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A NEW THEORY
OF RISK AND RATING

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PREFACE

The elegance of frugality and risk

From a theoretical standpoint, risk is confronted in the very same way in which human interests and activities deploy and manifest themselves at given levels of self-organization. In fact, there cannot exist an objectivistic and deterministic theory neither of these interests nor of the corresponding risks. Risk exists solely in the conscience of individuals and may only be referred to an agent, to an actor and his conation, to the history of his subjectivity and to the depth of his sub-conscience. However, there exist conditions of risk, or aggregates of tangible and intangible factors which determine conditions of low or high risk gradients. Risk, therefore, is a problem of subjective perception, of a conscious flux, mixed with conditions of structure - in the sense of Levi Strauss - which can alter the perception of risk as well as the possibility that the very existence of risk may appear either diluted or increasingly consistent.

This book speaks in a clear and concise manner of a remedy which is essential in times and conditions characterized by a high perception of risk and uncertainty.

This book launches a message. If we want to avoid aggregations and repetitions of new risks, our future must be a future of frugality. Frugality is essential simplicity, both in organizations as well as in patterns of behavior, thanks to which it is possible to replicate conditions of low complexity and, consequently, conditions of low systemic fragility. It is like the truth: it is reached only via subtraction, not by addition. Even though today this is

a scientifically established fact it is not sufficient to modify our will or behavior. An eloquent example is that of those who today govern global financial circles and who continue to practice the very same actions which have created conditions of high risk.

Risk doesn't exist in nature because it is like good or evil: it exists exclusively thanks to human behavior and to his arbitration in the world of technology. Because of this, all that which leads to higher complexity and entropy increases the intensity and emergence of risk.

In its courageous treatment of risk management, the book addresses one of the taboos of the contemporary consulting rhetoric, demonstrating how the techniques of risk management are responsible of an increase, not reduction, of risk itself. A nice lesson in the direction of today's illuminism of omnipotent managerial reification, which too often paralyzes our freedom and creativity. The book illustrates how behind this omnipotence hides a source of profound fragility which explains crises and dissolutions of societies which plunge into disorder. In effect, the problem of social sciences is to explain the existence of order. Conflict is not a problem. The problem is to understand how order can come about and replicate itself. There exists a multitude of books about conflicts but very few on the issue of social order, such as for example those by Emile Durkheim. At this point, complexity enters the scene. An entity which cannot evolve beyond certain limits without provoking the collapse of systems.

What makes this book interesting is its exceptional logical coherence. The complexity management techniques which the book illustrates are meant to counter the destructive forces of risk. The book is therefore an instrument for preserving the replicability, reproducibility and performance of systems in conditions of turbulence, multiple converging stresses and aggregation of numerous variables which can escape our control. A simpler

remedy means efficient control. In its simplicity frugality is, however, challenging from a conceptual standpoint. For this very reason, the book can help defend ourselves from risk thanks to sophisticated but at the same time simple techniques. Simplicity is the essence of elegance and sophistication.

We need to return to decency and ethics in social and managerial behavior. Therefore, elegance of the mind is essential more than ever. It can contribute greatly to rendering the personal and social life of the actors of the human comedy more evolved and self-reflexive. Well beyond these years of global economic depression.

Giulio Sapelli

1. INTRODUCTION

Probability is the most important concept in modern science especially as nobody has the slightest notion of what it means.

Bertrand Russell.

To predict the future has always been a dream of all peoples. Clearly, predicting the future is impossible. The reason lies in the non-deterministic character of matter which is reflected in the dynamics and the patterns of Nature. Because of this very fact, the future is permanently under construction and, therefore, the prediction of the future is out of the question.

There is an overwhelming amount of evidence in support of this fact. If the future were predictable we would have different laws of physics and life would probably not even exist. But humans are a stubborn species. Man neglects hard facts and scientific evidence. The only thing we learn from history is that we don't learn from history. It is because of the mentioned laws of physics that each single event in history is unique and unrepeatable. Each conflict or crisis, as well as the conditions that have led to it, are unique. Therefore, one really *cannot* learn from history. Looking at series of events and then computing averages or standard deviations is, from a predictive perspective, an irrelevant exercise. Take for example the two global conflicts of the twentieth century. They were of course totally different. However, it is also true from a statistical standpoint that in the past century there has been on average one world war every fifty years. A meaningless and useless statement of the obvious. We of course know that in

reality the wars had a much shorter temporal separation, not to mention a strong correlation. But regardless of the socio-economical conditions that have sparked both conflicts can anyone state based on this statistic that in the twenty first century there will also be approximately two world wars? The nature of our increasingly turbulent times makes it of course impossible to attempt any statements in that sense. However, the unhealthy desire to predict the future has pushed mathematicians to devise utterly unnatural methods which, in virtue of prolonged and often distorted use, are now deeply rooted in the minds and practices in virtually all branches of science. What cannot be achieved should not be pursued. Our efforts should be focused on real problems that admit real solutions.

One attempt to understand Nature is via statistics, by searching patterns in data and then trying to extrapolate future events based on such patterns. Unfortunately, this simplistic attempt is doomed for failure because the predictive power of statistics is close to zero. Statistical models are not only a poor caricature of reality – they also do a great job of distorting it as they generate dangerous placebo effects. Take the well know case of two hunters hunting for rabbits. They spot a rabbit and both take a shot. One hunter's bullet goes slightly to the left of the rabbit, while the second one misses by sending his bullet slightly to the right. Statistically speaking the rabbit is dead, in reality he is alive. This simple example looks like a joke. In reality, statistical models used by economists, analysts, engineers as well as doctors all suffer the same fundamental flaw – you cannot take a series of apparently similar events and make the assumption that they all belong to the same class or set and then throw some regression model on top in order to derive a predictive law. In doing this, the model will inevitably introduce a warping effect that will distort your conclusions and impact adversely your actions. Consider for ex-