

Preface

Despite possible misunderstanding which I assure readers I have not created, the reader might think, from its title that this book is a piece of research about the Philosophy of Statistics, a new brick into the great “Chinese wall” of the unending philosophical debates about statistics. But this is not the case. Taking into account that today philosophers still do not agree on the basic notions of “mind,” “cause,” “evidence,” “experience,” or “truth,” it would be a waste of time to devote our interests to the fuzzy and even impolite debates about *what things are*. Nevertheless, we need to talk, solve, and think about several domains that affect our lives. For example, why do things happen? Our minds are just used to accepting any possible result: Our brains predict possible outcomes of several sensorimotor actions at the same time our minds are trying to discover some kind of order in our world (internal, external, cultural, real, or invented, does not matter). For all these reasons, this book tries to deal with several connected questions: How do our minds operate with quantities? What are the most natural ways to deal with information? How can several epistemological models efficiently satisfy the numerical analysis of reality? Why are certain events only feasibly understandable through the analysis of big numbers? Some of these questions led us to the naturalization of statistics, a project to which I have contributed scarcely but with high intensity in this book. We will also learn how classic philosophical debates, like those related to causality or determinism, have been updated and continued by modern statistical thinkers or practitioners. The debate about the best and parsimonious methods is still present. During the twenty-first century, we are ceasing to do things with words and we are starting to explain concepts more and more with numbers. The last remnants of qualitative analysis are being colonized by numerical methods. Thus, sociologists, psychologists, philosophers, and archeologists, among other field experts, are entering into a new computational, statistical, and experimental era. For all the previous reasons, this cannot be understood as a book on Philosophy or History of Statistics, although part of the purposes of this book does belong in these fields. The overspecialization leads very frequently to experts unable to see the forest for the trees, and then, their scholarship becomes an academical product, empty

scholasticism. When we discuss about the numerical approach to the reality, we are not acting as mystical Neopythagoreans; instead, we are analyzing how the numerization process is created and how the rules work with these numbers. We are talking about a natural property of the cognitive systems (to deal with quantities) that has been heavily improved with symbolic tools. After centuries of intense scientific revolution, it is lamentable that rather than innovating we are following the same paths that made our ancestors venture their lives into the African savannah: to understand the world and survive adding “best” or more accurate meanings to our lives. The greatness and, at the same time, the main defect of this book are to explain briefly that while we are entering into a new paradigm of (numerical) research at the same time, we are not leading the need to solve our practical/conceptual necessities. Big data, deep mining, big mechanisms, e-Science, or computational simulations are only possible thanks to a new era of hardware and mindware: Statistics are the backbone of this revolution. Numbers now trace the path of the arrow of human evolution. Let me introduce you to some facts, debates, ideas, and also doubts about how we can understand our world. This is the true meaning of this book.

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