

Enrico Cassini\*

*Phenomenology, neuroscience and “the human”:  
A forensic and legal perspective*

*Abstract:* One of the hardest and staunchest viewpoints in the fields of neuroscience and neurophilosophy is that of eliminative materialism, according to which a number of mind-related concepts like thought, consciousness, free will, etc. can easily be dismissed as philosophical or commonsensical illusions. Eliminative materialism, as a matter of fact, aims to absorb a lot philosophical, legal, or anthropological problems in the area of brain functions, often labelling them as “folk psychology”.

Is it still possible to think the same concepts and problems, within a neuroscientific approach, avoiding the temptation to reduce them merely to a “ghost” of brain biology? Many philosophers, jurists, and neuroscientists give an affirmative answer. Francisco Varela, both neuroscientist and philosopher, attests that a way to deal with the “hard problem” of consciousness consists in combining the outcomes of neuroscience, with the methods and questions of phenomenology (a strategy recently deepened by Gallagher and Zahavi). Even several legal scholars and forensic scientists (e.g. Ugo Fornari, Andrew Millie, or Aaron Daniels) tend to integrate those methodologies, in order to think mind and human experience maintaining them in a scientific setting.

This article defines the opportunity to develop a specific neuro-phenomenological attitude in the realm of legal philosophy and “philosophical criminology” (Millie), to achieve a better understanding of traditional mind-related ideas and problems in a dialogue with neuroscientific thought.

*Keywords:* Forensic Science; Phenomenology; Philosophical Criminology; Philosophy of Law; Neurophenomenology.

*Indice:* 1. Eliminative materialism and neurophilosophy – 2. Phenomenology and the human dimension – 3. Phenomenology, neuroscience and forensic science – 4. Neurophenomenology and the need for integration

## 1. Eliminative materialism and neurophilosophy

One of the hardest and staunchest viewpoints in the fields of neuroscience and neurophilosophy is that of *eliminative materialism*, according to which a number of mind-related concepts like thought, consciousness, free will, etc. can easily be dismissed as philosophical or commonsensical illusions. Eliminative materialism,

\* Philosophy of Law scholar, University of Turin.

as a matter of fact, aims to absorb a lot philosophical, legal, or anthropological problems in the area of brain functions, often labelling them as “folk psychology”.

This kind of address, which have emerged within the context of contemporary philosophy of mind and, more generally, of analytic philosophy, seems, at first sight, to be refractory to any attempt to place it in the history of ideas. What might appear as an effort to rationalize and completely neutralize a series of “epiphenomena” settled in the history of Western thought (for example the very idea of a *mind*) is actually a trend with a specific historical path. A brief genealogy of the concept of eliminative materialism can shed some light on this phenomenon.

Leaving aside the forms of nineteenth century materialism and positivism, whose features developed from the seventeenth century, it should be noted that, in the context of analytic philosophy, such a tendency began with Wilfrid Sellars, who affirmed that our mental states are the result of a cultural framework, and not of a direct access to the work of our brains. Sellars’ assessment presents itself as “a modified form of the view that thoughts are *linguistic* episodes”<sup>1</sup>. Although he considered this theoretical background all in all reliable and plausible, this theory laden version of mental states greatly influenced subsequent eliminativism. The thinkers who contributed to shift from the side of Sellars’ construction, which was cultural and linguistic, to that of biological materialism, were, a few years later, Feyerabend and Quine. The former assumed that any form of physicalism would have been capable of undermining an understanding of mental states based on common sense psychology<sup>2</sup>. The second, on the other hand, emphasized that the states of the body are ontologically and epistemologically ascertainable, as opposed to the mental ones, which can be completely identified with those belonging to the physical world<sup>3</sup>. This conception, according to which mental states do not exist because there are only states of the brain, or if they exist, they are mere reflections of brain activity (and therefore reducible to it), will be taken up by various philosophers, including, for example, the early Richard Rorty. Nevertheless, it is with the approach of neurophilosophy, attributable to thinkers like Paul and Patricia Churchland<sup>4</sup>, but also to many neuroscientists who have dealt with the epistemological ground of their discipline, that eliminative materialism of the biological type found its proper place in the realm of the philosophy of mind.

At the basis of this theoretical approach, there is the belief that the level of description classified as “mental” is not worthy of philosophical consideration, as it can be absorbed in a physicalist description of brain states and functions. Mental states are states of the brain: consequently, any portrayal or explanation of them must take place within the neuroscientific paradigm. Human experiences such as beliefs, intuitions, pain, anxiety, fear, etc. would not exist except as neural activities. The words we use to refer to them would be nothing more than linguistic des-

1 Sellars 1956: § XI, sec. 47.

2 Feyerabend 1963: 295-296.

3 Cf. Quine 2013 [1960]: 243-245.

4 See, for a general assessment of their thought: Churchland 2007, especially 232 ff., and Churchland 2018.

ignations of brain states. In this way, not only human behavior and common sense psychology would be excluded from any kind of philosophy, but any psychology that is not strictly neuroscientific would also be debarred. Descriptions based for example on dynamic psychology, on imaginal processes, or on the phenomenology of mind, would be entirely irrelevant. The specific traits of this theoretical attitude derive from a particular tradition and deal with different theoretical knots: first of all, the refusal of introspection as a method suitable for reporting mind states, perceptual dynamics, or even states of the body (pain is a typical example) and, consequently, the fragile and enigmatic status of *qualia*. With a recurring grammatical metaphor which regularly accompanies accounts about these aspects of the philosophy of mind (and which exposes its filiation from the philosophy of ordinary language), it can be pointed out that, according to eliminative materialism, any first-person account must be removed from the philosophical and scientific discourse. The only reliable description is the third-person one: experiencing, for example, the fear of a human subject is impossible, however, detecting that peculiar brain activity called fear in ordinary language and folk psychology is indeed possible in a third-person perspective.

This philosophical approach stumbles over a *pragmatic* obstacle. Any physician knows that often, to get a first idea of a patient's condition, one must start from a first-person account. Any investigator or profiler knows that one must hypothesize certain mental dynamics, being absent any opportunity to rely on inspections of neural activity. Any judge knows that one will have to decide, not only by virtue of a pure fact or on the legal reconstruction of the same fact, but considering certain characteristics of the defendant as a subject, grounding the decision upon one's experience (the Italian penal code expressly provides for this<sup>5</sup>). Therefore, philosophy, when dealing with the human as a category and with human institutions, cannot renounce to address these aspects as well, even when they are ontologically or epistemologically problematic. The main task of human thought is not to ignore them. The risk, as well summarized by Martin Heidegger, is that of taking bumpy paths, *Holzwege*, that nevertheless lead us closer to the authentic duty of human thought<sup>6</sup>. An effort to rejoin philosophy and "the human" as a category is that attempted by phenomenology.

## 2. Phenomenology and the human dimension

The philosophy of mind in the analytic tradition, even in a perspective not strictly ascribable to eliminative materialism, is mainly constructed as an alternative to phenomenology. Consequently, it removes from its realm all the methods and principles attributable to the latter, among which the most important are: intentionality, first person ontology, and tracing verbal and behavioral manifestations

5 Artt. 132-133ter.

6 For an interpretation in this direction: Erspamer 2010: 144 ff.

to a mode of existence. In actual fact, it tends to remove *the human*, understood as a category, from the core of its discourse.

Intentionality lies at the very center of phenomenology. This concept is not related to the traditional meaning of the term, referring to purposeful actions in a teleological perspective. Phenomenology conceives intentionality in a different way: Husserl thought intentionality as a *relation* between consciousness and what consciousness is aware of. It pertains to the capacity of the human mind to refer to an existent or even a nonexistent object: according to Husserl, phenomena do not simply appear to us; instead, we *experience* everything through this fundamental quality of the relation. The complex constituted by the intentional *Erlebnisse* encompasses the whole life of the human subject, from perception to representation, from volition to judgement, etc. What really *exists*, or what effectively matters according to Husserl, is intentionality itself. I can indeed imagine a fictional object like a unicorn, an angel, or a round square: what really subsists in this case is not the object, but intentionality, which makes possible the experience of that imagination, of the fictitious object as *intentioned* object<sup>7</sup>.

First person accounts are inevitable. Physicians, psychologists, profilers, judges and lawyers, as well as philosophers of a phenomenological persuasion are aware of this occurrence. Symptoms are frequently introduced by first person reports and, in court, witnesses, defendants, plaintiffs and victims alike present first person narratives. In both clinical practice and criminal investigation, but also in legal proceedings, the elements concurring in the (re)construction of a portion of reality, placing it in a meaningful framework (medical, psychological, legal and so forth), are indeed first person accounts: life stories filtered from a point of view. As specified by legal theorist Michele Taruffo, facts relevant to the administration of justice are, at the end, *tranches de vie*<sup>8</sup>: sets of events concerning the actual life of human beings. Phenomenologists maintain that the attitude of many philosophers and scientists consisting in a denial of first person ontology is both naïve and dishonest, because even science presupposes constantly a first person experience of the world (as a prescientific image of reality). Shaun Gallagher and Dan Zahavi underline, on this basis, that a *pure* third person perspective is utterly impossible, “just as there is no view from nowhere”<sup>9</sup>.

Since the times in which Karl Jaspers worked on his treatise on general psychopathology, the principles of phenomenology have found an application in both psychiatry and psychology. In an attempt to overcome the traditional nosographical methods of psychiatry and the atomistic view of psychological phenomena, Jaspers elaborated a series of procedures capable of clarifying several aspects of pathological manifestations in a broader human and clinical background. Despite the occurrence that, according to him, the totality of human life and its ultimate origins cannot be the object of any scientific theory and they can't even be grasped

7 Cf. Husserl 2001 [1900-1901]: 127 (Vol. 2).

8 Taruffo 2009: 42.

9 Gallagher, Zahavi 2012: 21.

by an extensive philosophical construction<sup>10</sup>, we can be able to gain a wider comprehension of “what people experience in general and how they experience it”<sup>11</sup>. Through the examination of pathological aspects, phenomenology aims “to take the full range of psychic reality”<sup>12</sup>. At the very beginning of his treatise, Jaspers attests that psychopathologists “want more” than empathizing (*Einfühlen*) and mere observation, even though these activities can bring rich material to the study of human psyche; instead, they aspire to something communicable, expressed in concepts and formulated into *laws* and demonstrable relationships<sup>13</sup>. Nonetheless, in many other passages, Jaspers states the importance of empathic understanding for his program of comprehending human psychic experience: affective participation to patients’ first person accounts leads directly to a number of psychological connections; it brings us to *psychology itself*<sup>14</sup>. On a phenomenological background, also recently, the “diagnostic” role of empathy has been reevaluated, even in the forensic field. Starting from a jaspersian context<sup>15</sup>, or from other phenomenological persuasions, like a combination of “Kantian emphasis on human dignity and the Christian economy of gift”<sup>16</sup>, psychiatrists and criminologists reassess the role of an affective *Verstehen*, thus extending the role of empathy and human/affective understanding as fundamental steps in considering a nosological framework<sup>17</sup>. According to Andrew Millie, an empathetic approach in relation to criminology “would be able to see things from the others’ perspective”, be they victims, offenders, or even the State or wider society<sup>18</sup>.

From the elaboration of jaspersian psychopathology onwards, phenomenological psychiatry and psychology worked in the direction of this empathetic understanding. Many scholars, also from a phenomenological standpoint, saw in this approach a kind of “intrapsychic subjectivism”<sup>19</sup> which relied too much on introspection, abandoning then the central role of husserlian intentionality; despite criticisms, Jaspers opened to a number of phenomenological and existential perspectives pointing to a reconnection of symptoms, manifestations, and behaviors, to more comprehensive modes of existence. In the context of German legal culture and philosophy, this theoretical address gave way to an internal current of criminal law theory that went under the name of *Gesinnungsstrafrecht*: a doctrine emphasizing the primacy of the subject and of one’s inner attitudes, in order to focus on the problem of personal guilt and blameworthiness (*Schuld*)<sup>20</sup>.

10 Cf. Jaspers 1963 [1913-1959]: 543 ff.

11 Jaspers 1963 [1913-1959]: 2.

12 Jaspers 1963 [1913-1959]: *ibidem*. Jaspers uses the term “psyche” to designate the mingling of consciousness and experience (*Erlebnis*); cf. p. 9.

13 Jaspers 1963 [1913-1959]: 1.

14 Cf. Jaspers 1963 [1913-1959]: 304.

15 Ghaemi 2013: 269-270.

16 Millie 2016: 121-124.

17 Ghaemi 2013: *ibidem*.

18 Millie 2016: 121.

19 For a historical reconstruction: Zecchi, 1978: 32 ff.

20 Cf. for example: Giuseppe Bettiol, “Sul diritto personale dell’atteggiamento interiore”

In Italy, attempts to build a phenomenological criminology were made in the Seventies, primarily by Aldo Semerari<sup>21</sup>, who conjugated various theories and clinical methods, but whose primary aim was to convey the idea that exterior symptoms and criminal conducts could be placed in a wider view, contemplating the entire of human experience.

All the topics presented above make clear that phenomenology, as a method, is in many situations a valuable instrument in analyzing complex issues related to “the human”, *das Menschliche*, as a category. In many contexts, ranging from law to psychiatry and from criminology to the philosophy of mind, a level of description based on brain functions is insufficient. If consciousness, cognition, thought and mind activity as a whole cannot be seen from perspectives other than the ones connected with eliminative materialism and the “naturalization” of mind, any interpretation of the human condition made available by, for example, law, history, politics and so on, would be completely impossible. As shown by Gallagher and Zahavi, someone declaring fictitious “everything peculiar to human life”, “simply because it cannot be grasped by a certain mode of scientific comprehension”, exposes a commitment to a kind of naïve scientism, “according to which, (natural) science is the sole arbiter of what there is”<sup>22</sup>.

Certain areas of human knowledge and activity need to contemplate the human as a category, because every aspect belonging to their realm is merged within the human condition and the life of the mind, to use Hannah Arendt’s expressions. Phenomenology, as the study of experience through the first person point of view, is the philosophical form which, traditionally, developed methodologies in order to cope with this problems. Problems that, in these humanistic areas, are of a *pragmatic* nature<sup>23</sup>.

### 3. Phenomenology, neuroscience and forensic science

Neuroscientific explanations tend towards eliminative materialism when they absorb other areas of knowledge, resolving them in neuronal activity. Examples of this type of reductionism have concerned, for example: aesthetics, economics, theology, and, of course, the law. Regarding the latter, we can consider as an example two statements: one articulated by two American legal scholars (Goodenough and Tucker) and the other by two Italian forensic psychology scholars (Sammicheli and Sartori). They formulated two possible tripartitions of the different intersection areas between neuroscience and the law.

(1971) and “Stato di diritto e *Gesinnungsstrafrecht*” (1973), in: Bettiol 1980: 101 ff and 129 ff.

21 Cf. Semerari 1981: especially 1-32 and 207-236.

22 Gallagher, Zahavi 2012: 249.

23 For the historical relationships between phenomenology and pragmatism for what concerns the regions of psychology and the philosophy of mind, see, for a brief view: Gallagher, Zahavi 2012: 2 ff.

According to Goodenough and Tucker, the spaces in which neuroscience can find a promising relation with the law are basically three: the objective analysis of subjective situations (memory, pain, traumas, truth-telling, etc.) during the investigation phase; the uses of these findings in a court proceeding; finally, the theoretical and practical examination of a series of phenomena, ranging from free will to emotions, and from criminological issues to decision making<sup>24</sup>.

In the perspective adopted by the two Italian researchers on the other hand, it is possible to speak of a *forensic neuroscience*, i.e. the study and use of neuroscientific data, beneficial to both investigations and the trial scene; of a *criminal neuroscience*, which can provide a valuable contribution to the study of offenders and criminal conducts; in conclusion, of a *normative neuroscience*, as the discipline which deals with the neurobiological basis of law, such as the tendency of human beings to create social ties, or the sentiment of justice<sup>25</sup>.

Goodenough and Tucker warn of the fact that it is easy to fall into some pitfalls<sup>26</sup>, the most frequent of which might concern: the tendency to justify through neuroscience conclusions reached by other types of reasoning<sup>27</sup>; neuroscientific uncausalism, with reference to human behavior; and the possibility that a subject affected by certain dysfunctions can be pointed out as an enemy or as a “monster”.

Despite these warnings, it is clear that, in both cases, the “third area” creates perplexity. In the case of Goodenough and Tucker, investigation of human phenomena from a strictly neuroscientific point of view can lead to lose sight of the multifactorial aspects of human cognition and behavior against their own warnings, and to produce results close to those of eliminative materialism. On the other hand, a risk connected to the idea of a *normative neuroscience* as elaborated by Sammiceli and Sartori, is that of conceiving a neuroscientific foundation of law that would in fact constitute a new doctrine of natural law, which would not be too different from the orientation of nineteenth-century positivism.

It is not at all possible, as has already been pointed out, to reduce the complexity of both human behaviors and what takes the name of “mental states” to brain functions only, and that, as stated above, for *pragmatic* reasons. In the space of law, as well as in other regions of knowledge, which entertain relationships with the categories of the juridical, this complexity must always be taken into account. The tool constituted by neuroscience can undoubtedly contribute to the fueling of this complexity and, especially for judges and experts alike, it can prove worthwhile and endowed with a greater degree of precision than investigations which rely, for their accounts, on other levels of description (for example psychological or sociological). Nevertheless, it concurs with other methodologies and must in no way replace them.

This work is limited to the philosophical sphere. It has already been highlighted that many currents in the philosophy of mind and in particular the neurophilo-

24 Cf. Goodenough, Tucker 2010: 61-92.

25 Cf. Sammiceli, Sartori 2009: 15-40.

26 Goodenough, Tucker 2010: 65-66.

27 On this point, see also Legrenzi, Umiltà 2011 [2009]: 57-61.

sophical perspective are thought in stark contrast to phenomenology. However, we know that various disciplines that participate in the shaping of legal knowledge make a significant use of methods and instances coming precisely from this philosophical orientation. Below we will consider the contributions of *psychopathology* and *criminology*: for the former, we will refer to the reflections of an Italian scholar, Ugo Fornari, a psychiatrist who covered the role of expert witness in various processes; for the latter, we will use various attestations, coming from both criminologists and philosophers.

Fornari does not formulate an irremediable dichotomy between neuroscientific investigations and more classic methodologies. He emphasizes instead, how the results obtained by neuroscience, both from the morphological and from the functional perspective, when used as diagnostic or investigation tools, must be integrated with a more traditional clinical method, that is, with a constructive procedure that includes the narrative of a “life story” rendered by the test subject<sup>28</sup>. “Neuro” explanations are thus brought back into the context of a dialogic-narrative construction of truth, distracting them from the reductionist model of eliminative materialism. Fornari expresses his critical point of view with respect to this trend, stating that the exact sciences “measure the measurable”; however, what can be measured is far from being “the whole”<sup>29</sup>. Fornari makes here the same point stressed above by Gallagher and Zahavi.

The integrative and dialogical method described by Fornari aims to recover the depth and complexity of “the human”, within other categories such as *the juridical* and *the forensic*, avoiding reductionism. Fornari certifies that the scientific evidence cannot coincide, simplistically and reductively, with the findings of brain neuroimaging and molecular genetics, of which, however, cannot be denied an intrinsic usefulness, as it is for all psycho-diagnostic, instrumental and laboratory investigations<sup>30</sup>. Their outcomes though, has to be interpreted in the light of clinical meanings, in a “dialogical” way. The results must to be incorporated into a life story, into the *being-in-the-world* of the subject. This attitude, within the area of forensic science, has as its purpose the overcoming of eliminative materialism, integrating approaches and outcomes, so avoiding any attempt of reduction to a unique level of description. A scrutiny of the human as a category has to take seriously multiple levels of description, taking into account both neuroscientific explanations and the phenomenological, anthropological, or depth psychology analysis.

Criminology, on the other hand, offers different examples. As hinted previously, in peculiar areas like criminal profiling and crime scene analysis, one must formulate hypotheses on a different level of examination from that of neuroscience: a profiler relies in fact on completely dissimilar methodologies. One first point, related to the methods developed by phenomenology, coincides with the role of empathy. Many profilers and theorists introduced the idea of a participating or affective listening, in

28 Fornari 2012: 71. On this method, cf. as well: Elwyn, Gwyn 1999: 186-188.

29 Fornari 2012: 39.

30 Fornari 2012: p. 161.



reference to the victim<sup>31</sup>. An empathic approach in interviewing a victim (of a rape, or an aggression) can be less traumatic for the subject, but can also be valuable in reconstructing the psychological dynamics associated to the crime itself, and even revealing something about the offender's psyche<sup>32</sup>, in the jaspersian sense, referring to a mingling of *Erlebnis* and consciousness. Andrew Millie is clear enough in stating that "philosophical ideas permeate the criminological enterprise"<sup>33</sup> and, in this context, most continental philosophers, centering on phenomenology or existentialism, will argue that hard science "might not be best equipped" in answering to strictly human or existential questions<sup>34</sup>. This occurrence, as pointed out here, is also best illustrated by many real-world advices from psychiatrists or expert witnesses, who need to count on procedures placing the human being at their center.

A second issue of some importance concerns crime scene analysis. Also in this case is highly probable that the offender would be unknown, and even if there is a vast number of scientific techniques aiming at a controlled reading of the scene (fingerprints, bloodstain patterns analysis, chemiluminescent reactions with Luminol, DNA...), profilers and psychologists will rely on rather different methodologies. Aaron B. Daniels, a criminal analytic psychologist, describes the importance of a phenomenological strategy to crime scene examination<sup>35</sup>. According to Daniels, criminal profilers developed a series of approaches based on empathy, or on the interviewing of subjects unfolding first person experiences, that constitute "a sort of rough-and-ready phenomenological method". On this ground, Daniels explains that in trying to connect crime scene details to a wider psychological outline, or in considering first person accounts, this method has an "unacknowledged quasi-phenomenological origin"<sup>36</sup>. Although his orientation is based on a Jungian imaginal process, which would be highly interesting in a figural or aesthetic perspective, Daniels drives his study with a continual reference to phenomenology: his work can be read as a broad philosophical and psychological investigation of crime scene analysis. He uncovers the core of his phenomenological stance attesting that even if the images a "phenomenologist" can come across on a crime scene are "qualitatively dark and pathological", what really matters is the attempt to construct an encounter, a relation, with these materials. This is what actually marks a "phenomenological sensitivity"<sup>37</sup>.

#### 4. Neurophenomenology and the need for integration

Since the mid-1990s, many scholars, following the work of neuroscientist and philosopher Francisco Varela, gave life to the approach of neurophenomenology.

31 Cf. for example, Carillo 2011: 87 ff.

32 Carillo 2011: 89.

33 Millie 2016: 2.

34 Millie 2016: 10.

35 Daniels 2018: 33-34.

36 Daniels 2018: 34.

37 Daniels 2018: *ibidem*.

In a 1996 seminal essay, Varela assumed that phenomenology could be a “methodological remedy for the hard problem” of consciousness: the Chilean scholar attests that phenomenological processes are capable to overcome the reduction of consciousness and first person experience to *qualia* and brain functions<sup>38</sup>. Varela’s critique of reductionism is directed specifically to cognitivist and functional reduction of mind activity and phenomenological stances: according to him, neuroscience constitutes the opportunity to place phenomenological outcomes into a naturalistic framework. Consciousness and first person experience, in this way, can be integrated with the results of neuroscience research; he notes for example that in many neuroscientific studies “the lived experience is progressively more important, to the extent that it begins to enter inescapably into the picture”<sup>39</sup>, even if these currents of thought shows little or no interest in first-person accounts. Interestingly enough, Varela also notices that phenomenology can be a valuable approach in dealing with pragmatic problems, both from a speculative perspective and from the standpoint of practical issues in neuroscience and cognitive psychology<sup>40</sup>.

More recently, Gallagher and Zahavi continued along this line of thought, where phenomenology and neuroscience can find cooperation and dialogue: on a theoretical level of analysis, they attest the orientation that Jaspers, Fornari and Daniels built in reference to psychopathology and forensic science. Fornari notices that the law and forensic science collocate, among their fundamental issues, the human conduct and, for this reason, all the data collected by way of tests or instrumental examinations have to be considered in a multifactorial framework. Neuroscientific records are, according to Fornari, just one aspect of the many that can be relevant in questions concerning human behavior and its deviant or pathological facets<sup>41</sup>. From the perspective of legal thought or of forensic science methods, neuroscientific data have to be harmonized in a broader viewing platform concerning the *human condition*, an arendtian formula that can be found even in the work of a neuroscientist like Michael Gazzaniga, who dealt a lot with the interconnections between ethics, law and the human brain<sup>42</sup>.

Phenomenology, neurophenomenology, law and forensic psychology highlight that human psyche (made of consciousness and experience) is far more complex than what emerges from the accounts of eliminative materialism. On the one hand, they developed a series of methods and techniques in order to cope with this unavoidable complexity, on the other, as Jaspers observed, the totality of human life and its multiple characteristics remain elusive. Legal thought and forensic analysis can walk through these *Holzwege*, but phenomenology and neurophenomenology can take charge of what in “the human” exceeds even these intricacies, returning that category back to philosophical enquiry.

38 Varela 1996: 330-349 (for example p. 332).

39 Varela 1996: 341.

40 Cf. Varela 1996: diffusely, but noticeably, 340-341.

41 Cf. Fornari 2012: 178.

42 Cf. Gazzaniga 2011: 182 ff., and Gazzaniga 2008: 412 (entire essay: 412-415).

## References

- Bettiol G. 1980, *Scritti giuridici, 1966-1980*, Padova: Cedam.
- Carillo B.F. 2011, *Ricostruire il delitto. Dal sopralluogo al profilo criminale*, Torino: Espress Edizioni.
- Churchland P. 2007, *Neurophilosophy at Work*, Cambridge-UK: Cambridge University Press.
- Churchland P.S. 2018, *Braintrust: What Neuroscience Tells Us about Morality*, Princeton & Oxford: Princeton University Press.
- Daniels A.B. 2018, *Jungian Crime Scene Analysis: An Imaginal Investigation*, Oxford & New York: Routledge.
- Elwyn, G., R. Gwyn 1999, "Stories We Hear and Stories We Tell: Analyzing Talk in Clinical Practice", *BMJ*, 318, January 16: 186-188.
- Erspamer F. 2010, *Paura di cambiare. Crisi e critica del concetto di cultura*, Roma: Donzelli.
- Feyerabend, P.K. 1963, "Comment: Mental Events and the Brain", *The Journal of Philosophy*, 60 (11), may 23: 295-296.
- Fornari U. 2012, *Al di là di ogni ragionevole dubbio, ovvero, sulla cosiddetta prova scientifica nelle discipline psicoforensi*, Torino: Espress Edizioni.
- Gallagher S., D. Zahavi 2012, *The Phenomenological Mind*, Oxford & New York: Routledge.
- Gazzaniga M.S. 2008, "The Law and Neuroscience", *Neuron*, 60, November 6: 412-415.
- Gazzaniga M.S. 2011, *Who's in Charge? Free Will and the Science of the Brain*, New York: HarperCollins.
- Ghaemi S.N. 2013, "Understanding Mood Disorders: Karl Jaspers' Biological Existentialism", in G. Stanghellini, T. Fuchs (eds.) 2013, *One Century of Karl Jaspers' 'General Psychopathology'*, Oxford: Oxford University Press: 258-275.
- Goodenough O.R., M. Tucker 2010, "Law and Cognitive Neuroscience", *Annual Review of Law and Social Sciences*, 6: 61-92.
- Heidegger M. 2002 [1950], *Off the Beaten Track*, eng. transl., Cambridge-UK: Cambridge University Press.
- Husserl E. 2001 [1900-1901], *Logical Investigations*, 2 Vols., eng. transl., Oxford & New York: Routledge.
- Jaspers K. 1963 [1913-1959], *General Psychopathology*, eng. transl., Manchester & Chicago: Manchester University Press.

- Legrenzi P., C. Umiltà 2011 [2009], *Neuromania: On the Limits of Brain Science*, eng. transl., New York & Oxford: Oxford University Press.
- Millie A. 2016, *Philosophical Criminology*, Bristol & Chicago: Policy Press.
- Quine W.V.O. 2013 [1960], *Word and Object*, Cambridge-MA: The MIT Press.
- Sammicheli L., G. Sartori 2009, “Neuroscienze giuridiche: i diversi livelli di interazione tra diritto e neuroscienze”, in A. Bianchi, G. Gulotta, G. Sartori (eds.) 2009, *Manuale di neuroscienze forensi*, Milano: Giuffrè: 15-40.
- Sellars W. 1956, “Empiricism and the Philosophy of Mind”, in H. Feigl, M. Scriven (eds.) 1956, *Minnesota Studies in the Philosophy of Science*, Vol. I, *The Foundations of Science and the Concepts of Psychology and Psychoanalysis*, Minneapolis: University of Minnesota Press: 253-329. Available at: <http://www.ditext.com/sellars/epm.html>.
- Semerari A. 1981, *Manuale di psichiatria forense*, Roma: Antonio Delfino Editore.
- Taruffo M. 2009, *La semplice verità. Il giudice e la costruzione dei fatti*, Roma-Bari: Laterza.
- Varela F.J. 1996, “Neurophenomenology: A Methodological Remedy for the Hard Problem”, *Journal of Consciousness Studies*, 3 (4): 330-349.
- Zecchi S. 1978, *La fenomenologia dopo Husserl nella cultura contemporanea*, Vol. 2, *Fenomenologia e sapere scientifico*, Firenze: La Nuova Italia.