The tower block, condemned as a vertical slum by a Control that would rather update its architectural dimension into forms more amenable to representation... becomes an "incubator." The thicker the forest of towers, the more antennae perched above the city, the more the Radiant City, botched, radiates.

Steve Goodman

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The summer of 2003, holed up in a small room on the 12th floor of a residential tower block in Bow, East London, the sweat running down the inside of the walls. The floor is carpeted in grime and dust. The room is built inside a larger room, a hastily constructed endo-architecture to cocoon the studio, protecting the pirate transmission and transmitters from intruders. The electrics are sporadic but functional. A decimated fan makes what little air there is, circulate in the room, generating a turbulent microclimate of dust and smoke. Wires snake their way out of messily drilled holes (also working as steam valves), out through windows, trailing and flapping against the outside of the block, leading up to the transmitter on the roof. Inside this pirate radio studio, the megalopolis is screaming through the MCs, at a rapid rate, which seems to exceed the limits of the human system of vocalization. The pressure of millions channelled via a few mouths. They call out the name of their rivals in a lyrical assault and battery so cutting, so acerbic that even the DJ winces at the verbal violence as he drags the record backwards, halting the proceedings only to return to the edge and roll again, this time building the intensity level that little bit higher.

For a moment, the scene freezes. The MC stops insulting and becomes an "encryptor." His mouth becomes a modem, transmitting an as-signifying stream of digits to the audience distributed across London's airwaves: "out to the 365, the 768, the 976, 315..." Signalling that you are locked into the station's transmission is made via phoning the studio number, letting it ring once, then hanging up. Acknowledgement of this signal is provided by the host/DJ/MC reciting the last 3 digits of phone numbers from his log of missed calls on the studio handset. The connection made, the transmission swells, the rate of text messages incoming to the studio escalates, while the studio phone vibrates. Matt Fuller has noted how, within the media ecology of pirate radio, mobile phone rings "have developed as a way to use the telecommunications architecture at no cost to receiver or sender and to process a relatively large number of feedback signals at speed... they work as password. In this case, they don't so much allow the user to gain access — they are that access." Unusually, one caller persists. A private number. Most callers hang up on one ring, the missed call functioning as a request code for the DJ to rewind the current track to the beginning. But the phone keeps ringing. The MC's focus shifts from his rivals to the DTI (Department of Trade & Industry), and now Ofcom, the branch of the British state responsible for policing the radio spectrum. "You know how we do... no pri-
private numbers. DTI get bun!” Answering the mobile phone to a private number potentially allows Offcom, monitoring signal transmissions via the airwaves, to locate the studio much easier. A whole circuit of connection and disconnections, of contact and evasions. A veritable sonic war machine temporarily occupying a slice of radiophonic territory, hacking the national grid in a logistics of infection. Offcom, a centralized radio disease control agency monitoring outbreaks of “vira­ cy” in the frequency spectrum.

Although London pirate radio has its own specific history of predator and prey, Offcom’s low intensity war on “vira­ cy” now converges with a global tendency that has been tagged “war in the age of pirate replication.” Piracy, in all its strains, pulses blocks of affect in from the system periphery, either external or internal, feeding the viral nature of digital capitalism. The auditory dimension of this viral culture is exemplified by the contagious transmissions of East London pirate radio. Conceptually, a set of problems is thrown up by this focus, problems that demand piecing together a specifically tuned methodology. We call this methodology, “audio virology,” implying the transcription of the dialectical terminology of “underground” and “mainstream” sectors of the music industry into a materialist ecology of sonic markets and anti-markets; individual artists or producers, for example, become carriers, events become epidemiological incidents, scenes become fields of contagion, trade, an exchange of contagious sonic fluids or particles, radio a literal transmission network, mixtapes, CDs and vinyl as contamination vectors, and acoustic cyberspace, in both its analog and digital domains, becomes an epidemiological field of affective contagion.

The first problem confronted by an audio virology concerns this planetary context of “war in the age of pirate replication.” The early 21st century is a strange time to be an audio pirate, whatever the strain. Under the slogan of “piracy funds terrorism,” the war on terror has made a point of forging together the vast secret economies of pirated media (producing millions of unlicensed copies of CDs & DVDs particularly from South East Asia), anonymous, illegal online file trading (using an array of p2p platforms) with ubiquitous, decentralized insurgency networks such as Al Qaeda. From the point of view of agencies of control attempting to produce one global system, this multitude of targets is linked via the general dread of trans-medial viral invasion — electromagnetic, biological, terrorist, audiovisual. In fact, the virus constitutes the model for all threats to cybernetic control societies. Ubiquitous digitalization has intensified pirate replication, fuelling the viral nature of cybernetic capitalism. During the first wave of mp3 panic/excitement, gangsta rapper Ice T compared the file format to a biological weapon unraveling the cell walls of a global organism constituted by the major entertainment megacorps. Yet there is no necessary contradiction between unrestrained file trading and the subsequent reterritorialization of this into pay-for-downloads — merely a change in speed of propagation.
Itensified by multiple layers of processing — it becomes malleable, potenti­ated in reception. These are types of music that are fundamentally synthet­ic. They declare the whole spectrum of vibrations at any speed or frequency subject to their inventive power." Cerebral radio listening is short circuit­ed to be overridden by the "full-body-ear-drum" of the skin, and a sometimes mobile,3 distributed network of bass delivery systems. Parallel sonic wars (in the age of pirate replication) are being waged across the planet by an array of vio-sonic microcultures.

While much of the war against pirate media takes place online, its ear­lier local frontlines across the analog sonic megalopolis persist. As urban critic Mike Davis outlines in an essay entitled "Planet of Slums," the demo­graphics of urbanization on 21st century earth are in terminal transition. The key agents in the emergent global configuration are the "new megaci­ties with populations in excess of 8 million, and, even more spectacularly, hypercities with more than 20 million inhabitants,"4 as the result of mas­sive unilateral rural-to-urban migration. For the first time in the evolu­tionary history of the human species "cities will account for all future world population growth, which is expected to peak at about 10 billion in 2050."5 As de Soto notes in "Mysteries of Capital," radio has functioned as magnet in this process, advertising the opportunities of urban living across the rural world.6 Radio, McLuhan’s "tribal drum," thus acts as a mobilizing call to urban replication. "The Planet of Slums," for Davis, is composed of "inter­changeable and spontaneously unique" components, "including the bust­ees of Kolkata, the chawls and slums of Mumbai, the katchi abadis of Karachi, the kampungs of Jakarta, the iskwaters of Manila, the shammassas of Khartoum, the umjondolos of Durban, the bi­donvilles of Abidjan, the baladis of Cairo, the gecekondu of Ankara, the conventillos of Quito, the favelas of Brazil, the villas miserias of Buenos Aires and the colonias populares of Mexico City."7 This periphery, as turbu­lent zone of bass cultural innovation, does not reside exclusively in the 2nd and 3rd worlds but transects the core of the world system. The digital wars of viral economies thus parallel the massive exchanges of migrant populations, highlighting the frayed edges of McLuhan’s global nervous system as it undergoes cellular decomposition, molecular mutation and trade in sonic fluids.

The sonic anarchitecture of these emergent urban entities has usefully been tagged by music blogger, Woebot (Matt Ingram) via what he terms "shanty house theory," referring to the coincident music network which has arisen out of these planetary locales, from the grime pirate radio stations of East London, Crunk from the Southern US, dancehall from Jama­ica, Cariooca Funk from the Brazilian favelas, Kwaito from South Africa, Regaeton from Puerto Rico, etc.

...shanty House is the new strain of post World Music engaging in the same cultural and social dynamics that have given us Crunk and Grime in the first world and Dancehall in JA. Detractors might bemoan the need to give Pavela Funk, Kwaito and Desi a brand name. However, like it or lump it these forms are always going to exist on the peripher­ies of most people in the west’s experience of music. If they aren’t called something specific then they’ll be less absorbable in their own right, and conversely will be viewed as an extension of World music. The concept of "World Music" is inextricably intertwined with con­cepts of the natural, the earthen, and the rooted. However, the new wave of global urban music is mercilessly hooligan in its agenda, syn­thetic by choice and necessity, often produced in a crucible of urban existence yet more extreme, precarious and violent than that which characterises the temperature of New York, London, Berlin.8

In a somewhat condemning article in the Village Voice on M.I.A., the artist whose work masks as a “conference-call” between these degenerate locales of the planet of slums, Simon Reynolds elucidates the condition of shanty house theory as "world-va-ghetto musics: impurist genres... that typically are about bastardised village or indigenous folk forms to pirated ele­ments of rap, rave, and bass ‘n’ bootiy. Locally rooted but plugged into the global media sphere, these scenes don’t bother overmuch with sample clearances, and vibe-wise they typically project ruffneck raucousness leav­ened with party-up calls to shake dat ass. They also speak, vividly if oblique­ly, of a new world disorder where Tupac Shakur vies with Bin Laden as a T-shirt icon and terrorists keep in touch via text messaging."9

Drawing from strains of science fiction, epidemiology, and affective theories of sonic media, an audio virology is tuned to mapping what Matt Fuller has recently termed these “affordances,” “potentials” or “activated relations” of “media ecologies” within the shifting bio-technical meshwork of pirate radio. An audio virology focuses on pirate radios zones of trans­mission, incubation, its electromagnetic war for bandwidth, its bacterial nomadism within the vertical city, its asignifying contagious trade in nu­merical code and sonic fluids, and its power to generate virtual collectivity. Instead of merely making connections between individual cells, an audio virology probes the mutational potential of pirate media, asking what cellular transformations, and what new modes of contagious collectivity such sonic microcultures may provoke.

Perhaps the infectiveness of such analog and digital sonic transmis­sions makes them an audio portal into cultural futurity, affording an opti­mal laboratory for synthesising modes of collective distribution yet to come, and new sonic cultural machines of joy. Their abstract machines are never
purely sonic, and always possess a power of transduction and application into other social, cultural and economic fields. To engineer change in a radiophonic Babylon, we must pay more affective attention to the sometimes inaudible, vibratory, carrier waves which animate the babel of voices; how do the affective orientations of bass cultures and their deployment of sound systems, from pirate radio to the dancehall, work to produce invention in terms of movement and sensation. What is this simultaneously seductive yet forceful, contagious listening transmitted underneath and in between?

Notes
"Something shocking has happened! Who on earth allowed all those people to speak?!"

"You-you-you-you are listening to Radio Ozone..." The trailer sounded like a machine, of remoteness and the presence of data. The compressed, robotic voice, the peeping and cracking during pauses, the minimalist composition — the electrons seemed to make all of this audible as they thrust their way from Riga, Latvia through data lines far and wide, to manifest on computer speakers the world over as sound. Aesthetically an adequate counterpart for radio during the epoch of the I/O principle and networks, it characterized its time much like the stern, atmospheric announcements with their gongs and their "Achtung, Achtung!" (at least in Germany) stood for the early terrestrial radio of the 1920s. The Latvian artist collective re-lab.net began broadcasting its Radio Ozone program in 1996; live on the Internet for an entire evening, at least once each week, with sounds that can broadly be categorized as Electro-pop or as part of the budding Electronica movement. re-lab.net belongs to the group of pioneers once referred to in the context of "webcasting" — a term analogous to "broadcasting," which was created to indicate the transmission of audio-visual programs on the Internet.

"The Net" didn't become a generally accepted term until the beginning of the 1990s. Originally conceived as a means of exchanging alphanumeric data, it didn't take long before audio content was being transmitted. In the middle of the 1990s the first streaming software became widely available, with RealAudio leading the way. It was now possible to listen to sound at the same time the audio data was being accessed and transmitted from the Net. The Internet had, indeed, already been able to transport sound, but only in data formats that demanded a painstakingly slow download to a computer. Streaming allowed most audio files to be easily accessed on demand. It was then possible for anyone with the proper hardware and software to practice on the Internet what had traditionally been reserved for radio stations, namely the broadcasting of programs — even live.

Instead of having to go through the burdensome (and in most cases highly complicated and unsuccessful) process of applying for a radio frequency, whose range was still limited to a specific territory, the Internet established a technical distribution structure that anyone could employ. Since then, everyone with the basic tools can have their own station and publish audio content on the Net. The first ones to systematically exploit the transmission of sound this way were artists — of all kinds.

Anyone who experimented with the early versions of the RealAudio software will surely recall the noisiness and stuttering of playback. Would the industry attempt to force users to accept this poor sound quality in order to simplify their marketing channels? Would we have to get used to a sonic culture limited to sound bites, just because the flow of data within the networks could not be optimized? Would this be the future of listening?
For as much skepticism as there was, there was just as much celebratory anticipation — particularly by artists — about the opportunities the future would bring. It quickly became clear that the new medium of the Internet, which had been strongly characterized by its visual component, would realize great depth in the element of sound — an element inextricably linked to the corporeal and the three-dimensional, which opened the space beyond the aesthetic-conceptual considerations, however, the Internet was mainly attractive because of the possibilities it offered to distribute audio content around the globe. This translated into independence from established radio stations and recording labels, which had previously been necessary for distribution. In a broader scope, this development became tangible with "Hybrid Workspace," exhibited at the Documenta X (1997) in Kassel, Germany. Following that event, one festival after the other dedicated itself to the new frontier of webcasting. Parliaments, stockholder's meetings, US police radio, and others followed suit. Soon it was possible to listen to thousands of programs from around the world on the Internet. The networked computer had become a global receiver.

Skeptics, however, started to ask whether it could still be called "radio" if the transmission of sound is no longer achieved by the waves within the electromagnetic spectrum referred to as "radio waves." According to Wolfgang Hagen, creator of radio content and theoretician, the Latin term "radius" refers to the circular rays that appear to emanate from lighted bodies. Hagen also refers to the fact that radio is a technical apparatus with which sound can be transported across distances. For a listener it is typically irrelevant which technical medium is used to transmit the sound he hears. If we look at the apparatus of the Internet more specifically, we can envision its specific properties: network characteristics, data exchange, data processing, etc. We may thus recognize that the audio options in the Net barely reflect these properties, but rather mimic those of its traditional predecessor, namely the broadcasting principle. The audio stream that I call up functions for me as a listener in a manner no different than the transmission of a normal radio station. One transmits while many receive. Even listening to audio-on-demand files, which are often referred to as a net-specific form of radio in terms of practical reception, occurs in a way that is based on the old model. The industrial design of standard playback software allows for nothing different. It continues to adhere to the idea of a defined mono-directional, linear relationship between transmitter and receiver. The latter has no opportunity to intercept or even to return anything. Software has not even provided for the simultaneous playback of multiple programs and the creation of individual mixes.

The pioneers of Radio Ozone in Riga were not much interested in simple webcasting based on the standard model. For them, the central star-shaped broadcasting principle was obsolete — a consequence of their experience during the Soviet era and the period following the dismantling of the Iron Curtain. The unrestricted access of the Internet media structure appeared as if it had been specially ordered. Here they would be able to publish what they found important, without having to pass through the eye of the needle fashioned by the established media. It wasn't enough for them to portray Internet radio by means based solely on the concept of streaming. Their plan was to exploit the network characteristics of the new medium and to make the Net really start to sound off. At the end of the 1990s, their so-called loop actions were legendary. For the events, the Latvian artists met with other sound artists and independent web casters, including some from Sidney, Banff, Amsterdam, Ljubljana, and Berlin. The principle was that every station would take a live stream from another station, add their own sounds, make them available to the next participant, who would then mix his own sounds into the stream and pass it on, until it was called up at its place of origin — with a delay of about 10 to 15 seconds. The loop was then closed. The more often the stream circulated, the noisier it became. The
sound quality still so poor at the time didn’t trouble any of the participants, nor did it disrupt the random sonic results, which were created by the incalculable time delay of the Internet and which made a synchronous collaboration impossible. But this was of little consequence for the participants.

"Initially we were surprised that anyone would consider our experiment art. That was never our intention," reported Rasa Smite, founder of the Latvian group. "Actually we wanted to make a break from art. But then it became obvious—we’re artists. What we do, we do as artists. And it wasn’t about a fixed result, but rather about the process of sonic collaboration on the Internet."

The loop actions of re-lab.net were an important prelude for artistic aural activities that make use of the Net as a medium of digital data exchange and divert from the star-shaped broadcasting principle. The potential of establishing a flexible, dynamic relationship between sender and receiver elicited a series of important artistic experiments, from which a new conception of radio was derived. Some places hurried to rave about the “new possibilities” of the age of the digital network. Indeed, it is useful to take a comprehensive look back into its history. It is safe to assume that the Riga number of other Internet radio projects. Precursors to network-based radio networks and its potential for a radio of interaction and participation. The broadcasting principle, the state-controlled transmission monopoly, is not the natural state of radio. Its media architecture is much more the result of a political decision that was made in the 1920s in Germany—as in most other countries. The fear of the propagandistic effect of the medium—the incitement of the masses—was very strong at the time. The broadcasting principle, the state-controlled transmission monopoly, seems to be the least evil, if public radio was altogether unavoidable. This stipulation regarding the medium of radio as a state broadcasting monopoly and one-way communication medium would be criticized long into the next decade by artists and theoreticians such as Bertolt Brecht (1932) and Rudolf Arnheim (1933). "Radio: one speaks without hearing and everyone else hears without being able to speak." While Brecht called for democratization along with his push for a two-way medium, Arnheim very generally pointed to the communicative paradox of the broadcasting principle—to the power differential inherent in the face of an absence of options for direct response. In both criticisms is the reproach that that which is not call and answer or statement and response is neither dialectic nor truly enlightening.

The broadcasting principle also lays claim to substance and authority. As a consequence of its mono-directional structure, it benefits from both of these while it also encompasses—if not outright insists on—abuse as a result of the nature of a monopoly. The role distribution also becomes clear:

**Radio Magic**

Its strong point was the creative potential of the medium itself. The loop actions of re-lab.net were an important prelude for artistic aural activities that make use of the Net as a medium of digital data exchange and divert from the star-shaped broadcasting principle. The potential of establishing a flexible, dynamic relationship between sender and receiver elicited a series of important artistic experiments, from which a new conception of radio was derived. Some places hurried to rave about the “new possibilities” of the age of the digital network. Indeed, it is useful to take a comprehensive look back into its history. It is safe to assume that the Riga number of other Internet radio projects. Precursors to network-based radio networks and its potential for a radio of interaction and participation. The broadcasting principle, the state-controlled transmission monopoly, is not the natural state of radio. Its media architecture is much more the result of a political decision that was made in the 1920s in Germany—as in most other countries. The fear of the propagandistic effect of the medium—the incitement of the masses—was very strong at the time. The broadcasting principle, the state-controlled transmission monopoly, seems to be the least evil, if public radio was altogether unavoidable. This stipulation regarding the medium of radio as a state broadcasting monopoly and one-way communication medium would be criticized long into the next decade by artists and theoreticians such as Bertolt Brecht (1932) and Rudolf Arnheim (1933). "Radio: one speaks without hearing and everyone else hears without being able to speak." While Brecht called for democratization along with his push for a two-way medium, Arnheim very generally pointed to the communicative paradox of the broadcasting principle—to the power differential inherent in the face of an absence of options for direct response. In both criticisms is the reproach that that which is not call and answer or statement and response is neither dialectic nor truly enlightening.

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the one transmitting must take the initiative, while the receiver and addressee accept. Mission – transmission: the sacred connotation of the term never fails to resonate. The effect lingers from the time when it was considered a miracle that voices and sounds could travel magically through the air, and also points to the power discrepancy between those on the one hand who considered particular content worthy of broadcast and therefore operated with a certain “broadcast consciousness,” and those on the other hand who received the directive to shut up and listen — and to adopt the program as their own.

With much self-mockery, but not without regret, in 1924 “Radio Magic” heralded the victory of the broadcast monopoly over the network and multi-user principle. Beyond its political and communications-cultural objections, the first original German radio play additionally exhibits how a media architecture that is directed to participation and interaction also requires a reevaluated aesthetic criteria. The linear, defined program of the one-way medium challenges the polyphonic collaged improvisation of the multi-user space – a media architecture that seeks alternative materials, forms, and dramaturgical developments, requires other strategies of creating significance and meaning, and calls for a new concept of the artist, the recipient, and art itself.14

During the coming seven decades, radio and its imaginative and experiential world would develop almost exclusively from the mono-directional media architecture of the broadcasting principle. Interest in the concept of networked or two-way communication and interaction, however, continued to swell, requiring its own treatise in order to show how the principle of networking established the basis not only of the legendary 1938 American radio show “The War of the Worlds,” but also a number of Naif radio propaganda programs.15

The call for reshaping radio into a two-way communication medium — in the Brechtian tradition — once again increased in volume, particularly in the context of the anti-authoritarian movement in the middle and end of the 1960s. There were some attempts to allow the sentiments of listeners directly into programs by employing the telephone, even in a few radio plays.16 But the real push toward interactive art, which was so indicative of this period, hardly found its place in the medium of radio. At that time the Pentagon was having its first successes with technical networking experiments using computers, which gave birth to the forerunner of the Internet. However, it was known only to a very few artists and gatekeepers. Networking, de-hierarchization, and interactivity: all of these were key words for the arts of the time, which in the age of political emancipation were not part of the common vernacular. In beginning to realize these ideas, however, artists were soon confronted by the fact that neither interactive media architectures nor suitable technologies were at their disposal.

Despite the expansion of microelectronics and computers, the progress was slow for those artists who began to use early computer networks at the beginning and middle of the 1980s, such as the circle around the Canadian telecommunications artist Robert Adrian. Not long thereafter, composers and sonic media artists such as Alvin Curran and Bill Fontana created a stir with their net-based radio compositions, some of which were prize-winning, but which also showed that their excellent technical and audio quality was only achievable with very expensive equipment. Satellite connections, radio conferencing hook-ups, and stereo lines were all part of networks accessible only to those who gained access to public broadcasting centers and whose gatekeepers were able to be won over by off-beat ideas. This is not to say that they were not interested, in principle. If for no other reason than extreme cost considerations, however, such projects remained an exceptional adventure.

The digital networks of the 1990s were the first to provide the technical prerequisites with which the medium of radio could function with alternative communication systems, no longer exclusively within the broadcasting principle. The established media rarely explored principles and methods of making radio on the technical or conceptual basis of networked media architectures. But for that very reason, the exploration was more often undertaken by artists.

One prototype of early net-based radio experiments was “Horizontal Radio” from 1995, which was conducted under the auspices of ORF art radio and its editor Heidi Grundmann. This global 24-hour radio action set out to aurally implement the network principle as it entered the public consciousness through the World Wide Web — with the help of all available audio transmission technologies. Telephone lines, conventional radio transmission technology, ISDN, satellite transmission, and the Internet were all applied. Thirty radio stations participated in the project, from Jerusalem to Linz and Berlin to Australia, as well as eight Internet servers and over a hundred artists in their studios. Each of the participants was an equally valuable node in a global network. An autonomous audio event occurred at all of these locations simultaneously. Using the conglomeration of lines, each event was able to adapt the sounds of the other stations at their discretion and link it to their own productions. In this way, they created mixes from the surprising to the cacophonous, depending on whether the sounds were specifically coordinated between the creators or wholly spontaneous. The result could then be sent by online or on-air connections and thus made available to the participating audience. If, for example, Stockholm jammed with Berlin and Jerusalem over stereo radio lines, the mix could be heard on the radio at all of these three locations, depending on the range of the local stations. It was also simultaneously broadcast on the Internet and could be accessed by other stations in the global net and integrated into their own sound productions.
"Horizontal Radio" thus broke through the broadcasting principle to the advantage of unabashed transmitting and receiving. The kind of soundscape that was presented to the listener was dependent on the listener’s location, as well as on the networking between stations and the aesthetic decisions made there. "There were infinitely many variations of 'Horizontal Radio,'" recalls Heidi Grundmann, "but none of the participants, including the radio listeners as well as the Internet users, could experience everything. That was impossible." Those who wanted to listen to "Horizontal Radio" but were outsiders in the classical sense had a difficult time. The action was primarily designed for those who were directly involved. Only by participating was there a purpose for the direction of the data flows, for distance and proximity, and for the participating media and their qualities.

In this and similar undertakings, critics failed to find a concept or a sense of accountability oriented toward an end result. What randomly and unpredictably came out of the mixes was not always created for the purposes of pleasing the ear. Where the Internet was selected as the channel of audio exchange, the general result also suffered from the poor sound quality of the streaming software being used at the time. But what remained especially unsatisfying for many participants was that their carefully produced contributions were anonymously crammed into an expansive project while those who used and appropriated them failed to contextualize them according to original artistic intent. The promise of the Net to provide two-way communication for the purpose of power sharing did not pay off. For some of the participants, "Horizontal Radio" ended up being more of an experience of powerlessness.

A number of artists, however, came to the project with a different level of awareness. They understood the individual contribution to be a sort of building block that would be able to be integrated in ever-changing contexts, thus modifying the original work. "Horizontal Radio," an early and wide-ranging attempt at creating networked radio, elucidates that propositions of its kind must not be disregarded on the outset, but instead evaluated based on a fundamentally redefined discourse. The perceptions of concepts such as author, artist-subject, program, work, editorial responsibility, and the implicit distinction between sender and listener that had been accepted until now all transport criteria that could not be properly addressed amidst the happenings of the 24-hour event.

The first thing we can say about such a project is that it is comparable to a carnival, in that small and large groups of participants in the alleys and streets of a city have their fun, sometimes meeting up with other players, amusing each other, then moving off to other parties, going along together in different sizes of groups, and then maybe finally integrating into a larger procession down Main Street, which then as a whole offers something to curious onlookers. Here, radio does not connote information or pleasing sounds, but is experienced rather as communication in the context of a sonorous rendezvous, indeed a form of intercourse. The Net ends up presenting a structure capable of being filled with audio data, which can then be perceived only by those who participate. Just how gratifying this aesthetic-communicative experience is for each person depends on the individual’s specific criteria. The question must remain open about exactly what this kind of net-based collaborative radio action offers listeners sitting in front of speakers, who follow the entire process as they would a program on a radio station.

The interactive radio play "The Wheel of Fortune," broadcast at the end of September 2001 by the BBC, offered an indicative answer. Recalling a kind of acoustic hypertext principle, it worked with the technical principles and structures of a network. Three different radio plays, in which the content was carefully coordinated, were broadcast simultaneously on three different channels. One of the shows was to be heard on BBC Radio 3, one on BBC Radio 4, and the third as an Internet stream. At key points in the story, a recognizable signal was given for listeners and users to choose to switch to a different stream or channel, thereby selecting an alternative story progression. There were so many options that the probability was very high that each listener, depending on his selection (indeed, if he chose to make any selections at all), would hear a different version of the play. The concept of this acoustic hypertext was oriented around offering the listener a linear work—despite the selection options—that would approach the standard radio and radio play experience. Even if recipients chose not to navigate through the play, they were guaranteed to have a consistent experience. In any case, what they heard was a completely conventional radio play of traditional dramaturgy. But what should induce a listener to play within this conventional form, without actually being able to extend beyond the authorial frame of experience? Why select between options when a dedication to the linear flow of one version already achieves the desired and familiar listening experience? Those who stick with conventional forms will rarely have to worry about in-house conflicts. The station’s concern about the consistency of the program and its reception was greater than its curiosity about plumbing the depths of the possibilities of appropriating a different media architecture and endowing it with meaning—a missed opportunity.

This question about the methods of appropriation and the endowment of meaning on the side of the listeners and users has been a focus of the "Tele-tap" project from the Amsterdam artist group CUT-STOPSTE, which since 2001 has been exploring new configurations of networks, telephony, and broadcasting. The latter has benefited the project because it avoids the one-time event that hits the air waves for a brief time and is then considered to be celebrated history. In long periods of preparation, the artists continuously attempt to develop new forms of representation with which they can activate their Tele-tap system. Its underlying principle is based on mobile communications. A selected number of protagonists are sent off with a con-
Continuously connected mobile phone and plunged into the Amsterdam nightlife. What they experience there is transmitted throughout the course of the evening to an Internet server that produces live streams from the information it receives from the telephone, as well as to a radio studio and/or other venue. The individual streams of each of the mobile phones can be heard on the Web. Comparatively, the radio\textsuperscript{5} functions as a meta-channel, which linearly and successively reproduces and moderates the multiple happenings experienced out there by the eight protagonists, and "mediatizes" the anticipated audio experience, dramaturgy, and ways of representation and communication.

Anyone interested in listening to the players during their unadulterated nightlife experiences can hear each one individually in the Net and thus—as consciously calculated by the artists—sacrifice to his own aural voyeurism. Things get interesting at just the point where radio would normally discreetly fade out because, for example, one of the protagonists finds himself in the red light district and his encounters become increasingly bizarre—all of which we are privy to, thanks to the microphone in the mobile phone. It was also exciting—particularly without a moderator's commentary—to follow one of the participants, an expert on bats, as he intruded into a boarded up building one night, only to excite a mass of the winged creatures, which then flew wildly out. Broadcast and net versions complement each other well here, illuminating the different ways of creating meaning and context. The artists are in the process of further technically developing the setting in order to make additional flows of communication an essential component of the system. How would it be if the players could be contacted by listeners or other players using mobile or standard phones? What would the recipients perceive and experience if the Internet streams, which until now were separated, could be heard all at the same time? And what would change if the listeners—instead of a moderator—could control exactly what happens on the radio meta-channel?

The Tele-tap system demonstrates how the borders between intimate and public spaces break down in a mobile and interactively communicating society. This "reality radio" is not the result of staging or adaptation, but rather the media-architectonic concept of the artists. A number of media apparatuses were configured to coordinate with each other in order to activate alternative communication flows. They challenge expectations in recipients and provoke them to take a stance about their perception—listening, eavesdropping, and wiretapping as much as intervening in order to specifically influence one's own audio experience. "Tele-tap" shows that, depending on its specific architecture, every listening medium generates its own ear—its own way of being sonically perceived. And it is not the medium that mediates, but rather the perceiver, who adjusts his attention appropriately.

With "Horizontal Radio" from ORF art radio and the loop actions of re:lab.net, it was still about affirmatively realizing the state of being connected and being networked, the result of which was the crystallization of the question of what the medium does with its users. While the BBC project cautiously assumed that the new, other medium "didn't do anything" to its users—meaning it offered them nothing that conflicted with the user's typical radio experience—"Tele-tap" specifically addresses the interplay between manipulation and being manipulated.

Indeed, the medium does something with the recipients because they do something to it. This concept is also the basis of Atau Tanaka's radio-Internet play "Frankenstein's Netz"\textsuperscript{22} ("Frankenstein's Net") from 2002. It used the Internet not only as a structure for data exchange, but mainly for data procession. The users could upload audiovisual data in order to construct a personalized, agile, digital creature that was processed by the system in accordance with a complex server programming, based on its own ever-changing dictates and moods. The man-made creature thus transformed based on user input, turned the user into a central component of its protean nature, and encouraged the participants to become engaged with its material basis for a period of several weeks. During the concluding event of a live performance, the data organism was to act as a virtual performer—that is, as an audio artist—who in the same way as the human musicians would process material live in concert, which the Internet users would upload to the creature during the performance.

The technical and dramaturgical basis of "Frankenstein's Netz" was the programmed data process as controlling command, which merges and develops the input of listeners and users based on aesthetic criteria. However, the composer abandoned the idea just before commencing the live performance scheduled to travel through the ethers\textsuperscript{23} because he was concerned that hackers would destroy the overall effect. Out of fear of failure, the artist salvaged the project within a programmed setting and protected himself from any loss of control. Failure in this case would have meant a collapse of the program—dead air instead of continuous audio data procession.\textsuperscript{24} Thus did the interactive concept and its democratic participation end up being exactly the opposite.

Generally speaking, failure is an indispensable component of settings in which absolute control over content and input is abandoned. But in a cultural climate built on the ideal of the perfect work and on authorial accountability for the final product, transmitted with a fully realized and archivable message, the cultivation of failure hardly seems acceptable. Failure here connotes a collapse of the concept, and thus of the author. The model of procession, however, which is based on participation as well as the processing of input, addresses other premises. Hacking and other destructive interventions become a central component of the participation and communication experience. "Program as product" versus "process as activity."
At the place where radio and digital networks begin to meld, much has transpired since Radio Ozone's loop actions in the mid-1990s. The software that now enables webcasting no longer require much in the way of expertise to operate. Access to high-speed connections has also vastly expanded. Furthermore, sound quality has improved immensely, thanks to the mp3 revolution. Thus the Web, now more than ever, full of both mono-directional and interactive radio. The structure of the Net, however, with its potential for exchange, participation, and processing, has remained focused on the aesthetic level of sound. It is still rare that forms are developed that transport complex verbal statements, content, and opinions without trying to adapt them into a linear program principle. For this reason, it is worth mentioning the latest attempts by the Berlin media artist Ulrike Gabriel, even if they are currently in the development phase. In her “Flow” series, Gabriel provides a platform for fundamentally critical political opinions live on the telephone, as she confronts them with pre-produced or directly transmitted opinions from the mainstream of established media. In so doing, she attempts to create a dramaturgy of confrontational contestation that also incorporates electronic live music, a commentator, and a periodically imposed narrator. The work does not concern itself with the presentation of pre-selected opinions and commentaries in a familiar way such as we find in the classic news media, but rather with the creation of critical counterpoints in a kind of dialogue — better yet, multilogue. She attempts to achieve freedom of speech in the act of publishing the spoken word.

As a result of its spontaneous, explicit, and often very unorthodox statements, it would be surprising if this bold form and content experiment secures access to the programming of established private or public stations here in Germany. Too unpredictable is the political message that can develop from the verbal and non-verbal communication flows in the process of a live production. Objections to such radio projects are still rooted in the same fear of the propagandistic effect of the medium of radio, such as was the case in 1994. Although Ulrike Gabriel’s “Flow” concept has not integrated the Internet as a mechanism of sound transportation, it would be unimaginable without the influence of network thinking, data procession, and the anti-authoritarian democracy promised by the Brechtian two-way concept.

Digital networks have the conceptual potential to change our notion of radio as a medium for transporting sound. The examples depicted herein indicate that radio can be produced using other methods. It may thus become the apparatus of direct exchange, of being connected, of intersubjectivity, and the fluid or processual. An essential aspect is that the universally accessible Internet has broken down the previously high barriers that complicated the options for producing radio content. The trend in the established media is to increase accessibility by reducing production quality — along with the level of intellectual difficulty. In this way, they hope to reach a broader audience. However, accessibility in the literal sense has manifested in a different way, which has been evidenced in the past few years, as an increasing number of alternative cultural activists have received approval to establish their own stations. They don’t need to look long for content creators, since the desire to express oneself using sophisticated content and alternative — even new — forms and communication processes is, by definition, immense. Access and participation are the key words in this progress, which is catalyzed by the digital network media. If the concept continues to become more popular — and much indicates that it will — the consequence could be a new role for radio. The model of the authorial program for which the listener is obliged to remain silent and receptive in order to be entertained or instructed is now confronted by a different and equally legitimate model, one that is open, processual, and communication and participation-oriented, in which the roles of creator and public are no longer strictly separated. As the artistic examples indicate, in order to keep such formats from becoming trivial, a carefully constructed framework, more intelligent strategies, and occasionally more complex programming are required in order to create worthwhile settings in which others can be active. Even “radio activity” requires quality criteria. Due to the lack of experience and actual opportunities, there is a lot to be done in this regard. It remains to be seen whether such a new kind of positioning for radio can prevail in our culture, particularly in the face of the established criteria for broadcast media.

The broadcasting principle certainly will not die off. Quite the opposite is true. The star-shaped broadcasting principle may develop its greatest strengths in combination with networks and their potential for operative participation and interaction. The broadcasting principle offers the opportunity for contemplative reception — that is to say, listening. Without listening there is no communication, no exchange, and no understanding. It is a prerequisite for participation, intervention, and interactivity that one’s input responds appropriately to the aesthetic-communicative intention of the medium-defined setting, fulfills it, and completes it. Even in the age of networked media architectures, the practice and discipline of listening remains the origin of creative and intellectual sovereignty.

Notes
1: From the dialogue spoken by the “Program Director” in Hans Flesch, “Zauberei auf dem Sender,” Frankfurt Main 1984. “Zauberei auf dem Sender” (“Radio Magic”) was the first original radio play made in Germany. 2: One of the first radio productions to use the structures and possibilities of the Internet is “State of Transition” (ORF 1994), which connects radio listeners with Internet users, as well as a group of artists in both Graz and Rotterdam, all live via telephone, lines, and radio transmission technology. See also the documentation at http://kunstradio.at/1994/stateof_t.html
3: While private stations in Ghana, state radio in India, and stations in the US and the Pacific were streaming their programs in the Web, public stations in Germany were slow to join. This was due in part to the complicated legal situation of Internet broadcasting at the time. 4: Wolfgang Hagen, “Der Radioruf. Zu Diskurs und Ge-

Using the example of WIECOUNVER, out of many others I might have chosen, this brief text examines an over 25 year period that witnessed major changes in communication technology through digitalization and the way artists have reflected these changes in their work. WIECOUNVER highlights some of the roots of the radio art developed by artists since the early 90s in cooperation with Kunstradio, the weekly radio-art-program of the ORF (Austrian National Radio). It shows both the powerful influence of an independent scene of radio and radio artists and of independent telecommunications artists and their Pre-Web projects on these developments. It could also be said that WIECOUNVER represents an image of how the dominant curatorial model of radio-art-production inside the public (National) radio was challenged by artist-curated projects and spaces and by the non-curatorial field of networking and the Internet. Out of the interchange and exchange between these different models of communication and production/distribution, new decentralised, distributed and collaborative ways of producing radio and art have been developed. WIECOUNVER stands for many other such cooperations and developments of a radio art beyond the broadcasting paradigm.

VANCOUVER in the 60s/70s: radio-artists, artist-run-spaces, Fluxus, Intermedia

Vancouver was the first city in Canada where interdisciplinary Intermedia took on new forms based on a very specific situation in which cooperation and exchange in the wider art community seemed quite natural. In 1965, artists from different fields gathered around a “Sound Gallery,” which held evenings and a Festival of Contemporary Arts that included a first major “multi-sensory public happening in Vancouver” and many other events. The SFU (Simon Fraser University) Centre of Communications and the Arts was founded and immediately developed a strong artist-in-residence program. Contacts with Los Angeles and New York were strong — the E.A.T. event “9 Evenings” in NYC (1966, the year when Dick Higgins had written about “Intermedia”) had not gone unnoticed, but artists in Vancouver wanted to move beyond E.A.T. to Intermedia. McLuhan’s theories, especially his views on the reciprocal influence of old and new disciplines and media, had an important influence on artists like Iain Baxter of N.E.Thing Co.Ltd., while conceptual art and Fluxus influenced artists like Michael Morris. In 1967, artists in Vancouver founded an Intermedia organization/space around the exchange/sharing of equipment and the presentation of Intermedia projects. In 1968 “Intermedia Nights,” a four day festival of presentations by Intermedia, was hosted by the Vancouver Art Gallery. This was followed in 1969 by “The Electrical Connection: Intermedia,” a week of events, performances, and exhibitions. In 1970 Iain Baxter participated in the leg-
In 1973 the Western Front Society was founded by artists and continues to operate to this day. "For over 30 years, it has developed an international reputation as a center for experimental art practice and performance. Five programs focus on the production and presentation of exhibitions, performance art, new music, media art, and an arts magazine." (Quoted from the Western Front homepage)

In the year of its foundation, French Fluxus artist Robert Filliou was artist in residence at the Western Front. Among the local artists who were very impressed by Filliou and his concept of performance art, new music, media art, and an arts reputation as a center for experimental art practice and performance. Five programs focus on the production and presentation of exhibitions, performance art, new music, media art, and an arts magazine.

VIENNA in the 60s/70s — actionism, media art, etc.

There was nothing in Austria comparable to the radio opportunities offered by the Canadian independent radio and artist-run-center scene. In the 60s and 70s the radio drama department of the ORF (Austrian National Radio) more or less boycotted the innovative broadcasting movements “Neue Horspiel” and “Ars Acustica” (ORF succeeded in defending its radio monopoly in Austria until the second half of the 90s). This meant that Austrian writers and artists were often prominent among the authors contributing to these developments on public radio in Germany. Some of these artists were members of the so-called “Wiener Gruppe,” which in turn was in close contact with the artists of Viennese actionism. In the 60s these artists exploded onto the very restrictive, repressive and conservative postwar Austrian/Viennese scene and strongly influenced early media artists such as Valie Export and Peter Weibel in Vienna, while Richard Kriesche in Graz (influenced by Beuys) and Gottfried Bechtold in Bregenz (influenced by Conceptual art) developed their own type of media art. Bechtold realized several projects using radio transmission and was among the few artists who, on very rare occasions, was able to produce live Television Art with the help of the very open, almost clandestine editors of a cultural TV magazine who gave artists access to airtime.

In the 1970s the influx of international art and artists increased consistently through media art exhibitions and related symposia and, among many other events, an International Performance Festival (1979).

I had been working as a cultural journalist for the Austrian National Radio since the beginning of the 70s, when in 1976 I succeeded in founding KUNST HEUTE, a regular program on international contemporary visual arts. Some of the artists I met on my travels for this program did very interesting sound and radio works, and some of them even called themselves “radio artists” (among them Hank Bull from Vancouver) and consequently, in December 1977, I reserved a chapter of my program for “Art To Listen To” (“Kunst zum Hören”) and aired mostly excerpts of such works.

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as part of the “Computer Culture” symposium in Toronto, and developed as
a computer conference (or "chat") on the IP Sharp world-wide timesharing
network. The Vienna contribution to the project was split between
the IP Sharp office, where artists Robert Adrian and Richard Kriesche
were working, and a radio studio
network. I was joined
in the studio by
computer terminal
was to be transmitted live. I was joined
in the studio by Gottfried Bach, local manager of IP Sharp, with his
portable computer terminal. What the listeners to this live edition of KUNST
HEUTE heard was the noise of Gottfried Bach's terminal-printer, the
beeping of the modem and his voice explaining the project and reading out messages that he received from — or sent to — artists in different corners of the world. By then, also Hank Bull and others at the Western Front in Vancou-
ver had become involved in telecomunication art.

Hank Bull’s Brief History of WIE
COUVER lists three projects, which
were part of the rapid development of telecomunication art in the
1970s/80s:


WIENCOUVER II 1980 (Mail art, Slowscan Video, Computer)

We did a mail art exchange exhibition. Contributions from each city
were shown simultaneously at the Modern Art Galerie — as part of Rob-
ert Adrian’s exhibition — in Vienna and the PUSH ART gallery in Vancou-
ver. As a special event we took part in the global artists’ telecom
conference organized by Bill Bartlett. Our communication with Vienna
was expanded to include a dozen cities around the world, all exchang-
ing slowscan video and collaging an enormous text by computer.

http://kunstradio.at/HISTORY/TCOM/WC/1982/82index.html

WIENCOUVER III 1982 (Telefax, Slowscan, Computer)

This took place as our contribution to Robert Adrian’s “24 HOURS”
project. On that day we used slowscan, computer and, for the first time,
telefacsimile. We were beginning to feel at home in the medium.

http://alien.mur.at/rex/BIO/index.html

For THE WORLD IN 24 HOURS in 1982, some contributors used a second
telephone line to send sound-pieces from their locations. A year later, Rob-
et Adrian used the term “telephone music” to describe contributions,
which allowed people to participate in networked projects, even if all they
had access to was a telephone — as was the case for most Eastern European
artists who had neither fax machines nor computers nor access to timesharing
systems.

Music played into the telephone is TELEPHONE MUSIC because no
matter how rich and wonderful the music is when it goes into the tele-

phone, when it emerges a hundred, a thousand, ten thousand kilome-
ters away it will be telephone sound. (Robert Adrian)


WIENCOUVER IV stood at the end of the history Hank Bull published in
1983 in the small print publication ART + TELECOMMUNICATION, which
as a co-production between the Viennese group BLIX (Robert Adrian,
Helmut Mark, Zeiko Wiener) and the Western Front in Vancouver, could be
invited in the list of WIENCOUVER projects. But of course nobody at the
time could either foresee the radical changes our mediascape would under-
go in the next decades nor the development of this still ongoing project.

WIENCOUVER IV 1983 (Telephone Music, Slowscan)

To bring things full circle, Robert Adrian came to Vancouver, and so
did Bill Bartlett. For the exchange we had several musical groups and
performers in each city. The addition of a second telephone line to car-
your sound really brought the slowscan to life. Thanks to good techni-
cians and excellent contributions this was our most successful ex-
change to date. Western Front Video produced a video document of the
event.

This video document is one of the very few to convey the special a-
esthetics of Slow Scan TV as a medium for telematic art. Artist’s use of SSTM
— by then in color — reached its peak at the internationally networked LAB-
ORATORIO UBIQUA at the Venice Biennale in 1986. Almost all the docu-
mentation of the 86 Slow Scan exchanges — stored on audiocassettes — seem
now to have been lost. Only in the archive of the Western Front in Vancouver
a few audiotapes with the data of 86 SSTM exchanges remain — and what is
more, the Western Front still owns the technology to decode these data as
video-images.

CRITICISM OF THE BROADCASTING PARADIGM

In an email interview in 2004, Bertrand Gauguet asked Robert Adrian
what the thinking behind early telecommunication projects such as THE
WORLD IN 24 HOURS had been like. Robert Adrian answered:

... the basic theoretical concept was:
1) To demonstrate the global nature of electronic networks — and also
the fact that most of the globe is missing from the network (all of Afri-
can and South America and most of Eastern Europe and Asia),
2) To challenge the hegemony of the one-to-many broadcast media by
using the telephone system for one-to-one multi-media interaction,
3) To make a statement about a new role for the artist in the age of electronic media as a creator of the space for art rather than as a mere producer of objects.

The criticism of broadcasting and the many restrictions it usually imposes on artists and their productions was also revealed in the works described in the Selected Survey of Radio Art in Canada, 1967 - 1998, presented as part of the exhibition of the very important international Radio Rethink conference at the Walter Phillips Gallery of the Banff Centre in 1992, and later as a small supplement to the Radio Rethink book and CD. The survey of Canadian radio art was compiled by co- curator, sound and radio artist Dan Lander, with the help of other radio artists, among them Hank Bull from Vancouver. The unusual document underlines that a big part of this art was (and is) produced in the community and campus radio (c/c) sector. In his contribution to Radio Rethink Lander remarks: "When considering radio as art (...) most practitioners have grown to accept a level of control and censorship that is not normally tolerated with forms of artistic and cultural expression such as painting and literature." And further in the introduction to the Survey of Radio Art in Canada Lander notes that "...there is a common thread of critical concern regarding the state of contemporary radio, the end result of which constitutes a kind of love/hate relationship with the medium. This is made tangible by artists' desire to reinvent the medium through deconstruction and/or reconstruction, the use of "dangerous" contents and refusal to produce works that easily fit into the categories of sanctioned radio broadcast."

Such thinking is further articulated by Daina Augaitis, curator of Radio Rethink and at the time director of the Walter Phillips gallery, as she summarizes in the foreword to the catalogue of the symposium and exhibition: "A predominant feature of radio art is a resistance against state regulation of the airwaves and the many subtle and overt levels of control that have resulted. Not only is government censorship an issue, so too is corporate power."

**ARS ACUSTICA**

In 1987 one of the chapters of Documenta 8 at Kassel was surprisingly dedicated to Ars Acustica, curated by Klaus Schöning. He presented it as a very mature art rooted in the early avant-garde of the 20th century and as an art initiated, organized and administered by the experts of the institution of Public Radio. Schöning as the founder and producer of a weekly Studio Akustische Kunst on the WDR Cologne was, of course, himself such an expert, and for that matter the leading one in the field. He had coined the term "Radio Art" and gathered producers producing with many important international artists for well over 30 years, since the early 1960s in the studios of the WDR. At his initiative an Ars Acustica group was founded at the EBU (European Broadcasting Union) in 1989. The group consists of radio art producers in Public Radio organizations in Europe and, from its beginnings also included North American and Australian producers. Only recently the respective Canadian and Australian programs have become sad examples of how much the members of the group and their programs belong to the endangered species of minority programs in Public Radio, which suffers increasingly from the pressures of commercialization and political influences. This situation reinforces the tendency of producers towards quite literal and affirmative interpretations of Klaus Schönöng's statement about Ars Acustica as an art initiated and administrated by the institution (whereas, coming from Schönöng and in view of the rich Ars Acustica history he was able to produce at the institution of the WDR, his statement should probably be viewed as ambiguous).

However, such a definition of Ars Acustica not only excludes much of the radio art initiated and produced outside - and sometimes even inside - these institutions, but also fails to describe the essence of networked radio art projects, as produced and developed collaboratively from different geographic locations since the early 90s.

**KUNSTRADIO**

http://kunstradio.at

In 1987 I had to replace my program on visual arts on the cultural channel of ORF and was able to do so by redefining the old program slot as a new space for original works of radio art. KUNSTRADIO-RADIOKUNST was to be the full title of what is since just known as KUNSTRADIO signifying more than the weekly program which is at the core of many radio art activities around and beyond it. Of course, I immediately renewed all my contacts with many of the international and Austrian radio artists, sound, media- and communication-artists I had met in my many years as a cultural journalist - among them Hank Bull, G.X. Jupiter-Larsen or Hildegard Westerkamp, who had all worked regularly on CFRO FM - COOP Radio in Vancouver.

**TELEMATIC RADIO ART**

http://kunstradio.at/SPECIAL1/XR/razionalnik.html

In Austria, just a few months before KUNSTRADIO-RADIOKUNST was founded, Seppo Gründner and Josef Klammer, who belong to a second generation of Austrian media artists realized RAZIONALNIK, a telephone concert to which the notion of Telephone Music did not apply anymore. What was
sent over the telephone lines and modems connecting artists in Graz, Ljubljana and Budapest was not telephone sound but digital code (MIDI data). This data triggered sequencers and synthesizers at the respective locations and thus directly intervened in the concerts at each of the other nodes of the small network: the artists/musicians not only gave up part of their control about the local situation but none of them had any control over the project as a whole. There was no radio program yet to listen into this networked project or to become one of the nodes in the network.

But at the beginning of the 1990s, artists like Seppo Gründler, Gerfried Stocker and Horst Hörtner, Mia Zabelka, Andres Bosshard, Isabella Bordoni and Roberto Paci Dalò (Giardini Pensili) and others conceived of and realized their first telematic radio art projects. To do so they made utmost use of the broadcasting times and infrastructure of the National Austrian Radio ORF they found access to via KUNSTRADIO, which defined itself as an interface between independent artists and the institution.¹

These, and very soon many more international artists, as well as a few engineers and other allies in public and independent, free and pirate radio, at festivals, universities, and artist-run centers, started and developed a specific tradition of networked radio art projects, later also described as on air-, on line-, on site projects.

Networked projects put into question State-regulated, one-way broadcast medium radio and investigated the changes to which radio is subjected under the pressure of the convergence of old and new media, their hybridization and remediation. They also run against traditional notions of the curator/producer, of authorship and copyright and of the finished work of art. Networked radio art projects include audio- as well as video- and data-streaming. Participants come from all fields of radio and art production, they collage old and new technologies, using and especially abusing them to their fullest extent. While they may contain all genres of Ars Acustica and radio art, music, sound poetry, sound art, etc., they do not define themselves as distribution systems for individual contributions, but rather as temporary, often experimental, networks for a decentralized, sometimes simultaneous, collaborative exchange and processing of material which can be rendered at all participating nodes into whatever versions are technically possible and aesthetically desired. Such projects can only be experienced in versions open to — and dependent on — the interpretation of their participants and dispersed audiences.

The advent of digitalization and its early reflections on the theory and practice of a horizontal production of art (and radio), exploded the vertical notions of Ars Acustica. Moreover, a gap had started to open between the institutionally owned technology of classical radio studio production and the increasingly sophisticated home-studio technology, partly combined with new communication technologies and thus also with easy access to the increasingly infinite archives of contemporary culture. All this gave art-

ists, who had themselves become experts in cutting edge technologies, which were frequently still viewed with suspicion by the institutions, control over the realization of their own intentions by setting up the specific parameters of their respective nodes as networked but otherwise independent members of the overall organism of such temporary collaborative networks. Participants at each node usually curate their own contribution and the specific on site and/or on air renderings they give to the data circulating in the network. Usually each node had and has to raise its own support.

http://kunstradio.at/HORRAD/horrad.html
http://kunstradio.at/RIV_BRI/index.html
On two occasions artists succeeded to inspire the participation of the majority of producers forming the EBU ARS ACUSTICA Group. Otherwise the ground breaking projects HORIZONTAL RADIO (1995) or RIVERS & BRIDGES (1996) would not have been possible. By 1995, some of the many institutions and artists participating in HORIZONTAL RADIO — among them the artists who founded KUNSTRADIO ON LINE as an art-project in its own right — had already found access to the World Wide Web. In 1996, artists were streaming audio and video over many hours and from such unlikely locations as a boat on the Danube river and a remote valley in the Tyrolean Alps. To connect the different nodes at EBU (and other nodes) artists tested new technologies such as the international compatibility of ISDN lines or methods for up and down links to and from an EBU satellite — making full use of the manifold possibilities of networking and interchange available to them.

But, true to the philosophy of early telecommunication projects, artists could (and can also) also hook up to such projects via telephone. Hank Bull from Vancouver (but also artists from the east coast and Quebec) used the telephone for contributions until about 1998. In this year FIRST FLOOR EAST SIDE as new “remote volunteers” (Tom Sherman, 1997) set up a stream, and a semi-automated non-stop one for that matter, from their home in Vancouver to participate in the networked on air-, on line-, on site project IMMERSIVE SOUND. In addition, Matt Smith, who, when living in Austria, had been part of earlier networked projects, set up streaming servers for both the Western Front and CITR Vancouver.

http://www.kunstradio.at/BREGENZ/IS/index.html
IMMERSIVE SOUND was produced in 1998 by KUNSTRADIO in Bregenz, Western Austria, of course with the help of artists at other locations. It was part of an exhibition, which featured a whole anthology of different sound installations — most of them in the public space of the small regional capital. IMMERSIVE SOUND, which went on for five weeks (and also streamed for this entire period non-stop on the Internet) was located as an immersive live sound installation in the Black Box of the experimental studio and re-
hearsal space of the regional theater. It used all the other installations in the city as well as three non-stop generative streams from Adelaide, Linz and Vancouver as material, and was projected into a series of radio programs and via loudspeakers into the public space of the city and, of course, onto the Internet. The on site and on line mix in Bregenz was curated and realized by weekly changing groups of artists – one group also comprising Peter Courtemanche and Lori Weidenhammer from Vancouver who had been invited to Bregenz to install their own sound piece in the public space of the city. During the nights and the entire last week, the machines took over in the form of SOUNDPool, a generative program designed by Austrian media artist Winfried Ritsch: in this type of automated, generative projects, notions of contained performances, installations and broadcasts accessible only within rigid time schedules, gave way to concepts of potentially unending interacting “flows.”

http://kunstradio.at/SID/index.html

One year later, SOUND DRIFTING took these developments several steps further. This networked project had two nodes in Vancouver and was already part of WIENCOUVER 2000.

WIENCOUVER 2000

http://www.kunstradio.at/WIENCOUVER/index.html

Through the new contacts with artist Peter Courtemanche, Media Director of Western Front, where also radio and telecommunications pioneer Hank Bull resides, the streaming commitment of FIRSTFLOOR EASTSIDE and radio artist Anna Friz, at that time also the program director of CITR, Vancouver, it was possible for KUNSTRADIO to embark on the development of the still ongoing series WIENCOUVER 2000.

The introductory text to WIENCOUVER 2000 on kunstradio.at reads as follows:

In 1980, when the modern Fax machine was still an exotic promise and computers either massive mainframes or playthings for the hobbyist, artists in Vancouver and Vienna were collaborating on the first of the projects known as WIENCOUVER. WIENCOUVER 2000 is not a nostalgic look at the early years of Art+Telcomm but an exploration of the new technology available for artists working in the field as we approach the new millennium.

The WIENCOUVER 2000 website contains links to many different projects realized since 1999. Yearly celebrations of ART’S BIRTHDAY have become the backbone of WIENCOUVER.


Art’s Birthday is an annual event first proposed in 1963 by French artist Robert Filliou. He suggested that 1,000,000 years ago, there was no art. But one day, on the 17th of January to be precise, Art was born. According to Filliou, it happened when someone dropped a dry sponge into a bucket of water. Modest beginnings, but look at us now. Filliou proposed a public holiday to celebrate the presence of art in our lives.

In recent years, the idea has been taken up by a loose network of artists and friends around the world. Each year the eternal network evolves to include new partners — working with the ideas of exchange and telecommunications art.

http://artsbirthday.net/

ART’S BIRTHDAY celebrations had entered the matrix of collaborations between artists in Vancouver and artists from/in Vienna for the first time in 1991. Participation from Vienna, initiated by Roy Ascott and organized by Matthias Pucha, was limited to email via ARTBIX computer communication. Most of the other over twenty nodes also communicated by fax and/or videophone. The majority of the contributions to ART’S BIRTHDAY 1991 were protests against the first Gulf War. Hank Bull later wrote: "Just before showtime, the Americans started the bombing of Baghdad and our party turned instantly into a protest. We found ourselves in the possession of an international electronic network, just like CNN’s, the important difference being that ours was interactive... Symbolically, this event offered an alternative to the television viewer's passive frustration." The ART’S BIRTHDAY protests 1991 was almost immediately followed by a networked project under the title (coined by Roy Ascott) TEXT, BOMBS AND VIDEOTAPE with strong fax contributions from many nodes, including Vancouver and Vienna.

An ART’S BIRTHDAY celebration in 1993 contained the first transcontinental on line MIDI exchange via telephone between Austrian artists and artists at the Western Front. The exchange was modelled on RAZONALNIK (1987). In Vancouver, the event was transmitted on a local radio frequency.

Since 1996, ART’S BIRTHDAY celebrations are still reminiscent of, but also different from, the earlier fax and/or videophone exchanges. Webcasts, i.e. audio- and video-streams, and chats, became the basis of the events, while telephone interventions and even birthday presents as mail art were, of course, also welcome. These presents were usually also put on line on special project-pages on kunstradio.at, and more recently also on websites in Vancouver, all of them accessible via artsbirthday.net. KUNSTRADIO did not always manage to get broadcasting slots for ART’S BIRTHDAY, so the main on-air part of almost all of the parties since 1999 was provided by CITR.
Vancouver, the independent radio of the university of British Columbia, which, if at all, celebrates by having artists and their contributions on-air for amazing 24 hours of non-stop live radio art.

http://scrambled.aacol.ca/html/events/vanschedule.php?day=8

With a group of artists-in-residence at the Western Front In 2003, Peter Courtemanche embarked on SCRAMBLED BITRS, a year long collaborative project culminating in the networked birthday-party 2004. The concept was to develop a network of local/remote situations involving robotic-like devices which could be triggered by data from the Scrambler, an on line tool, and in turn would send back data to this Scrambler. The result was that at many locations artists constructed funny and/or bizarre robots that contributed very much to an atmosphere of the networked project's all-over "translocal conviviality" (Tetsuo Kogawa).

Referring to the use of MIDI in earlier projects, the Scrambler also addressed, in a quite lighthearted way, a problem which networked artists have been confronted with since the beginnings of telecommunication art, i.e. the question of how to design on site events in a way that helps to make readily perceptible to local audiences how events (in this case objects) at their site are influenced by other nodes and the other way around. In other words, to make them conscious of the fact that they are part of the many dispersed audiences of a networked event.

http://reverie.aacol.ca/
http://kunstradio.at/PROJECTS/AB2006/index.html

Under the title TRANS DADA EXPRESS, proposed by the ARS ACUSTICA group and readily adopted by the network of international independent artists organized from Vancouver, ART'S BIRTHDAY 2006 celebrated the 90th anniversary of the foundation of Cabaret Voltaire in Zurich.

http://devolve.aacol.ca/onlinelfloat.html

In 2002 Peter Courtemanche, together with a few selected artists realized the on-line, on-air, on site project devolve into II. As in other projects before, Courtemanche offered the participating artists a poetic project introduction along with a tool he had programmed. The audio-visual contributions of the invited artists are still accessible as a kind of on line generative installation, which Courtemanche calls float. There were also on site and on air versions of devolve into II, which, just as its predecessor, was a WIEN-COUVER project.

http://devolve.aacol.ca/online/ch-english.html

In a text for the CD of devolve into II, art historian and media theorist Reinhard Braun states:

This networked streaming project carries on the... tradition of a telecommunication art from the seventies and eighties, however it interweaves this with a form of radio art, which defines itself as part of these telecommunication projects and reflects the change of radio through the development of new communications media... The transmission format of radio and its contents...now exists in direct relation to countless other media and communication formats...

From the point of view of Matt Smith, who used to run a weekly radio art show on CITR Vancouver from 2000 to 2005, aside from realizing projects that could be considered part of an "extended" or "expanded" radio art project (see below) "the newer communication methods are permeating the traditional broadcast media. (To the artist/activist) they represent a conceptual entry into the vast possibilities offered by linking all the various communication paths together in order to create new spaces for expression and interaction. (...in order to make full use of these powerful tools, one needs to understand the various conceptual relationships between media, technology and society..."

As time passes and technology evolves, the city will slowly decompose... Like many experimental contemporary practices, Reverie is ephemeral. (Peter Courtemanche in the publication REVERIE: NOISE CITY)
REINVENTING RADIO

http://www.kunstradio.at/PROJECTS/REINVENTING/start.php

There is a history of artists, who in their projects scrutinize the ever-changing technological, social, economical, political and cultural context of radio and its technologies and, in their work, point to the recurring processes through which every new communication technology seems to be immediately not only subverted from "an apparatus of communication" into "an apparatus of distribution" (Bertolt Brecht) but also into an increasingly ubiquitous apparatus of surveillance and control.

This observation was the basis of an ongoing project KUNSTRADIO embarked on in 2004 at the Garage Festival in Stralsund, and followed up with a contribution to the ARS ELECTRONICA Festival of the same year. This contribution consisted of a small symposium, three projects and a networked on line-, on air-, on site LONG NIGHT OF RADIO ART. The discussions of the symposium focussed on the tentative notions of an "extended" or "expanded" radio (art).

The LONG NIGHT OF RADIO ART 2004 event in Vienna marked, as a first live event, the start of the regular transmission of Österreich 1 broadcasts in 5.1 format (along with stereo). The format, for the first time, offered the very welcome opportunity to distribute incoming streams (among them one from Vancouver) on individual channels and thus to provide the listeners with an additional possibility to identify different contributions in the network.

http://www.firstfloor.org/ARL/audiomobile/

http://kunstradio.at/SPECIAL/Audiomobile/

One of the three projects in the REINVENTING RADIO chapter of the ARS ELECTRONICA FESTIVAL 2004 was a Linz version of AUDIOMOBILE by Matt Smith and Sandra Wintner. The Vienna version followed in autumn 2005.

AUDIOMOBILE was developed as a project for ARTIST RUN LIMO­SINE, a mobile artist-run space located in a Vancouver-based white 1952 Cadillac Stretch Limousine. After the demise of the old Cadillac in 2004 on the trip back home over the Rocky Mountains from Winnipeg, where a version of AUDIOMOBILE had been realized for the send & receive festival, further versions of AUDIOMOBILE take place in locally provided cars able to comfortably transport a small group of passengers and equipped with a multi-channel sound system. Local artists who work with sound and radio are invited to contribute sound files to the project and to localize them along a proposed route of the AUDIOMOBILE through the streets of the respective city. After a meeting/workshop and in contact with the local artists, Matt Smith maps the sounds, so that they can be triggered by GPS (Global Positioning System which uses radio-transmission from and to satellites) within the space of the car during tours through the city. The small audiences in the car experience unusual mobile soundscapes, while the familiar cityscape passes by the windscreen and car windows.

http://kunstradio.at/SPECIAL/XIV/frameset.html

AUDIOMOBILE is one of an increasing number of projects operating within paradigms which media artist Richard Kriesche was already able to describe metaphorically in some of his texts at the end of the 1980s.

After first stating that "the sphere of... public art is that of the 'public­ation of traffic'; of communication, information, telephone, radio, television, transmitting, broadcasting, of car, train and satellite networks, of global and cosmic traffic..." Kriesche goes on to describe "radioman" by saying that

the electric man no longer listens to the radio — he himself is radio: set at the same time on reception and transmission, as a sign of his existence he thus leaves his marks on the data background, the drawing of marks is the basis of his existence (on video, banking card, telephone, fax, personal computer and so on). As in recognition of the electric circuits in his own body, the "radioman" charges himself up with mobile electronic calculators, watches, data and dictating machines, Walkmans, cellular telephones, electronic locators, laptops, notebooks supported by batteries, he creates around himself the postmodern aura of omnipresence. His exterior is radiant, his interior is embedded in the electronic community of the data background.

For more than a quarter of a century, the "imaginary city" of WIENCOUVER has been an oscillating entity, changing its volatile shape with every new project taking place in and around it. It is feasible that one day it will turn into a purely archeological site of the efforts of artists to connect and communicate — and thereby re-invent radio — and/or to make perceptible some of the otherwise invisible (power)-structures of the data background in which we are embedded as "radiomen." And then, just as Peter Courtemanche anticipates it for "Reverie: Noise City," also this other city of WIENCOUVER will "crumble into digital dust."
Notes

The URLs in this text have last been checked on February 11th 2007.