

Guest Editor's Preface

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1. One of the most significant but at the same time questionable aspects of neuroscience and its findings is that they seem able to pervade the fields of a wide range of disciplines, modifying their categories and their schemes. Law is not an exception, both in its practical and theoretical aspects.

Even the currently used term “neurolaw”¹ could be seen as irrefutable evidence that the relationship between law and neuroscience outlines a widely accepted interdisciplinary research field. Although the main attention is usually given to the criminal law (from the requirements for criminal responsibility to the theories of criminal punishment) and to the (civil or criminal) procedural law, in this field there are a lot of studies, impressive for their quantity and for the variety of themes and approaches².

On the other hand, the growth of these interdisciplinary researches leads to the need to focus on their conceptual assumptions, both from a more general theoretical point of view and from a more practical perspective³.

To approach the variety of problems discussed in this field, it could be helpful to begin with an overview of the different ways for “mapping” this wide territory, proposed by different scholars. Indeed, the development and the increase of the number of issues and perspectives have been so intensive that in the last years several contributions have been published, outlining the various research trends⁴.

Each of these attempts at organising and classifying not only the results but also the perspectives in “neurolaw” is more or less explicitly based on a certain

¹ For the Italian “*neurodiritto*”, see e.g. Picozza 2013; “*neurogiuridico*” see e.g. Lavazza–Sammicheli 2012, p. xix.

² E.g. see Goodenough 2009; Freeman 2011; Spranger 2012. For an useful overview, see also the website <http://www.lawneuro.org/bibliography.php>.

³ Pardo-Patterson 2013, pp. xvi–xvii, introduce a general taxonomy of methodological issues, distinguishing empirical, practical, ethical, and conceptual issues. The general theoretical frame of their approach is provided by Bennett–Hacker 2003.

⁴ It could be seen as meaningful the fact that in 2004 Zeki–Goodenough lamented about the low number of studies in law and neuroscience and that in 2010 Goodenough–Tucker have pointed out that there had been a great increase of studies in this field, which has led to the need to bring the different types of researches flourished in the meanwhile into a unifying theoretical frame.

view of the relationship between law and neuroscience, and of the foundations of their several intersections. A quick outline of these classifying models will be useful to give an account of the implicit assumptions, the possibilities and limits of the different ways of organising the research topics.

2. One way to provide a taxonomy is to start from the possible aims of neuroscience, and consequently outlining the various issues arising in the different juridical fields, which are affected by them. According to this perspective, e.g. Garland suggested already in 2004⁵ a two-pronged classification. On the one hand, the findings and the technologies of neuroscience can be used to *monitor* the brain; on the other hand, they can be used to *manipulate* the brain. In the first case, the arising issues concern, for example, predicting criminal or violent behaviour, determining competencies and capacities (e.g. to act), determining state of consciousness or brain death, performing lie detection. In the second case, the problems arise, for example, from enhancement practices or (eventually forced) pharmacological treatments.

Despite its simplicity (or even because of it), this classification cannot offer a sufficient account of the many-sided relationship between law and neuroscience. Garland himself admits that there are many cross-cutting legal issues lying at the intersection of the two classes.

By contrast, another way to provide a taxonomy is to start with the law and its branches. This approach leads to restrict the inquiry to a certain “region” of the law, in order to focus on the different points of impact – e. g. civil or criminal law; substantive or procedural law; positive law or fundamental principles of the law

For example, Sammiceli and Sartori⁶ explicitly confine their perspective to the criminal law and distinguish the following categories: *forensic neuroscience* (which deals with the neuroscientific data relevant for the judicial decision); *criminal neuroscience* (which investigates criminal subjects); *normative neuroscience* (which considers, e.g., the neurological correlates of the sense of justice). The *Manuale di neuroscienze forensi*, of which their essay is a chapter, follows a similar approach. After a first methodological section mainly focused on criminal law and criminology, the following sections deal with issues concerning the criminal and the civil trial.

Instead of focusing on the neuroscience or on the law, it is possible to start precisely from their relationship, investigating its several features. More recently, for example, Goodenough and Tucker have suggested to reorganise the different streams of investigation into three different classes: law of neuroscience; neuroscience of thought and behaviour of interest to law; neuroscience of the law

⁵ Garland 2004.

⁶ Sammiceli–Sartori 2009.

itself⁷. The first one deals with the study of the law and policy governing the activities of neuroscience in research as well as in applications (including, e.g., brain death, disorders of consciousness, cognitive enhancement, intellectual property, privacy). The second involves the study of the findings relevant to the law in its daily application, including their possible employments in court rooms (e.g., methods for revealing subjective states like lying, pain, memory; the arising issues for the law of evidence; explaining violent behaviour, determining criminal liability). The last one deals with the neurological correlates of the law (e.g. the study of neurological correlates of legal reasoning; the role of emotion in decision making; the neurological basis of the normative judgement).

3. Looking at the different taxonomical models, which are used or proposed, permits to summarize the different current main research streams and to appreciate their variety. Nevertheless, it could divert attention away from the reason why neuroscience can permeate the several aspects of the law, both the practical and the theoretical.

If we consider the way in which some of the most famous neuroscientists present the general purpose of their work, we can easily recognize the same leading thread. The final defeat of the Cartesian mind-body dualism seems to be the general programme shared even by research streams and approaches which are completely different. Whether their epistemological and conceptual means are suitable for the aim or not⁸, the unifying purpose of the several approaches seems to be the complete naturalisation of the human being⁹.

The first immediate way to carry out such a naturalisation can be – and often is – a new form of reductionism. From this point of view, the whole being of the human subject is defined and circumscribed within the field of natural science, where neuroscience has a primary relevance. However, even those scholars who do not come to such an extreme position assume that nothing of which the human being does or could do can be adequately understood without the conceptual means offered by the evolution theory.

On the basis of these premises, the traditional idea, which has offered for centuries the ground for the law, fades into insignificance. That is, the idea of a certain unmovable and irrefutable difference between the human being and nature¹⁰, between the class of events which happen according to the scientific laws

⁷ Goodenough–Tucker 2010.

⁸ The question of suitability has been addressed from different philosophical perspectives: e.g., Bennett-Hacker 2003 move from an analytical point of view, Gallagher–Zahvi 2008 from a phenomenological one.

⁹ See Bianchi 2009, p. xxiii.

¹⁰ See Bianchi 2009, p. xxiii.

(e.g. the physical or the biological events) and the class of events which happen according to the aims, the interests and the decisions of the human being.

With regard to law, this challenge can be faced in different ways. It is possible to embrace enthusiastically the naturalistic perspective and its consequences¹¹; or to criticize it as a source of confusion among different levels and categories¹²; or to warn against the risks coming from an over simplistic forensic application of technologies or scientific methodologies designed and validated for experimental use only¹³. It is also possible to try to limit its effects by classifying it as “already known”. The neuroscientific naturalisation programme could be seen as nothing else but the last occurrence in a long list which from genetics and the Positive School¹⁴ goes back to phrenology¹⁵, whose scientific programme is criticized in Hegel’s well-known sarcastic sentence: “das Sein des Geistes ein Knochen ist”¹⁶.

Considered together these different approaches outline the limits for facing this challenge. On the one hand, we cannot reject a priori the possibility that the findings coming from neuroscience are of relevance to the law. On the other hand, this implies that it cannot be taken for granted that the conceptual means designed and used by the neuroscientists in their research and grounding their findings are a priori suitable for those issues, which the law was created and developed to deal with in the first place.

4. Considering this premises, the contributions are distributed on three levels.

On the first level, there are the essays dealing with epistemological issues. As it has already been shown, the background for the neuroscientific enterprise seems to have the following points of reference: on the one hand, the naturalistic approach and, on the other hand, reductionism and eliminativism as paradigms in the mind-body problem debate. These two issues are discussed by Antonio Nunziante and Alberto Gaiani, respectively. The former offers a critical reconstruction of the genesis of the naturalistic paradigm and of its progressive prevailing in neuroscience. The latter focuses on the philosophical questions arising from the reductionistic approach providing a general overview and addressing, in particular, the theme of consciousness.

Subsequently, Claudio Sarra’s essay explores if there are and which are the conditions for the compatibility and suitability of the different conceptual frames used by neuroscientists and jurists, respectively. This is a necessary precondition to

¹¹ See e.g. Greene–Cohen 2004.

¹² For example see Morse 2003; Morse 2004; Morse 2006; Morse 2011.

¹³ Garland–Glimcher 2006.

¹⁴ Barbieri 2011.

¹⁵ Regal–Nanut 2008.

¹⁶ Hegel 1980, p. 190 (“the being of Spirit is a bone”, p. 208)

understand if and to what extent the findings of the neuroscientists are relevant or not for the practice and the theory developed by the jurists.

On the second level, there are essays dealing with anthropological issues, that is issues related to the way in which a certain view of the human being affects the law, both in the daily practice and in the theory. The naturalisation of the law is currently seen as a necessary consequence of the naturalisation of the human being. In this respect, one of the main issues is the role played within it by consciousness. This is the guiding thread of my contribution. Another central issue is the notion of normality, both in relation to what is failing because of disorders, and to what is excellent or enhanced . By means of the notion of “neurocivilisation”, Paolo Sommaggio analyzes the former type of “non-normality”.

Neuroenhancement provides the thread for the third level, concerning ethical and practical issues. The main questions are about the limits of applying the new findings to human subjects and the principles which should inspire law and policy in this field. Laura Palazzani leads the reader into the investigation of the bio-ethical and bio-juridical issues of neurocognitive enhancement. Salvatore Amato offers a critical outline of the debate – currently very intensive in the USA – about the military applications of neuroenhancement.

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