

Are We Heading Towards a Brain-Centered Culture?

An Interview to Fernando Vidal

Interview conducted by Piroska Csúri and Jimena Mantilla.

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Born and raised in Buenos Aires, Fernando Vidal attended the Colegio Nacional de Buenos Aires, and went on to receive undergraduate and graduate degrees in psychology and history and philosophy of science from Harvard University, the University of Paris, the University of Geneva and the Ecole des Hautes Etudes en Sciences Sociales (Paris). He has been a Guggenheim Fellow. After over a decade as permanent Research Scholar at the Max Planck Institute for the History of Science, Berlin, in 2012 he moved to Spain, where he currently serves as Research Professor of ICREA (the Catalan Institution for Research and Advanced Studies, Barcelona) as well as Professor at the Center for the History of Science, Autonomous University of Barcelona. Dr. Vidal's stay at the Centro de Investigaciones Sociales (CIS-CONICET/IDES) in Buenos Aires in April 2015 was made possible by a Cesar Milstein Fellowship awarded by the Argentine Ministry of Science, Technology and Productive Innovation, and provided (among other activities) the opportunity for the following interview.

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1) How would you define the topic of your research and how did you get around to working on it?

I was initially trained as a psychologist, with a focus on child development. I was interested in the work of the Swiss psychologist Jean Piaget and, like many people, was attracted to his idiosyncratic combination of empirical work on children with philosophical and biological questions. At some point, I began to suspect that something was wrong or fundamentally incomplete about the official accounts of his intellectual development, which were all based on his own short autobiographies. As I started investigating, I discovered archival materials of all sorts, and these materials revealed the young Piaget's deep political and religious commitments. This religious and political dimension was crucial for understanding his vocation, his ideas and his work up to at least the 1930s. I suppose it was at the time of doing this research—which led to a book called *Piaget Before Piaget*—that the main theme of my work evolved into the articulation of knowledge and values in the history of the human sciences, or perhaps more precisely: the history of how notions of the human being are embedded in the human sciences.

I've worked on many topics, such as the concept of *psychology* and the transformation of the sciences of the soul in the early modern era, sexuality in the Enlightenment, miracles and science in the same periods, and the history of the progressive education movement in the 20th century, to mention just a few. Surely they might seem too many different topics, but, especially in retrospect, it's clear to me that their common leitmotif is the nexus between knowledge and values. This is also the case of my work less directly connected to the history of the human sciences. I am thinking of three large-scale collaborative projects that resulted in the edited volumes *The Moral Authority of Nature*,

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with Lorraine Daston; *Believing Nature, Knowing God*, with Bernhard Kleeberg; and *Endangerment, Biodiversity and Culture*, with Nélia Dias, a book that has just come out in the series “Environmental Humanities” of Routledge. One way or another (the specifics are of course all very different) these volumes investigate the constitutive role that values (and actually also emotions) play in the production of historically-situated knowledge across disciplines, across cultures, and over a long time span.

2) What brought you to study the neurosciences?

Well, I wouldn't say that I “study the neurosciences,” because the details of those sciences and their history don't play a central role in my work. This is easy to explain. As I said, I'm interested in the intellectual and cultural history of views about the nature of the human, and in how these views are embodied in scientific and extra-scientific discourses and practices. In the Western Christian tradition, which has been my focus, those views involve discussions about the definition of personhood and personal identity, about the role of physical and psychological features (or material and immaterial substances), and also about the significance of relationships and communities. And this brought me to the brain.

Until the late 17th century, the Christian tradition emphasized that persons are inherently corporeal beings. Showing how and in which contexts this changed in the early modern period provides answers to questions such as: How did the brain become the only organ we apparently need in order to be ourselves? Why does it seem so natural (at least in Anglo-American philosophy starting in the late 1960s) to discuss personal identity using thought experiments about brains in vats and brain transplantations? In short, what made Roland Puccetti's unforgettable statement “Where goes a brain, there goes a person” possible? Neuroscientists' answers rely on a triumphalist vision of neuroscientific progress: *we now know* that we are our brains, that the soul doesn't exist, that a brain transplant would actually be a full-body transplant, and so on.

I'd argue that things happened the other way around: when personhood and personal identity were “psychologized” in the late 17th century, they also were “cerebralized.” This happened because

it was known that functions like memory and consciousness —by which the “modern self” came to be defined— were somehow located inside the head. That immediately turned human beings into “cerebral subjects.” No particular knowledge of the brain was necessary to believe this, because the belief resulted from a *philosophical* redefinition of personhood. But this redefinition increased the significance of brain research, motivated it, and has sustained it ever since. This is not to deny the immense advances of neuroscientific knowledge, but it serves to relativize claims such as those by Rafael Yuste, head of the US BRAIN project, who recently told the Spanish newspaper *El País* that once it understands the brain, humanity will “understand itself from the inside.” Yuste also announced that the neurosciences will revolutionize the whole of culture, and anticipated the advent of a “new humanism.” We’ve been hearing similar prophecies since the 1990s, and the large amount of research on neuroscience and society produced by the humanities and the social and human sciences has not managed to demystify them in the eyes of politicians or the general public or, for that matter, in the eyes of those scholars in the human sciences who believe that their fields require a “neural turn.” There is considerable lucidity and skepticism both inside and outside the neurosciences. However, the hype keeps selling, and the fact that so many neuroscientists, scholars from various disciplines, and science popularizers throughout the world (Argentina included) keep playing this game strikes me as a large-scale moral failure that calls for a radical overhaul of the global system of science. Unlikely to happen!

3) Your latest work focuses on so-called “neurocultures.” First of all, what do you understand by “neurocultures”? Second, can this line of your investigation be inscribed in a relatively new field called “critical neuroscience,” considering the scope and tools of this recently developed discipline?

“Neurocultures” —a word that appears in the title of a book Francisco Ortega and I edited in 2011— is basically a practical term for capturing the diverse forms “neuro” discourses and practices have assumed in contemporary society. This goes from the official redefinition of mental illnesses as “brain disorders” to the growth of disciplines with names like *neuroanthropology*, *neuroaesthetics*, *neuroethics*, *neurohistory*, *neurolaw*, *neuromarketing* or *neurotheology*, to the emergence of a “neurodiversity” movement, to businesses such as the fMRI lie detector or the multimillion-dollar brain-training industry. (By the way, it is revealing of the present state of society that this industry has

continued to thrive even though several large-scale studies have demonstrated its inefficacy). But I don't think my work on neurocultures really belongs in the field of critical neuroscience. Critical neuroscience is largely internal to the neurosciences themselves, and responds to criticism by improving things from the inside. For example, a programmatic text published in German last January (which just appeared in Spanish in *Mente y Cerebro*) proposed "nine ideas for a better neuroscience." The authors called for more rigorous sampling and statistical techniques, for turning the publication of negative results and replication studies into more common scientific practices, for a reform of the evaluation and peer review systems, and overall for more self-criticism.

While these suggestions are valuable, they leave intact the core problem, which is the conviction that we are essentially our brains. If you are convinced that, as a prominent figure of neuroethics put it, "imaging the brain provides information about the mind," then you can keep doing neuroaesthetics or neurotheology, and seek funding to develop more powerful imaging technologies, work with larger samples, and train researchers better. My point of view is different, and has in fact become increasingly so the more I studied the "neuro" universe: imaging provides information about the brain, not about the mind; a relevant study into aesthetic or spiritual experience barely begins at the point where neuroaesthetics or neurotheology leave off. In a review of Steven Pinker's *The Blank Slate* published in *The New Yorker* in 2010, the Harvard cultural historian Louis Menand wrote: "every aspect of life has a biological foundation in exactly the same sense, which is that unless it was biologically possible it wouldn't exist. After that, it's up for grabs." This would require a lot of elaboration (and some of it will be provided in *Being Brains*, my forthcoming book with Francisco Ortega), but Menand captures exactly the point: the neuroscientific level of analysis is generally inappropriate for explaining complex human phenomena, and not all phenomena involving the mind/brain lend themselves equally well to neuroscientific analysis. Since this observation seems to me a matter of common sense, I'm always surprised by the resistance it provokes. In conclusion, as far as your question is concerned: critical neuroscience may be critical, but it is still neuroscience; the study of "neurocultures" as I practice it takes place on the other side of the fence.

- 4) The notion of "brainhood", a term you coined, is central to your research. How would you explain this concept and its relevance for your investigations?**

The term “brainhood” is patterned after “personhood”: if personhood is the quality of being a person, brainhood is the quality of being a brain. This term seemed a good name for the notion of the human being whose history I’ve been studying. Some colleagues have questioned the “existence” of brainhood because, as they correctly note, people don’t consider themselves literally as their brains. But they reduce “existence” to the beliefs of individuals, and miss the following point: I’m not claiming that brainhood represents a hegemonic way of being; rather, I explore the history and functioning of what I call an “anthropological figure,” that is to say, a way of understanding what human beings fundamentally are. In real life, people sometimes see themselves as “cerebral subjects” and act accordingly; sometimes they don’t, but even then it may happen that they are considered as such, and that has a concrete impact. For example, when public health agencies declare that mental illnesses are actually brain disorders, that claim has consequences for reimbursable diagnoses and treatments, and therefore on people’s real lives. In the perspective of a *longue-durée* history of notions and practices of personhood and personal identity, brainhood represents a crucial juncture.

5) It has been alleged that neurosciences have close ties to neoliberal political ideas. How would you assess this statement?

I tend to keep away from such statements. It doesn’t seem to me that studying the brain as a scientific endeavor has intrinsic ties to any political outlook or even a particular view of the human. Although a certain measure of methodological reductionism is necessary, the ideology of brainhood is not intrinsic to the brain sciences, and neither are right- or left-wing politics. Almost any science or scientific result can be instrumentalized in favor or against any political view, and reciprocally, almost any political view can absorb almost any scientific result. This doesn’t look that way given American conservatives’ negative reaction to Pope Francis’ “environmental encyclical,” which is heavily informed by science. But in fact, what they really dislike is the Pope’s social and political message. In the neurocultural world, a good example is provided by the notion of “neuroplasticity,” a term that designates the brain’s ability to change as a result of experience, and also to recover and repair itself, and self-reprogram after injury. Neuroplasticity has been celebrated as a revolutionary finding, and is exploited by a large spectrum of interested individuals, including brain-fitness dealers, philosophers, political scientists, psychiatrists, rehabilitation specialists, and researchers in areas such as

neuroeducation and cultural neuroscience. Politically too, it can be stretched in any direction you want. At one end, it seems to reflect the neoliberal emphasis on autonomy and self-responsibility, on individuals' personal initiative and self-realization provided they don't ask anything from the state and remain economically productive. It apparently makes flexibilization acceptable, with its sequel of precarious jobs and the freedom to lay off workers. But at the other end, the existence of neuroplasticity is presented as a liberating fact, as a feature that allows us to freely "make" and "sculpt" our brains, and "change our life" however we freely choose. I don't adhere to any of these interpretations, but mention them to underline that, like most major trends or worldviews one can identify in history, the phenomena we label "neurocultures" and "neoliberalism" are formidably elastic. Talking about ties between the neurosciences and neoliberalism is perhaps interesting if it is based on the detailed analysis of concrete cases and given a restricted meaning, but not if taken as a totalizing framework.

6) Which area or areas of neuroscience research do you consider most relevant for socio-historical and sociological research?

It depends on what one means by "relevant." If relevance boils down to confirming that there are neural correlates to all and any behavior that may come into consideration in socio-historical and sociological research, then the answer is that neuroscientific research is for the most part irrelevant. Unfortunately, this is mainly what one gets out of the results obtained since the 1990s, which is when neuroimaging began to be applied to questions traditionally associated with the humanities and the social sciences, and gave rise to the "neuro" disciplines I mentioned before. For the reasons already mentioned, I don't think such a situation can change: irrelevance is intrinsic to those "neuro" endeavors. I'm not claiming that everything the humanities and the social sciences say is relevant, but that there is where there are better chances for understanding the most complex human phenomena. Let us take one of the "toughest cookies" in the domain of mental health: MDD, or major depressive disorder. *Nature* just published [July 2015] an article announcing the identification, for the first time, of genetic markers reproducibly linked to MDD. This is potentially important, since MDD is one of the leading causes of disability globally. But since you may have these markers and not develop MDD, as well as develop MDD without those markers, the significance of neurogenomics is

extremely limited unless accompanied by evidence of the sort that can only be provided by the human and social sciences. And the same can be said about complex phenomena for which the necessary anatomical and physiological conditions have been established. We need certain types of specialized neurons to perceive straight lines; but since these neurons operate alike irrespective of whether we look at a fence or a canvas by Mondrian, knowing about them says preciously little about experiencing a Mondrian painting as art (or rather, as object of an aesthetic relation). This seems to me obvious, and that is why, together with a few enlightened neuroscientists, I take the “neural turn” in the human and social sciences to be an intellectual dead end, even if it has been institutionally successful.

7) Ideally, then, what kind of a relationship do you imagine between neurosciences on the one hand, and humanities and social sciences on the other?

“Ideally,” I imagine a relationship of mutual respect and equilibrium. But there is very little to suggest that this is possible. In an interview given in 2008, the director of a Max Planck Institute affirmed that the human sciences had failed to say anything significant about beauty because they don’t carry out empirical research, and he demanded that they show “courage on the long way to knowledge.” The ignorance and contempt of such a statement are shocking, but they are not an exception. In milder, less explicit, and in any case less arrogant forms, they characterize a lot of the research of the “neuro” disciplines, which barely takes into account the work the human sciences have done on the topics they claim to be dealing with (beauty or aesthetic experience, to stay with the example). In a way this is understandable, since their goal is ultimately to replace the soft “descriptions” and “interpretations” of the human sciences with the harder “explanations” and the more “objective” analysis of the neurosciences. In contrast, when philosophers, sociologists, anthropologists or historians publish something involving the neurosciences, they have, to the best of their abilities, studied them and tried to understand them: a simple comparison of bibliographies is in this respect very revealing. Ideally, then, we should give up the prevailing and profitable but deceitful and intellectually unproductive discourse about interdisciplinarity. We should of course collaborate and remain open to learning from each other, but we should also let each discipline approach the world with its own evolving conceptual and empirical toolboxes.

8) What concrete “real life” applications do you imagine neurosciences can contribute to improve individuals’ lives and life in society at large?

There are quite a few areas of application, some better substantiated than others. Brain training isn’t substantiated at all, but there are well-documented possibilities for cognitive enhancement or memory manipulation. The most desirable applications are most likely to be in medicine. A lot is known about the pathogenic mechanisms of many disorders, and in a world of ageing populations and increasing numbers of people suffering from dementia or cognitive impairment, the neurosciences have a crucial role to play. But therapeutic applications are largely in the distant future; and that is even more the case with conditions such as depression. It seems to me that whatever “applications” the neurosciences have in the domain of health and disease, we must recognize that mental disorders are not, as often claimed, “just like diabetes.” And to proclaim that the neurosciences will bring about “revolutionary” changes in self-understanding and in legal and educational systems is to engage in a self-serving false prophecy. The neurosciences, like other sciences, can inform views and decisions in those domains. But the views and the decisions themselves are moral, political, or philosophical, even if they are often masked as technical and justified as being evidence-based. Ultimately, recognizing this will benefit the neurosciences themselves.