

Introduction

This book was conceived and developed within, and with the support of, the Erasmus-KA2 project *RECOGNISE-Legal Reasoning and Cognitive Science*, (<https://www.recognise.academy/>), carried out by a partnership including the University of Palermo (Coordinator), the University of Bologna, the University of Ljubljana, Maastricht University, the University of Alicante, and the Jagiellonian University in Krakow.

As suggested by its name, the project concerned the contributions that cognitive science—broadly understood as the new waves of empirical or empirically informed inquiries into the mind (both natural and artificial minds) flourished over the last half century—may afford to the understanding, and hopefully to the improvement, of legal reasoning and, more generally, of legal institutions.

Since its inception in the 1950s, cognitive science has developed rapidly and has profoundly impacted many fields of knowledge. So rapid and so profound to be called a “revolution”: the “cognitive revolution”.

One of the fields where the impact has been more profound is our understanding of human reasoning and decision-making, which has been enriched with many details and probably also deeply transformed. To summarize the dominant trends in the last decades, one could simply resort to four interconnected notions: intuition, emotion, embodiment, and unconscious. To a much more significant extent than granted by common sense and by former mainstream accounts, human “higher order” functions, such as reasoning and decision-making, appear to rely on intuitive rather than logical processes, to be driven by emotions rather than “cool” cognition, to be grounded in the body rather than abstracted from it, and to be pervasively influenced by mechanisms and factors we are not aware of.

In the last twenty years, these kinds of studies and approaches have been applied to *legal* reasoning and decision-making as well, resulting in a series of successful research programs: “Heuristics and biases and the law”, “Emotions and the law”, “Law and intuition”, “Embodied cognition and the law”.

Adding to the increasing interest in the sciences of human cognition and interacting with it in various ways is the astonishingly rapid improvement of AI tools and their use and application within legal decision-making processes.

The basic idea of the project was straightforward. All this body of knowledge should become a part of standard legal education. This does not mean that legal education, as it is currently done, should be *replaced* by approaches centered on cognitive science. More modestly, the latter approaches should be somehow *integrated* within traditional legal education: they should be introduced, discussed, and considered.

Given this goal, we built, tested, and implemented a range of didactic activities—a university teaching course, a series of seminars, and two Intensive Study Programs targeted at LLM students, PhD students, legal professionals, and legal scholars. To this, we wanted to add, to the already rich body of knowledge and research, a book including original research papers by experts in the field that were also written in a clear and reader-friendly style and therefore suitable for use as reading materials in higher education (LLM, PhD programs, etc.). This book is the result of this effort, and of the collaboration not only of researchers belonging to the partnership, but also of researchers affiliated to other universities who have generously accepted to take part in the endeavor. The title of the book reflects the variety of perspectives, methods, and topics of the collected contributions.

The book is divided into eight parts.

Part I deals with the naturalization of law and legal theory. The first chapter, by Francesca Poggi and Francesco Ferraro, has a historical character: It introduces currents of thought advocating for empirical approaches in jurisprudence, focusing on American and Scandinavian legal realism. The second chapter, by Bruno Celano, tracks the roots of the anti-psychologistic stance that profoundly influenced 20th-century jurisprudence and advances arguments in favor of its reorientation—at least as far as the theory of norms and norm-based reasoning are concerned—towards a “psychologistic” (or “naturalistic”) approach. The third chapter, by Kevin Tobia (the republication of a previously published longer article), provides a comprehensive introduction to the methods and inquiries of a new, exciting field: experimental jurisprudence.

Part II gathers five different cognitive-oriented perspectives on law and legal reasoning. Philip Johnson-Laird and Monica Bucciarelli present their influential application of the theory of mental models to the meaning of causation and its import for the law. Michele Ubertone, Anna Borghi, Caterina Villani and Luisa Lugli apply embodied and grounded cognition perspectives to legal concepts and their use for the legal classification of facts. Marek Jakubiec’s chapter investigates the role of metaphorical simulation in legal reasoning. Bartosz Brożek makes the case for an ecological conception of rationality and illustrates some consequences of adopting it to understand the rationality of law. Łukasz Kurek investigates, with an empirically-oriented perspective, mindreading abilities and their role and peculiarities within legal practices.

The topic of Part III is the nature of law and normative phenomena. The first chapter, by Philippe Rochat and Nikita Agarwal, develops a wide-ranging account of the emergence of normative thought and decision-making in human development. The second chapter, by Corrado Roversi, is an inquiry into the cognitive foundations of legal institutions, that is, into the cognitive abilities required to act in light of legal facts one believes exist. In the third chapter, Jaap Hage traces the roots of the disagreement between legal positivists and non-positivists to different views of how our minds shape social reality, and he develops an answer to the latter question based on a particular kind of facts, constructivist facts.

Part IV deals with legal reasoning and cognitive biases. Niek Strohmaier and Sofia de Jong focus on motivated reasoning—the process by which people are unconsciously motivated to reach a particular conclusion while operating under the illusion of objectivity—, and in particular on the role played in motivated reasoning by moral character inferences. The chapter by Przemysław Pałka, Piotr Bystranowski, Bartosz Janik, and Maciej Próchnicki investigates so-called abstract-concrete effects (understood as the general tendency to judge an issue differently depending on the level of abstraction at which it is described), how they affect legal reasoning and what are the consequences for the Rule of Law. Enide Maegherman focuses on confirmation bias, its role during investigation and trial, and methods to help counteract its effects. Finally, Noam Gur’s chapter highlights one key function played by legal rules: how they can operate as corrective devices against several systematic biases.

Part V is about law and emotions. The first chapter, by Miha Hafner, deals with the role played by emotions and empathy in criminal procedure. The second chapter, by Kristina Čufar, reconstructs the genealogy of the reason-emotion binary and its implications in Western legal systems from the perspective of feminist critical theory.

Part VI concerns the notion of “defeasibility” and its import in legal cognition. Manuel Atienza focuses on the relations between the notions of “defeasibility” and “balancing” and the problems they deal with—on the one hand, the need to allow for implicit exceptions while remaining within the boundaries of the legal system, and, on the other hand, the need to solve difficult cases argumentatively through the balancing of principles. Rafael Buzón provides a general criticism against legal positivist accounts of defeasibility and develops a post-positivist perspective on the problem. Daniel González Lagier explores a possible application of J. Haidt’s social intuitionism to the defeasibility of legal rules and uses it as a point of departure to criticize Haidt’s view and, more generally, the normative claims sometimes advanced by cognitive

scientists. Josep Aguiló's chapter deals with legal presuppositions, the defeasibility of presumptive reasoning, and the possible role of the cognitive sciences in the detection of material fallacies.

The topic of Part VII is legal evidence. The first chapter, by Bartłomiej Kucharzyk, provides an overview of psychological factors that may negatively affect the rationality of legal evidence evaluation, providing examples of their impact taken from experimental research. The second chapter, by Barbara Spellman and Adele Quigley-McBride, explains how biases and other conditions may affect the reliability of forensic analyses, reconstructs the (often mistaken) beliefs people have about forensic science and illustrates strategies for evaluating and communicating forensic science results during trials. Finally, Michele Ubertone argues in his chapter that the law often seems to overestimate the human ability to solve problems individually and to underestimate the importance of the division of cognitive labor.

Part VIII turns to Artificial Intelligence. The first chapter, by Antonia Waltermann, explores the challenges posed to legal reasoning by the combined effects of the development of AI and increased knowledge of the cognitive processes (and often biases) involved in legal decision-making. The second chapter, by Susana Navas, provides an overview of the application of AI in the legal field, of different LegalTech tools, and on the probable impact of the European Proposal for a Regulation on Artificial Intelligence.

A final note. Bruno Celano has been one of the creators of the RECOGNISE project and of the book it was meant to produce. Sadly, Bruno died in May 2022. It was an enormous, incalculable loss, both scientifically and emotionally. All our work up to the publication of this book (in which we are happy to have been able to include the English translation of one of his essays) has been accompanied and sustained by the memory of his splendid intelligence, by the care he was able to give us and by the knowledge he passed on to us.

MARCO BRIGAGLIA and CORRADO ROVERSI