

DECEMBER 7-9, 2017
TU WIEN

SOPHISTICATION: RHETORICAL, GEOMETRICAL, AND COMPUTATIONAL »ARTICULATION«

A SYMPOSIUM ON ARCHITECTURE, TECHNICS, THEORY, AND THINKING

DEC 07

Kuppelsaal
TU Wien
Karlsplatz 13

19:00-19:15	WELCOME Prof. Dr. Vera Bühlmann architecture theory and philosophy TU Wien, ATP	
19:15-19:30	EUROPE AND THE UNIVERSITY - A concerned Statement Prof. Dr. Rosi Braidotti philosophy, cultural studies and gender studies Utrecht University	6
19:30-19:45	PICO DELLA MIRANDOLA AND ARCHITECTURE by Dr. Oliver Schürer architecture theory TU Wien, ATP	6
19:45-21:30	ON HUMAN DIGNITY Pico della Mirandola, 1486 read by Sebastian Michael writer, film director and actor London	5
21:30-21:45	RESPONSE: Giuseppe Longo information science and philosophy École Normale Supérieure, Paris Tufts University, Boston	6
22:00-22:30	WHAT ARE MASTERPIECES AND WHY ARE THERE SO FEW OF THEM Gertrude Stein, 1935 read by Martin Burr réalisateur Basel	7

drinks and finger food will be provided throughout the evening

DEC 08 **Amidst: Somewhere between »a lot« and »too much«**

Prechtlsaal
TU Wien
Karlsplatz 13

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11:00-11:30	Coffee Break	
11:30-12:10	ON IMPOSTURE Dr. Alexi Kukuljevic philosopher and writer Berlin	9
12:10-12:30	Discussion	
12:30-14:30	Lunch Break	
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DEC 09 **Ever again: mathematics, models, architecture**

Prechtlsaal
TU Wien
Karlsplatz 13

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ON HUMAN DIGNITY

Pico della Mirandola, (De Hominis Dignitate, 1486)

read by Sebastian Michael | writer, film director and actor | London

Giovanni Pico della Mirandola was approaching his twenty-fourth birthday when he invited any interested scholars to come, at his expense, to a public disputation in Rome of 900 theses he himself had just published, under the title *Conclusiones philosophicae, cabalisticae et theologicae*, in December 1486. He immediately found himself under attack. On the one hand for the outrageous boldness of his undertaking – the vast number of theses and the spectrum they covered – and on the other for what was perceived as his sheer arrogance of youth: that at his age he should presume to have anything to say at all was enough. That he said it with such flourish and panache riled the establishment and angered the church. Much more significant, though, and of lasting impact to this day, is the ambition of his thought. Paul Oskar Kristeller in *The Renaissance Philosophy of Man* – a book he co-edited and wrote the Introduction for, speaks of Pico's extensive range of learning that “absorbs many different ideas and traditions that most of his contemporaries would have considered incompatible.” What makes this work stand out is the way it encapsulates in a relatively short text – some eleven thousand words in English – both the scope and the stance of a young man at a point in history when the world is rapidly and radically, categorically, changing. It has been called a ‘Manifesto for the Renaissance’, as well as the ‘most elegant oration’ (*oratio elegantissima*), uniting, as it does, upon itself two central themes, that of human dignity, and the ideal of a universal harmony among philosophers and their schools of thought. From within these, one concept more than any other shines out, much like a beacon: freedom. For Giovanni Pico della Mirandola, what truly distinguishes the human from any other being – animal or celestial – is our freedom to choose to become what we will. With this freedom comes, of course, our responsibility, but also our right to practice philosophy. And this Oration is a robust defence of the human right to think freely. Equally emphatic is Pico's disgust with the commodification of education, and the prevailing, snide anti-intellectualism of his day. No wonder he speaks to us now... Pico never held his *Oration*. It was penned as the opening speech of his disputation, planned for early 1487, but Pope Innocent VIII suspended the event and instead set up a commission to examine Pico's 900 theses for heresy. Pico promptly recycled the second half of the *Oration* in an *Apologia*, but this did not solve his problems: he faced years of persecution, and in 1494, two years after the death of his patron and protector, the powerful Lorenzo de' Medici, Pico, together with his friend Poliziano, was murdered in Florence – as exhuming them both in 2007 established – by arsenic poisoning. Originally known simply as *Oratio*, and first published posthumously by Giovanni's nephew Francesco Pico in 1496, the title soon acquired the addition by which it is today generally known and became the *Oratio de hominis dignitate* – the *Oration on the Dignity of Man*.

BIO “I think, write and create across disciplines in theatre, film, video, print and online with a deepening interest in humans, the multiverse and a quantum philosophy.”

Sebastian's stage plays range from contemporary relationship drama (*The Power of Love*) and the topical examination of religious fervour (*Elder Latimer is in Love*), to the ‘apocalyptic comedy’ *Top Story*, and a celebration of Shakespeare's poetry in *The Sonneter*. His short films and debut feature *The Hour of Living* have been screened at festivals worldwide, and he has published one novel, *Angel*, as well as the ‘picture story book for grown-ups’ *The Snowflake Collector*, which originated from his current ongoing online experiment *EDEN* by FREI – ‘a concept narrative in the here & now about the where, the wherefore and forever.’

Sebastian is a contributing author to *A Quantum City* (Eds. Hovestadt/ Bühlmann, Birkhäuser, 2015) and co-author, with Ludger Hovestadt and Vera Bühlmann, of *A Genius Planet* (Birkhäuser 2017). He is guest lecturer at the Department for Architecture Theory and the Philosophy of Technics at TU Wien.

Sebastian lives in London and works wherever his projects take him.

EUROPE AND THE UNIVERSITY - A concerned Statement

Prof. Dr. Rosi Braidotti | philosophy, cultural studies and gender studies | Utrecht University

BIO Rosi Braidotti is an Distinguished University Professor and founding Director of the Centre for the Humanities at Utrecht University. An established scholar in the field of Continental philosophy and epistemology, feminist and gender theories and post-structuralist thought, she is also a world figure in gender and critical theory. Braidotti set up in 1989 the Network of Interdisciplinary Women's Studies in Europe (NOISE) within the Erasmus Programme. From 1997 to 2005 she was the founding scientific director of the SOCRATES Thematic Network for European Women's Studies ATHENA, which was awarded in 2010 the Erasmus Prize of the Lifelong Learning Programme of the European Commission for outstanding contribution to social inclusion. Among her book publications are: *Nomadic Subjects* (second edition, revised and enlarged, 2011, Columbia University Press); *La Philosophie, là où on ne l'attend pas*, Larousse, Paris, 2009; *Metamorphoses: Towards a Materialist Theory of Becoming*, Polity Press, Cambridge 2002.

PICO DELLA MIRANDOLA AND ARCHITECTURE

by Dr. Oliver Schürer | architecture theory | TU Wien, ATPP

BIO Oliver Schürer, Senior Scientist Dipl.-Ing. Dr.techn., is researcher, curator, editor and author as well as Senior Scientist at the Department for Architecture Theory and Philosophy of Technics, Vienna University of Technology. He did numerous research projects, guest lectures, events, and international publications mainly on the cultural relations of technology and media in architecture. In 2015, he founded the transdisciplinary research group H.A.U.S. among humanities, engineering and arts, researching "Humanoid robots in Architecture and Urban Spaces".

RESPONSE: Giuseppe Longo

information science and philosophy

École Normale Supérieure, Paris | Tufts University, Boston

BIO Giuseppe Longo is Directeur de Recherche (DRE) CNRS at Centre Interdisciplinaire Cavallès, Ecole Normale Supérieure, Paris and Adjunct Professor, Department of Integrative Physiology and Pathobiology, Tufts University, Boston. He is a former Professor of Mathematical Logic and, later, of Computer Science at the University of Pisa. In the '80s, he spent 3 years in the USA (U.C. Berkeley, M.I.T., Carnegie Mellon) as researcher and Visiting Professor. GL is founder and former director (1990-2015) of Mathematical Structures in Computer Science, a Cambridge U.P. journal. Since the late '90s, he extended his research interests to the Epistemology of Mathematics and Theoretical Biology. He (co-)authored more than 100 papers and three books: with A. Asperti, on *Categories, Types and Structures* (M.I.T. Press, 1991); with F. Bailly, *Mathematics and the natural sciences: The Physical Singularity of Life* (Hermann, Paris, 2006; Imperial College Press, London, 2011); with M. Montévil, *Perspectives on Organisms: Biological Time, Symmetries and Singularities* (Springer, Berlin, 2014). With A. Soto and D. Noble, Longo edited (and co-authored six papers) of a 2016 special issue of *Prog Biophys Mol Biol*, *From the century of the genome to the century of the organism: New theoretical approaches*. He directs a research project at IEA-Nantes (2014-20) on the concept of law, in human and natural sciences.

WHAT ARE MASTERPIECES AND WHY ARE THERE SO FEW OF THEM

Gertrude Stein, 1935

read by Martin Burr | réalisateur | Basel

I was almost going to write an abstract and let you read what masterpieces are and why there are so few of them, at least according to Gertrude Stein and me. Therefore I was going to describe and getting to the point of this lecture, but actually it is impossible to describe and getting to the point because describing essentially has nothing to do with hitting a point. Describing is tracing outlines of a figure which in itself has no single description. It is like a state of not being able to remember the word I want and through movements of thinking grasping a few stars describing ellipses in the heavens.

BIO Born 1973 in Basel, Switzerland. Bachelor of Arts und Bachelor of Music at the Royal Conservatory and the Royal Academy of Art (Den Haag, NL). Collaborations with the Ensemble Hollandia until 1998. Between 2000 and 2002 Lecturer for Music Theater at the Academy for Theater in Zürich and engagements as a composer and Regisseur at the Schauspielhaus Zurich. Until 2005 director of the theater Scène 2 (Senones, F). He currently works as the director of Imprimerie Basel, a Studiospace for the Arts and Sciences.

ABSTRACTION AND GENEROSITY

Prof. Dr. Vera Bühlmann | architecture theory and philosophy
TU Wien ATTP

For apprehending a simple line for what it is, the Art Historian Wilhelm Worringer writes in *Abstraction and Empathy (Abstraktion und Einfühlung)* from 1906, “I have to expand my inner vision till it embraces the whole line; I have inwardly to delimit what I have thus apprehended and extract it, as an entity, from its surroundings.” Worringer foregrounded thereby a particular kind of psycho-motoric activity, which he called “apperceptive action”, as a means for attending to the socio-political role of art in relation to an individual subject’s aesthetical sense and cultural technical “progress”. This paper will discuss Worringer’s proposal beyond the strictly disciplinary scope of Art History, and extend its concerns to the societal role of “Intellectuality” at large. It proposes to consider Worringer’s psycho-motoric activity in relation to the economy of an active life.

With *Abstraction and Generosity*, this paper proposes a generalised concept-couple that is to relate the concerns raised by Worringer one hundred years ago to our own situation, with regard to what it means to date an object: Inevitably, Datafication too involves an “apperceptive activity.” But, this paper asks, Where to locate, and how to identify the “subjectivity” to which this psycho-motoric activity is to be attributed? Key points of reference will involve also John Stuart Mill’s theory of “naming” in his *A System of Logic, Ratiocinative and Inductive* (1836), Dante Alighieri’s *Convivio* (in German: *Das Gastmahl*, 1306), Rem Koolhaas’s *Generic City* (1995).

BIO Vera Bühlmann is Professor for Architecture Theory at Vienna University of Technology, and director of the ATTP Department since 2016. She originally studied English Literature and Language, Philosophy, and Media Studies at Zurich University, and earned a PHD in Media Philosophy/Philosophy of Technics from Basel University in 2009. Together with Ludger Hovestadt, she is co-founder of the applied virtuality lab in 2010, at the Chair for Computer Aided Architectural Design at ETH Zurich, where she had been teaching since 2008. She is Co-editor of the Applied Virtuality Book Series (Birkhäuser, since 2012). Her newest monograph is under contract with Bloomsbury Press, London, and will be entitled *Mathematics and Information in the Philosophy of Michel Serres* (2018, forthcoming).

ON IMPOSTURE

Dr. Alexi Kukuljevic | philosopher and writer | Berlin

Plato describes the sophist as a mimetician (mimetikes): one who excels in appearing to be the thing it is not, an imposter. In this paper, I will consider the relationship between mimesis, imposture, and the philosopher's effort to think the paradoxical being of non-being. Through a close engagement with Plato's Sophist, I will follow how the effort to render imposture ridiculous demands that we think in turn the ridiculousness of being, exposing the close relationship between education, thought, and humor.

BIO Alexi Kukuljevic is an artist and a philosopher based in Berlin. His book, *Liquidation World: On the Art of Living Absently* was published this Fall by MIT Press. His work has been exhibited at institutions such as the Palais de Tokyo, Paris and the ICA in Philadelphia. He is a lecturer in art theory at the University of Applied Arts in Vienna. He recently had a solo exhibition exhibition, entitled BIRDWAR, at Åplus in Berlin.

**MINDSET, PENTECOST, STOPWATCH: ONLINE SOURCES,
OR HOW TO RECOGNISE THE BEGINNING AND THE END OF AN IDEA**
Dr. Jorge Orozco | architecture theory | ETH Zürich, CAAD

When we ask IBM Watson online what it sees in Diego Velázquez's Las Meninas, it is 66% sure to recognize a 'little theater' with 'female faces' of age '18 to 34'. When we ask the same question to Michel Foucault, he sees a void, an empty space surrounded by objects pointing to it. Even when both see elements in Velázquez's work, they don't treat it in the same manner. Foucault is interested in what the elements can do and tell, locally and vividly, as the masterpiece is alive and talking to him. While Watson is interested in recognizing what the elements are, globally and taxonomically, as its success is measured by the accuracy with which it links them to global definitions.

This talk will address the information that circulates on web communities by sourcing and modeling it with instruments similar to Watson's, but with interests similar to Foucault's, that is, decoupling from recognition of global definitions and focusing on asking architectural questions. Showing the capacities and abilities that are gained with applications that 'talk' about architecture from the abundance of information.

BIO Jorge Orozco is a post-doctoral researcher at the Chair for Computer Aided Architectural Design (CAAD), ETH Zurich. His PhD thesis titled "Indexical Architecture. Prominent positions, applications and the Web" deals with the abundance of online information in architecture. It argues for a more vivid and capacious understanding of architecture by affirming and embracing the information that circulates ad infinitum on the Web.

Jorge completed his PhD research supervised by Prof. Dr. Ludger Hovestadt at the Chair for CAAD. He holds a Master of Advanced Studies degree in Computer Aided Architectural Design from ETH Zurich, and a Master in Advanced Architecture degree with specialization in Digital Tectonics from IAAC, Barcelona. Jorge graduated from Universidad Michoacana de San Nicolás de Hidalgo's Faculty of Architecture, Mexico.

**THE INFORMATIONAL MOTOR:
ARCHITECTONICS, ALGORITHMIC REASONING AND ABSTRACTION**
Dr. Michael Doyle | architecture theory | TU Wien, ATTP

Confronted by the mysteries of the world, humanity has developed various strategies to create meaning from the incomprehensible. From ritual and custom to geometry and algebra, models of religion and science have attempted to bring a world of heterogeneous entities into a common space and time. Such models, however, risk excluding that which is external to their model. The creation of a communicational space founded upon inclusion rather than exclusion requires a new sort of instrument of cognition—an informational motor—which would be able to decipher order in an otherwise noisy contingency. Looking at the work of Michel Serres, Roman Architect Vitruvius and others, I argue that, just as the atomist physics of Ancient Greece challenged the model of a pantheistic world, quantum physics continues to challenge the model of classical physics. With both algorithmic and abstract reasoning, however, we can build informational motors fuelled by contingency and powered by the very heterogeneity most models seek to exclude.

BIO Michael R. Doyle is assistant project researcher and lecturer at the ATTP (TU Wien) and postdoctoral researcher at the Laboratory for Environmental and Urban Economics at the Swiss Federal Institute of Technology in Lausanne (EPFL). He holds an M.Arch. and M.Sc.Arch. from Laval University (Canada) and a PhD from the EPFL. His research interests and activities span from the challenges facing research methods in design and planning by the evolution of computational technics and the availability and quantity of data to the bodies of theory with which novel methods can be invented to cope with contingency today.

THE TROUBLE WITH ALGEBRA: ART AND METHOD OF INVENTION

Prof. Dr. Roy Wagner | philosophy | ETH Zürich

The talk will begin with a review of Jacob Klein's explanation of the emergence of symbolic algebra in early modern Europe (Viète, Descartes, Wallis) in terms of a philosophical change of perspective. I will contrast his view with an explanation that builds on economic practices that became prevalent in late medieval and Renaissance Italy. If time permits I will present some modern innovations concerning mathematical practice with algebraic symbols as well. The purpose of this exercise is to show the different layers of reasoning involved in generating new algebraic conceptions and practices. Understanding these different layers will support a more general understanding of formal innovation, both sophisticated or unsophisticated.

BIO Received a math PhD (1997) and a history and philosophy of science Ph.D. (2007) from Tel Aviv University. Published on the history and philosophy of mathematics using case studies from a wide range of times and places representing various mathematical cultures.

Books: Post-structural readings of Gödel's proof (2009), Breaking and making mathematical sense: histories and philosophies of mathematical practice (2017). Also published papers in the area of critical theory/resistance studies.

A MATHEMATICAL CRITIQUE OF COMPUTATIONAL THINKING IN THE SCIENCES OF NATURE

Prof. Dr. Giuseppe Longo | information science and philosophy École Normale Supérieure Paris |
Tufts University Boston

The singularity of human life (its “dignity”) is the result of biological evolution and of human history. By active gestures and language, we produce sense within the human communicating community; we delimit and qualify phenomena, we co-construct objects of knowledge and objectivity. Today’s use of discrete state (digital) machines both as mathematical models and as a paradigm in science and humanities sets peculiar biases to knowledge construction. Their networks for elaborating information provide fantastic tools for human activities, but also an image of the world. The confusion between “elaboration of information” and “production of sense” is affecting our humanity and ways of knowing. The strong dualism of computing devices (software vs. hardware) blurs the radical materiality and the physical singularity of life. The related distortion of knowledge is also grounded on the abuse of pre-scientific or common-sense notions from information and programming theories in biology, with some dramatic consequences also for our health, in particular in cancer analysis and prevention.

References:

F. Bailly, G. Longo, Mathematics and the Natural Sciences. The Physical Singularity of Life, Imperial College Press, London, 2011.(Introduction: <http://www.di.ens.fr/users/longo/files/BaLoSingBook/english-introduction.pdf>)

G. Longo. The Biological Consequences of the Computational World: Mathematical Reflections on Cancer Biology. In Print See <http://www.di.ens.fr/users/longo/download.html> for this and more.

BIO Giuseppe Longo is Directeur de Recherche (DRE) CNRS at Centre Interdisciplinaire Cavallès, Ecole Normale Supérieure, Paris and Adjunct Professor, Department of Integrative Physiology and Pathobiology, Tufts University, Boston. He is a former Professor of Mathematical Logic and, later, of Computer Science at the University of Pisa. In the ‘80s, he spent 3 years in the USA (U.C.Berkeley, M.I.T., Carnegie Mellon) as researcher and Visiting Professor. GL is founder and former director (1990-2015) of Mathematical Structures in Computer Science, a Cambridge U.P. journal. Since the late ‘90s, he extended his research interests to the Epistemology of Mathematics and Theoretical Biology. He (co-)authored more than 100 papers and three books: with A. Asperti, on Categories, Types and Structures (M.I.T. Press, 1991); with F. Bailly, Mathematics and the natural sciences: The Physical Singularity of Life (Hermann, Paris, 2006; Imperial College Press, London, 2011); with M. Montévil, Perspectives on Organisms: Biological Time, Symmetries and Singularities (Springer, Berlin, 2014). With A.Soto and D. Noble, Longo edited (and co-authored six papers) of a 2016 special issue of Prog Biophys Mol Biol, From the century of the genome to the century of the organism: New theoretical approaches. He directs a research project at IEA-Nantes (2014-20) on the concept of law, in human and natural sciences.

ARCHITECTURAL MATHESIS

Prof. Dr. Frédéric Migayrou | architecture theory

The Bartlett School of Architecture | Centre Pompidou

Architecture is historically bound to Mathematics as a discipline working on space (geometry) and numbers (algebra). If it is possible to organize a history of architecture linked to the evolution of geometry from Euclidian, to differential then algebraic geometry, the consequences of a full algebrisation, the generalisation of the computational and the increasing recourse to generic simulation tools impose a new approach to the current interaction of architecture and mathematics. The influence of structuralism and the logical sources of phenomenology constitute a common ground to define a short history of computational architecture interacting with questions relative to the foundations of mathematics. To surpass the debates between formalism, realism and intuitionism, the questions of “Naturalisation”, of the Theory of Categories (Topos, Morphism...) or the “Ontology of the Number” remain as keys to understand possible perspectives on digital architecture.

BIO Chair Professor, Bartlett School of Architecture, University College, London (U.C.L). Deputy Director, National Museum of Modern Art, Centre Pompidou, Paris. Curator and Publisher of books and catalogues on Art & Architecture (Steven Holl, Diller & Scofidio, Morphosis, De Stijl, Claude Parent, Bernard Tschumi, Frank Gehry, Dominique Perrault, Le Corbusier, Marcel Duchamp, Jeff Wall, Japan-Ness (History of Japanese Architecture, 1945-2015), La Tendenza (Italian Architecture, 1965-1985). Regarding Digital Architecture: Co-Founder of Archilab (Annual Exhibition on Experimental Architecture, 1999-2004), Curator of Non Standard Architecture (Pompidou Center, 2003) and Co-Curator of Naturalising Architecture (2014). Founder of the Center for Digital Architecture B-Pro (Bartlett Prospective). In preparation: Coding the World (Pompidou Center, 2018)

**ANADYOMENE AND THE BEAUTY OF THE TROUBLESOME:
GNOMONICS OF SPECTRALITY
AS THE ART OF EMBRACING OBSTACLES**

Prof. Dr. Elias Zafiris | mathematics | Athens University

The main thematic concerns the notion of information as “anadyomene” in the context of the natural communication model. Information is theorized from a non-statistical and not set-theoretic viewpoint, as pertaining to the capacity of forming distinguishable spectral differences within intrinsically and objectively foamy surroundings, laden by the presence of obstacles and obstructions of any possible nature. We examine particular exemplifying cases in relation to the algebraic, geometric, topological and harmonic domain. In all these cases, information emerges as “anadyomene” from another level of “hypostasis” via an obstacle-circulation metaphorical process guided by a “gnomon”. In turn, this unifying characteristic underlies a specific type of weaving of the fabric of “chronos” in modular relation to the considered “topoi”.

BIO Elias Zafiris holds an M.Sc. (Distinction) in “quantum fields and fundamental forces” and a Ph.D. in “theoretical and mathematical physics”, both from Imperial College at the University of London. He has published papers on category-theoretic methods in quantum physics and complex systems theories, modern differential geometry and topology, and many other topics in the foundations of physics and mathematics. He is also the author of two books on these subjects.

He is a research professor in theoretical and mathematical physics at the Institute of Mathematics at the University of Athens, and is currently a visiting professor in the Department of Logic, Eötvös Loránd University in Budapest.

A TREATISE ON DIGITAL ARCHITECTURE

Prof. Dr. Ludger Hovestadt | architecture and information science
ETH Zürich, CAAD

This paper argues that we left the order of “absolute time” around 1900 and entered a new world of “life”. Quite comparable to the Renaissance, which left the order of “absolute space and entered the new world of “time”. In fact, we are currently experiencing a dramatic erosion of sense and values of our old logical order of time. With this, we can learn from the Renaissance that we should follow the humanist way, trust our intellect, get “literate” in the digital, and reevaluate our cultural heritage.

This, not a certain performativity, is presented in this talk as digital architecture today (which, surprisingly but consequently, did not start recently but 120 years ago).

BIO Since 2000 Ludger Hovestadt is Professor for Computer Aided Architectural Design at the ETH Zürich, Switzerland, and is directing a permanent research group of 16 PhD students. His interest is in artificial intelligence and not in computer graphics. He founded several companies in the fields of smart geometry, building intelligence, building information models and the internet of things. Since 2008 his focus shifted from applications to the principles of computing in architecture. In 2010 he cofounded the Laboratory for Applied Virtuality with Vera Bühlmann, which edits the applied virtuality book series (Birkhäuser, since 2010). He has published several books on architecture, computing, philosophy, and mathematics.