1. Introduction to *The Rise of Algorithmic Society and the Strategic Role of Arts and Culture*

This is a time of narratives and storytelling. This is a time for surfing and multitasking. In the era of complexity, women and men look for simple solutions to increasingly complex issues. Decision processes characterising the fourth industrial revolution (Schwab, 2016) have changed thanks to the application of artificial intelligence (AI), robots, machine learning (ML), automated work and the Internet of Things (IoT) (Höller et al., 2014; Ford, 2015; Kaplan, 2016; Russel and Norvig, 2016; Acemoglu and Restrepo, 2018). In this context, metrics and rankings are produced to justify or delegate more objective final decisions based on quantitative rather than qualitative indicators which are more easily accepted in a period of scarce resources, and which also underlie the exercise of soft power that is not always recognised (Espeland and Sauder, 2007; Noor, 2014; Espeland, 2015; Domingos, 2015). On the other hand, qualitative tools such as narratives are established as scientific methods which were once the prerogative of the humanities and are now progressively used in many branches of economics, animating the debate between algorithms and narratives.

Starting from the dispute between culturalism and computationalism on the culture of education (Bruner, 1996), moving toward the theme of uncertainty, ‘the shadow of the future’ (Bernardi et al., 2019, p. 4), and studies on fertility and the narratives of the future (Vignoli et al., 2020a, 2020b), up to the analysis of behavioural economics and economic crises, narratives have increasingly found validation in the literature. In this regard, the winner of the Nobel Prize in Economics, Thaler, writes: ‘In the beginning there were stories. People think in stories, or at least I do it. My research in the field now known as behavioral economics started from real life stories’ (Thaler, 2018, p. 1265).
Moreover, in the authoritative journal *American Economic Review*, Shiller (2017) writes:

This address considers the epidemiology of narratives relevant to economic fluctuations … Stories motivate and connect activities to deeply felt value. Narratives ‘go viral’ and spread even worldwide with economic impact. The 1920–1921 depression, the great depression of the 1930s, the so-called great recession 2007–2009 and the contentious political economic situation of today are considered as the result of the popular narratives of their respective time. (Shiller, 2017, p. 2)

Many things are changing, not only in scientific research but also, and perhaps above all, in society. The effort of analytical research on which the very essence of the concept of experience was based is today delegitimitised and replaced by the need for speed, by the urgency of an immediate response, moving towards a progressive zeroing of the space–time dimension due to the applications of the new information and communication technologies (ICTs).

The denial of a reality which is increasingly difficult to decode and face leads to alienation and evasion through the game that replaces the effort and commitment with fun and pleasure. This leads to building other worlds and multiple truths. The notion of true or false fades, as does the system of rules and codes that helped distinguish between real life and imagination. Concepts such as virtual reality and augmented reality, coined for the first time in 2010 by former Google chief executive officer Eric Schmidt, are part of the daily life of many digital natives. In many places, we are starting to discuss the technological revolution which is becoming a mental revolution, generating a real Darwinian mutation of the existential human condition. The living and working environment is incorporated into a whole consisting of hardly distinguishable parts that involve both the physical and the virtual world’s experiences represented by the so-called ‘isosphere’ (Floridi, 2014), where the fourth industrial revolution and a new ‘humanology’ develop. In *Homo Deus*, the Israeli historian Harari (2016) discusses the dystopian relationship between human and machine, and revives the debate on humanology. He writes: ‘It is at the same time, the ecology of the humans and the anthropology of the machines and the study of the mutual redistribution of their functions’ (Harari, 2016).

This book contributes to the debate through a multidisciplinary and multigenerational approach, telling about the rise of the algorithmic society (a narrative of the past), and the role that culture (a narrative
of the future) could play in the digital challenge. It combines the approaches of the economics of culture and creativity with those of the regional sciences, which are sufficiently studied in the literature, through a twofold objective:

1. Providing a first summary framework of the digital transformation from both an economic and social perspective as a starting point for analytical reasoning.
2. Identifying useful elements in order to build a new research agenda aimed at rethinking and/or reformulating new models of culture-driven economic development and the related policies of culture conservation and enhancement, being aware of the many limitations that this attempt may imply.

Hence, culture is both a memory of the past, settled in the cultural heritage, in the communities and the territories, and at the same time a driver for analysing the future of the economy and society. In this regard, I ask the following main questions: What is artificial intelligence and what characteristics does this innovation have? What do we mean by the algorithmic society, and what economic and social transformations has it generated? How does the relationship between economy, society and culture change with the advent of new technologies, and what new models of culture and technology-driven development can be outlined?

The issue is complex, and to address it I have chosen to integrate the narrative approach with one borrowed from open innovation studies (Lester and Piore, 2004). I discussed it in formal and informal settings with colleagues, students and ‘20th century elites’, experts in different disciplines (scientific and humanistic sectors, as well as legal, political, economic and social sciences), so as to build an overview of this transformation.

I therefore began to draw up a possible research agenda starting from what was written by Stewart Brand (1974), one of the fathers of the technological revolution as well as the inventor of the term ‘personal computer’, who underlines how ‘Lots of people try and change human nature but it’s a real waste of time. You can’t change human nature, but you can change tools, you can change techniques. And that way you can change civilization’ (Brand, 1974). A brilliant intuition, also debated by the famous American sociologist Sherry Turkle (1984) in her book *The Second Self*, is that technology is a catalyst capable of changing not only what we do, but also ‘how we think’.
After this introduction, the book develops in the following way. After broadly discussing the meaning of the artificial intelligence (AI) ecosystem, Chapter 2 retraces the evolution of the different definitions of AI, focusing on those of machine learning (ML), deep learning and big data, and the algorithm bias issue. Then, it discusses the paradigmatic scope of innovation by identifying ten particular features. Chapter 3 retraces the main moments of the rise of the algorithmic society, the places from which it was generated, the actors and the most representative innovations. It then examines the main transformations from a social, economic and cultural point of view. It considers the changes in the attribution of value system, the changes in knowledge dissemination processes and knowledge legitimation, then those in businesses, products, innovative processes, work, and even in the new forms of the so-called ‘media document capitalism’. This is a kind of capitalism in which the documents registered online by users/prosumers become commodities to exchange on the Web. Chapter 4, the last chapter, discusses the technological transformation of culture-driven development models and the changes brought about by the rise of the algorithmic society, highlighting opportunities and threats, for drawing up a future research agenda for the enhancement and protection policies of cultural heritage and territories.

I have thus identified the birth of a new phase in the relationship between culture, economy and society that I have called the ‘enhancement and technological preservation of culture’. In this new phase, I hope the enhancement and protection of the ‘values of diversity’ (whether artistic, human, cultural or environmental) and the role of the ‘territories’ – whether anchors of reality or territories of the mind – will be harbingers of new models of sustainable development based on culture.

What this book aims to do is to outline the main moments of digital transformations following a multidisciplinary approach to explain the aspects related to culture and creativity, the area of specialisation that we know best.

References to philosophy, psychology, sociology, information technology, and so on, are useful food for thought for reasoning. The information is collected sometimes according to the ‘inverted pyramid’ approach by surfing the sea of Web knowledge, sometimes making use, as far as possible, of the advice of experts from the various disciplines, aware of the many limitations that our reflections may present.

At this point I would like to anticipate one of my sentences that summarises well the leitmotif of this work: ‘We should not forget that what
most distinguishes humans from machines is imagination, and as such, it should be nourished and protected’ (see p. 90).

What I am therefore going to tell is a story that begins as a ‘narrative of the past’, since the algorithms and the AI on which it is based have a predictive nature and tell us about the past to predict the future, but that ends with a ‘narrative of the future’ because I end by discussing imagination and how culture and creativity allow us to face the challenges of the digital revolution. It is a story that is born locally, and suddenly becomes a global success phenomenon, but which finds its useful and necessary complement in the physical and mental territories.

NOTES

1. This is the English version, updated and integrated, of the Italian book *L’ascesa della società algoritmica e il ruolo strategico della cultura*, published by FrancoAngeli in 2021 and written in 2020 during the period of the Covid-19 pandemic. Most of the examples reported in the book refer to the Italian experience, especially those connected to art and culture.
2. Having decided to privilege the applications of AI connected to the economy of culture and creativity and local development, I will not go deeper into those connected to robotics (Ford, 2015) and to the IoT (Höller et al., 2014), on which a vast literature already exists, especially in the field of economics and innovation management.
3. The terms ‘mutation’, ‘transformation’, ‘transition’ and ‘technological revolution’ are often used synonymously in this book. These indicate, under different aspects and nuances, the changes that the introduction of digital technologies and AI have generated in what we call an algorithmic society.