

The human of the science



In this edition of the magazine *Papeles* we encounter two topics greatly linked to one other: first, a debate centred on science, its constitutive exactitude and the teaching of it in universities; in particular, the contemporary debate regarding the scientific method found in the Social Sciences, with their fundamental pillars: objectivity, the subject and truth, together functioning as the core concepts of distancing with regard to both natural and formal sciences. Second, it seems right to utilise this monographic publication as an homage to one of the greatest intellectuals of our time, to a man who has dedicated his life to the study of two linguistic paths, one being the marvellous world of the brain, akin to a neuronal network whose role is to permanently reconstruct our surrounding reality, and the other, the discursive implications and manipulations that have led to social and political injustices committed by those who have manipulated modern society's political and economic power, including appropriating the virtues of science in order to subjugate the ignorant. And throughout this study and this particular stance, Noam Chomsky has been a beacon of rigour, and of the need to offer support to the discipline of knowledge through intelligible discourse, forever with the interdisciplinary openness required in the field of current-day scientific development, and forever conscious of the limits of science so as to account for man's complexity.

And it is precisely that: a legacy like that of Professor Chomsky, both through his impact on the world of Linguistics and also from his subsequent political viewpoints, is a beautiful testimony to the rigour and the possibility found in the Social Sciences. Such rigour is found in the paradigms, in the respect for tradition of discipline, in the construction of models of reality as a contributory abstraction of the marvellous individuality of each human being, in the formalisation (both symbolic and mathematical) of the reality in a symbolic world that does not render impossible the continuity of the question; rigour in the momentousness of the official birth of a Universal Grammar and all of its subsequent developments (generative grammar, minimalist programming, amongst other significant contributions to Modern Linguistics) in an open path seeking a more intelligible world, and therefore a potentially more comfortable, just and contented one. Professor Chomsky has continued his controversial post-structuralist argument and subsequently, those of his renowned heirs across all the Social Science disciplines, the postmodernists. His permanent claims (highly respectful and full of alterity), as much from the edge of science as from his political appreciations, the rigour and holistic perspective has been his path, but always with a positive emergency of the facts, in dialogue between the theoretical fabric and the actual reality. His dialogue and tactics with the postmodernists have been the tactics of a language, a stance and a conclusion within modern rationality, that which is intelligible and responsible. Neither confronting nor developing a rigorous and responsible rationality of the world by the intellectuals is to be an accomplice of the difficulties of emancipation of the least favourites. And on this point, the professors and academia have a crucial commitment in the path of the construction of Modernity.

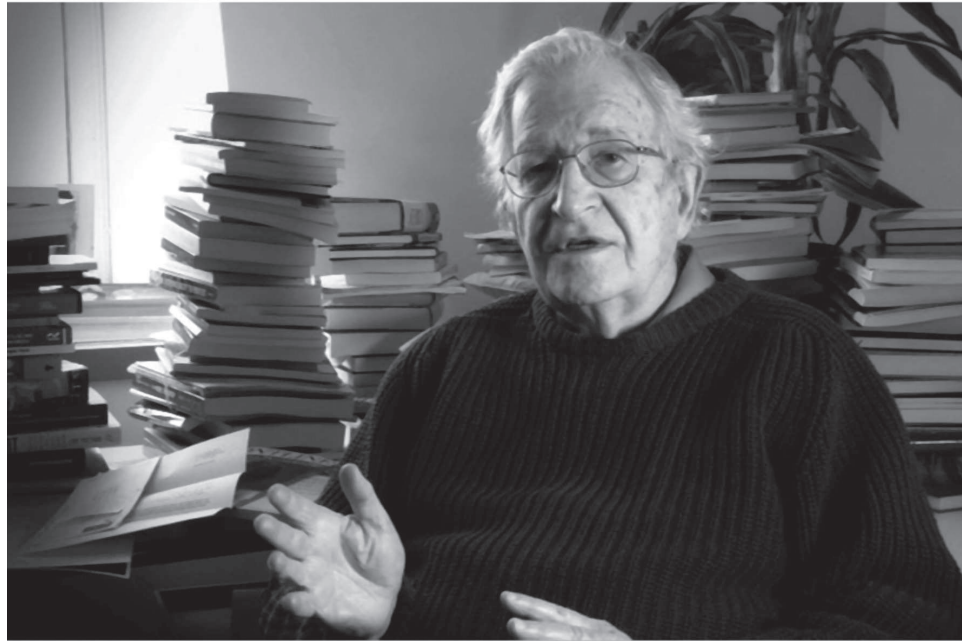
And fairly, with regard to the Social Sciences debate, Professor Chomsky offers us a means by which to exhibit the rigour of the scientific disciplines, with one essential fact: he has turned to the formalisation (with strong references to mathematics, logic, biology amongst other interdisciplinary dialogues). Professor Chomsky has honoured us on this issue, desecrating his delayed schedule for these needs, with words regarding five questions on the matters that unite us in this edition, as one has already said, about a debate of methodological rigour in the social sciences, and in addition, offers us some signs about the debate with the current contemporary philosophers gathered around the postmodern sign, always within his permanent commitment to expose on the world stage his determined though nevertheless respectful voice.

The human being in his essence, this magnificent neuronal weave that stretches itself from the brain to the skin, towards the senses, towards the universe, is structured to create science, whether in a conscious or subconscious manner, whether publically or amidst the darkness of the brain's inner-most layers. That is the nature of our brain and its mechanism to grasp the sensory experience and construct the intelligible memory, in a cycle where the immediate reality and processed reality, by means of neural knots, blend to incessantly nourish a tissue capable of accounting for new sensorial incentives, which are read under the logic of old experiences and which are turned into «forms» of language. From that meeting arises our notion of reality, both spatial and conceptual. And in this process, as complex as it is awesome, the brain turns to processes particularly similar to the essential characteristics of scientific concept: systemisation, rationality, fallibility, universality, verifiability, in a continuous present,

abstraction and synthesis; and other derivatives and superior types of application (in the way that Bakhtin presents us the genres of discourse): the ability to redevelop the torrents of discourse through which we learn about the world in new integrated forms of established processes so that we may give account of the complex foreign phenomena at first glance at our senses. In addition, one ought to remember that over eighty per cent of the information acquired by our brains during daily chores is foreign in the immediate conscious processes, and are synthesised by means of unconscious processes, although these new neurological knots certainly influence the forms in which our brain will perceive these realities in subsequent stages of our development, thereby demonstrating that which we can see, defining the eye before the remembered object reaches it via light.

And this device for devouring reality, to re-elaborate the language in order to devour new experiences, is absolutely essential in the debate in which we are immersed, the social sciences look after the incessant dialogue, between the construction of our mental structure of world prejudices and the complex reality of relations between individuals and groups, in which the inter-subjectivities agree and disagree, producing a double necessity for abstraction: first, through the encounter with the other; secondly, due to the possibility that an observer, a third party, attempts to define this experience, attempts to create an observable and graspable form, including overcoming the first obstacle, the inevitable participation of this world proclamation through the subject that is, from the point of view of its permanently convulsing mechanisms in the construction of the sense of reality. However, we are optimists – this is the challenge given to us as humans, to know how to find ourselves the least bit shared, to know how to weave the codes as bridges between my universes and the universes of others, via numerous instances and interests, via the observed variety through shared universal minimums. This is the commitment of science in general. We resume with the classification of Bunge, between formal and factual sciences, so that later we may break down through the facts of the social and natural sciences. And it is in this shelf of social sciences that Habermas has illustrated to us with three examples how to classify the scientific process of the social sciences and anthropological factual sciences (the natural sciences will be the pre-anthropological factual sciences, and on the other hand, are considered the formal sciences, mathematics and logic.³ This is the stage on which emerges our debate on the classification of science into disciplines and, in the case of social sciences, our very observation of our very being and the way in which we interact with another, and the instances and possibilities of selecting from this social experience, in an analogous manner, how we observe nature in order to discover its laws (pre-human sciences) and how we observe the numbers with numbers in order to produce theorems.

³ We can depart from the classic viewpoint of Mario Bunge in his legendary book *The Science, its Methodology and its Philosophy*, in order to categorise the different branches of The Sciences. And we may well add in this case the precisions of Habermas so as to highlight the difficulties of the Social Sciences argument in his book *Knowledge and Interest*, and thereby avoid such confusion and mistaken demands, for example either an historical difficulty or disciplining, and as such, the factual anthropological sciences have become divided: an agreement with its interests and its disciplines: (emancipatory: social critique; praxical: historical-hermeneutics; and technical: empirical analysis).



It would appear as if this need for permanent synthesis were vital for the continuation of our life, of our brain as a processing mechanism of information, and consequently the synthesis, the systemisation and rationalisation of reality across neurological-cognitive contact is an imperative so that our marvellous machinery of neuronal networks does not collapse and furthermore, redefines itself permanently integrating the old forms with new forms, in an incessant dialogue with the world for the sake of giving account of our biological and cultural needs, both constitutive of our language as a stage of reading of our vital experience, and therefore, of the construction of possibilities of each being, and of the possibilities in the living world.

“Science addresses very simple things and asks basic questions about them. As soon as science becomes complex, it becomes unable to respond to them. The reason why physics can reach such depths is because it limits itself to extremely simple matters, ignoring the complexity of the world”⁴.

Science struggles to reach the human matters, the sense of complexity of relations between human beings overcomes the horizon across which both formal and natural science move and of course human sciences, too; thus, the sciences engage with concrete facts, of phenomena grasped in instances of reality or truth, whilst human beings are universes riddled with neuronal memories in constant turmoil, a human brain is made up of 100 billion neurones redefining themselves constantly in a relation where the device and its product nourish each other, in an endless cycle. In reality, the human fact as totality escapes sciences, but each scientific discipline contributes,

⁴ Reference taken from an interview with Noam Chomsky in Matt Donnelly, *Science and Theology News Journal* (March, 2006).

with its rigour, bridges between absolute uncertainty and the enclosed uncertainty. The rigours of science, and here we see crucial epistemological differences between the different types of scientific knowledge, are not measurable due to the totality of human being questions but because of those committed by each object of traced knowledge. And in this sense, the purpose of human sciences (with the exception of its divisions presented by Habermas in *Knowledge and Human Interests*) will need to be tackled and evaluated without forgetting the particular field of its epistemology, a subject-object relation with great difficulties, but not because of this obliviousness to possibility of rigorous abstraction of reality, with a nourished participation of support and loans from formal and natural sciences, without it involving confusion and the lost objectives. The hermeneutic processes need, therefore, to search for its conclusions with exegesis capable of obtaining communicative action and indict processes of comprehension in the complexity of human relations, in a mathematical continuum with a tendency to seek out universal absolutes, universal willingness to discuss, capable of enclosing human experience, a path of unveiling complex logic of living world systems, where infinite array of possibilities do not exclude the options of enclosed, indicted and concluded infinities, in order that harmonious cohabitation in the middle of difference, in order to achieve the minimum of a universal pragmatism for an action with the maximum liberty for each individual. This fact is an object of science, with dimensions like a paradigm is object of incessant work, like the body, forever exposed to death of a patient in the hands of doctors, just like the axiomatic language of mathematics weaves infinite labyrinthine combinations in its dialogue turned over itself (infinite combinatory operations); like all knowledge whose existence responds at first to two facts: the possession of a defined object worthy of being looked over through its paradigms, and of course, the impossibility of definitively resolving them. Knowledge, in general, and scientific knowledge in particular, are fences and altars of complexity that human beings incorporate into their world in order to construct small illusions of eternity as a means to become accustomed to the fact that we are growing ever close to death.

The conception of science changed, Chomsky tell us. Instead of trying to show that the world is comprehensible to us, we recognised through what is a partial, historical, final manner, that it helps us to simply live a little more easily, to know an element of reality, and that often floods us with new doubts and contradictions, but regardless of that, we stop valuing the extraordinary development of humanity, the giddy development since modernity produced a reason that justifies, and in a humbling sense; since the Renaissance until the Enlightenment, and beyond until our cyber era, between modernity and modernisation, global village has freed itself of the medieval news of the periphery.

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