Audio Jackets and Other Electroacoustic Clothes

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ABSTRACT

The author discusses his performance pieces involving electroacoustic clothes—combinations of various thematic articles of clothing and sound equipment—worn by performers who interact with the sounds coming from their apparel and the public.

I use sound as a temporary three-dimensional sculpture—that is, a sculpture that is "seen" with the ears. In 1982, I started building electroacoustic clothes, or "Audio Jackets," as I call them, in order to produce and spread sounds through space. Audio Jackets are second-hand clothes equipped with loudspeakers, amplifiers and batteries. By hooking up a minicassette player to this jacket and playing an audiocassette through it, the wearer is free to move about in any indoor or outside space to create a mobile sound sculpture.

In 1985, I founded Die Audio Gruppe in order to create limited series of such electroacoustic clothes, called "Audio Uniforms." Audio Uniforms are conceived site-specifically—that is, their materials, design and sound are created for a specific environment. Essentially, electroacoustic clothes, as multi-acoustic and mobile sound units, permit me to temporarily intervene in an area or space so as to alter perceptions of it.

BACKGROUND

I moved to Berlin at the end of the 1970s to work as an artist/painter. A gallery owner offered me a show and—more importantly—a studio to work in and many fine-art books to read.

At that time I had been working on a series of abstract torso portraits created by repeatedly pressing a freshly painted canvas of a torso onto another canvas using different colors. It was a combination of Yves Klein's live-printed models and Duchamp's readymades that inspired me to pick up some old jackets and harden them with paint. After they had dried, I smeared them with color and used them to print on canvas. I used my body weight as a giant press and created "multiples" by using different colors and stomping out series of such clothes.

I then went around collecting old clothes from friends and garage sales (pants, bras, underwear, socks, sweaters, shoes, etc.) that I printed onto 5-meter sections of canvas as "group portraits."

CLOTHES MEET LOUDSPEAKERS

Ultimately, it was the work of Christo and Daniel Buren—conceptual artists working outside the gallery space—that fascinated me the most. In 1982, using my clothes-printing method, I "painted" a 1-km-long roll of paper with a child's jacket. I called the project *Running Painting* (in homage to Christo's *Running Fence* [1976]) and cut the paper roll into 20-to-30-m sections, which I tacked, taped or glued onto various outdoor walls, fences and floors around Berlin. But this proved unsatisfactory, as passersby vandalized the work, and the wind and rain disposed of what was left. I felt that the traditional painting tools I was using were preventing me from discovering what I was looking for—namely, a form of art better suited to working outdoors in the seeable, hearable, palpable, smellable world. All this came to a crux one day when I awoke to discover that I could not paint anymore.

Berlin in the mid-1980s was an effervescent place. The Deutsche Akademische Austausch Dienst (DAAD), a grants program that invites foreign artists to live and work in Berlin for one year, was bringing in a lot of Fluxus and sound artists. There was a burgeoning local sound art scene involving people doing strange things with loudspeakers—for example, at the Gallerie Giannozzo, founded by sound artist Rolf Langebartels, artists such as Rolf Julius and Ulrich Eller exhibited sound installations [1]. All this was taking place under the omniscient presence of that great experimental musician and audio godfather to us all: John Cage, who was often in Germany giving concerts. Cage's music incorporated accidental and ambient sound, and during his concerts the public was invited to participate by coughing, vocally protesting or simply applauding.

To recuperate from my painter's block, I started taking long, therapeutic walks through the city. One day my path took me through a department store, where I heard an advertising announcement through the public-address (PA) system. This, I thought, was the solution: art happening through loudspeakers—instead of "painting" colors, I would "speak" them through the air. Little did I know at the time that Yves Klein had done this years before with the word "Blue," although in a gallery context. I soon began noticing that PA systems existed everywhere around the city—convention centers are equipped with them, as are train stations and sports stadiums. They are even found inside buses or on street lamps along important boulevards. All I needed to do was to obtain permission to use these pre-existing speaker systems for "audio performances." I had some initial success: I did a performance on visitor's day at the International Congress Center in Berlin. I repeated the sentence "Yellow and blue make

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Fig. 1. ***Audio Jackets,*** **second-hand jackets equipped with loudspeakers, 10-watt amplifiers, batteries and Walkman stereos, Berlin, 1983. Sound: assorted custom-made audiocassettes.**

green" through the main loudspeaker system and had the technicians process my voice through a sound modulator. But further offers did not materialize, mainly because those responsible for the loudspeaker systems were afraid that the people walking through these public spaces might panic at what I was saying.

It was while discussing these problems with a friend at the studio that I had the idea of attaching loudspeakers to one of the many jackets left over from my clothes-printing phase, thus transforming it into a mobile PA system (Fig. 1). This first Audio Jacket had speakers that were wired to the "external audio" jack of a portable cassette recorder. The result was a "talking" jacket. I had no knowledge of electronics at the time, but I tried this and it actually worked.

I went to the flea market, bought a crateful of old speakers and some portable cassette players, and started feverishly transforming other jackets and coats. I invited friends to make audio cassettes and play them through the jackets while we strolled around together as a mobile sound sculpture. One afternoon I sat down and made a series of recordings with the pots and pans in my kitchen—creating, in effect, a "heavy metal" composition for Audio Jackets—but I had no fixed plan or choreography for the group other than to play the cassettes and walk around. In 1983, I was invited to present the audio clothes at the Performance Festival of Paris, at Galérie Donguy, and in 1984, at the Art and Media exhibition at the Staatliche Kunsthalle of Berlin (see Fig. 1). Both of these events were in the best tradition of NeoDada, Fluxus and Happenings, artistic movements of the 1950s that attempted to bridge the gap between art and the routine of daily life by incorporating common physical actions into the process of art. As a matter of fact, someone recently told me that Wolf Vostell, a central German figure in the Fluxus scene [2], once used a loudspeaker-equipped raincoat during a performance.

The participants in our performances were allowed to express themselves in any way they wanted—in other words, the performances were quite loose and individualistic. It was as if we were acting in a vacuum; it did not matter whether we were acting within or outside the traditional gallery space, as there was no direct sound interaction with our environment. We were not interfering with the room or the people inside it and we were not getting any "feedback"—either socially or acoustically speaking.

We then discovered there was a technical problem in the electroacoustic quality of these clothes: we had equipped them with small 10-watt amplifiers and 12-volt battery packs so that we could use Walkman-type personal stereos instead of having to lug around cumbersome cassette players, but the result was still not loud enough to effectively counteract the noise of normal city traffic. The main reason for this was the loudspeakers. Even though they were now being professionally sewn onto the clothes, they were not functioning properly. To get good sound out of a loudspeaker, the air in front of its membrane must be sealed off from the air in back of it. This is why speakers are usually enclosed in boxes. The Audio Jacket cloth onto which the speakers were mounted, however, was letting air through, and we were losing a lot of sound.

Fig. 2. ***The Audio Herd,*** **performance in seven suits made of synthetic animal skin, audio corsets, amplifiers, batteries, loudspeakers and external plugs for Walkman stereos, 12 volts, 30 watts, Bundesgartenschau, Berlin, Germany, 1985. Sound: animal noises.**

THE BIG BREAK

In 1985, I participated in a competition for artistic installations at the Bundesgartenschau, a garden landscaping event that happens each year in a different German city. It was taking place that year in a sprawling landscaped park in the Lichtenberg area of Berlin. I called my project *The Audio Herd.* It consisted of seven Audio Suits custom-built for ambulatory performances through the park. These electroacoustic suits—classically cut jackets with pants for men and skirts for women—were made from a synthetic material that looked like animal fur. They could blend into the environment like multimedia chameleons—the participants played audio recordings of animals (monkeys, birds, human beings) that were designed to correspond to different areas of the garden and cho-

reographed as such (e.g. monkeys in the tropical section, birds in the bushes, people in the clearings).

I brought together a group of people—including an electronics specialist, a tailor, a sound artist and a manager. We called ourselves Die Audio Gruppe.

We solved the loudspeaker problem by fitting the performers with "audio corsets"—40-cm-diameter circular pieces of leather onto which we mounted car loudspeakers (these are extra thin, as they are usually mounted in car doors). The audio corsets, worn under jackets, were strapped to the performers' backs. The only visible electronic element was a custom-built 30-watt amplifier that was mounted on the back of the jacket (Fig. 2). Sound designer Hans Peter Kuhn made a master cassette recording of animal noises, which the performers played on Walkman portable cassette players. A cassette player and a 12-volt battery were hidden inside the pockets of each jacket.

The Sound Effect of Audio Clothes

The main advantages of Audio Clothes, and particularly Audio Uniforms, result from the localization of sound. Each performer in the Audio Herd plays his or her sound individually, unlike most performers at open air concerts, whose sound is amplified through massive PA systems. The music is not blasted at the listener with 30,000 watts of power from a static source, but comes with 30 watts of power from a variety of places and at a volume that is dependent on the distance that separates the listener from each person wearing an Audio Uniform. The uniform wearers can spread throughout an area so that it is impossible for the listener to see or hear all the sound sources at one time (as I recall, during the "monkey" part of *The Audio Herd,* most of the Herd was hidden behind bushes). I use the term "multi-acoustic" to describe the sound effects caused by the Audio Herd: the cassettes, though identical and played simultaneously, are purposely not synchronized exactly. This happens partly accidentally, because Walkmans are simple, portable machines: the motors that run the cassettes do not play them at exactly the same speed, and the batteries that run them are not always as fresh as they should be. In addition, the sound changes as soon as the Audio-Uniform-wearer turns his or her back or starts moving in another direction. The same sound is propelled into the air from a variety of vantage points in space, so that it reaches the listener's ear sounding "staggered," or like an echo. This is why the places in which the Audio Clothes are played are so important—the geography and architecture of the area are important elements in the concert. In addition, the loudspeaker sources are carried by people who react spontaneously to situations (e.g. walking up stairs, waiting at a stoplight or exiting through a door), thus bringing whole new factors to these sound events that cannot be duplicated by normal "instruments" in a concert hall, gallery or museum.

The element of chance plays an important part in our performances, for one cannot select one's public when working outdoors. The first Audio Herd performance was briefly interrupted by a posse of park police, providing us with an unexpected intermission while they cleared up matters with their superiors.

More Audio Uniforms

In 1986 we were invited to the Ars Electronica Festival. For this occasion we created our second set of uniforms, the Audio Steelworkers. During a preparatory visit to Linz where the festival takes place, I discovered that the city is home to Voest Alpine, the biggest steel mill in Central Europe. We borrowed 10 fireproof coveralls, on which we mounted amplifiers and loudspeakers (the treated asbestos material was ideal for sealing off the air around the speakers) (Fig. 3). Kuhn created a tape based on live recordings from the steel mill. During the week-long festival we had walk-on performances in various locations in and around the city.

The Audio Subway Controllers (1987) were created for the festival Die Anweisung in Berlin. In the Berlin subway, each station has an attendant who uses the PA system to advise passengers (with more or less emphasis, depending on his or her mood) when and when not to get on the trains. ("Einsteigen, bitte!" and "Zuruckbleiben!" are the phrases they use, translating roughly as "All aboard please!" and "Step back!") I systematically recorded all the attendants' voices along one subway line and compiled them onto two separate cassettes: one with 30 different "All aboard, please!" voices and another with 30 "Step back!" voices. Because this was an official festival project, the Subway Authority loaned me seven authentic controller suits, under which we could fit the audio corsets. As it turned out, the suits also had extra-large inside pockets for the amplifiers, batteries and cassette players, so that we had ourselves an instant Audio Uniform. The performance consisted of playing the subway voice-

Fig. 3. ***Audio Steelworkers,*** **performance in 10 fireproof steelworker uniforms equipped with loudspeakers, amplifiers, batteries and external plugs for Walkman stereos, 12 volts, 30 watts, Ars Electronica, Linz, Austria, 1986. Sound: recordings from the steel mill in Linz.**

collages while "controlling" the subways in which they had been recorded (a sort of conceptual "audio feedback"). The combination of subway voices being played through authentic suits caused a certain amount of consternation among the subway passengers (and employees).

In 1988, we created the Audio Bicyclists for the Festival des Arts Electroniques in Rennes. This city in the Bretagne area of France is crazy about bicycling, which provided inspiration for the theme of this project. I had 10 "audio tricots" (tricots are the typical nylon knit sportshirts that bicycle racers wear) built with loudspeakers sewn into the lower back area (reinforced with leather) of the tricots, where the cyclists usually keep water bottles and energy rations. Conveniently for us, we discovered that Bernard Hinault, the five-time winner of the Tour de France, lived on the outskirts of Rennes. We interviewed him, and musician Ralf Buron used the taped interview to splice together a word collage that sounded in some parts like a techno-rap: "*J'ai gagné*" was the basic chorus line of the Audio Cyclists' cassette. The local sports center recruited 10 amateur racers and organized a route through the streets of Rennes, complete with an official master of ceremonies and the obligatory Audio Cyclist trophy. There was even a solo race against the clock, during which a metronome sound was played through our speakers.

One particular set of Audio Uniforms, the Guitar Monkeys, is an all-time favorite of mine. It was conceived for the Berlin Atonal Festival (1986), a series of punk and avant-garde rock concerts. Seven performers, mostly friends of mine with little or no experience playing guitars, wore black leather vests with two loudspeakers mounted on the lower back section and an amplifier in the inside pocket into which one could plug an electric guitar or microphone. Each member of this "rock band" could individually amplify his or her instrument without having to be on stage. Most of the time we played in the middle of the audience or in stairwells, hallways or other niches particular to the space (men's rooms have special acoustic qualities of their own). The Guitar Monkeys were basically a noise and feedback band—and an intensive one at that: imagine not just one loudspeaker giving off feedback, but seven at once. The guitars we used were usually bought at the flea market (we had a budget ceiling of $10 per instrument), and instead of usual contact microphones, we used Piezo loudspeakers, which are extremely cheap and which we used as pick-ups (a trick I learned from other sound artists, such as John Driscoll and Alvin Curran). Even after the Atonal Festival, the Guitar Monkeys stayed busy and even went on tour (one critic dubbed us the "grandchildren of Jimi Hendrix" and described the music as "post-industrial punk").

The design of this Audio Uniform was important because it allowed performers to be personally responsible for creating their sounds, while previous designs could only accommodate pre-recorded cassettes.

It was during the Guitar Monkey tour of 1989 that the director of L'Aeronef in Lille asked me to design a new Audio Uniform for the festival Les Arts au Soleil, which was going to take place at the local beaches. This is how the Audio Ballerinas came into existence (Fig. 4).

The Audio Ballerinas

I had been experimenting with solar cells as a possible energy source for Audio Uniforms (usually we use rechargeable 12-volt batteries) and came to the conclusion that ballerinas' tutus were the ideal surfaces on which to place solar cells. Instead of using cloth, we made the tutus of transparent plexiglass. We discovered that these hard plastic tutus were ideal for mounting speakers, microphone jacks and amplifiers, similar to a disk jockey's portable mixing board. This, in turn, permitted us to try out new equipment—for example, a digital chip (256 K) to record sounds, an electronic metronome, a photovoltaic cell (to be used as light sensor) and even a miniature receiver. In the end, we had an Audio Uniform that could spontaneously pick up sounds, amplify them and repeat (loop) them. For example, the tutus could record the sound of a bell tower ringing nearby and instantaneously play back the sound. Added electronic features allowed the wearers to change the speed of the loop or the tenor of the pitch (like a rudimentary sampler) to make a pitch change to that of a heavy brass gong or, in the other direction, to that of jingling bells. This system allowed us to do away with the Walkman stereos and pre-recorded cassettes we had been using previously. At the same time, the Audio Ballerinas still had the option of using contact microphones and Piezos, similar to the Guitar Monkeys, but instead of attaching them to old guitars, they stuck them onto other "instruments," such as umbrellas or a simple metal rods, which functioned like giant phonograph needles being dragged on the ground and amplified through the electronics on their tutus. Hence the title of the piece, *The Earth as a Record Player.* Acoustically, the sound can roughly be compared to a team of sanitation workers dragging garbage cans along a street. With their light sensors—the photovoltaic cells mounted on the tutus—the Audio Ballerinas can react to

Fig. 4. ***Audio Ballerinas,*** **performance by 10 dancers wearing plexiglass tutus equipped with loudspeakers, amplifiers, digital memories (256K), solar cells, 2-amp rechargeable batteries, radio receivers, photovoltaic cells and contact microphones, 12 volts, 30 watts, Les Arts au Soleil Festival, L'Aéronef, Lille, France, 1989. Sound: recorded per computer chip or microphone directly from the environment.**

Fig. 5. *Audio Ballerinas*, performance by 10 dancers wearing plexiglass tutus equipped with loudspeakers, amplifiers, digital memories (256K), solar cells, 2-amp rechargeable batteries, radio receivers, photovoltaic cells and contact microphones, 12 volts, 30 watts, Audio Ballerina Tour, Alexanderplatz, Berlin, 1991. Sound: recorded per computer chip or microphone directly from the environment.

light: under direct light, the tutus give off high-pitched sounds not unlike those of a Geiger counter responding to radioactive substances. The pitch of the sound changes according to the intensity of the light (radiant energy). This occurs when either their own shadows or shadows from their surroundings interfere with the direct light as they dance through space. In effect, they can thus translate their body movements into sound. With their receivers, the tutus render audible the radio waves traveling through the air. My favorite sound is actually the "white noise" between radio stations.

Such electronic tools have also been used by many other sound artists, such as Laurie Anderson, but the Audio Uniforms—though more rudimentary than most standard studio and stage equipment—permit the performers to interact spontaneously with the particular characteristics of their indoor or outdoor environment (sounds, lighting, architecture or topography).

By adapting these electroacoustic clothes for use in dance, we have added an extra aesthetic dimension to the performance: the dancers' movements—as visible motion sculptures—complement the invisible sound sculptures created by the electroacoustic tutus. And the reverse is true: we took symbols of a classical form of art—ballerinas and tutus—and transformed them with the help of a new medium—in this case, electronics. On one hand, the plexiglass tutus present a certain handicap to the dancers (as a hard surface that divides their bodies in two sections and impedes their movements); on the other hand, the dancers have come to realize that the electronic tutus enable them to radically extend their movements through space by producing sound (Fig. 5).

Each place has its own particular sound that one can work with. The Audio Ballerinas do not work with a prepared score, but spontaneously create their compositions using local sounds. Moreover, they can electronically interpret these sounds without being tied down to a stage.

CONCLUSION

We are still building Audio Uniforms whenever we have the opportunity. For example, in 1993 in Oslo we created the Audio Guards using uniforms identical to those of the Royal Norwegian Guard who stand in front of the King's castle (not unlike those at Buckingham Palace). We equipped our Guards with audio vests, audio shoes and umbrellas (instead of rifles), and used the same choreography as the real guards, deliberately amplifying the movements and steps with electronics. Our "changing of the guard" performance occurred at the same time as theirs, but took place in front of the Modern Art Museum.

Future plans include Audio Kimonos for a performance in Japan and a team of Audio Hockey Players for a performance in Québec.

What I have done is to create a tool and concept—manifested in the Audio Jackets and Audio Uniforms—with which I can intervene in the world around me and shake things up a bit to counteract the numbing routine of daily life.

Notes

1. Rolf Julius, better known as simply "Julius," was playing minimal sound cassettes through loudspeakers full of dry pigment. Ulrich Eller's specialties at the time were rubbing contact microphones against gallery room walls and setting up electric guitars on the floor of a stage, piling rocks on the strings, then shaking the floor around them with his body weight.

2. Wolf Vostell is principally known for "décollage" events, during which daily occurrences or objects were presented in absurd, sometimes destructive ways.