Deep Time of the Media

Toward an Archaeology of Hearing and Seeing by Technical Means

Siegfried Zielinski

TRANSLATED BY GLORIA CUSTANCE

Introduction: The idea of a deep time of the media

The MIT Press
Cambridge, Massachusetts
London, England

Originally published as *Archäologie der Medien: Zur Tiefenzeit des technischen Hörens und Sehens,* © Rowohlt Taschenbuch Verlag, Reinbek bei Hamburg, 2002

The publication of this work was supported by a grant from the Goethe-Institut.

This book was set in Bell Gothic and Garamond 3 by Graphic Composition, Inc., Athens, Georgia. Printed and bound in the United States of America.

Library of Congress Cataloging-in-Publication Data
Zielinski, Siegfried.
[Archäologie der Medien. English]
Deep time of the media : toward an archaeology of hearing and seeing by technical means / Siegfried Zielinski ; translated by Gloria Custance.
p. cm.—(Electronic culture—history, theory, practice)
Includes bibliographical references and index.
ISBN 0-262-24049-1 (alk. paper)
1. Mass media—Historiography. 2. Mass media—Philosophy. I. Title. II. Series.
P91.Z53813 302.23'0722—dc22 2005047856

10 9 8 7 6 5 4 3 2 1

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Introduction: The Idea of a Deep Time of the Media

> Our sexuality . . . belongs to a different stage of evolution than our state of mind.
>
> —BRUNO SCHULZ,"AN WITOLD GOMBROWICZ." IN: *DIE REPUBLIK DER TRÄUME*

In the early 1980s, the Texan science-fiction author Bruce Sterling invented the phenomenon of cyberpunk, together with the sci-fi writers William Gibson from Canada and Samuel R. Delany of New York, an ex-boxer and professor of literature. Their creation married clean high-tech and dirty rubbish, order and anarchy, eternal artificial life and decomposing matter. Techno- and necro-romanticism came together to create a new *Lebensgefühl.* The inspired collaboration of Ridley Scott, film director, and Douglas Trumball, designer and set decorator, translated this feeling into cinema in the brilliant *Bladerunner* (1982). *The Matrix* (1999), directed by Andy and Larry Wachowski, fulfilled a similar function at the end of the 1990s for the now computer-literate fans of cyberculture, who by then were all linked via worldwide data networks. The horror that stalks the film *Matrix* is no longer an individual, amoral machine that operates locally and has taken on human form, as in *Bladerunner,* but, instead, is a data network that spans the entire globe and controls each and every action, emotion, and expression.

When one generation of computer hardware and software began to follow the next at ever shorter intervals, Sterling initiated "The Dead Media Project." There, he exchanged his wanderings through an imaginary everyday life in the

future for an energetic movement that traversed the past to arrive in the present. Together with like-minded people, in 1995 he started a mailing list (at that time, still an attractive option on the Internet) to collect obsolete software. This list was soon expanded to include dead ideas or discarded artifacts and systems from the history of technical media: inventions that appeared suddenly and disappeared just as quickly, which dead-ended and were never developed further; models that never left the drawing board; or actual products that were bought and used and subsequently vanished into thin air.[1] Sterling's project confronted burgeoning fantasies about the immortality of machines with the simple facticity of a continuously growing list of things that have become defunct. Machines can die.[2] Once again, romantic notions of technology and of death were closely intertwined in "The Dead Media Project."

Media are special cases within the history of civilization. They have contributed their share to the gigantic rubbish heaps that cover the face of our planet or to the mobile junk that zips through outer space. While the USSR was falling apart, the cameraman of Tarkovsky's legendary *Solaris,* Vadim Yusov, was teaching astronauts from the MIR space station to take pictures of Earth for Andrei Ujica's *Out of the Present* (1995). The 35mm camera they used is probably still orbiting up there over our heads. After the rolls of film had been shot and stunning pictures of the blue planet were in the can, the camera was simply thrown out of the escape hatch. Taking it back to Earth would have been too expensive, and it was not considered worthwhile to develop a special program just to destroy a few kilograms of media technology.

The stories and histories that have been written on the evolution of media had the opportunity—at least theoretically—to do some recycling, in line with the rubbish theory proposed by Michael Thompson:[3] they might have searched through the heaps of refuse and uncovered some shining jewels from what has been discarded or forgotten. Nothing endures in the culture of technology; however, we do have the ability to influence how long ideas and concepts retain their radiance and luminescence. Up to now, media historians have neglected to do anything of the kind, mainly on ideological grounds, and this has also had methodological repercussions. In the extensive literature on the genealogies of telematics (from antiquity's metal speaking-tube to the telephone; from Aeneas's water telegraph to the Integrated Service Data Network [ISDN]), or cinema archaeology (from the cave paintings of Lascaux to the immersive IMAX), or the history of computers (from Wilhelm Schickard's mechanical calculating apparatus to the universal Turing machine), one thing above all others is refined

and expanded: the idea of inexorable, quasi-natural, technical progress. It is related to other basic assumptions, such as the history of political hegemony developing from the strictly hierarchical to strictly democratic organization of systems, the rationale of economic expediency, the absolute necessity for simple technical artifacts to develop into complex technological systems, or the continual perfecting of the illusionizing potential of media. In essence, such genealogies are comforting fables about a bright future, where everything that ever existed is subjugated to the notion of technology as a power to "banish fear" and a "universal driving force."[4]

Michelangelo's ceiling paintings in the Sistine Chapel in Rome do not anticipate that which today goes by the name of virtual reality and is produced on outrageously expensive computer systems, like the CAVE. What would this genius, master of two-dimensional illusions using painted images, colors, and geometry, have found of interest in such an idea, weak and already backward a couple of years after its "invention"? Having said that, there is something akin to a topicality of what has passed. However, if we are to understand history as being present not only when it demands to be accepted as a responsibility and a heavy burden, but also when there is value in allowing it to develop as a special attraction, we will need a different perspective from that which is only able to seek the old in the new. In the latter perspective, history is the promise of continuity and a celebration of the continual march of progress in the name of humankind. Everything has always been around, only in a less elaborate form; one needs only to look. Past centuries were there only to polish and perfect the great archaic ideas. This view is primitive pedagogy that is boring and saps the energy to work for the changes that are so desperately needed. Now, if we deliberately alter the emphasis, turn it around, and experiment, the result is worthwhile: do not seek the old in the new, but find something new in the old. If we are lucky and find it, we shall have to say goodbye to much that is familiar in a variety of respects. In this book, I shall attempt to describe this approach in the form of an (an)archaeological expedition or quest.

For Isaac Newton, the great world-mechanic, and his contemporaries, what we call "our" planet was still thought to be not much more than six thousand years old. God's representatives here below, men like the Anglican prelate James Ussher, had "proved" that this was so in the mid-seventeenth century, and that was that. As more and more evidence of immense qualitative geological changes piled up, their only resort was the trick of compressing the time periods in which the deposits had accreted. In the seventeenth century, Athanasius Kircher

used the same theoretical crutch in his description of the subterranean world. In the eighteenth century, doubts were increasingly voiced about this extremely short chronology, and by the nineteenth century, geologists were calculating in millions of years. It was only in the twentieth century that there was absolute certainty that the history of the Earth spans billions of years. Such numbers surpass our powers of imagination, just as it is almost impossible to imagine the existence of infinite parallel universes or the coexistence of different space-times.

At the turn of the eighteenth to the nineteenth century, the idea that the Earth was far older than previously supposed became a fashionable topic in the academies and bourgeois salons, just as electrical impulses in the bodies of organisms or between heterogeneous materials already were. Time structures on the large scale began to arouse interest, as well as their peculiarities on the small scale. In addition, the solidity of territories began to lose its dependability and comfortable familiarity as national boundaries were redrawn at ever decreasing intervals and traditional hierarchies were questioned. In Germany, Abraham Gottlob Werner, a mining engineer and lecturer at the famous Bergakademie in Freiburg, pioneered studies on the systematic investigation of minerals and rocks and their origins in the oceans that once covered the Earth. However, he neither could nor wanted to write a history of the Earth. More courageous than the "Neptunist" Werner was the "Vulcanist" James Hutton.[5] Son of a wealthy Scottish merchant, Hutton supplemented his already ample income by producing useful chemical compounds. His wealth provided him with a comfortable lifestyle in Edinburgh and the means to travel, conduct research, and undertake geological fieldwork for his own intellectual pleasure, entirely independent of any institutions. What is more, he had the time to write up and illustrate his observations. Hutton's *Theory of the Earth* of 1778, one thousand pages long, and the two-volume edition published in 1795 no longer explained the history of the Earth in terms of the old theological dogma. Hutton asserted that Earth's history could be explained exactly and scientifically from the actual state of the "natural bodies" at a given moment in time, which became known as the doctrine of uniformitarianism. Further, Hutton did not describe the Earth's evolution as a linear and irreversible process but as a dynamic cycle of erosion, deposition, consolidation, and uplifting before erosion starts the cycle anew. At localities in Scotland he observed that granite was not the oldest rock, as Werner and his student Johann Wolfgang von Goethe had assumed. Underneath the granite were deep vertical strata of slate, which were much older. These conclu-

sions were presented in a powerful illustration that adorned the second edition of Hutton's *Theory of the Earth.* Underneath the familiar horizontal line depicting the Earth's surface, the slate deposits plunge into the depths, exceeding by far the strata lying above them. John McPhee's *Basin and Range* (1980), which first introduced the concept of "deep time," displays Hutton's illustration on the cover. This discovery must have been as stunning and important for geology as were the first depictions of the Copernican view of the solar system, which firmly dislodged the Earth from the center of the universe.

Hutton's illustration also introduces the chapter devoted to the Scotsman in Stephen Jay Gould's *Time's Arrow, Time's Cycle,* his important work on the history of the Earth and organic life.[6] Gould, the Harvard geologist and zoologist who regarded himself primarily as a paleontologist, says that the idea of geological deep time is so foreign to us that we can understand it only as a metaphor. Imagine the age of the Earth as represented by one Old English yard, "the distance from the king's nose to the tip of his outstretched hand. One stroke of a nail file on his middle finger erases human history."[7] Hutton's concept of Earth as a cyclic self-renewing machine,[8] without beginning or end, is in stark contrast to the time reckoning instituted by humans. Gould takes this concept a step further when, for his field, he rejects all ideas of divine plans or visions of progress. In a specific continuation of uniformitarianism, Gould's studies on the long chronology are marked by a contemporary concern for the ongoing loss of diversity. In *Wonderful Life,* which came after *Time's Arrow, Time's Cycle,* he introduces a new category that runs contrary to linear thinking: "excellence," which should be measured with reference to diversification events and the spread of diversity.[9] Thus, Gould adds to the idea of deep time a quantitative dimension as well as a qualitative one that addresses the density of differences and their distributions. Taken together, these ideas result in a very different picture of what has hitherto been called progress. The notion of continuous progress from lower to higher, from simple to complex, must be abandoned, together with all the images, metaphors, and iconography that have been—and still are—used to describe progress. Tree structures, steps and stairs, ladders, or cones with the point facing downwards (very similar to the ancient mythological symbol for the female, which is a triangle with the base above and the point directed toward the Earth) are, from a paleontological point of view, misleading and should therefore be discarded.[10] From this deep perspective, looking back over the time that nature has taken to evolve on Earth, even at our current level of knowledge we can recognize past events where a considerable reduction in

diversity occurred. Now, if we make a horizontal cut across such events when represented as a tree structure, for example, branching diversity will be far greater below the cut—that is, in the Earth's more distant past—than above. In this paleontological perspective, humankind is no longer the hub and pivot of the world in which we live but, instead, a tiny accident that occurred in one of evolution's side branches. Genetically, the human brain has changed little during the last ten thousand years—a mere blink in geological terms that can hardly even be measured. Humans share the same stasis in their biological development with other successful species. The price that they pay for this is a relatively short life span and a narrow range of variations in their specific biological traits. At the other end of the scale are the bacteria, with their enormous variety and capacity for survival. It was Gould's own existential experience of illness—in 1982 he was diagnosed with a rare form of cancer and the statistical mean predicted he had only months to live—that made him deeply distrustful of any interpretation of living organisms that is based on considerations of the average. In reality, there was no mean for Gould. He took individual variations to be the only trustworthy value and punctuated equilibrium as the mode in which change takes place.[11]

The paradigm of technology as an organ was a crutch used in the development of mechanics; similarly, the organic becoming technology is now a poor prosthesis in the age of electronics and computation. Technology is not human; in a specific sense, it is deeply inhuman. The best, fully functioning technology can be created only in opposition to the traditional image of what is human and living, seldom as its extension or expansion. All of the great inventions that form the basis of technology, such as clockwork, rotation in mechanics, fixed wings in aeronautics, or digital calculators in electronics, were developed within a relationship of tension to the relative inertia of the organic and what is possible for humans. The development of geological and biological evolution on the one hand and that of civilization on the other are fundamentally different. Evolution, which is counted in billions of years, progresses very slowly. The changes that have taken place within the short time span of what we call civilization have occurred quickly by comparison and now occur at ever shorter intervals. In Gould's view, this difference is demonstrated by two particular traits, which influence cultural development decisively. The first is topological. Humans are nomadic animals; and our migrations lead to productive mixes of different situations and traditions, which often find expression in subsequent periods of rapid development. The second trait that has influenced the develop-

ment of civilization is the culturally acquired ability to collect and store knowledge and experience and to pass these on to others. This ability can also lead to periods where qualitative developments are extremely concentrated: these could not possibly be achieved via the mechanisms of biological evolution.[12]

An investigation of the deep time of media attractions must provide more than a simple analogy between the findings of research on the history of Earth and its organisms and the evolution of technical media. I use certain conceptual premises from paleontology, which are illuminating for my own specific field of inquiry—the archaeology of the media—as orientations: the history of civilization does not follow a divine plan, nor do I accept that, under a layer of granite, there are no further strata of intriguing discoveries to be made. The history of the media is not the product of a predictable and necessary advance from primitive to complex apparatus. The current state of the art does not necessarily represent the best possible state, in the sense of Gould's excellence. Media are spaces of action for constructed attempts to connect what is separated. There have been periods of particularly intensive and necessary work on this effort, not the least in order to stop people from going crazy, among other reasons. It is in such periods that I make my cuts. If the interface of my method and the following story are positioned correctly, then the exposed surfaces of my cuts should reveal great diversity, which either has been lost because of the genealogical way of looking at things or was ignored by this view. Instead of looking for obligatory trends, master media, or imperative vanishing points, one should be able to discover individual variations. Possibly, one will discover fractures or turning points in historical master plans that provide useful ideas for navigating the labyrinth of what is currently firmly established. In the longer term, the body of individual anarchaeological studies should form a *variantology* of the media.

The idea for this book originated in the late 1980s, while I was writing *Audiovisions: Cinema and Television as Entr'actes in History* for Rowohlt's Encyclopaedia book series. *Audiovisions* attempted to locate the two most popular audiovisual media of the twentieth century and their parallel development within a wider context of the history of the development of technology and culture. My intention was to make cinema and television comprehensible as two particular media events and structures whose hegemonial power is historically limited. At the time of writing, there were already hectic signs heralding a technological and cultural transition centered on the digital and computers. I sought to offer a more considered and calm perspective, but by no means a

complacent one. This overhasty orientation on a new master medium toward which all signifying praxis would be directed for a time—until the next one is defined—demanded the delineation of an independent and constructive way of dealing with this new phenomenon as a different possibility. In my understanding, *Audiovisions* was a plea for the heterogeneity of the arts of image and sound and against the beginning *psychopathia medialis.*[13]

Certain attitudes, which one already encountered on a daily basis in the late 1980s, became even more pronounced during the course of the 1990s. The shifts, which had become standard practice, were judged to be a revolution, entirely comparable in significance to the Industrial Revolution. Hailed as the beginning of the information society and new economy, where people would no longer have to earn a living by the sweat of their brow, the proclaimed revolution stood wholly under the sign of the present, and it was assumed that the new would lose its terrors. Every last digital phenomenon and data network was celebrated as a brilliant and dramatic innovation. It was this vociferous audacity, found not only in the daily fare served up by the media but also in theoretical reflections, that provoked me to undertake a far-ranging quest. In the beginning, it was patchy, with considerable time lapses, and dependent upon the places where I worked.

At the University of Salzburg I found a fine stock of books from an excellent Jesuit library. For the first time ever, I held in my hands original books and manuscripts by Giovan Battista della Porta, Athanasius Kircher, Caspar Schott, Christoph Scheiner, and other authors of the sixteenth and seventeenth centuries. A key experience was when I chanced upon a copy of John Dee's *Monas Hieroglyphica* of 1591, which had been bound together in one volume with a treatise on alchemy dating from the thirteenth century by Roger Bacon. This discovery coincided with a workshop on John Dee and Edward Kelley, to which I had invited the British filmmaker and producer Keith Griffiths. He encouraged me to delve into the rare texts by Dee, court mathematician to Elizabeth I, to explore the Prague of Rudolf II, and to appreciate as truly exciting texts the alchemists' writings with their strange worlds of images. Helmut Birkhan, a classical scholar from Vienna who, on his own testimony, is one of the half-dozen people in the world to have actually read the unpublished fifteenth-century *Buch der Heiligen Dreifaltigkeit* by the Franciscan monk Ulmannus, introduced me to the special hermeticism of alchemistic texts. He is able to interpret this strange material in the way that I "read" films by Jean-Luc Godard or Alain Robbe-Grillet with my students and, moreover, with the same enthusiasm. It was from

Birkhan that I first learned that a crucial characteristic of alchemistic writings, in contrast to the published findings of modern science, is the *private* nature of the elaborated treatises; for this reason, they are replete with cover-up strategies and practices to preserve their secrets. Words conceal one meaning behind others: for example, "a young boy's urine" can also stand for what we call vinegar—one of the easier examples to decipher. The special language employed by alchemists was regarded by some adepts as "destructive to discourse." In one of the earliest texts, *Turba philosophorum*, a meeting of alchemists was convened for the purpose of standardizing linguistic signs to facilitate mutual comprehension. However, "it failed utterly in its goal, for the various participants . . . Greek natural philosophers, such as Anaximenes and Pythagoras, with arabicised and distorted forms of names . . . scarcely referred to what others had said and contented themselves with making general statements or ones couched in singular language. It did not result in norms for the language of alchemy nor must this ever come about!" Heaven forbid, then anyone could make the *lapis* and, as Birkhan once made unmistakably clear to his audience during a lecture, for this we lack all the prerequisites.

Parallel to studying advanced media technologies, I began to develop a deep affection for several of the early dreamers and modelers. I had never encountered them in the course of my university education, and they have been left out of the discourse of media studies almost entirely. These two fields of interest were virtually inseparable: forays into forgotten or hitherto invisible layers and events in the historical development of the media, and the fascination exuded by my professional setting, filled with Unix and Macintosh computers, PCs, networks, analogue and digital studios for producing and processing images and sound, and including attempts by artists and scientists to coax new languages from this world of machines or to teach them laughter and tears. During the 1990s, this close mesh of media theory and artistic praxis led me to define two areas that, in my view, represented a pressing challenge:

- After a brief period of confusion and fierce competition between various systems of hardware and software, there emerged a strong trend toward standardization and uniformity among the competing electronic and digital technologies. The workings of this contradiction became abundantly clear to those involved with the new technical systems in the example of the international data networks. Telematic media were incorporated very quickly in the globalization strategies of transnational corporations and their political administrators and

thus became extremely dependent on existing power structures. At the other end of the scale, there were individuals, or comparatively small groups, who projected great hopes onto these networks as a testing ground for cultural, artistic, and political models that would give greater prominence and weight to diversity and plurality. This goal of facilitating heterogeneity as before, or even developing it further with the aid of advanced media systems, was in direct contradiction to the trend toward universalization being demanded by the centers of technological and political power.

▪ As so often before, the tension between calculation and imagination, between certainty and unpredictability, proved to be an inexhaustible fount of discussion about cultural techniques and technological culture. It is a debate where no consensus is possible, and any dogmatic opting for one side or the other can lead only to stasis. However, it is possible to explore the options in experiments that are, in turn, a source of fresh insights. Radical experiments, which aim to push the limits of what can be formalized as far as possible in the direction of the incalculable and, vice versa, to assist the forces of imagination to penetrate the world of algorithms as far as is possible, are potentially invaluable for shedding light on a culture that is strongly influenced by media and for opening up new spaces for maneuvering. A most important arena where the two sides engaged, both theoretically and practically, proved to be a specific area of media praxis and theory, namely, the handling and design of the *interfaces* between artifacts and systems and their users. Cutting-edge media theory and praxis became action at the interface between media people and media machines.

My quest in researching the deep time of media constellations is not a contemplative retrospective nor an invitation to cultural pessimists to indulge in nostalgia. On the contrary, we shall encounter past situations where things and situations were still in a state of flux, where the options for development in various directions were still wide open, where the future was conceivable as holding multifarious possibilities of technical and cultural solutions for constructing media worlds. We shall encounter people who loved to experiment and take risks. In media, we move in the realm of illusions. Dietmar Kamper, philosopher and sociologist, used to insist in public debates that the verb *illudere* not only means to feign or simulate something, but also includes the sense of risking something, perhaps even one's own position or convictions: I think that this is of crucial importance for engaging with media.

If we are to learn from artists who have opted to play the risky game of seeking to sensitize us for the other through and with advanced technology, then gradually we must begin to turn around what is familiar. When the spaces for action become ever smaller for all that is unwieldy or does not entirely fit in, that is unfamiliar and foreign, then we must attempt to confront the possible with its own impossibilities, thus rendering it more inspiring and worth experiencing. We must also seek a reversal with respect to time, which—in an era characterized by high-speed technologies and their permeation of teaching, research, and design—has arguably become the most prized commodity of all. These excursions into the deep time of the media do not make any attempt to expand the present nor do they contain any plea for slowing the pace. The goal is to uncover dynamic moments in the media-archaeological record that abound and revel in heterogeneity and, in this way, to enter into a relationship of tension with various present-day moments, relativize them, and render them more decisive.

"Another place, another time"[14]—I developed an awareness of different periods that we often experience with regard to places: for example, to discover Kraków in Palermo, to come across Rome in New York, or to see cities like Prague, Florence, or Jena converge in Wrocław. At times, I was not certain where I actually was. Phases, moments, or periods that sported particular data as labels began to overlap in their meanings and valencies. Wasn't Petrograd's early techno-scene in the 1910s and 1920s more relevant and faster than that of London, Detroit, or Cologne at the turn of the last century? Did the Secret Academy in the heart of Naples necessarily have to be a sixteenth-century foundation, or wouldn't it have flourished better if founded under new conditions in the future? Don't we need more scientists with eyes as sharp as lynxes and hearing as acute as locusts, and more artists who are prepared to run risks instead of merely moderating social progress by using aesthetic devices?

Notes

Chapter 1

1. See Sterling 2000; the project can be visited at: www.deadmedia.org (last accessed 29 August 2004).

2. In discussions, this was one of Dietmar Kamper's favorite rejoinders to metaphysicists of media technology.

3. See also Thompson 2002.

4. Fülöp-Miller 1934, p. 330 and 275.

5. On Hutton's discoveries, see Trümpy 1996 (in German); citation p. 79f., and Repchek's wonderful new monograph *The Man who Found Time* (2003).

6. See Gould's chapter on Hutton, pp. 61–98 (1987, reprint 1991).

7. Ibid., p. 3.

8. Ibid., p. 63f.

9. See Gould 1991.

10. Gould 1997.

11. I cite important ideas from Gould's extensive writings that are relevant to my theme, which appear in various works listed in the bibliography. The text on his cancer diagnosis "The Median Isn't the Message," (the title is a play on a well-known book of Marshall McLuhan's), is found in Gould 1992, pp. 473–478.

12. Gould 1998, pp. 266f.

13. This is the title of the final chapter of the English translation of *Audiovisions* (Zielinski 1999).

14. Segalen 1994, p. 48 (in the section "Der Exotismus der Zeit" [The exoticism of time]).

Chapter 2

1. For a full description see, for example, the conference proceedings Johnson and Haneda 1966, particularly the chapter on firefly bioluminescence, p. 427f.

2. On view in the aquarium of the Stazione Zoologica in the Villa Communale Park, Naples. This marine biological station was founded in 1870 by the zoologist Anton Dohrn from Stettin (Szczecin).

3. For a description of the biological mechanisms, see Marchant 2000, p. 34f.

4. Bataille 1985, citations p. 289 and 291 (Bataille's italics).

5. Ritter paid Schubert back later in installments; on the relationship of the two men, see also Klemm and Herman 1966.

6. Wagner 1861, p. 12; for biographical details, see also Schneider 1863.

7. *Rosa ursina sive sol* [The Bear Rose, or the Sun] is the title of the principal work of the astronomer Christoph Scheiner, who worked at the beginning of the seventeenth century in Galilei's shadow.

8. Schubert cited here according to the 1818 edition, Lecture 1, pp. 1–25.

9. See, for example, Wagner, 1861, p. 38.

10. Title of chapter 2, cited here from Schubert 1840, p. 6f.