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Volume 18
Futures

The Great Turn

Edited by
Carine Dartiguepeyrou
Michel Saloff-Coste

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Chantal Ammi

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Foreword by May East

Expanding time horizons

Persian poet Rumi once said that there are 1,001 ways of kneeling and kissing the Earth. While there are 1,001 future scenarios arising from economists, population experts, futurists, environmentalists, social cyberneticists and climate scientists, we can synthesize these into two scenarios. Transition is going to happen, either we are going to design and implement it, or we are going to be victims of it. The discussion on how to design the transition should be at the core of every study about the future. This book provides a unique contribution to international debates by exploring the ethical frameworks, mindsets and values that should inform this transition.

The book is pioneering in uniting a constellation of “future thinkers” coming from the three most influential geopolitical regions – Europe, the United States and China – in shaping megatrends that will inform the evolution of humanity and the planet. As the name suggests, megatrends occur at large scale and unfold over extended periods of time. They are backed by verifiable data and involve a complex combination of factors within and between economic, social, political, technological and environmental systems.

To change the culture, we need to change who is included in the conversation. This book is unique in bringing a plurality of foresight interpretations from megatrend “connoisseurs”, who are authorities in prospecting potential bifurcations and ruptures which influence transitions in human civilizations and planetary health,

with implications for many over long timescales. These contributors are helping to foster a future-oriented and anticipatory culture, as well as increasing our understanding of uncertain and unfolding futures.

We create the context for what we imagine. Foresight efforts tend to move away from resolving problems of today to focus on the potential of tomorrow. Analysis of megatrends can help to anticipate long-term societal and environmental shifts that stretch across years, geographies and sectors. In *Futures*, the future is now. Enjoy stretching your time towards a multitude of possible horizons!

May EAST
Director of Cities Programme
UN House Scotland

Foreword by Patrick Scauftaire

What is the place of foresight within an institution such as the Université Catholique de Lille? And how does the realization of this work reflect this? To answer these questions, we must go back to the very creation of the university in 1875, specify its original positioning as an actor in the transitions and see how - based on what it is and how it is oriented towards the construction of the future world - it mobilizes an “on-board” or “on the way” foresight, which sheds light on the road, opens up questions and prevents satisfaction of agreed solutions.

Illustration of the social commitment of Christianity

The Université Catholique de Lille - La Catho - was created in 1875 by the Catholic Church and committed Christian entrepreneurs to be a kind of laboratory of Christian social thought, placing the human person at the center of its concerns and training responsible actors capable of combining professional skills and ethical requirements. This creation by actors of the economic world has, from the beginning, given La Catho an orientation towards concrete action, turned towards the future. This orientation is reflected in the deployment of research, teaching and care, as well as in its services to society in accordance with Christian social thought.

The aim of this program is to constantly innovate, experiment and allow each student to find their place. It is a matter of helping the student to reach a deep discernment on the rational, relational, spiritual, emotional and creative levels, allowing them to decide by themselves,

with full autonomy and responsibility, how they want to be in the world. In order to allow and foster this, the capacity for foresight is essential.

The place of foresight

Today, more than ever, it is important for universities to project themselves into the future in order to act *hic et nunc* and to answer the question: How is foresight mobilized? The approach of the Université Catholique de Lille is unique. It takes sides on the purpose of the foresight process that it undertakes. It is not a question of illuminating the future by trying to limit the field of complexity and uncertainty. It is not a question of trying to control one's destiny at the risk of confusing foresight with forecasting. It is not about defining a precise target where a strategic plan lands.

The foresight practiced at the Université Catholique de Lille is an “embedded” foresight. It is mobilized not to provide affirmations or answers, but to open up questioning, to challenge the *status quo* and the dominant ideas, to envisage disruptions, to offer a higher perspective. Above all, it allows us to give meaning to the initiatives that are being promoted and to be an object of mobilization, reflection and creativity.

An “embedded” foresight

Thus, foresight, as practiced at the Université Catholique de Lille, is not about identifying a form or a given future in the fog of complexity, but rather about participating in the design of this form where everything is possible. The objective is not to master our destiny, but rather to co-design a destiny for humanity. The questions of ethics, of

values, of the meaning to be given to this destiny are obviously an essential part of this approach.

Due to its co-elaborative character, “embedded” foresight is a guiding force that sets in motion actors that are mobilized in constructing a desirable future and in creating a shared destiny, and that contribute to the common good.

It is also a way to create spaces for action, experience and individual and collective reading, so that our students become reinventors and developers of themselves.

It is this same perspective of co-elaboration that is found in this book. Each of the authors brings a perspective that is situated and complementary to the work of others. Michel Saloff-Coste, Jean-Éric Aubert, Francis Jutand, Laurent Bontoux, Carine Dartiguepeyrou, Nathalie Popiolek, Valérie Kauffmann, Zhouying Jin, Herman Gyr, Lisa Friedman, Marc Luyckx Ghisi and Pierre Giorgini are to be thanked for their essential contribution to futures thinking. Michel Saloff-Coste and Carine Dartiguepeyrou should also be thanked for their direction of this work.

Patrick SCAUFLAIRE
President and Rector
Université Catholique de Lille
France

Author Biographies

Jean-Éric Aubert

An economist with a doctorate in applied mathematics, Jean-Eric Aubert has spent his entire career working for international organizations, primarily the OECD and the World Bank. He has worked in more than 50 countries at all levels of development, conducting public policy reviews in the fields of science, technology, industry and education. He is now an independent consultant for United Nations agencies and chairs the *Société française de prospective* and Fondation 2100. One of his major works is *Cultures et systèmes d'innovation* (Presses des Mines, 2017).

Laurent Bontoux

Laurent Bontoux is a senior policy foresight expert at the European Commission's Joint Research Centre. In his day-to-day life, he strives to promote long-term systemic thinking in European policy-making. To do this, he applies inclusive participatory techniques to engage all relevant stakeholders (Commission, industry, EU Member States, international institutions, civil society, academia, etc.). He has an engineering background in the agriculture and food industries (ENSIA, France) and an engineering background in environmental sciences (UC Berkeley, USA). He joined the European Commission in 1993, where he spent most of his career at the interface between science and policy on a number of issues, particularly in the environment-health field. After his PhD and before joining the Commission, he spent three years at Procter & Gamble in Brussels, assessing the environmental impact of cleaning products.

Carine Dartiguepeyrou

Carine Dartiguepeyrou wrote her thesis on European policy in the field of the information society. She conducts foresight missions for large groups and public institutions. She has been the General Secretary of Les Entretiens Albert-Kahn, the public innovation laboratory of the Hauts-de-Seine department since 2012. She co-founded the association L'Observatoire des valeurs, which aims to promote training and research on value-based analysis. She has written and edited a dozen books on foresight, including *Le futur est déjà là* (Le bord de l'eau, 2017), *Prospective d'un monde en mutation* (L'Harmattan 2010), *Les voies de la résilience* (L'Harmattan, 2012), *Le dirigeant du 3^{ème} millénaire* (Éditions d'Organisation, 2006), as well as on innovation and societal transition, such as *L'innovation publique, repères et retour d'expérience en territoire* (Presses des Mines, 2020), *Transition industrielle et organisations émergentes : question d'éthique* (collective with Pierre-Antoine Chardel, Presses des Mines, 2019), *Un autre monde est possible : Lost in transitions ?* (with Gilles Berhault, Éditions de l'Aube, 2018). She is a member of the LASCO IdeaLab at the Mines-Télécom Business School (guest researcher), a member of the scientific cooperative *Transition énergétique et sociétale* at Mines Nantes and a director of the *Institut des Futurs souhaitables*. She is an Associate Professor and Lecturer in the master's degree programs “Globalization and economic mutations”, “Foresight and strategic management” and “Ethics and sociology of international organizations” at ISIT Paris Panthéon-Assas Sorbonne.

May East

May East is a systems theorist applied in urbanism, regenerative designer and educator. A UNITAR Fellow and SDG Academy Advisory Member, she works internationally with intergovernmental agencies, private sector, local and regional governments in the creation of policy guidelines and activities for accelerating SDG implementation. Her practice includes gender-sensitive cities, nature-based approaches for shaping 20-minutes neighborhoods, eco-communities and transition towns. She is Director of Cities Programme at UN House Scotland. May was awarded Woman of the Decade in Sustainability and Leadership by Women Economic Forum 2019.

Lisa Friedman

Lisa Friedman, PhD, is a co-founder of the Enterprise Development Group. She works with leaders globally to set a clear innovation strategy and to build the practices and organization that enable their people to create this future together. She is a co-author of *The Dynamic Enterprise*, and has written other books and articles on innovation and leadership. Lisa has worked within sustainability for decades - hosting a business and sustainability speaker series at Stanford University; leading innovation and sustainability tours in Silicon Valley; and now works with companies, investors and startups to develop climate solutions.

Pierre Giorgini

An engineer and graduate of *Télécom École de management* (formerly INT Management - *Institut national des télécommunications*), he first taught telecommunications network architecture and telematics at the *Institut national des cadres des télécommunications* in

Villeneuve-d'Ascq, before becoming head of the IT and network department and director of studies. He then joined INT as a project manager, in charge of executive training for France Télécom, from 1982 to 1985, then as head of the telecommunications technology department, from 1987 to 1990. In 1990, he created the Enic (Ecole nouvelle des ingénieurs en communication) and directed it until 1994. At the same time, he directed the Laser-Enic (*Laboratoire d'architecture des systèmes pour l'enseignement réparti*). Director of Human Resources at France Telecom from 1994 to 1998, then Director of Skills Development, Pierre Giorgini was Deputy Director General of the Human Resources Department of the ANPE from 1999 to 2003. He was Deputy Director of France Télécom Research and Development, in charge of human resources, communication and management from 2003 to 2006. He then worked as a management consultant before taking over as CEO of the Isen group (*Institut supérieur de l'électronique et du numérique*) from 2007 to 2009. He is a Knight of the Legion of Honor, a Knight of the National Order of Merit and a Knight of the Palmes Académiques. He was President-Rector of the Université Catholique de Lille from 2012 to 2020. He is now a Research Associate at the ETHICS laboratory of the Université Catholique de Lille.

Herman Gyr

Herman Gyr, PhD, is a founding partner of the Enterprise Development Group. He works with enterprises living through periods of dramatic disruption - many of them underestimating the potential for achieving their highest aspirations during periods of significant change. He is the co-author of *The Dynamic Enterprise: Tools for Turning Chaos into Strategy and Strategy into Action* and is a

frequent speaker and workshop leader around the world on strategic thinking and business transformation in the digital and regenerative eras.

Zhouying Jin

Zhouying Jin, PhD, is a senior researcher and teacher at the Chinese Academy of Social Sciences (CASS), as well as the founder and former Director of the Center for Technology Innovation and Strategy Studies at CASS. In 2005, she was invited to participate in the first *World Think Tank Conference*, as one of the world's top 10 thinkers alongside 10 Nobel laureates.

Francis Jutand

Francis Jutand is Deputy Director General of the Institut Mines-Télécom (IMT). A teacher and researcher in the field of digital technology, he was, successively, Director of Télécom Bretagne, Scientific Director of the Orange Research Center, Director of the CNRS ICST department, and Scientific Director of the Institut Télécom, then of the ITM. He founded the Cap Digital company, chaired the digital scientific committee of the ANR and was a member of the *Conseil national du numérique*. He is a Knight of the Legion of Honor. A digital futurist, he directed the collective book *La métamorphose numérique, vers une société de la connaissance et de la coopération* and contributed to the books *Nouveaux mythes, nouveaux imaginaires pour un monde durable* (edited by Gilles Berhault and Carine Dartiguepeyrou, Editions Les petits matins, 2015), *La grande transition de l'humanité* (edited by Jean-Eric Aubert, Christine Afriat and Jacques Theys) and *Un autre monde est possible : Lost in transitions ?* (edited by Gilles Berhault and Carine Dartiguepeyrou,

Editions de l'Aube, 2018). His current work focuses on the digital imaginary, corporate transformations in the information age and the design of human evolution.

Valérie Kauffmann

After graduating in architecture, Valérie Kauffmann continued her studies with the Certificate of Higher Landscape Studies (CESP) at the Ecole nationale supérieure du paysage de Versailles. She worked as an architect and then as a landscape architect in various design offices. She joined the Council of Architecture, Urbanism and Environment of Essonne in 1999, was appointed Deputy Director in 2009 and then Director in 2018. Convinced of the relevance of a systemic entry through landscape to address issues related to the development of this territory of metropolitan fringes, she develops the landscape pole. In particular, she is involved in the agri-urban projects present in the department by investigating the link between the city and agriculture, and their complementarities in space and use. She participates in the steering committee of the PSDR (Pour et sur le développement régional) research, Agrige (Archipels agriurbains, gouvernances et résistances), supported by the Île-de-France region, with INRA, AgroParisTech, LAREP, Ecole nationale supérieure du paysage de Versailles and the Université Paris Ouest La Défense. As a member of the Paysages de l'après-pétrole (Post-oil landscapes) collective, she contributes to reflections on the forward-looking questions of land use planning and landscape transformation related to the evolution of agriculture and food issues. Since 2007, in partnership with the direction of the environmental department, she has integrated the notion of biodiversity and ecological continuity as essential constituent elements for urban and landscape

considerations. The rise in importance of this approach to biodiversity in relation to ecological issues has led her to develop this type of approach for communities and to participate in the coordination of federal and regional networks of CAUEs on this issue. She participates in the steering of the call for expressions of interest carried out by the Fédération nationale des CAUE, the French Ministry of Ecology and the Region de France “Green and blue network: From regional planning to the construction of a territorial strategy”. In this context, she is co-leading two successive action research projects for the CAUEs of Île-de-France: “Biodiversity as a common good” with Perrine Michon, lecturer in geography at the Université Paris-Est-Créteil, and “Biodiversity, a question of values” with Carine Dartiguepeyrou, political scientist and futurist.

Marc Luyckx Ghisi

Marc Luyckx Ghisi has had three lives. He first studied mathematics, philosophy and theology, and was a Catholic priest for 12 years until his marriage. He was a member of the European Commission's Forward Studies Unit, created by Jacques Delors, for 10 years. He was also a member of the Group of International Advisors in Auroville, South India, as well as the Dean of the Cotrugli Business School in Zagreb and Belgrade. Now in his third life, he is an author and international speaker.

Nathalie Popiolek

Nathalie Popiolek is qualified to direct research (HDR) in economics and teaches at the Université Paris Dauphine-PSL as well as at the Université Paris-Saclay, where she was Vice President of the Academic Council. She is currently President of Adœquate Consulting, a company

specializing in innovation management, multi-criteria decision-making support and foresight analysis. Having worked for 20 years at the French Atomic Energy Commission (CEA), she is a specialist in technological innovation, particularly in the field of low-carbon energy. Her work has led to numerous publications in peer-reviewed journals. Very recently, she co-authored a book with Jean-Alain Héraud on the organization and valorization of research, published by Peter-Lang, and co-edited a volume in the series “Histoires de sciences et entreprises”, published by Presses des Mines, on the impact of research and innovation. She is also the author of two methodological guides: *Guide du choix d'investissement* (Eyrolles, 2006) and *Guide de prospective technologique* (EDP Sciences, 2015).

Michel Saloff-Coste

Michel Saloff-Coste is Director of Foresight at the Université Catholique de Lille. He has long been invested in the notion of the future and the resulting transformation of organizations. He actively participated in the 2100 project, “The Story of the Next Century”, with Thierry Gaudin at the Ministry of Research in the 1980s, then joined Jean-Christian Fauvet in management research at Bossard Consulting in the 1990s, before writing several major books, including *Management du Troisième Millénaire* (Tredaniel, 1991). His objective is to raise awareness among a wide audience of the major technological, economic, social and ecological transformations taking place today, so that everyone can participate positively in sustainable development and in the civilization of the future. After developing his own firm, MSC & Associés, between 1995 and 2008, he joined In Principo between 2010 and 2020 to develop research and

international relations. In 2014, he became Scientific Director of the *Institut International de Prospective sur les Ecosystèmes Innovants* at the Université Catholique de Lille and Université de Lyon. Alongside this, he was the International Development Associate of the Copenhagen Institute for Future Studies between 2015 and 2020. He is the author of a dozen of books on foresight. In recent years, he has conducted a major study on the 17 most important innovative ecosystems on the planet, analyzing the scientific, artistic, cultural and philosophical developments that are taking place. One of his published works is *Innovative Ecosystems: the Future of Civilizations and the Civilization of the Future* (ISTE Ltd and Wiley, 2022).

Patrick Scaufaire

An engineer by training, Patrick Scaufaire graduated from the École Polytechnique (1984) and the École des Mines de Paris (1986). He also holds a master's degree in theology and religious sciences from the Institut Catholique de Paris (2013) and an executive MBA from HEC (2016). He started his career with the Solvay group in Belgium in 1986, then became a process engineer in Brazil in 1989. In 1995, he became Production Manager, a position he held until 2001. That year he joined BP Chemicals, where he managed research and technology activities, becoming Research and Technology Manager for Europe. From 2005 and for 10 years, he dedicated himself to the Fondation des Apprentis d'Auteuil, as Deputy General Manager from 2006. In 2015, he took over the management of the Lille site of Icam, one of the Université Catholique's establishments, which offers a generalist engineering education characterized by personalized support for the trajectory of each student. As President-Rector of the Université Catholique de Lille since September 2020, he intends to consolidate the dynamic

that makes this university “an opportunity at the heart of transitions”, to offer students a “true life experience” and to extend the “caring” dimension specific to the health/social sector of the federation, to all its activities. Since 2002, he has also been a permanent deacon of the Catholic Church.