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PIER LUIGI GENTILI

THE WINGED SCIENCE TO FACE BIOETHICAL COMPLEXITY

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Nota dell'autore all'immagine di copertina:
a Good Harmony between Science (on the right) and Christian Religion (on the left)
is Crucial for Untangling Bio-ethical Complexity.

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To God, my parents, family,
and anyone interested in the dialogue between science and religion.

PREFACE

Scope, Genesis and Purposes

Technology is developing at a vertiginous pace. The scientific method that reached its mature formulation in the seventeenth century A.D. through great minds, such as Galileo Galilei and Isaac Newton, has accelerated technological development enormously. Scientific enquiry allows humanity to be acquainted with natural laws as never before. The scientific knowledge of natural phenomena favours the design and implementation of methods and tools to solve practical problems and improve the psychophysical well-being of humans.

Technological innovations allow humans to exploit natural forces and elements. In the last decades, humanity has devised methods and tools to manipulate materials at the nanometric and molecular scales (the so-called nanotechnologies), engineer life (the so-called biotechnologies), and develop Artificial Intelligence that can outperform human intelligence, at least in specific tasks. Cutting-edge technologies reshape human lives as never before, and human productive activities are so invasive that they affect the Earth locally and globally. Now more than ever, the future of humanity and life on Earth is in our hands, minds, and souls. A spontaneous question arises: "Is it always fair and safe to perform whatever technology allows us to do?"

It is challenging to answer this question. Current technologies allow humans to perturb the fragile stability of systems as complex as every living being, ecosystems, climate, societies, and the delicate psychophysical well-being of every human.

Most of these Complex Systems are "alive" masterpieces which have never been designed nor implemented from scratch by any human being.

Complexity Science explains that we encounter concrete and intrinsic limitations in describing and predicting the behaviour of Complex Systems. Advanced technologies allow us to noticeably intervene in Complex Systems, perturb and transform them, and interfere in their evolution, but we don't know the consequences of our acts. So, who helps us decide if it is correct to use those particular technologies? These technologies are double-edged swords: they are powerful but dangerous simultaneously, depending on which effect we ponder.

To find an answer to the aforementioned thorny question, I merged my cultural and spiritual roots, i.e., Complexity Science and my Christian faith.

Complexity Science scrutinizes Complex Systems through an interdisciplinary dialogue among well-distinct disciplines to pinpoint the features shared by all the Complex Systems. It proposes adequate methods for describing Complex Systems. In its efforts, Complexity Science outlines the limitations of scientific enquiry. Science cannot formulate solutions for any problem. More specifically, science alone is not enough to put forward acceptable solutions to bioethical issues. Other forms of knowledge are required. In this book, I propose the Christian religion as the ultimate source of Wisdom.

The Christian faith has its roots in the Holy Bible and Jesus' life. So, I reread the Bible to find answers to my leading question: "Is it always fair and safe to perform whatever technology allows us to do?".

Guided by the same intent, I also perused the fabulous book *The Poem of the Man-God* (also known as *The Gospel as revealed to me*), written in the middle of World War II by Maria Valtorta. I know that many Catholic dislike Valtorta's Gospel.

Perhaps, they have never read it yet, but they have an *a priori* negative attitude towards it. The repulsion towards Valtorta's manuscript is because the Catholic Church's Holy Office placed it on the Index of Forbidden Books in 1960. Valtorta's Gospel was banned because of its claim to supernatural guidance. However, I must declare that its reading helped me to know and understand Jesus, Mary, and his apostles much more in-depth. Valtorta's Gospel has undoubtedly strengthened my Christian faith and constantly helped me face the events of my life. Reading the Bible and Valtorta's Gospel allowed me to find answers to my leading question applied to many cutting-edge technologies that interfere with the spontaneous evolution of systems as complex as humans, their societies, and natural ecosystems. Therefore, I have decided to write this book. It is based on *my sincere personal point of view*. I hope some readers might find some helpful thoughts, pieces of advice, and topics of reflection.

The structure of the book is synthetically described below.

Chapter 1 presents Complexity Science that investigates the ontology and the epistemology of Complex Systems. Since all the bio-ethical issues regard Complex Systems, they generate what we might call "Bio-ethical Complexity". Bio-ethical Complexity cannot be tackled solely by science. It requires an interdisciplinary dialogue involving scientists, philosophers, jurists, theologians, and artists.

Chapter 2 looks for the correct route to untangle Bio-ethical Complexity. I immediately run into a crossroads: it is necessary to decide whether we believe in God and whether we are ready to steer this terrestrial life in loving God. We inhabit a universe full of marvels and ruled by rational laws. How did everything have an origin? I try to convince the reader that the most reasonable choice is to believe in God. My driving motto is: *Intelligo ut credam*. More specifically, I claim the uniqueness of the Christian religion. Hence, the book's purpose is to

demonstrate the validity of the motto *Credo, ut intelligam*: If we believe and live the Christian message, it is possible to untangle "Bio-ethical Complexity".

Chapter 3 describes the Wisdom that sprouts from the Christian faith. I advocate that if we live equipped with True Wisdom, we are provided with wings that allow us to take off and make the experience of a "Fifth-Dimension" or "Extra-Dimension" beyond the three spatial dimensions plus the one temporal dimension that everybody lives in this earthly existence. The "Extra-dimension" is spatiotemporal. It refers to a space beyond this universe and an eternal time with no beginning and end. Living in five dimensions makes us feel free. We achieve freedom from any temporary goods and any fleeting worldly desire. If scientists merge their rational knowledge with their love for God, they can live in five dimensions. An extraordinary "Winged Science" emerges.

Such "Winged Science" is powerful because it is valuable to untangle Bio-ethical Complexity, as demonstrated in *chapter 4*. Based on the Biblical Wisdom, also reflected in the Valtorta's Gospel, I formulate four axioms (plus one corollary) that result be effective in dealing with:

(a) the many forms of suffering, their meaning, and the right attitude to assume in front of them;
(b) the death, suicide and euthanasia, and therapeutic obstinacy;
(c) the many technologies that intervene in the birth of a new human life;
(d) transhumanism and artificial intelligence;
(e) the technologies that negatively affect our planet Earth.

Optimistically speaking, the four axioms plus one corollary I propose will also be meaningful for facing all the bio-ethical issues that will arise in the next future.

Finally, *chapter 5* presents some of the fundamental ethical and bioethical theories proposed in philosophy. Such theories are compared with my approach to bioethics. Then, some conclusive

brush strokes for outlining the figure of the "Winged Philo-Physicists" are drawn. Philo-physicists are scientists guided by wonder, curiosity, and the will to improve human psychophysical well-being. They scrutinize Complex Systems equipped with love towards the Creator, religious respect, and devotion. "Winged Philo-physicists" embrace Godly Wisdom and become models to mimic for everyone because they permanently live in five dimensions. Philo-Physicists, truly equipped with metaphorical wings, will always find a path leading to the Truth.

Readership

This book is particularly apt for those who have asked themselves at least once in their lives the question that induced me to write this book: "Is it always fair and safe to do what technology allows us to carry out?". Therefore, this book can interest bioethicists, scientists, and anyone else whose attention is drawn by the highly debated consequences of using the most recent technologies. All those scholars who dedicate their research to the investigation of Complex Systems might find this book worth reading because it shows the critical role Complexity Science might play in facing bioethical issues. When Complex Systems are analyzed from an epistemological point of view, the limitations in the human capacity to predict their behaviour emerge. Complexity Science must be supported by other forms of knowledge to untangle Bio-ethical Complexity. I have recourse to the Wisdom of the Christian message in this book. I outline the features of an inspired "Winged Science" that could transform the attitude of scientists. I am convinced that a "Winged Science" would positively impact our societies and our planet Earth.

Those interested in a proficuous dialogue between science and religion might find this book worth reading, especially if they are Christian.

Limitations and Apologies

This book is not intended to be a survey on bio-ethics. It instead tells a truly personal intellectual and spiritual itinerary I made for finding convincing and assuring answers to my concerns and doubts about the spreading of certain cutting-edge technologies that are transforming our lives.

As already said above, I trusted in my direct experience in Complexity Science and my Christian faith along my intimate intellectual and spiritual path. The final output of this trip is the outline of a "Winged Science" that promises to be effective in facing any bio-ethical issue.

The reader should not expect that I directly deal with all the possible bio-ethical issues. I face some of them, which have particularly drawn my attention. However, I hope the approach and axioms I propose are valuable to tackle any current and future bioethical dispute.

Whoever believes that the axioms I propose are not satisfactory to solving specific bioethical issues and wants to suggest improvements or constructive discussions, I invite them to contact me.

I.

INTRODUCTION TO BIOETHICAL COMPLEXITY

The humble and wise scientist
does not expect or hope that science can do everything […]
He does not expect science
to furnish a code of morals or a basis for aesthetics…
Warren Weaver (1894-1978)

Technology is a useful servant but a dangerous master.
Christian Lous Lange (1869-1938)

I.1 Introduction

Our life is mysterious.

Each of us, during our terrestrial existence, raises basic questions (see **Figure 1.1**) such as:

"Who am I?".

"Where do I come from?".

"Where am I going?".

"Why do I live?".

"Which is the meaning of my life and that of my neighbours?".

"Why does physical and psychical pain exist?".

Furthermore, if we observe what surrounds us, the variety of life forms, and the vastness of the universe, we spontaneously interrogate ourselves: "How did the universe originate?", "Is there God?", and so on.

All these questions regard ourselves, the meaning of our lives, and the origin of everything that surrounds us.

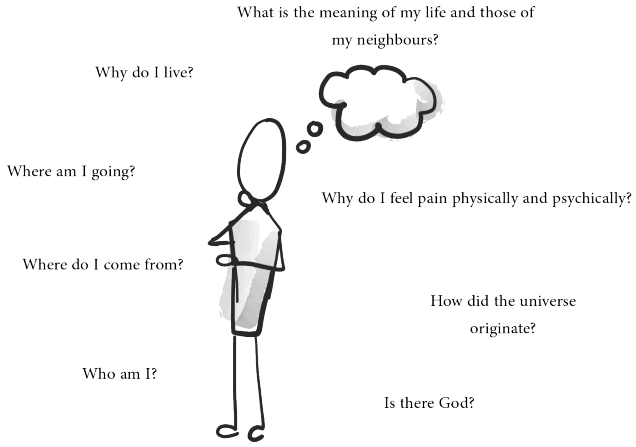

Figure 1.1 - The basic questions we pose ourselves.

Humanity has formulated distinct forms of knowledge to answer these fundamental questions throughout history. They are the mythological, religious, philosophical, scientific, and technological forms of knowledge. Besides them, the arts, such as painting, music, dance, sculpture, literature, theatre, architecture, and films, express some ideas and feelings. They constitute alternative forms of knowledge and its manifestation (see **Figure 1.2**).

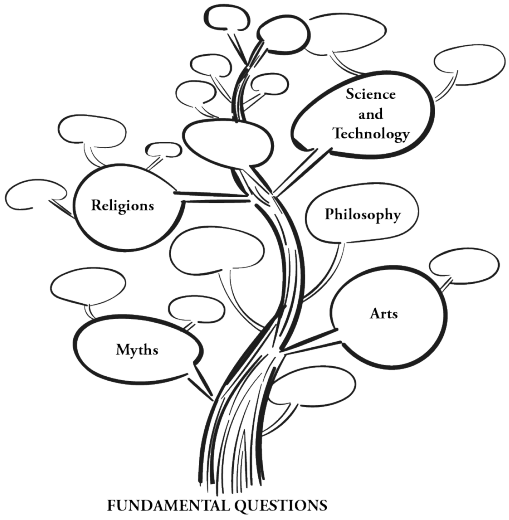

Figure 1.2 - The different forms of knowledge.

Science is among the youngest forms of knowledge. Its formulation is based on the scientific method. The scientific method is usually attributed to Galileo Galilei and Isaac Newton, who systematically applied it to formulate the fundamental laws of Classical Mechanics in the seventeenth century A.D.

However, we know that the scientific method's formulation was not a sudden discovery but a slow and lengthy process. A crucial contribution came from philosophy born in Greece in the VI century B.C. (Gentili, 2018).

The scientific method relies on three fundamental pillars (see **Figure 1.3**):

1. The experiments are necessary to collect data and information about natural phenomena and promote scientific knowledge. It is through experiments that scientists ask Nature questions.
2. Mathematics and geometry are the essential languages by which scientists express their knowledge. These languages are universal.
3. The rigorous mathematical logic rules scientific reasoning.

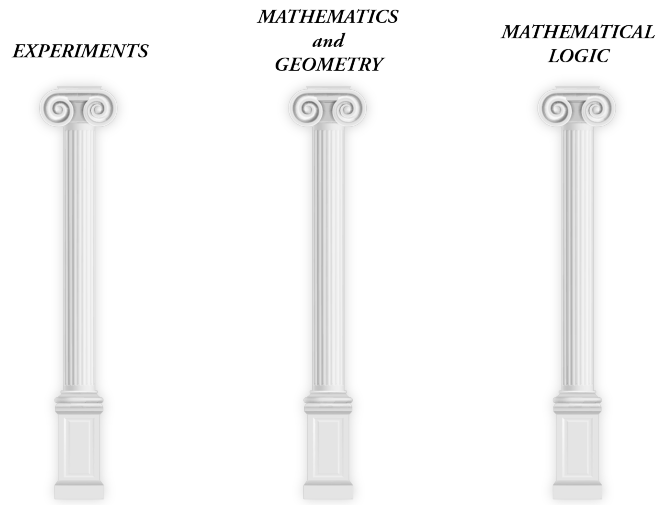

Figure 1.3 - The three fundamental pillars of the scientific method.

The scientific edifice (see **Figure 1.4**) consists of axioms and postulates formulated mainly by inductive reasoning. From the axioms and postulates, the theorems and propositions are deduced. If the theorems and rules allow us to predict our experiments' outcomes, the axioms and postulates are implicitly validated. On the other hand, if the theorems and rules do not allow to predict the natural phenomena, then the axioms and postulates must be perfected. In four hundred years since its mature formulation, the scientific method has allowed the collection of a vast amount of information, the formulation of outstanding knowledge about natural phenomena, and breathtaking technological development. Technology relieves humans from their manual and mental labour. Its ultimate goal is to improve the psychophysical well-being of humans.

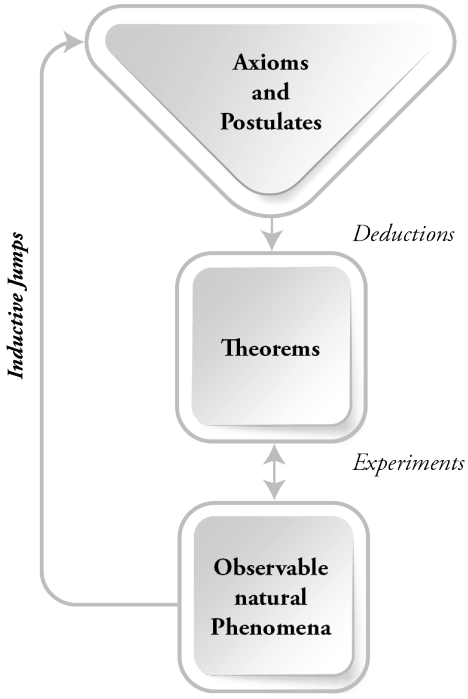

Figure 1.4 - The edifice of scientific knowledge.