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Introduction

Between Law and the Cognitive Sciences – A Manifesto

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1.1 A SCIENTIFIC REVOLUTION

Recent decades have brought about a genuine scientific revolution. It did not take place overnight, but the cumulative efforts of psychologists, neuroscientists, specialists in AI and philosophers have given us a picture of human cognitive processes and behaviour that is radically new. The revolution has led us to recognize and account for the important role played by unconscious decision making, the central role that emotions play in the human psyche and the intricate relationship between mind and body. In doing so, it has significantly reshaped the way in which we understand our mental lives and the sources of our actions.

Of course, it is debatable whether the theoretical and methodological shifts brought about by the cognitive sciences deserve the label of a 'revolution'. One may argue that it is better to speak of a gradual evolution, one which errs more often than it finds a grain of truth. However, such terminological disputes are ultimately useless. Whether we have a revolution on our hands or 'merely' a slow evolution, the fact is that – when compared to the science of the first half of the twentieth century – the contemporary cognitive sciences provide us with a fresh, often intriguing and surprising view of human thinking and agency.

All of this poses a challenge to legal scholars and practitioners. The law is preoccupied with guiding human behaviour by means of rules. Thus, it would seem that lawyers should take careful notice of the advances in the cognitive sciences. After all, if one wishes to influence the behaviour of people, one should understand what drives this behaviour in the first place. Nevertheless, for various reasons, lawyers have paid relatively little attention to developments in psychology and other cognitive sciences over the last century. Arguably, they have often adopted the strategy of splendid isolation, where law is considered an island far removed from the mainland of the empirical sciences. Of course, not everybody has been an isolationist, and hence the employment of the terms 'relatively', 'arguably' and 'often'. However, it is difficult to escape the conclusion that the prevalent attitude of legal scholars and practitioners has

been to safeguard their sceptred isle from the intrusions of economists, sociologists and psychologists.

Perhaps there are good reasons for this isolation. A century ago, Hans Kelsen forcefully spelled out what he believed to be such reasons. According to Kelsen, the law remains the law only when it is considered as a sphere of Ought, based upon, but not part of, social reality. In this way, legal decision making could remain free from external considerations. Yet does this argument, based on the alleged nature of law, provide us with a sufficient justification for remaining aloof from the sciences? Arguably (again!) not. At the very least, lawyers should seriously consider whether the cognitive sciences have any significant bearing on the law. Of course, there are numerous obstacles to doing so successfully. Let us comment here on a few of them.

1.2 (DO NOT) MIND THE GAP!

Cognitive sciences are about human behaviour and so is the law. Therefore, each must be highly relevant for the other. Superficially this is how it may seem, but if one takes a closer look, it transpires that the cognitive sciences investigate the way we actually act, uncovering the mechanisms behind human behavioural patterns, while the law tells us what our behaviour should be. For many centuries, philosophers have been telling us that this difference in modalities is crucial: there is an unbridgeable gap between Is (as investigated by the natural sciences) and Ought (as considered in law or ethics). Because of the gap – and not an ordinary, but an unbridgeable one! – lawyers, preoccupied with what *ought* to be the case, are engaged with something *completely different* than the cognitive scientists, who are interested in what *is* the case. This means that there is no theoretical or methodological bridge to be built between Is and Ought and, consequently, that no dialogue between the law and the cognitive sciences is possible! Lawyers who are not interested in the findings of the cognitive sciences are not unreasonable. To the contrary: they act fully reasonably by trying to avoid violating the fundamental methodological precepts that define their discipline.

Some people are indeed happy to accept the analysis outlined above and tend to adopt a dualist approach in relation to norms (moral or legal) and empirical facts: the methods of the normative sciences differ fundamentally from those of the empirical sciences. However, others are quick to point out that, in the real world at least, the law is significantly limited by various factual constraints, from the purely physical to the economic. For example, one cannot impose an obligation which is impossible or extremely hard to fulfil. Such observations force one to adopt a position which is the polar opposite, one which denies the existence of the sphere of Ought altogether. Legal norms become descriptions in disguise: to say that one ought not to steal is nothing other than saying, for example, that if one does steal something, one will (with such and such a degree of probability) be punished by the court.

These two extreme stances, dualism and reductionism, are both philosophically defensible, but they are far from being the only available options. Their persistence is but a reflection of the human propensity to think in terms of crude oppositions. It is certainly easier this way: when the choice is limited to well-defined and highly contrasted options, one lives in a theoretically simple universe. The problem is that such a universe is not only simple, but also simplistic. Things get much more interesting when one moves beyond the celebrated opposition. There, one finds an abundance of possibilities for depicting the relationship between Is and Ought and it is by accepting this complexity that one may achieve deeper insight into the functioning of the law.

There are at least two strategies which may be employed to help overcome the simplistic dualism of Is and Ought. The first is to realize that sentences expressing norms may stand in a special relation to sentences expressing empirical facts. In this context, one interesting route – albeit obviously not an uncontested one – is to take advantage of the concept of supervenience. On this account, no change at the level of legal norms (obligations), that is, the supervenient level, would be possible without a change at the level of empirical facts (that is, the subvenient level). Another intriguing route is to utilize the concept of presupposition: some empirical facts would be necessary for some statements expressing legal obligations to be meaningful. For example, the sentence 'Crimes may be committed only intentionally' presupposes that human beings are capable of acting intentionally; if humans lack this capability, the requirement that crimes be committed intentionally is meaningless.

The second strategy for blunting the Is–Ought distinction is to downplay its importance. That is not as difficult as some imagine. The claim that there is an 'unbridgeable gap' between what is and what ought to be seems to assume a very poor and highly polarized view of language. In addition to descriptive and imperative sentences, language offers a broad spectrum of other kinds of expressions. Perhaps the most powerful picture of the richness of language has been sketched in Ludwig Wittgenstein's *Philosophical Investigations*, where he writes:

> But how many kinds of sentence are there? Say assertion, question, and command? – There are countless kinds: countless different kinds of use of what we call 'symbols', 'words', 'sentences'. And this multiplicity is not something fixed, given once for all; but new types of language . . . come into existence, and others become obsolete and get forgotten. . . . Review the multiplicity of language-games in the following examples, and in others: Giving orders, and obeying them – Describing the appearance of an object, or giving its measurements – Constructing an object from a description (a drawing) – Reporting an event – Speculating about an event – Forming and testing a hypothesis – Presenting the results of an experiment in tables and diagrams – Making up a story; and reading it – Play-acting – Singing catches – Guessing riddles – Making a joke; telling it – Solving a problem in

practical arithmetic – Translating from one language into another – Asking, thanking, cursing, greeting, praying.[1]

The opposition between Is and Ought only becomes so strict if we focus exclusively on two kinds of speech acts, those expressing norms and those expressing facts. However, once we broaden our perspective and realize that there are also questions (which come in many varieties), value judgements, mathematical truths, logical tautologies, evocative metaphors, *onomatopoeias*, dirty and abstract jokes, crossword puzzles and so on and so forth, we will plainly see that there is something artificial in concentrating on the Is–Ought gap. Given the abundance of ways in which we use language, the gap is but one of many.

Moreover, it may be argued that even the category of Is-sentences is not as uniform as it seems. Let us consider the following four sentences: 'Dobrochna entered the room', 'The total entropy of an isolated system can never decrease over time', 'Every positive integer can be written as the sum of at most four squares' and 'If Manuel is happy then Manuel is happy'. Arguably, all of these sentences are Is-sentences, but it is quite clear that the facts they express and the manner in which they do so is completely different. 'Dobrochna entered the room' is a description of a concrete situation, and it is true if and only if Dobrochna has indeed entered the room. The second law of thermodynamics is a general law and as such it is a hypothesis pertaining to the structure of the universe. Of course, it has turned out to be a very good hypothesis – one which has not been falsified so far (and may never be falsified) – but one cannot say with absolute certainty that it is true. Lagrange's four-square theorem expresses a mathematical truth: it is not an empirical truth, but rather a necessary one. Finally, 'If Manuel is happy then Manuel is happy' is a tautology; it is also necessarily true, but – in contraposition to Lagrange's theorem – it has no discernible content. Its truth hangs together exclusively with its form.

We encounter a similar diversity in normative expressions. 'One ought not to steal' is substantially different from 'One ought to use the word "bald" by referring to bald people only', which is still different from 'If one wants to kill bacteria, viruses and protozoa in the water, one ought to heat it to 100 degrees Celsius'. It is easy to see that the 'oughts' involved in these three sentences are quite different. The first is considered by many to be a 'full-blooded' ought: the norm that it contains expresses a moral (and legal) obligation. The second is used to set (or describe?) a criterion of linguistic correctness. The third, in turn, is an instrumental recommendation, rooted in some facts discovered by the natural sciences.

We do not want to suggest that the distinction between Is and Ought is completely irrelevant. However, the above considerations clearly show that the issue is much more complex and not as clear-cut as may transpire from some philosophical discussions. Even if there is a gap between Is and Ought, there exist many other

[1] L. Wittgenstein, *Philosophical Investigations*, translated by G. E. M. Anscombe, §23 (Oxford: Basil Blackwell, 1953).

gaps of various kinds: between descriptive and evaluative statements, descriptions of concrete facts and general laws, mathematical truths and empirical truths, moral obligations and linguistic standards, legal norms and instrumental recommendations, and so on. Therefore, the conclusion is that the Is–Ought distinction cannot be considered as fundamental; to the contrary: a small shift of focus leads to highlighting different conceptual distinctions. Moreover, it transpires that intriguing theoretical and practical problems emerge in the space delineated by the extreme views of dualism and reductionism. The way is quite open to explore this territory, and hence to engage in reflections which combine the perspectives of both lawyers and cognitive scientists. At the same time, it is obvious that this is no easy task. In particular, it requires a lot of methodological awareness as well as the use – and perhaps also the development – of new conceptual tools.

1.3 SCOPE AND DEPTH

It would be unfair to claim that the cognitive sciences have had no influence in (and on) the law. There has been substantial effort to organize and discuss the research in the field, especially within the *neurolaw* movement. Hundreds if not thousands of papers have been published, and dozens of international conferences dedicated to this topic have been organized. Even if this constitutes but a tiny fraction of the publications and events devoted to legal scholarship, one cannot pretend that nothing has been done.

However, a closer inspection of the ongoing debates reveals that they are somewhat narrow in scope. Usually, the research and discussions in question revolve around three main issues: legal reasoning (in particular, unconscious decision making and the pitfalls of relying on heuristics in the law); evidence (in particular, the use of neuroscientific evidence in the courtroom); and the existence of free will in the context of legal agency (although this topic is usually considered within a broader, ethical perspective). These are all extremely important issues, and the research targeting them often leads to interesting, if not groundbreaking ideas. The problem is, however, that the insights they bring are rather fragmentary. Let us consider the research in law and psychology pertaining to legal reasoning. It is almost exclusively devoted to the decision-making processes which take place at the unconscious level. Many important contributions have shown that professional lawyers are prone to commit errors while tackling legal problems due to their (unconscious) use of heuristics. At the same time, little if any attention is given to other aspects of legal thinking: conceptual structures, theory construction, argumentation or imagination. This may generate the false impression that the cognitive sciences are only useful to the extent that they help us to uncover the unconscious processes that interfere with 'correct' legal thinking, while they have nothing to say about our conscious efforts to solve legal problems. It is true that the cognitive sciences have done much to reaffirm the power of the unconscious mind – but it is

not all they have done. To sketch a full and methodologically sound picture of legal thinking, one must also take the theories developed by cognitive sciences into consideration that pertain to language processing or the mechanisms underlying mental imagery.

The same argument applies to other law-related issues that are addressed from the perspective of the cognitive sciences. There is a substantial amount of research directed at particular problems, but a more comprehensive picture is missing. We believe that the cognitive sciences may shed new light on virtually any problem to be found in legal scholarship, from the philosophy of law (legal ontology and epistemology), through legal doctrine (criminal and private law), to the law of evidence. All these areas may be – to a lesser or greater extent – informed by the cognitive sciences.

Of course, some of them are a more natural fit for such an approach than others. For example, it is quite easy to understand how insights from the cognitive sciences may alter our picture of legal decision making, while it is much more difficult to see this happening in relation to legal ontology. Moreover, it must be observed that at least in some of the areas of legal science there are powerful inertial forces at work, which make it difficult to embrace the insights coming from outside, in particular from the natural sciences. A case in point is contemporary legal philosophy, largely dominated by the analytical tradition, a paradigm which is often tinged with conservatism and isolationism. The basic tenet of analytical jurisprudence is that the goal of legal philosophy is to uncover the conceptual scheme of the law and map the interconnection between various legal concepts as they are actually used. Questions pertaining to the origin of the said concepts, their evolution or function, are relegated to the (often ignored) background of this kind of philosophy.

A similar isolationist attitude may be discerned in legal doctrine. A typical criminal or international lawyer is interested in the interpretation and application of legal provisions or in putting together a coherent 'narrative' linking past precedents with current and future cases. They are also engaged with questions pertaining to the practical use of science, and especially scientific evidence, in legal procedures. However, more fundamental problems which potentially lead to the questioning of the dominant paradigm are rarely raised or addressed. As a consequence, there is little need to open up legal doctrine to impulses coming from the outside.

Thus, our suggestion is not only that the theories and insights from the cognitive sciences should be used in a much wider way in legal science; we believe that such an endeavour should penetrate the fabric of law much more deeply. Much of the existing research on the subject may be described as 'scratching the surface'. The cognitive sciences are not taken seriously as a point of reference in discussing the foundations of law, or the key legal concepts. Instead, relatively smaller issues are addressed and investigated.

Our plea to adopt a wider involvement of the cognitive sciences in the science and practice of the law is a plea for more coherence. Fragmentary and shallow attempts to illuminate legal problems from the perspective of this or that conception

developed by neuroscientists or experimental psychologists may be fashionable, provocative and may arouse a considerable degree of controversy. However, from the methodological standpoint, they are essentially flawed. Only a kind of reflection which aims at the development of a more embracing picture of the relationship between law and the cognitive sciences may lead to real insights and progress.

This is closely connected to yet another issue: our understanding of the cognitive sciences. In the existing legal literature, the cognitive sciences are often equated with neuroscience or experimental psychology – the 'real' natural sciences. In this way, they are opposed to less well-defined and less highly regarded fields of inquiry. In truth, however, the cognitive sciences are a more complex beast. They also embrace other branches of psychology, as well as evolutionary theory, research in artificial intelligence, logic, and philosophy of mind and of action. Moreover, the complexity of the cognitive sciences is tied up with the nature of the theories developed therein. Most of the work done in neuroscience and experimental psychology pertains to well-defined, but comparatively small problems investigated in the controlled environment of a laboratory with the use of somewhat artificial cognitive tasks.

At the same time, there exist attempts to synthesize this mosaic of data and small-scope theories into a larger narrative of how the human mind functions. Naturally, these attempts exhibit less methodological rigour than a well-designed experiment: they are largely based on philosophical argument more than anything else. They also generate considerably more doubt and criticism than the more focused research. The point is, however, that without such synthetic approaches the enterprise of law and the cognitive sciences (as well as literature and the cognitive sciences, economics and the cognitive sciences, political science and the cognitive sciences, etc.) would remain shallow and fragmented. Any fruitful exchange between these different fields of reflection can only take place at an appropriate level of generality: one where the image of mankind depicted by the contemporary cognitive sciences may be meaningfully confronted with the image of mankind presupposed by the law.

1.4 THE PROMISE AND THE OBSTACLE

The above considerations are underpinned by what may be called 'the promise of law and the cognitive sciences'. This promise may be understood in two distinct ways: either moderate or revolutionary. The moderate promise is that the cognitive sciences may and will constitute an important point of reference for the law. This will happen regardless of what the lawyers do now. The continuous advances in neuroscience, experimental psychology, artificial intelligence and related disciplines, which lead to a better understanding of the functioning of the human mind and the mechanisms behind human behaviour, will – in one way or another – force legal science into rethinking the law in light of the findings of the cognitive sciences. If so, it is only reasonable to develop conceptual tools which would facilitate this process. In particular, much needs to be done in connection to legal method as well

as in relation to opening up the legal sciences to the dialogue with other disciplines. In other words, the moderate promise will be fulfilled to a higher degree and in a smooth and coherent manner if lawyers are ready – and know how to – respond to the challenges posed in the future by the cognitive sciences.

The revolutionary promise goes much further: it is a claim that the law of the future will be substantially different from what the lawyers are accustomed to. Key legal concepts such as crime, contract, personhood or ownership will be abandoned, completely reinterpreted or at least given new theoretical foundations. Similar changes will transpire in legal practice, where the methods of the cognitive sciences and neuroscientific technologies will be used more commonly. Legal scholars will be part-time psychologists and will devote as much time to reading the Damasios and Blooms of their time as to the more traditional reading list. Law students, in turn, will be required to complete an intensive course in cognitive science. Thanks to these revolutionary changes, the law of the future, created, interpreted and applied with constant support from the relevant natural sciences, will become more efficient and fair (or, at least, commonly considered as fair).

The revolutionary promise is, of course, much stronger and it is unlikely that the law will change to such a degree. There is a very powerful argument to this effect, one that constitutes, in our opinion, the greatest obstacle to applying the findings of the cognitive sciences in the sphere of law. The law is based on a particular conceptual scheme, one which is deeply rooted in what psychologists call 'folk psychology'. This is a set of concepts that people use (also unconsciously) to understand and predict the behaviour of others. Folk psychology uses concepts such as 'belief', 'intent', 'voluntary', 'reason', 'guilt' and so on. Their legal counterparts are not so very different; rather, they constitute a more detailed specification of these common notions. Because of this shared set of concepts, people are generally able to understand the law. Even if, on occasion, the law involves a high degree of abstraction, it remains connected to the well-known folk-psychological way of thinking about human behaviour.

Meanwhile, the explanation of human behaviour offered by the cognitive sciences is, more often than not, at odds with folk psychology. When our common understanding is that we make decisions in a conscious and informed way, forming intent and acting on the basis of well-established beliefs, the cognitive sciences suggest a picture in which most of our decisions are unconscious. When folk psychology ignores or, at best, downplays the role of emotions in the human mental life, the cognitive sciences place emotions centre stage in the theatre of the human mind. While we tend to think that we are free in our decision making, the cognitive sciences raise serious doubts as to the common understanding of the will.

The relationship between these three conceptual schemes – the legal, the folk-psychological and the scientific – is fascinating. The legal conceptual apparatus is a refinement of the folk-psychological one, making the law understandable to its addressees. The scientific perspective uncovers the real mechanisms behind human

behaviour: it provides an explanation of why we act and think in the given way. (As such, it also explains the emergence and role of folk psychology.) It transpires that the law is based on an essentially flawed picture of the architecture of the human mind. It misinterprets the real motivational factors at play in our behaviour and, in turn, this leads to serious doubts regarding the efficacy of the law. At the same time, a legal system based exclusively on the view of the human decision making provided by the cognitive sciences would most probably be difficult to understand, and a rudimentary understanding of what is required of us seems to be a prerequisite of following legal rules. Therefore, legal regulations based on a picture of the human mind which is alien to the common folk-psychological understanding of what it means to think and act would also be inefficient. This leaves us with a puzzle or, better yet, a certain tension.

We believe that this is an unavoidable, but creative dialectic. It shows that what we should be looking for is neither the moderate nor the revolutionary approach; what matters lies in-between. It will be intriguing to see where this creative tension leads us and what it generates in the future. The present volume is but one attempt to decipher this future.

1.5 THE CONTENTS

In line with the above considerations, this handbook aims to encompass a wide scope of subjects at the intersection of law and the cognitive sciences. It may be divided into five parts. The first is devoted to metatheoretical and methodological issues, in particular the Is–Ought problem and the relationship between the legal and folk-psychological conceptual frameworks and the cognitive sciences. The second part tackles some of the key topics in legal philosophy: ontology of law, legal epistemology and the rationality of legal decision making. In the third part, important doctrinal issues in both private and criminal law are addressed. The fourth part is devoted to some of the more prominent themes in evidence law. The fifth and final part consists of three 'dissenting opinions', where substantial doubts and questions are raised in relation to 'law and the cognitive sciences'.

Most of the chapters are accompanied by shorter commentaries. The role of these is not to criticize merely for the sake of criticizing, but rather to add a new perspective, or highlight an aspect of the problem which has perhaps not been fully explored in the main chapter. It is our hope that a more comprehensive picture of the use of the cognitive sciences in the law may be formed in this way.

1.5.1 *Part I*

Here is a short outline of the contents of the handbook. The first part, on the metatheoretical and methodological issues, opens with a chapter by Jaap Hage, where he argues that the cognitive sciences are important for the law for three

different reasons: because facts that can be established by the cognitive sciences are important for application of the law, because the content of the law is (partially) determined by such facts and – most importantly – because the law assumes a descriptive view of mankind which is challenged by the cognitive sciences. Hage underscores the fact that, while the first reason is quite straightforward, the remaining two are subject to argument.

Carsten Heidemann disagrees with Hage's account of the relationship between Is and Ought and defends this distinction, pointing out the internal tensions in the second part of Hage's argument, as well as some additional external reasons.

Łukasz Kurek, in turn, considers the relationship between the law and folk psychology, that is, a conceptual scheme we use to understand the intentions and actions of ourselves and others. He analyses in some detail three different stances with regard to this relationship: autonomy and revision of law with regard to the role of folk-psychological concepts and integration of the conceptual frameworks of folk psychology and the cognitive sciences in the law.

This problem is also taken up by Kevin Tobia, who advances 'the folk law thesis' in his commentary, that is, the view that ordinary (folk-psychological) concepts are at the heart of key legal concepts.

1.5.2 *Part II*

In the second part of the volume, which is devoted to legal ontology and epistemology, Corrado Roversi's chapter starts from two theses pertaining to legal metaphysics: that legal facts are a subset of social facts and that they are the outcome of rules that organize sanctions and authority in a formal way. Building on these assumptions, he develops the view that complexity in human society is based on the kind of intentional states involved, and the way in which these states are interrelated. In particular, Roversi distinguishes four levels of sociality. Level 0 is the baseline of sociality, that is, acting together; level 1 is a fundamental element, the acceptance of norms; level 2 is a specific thing we can do together, namely, attribute a status; and, finally, level 3 combines levels 1 and 2 in the attribution of a status through social norms. In the passage from level 0 to level 3 the creation of social facts, and therefore also legal facts, is made possible.

In his chapter, Bartosz Brożek provides an overview of the architecture of the legal mind. He posits that legal thinking is possible through the simultaneous utilization of three different but interlocking mental mechanisms: intuition, imagination (or mental simulation) and linguistic constructs.

Morris Hoffman addresses the issues connected to the psychology of trial judges. He considers the question of whether general insights from psychology are applicable to trial judges, and also discusses the use of heuristics in judicial decision making. The chapter closes with some general reflections on the challenges psychology poses to judicial reasoning.