

Human and Natural Sciences: dialogues and politics of collaboration

Interdisciplinary is in demand. It is an epistemological requirement – because the objects we seek to understand do not conform to the boundaries of the disciplines as they were established. It is an organizational requirement, because we need to shake up the ossified structures of the universities and their departmental enclaves and rivalries, and it is also, a pragmatic requirement – because the nature of many problems that we seek to understand requires the collaboration of experts from a wide range of backgrounds¹.

The difficult questions raised by dialogues between different disciplinary fields are especially pertinent in the relations between the life sciences and the social sciences. Transactions between these two domains of knowledge were intense across the XIX century – with the life sciences often imagining their concerns in metaphors taken from the social life of their times and the social sciences borrowing many metaphors and models from the life sciences and, indeed, often suggesting that key features of human life were shaped by their biology. But during the twentieth century, such transactions were gradually displaced by hostility and mutual suspicion, notably as twentieth-century biology and genetics became associated with reductionism and determinism, and social science seemed to aspire a purification from biology.

As our own century develops, the possibilities for interaction seem more positive. Today many life scientists – in genomics, in neuroscience, in biomedicine – recognise that the old distinctions between organism and milieu are no longer viable, that, to use a phrase now becoming a cliché, the environment is not just 'out there' – but 'gets under the skin'. In this emerging 'style of thought'^(a), at least partially non-reductionist and non-deterministic, the truth discourse of contemporary genomics no longer sees genes as the hidden entities that determine us².

Yet, in the same moment as genetic determinism is rejected or questioned, new strategies are emerging that seek to intervene on DNA sequences, which, in a new way, are seen as central to health and disease. Across the world, researchers and policy makers place their faith in big data, linking full genome sequencing of thousands of individuals with lifestyles and health information, to be analysed by algorithms to generate 'precision medicine'. Hence vitality is molecularised, and life has become open to politics at the molecular level. More generally, organisms, including human organisms, "are seen as constituted by intelligible vital mechanisms among molecular entities" that can be object of intervention, and which are no longer constrained by the apparent normativity of a natural vital order² (p. 6). Biology is now seen not as destiny but as opportunity².

Consider for instance the recent successful birth of a child through the transplant of a womb from a friend to a woman who did not have the capacity to reproduce (...) consider the use of drugs to modulate all sorts of human capacities, whether it's Viagra, whether it's the so called cognitive enhancers. All these things suggest that the more we know about the biological basis of any particular characteristic, the more we can reverse engineer it and work out the molecular or biological underpinnings of that characteristic. Or at least that is the dream – in principle the more we know, the more we are able to intervene³.

Since the mid-nineteenth century, political authorities in alliance with many others – physicians, biologists, educators, etc. – have taken on the task of the management of life through both the disciplines of the body and the

^(a) A 'style of thought' is a particular way of thinking, seeing, and practicing. The term is derived from the work of Ludwick Fleck in his 1935 book *Origin and Development of a Scientific Fact*. It involves, for example, membership of a thought community in a discipline and an intimate knowledge of its relations of power and status. It "is not just about a certain form of explanation, about what it is to explain, it is also about what there is to explain". (p. 12)

biopolitics These intellectual and political strategies were pioneered mainly, at sub-State levels – by philanthropists, medical reformers and institutions, religious organizations, welfare funds and so on. This biopolitics took many forms: from the management of cities and sociality in the name of the minimization of disease, the administration of birth and death and so on. Thus, the birth of biopolitics:

was inextricably bound up with the rise of the life sciences, the human sciences, clinical medicine. It has given birth to techniques, technologies, experts, and apparatuses for the care and administration of the life of each an of all, from town planning to health services”² (p. 54).

The social sciences and the life sciences have a long shared history; so perhaps as the styles of thinking in biology mutate, so then should the styles of thought in those disciplines seeking to understand the social organizations and their consequences

Today, the management of our corporeal existence has become one of the central ethical demands of our present; no longer a matter restricted to the elite or those adhering to a particular cult of the body, but one of the central ways in which each and all of us are obliged to manage our everyday lives and existence in terms of diet, in terms of alcohol intake, in terms of exercise, in terms of the use of drugs of various sorts to modulate bodily processes, whether they are the statins to reduce the risk of heart attack or stroke or the drugs to manage our sexuality as in Viagra. This is what is meant by referring to the ‘birth’ of a ‘somatic individual’ – not so much as a novel reality, but as the object and target of knowledge, of intervention, and of the practical ethics of everyday existence. As our existence becomes ‘somatic’, our ‘corporeality’ becomes central to our understanding of what human being are, about what they must do and what they can hope for. This does not displace the psychological individual that became hegemonic during the XX century⁴ but it complements and supplement this perspective.

In this new form of subjectivation we can see `novel concepts of `biological citizenship` and “new expectations of human beings in relation to their sickness”, and also to their ‘life itself’ that “reorganize the relations between the individuals and the biomedical authorities and reshape the ways in which human being relate to themselves as `somatic individuals`”. This attention to the somatic, which increasingly includes the management of neuro-biological existence, is no longer constrained by the poles of health and illness. Many interventions today seek to optimize the life - and not just to prevent and to cure diseases and to rehabilitate patients-, “acting in the present in order to secure the best possible future of those who are their subjects”. Hence the biomedical technologies embody disputed visions of what, in individual and/or collective human life, may indeed be an optimal state². As we have learned from Michel Foucault, we must be concerned with the history of our present, not because we are interested in the past, but because we are interested in intervening in possible futures – and that demands actions in the present.

Those developments have important consequences for the politics of life, and for the relations between the Human Sciences and their relations with the Natural Sciences. It offers the opportunity to go beyond commentary and critique, and to open up new opportunities for a different relation with the biological. The humanities can and must use their methodological and theoretical tools to contribute to a critical analyse of the contemporary biomedical technologies,

stressing what we have learned over the last decades of research, that our (neuro) biological capacities are bound up with cultural, semiotic, bodily, societal and aesthetic 'webs' – and vice versa⁵(5). As Foucault demonstrated in the Birth of the Clinic⁶, the epistemological, ontological and technical reshaping of medical perception comes through an interconnections of changes along a series of dimensions, some of which seem, at first sight, rather distant from medicine. It is more than ever true that, as he puts it in the History of Sexuality⁷, the human, today is an animal whose politics place his existence as a living being in question.

In this context we believe that new forms of exchange between natural and social scientists can and should emerge, leading to an experimentation with concepts of nature an culture, biology and society, affect and cognition, life and death beyond out-moded ideas of 'nature versus nurture'.

We consider that such a partnership could help clarify, for example, ethical dilemmas of biological research for example, the ones about "reproductive technologies, disputes about the ethics of life extension, euthanasia, the maintenance of the life of babies born with severe disabilities and so on"⁶ (p. 222). It could, also, help to "contribute to a critical perspective about the contemporary politics of life and the ways that this is intrinsically intertwined with the economics of life - the opening up of the vital processes of life to intervention, has made life itself a field for intense capitalisation by the pharmaceutical industries, the medical devices industries and so on"⁶ (p. 222). In the same moment that developments in biomedical technologies enable us to intervene upon ourselves in new ways, our vitality has been opened up as never before for economic exploitation and the extraction of biovalue. Thus it is not just biopolitics, but also bioeconomics that is transforming our very conception of ourselves

We are witnessing a new intertwining between forms of knowledge and techniques of intervention, modes of capitalisation, political and ethical disputes. This constitutes an intriguing and important new field for analysis and political disputes, and one that should be central to the work of the Human Sciences. We need to go beyond interpretation of the hidden hand of neoliberal capitalism, or the hidden interests of the state or our authorities, first of all to describe the developments within which we are enmeshed. Indeed, perhaps the critical social sciences need to move beyond critique and to recognize that the most profound thought is that which remains on the surface!²

The issues reflected here refer to multiple fields of knowledge and practices, bringing, for example, to the field of Collective Health - territory in which some of the authors of this editorial exercise their research activities - instigating issues that we deem absolutely relevant to update its theoretical framework.

It brings to the debate the need to radicalize the transdisciplinary task of this field that emerged in the 1980s in the confluence of knowledge from the areas of Policy, Management and Planning with those of Epidemiology and Social Sciences, through the incorporation of other fields of knowledge, as the philosophy⁸ and, in an apparent paradox, biological ones that, as we have argued, has undergone important transformations. This important point of intersection between those 'sciences' should also open space for a research construction that seeks to accompany the movements of life, engendering connections that allow to go beyond the reproduction of theoretical and methodological models to explore new possibilities.

From the point of view of health care, it alerts us to the need to strive to update our understanding of what is affirmed as life and health and the consequences of this new understanding. Today it is central for the health services

to go beyond the task of prevent, promote, cure and rehabilitate but, also, to implement actions that seek to optimize the life of each and every one at a time when our body management is increasingly assuming the centrality in the process of production of what we think we are or should be.

We believe, also, that the approach that we comment above can be of importance to rethink our educational and research projects. It can be helpful on go beyond the divide lines and prejudices between biological and human sciences and to overcome artificial separations and disputes in space, that could benefit mutually form a transdisciplinary.

An effort that might seek a critical reinvention of what we think, of what we are and of how we should act to transform the word and ourselves⁵. In other words, an effort that might look to build up, inventing, a new politic of subjectivity.

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