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Beyond Neuronal Man: Interdisciplinary Research on the Social Uses of Neuroscience in France

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The study of the social uses of neuroscience in France is a part of a larger story, the history of the relations between neuroscience and social science, which began forty years ago.

I shall then outline the main steps of this history, until the late 2000's. Then I shall go back to the study of the social uses of neuroscience, by presenting a modest experience that we have been conducting at the MSH PN since 2010. My presentation will develop three points.

1

Calls for collaboration end up in philosophical soliloquies

In 1972, two social scientists, named Edgar Morin and Massimo Piatelli-Palmarini, organized, with the help of famous biologists such as Jacques Monod, a symposium entitled « L'unité de l'homme », which aimed to build bridges between social science and biology. Among the contributors, we can mention people like David Premack, Paul D. MacLean, Humberto Maturana or Jean-Pierre Changeux. One of the three volumes of the proceedings of the symposium¹ has been entirely dedicated to the brain, although rather in a cognitivist way than really neuroscientific.

This sociological interest for neuroscience came from mavericks such as

¹ *L'unité de l'homme*, 3 vol. Paris, Seuil, 1974.

Morin. All of this must be put in the context of great discussions initiated by Foucault at the end of *Les mots et les choses*, concerning « the end of man » or the end of the absolute, universal notion of man. Human nature was a concept rather disqualified in the French intellectual avant-garde at that time. Bourdieu and Passeron, in their 1970 *Reproduction*, also denied to biology any influence on social phenomena. And one can say that some people, as Morin, tried to revive this notion in order to contest the supremacy of this avant-garde connected to critical structuralism, but also to Marxism.

Neuroscience really began to draw public attention in France in 1983, thanks to a book written by a prominent neuroscientist, Jean-Pierre Changeux. This book, *L'homme neuronal (Neuronal man)*, inaugurated a long serie of neuroscientific best-sellers in France, by Jean-Didier Vincent Oliver Sacks or Antonio Damasio. Neuroscience became trendy, especially in the intellectual and journalistic fields.

Jean-Pierre Changeux has been one the most brilliant figures celebrated at that time. He perfectly summed up a rather popular opinion in the 1990's that «fierce ideological oppositions have contributed to the disastrous divide between the reflections on brain and human and social science. These three last decades have been dominated in France by three systems of analysis which have neglected too much our brain : structuralism (...), marxism (...) and psychoanalysis. »² But, paradoxically, at the same time, he did not pay much attention to social scientists and he preferred debating with famous philosophers, such as Paul Ricœur in a book published in 1998³.

In my opinion, the general tonality of this two works, *L'unité de l'homme* and *Neuronal Man*, paved the way for discussion for at least two decades in a very specific manner. I mean that discussion focused on great theoretical propositions, leaning towards anthropology and philosophy, which blurred what sociologists could really do with or think of neuroscience.

At the same time, neuroscience established its legitimacy by gaining more and more importance in the French cognitive science field, at the expense of

² Jean-Pierre Changeux, *Raison et plaisir*, Paris, Odile Jacob, 1994.

³ Jean-Pierre Changeux, Paul Ricœur, *Ce qui nous fait penser*, Paris, Odile Jacob, 1998.

computer science and human and social sciences.

As a result, neuroscience may have appeared engaged in a kind of imperialist momentum. One could even speak of a kind of general mistrust, all the more so neuroscience, backed by the public authorities, proclaimed as scientific avant-garde, was regularly evoked to delegitimize critical thinking, from Marxism to Foucault or Derrida (this is a gross outline, forgive me). Anyway, calls for collaboration fell flat.

2

The growing interest of social scientists in two specific fields

French sociologists began in fact to cope with neuroscience only in the late 1990's. Bourdieu alluded to the possible links between his habitus theory and neuroscience in his 1997 book, *Méditations pascaliennes*. Others, wanting to promote a « cognitive sociology » inspired by the theory of rational individual of Raymond Boudon, tried to take into account some neurocognitive approaches, before dismissing them.

At the same time, Brigitte Chamak, a sociologist who is also a trained neuroscientist, published an article on neuro and cognitive science history in France, but in *Social Studies of Science*, which is not, as you know, a French journal.

In fact, more and more people thought that neuroscience deserved a real discussion. But Brigitte Chamak's work has been a kind of exception. When they accepted to talk of or with neuroscience, sociologists rather adopted the same great, large, anthropological, epistemological questions that I evoked before. During the 2000's, more and more books and articles have been indeed produced about the relations between life science and social science, about social cognition, about the debate between naturalism and constructivism, about the neuro-turn of social sciences and so on⁴. They mainly dealt with theoretical issues, as a heritage of the history that I previously described, and one can see that as the sign of a sort of domination of neuroscientists, who set the terms of the discussion.

⁴ See Michel de Fornel and Cyril Lemieux (dir.), *Naturalisme versus constructivisme*, Paris, EHESS, 2008 ; Bernard Lahire and Claude Rosental (dir.), *La Cognition au prisme des sciences sociales*, Éd. des Archives contemporaines, 2008 ; *Revue française de sociologie*, décembre 2010, etc.

On the other hand, we can mention, at the same period, a real attention for neuroscientific approach among sociologists working on autism, psychiatry and mental health, such as Brigitte Chamak or Alain Ehrenberg, who wrote an important article about the « cerebral subject » in 2004⁵.

Thus, the scene is set until the late 2000's. A symposium held in 2010 in the EHESS on the « human sciences in a neuronal era » was typical of these two orientations: one half of the symposium was devoted to an overview of the spreading of the prefix *neuro* in several human and social sciences (linguistics, philosophy, history, economics) (it resulted in a special issue in the *Revue d'histoire en sciences humaines* in 2011) ; the other half was devoted to the uses of neuroscience in the realm of psychiatry and psychology, for instance, how neuroscience can be used in the treatment of hyperactivity or of obsessive-compulsive disorders.

This kind of investigation could have led to other social uses of neuroscience, but for a while most of the discussions seemed to remain theoretical. If you were sympathetic with naturalistic approach, you could talk epistemology. If you were in a critical and anti-reductionist mood, you could work to reveal the flaws of neurotheories of social phenomena. But few investigations dealt with other kind of concrete situations, whereas, at the same time, new topics appeared which began to catch the eye of journalists and various specialists. I will mention a few of them:

- In 2006, a report of the National Institute of Health and Medical Research (INSERM, Institut national de la santé et de la recherche médicale) on the « conduct disorders in children and teenagers », aimed to provide a set of tools in order to identify problematic individuals among very young children and aroused a huge controversy,
- In 2006, Minister of Education, Gilles de Robien had a quarrel with teachers after the publication of a report on the learning to read, which suggested that teachers be trained in neuroscience, along with other knowledges. Gilles de Robien's interpretation of the report strongly opposed "real science", that is to say neuroscience in De Robien's mind, and "so-called science", that is to say

⁵ Alain Ehrenberg, « Le sujet cérébral », *Esprit*, , novembre 2004, p. 130-155.

methods inspired by education science. De Robien's interpretation of course created another controversy.

- In 2009, several seminars on the uses of neuroscience in public policy were held at the Centre d'analyse stratégique, connected to the Prime Minister administration. The topics were the uses of neuroscience in legal proceedings, public health prevention, and so on⁶.

All of this made some of us want to go beyond mere epistemological debates. This is my third point.

3

Trying to go beyond *Neuronal Man*

In 2010, the historian Carole Reynaud Paligot and I began to coordinate at the Maison des Sciences de l'Homme Paris Nord a research topic, that we called « The biologization of the social : discourses and practices ». Carole has been working for years about French racial ideologies and politics in 19th and early 20th century France. I have worked on biologism in contemporary France, especially among intellectuals and cultural industries.

We wanted to have a clearer vision of the social implications of the life science, outside the realm already investigated of mental health and to get rid, at least momentarily, of epistemological debates. We wanted to see if people were concerned in the various uses of biology in everyday life, at school, in the working field, in courts, and so on. In order to do that, we set up a workshop entitled "The social uses of brain science, in May 2012.

This was a rather successful workshop, which ended with people strongly debating. We had presentations from several colleagues from human and social science, history, criminology, who met neuroscience in their own research, and also from a neuroscientist, Catherine Vidal, and from a sociomedical scientist, Rebecca Jordan Young, from Barnard College (New York).

We tried to keep this multidisciplinary orientation in two other workshops

⁶ A « note de veille » thus indicated that the neuroscience project could not be anymore summed up in a mere brain science project, as neuroscience had now numerous impacts in various social spaces, arousing false hopes and fantasies.

(the later was held in November 24), although we have not yet succeeded in turning it into a real interdisciplinary one. One of our goals for the next workshop, probably in 2016, would be to invite more neuroscientists.

Moreover, a special issue "Biology and sociology" is to be published in the *European Journal of Social Science* in 2016, with some of the contributions of the workshops, for instance Rebecca Jordan Young on neuroscience and gender, Patrice Pinell on psychiatry, Stanislas Morel on neuroeducation.

What kind of results can we get from these three workshops, which gathered twenty colleagues coming from neuroscience, sociology, philosophy, anthropology, education science or history ?

First, as far as we know, there are few works on the social impacts of neuroscience in France, except in the mental health field. Thus, Brigitte Chamak recently conducted a project granted by the French National Research Agency (ANR) : "The social life of neuroscience", focused on autism and patients organizations and which resulted in a book this year : *Neuroscience et société*. Several specialists from social science and life science collaborated on the book, including Nikolas Rose and Joelle Abi-Rached.

Second, the other kinds of works where neuroscience is studied, are large investigations, where neuroscience is just one aspect of the whole thing.

Moreover, the topics of these works are few. One can mention the issue of youth and more specifically the issue of education and school, especially school failures. A quarter of the presentations in all our workshops dealt with these topics.

Another important topic can be mentioned: gender. There is at the CNRS an interdisciplinary thematic network on gender, including social scientists and life scientists.

I really think that childhood and youth are topics more and more legitimate for interdisciplinary research and you can also consider that this topic has strong connections to the field of mental health. The best example of that is the recent launching of a large-scale study, the "Elfe" project, involving researchers from many different backgrounds, including neuroscience and social science, who

will follow the lives of 18 000 children born in 2011, from the day they were born up to their 20th birthday. They will be exploring every aspect of these children's lives, in order to measure the impact of their family circumstances, living conditions and the environment on their physical and psychological development, health and socialization. This "Elfe" project is managed by a joint unit, which was set up under an agreement between the National Institute for Demographic Studies (INED), the National Institute for Health and Medical Research (INSERM) and the French National Blood Service (EFS).

Third, when they exist, studies on the social uses of neuroscience are conducted by social scientists alone, and often by social scientists who are not trained in biology, except few people like Brigitte Chamak. This can be a real difficulty. Since you can expect that people working on China, speak Chinese, you can expect from people who study social applications of neuroscience, to have a kind of biological training. Unfortunately we do not have many sociologists of that kind. We therefore need interdisciplinary team, involving biologists and social scientists. I look forward to having news from this Elfe project. An epidemiologist at INSERM (Marie-Aline Charles), is the director of this joint unit. She is assisted by a deputy director (Bertrand Geay), Professor of Education at the University of Picardy. Around thirty people currently work within the Elfe unit, including Sandrine Garcia, one of the colleagues who came to our workshops.

Indeed cooperation does not always go without saying. For instance, in the education field, there are still more controversies than collaboration between very pervasive neuroscientists who would like to convince everyone that teaching is a science and education scientists who strike back by showing that teaching is a social practice.

Finally, for the time being, we mostly find, on one hand, neuroscientific projects ignoring social scientists' works, even when they study questions with obvious social dimensions. And, on the other hand, we have critical studies by social scientists.

As a conclusion, I would say that the situation of interdisciplinary research is yet far from being clear. When programs exist, what role for social sciences in

them ? Supplement of soul or real contributor ?

But the issue of interdisciplinary research is also linked to the other issue that I evoked, concerning the social uses of neuroscience. I am convinced that it is an indispensable aspect of interdisciplinary research. We need neuroscientists or sociologists with neuroscientific skills to study these social uses, as well as neuroscientists need social scientists to fulfill this kind of work. The goal could be to get the indispensable reflexivity which will enable us to, I hope, more fruitful collaborations.

Thank you for your attention.