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**01**[SEARCH LEA](#) [Advanced Search](#)**The Anxiety of the Client: Dilemmas of the Database as a Compositional Tool**  
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<http://www.ostrowsk.info>**Keywords**

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**Abstract**

This paper is concerned with some of the dilemmas inherent in creating artworks using databases as source material. Using Adorno's idea of the opposition between the instrumental and the mimetic, it argues that a database is by nature purely instrumental, and the ideology implicit in the digital object inevitably determines the outcome of the work, leaving no opening for the mimetic faculties. In the context of two recent works of this type, the ontological status of the digital object and its influence on the artistic subject are discussed.

"Communication is the adaptation of spirit to utility, with the result that spirit is made one commodity among the rest, and what today is called meaning participates in this disaster."

— T. W. Adorno [1].

**The Anxiety Of The Client**

Recently, there has been a great deal of interest among electronic composers and new media artists in using data sets, both static and dynamic, as material for compositions and artworks. Source material has ranged from amino acid sequences [2] to data traffic over a network [3] — almost anything that can be described by a multidimensional data set has been used. These strategies, historically rooted in algorithmic composition techniques from the fugue to the probability distribution and facilitated by computers, usually embrace a rhetoric of using sound as a tool of exploration or discovery of an underlying order immanent in the data. This data is presumed, by virtue of having some kind of internal structure, to resonate aesthetically, as well as to reveal some kind of truth about the phenomenon analyzed. As technological means of art production have become more ubiquitous, a great deal of thought and energy has been spent on bridging the gap between the rational and irrational, the logical and creative, the scientist and the artist. Although much ink has recently been spilled about the importance of this rapprochement, I believe that there are profound internal contradictions in this undertaking, which I have subsumed under the general heading of the anxiety of the client.

A client program is by definition bound to the protocols, data structures, and methods of its server. Virtually all works using a database as source material act as clients of the database they are using [4], and are thus bound by its structure and nature — they are its creatures, and subject to its laws. At the same time, however, these client programs are culturally and socially treated as artworks, which we habitually think of as instruments of free expression. Anxiety lies in the unease caused by the irreconcilable conflict between these two ideals: the reliable processor of data — the computer — which serves our rational interests and needs, and that less reliable interpreter of data — the artist — who aims to use the world as a base point from which to create aesthetic experience as distinct from information.

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Music was the first art form to grasp the database as a possible source of material [5], and as technology has advanced, this idea has been taken up by artists in other fields. The increasingly parameterized approaches explicated by serial composers, and further developed by Xenakis and Cage, has almost made it an article of faith to believe that any structure, musically expressed, guarantees some kind of formal coherence, granting it status as a musical composition. Implicitly underlying this idea is the Romantic notion of the divinity of nature: whatever Nature puts before us contains a hidden order, which is by definition participates in the sublime. Ironically, this almost animistic notion has been indispensable to the rationalization of composition.

The anxiety of the client has two problematic aspects for composers and audiences: One, the inevitably arbitrary nature of selecting parameters in a work of sonification; and two, the paradox of the dual status of the composer as both technician and artist. The first has its roots in the ontological status of the digital object, and the belief that objects in the digital world can have the same relationship to artistic production as objects in nature. The second aspect emerges from the assumption that working with digital materials does not change the nature of the artistic subject. This reveals itself in a willful disregard of the cognitive split between the Romantic subject as creator of art and the digital client as data processor. The idea of the autonomous artwork, free from the ideological constraints of church and state, has defined most musical activity since the time of Beethoven. The current reconciliation between science and the arts has imported a great deal of rationalist ideology into art practice without much notice, and sonification-based composition is unwittingly returning to a pre-Romantic state, in which art serves power, and allegory replaces expression.

To clarify the essence of this conflict, I am using Theodor Adorno's idea of mimetic and instrumental forms of knowledge [6]. According to Adorno, language, and art, are engaged in a dialectic between these two poles. Instrumental rationality can be considered the use of the intellectual tools of reasoning — logic and analysis — for understanding. He contrasts this approach with what he calls mimesis, which in its essence can be thought of as sympathetic language, in the broadest possible sense of the word — using language to become something rather than describe it. Messiaen, for example, when he uses a piano to imitate birdsong, is performing a mimetic act, whereas using physical modeling to synthesize birdsong is an act of instrumental rationality. In Adorno's view, it is the task of art to present a critique of instrumental reason and its tendency to incorporate all discourse to its own terms [7]. The anxiety of the client lies in a lack of awareness of art's role in the dialectic between these terms, what the role of art should be in an increasingly rationalized world, and how the materials we work with determine our relationship to these limits.

I will explore these ideas in the context of two of the more successful works in the field: *Atmospherics*, an audio work by Andrea Polli, and *Listening Post*, an audio-visual installation by Mark H. Hansen and Ben Rubin. These pieces take very different approaches to their materials, but face many of the same issues, caused by the inevitable chasm between the rationalized world of data and the aesthetic world of the human audience: the anxiety of the client.

#### **The Digital Object And The Absence Of Presence**

Let us begin with *Atmospherics*, which uses weather data as source material [8]. Here is how Polli describes it :

Two historic storms that devastated the New York/Long Island area were re-created first through data, then through sound. The resulting turbulent and evocative compositions allow listeners to experience geographically scaled events on a human scale and gain a deeper understanding of some of the more unpredictable complex rhythms and melodies of nature. [9]

This is the most common approach to sonification: take a multidimensional set of data, assign them to musical parameters, and play them along the time axis. In this work, information such as wind speed and air pressure are mapped directly onto parameters such as frequency, volume, and filter cutoff frequency. The aim is to keep the data as pure as possible, to make nature transparent. The dominant trope of this piece is compression: The time-scale is reduced from days to minutes, and the meteorological variables are condensed to fit in the human ear. Aside from these purely practical issues, how does one even start making a decision?

Here is the point at which we see the first aspect of the anxiety of the client: Which variable should correspond with which parameter? The source of this difficulty is innate to the data set as an object of aesthetic exploration, and the way it carries within it the history of the entire instrumentalist undertaking. By using data, absolutely

rationalized content, devoid of anything resembling Adorno's mimetic, the form will inevitably be contingent. The ostensibly objective structures have no mode of expression which could be considered natural to them, so any one decision is as good as any other. This flattening of meaning can be traced to the nature of the digital object.

As early as the industrial revolution and the spread of rationality and scientific expiations to progressively larger spheres, we have developed a habit of using technological metaphors as our epistemological infrastructure, often without realizing that we are speaking metaphorically. As technology changes, so do the metaphors. Think of Freud's hydraulic explication of the mind: A Newtonian system of pressure and release, in which each action has an equal and opposite reaction, completely in keeping with the then dominant technology of the steam engine. Now, the dominant technology is the computer, and we unconsciously use its cognitive model as our metaphor for the world. As we apply the tools of instrumental rationality to a progressively larger field, we construct a parallel world of data, fulfilling the expectations of the model. It seems natural to think of data as the equivalent of landscape, a postmodern version of "nature", which can be re-presented as one would paint a view of Delft.

The digital object, however, is not an object in the way that Delft is, apprehensible directly to our senses, and thus capable of mimesis. Digital representation is of a completely different order: not a re-creation the way the eye re-creates the image of Delft inverted on our retinas, but a diagram, in Charles Sanders Peirce's sense of the word: "those [signs] which represent the relations... of the parts of one thing by analogous relations in their own parts." (my emphasis) [10]. What is retained is relationships between measurable parts, but the thing itself is no longer present. This representational form is a radically different logical type from other media representations: in newspapers, paintings, television, the intended audience remains human beings. Once something is digitally encoded, on the other hand, it has become disconnected from our ability to apprehend it, and our only avenue of access is through a computer. The object has passed from the world of mimesis into the world of the instrumental, and requires decoding, remapping, resynthesis to make it available to us again. For all intents and purposes it has been turned into something with much the same existential status as paper money: dependent on the credit of the system that endorses it, one can exchange it for anything, but is in itself worthless.

This leads us back to the question of ideology. Implicit in the computational model of the world is a foggy belief that the diagram — abstracted information about real things — underlies things themselves as a kind of Platonic essence. We make art out of data because that is all there is. The more music bases itself on these assumptions, the more it loses its autonomy. Absorbed by the myth that data is the Absolute, the zero degree of the world itself, it loses the ability to critique the instrumental rationality such an assumption is based on. Music becomes a conduit, an aestheticized transfer of information, and no more.

Now we can see why the compositional technique of data sonification is forever caught in a dilemma: As data is indeterminately interchangeable, there is no quality inherent in it which needs to be expressed in any particular way. At the same time, since data is by its nature unavailable to the mimetic faculties, there is no way to make a decision based on the subjectivity of the composer, no access to any meaning that extends beyond ornament. This is why composers of these works invoke objective assertions about aesthetics. The only possible claims they can make in terms of why to choose one set of parameters rather than another are the standards of good design: clarity, comprehensibility, ease of understanding — functional concerns which have been thoroughly colonized by capitalist production. These design standards, themselves a rationalized mapping of human behavior backed up by scientific and marketing research into how humans react to visual and sonic stimuli, make an essentially instrumental claim to objective truths about human nature and perception.

#### **The Digitized Subject And The Rational Audience**

Although I have focused on the ontological status of data while discussing *Atmospherics*, much of the above applies in many ways to Hansen & Rubin's *Listening Post*. This installation most clearly illustrates a different aspect of the anxiety of the client: the cognitive conflict between the Romantic subject — the autonomous creator of artworks — who, responding to the environment, creatively recapitulates it by mimesis, and the digital client that examines and manipulates data, re-presenting them in order to increase our knowledge.

To quote from Hansen & Rubin's press materials:

*Listening Post* is an art installation that culls text fragments in real time from thousands of unrestricted Internet chat rooms, bulletin boards and other public forums. The texts are read (or sung) by a voice synthesizer, and simultaneously displayed across a suspended grid of more than two hundred small electronic screens [11].

Using the armamentarium of statistical analysis and data mining, *Listening Post* prunes the vast flow of online talk down to a stylish synecdoche. Its six-part structure, visual aspects, even the simplicity of its musical elements, show a high degree of aesthetic intervention. By virtue of its speech content, it also has a certain empathic and narrative quality.

In this work we are dealing with tropes of distillation and abstraction. Thousands of online contacts between people are monitored by *Listening Post*, and it is no irony that the most sophisticated techniques of surveillance and social control generate this piece. Language itself is reduced to data. Generalized Sequence Mining and Minimum Description Length algorithms turn our most intimate form of expression into so much grist for the analysis mill. This work is probably the *ne plus ultra* of contemporary data art: the ultimate extension of digitizing rationalism as presented for aesthetic consumption. Yet at the same time, the piece is unquestionably elegant, and even contains a certain pathos with its mechanized echoes of thousands of voices seeking contact in the electronic void. *Listening Post* employs strategies of domination as a means to an inarguably expressive end. Here we see the client in its most paradoxical manifestation: holding out the promise of empathy with our fellow humans while simultaneously playing the role of rationalized master of its virtual world of information.

The cognitive conflict between the Romantic subject and the digital client lies here: These two forms of language, the instrumental and the mimetic, imply two different kinds of knowers. What this piece represents is the complete absorption of the subject, of subjectivity itself, into the client.

The following is from a paper describing an earlier version of *Listening Post*:

.... Our goal is to create a sonification which is both communicative and listenable. Here we face the additional challenge of incorporating verbal content. With TTS [text-to-speech] annotations, it becomes more difficult to intelligibly convey more than one layer of information through the audio channel. Our design incorporates spatialization, pitch and timbral differentiation, and rhythm to achieve clarity in the presentation of the hierarchically structured data coming from the statistics engine [12].

It is evident what kind of thought we are seeing at work here. This is a perfect example of instrumental cognition applied to the aesthetic field — transparency, ease of use — the values one associates with a well-designed product. At best, these are the values of post-production, of what one does when the art has already been made. The inevitable conclusion is that the art does not lie in what the audience actually experiences — that is merely a design issue — but in the code, the data, the act of surveillance itself.

We tend to identify with the artist as our guide through the world he has created: Virgil is to Dante as Dante is to us. In this piece, it is plain that aesthetic choices have been made, and the mark of those choices cannot but evoke the image of the artist as a mimetic and sympathetic force who shapes the work. But our Dante has abnegated all responsibility for what he has created — the instrumental imperatives of communicativity and listenability have determined his decisions. He has built a Hell, but simply shoved us in and slammed the door. Once inside, we are at the mercy of a self-generating system, a research project into our minds that is justified only by the voracious demands of the client that collects, abstracts, and re-presents. The paradox of the client as subject becomes our own as we participate and co-conspire in *Listening Post*. Data lurks behind not only the physical phenomena of the world, but behind our interiority, as the very possibility of the subject dissolves into the inaccessible world of data. In this sense, the piece is an allegory of instrumental rationality itself, demanding not only the acquiescence of the world, but that of the subject as well.

#### **Recuperating The Mimetic**

Does this mean that the entire undertaking of sonification or data examination is inexorably doomed to be no more than a pawn in the continued advance of instrumental rationalization? To go beyond these pitfalls, artists need to have some awareness of the risks of the realm they are working in, as well as a light touch and a

bit of quirkiness. Historically, we should look to Raymond Roussel and Eric Satie, who could look at the apparently airtight and self-consistent system of the instrumental at previously unimagined angles to break its systematic hold. A fine example of contemporary work which exploits, rather than is exploited by, the anxiety of the client is Yasunao Tone's Wounded Soutai Man'yo [13]. As a data sonification, it is an exemplary work of Situationist tourmage. In this piece, he uses the pen tool in an audio editing program to write Japanese characters, and then synthesizes the results as sound. He wedges open a weak spot in the digital model by exploiting the inability of the computer to distinguish one bit from another, recuperating language from the data realm by presenting it to the computer in a way it is not programmed to understand. In its gleeful disregard of the instrumental imperatives of input and output, Tone's work shows us a route to incorporating data that is intelligent, playful, and perhaps gets most directly to the heart of mimesis in art: Aesthetic success does not depend on the ways in which an artwork resembles reality, but rather on the ways in which it does not.

#### References

1. Theodor Adorno, *Aesthetic Theory*, Robert Hullot-Kentor (trans.) (Minneapolis: University of Minnesota Press, 1997) p. 74.
2. John Dunn and Mary Anne Clark, *Life Music: The Sonification of Proteins* <http://mitpress2.mit.edu/e-journals/Leonardo/isast/articles/lifemusic.html>
3. The carnivore project, <http://www.rhizome.org/carnivore/>
4. Lev Manovitch. "Database as a Symbolic Form", <http://www.manovich.net/docs/database.rtf>.
5. The first contemporary work of database art in any medium was probably Charles Dodge's 1970 composition Earth's Magnetic Field (Nonesuch H71250, 1970).
6. Theodore Adorno and Max Horkheimer, *Dialectic of Enlightenment*, John Cumming (trans.) (New York: Continuum, 1993); and Adorno, [1].
7. Simon Jarvis, *Adorno: A Critical Introduction* (New York: Routledge, 1998), p. 120 . A most useful guide to making sense out of the books cited above.
8. Full disclosure: I worked on this piece developing the mapping & spatialization software.
9. Andrea Polli. "Atmospherics/Weather Works: a Multi-Channel Storm Sonification Project", Proceedings of ICAD '04 Tenth Meeting of the International Conference on Auditory Display. [www.icad.org/websiteV2.0/Conferences/ICAD2004/papers/polli.pdf](http://www.icad.org/websiteV2.0/Conferences/ICAD2004/papers/polli.pdf). Also see <http://www.andreapolli.com/studio/atmospherics/>
10. C. S. Peirce, *Collected Papers of Charles Sanders Peirce*, Vol. II. (Cambridge: Harvard University Press, 1932). Cited in Jean-Marc Orliaguet, *Prolegomenon to a Semiotic of Digital Media*, [www.cck.chalmers.se/people/jmo/semiotics/semiotic\\_of\\_digital\\_media.pdf](http://www.cck.chalmers.se/people/jmo/semiotics/semiotic_of_digital_media.pdf)
11. Earstudio. <http://www.earstudio.com/projects/listeningpost.html>. Video clips are also available at this site.
12. M. H. Hansen and Ben Rubin, "Babble Online: Applying Statistics and Design to Sonify the Internet", Proceedings of the 2001 International Conference on Auditory Display. [www.acoustics.hut.fi/icad2001/proceedings/papers/hansen.pdf](http://www.acoustics.hut.fi/icad2001/proceedings/papers/hansen.pdf)
13. Yasunao Tone. <http://www.medienkunstnetz.de/works/wounded-many-o-2-2000/>. (According to a personal communication from Mr. Tone, the title is listed incorrectly on the website.)

#### Author Biography

A New York City native, Matthew Ostrowski is a composer, performer, and installation artist working primarily with electronics and sound. He studied music at the Oberlin Conservator in Ohio, and the Institute of Sonology in The Hague. He has shared the stage with everyone from John Zorn and David Behrman to a trio of Elvis impersonators.

He spent most of the 1980s in New York City, improvising with live electronics, amplified objects, and broken tape recorders in the days when it was still a novelty, performing with such downtown regulars as Anthony Coleman, Zeena Parkins and David Shea. He was also one of the originators of the Surrealist-inspired Exquisite Corpses projects, which led to two recordings and several live performances, working with such artists as Ikue Mori, Catherine Jauniaux, and Anthony Coleman.

From 1993-2000, he moved to the Netherlands, where he studied at the Royal Conservatory in the Hague for the first two years. During this period, he focused more on his compositions and installations, performing extensively throughout Europe. He was also working at this time as composer-in-residence for the MacArthur fellowship-winning choreographer Elizabeth Streb, using only sounds based on the amplified or detected movements of the dancers.

In 2000, Ostrowski returned to New York, where he took up with the Flying Karamazov Brothers, world-renowned masters of juggling and cheap theatrics, serving as their technology director.

He presently develops custom software for musicians and installations, and spends most of his time in New York, counting his grammys, and coming up with new ways to annoy his neighbors with new pieces.

He has performed from Australia to California, including the Melbourne Festival, the Audio Art festival in Krakow, Sonic Acts in Amsterdam, New Music America, the Festival Musiques Innovatrices in France, Stroom in Switzerland, PS 1, Wien Modern, and many other venues worldwide. Ostrowski has received fellowships from STEIM in Amsterdam, the Media Alliance in New York, the New York Foundation for the Arts, and many others.



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