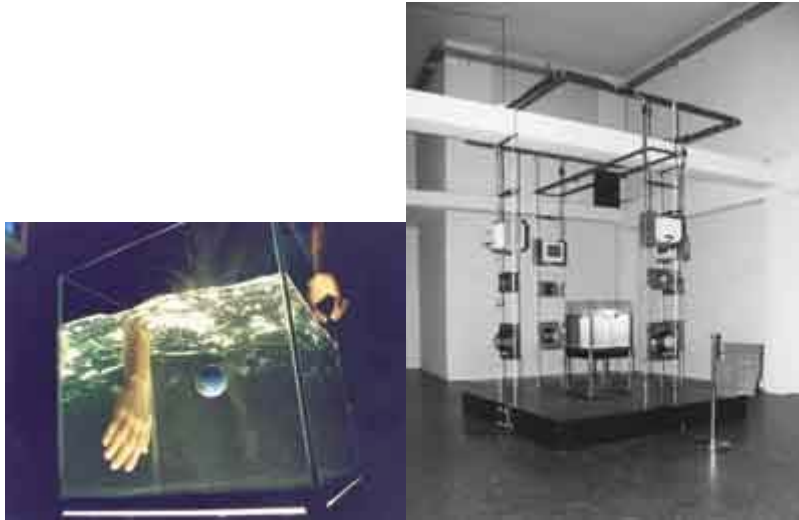


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Liquid Space

An Experimental Design



The primal motif of the project *Liquid Space* is the veritable boom in the use of the term "liquid" and the inflation which communication and information technology has engendered in conceptions of space which—to the extent that they crystallize into the form of rhetorical questions—do indeed make reference to specific subjects but, in the methods of such designation and the modes by which they take up a specific theme, remain generally unpondered. We proceed under the assumption that inherent in the coupling of science and art is the potential of an art capable of repositioning its social and aesthetic organization.

Abstract

Liquid Space is based upon the theoretical, scientific and artistic work of the authors and, as an experimental design, is a work-in-progress.

Proceeding from theoretical assumptions—also with respect to a preliminary form and its function, a cue (signal, suggestion, or hint)—the attempt is made to employ the methods of discourse to take theoretical statements and to generate from them aesthetic insights and experiences as well as a model for the linkage of science and art.

The cue of *Liquid Space* is conceived in such a way that a liquid, as a term for the diffusion of various different states [of reality] and contexts of action, behaves in such a way that it also functions in its material form as a carrier medium of its terminological correspondence.

Core themes are diverse, for the most part only metaphorically summarized conceptions of space, as they have come to determine the "media art" discourse in the wake of the paradigmatic transformation of our culture [into an information and communication system]—cyberspace, virtual space, communication space, etc.—with the goal of opening up individual approaches to perception and to operationally define them (through actions). In *Perception as Means to Attain Insight*, we see that which art and science have in common; likewise in that which is processual, whereby insight is produced in a discourse. We consider this to be obligatory for an art that radicalizes the paradigm shift—by means of new contexts of how art is done, promoted and disseminated—as an "art beyond art." ¹

The chief focus of attention is on auditory phenomena (perception having to do with hearing), which most closely resemble the conceptions as well as the facilities of net space and its communication structure.²

Through this project, we are implicitly insinuating a lack of binding statements on the subject to "media art"; we are merely focusing theoretical spotlights, in light of which certain phenomena are to be seen, though which are also, in turn, to be relativized in light of conventional practice.

Perception–Art and Science³

Science and art have the assumption in common that they construct or reconstruct (segments of) reality by means of models, whereby deconstruction is only one of the possible methods. In these abbreviated elaborations, we assess art and science as "media" of insight.

This equation is based upon considerations on aesthetics as a phenomenon of perception⁴ put forth as early as 1735 by Alexander Gottlieb Baumgarten, for whom "art is by no means the subject of aesthetics. It ought to particularly serve the improvement of the lower, the sensory cognitive capacity."⁵ Aesthetics is used in the sense of its "aesthetic significance"⁶ as a sensory cognitive capacity, not as a normative discipline.

In the wake of the coupling of the process of gaining insight with observation on the part of the empirical sciences, sensory perception as a method of recognition has been shown to be increasingly problematic. At the start of the 20th century, the Vienna Circle focused on the sensory and cognitive implications of human observation, which is accompanied by perception and the linguistically transmitted depiction of its contents. Every scientific statement is then–eliminating those implications–possible in a strictly formal abstract language. In the remark by Oswald Wiener (1980)–"aesthetic experience [...] is not the opposite of recognition, it comprises recognition, it is recognition"⁷–the implications of perception in art and science are brought together.

In the empirical sciences, the process of gaining insight has methodological implications; this refers to perception as a process of constructing reality as well as to methods of recognizing reality. One of the theoretical foundations of media art is to be subsumed under this category.

Prior to every scientific insight is, indeed, the science of insights–namely, the process of working out theories and methods of gaining insights beyond the individual conducting scientific research.

It was, at the very latest, the appearance in 1876 of Gustav Th. Fechner's *Vorschule der Ästhetik*⁸ and the growing cognizance of methods that would later be established as those of the natural sciences that the basis was formulated for art to turn away from its romantic attitude of sketching alternative worlds and to turn its attention toward that which is.

With this aesthetic emerged a science between science and art. Today, frequently demanded positions can be derived from the fact that "scientificness" establishes certain working relationships. Objective research necessitates, for example, the suppression of the subjectivity of the individual conducting research and integrates it (generally speaking) into an association of knowledge. In return, the creator in art mutates into the initiator, subjectivity increasingly gives way to objective observation, and art as insight proceeds from the possession of a few individuals to public "property."

Parallel to the transfer of "scientificness" into art, initial approaches tending toward the opening up of science to the potentials of art can be observed.

Model / Methods

A model is the formalization of a conception, to which methods are sought to make it possible to test whether the model conforms to reality or not. This corresponds to the image of testing science; the exploring of questions that have been raised is frequently assigned a lesser value in the process of gaining insight. Conversely, the self-conception of art can basically be traced back to the fact that it poses questions and, as a rule, does not concern itself with the answers. This task is left up to protagonists in its applied disciplines—mostly disciplines of mediation—and has to do for the most part with already formalized questions (works of art). The discussion of the processes and organizational structures of this formalization, in which what is generally designated as art is represented, takes place only marginally. And, in general, science also declares itself responsible for that which emerges from these questions (whether having to do with space or with biotechnology)—the process of calling art into question, a process beyond fashion and polemics, in the sense of art's theoretical and methodological foundation. Art would perpetuate by means of this "lack of responsibility" its romantic understanding as being committed to the idea of genius—a tradition which "media art" also seems to be following in spite of its methodological approaches which have been propagated as new in many quarters.

Nevertheless, on the way from modernism to post-modernism, a convergence of art and science has taken place. If science was the testing discipline and art the poser of questions, then these hard and fast standpoints have softened. Science is said to be methodologically dominated. "Within disciplines, questions are only then allowed when there is a method available for them to be handled."⁹ At least, questions are evaluated as sensible only when they are assessed as capable of being answered. Ernst Pöppel inverts this valence: "[...] in that we have, up to now, made possible unposed questions, stimulated still-concealed ways of thinking, and launched still-undiscovered artistic processes."

From the community of science, working is transformed into a collective process, a network-linked association of knowledge, and the consciousness of insight as a process, as a temporary state mutates into a collective processual art. From art, the method of posing questions metamorphoses into science, the sole task of which is to test questions.

Communication as a method of gaining insight forces its way into art as a discourse in the service of an increase in objectivity. Implicit in this are the replacement of the creator with the initiator and—in accordance with cognitive theory—the replacement of subjectivity with objectivity. In science, progress occurs as a process of construction employing available materials; to an increasing extent, art also replaces its conception of an avant-garde oriented on primary objects with "derivation from previously generated results."¹⁰ Of sociopolitical importance in this process are not only the shift from individually obsessed knowledge to a "public good," but also (at least according to theory) the consequences affecting the marketing of art, since this transformational process opposes the interests of commercialization and thus, of course, also artists' social interests that have been valid very outdated to now!

As an experimental design and work-in-progress, *Liquid Space* is dedicated to designing a model of this shifted paradigm in media [systemic] art as well as, at the same time, to testing this model by means of publication (and discussion) of its methods and real (monetary, social, technological) conditions.

An Experimental Design

An "experimental design"—in the sense of an understanding that links the experimental sciences with it—is to be understood as a methodical, plan-based arraying of [variable] circumstances for the purpose of placing them under observation. The mode of understanding in the natural science associates this, as a rule, with a laboratory situation from which the public is excluded; only the results are presented to the public. This mode of proceeding is equivalent to those of art forms whose production is independent of the conditions prevailing at the locations where they (consequently) take shape characterized as works of art. As an experimental design in the sense of the empirical social sciences, however, the project intends to produce a situation [a cue] for the purpose of carrying out the controlled observation of its constituent conditions. In other words, the environment [and how this is designed and set up as a result of the cue through the influence of external data] is just as much an object of Liquid Space as the internal deliberateness that provokes this influence. The work—the cue and/or the core installation—is merely a part of a process to which it is subordinate. As a project in the context of media art, Liquid Space is arranged media-systemically.

Under these preconditions, our mode of proceeding is determined by the attempt to take a theory—including the acceptance of the conditions which accompany such a theory, such as its application to itself in order to test its own validity—as our point of departure and to arrive at aesthetic conclusions in the sense of a practical model that makes possible sensory experience.

Media-systemic Art

Media art which fulfills its paradigmatic claim to innovativeness as media-systemic art beyond the canon of production, distribution and reception of the work of art (which, thus, does not define itself in the employment of new means, but rather in the behavior of things among themselves whose means are mediators) nominates conditions of production other than processes resulting in a work of art.¹¹

The term "media-systemic" refers to the fact that the engaged media are merely mediators of their applications as specified by their function. For example, the teleinformation system is not received with regard to that which is sent (an image), but rather with regard to the process of sending and how the transmitter makes this appearance possible; the image itself is secondary.

In a media-systemic art as we imagine it and in accordance with the way it is being carried out as a project of its own development [through art projects and the formation of theories and experience with respect to them], the public space thus becomes an integrative part of the developmental process. The term public space in the case of *Liquid Space* subsumes the entire spectrum of exchange dealing with the object. This mode of proceeding resembles the experimental designs of the empirical social sciences. The project is based upon this and, to a certain extent, upon Michel Foucault's conception of "discourses" as "practices," which systematically constitute the objects of which they speak.¹²

In this sense, it is also intended to design the space of which the project "speaks," about which is spoken through the project, and by means of which it functions. Spatial perception and the use of space are meant to be set up in a way that allows for a symbiotic relationship to arise, so that one would ultimately be able to speak of "space applications."

Communication of Spaces¹³

For the cue of Liquid Space as a model conducting tests upon concepts and conceptions of space, we are attempting to convey the auditory conditions that most closely correspond functionally and psychologically to these concepts into an operational structure.

We are capable of perceiving physical space primarily by means of visual/tactile facilities. In a series of visual fields which come about as a result of movement, we interpret invariables as that which is produced by change of spatial position, variables as that which is determined by time.¹⁴ Space, which is usually located in front of us and which we describe mathematically in an artistic, three-dimensional orthogonal system, is thus generated for us by the interplay of speed-time-distance. The perception of physical space in auditory phenomena must be differentiated from this. The relatively slow propagation speed of sound as a carrier of information on the state of a sound source (oscillator), along with the specification of its state, also depict the factors of transmission—that is, also the surrounding space and its position in it. During the transmission of the sound (the propagation of sound in the air), the tonal quality provides—by means of the process of refraction particularly in its sensitive upper spectral segments—information about the space in which it is transmitted.

We perceive auditory space independently, as it were, of our own movements—the movement of the sound we are capable of perceiving "replaces" this, so to speak—and as omnipresent round about us ("egocentric" perception). This is in contrast to visual space which is continually independent of our movement and takes place in a moment merely as something in front of us. The space behind us is closely connected with time; it is associated with that which is in the past. Visual space is investigated by means of temporally separate changes of fixation, whereas acoustic space is always, at every moment, completely specified.

In our perception, netspace behaves similarly to auditory space. The increase in the speed of information transmission beyond that which can be comprehended by human beings allows the speed-time-distance structure in our perceptive facilities to become a psychological factor, the here and now. The mechanistic paradigm breaks down in our perceptive facilities. Netspace is omnipresent beyond our direct physical movement; in our consciousness, it does not lie before us but rather in us.

Auditory space and netspace are spaces in which events take place; they are characterized by information transmission which can be experienced and which indicates that space. The experience of space arises by means of the comprehensibility of the information transmission events that define it. That which is perceived auditorily is that psychological interface which could permit the transgression into the experience of any in and of itself comprehensible magnitude.

Communication Space and Interaction Space

The net behaves systemically and "in secondary real-time."¹⁵ Direct reactions cannot be expected, less as a result of technical delays—that is, the time that information needs to cover great distances even when the transport is very rapid—but rather on account of its essentially interactively regulated behavior. Reciprocal exchange of information changes the nodes of the information distribution system which are involved. This modulation goes on to effect the information; the system becomes an information generating system. Ultimately, the transmitted information changes the system and the system changes the transmitted

information. This relationship is reflexive and describes the transition from information to communication.

Models which describe this information-generating and system-generating behavior through interaction have been put forth in the late 1950s in, for example, group psychology. Purely mathematical systems theories are complemented by those from experimental psychology, including complex theories of the generation of knowledge, of decision-making on the basis of knowledge, and, finally, of "irrational" behavior. They constitute models that imply learning and that are artificially intelligent.¹⁶ In *Liquid Space*, a program is used that takes into account the formation of their structure by means of interaction with the communicated information.

That which has been empirically investigated in group psychology¹⁷, tried out artistically in free jazz, and simulated in electronic and interactive arts is available now as knowledge about the self-structuring of communication which takes shape out of its informal processes in formalized form and is technically manageable to a very high extent. But this is not a matter of applying these communication theories—and the exclusion of information theories—to network-linked electronic communication; rather, this has to do with intentionally conducting the two in parallel fashion, from which we expect to obtain insights into the sociopolitical implications of electronic networks and into the generation of knowledge by them.¹⁸

The CUE

The cue consists of a glass basin filled with water and a six-channel surrounding field marked off by loudspeakers—the acoustic space. The moving water's own dynamics functions as physical interface—an expression of its specific morphology.

Set into motion, a number of irregular disturbances take place in the water. These gradually form a stream (laminar stream), the behavior of which describes the systemic event of a fluid. Objects with the specific weight of the fluid carry out these "outcomes," which are "depicted" in the acoustic space. What emerges thereby is a new, acoustically defined psychological interface that obtains its dimension from the dynamics of the liquid system and, on an explicitly sensory level, confronts three forms of perception with one another: the haptic (tactile), the visual, and the auditory. The objective is to transfer the primary forms of perception to additional experiential spaces and to provoke other spatial experiences.

For this purpose, a network of satellites—a network of interaction units linked up to each other as well as to the core installation, and, thus, a communication and event structure—will be set up: a netspace that is likewise subject to the dynamics of the liquid. The interweaving of the spatial tones which determine the satellite station with the tonal behavior of the core installation and the exchange of alphanumeric encoded information is designed to provoke the experience of specific characteristics of netspace as the behavior of a self-organizing system. The system takes shape by means of programs that are capable of learning as a result of pattern recognition processes.

In this context, communication means both the behavior of the communication system as well as the exchange of alphanumeric encoded information. System and information exist—with respect to structure and meaning—in a reflexive relationship. Pieces of information are mediators of the formation of the communication system; at the same time, they obtain their meaning through its specific structure. To communicate by means of *Liquid Space* will mean: to make use of *Liquid Space*, to communicate with it, and, at the same time, to set it in

motion. The netospace as the project's forum of public discourse is—like hand and water—an intervention medium in the functional context of *Liquid Space*. The behavior of the fluid serves as physical interface into the systemic. The behavior of the sound in space serves as physical interface into the netospace.

Liquid Space thus stands for the systemic behavior of "spaces" that are interwoven with one another and for the experience of interweaving, not for the means—in other words, for the shape that the project is preliminarily imparted by means of the cue.

The point is [in analogy to the idea of materially functionalizing the term liquid as this is used in media theory] to transfer theoretical assumptions into actual practice—that communication art not only participates in communication space, but rather, by means of its functional and organizational structure, generates it and imparts an expanded definition to it. As media-systemic art that makes these specific phenomena able to be experienced and consciously considered, it is in accordance with the paradigms and issues upon which research focuses in the empirical social sciences.

The model presented at Ars Electronica 99 represents the considerations undertaken up to now. Bearing in mind the provisional nature of any form of knowledge, the discourse as a means of obtaining insight implies to art [as well] possible modifications of the model, and thus also changes in the "shape" of *Liquid Space*—both in the form of the installation as well as of the project.

In Cooperation with ESC, Graz

Notes

¹ Kac, Eduardo, *Aspects of the Aesthetics of Telecommunications*, Graz 1993

² Visual images and sounds are appropriate to imagining spaces. In contrast to visual images, though, sounds can also communicate and process spaces. Whereas sounds as temporal events continually and directly communicate information processually, visually-determined conditions require a secondary encoding to become processual.

³ Jauk, Werner, Forum Stadtpark/Wissenschaftsreferat, *Generationen* (Ed. Christine Grond), Vienna 1999 (forthcoming)

⁴ Baumgarten, Alexander Gottlieb, *Meditationes philosophicae de nonnullis ad poema pertinentibus*, Halle 1735, cited in *Meditationes philosophicae de nonnullis ad poema pertinentibus—Philosophische Betrachtungen über einige Bedingungen des Gedichtes*, Hamburg 1983, CXVI p. 86—87.

⁵ Welsch, Wolfgang, *Grenzgänge der Ästhetik*, Stuttgart 1996.

⁶ *Ibid.*, p. 65.

⁷ Wiener, Oswald, Wozu überhaupt Kunst? Wiener, Oswald *Literarische Aufsätze*, Vienna 1998

⁸ Fechern, Gustav Theodor, *Vorschule der Ästhetik*, Leipzig 1876

⁹ Pöppel, Ernst, Radikale Syntopie an der Schnittstelle von Gehirn und Copmputer. *Die Technik auf dem Weg zur Seele, Forschungen an der Schnittstelle Gehirn/Computer* (Eds., Maar, Christa; Pöppel, Ernst; Christaller, Thomas). Reinbek bei Hamburg 1996

¹⁰ Wulffen, Thomas, Kunst und Wissenschaft. Überlegungen zu einem prekären Verhältnis. *Dialog und Infiltration. Wissenschaftliche Strategien in der Kunst*, Kunstforum International, Vol. 144, Cologne 1999, p. 38—39.

¹¹ See Ranzenbacher, Heimo, *Versuchsanordnungen—Versuch einer Ordnung*, Paper presented at the symposium Recycling the Future, Vienna 1997.

¹² Foucault, Michel, *Archäologie des Wissens*, p. 74.

¹³ See Jauk, Werner, *Physical/Auditory/Musical/Net Space. The Transgression of a Mechanistic Paradigm*. Paper presented at the Conference on Musical Imagery, Oslo 1999.

¹⁴ See Gibson, James J., *Wahrnehmung und Umwelt*, Munich 1982.

¹⁵ De Kerckhove, Derrick, Kunst im World Wide Web. *Prix Ars Electronica 95* (Eds., Leopoldseder, Hannes; Schöpf, Christine), Linz 1995, p. 37—49.

¹⁶ See Jauk, Werner, Gestaltung durch kommunizierendes Verhalten: Musik und Net-Art. *Forschungsbericht Klangforschung 98*, Munich 1999, (forthcoming).

¹⁷ Bales, R. F., *Interaction process analysis*, Cambridge 1950.

¹⁸ See Jauk, Werner, Interactivity instead of reactivity. *Prix Ars Electronica 95* (Eds., Leopoldseder, Hannes; Schöpf, Christine), Linz 1995, p. 23—27.