

ON THE BOOK SERIES VERA BÜHLMANN, LUDGER HOVESTADT

Only one hundred years ago, hardly any scientist of renown would have been unaware of philosophy, and hardly any artist or architect uninformed about up-to-date technology and mathematics. Today, our ability to explain and explicate our own work within a shared horizon of assumptions and values beyond our specific scientific community has, perhaps paradoxically, turned into an inability and resulted to some degree in a kind of speechlessness. Only rarely now is it thought important that we relate our work to, and integrate it with, an overall context that is in itself “on the table” and up for consideration. More and more, that kind of context is taken for granted, without any need for active articulation, refinement, or development. At the same time though, the media are full of news stories about catastrophes, crises, and an impending doom that cannot, it seems, be warded off. Climate change, shortage of resources and population growth, urbanization—this is just to name a few of the critical issues today. Quite obviously, the notion of such an overall context, both implicit and assumed, is extremely strained, if not indeed overstretched today. This all is widely acknowledged—the United Nations Educational, Scientific and Cultural Organization (UNESCO) Division of Foresight, Philosophy and Human Sciences in Paris, for example, launched a discourse on this subject in their 21st-Century Talks and Dialogues under the heading “The Future of Values.” The companion book, published in several languages simultaneously in 2004, is structured in three parts, and includes one chapter on the ethical issues of values and nihilism lying ahead, another chapter on technological progress and globalization, as well as a third chapter on the future of science, knowledge, and future studies. What remains strangely implicit, and in that manner ignored here, in a way that is typical of this inarticulacy with regard to an overall context mentioned above, is the societal, scientific, and cultural role that inevitably is ascribed to technology against the backdrop of such discussions, along with the expectations that are associated with that role of technology. In the *Metalithikum* series, we tend to regard technology in the extended

sense of technics at large. Along with its respective solution-oriented application to the sciences, culture, economics, and politics, we think that technology needs to be considered more fundamentally, especially regarding the semiotic and mathematical-philosophical aspects it incorporates. From this perspective, we see in technology a common factor for facilitating a discourse that seems to have been largely lost from today’s discursive landscape, the degree of its disappearance inversely proportional to the increasingly central role technology plays in every domain of our lives. Such a discourse seems crucial if we are to develop adequate schemes for thinking through the potentials of today’s technology, something that is in turn essential for all planning. Our stance is an architectural and, in the philosophical sense, an architectonic one. Our main interest centers on the potentials of information technology, and how we can get used to the utterly changed infrastructures they have brought us.

But have our infrastructures really changed substantially? Or is it merely the case that a new level of media networks has emerged on top of technology with which we are already familiar? Are the “new” and digital media simply populating and exploiting, in a parasitic sense, the capacities of modern industrial infrastructures that have brought prosperity and wealth to so many? In his contribution to the UNESCO dialogues, Paul Kennedy was still convinced: “In the Arabic world, 3% of the population has access to the internet. In Africa, it’s less than 1%. This situation won’t improve as long as the infrastructures remain in their current state. It won’t change, as long as these countries lack electrification, telephone wiring and telephones, and as long as the people there can’t afford either computers or software. If knowledge is indeed power, then the developing countries today are more powerless than they were thirty years ago, before the advent of the internet.” Our experience since then has allowed us to see things a little differently. There are meanwhile as many mobile phones in use worldwide as there are people living on the planet. Six billion people out of a seven billion world population can meanwhile read, write, and calculate (at least in some basic sense). Only three decades ago, this proportional measure was not 6/7th, but 2/5th! We have seen the “Arab Spring” that brought simultaneous political revolutions in several Arabic countries, giving facticity to the cultural impact of digital media, and this to a degree that was unexpected or previously deemed improbable by many. And the credence of this facticity is not harmed, we think, by the fact that since then we have had to witness ongoing fundamentalist reactions as in Syria, where the situation is currently escalating into a veritable civil war. To say that the facticity of the cultural impact of digital media is not impaired in its credence thereby is not to downplay the seriousness of these complex situations. Of course, in political, economic, religious reorientation all is at once at stake, and the idea that technological

modernization be sufficient for consolidating the complex conflicts that arise in such phases of reorientation must strike one as quite naive. Even if technology affects how people live on the collectively existential level of infrastructure, it cannot do away with conflicting cultural values whose roots lie in different mentalities. Modernization of technological infrastructure, as “democratizing” and empowering for the people they may be, might even have an infantilizing effect on societies who begin to depend on it, because it fosters the idea that all kinds of problems may be solved technically, and can in essence be taken care of by respective experts and specialists.

The same must be observed with greatest prudence also on a global scope, where we cannot help but observe an increasingly tyrannical polarization of values into a crude and simple distinction of good and bad—orientated around the two poles of (1) sustainability or the collective care for the health of the larger whole (the climate), and (2) terrorism as a new, diffuse form of violence. We call this polarization tyrannical because it refutes interpretative investigations into the nature of these complex issues and instead focuses on “objective” measures like a numerical index for CO₂ pollution or registered documentation of power abuse; interestingly, the same technology is used by military and intelligence agencies alike with defenders of civil rights such as Edward Snowden. Thus we see the same technological means instrumentalized sophistically from all sides.

We read these constellations as strong indicators for just how limited the applicability of our noetic schemes is for thinking through long-term developments. These schemes have evolved from our experience of prosperity in times of strong modern nation-states and industrial technology with matching economics. They go along with notions of centeredness for thinking about control, notions of linearity and nested recursion, of processes and grids, and of mechanical patterns of cause and effect used for planning. It is a truism, perhaps, to point out that these notions do not fit information technology very well. They are stressed and overstrained by the volatile associativity that emerges from logistic networks and disperses throughout user populations. Going by our inherited notions, industrial infrastructures appear to be used as a playground for what is called, somewhat helplessly, “consumer culture” or “the culture industry.” But in the case of India, for example, what came back as a result of the success of mobile telephony, astonishingly, were new infrastructural solutions. With no banks and no cash machines on hand, people simply invented the means to transfer money and pay by SMS. Yet the standards developed for micro-banking today can be referred to and linked up with solutions that exist for other areas, such as energy provision maintained by photovoltaics and micro-grids, for example. This is not the place to present scenarios. But let us remember that in India, Africa, and the Middle East, information technology has achieved what

no administration, no mechanical infrastructure, no research, and no aid has been capable of: enabling people in developing areas of the world to use standard, state-of-the-art, technological infrastructures, not state administered and directed for their own benefit. We would simply like to invite you to consider the profound extent to which codes, protocols, or algorithms, standards such as ASCII, barcodes, MP3, or the Google and Facebook algorithms, have challenged our established economic, political, and cultural infrastructures. From this we get a sense of the potentials that come with information technology, directly proportional to these challenges. We deliberately call them potentials, because we are interested in developing adequate noetic schemes for integrating them into thinking about information technology from an infrastructural perspective. We are interested in how these potentials and dynamics can be applied to finding ways of dealing with the great topics of our time. We are interested in how we could understand computing as a literacy that is at once more capacious and more demanding than the strict reduction of complex issues to simplified and mechanically treatable measures of truth values. As Marcel Alexander Niggli and Louis Frédéric Muskens wrote in their article on mechanization and justice for the second volume of this series: “We might advance with greater ease once we admit that law bears greater resemblance (and hence is linked more strongly) to quantum physics and its often perplexing complexities.” Since information technology itself is constituted by quantum physics, this argument may well be extended to any field and domain that is organized today by this new form of technics.

In another contribution to the UNESCO dialogues mentioned above, Michel Serres observed, somewhat emphatically: “Today’s science has nothing to do with the science that existed just a few decades ago.” Computers and IT bring us the tools for statistical modeling, simulation and visualization techniques, and an immense increase in accessibility of data and literature beyond disciplinary boundaries. With the colloquies that are documented in the *Metalithikum* book series, of which this is the fourth volume, our main interest lies in how to gain a methodological apparatus for getting familiar with the potentials and dynamics that are specific to information technology and applying them to dealing with the global challenges that are characteristic of our times, by referring them to a notion of reality we assume will never be “fully” understood.

The prerequisite for making this possible is a regard for, and estimation of, the power of invention, abstraction, and symbolization that we have been able to apply, in past centuries and millennia, in order to come up with ever-evolving ways of looking at nature, cities, at trade and exchange, at knowledge and politics, the cosmos and matter, and, increasingly reflected, at our ways of looking, speaking, representing. Rooted in their respective historical cognitive frames of reference, we

have been able to find ever-new solutions for existential challenges. There has most likely never been any such thing as a prototype for coordinate systems: their detachment from substance-space and its formal symbolization result from acts of abstraction. Plato may have already considered the idea of a vacuum, yet he thought it “inconceivable”; nevertheless, this notion of the vacuum inspired abstract thought for ages, before Otto von Guericke invented the first vacuum pump as a technological device in 1654. Electricity was thought of as sent by the gods in thunderstorms before the algebraic mathematics of imaginary and complex numbers were developed along with the structures that allowed us to domesticate it. Today, we imagine the atomic structure of matter by means of orbital models gained from a better understanding of electricity.

So, in short, we do not share the idea that characterizing our time as post-anything is very helpful. While we agree that we seem to be somewhat stuck within certain mindsets today, we do not consider it at all plausible that any kind of concept or model, political or otherwise, will ever come close to anything resembling a natural and objective closure. The concepts behind any assumption of an End to History—whether this be in the Hegelian, the Marxian, or the more recent Fukuyama sense—stem from the nineteenth century, when Europe was at its peak in terms of imperialist expansion. To resurrect them today, in the light of our demographic, climatic, and resources-related problems, to us seems a romantically dangerous thing to do.

By now it is safe to say that technology is not simply technology, but has changed character over time, perhaps even, as Martin Heidegger put it, it has changed “modalities in its essence.” In order to reflect this spectrum, we propose to engage with a twin story, which we postulate has always accompanied our technical evolution. Historically, the evolution of technics is commonly associated with the anthropological era called the Neolithic revolution, which marks the emergence of early settlements. We suggest calling our twin story “metalithikum.” As the very means by which we have been able to articulate our historical accounts, metalithic technics has always accompanied Neolithic technics, yet in its symbolic character as both means and medium it has remained largely invisible. The metalithikum is ill suited for apostles of a new origin, nor is it a utopian projection of times to come. Rather, we wish to see in it a stance for engaging with the historicity of our culture. As such, it might help to bring onto the stage as a theme of its own an empirical approach to the symbolics of the forms and schemes that humans have always applied for the purpose of making sense. This certainly is what drives our interest in the Metalithikum colloquies, which we organize once a year in a concentrated, semipublic setting. As participants, we invite people from very different backgrounds—architects and engineers, human and natural scientists, scholars of humanities,

historians—or, to put it more generally and simply, people who are interested in better understanding the wide cultural implications and potentials of contemporary technology. This as well characterizes the audience for whom this book is written.

We are very grateful for the opportunity of collaborating with the Werner Oechslin Library Foundation in Einsiedeln. The library chiefly assembles source texts on architectural theory and related areas in original editions, extending from the fifteenth to the twentieth century. Over fifty thousand volumes document the development of theory and systematic attempts at comprehension and validation in the context of humanities and science. The core area of architecture is augmented, with stringent consistency, by related fields, ranging from art theory to cultural-history, and from philosophy to mathematics. Thanks to the extraordinary range and completeness of relevant source texts and the academic and cultural projects based on them, the library is able to provide a comprehensive cultural history perspective. When we first talked to Werner Oechslin about the issue that troubled us most—the lost role of Euclidean geometry for our conceptions of knowledge, and the as-yet philosophically unresolved concepts of imaginary and complex numbers and their algebraic modeling spaces—he immediately sensed an opportunity to pursue his passionate interest in what he calls “mental chin-ups” as a form of “mental workout,” if not some kind of “thought acrobatics.” We would like to express our thanks to him and his team for being such wonderful hosts. We would also like to thank the editors at Birkhäuser (Vienna), David Marold and Angelika Heller, for all the support we have received for our project, and for realizing this fourth volume.