Brain, Mind and Society.

A critical account of neuroscience.

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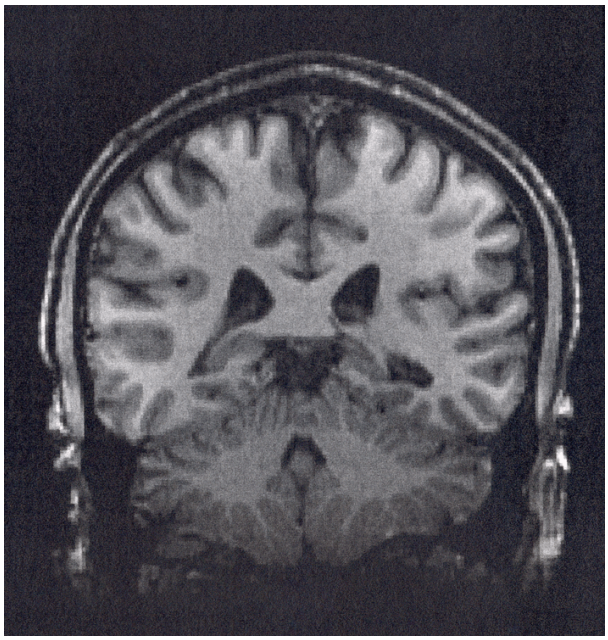


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Since the 1990s, which was proclaimed the “Decade of the brain” in the US by former president George Bush Sr., the rise of neuroscience has been considered a major scientific, historical, discursive, political, cultural and even mediatic event in western society (Rose and Abi-Rashed 2013). Countless symposiums and publications of all sorts have been produced regarding the relationship between the brain and the human subject[1]. Since then, the field of neuroscience has benefitted from massive investments, both financial and symbolic[2], in order to promote scientific research aimed at “defeating brain disease” (including Alzheimer’s and Parkinson’s, vascular cerebral accidents, autism and schizophrenia) as well as “[enhancing] public awareness of the benefits of brain research” (“Presidential Proclamation 6158”, July 17, 1990). More recently, president Barack Obama inaugurated the “Century of the Brain” with a publicly funded research programme called the *B.R.A.I.N. Initiative* (*Brain Research through Advancing Innovative*

Neurotechnologies), which links therapeutic advances and brain mapping, techno-scientific innovations and job creation ("Fact Sheet : BRAIN Initiative", White House Office of the Press Secretary, April 2, 2013). Brain research has therefore been developed and renewed within a "rhetoric of hope" (Mulkay 1993), buttressed with persuasive strategies seeking to lend credibility to the politico-moral position that claims research will revolutionise human understanding and allow human preservation in terms of cognitive, mental, psychological and even social health[3]. In 2013 in Europe, the important *FET Flagship Project* "Human Brain Project" started with the aim of organising the convergence of neuroscience research data and simulating the human brain cortex at the crossroad of neuroscience, computer science, clinical neuroscience and pharmacology. Given these circumstances, it can be difficult to differentiate between hype and reality, hopes and facts.

Nonetheless, the promises of the imminent revolutions which have taken place in the name of neuroscience are not reducible to mere "cerebral mythologies"[4] to be unmasked or refuted. Rather, these promises are an integral part of the "proleptic structure of neuroscience" (Hagner and Borck 2001), and in that sense they do not simply constitute a promotional tool, but, much more fundamentally, they constitute a mode of production for an ever-expanding field. This proleptic structure is however neither new, nor is it proper to neuroscience — it is sometimes referred to as "new brain sciences"[5] backed by "new cerebral imaging techniques" (for example, functional M.R.I.). In fact, the structure has been a defining feature of the long history of brain research. Indeed, brain research has been in pursuit of the same essential questions since the 18 th century (the link between thought and the brain, between the body and the brain, the debate on the innate and the acquired mental capacity, questions on the physical support of the subconscious, emotions, etc.). The promises to find definitive answers to these essential questions are not only renewed within every iteration, but they are even embellished with new techniques of observation (Hagner and Borck 2001, see also Cornelius Borck's and Christel Gumy's contribution to this *Traversal*).

The project of critically demystifying neuroscience seems all the more problematic given that the field's revolutionary rhetoric also affects the realms of Social and Human Sciences (henceforth SHS), which usually oscillate between fascination and repulsion. Some authors emphasise how neuroscience opens up previously unexplored potentials of revolutionizing or revamping SHS — including the field of psychiatry —, while others diagnose the increasing "cerebralisation" of their research objects, a phenomena which puts the SHS at risk of being "colonised" by, or even dissolved into, "hard" brain science. These contrasting positions, between neurophilia and neurophobia, exacerbate the tensions that, in reality, have less to do with the disciplines in

question than with the common and inherently controversial object these domains of knowledge and practice share : the human subject. Given this commonality, it is convenient, at least for now, to situate neuroscience and SHS on the same level and to consider them according to a principle of symmetry, which is much cherished by the anthropology of science and knowledge.

It is perhaps useful to mention here that a number of disciplines included in SHS — such as cognitive behavioural psychology, developmental psychology, philosophy of the mind and neuropsychology — have long been making use of the tools of brain science in order to validate their own findings and to expand their resources of innovation. Since the 1990s, the SHS “with brains” have developed into a particular research framework that promises to elucidate the neuronal foundations of human behaviours. This framework is referred to as *social neuroscience* (for a further discussion, see Borck in this *Traversal*) and it is reflected — in both senses of the term — in projects related to “Cognitive Sociology” (Clément and Kaufmann 2011). More recently, research groups have been trying to integrate the SHS into neuroscience by calling on questions, concepts and even qualitative tools taken from SHS, in order to contextualize, refine and improve their experimental protocols (Arminjon 2013). This is particularly true in the case of *Critical Neuroscience* (Choudhury, Nagel and Slaby 2009, Slaby 2010, Choudhury and Slaby 2012, for further discussion, see Kraus 2012) and of the project *neuroGenderings* (Dussauge and Kaiser in this *Traversal* ; see also Dussauge and Kaiser 2012).

It must be noted that several interdisciplinary projects are now attempting to bridge the gap between the SHS and the brain sciences. Therefore, the issue no longer has to do with taking sides in the “war of subjects” between a “cerebral subject” and a “speaking subject”, a dichotomy deemed by some to be disciplinary and by others ontological (Ehrenberg 2004). Rather, it is a matter of analysing, without disciplinary bias, the manner in which anthropological knowledge is produced and various “types” of subject come to be constituted, regardless of whether this constitution is done in the name of neuroscience, SHS, or both. This might be one of the aspects that validate a critical approach to neuroscience, by drawing inspiration from the social studies of science, technology and medicine. However, it is necessary to note that “criticality” and reflexivity are not the sole prerogative of such approaches (Lynch 1982). As in most scientific developments, it is crucial to recognize the critical activity of the players involved in the growth of neuroscience. Here, the traditional distinction between peers and informants tends to become blurred, especially given the tendency of these fields to be introspective in their practice and its effects on their subjects. This is particularly true of medicine’s “special” branch, psychiatry, which cannot help but constantly reflect on its practice and to verbalise its associated difficulties.

One of the major challenges of the tenants of psychiatric neuroscience is to promote so-called “translational” research, or in other words to transfer (or translate) the research produced in the laboratory towards the realm of the clinic in a manner beneficial to patients (for example, see Preissmann et al. 2009). This places the field of psychiatry between two particularly interesting paradoxes. Firstly, despite the fact that the everyday life of therapists seems very far from the promising discourse put forward by brain research, and despite the fact that therapists can treat patients without having to study the brain, their practice is nonetheless strongly affected by the institutional upheavals brought on by the rise of psychiatric neuroscience. While the brain is rarely mentioned in the clinic, it remains omnipresent in the protocols of translational research. This has inevitable repercussions on the manners of thinking the clinic. The clinicians are therefore under ever increasing pressure to master theories emerging from research on psychiatric neuroscience, despite the fact that these theories hardly have any impact on their practice. Secondly, even though psychopharmacology has remained omnipresent within psychiatry, from the 1950s until today, psychiatric neuroscience tends to distance itself from this heritage deemed to be too empirical, irrational, and even cumbersome, since it opposes the translational ideal (see Pidoux 2012) : in psychopharmacology, it is the findings in the efficacy of psychotropic drugs that lead to subsequent neurochemical hypotheses and not the other way around, meaning that the pharmacological model has therapeutic applications, from “the mouse to the human being” or from the lab bench to the bedside of the patient. These two paradoxes further encourage professionals in mental health to address the issue of the coherence of their heterogeneous practices, based on a body of knowledge and their clinical experience of human subjects. This is why it strikes us as very important to pay close attention to the ways in which neuroscience reconfigures (or not) the everyday practice of therapists, and to do so *with* the therapists themselves.

It is in this spirit that the research group PNS3 (“Psychiatry, Neuroscience, Health [*santé*], Subject, Society”) was formed at the Academic Institute of Medical History and Public Health (IUHMSP) in Lausanne. Comprised of historians, psychiatrists, anthropologists, psychologists, sociologists, neuroscientists and philosophers, the PNS3 group promotes social studies of neuroscience by privileging a reflexive approach to the production of anthropological knowledge by brain science, including neuroscience and SHS. Since 2006, the group’s research seminars and symposiums[6] have generated a constructive dialogue outside of a strictly disciplinary framework, along with individuals interested in brain research, in order to explore the challenges raised by the reinforcement of neurobiological theories in the process of shaping the human subject.

The articles gathered in this *Traversal* stem from the following approach : to investigate the brain sciences in order to test neuroscience on the basis of its own stated ambitions and, in a bid to be symmetrical, to interrogate the SHS. The contributions collected here reflect, on the one hand, the development of critical analyses on the historical, social and epistemological dimensions of neuroscience, and on the other, the epistemic and sometimes political tensions induced by neuroscience in other fields such as SHS and other practices such as the psychiatric clinic. The articles also outline, each in their own way, the challenges of dialogues between various fields, qualifications, paradigms and various players such as psychiatrists, historians, neuroscientists, sociologists and philosophers.

The texts collected in the *Traversal* “Brain, Mind and Society” have in common the fact that they adopt, each in their individual way, a critical perspective on the development of contemporary neuroscience and its epistemic, epistemological and practical effects on “the science of man” as one would have referred to it in the past, and the “practices of the human mind” (Gauchet and Swain 2007.) Neuroscience, like psychological, sociological or clinical approaches, does reconfigure our relationship with the “human subject”. The question today is perhaps less about the “truth” of the neuroscience-based conceptions of the “human” than about understanding the dynamics of compatibility and tensions that occur between the simultaneous, differing and contextual multiplicity of human ontologies produced by specific knowledge (see Panese 2009). In this sense, the criticism can take the path of a close analysis of the ways in which rules of exchange between worlds that attribute contrasting significance to the objects they share, in this case the brain and the human mind, establish (or not) rules of exchange. One way to bypass the polemical hurdle while maintaining critique is perhaps the formulation of what Devereux (1972) called a “complementarist perspective” : to contemplate, without any otherworldliness, both the unity of the human object and the proliferation of the discourses and practices that constitute it while conducting research on precisely their relationship of complementarity and the dynamics of what differentiates them. Complementarism represents a possible path to bridge two notions in tension between natural and social human sciences : reductionism and idealism. To offer perspectives on neuroscience, as the contributors are trying to do here, is a possible means of moving in that direction[7].