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Variantology 2

On Deep Time Relations of Arts, Sciences and Technologies

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1806/2006—A Miniature
in lieu of a Preface
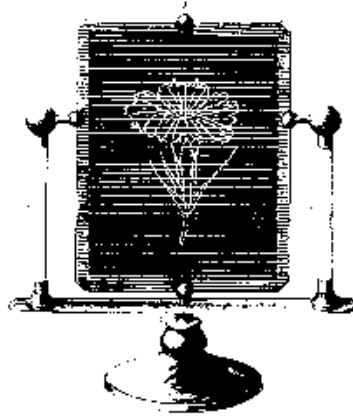
Tableau magique

The physico-chemist Johann Wilhelm Ritter (1776–1810) appeared for the last time in front of an academic audience in Munich. Ritter was just thirty years old. On the 28th of March 1806 he delivered a lecture to the assembled members of the Bavarian Academy of Science with the title "Physics as Art".[1] In the lecture's sub-title, Ritter states the aim of his lecture: "An attempt to interpret the future direction of physics in the light of its history". In his typically ardent fashion Ritter sees the ultimate goal of all thought and action as "re-unification with nature, [the] return to the former state of harmony", and within the space of one printed page boldly sketches the history of the arts to date as an especially positive anthropology. Ritter distinguishes four different qualitative stages in this anthropology; for him, the most important aspect in the scaling is human activity:

  Architecture/the town in its four-dimensionality (space and time) attempts to shape and preserve human deeds in monumental form for posterity. In three-

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1 Reprinted in the new edition of Ritters' *Fragmente aus dem Nachlasse eines jungen Physikers* [1810] (Hanau, 1984), pp. 288–320, quotation p. 310.

dimensional sculpture, the creator seeks to embody himself directly as an individual. Painting has partially re-delegated and given back to humans the necessity of an active role, because the observer is compelled to fill up the image space of a painting, which Ritter refers to as "half-space", with the aid of the imagination. Thus far, all art forms have addressed the eye. They show what has been, live off the past, and thus are arts of memory. Taking an idea from Lucretius' poem on the world of atoms, *De rerum natura*, Ritter summarises these first three stages: "Purpose of art: to render present what is absent [...], monument. The beloved, however, is more than her image."[2] With music, history takes a different turn. Sounds draw human actors into the very act of artistic creation; in music, the act is directly present. Whatever comes after this will be accomplished by physics: the (re-)establishment of consonance between nature, which is external to humans, and their inner nature; the identity of nature and action, of life and enjoyment of living. This is the highest form of art and Ritter believes that the physics of the future will be capable of realising it; indeed, he sees this as imperative, if physics is not to forfeit its deeper meaning.[3]

Stimulated by these 200-year-old thoughts, I have begun to work with an anthropology, which, like Ritter's, is conceived as operational.[4] Through studying the history of the specific tensions between the arts, sciences, and technology, this anthropology attempts to keep options open for possibilities of action in years to come, both for scientists and artists, who are committed to experiment in the broad sense of the term

The relations between the autonomous epistemological and work areas of art, science, and technology are strongly reduced in their complexity and comprehended as varying historical qualities in relation to art and media. The art referred to here is art affected by media in the sense of experimental aesthetic praxis that engages with science and technology. For only then are the relational qualities meaningful, which are the focus here.

I differentiate between four qualities: art *before* media, art *with* media, art *via* media, and art *after* media. As in Ritter, these qualities should not be understood as a chronological succession, but as differently weighted priorities within the

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2 Ritter, *Fragmente*, p. 256.

3 Ritter, *Fragmente*, p. 317f; on this aspect, see also the dissertation by Wolfgang Hartwig, *Physik als Kunst* (Freiburg, 1955), particularly pp. 70–83, and for further details my recent book: Zielinski, *Deep Time of the Media* (Cambridge, MA, 2006), pp. 177–182.

4 I had the opportunity to present and discuss this anthropology for the first time in 2003 in Barcelona at Claudia Gianetti's Institute for Art and Design, for which I am most grateful.

deep time structures that we are interested in. They overlap historically and in part run parallel. The two relational qualities in the middle, art *with* media and art *via* media, are the easiest to grasp.

Art *with* media concerns the artistic utilisation of findings in mathematics, arithmetic, and geometry and their application in mechanics and optics, as well as the thrust of this utilisation toward the creation of artefacts and technical systems for understanding, instruction, illusionisation, shocking, amusement, and missionising. Art *with* media implies an instrumental relationship. In this relational quality flat or curved mirrors, pipes, funnels, drums, magnetic tele-writing, or combination systems serve as prostheses for art, but are not essential prerequisites for art's existence. These artefacts expand artistic praxis, may possibly make it more effective, but do not renew it. In a narrow historical perspective this quality developed at the latest since the geometrisation of seeing and of the image during the Renaissance, it flourished in the innumerable models for cryptography and steganography as well as the refined spaces for the mise-en-scène of technical images in the sixteenth century, and achieved its first high points in the seventeenth century with concepts for the automatisation of musical compositions, the sequencing of harmonic series of notes, and the invention of numerous visual special effects. All of the mechanical, optical, as well as acoustic innovations and inventions that followed in the eighteenth and nineteenth centuries—the founding epoch of the new media—essentially serve this instrumental relational quality.

Art *via* media means that the artistic process or the artistic work is essentially realised through a technical medium or via a constellation of technical media. This has been the case at the latest since the advent of the artificial production of electricity. The age of Enlightenment saw the taming of forces of nature, lightning and thunder. Discovery of the physical and chemical bases of electricity led to the growth of a rich culture of experimentation between London, Paris, and St. Petersburg. Applied science was demonstrated at spectacular performances, where the heavy bodies of monks, or the light bodies of boys and girls suspended in the air, were electrified with weak current. Experiments performed in salons, like those of the German physicist Georg Matthias Bose (1710–1761), who, to welcome evening guest speakers, electrified a young lady standing on an insulated stool so that his visitors could experience the sensational feeling of an electric kiss from Venus, were demonstrations that issued the first invitations to participate physically in an experiment—the prerequisite for the realisation of any performative installation. In addition to various models of the *tableau magique* upon which electric sparks inscribed awe-inspiring figures, devices came into being for instruction and for entertainment that generated images in a new

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mode, namely, in time.[5] These figures were only visible (and some could even be felt) when electric current flowed. And with the electrical treatments for illness of Franz Anton Mesmer (1734–1815) and other medico-electropractioners there arose in the eighteenth century archaic forms of a *psychopathia medialis* which we also experienced among our contemporaries at the end of the second millennium.

With his idea of a constantly vibrating, oscillating cosmos, both macro and micro, Johann Wilhelm Ritter should be regarded as the first not only to formulate the relational quality of an experimental art *through* media at a very early stage, but also as someone who lived it, by declaring his body a laboratory and his organs and extremities conductors and display units of electrical current. Ritter's last book project, which he never realised, was a theory of glowing.

At the beginning of the third millennium the mechanical, electrical, and electronic media with and through which the production, distribution, and reception of art and sciences are effected have become utterly familiar, a matter of course. They are part of everyday experience, like the water taps we turn on and off as required without thinking much about where the water comes from, what its composition is, or how it is disposed of after we have used it.[6] In the industrialised parts of the globe the infrastructure is geared to technical media systems and dependent upon them. The generations of scientists, artists, and engineers, who are currently learning, studying, trying things out, setting things up, and directing have been more or less intensely socialised by their experience with technical media. For these people, technical media are no longer anything special or attractive. By art *after* media I do not mean a type of experimental praxis without technical media; this is no longer an option in applied culture or science. The relational quality of art *after* media draws attention to our search for an art of experimentation that does not require the application of media as legitimation or to create a sensation, but does not close its eyes, ears, and thinking tools to it either. How art *after* media will develop in the future is foreseeable at the beginning of the third millennium, but by no means a foregone conclusion. My

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5 Such *tableaux magiques* (see the illustration at the beginning of this preface) were used in the early physics cabinets as a popular way of visualising the effects of electricity in darkened rooms. See the lavishly illustrated and detailed description: Figuier, *La machine électrique, le paratonnerre, la pile de Volta, L'électromagnetisme* (Paris, 1870), pp. 485–486, image: p. 486.

6 Günther Anders made this comparison already in 1956 in his book *Die Antiquiertheit des Menschen*, vol. 1: *Über die Seele im Zeitalter der zweiten industriellen Revolution*; see particularly the section entitled "Die Welt als Phantom und Matrize" (The World as a Phantom and a Matrix), pp. 97–211 (Munich, 1980).

anthropology, too, is a modest attempt *to think of the future direction of art proceeding from its history*, as Ritter did for physics (as the broad science of life).

Art did not do without media before certain notions, concepts, and ideas came into existence that were generalised under the heading "media" as a specific area of theory and praxis. Instruments for encoding and decoding secret languages and the optical devices proposed by Giovan Battista della Porta (1535–1615), the monochord that Robert Fludd (1574–1637) wanted to use to tune the seventeenth century harmoniously, or the opulent portable boxes that allowed one to combine various things at home made by Athanasius Kircher (1601–1680) at the Jesuit college in Rome were all culminations of research, speculation, recognition, and model construction conducted over the preceding centuries, but they did not necessarily have to result in the actual inventions of the modern age. In two and a half thousand years (between 1000 B.C. and 1500 A.D.) a great diversity of optical, acoustic, magnetic and combinatorial sensations were developed, which can only be assembled under the collective term "media" through the force exercised by the context of our contemporary perspective. In their own time there was no trend toward such generalisation, nor did these phenomena need it. The modular grids and strings which ancient Egyptians used to model the ideal body proportions for sculptures of their gods,[7] which were in turn probably used by the Pythagoreans to derive their concepts of harmony based on geometry, the shadow optics of the Chinese Mohists 2,300 years ago, Heron of Alexandria's theatre of automatons from the first century (A.D.), which corresponds wonderfully with the mechanical and hydraulic jewels of the engineer Ibn al-Razzāz al-Jazarī from Mesopotamia in the early thirteenth century, the optical experiments of the Chinese astronomer Shen Kua with projections of birds on the wing and moving clouds in darkened chambers in the eleventh century—such individual and occasional sensations from the deep time of history I term phenomena of art *before* media. For an archaeology that is greatly interested in the origination and developments of hearing, seeing, and combining using technical means, this dazzling diversity is among the most exciting of the historical relational qualities.

With curiosity, respect, and admiration, in the Variantology project we follow how researchers from various parts of the world and very different disciplines—theology, philosophy, musicology, philology, history of mathematics, science, and technology—study and describe, each from their own perspective, these

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7 See Presas i Puig, *Numbers, Proportions, Harmonies, and Practical Geometry in Ancient Art* (Berlin, 2004).

relations of tension that are our common interest. At the beginning of the twenty-first century these researchers fruitfully re-open our pre-assembled conceptions (trained by the media age of the twentieth century) on art and the media. Through these temporary linkages between the heterogeneous positions and depictions in this series of books we hope to give something back to the authors and to you, the readers, that will surprise, maybe even astonish.

Translated from German by Gloria Custance