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Sciences with the Science

Alliance Athena

Sciences with the Science. The obvious porosity

Des sciences avec les sciences. L'évidence d'une porosité

DOI: 10.4000/books.allianceathena.235
Publisher: Alliance Athena
Place of publication: Paris
Year of publication: 2015
Published on OpenEdition Books: 29 July 2015
Serie: Collection ATHENA
Electronic ISBN: 9791093170046



<http://books.openedition.org>

Electronic reference

COMMAILLE, Jacques ; THIBAUT, Françoise. *Sciences with the Science. The obvious porosity* In: *Sciences with the Science* [online]. Paris: Alliance Athena, 2015 (generated 25 avril 2019). Available on the Internet: <<http://books.openedition.org/allianceathena/235>>. ISBN: 9791093170046. DOI: 10.4000/books.allianceathena.235.

This text was automatically generated on 25 April 2019.

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- 1 The SSH implication in the production of knowledge is potentially so broad that they do not stand next to other sciences but are closely connected with them.
- 2 The SSH communities, thanks to their ability to take the uncertainties and the complexities into account, must play a wider part in a scientific policy broader than their proper fields, because their objects are borders and hybrids. Prudence (in its Aristotle's meaning) is necessary when it comes to innovation policy. Thus the SSH are no peripheral matter, they are not involved in giving afterwards 'a little extra soul' to other sciences

nor in being summoned to the mere function of an acceptability tool for what scientific or technological progress dictates. While keeping their specificity, they can take part in the progress of other sciences. A lot of the major programmes can only be achieved with the SSH's participation (especially in the fields of health, energy and climate...)

- 3 Sciences including the SSH, throughout the long movement of ideas of the last century, have successfully developed specializations allowing for a development of in depth knowledge, and then developed new approaches whereby complexity, interaction and non-linearity have fed the construction of thought and knowledge, While simultaneously taking into account time and space.
- 4 The SSH provide the formal tools to think complexities. They are thus in the best position to provide comparison scales based on rigorous and distinct methods, according to objects and disciplines. They more and more bear in themselves the ability to discern and differentiate the diverging interpretation possibilities of the obtained results, that theorization will otherwise tend to neglect.
- 5 Sciences are most of the time challenged on grounds which belong in fact to the SSH's competence. However, it can be seen that the technological or experimental sciences' approaches regularly prevail, although the main natural, physical, technological issues our societies are confronted with, those so-called 'society challenges', always involve social, economic and political dimensions, the lack of which might lead to failure or impotence.
- 6 To give just three examples, the questions of environment are mostly approached via physical or biological problems, whereas their main determinants are human activities. The issues involved in these questions cannot be dissociated from questions of governance (including the acceptability of public action policies) and must take into account various scales, from global to local.
- 7 Similarly, the exploitation of soils and natural resources for feeding purposes or to produce biomass needs arbitration. These questions have political implications. They require choices which of necessity must at least guarantee that all options remain open.
- 8 The SSH's multiple mobilization on different stakes is all the more necessary as it should be confronted with the complexity and the interdependence of these issues. As a second instance, the questions concerning the management of resources in a sustainable development perspective, can only be tackled and treated while considering interactions and 'feedback loops' at stake within complex systems (eco-systems, and socio-economic systems) and between these systems. On top of an interdisciplinary approach, at the interface between life sciences and earth sciences, these questions require the promotion of genuine transversal problematics.
- 9 The challenge of food safety is another good example. It should not be tackled without including the concern for a sustainable management of water and soils supplies of the planet's farmlands. Yet the fast and uncontrolled development of an agriculture dominated by finance or business under various forms ('land grabbing', speculation on crops and products, excessive intensive methods etc...) is a vector of resource downgrading (soil, bio-diversity, agricultural food products) as well as the people's well-being and health. The whole chain of interactions between ecosystems and economic systems must be investigated.
- 10 The energetic transition challenge needs to develop an SSH agenda considering the socio-technical dimension of technologies, in order to focus the analysis on the various

dimensions of the formation processes for the technological potentials. It matters to cast a broad look into the technological options, including those not seen today as priorities, and into their communities and the relevant debates, if one is really to support the transition.

- 11 The researchers in SSH, as in other sciences, are more and more conscious of such a needed interpenetration of scientific problems, including the competence of both parties. It is significant that the new global vision of science which the SSH adhere to, is more and more carried by institutional projects or programmes.
- 12 In the framework of this global vision, it would be inconceivable to imagine scientifically to treat the issues that France and Europe are confronted with, without including them in a broader perspective including the non-European and non-Atlantic culture zones. This is one of the SSH's major fortes, notably humanities, in France. It is one of the conditions of any claim for universalism. The knowledge of languages and civilisations, the understanding of oneself and others, of cultural mind-frames and religious dynamics are considerable assets, if we are to understand a globalization not to be reduced to financial fluxes and economic and information flows. Those are not to be a mere dissemination of a unique model. On the contrary, they are liable to generate competition strategies between the dominating groups having an impact on the financial imbalances and nurture them.
- 13 To include space and time, a behaviour consubstantial with the SSH, is inseparable from a vision of the future world. The study of classical Antiquity or Middle Ages texts, for example, gives clues to reconsidering our analysis of the dominating family model over the past two centuries. The social and political usefulness of research is, in this case, to underline and understand the variability of the family models throughout history. The French historical sciences, through their interest in facing the globalization of scientific and scholarly exchanges, are keen to take a specific view at other societies.
- 14 The SSH have for a long time carried an often learned questioning over the bases of the western civilization, whose implicit foundations and impacts for domination are henceforward to be re-examined. They are at the present time crossed by the question of and the demand for a 'de-westernization' of the SSH.
- 15 Thus, the SSH allow for a differentiated approach to the development of knowledge and culture as well as a de-dramatization of cultural relativism. One of the most notable advances in contemporary philological researches is in effect the recognition and the rigorous deepening of the differences between literary and theoretical practices created by particular linguistic universes. In this perspective, phenomena about translations as well as conceptual transfers, confront incommensurability and untranslatability, or even sometimes surprising convergences which permit to challenge a few certainties. The discovery of non-western literatures and the emerging domain of postcolonial studies, change the deal and will allow for a new evaluation of our cultural hierarchies.
- 16 Like other sciences, the SSH are without boundaries, be they geographic or intellectual. On the latter aspect, it illustrates the development of the activity field as they were considered in the 21st Century as inextricably linked to culture and science : performance practices, performing arts, artistic creation, architecture and design belong to research as do musicology and visual arts, ensuring diversity and de-compartmentalization of research in humanities.

- 17 The interdisciplinarity allowed for a re-dynamization of research, mostly absent from universities : dance, voice, work and re-creation of sounds... the new technological and digital orientation of musicology are at the forefront of international development in these fields.
- 18 Emerging cultural objects such as performance practices and performing arts in general, applied instrumentalization, study of the musical gesture and of improvisation are a hot-bed of creativity for sciences as much as innovation of humanities.
- 19 Research today must incorporate the variety of contemporary innovative forms, which include the performing arts and performance practices – all that allows for a movement in hierarchies and traditional intellectual certainties, a disruption that always has been the source of progress in humanities.

Global SSH

- 20 The paradoxical effect of globalization is that globalization could make believe that efforts to enter the world's societies through their languages and their long history have become pointless.
- 21 In fact, globalization invites us to think differently, to get out of methodological nationalisms and to imagine what the Social Sciences and Humanities could be, not only taking them in the era of globalization, but taking them also in the logics of globalization. Should it be reminded here that French historical sciences long ago tackled these questions of movement and globalization on a regional or a world-wide scale (for example for the Roman world and East Asia) ? To think global is to take an interest in planetary logics and articulate that level of analysis to other regional, national and global levels. It is also to focus on the evolutions of contemporary laws, on the birth of a 'global law' which, to a certain extent, is a substitute for international law, and sometimes complement it, and on the formation of social, political or cultural objections on a world-wide basis such as alter-globalization movements. This is also putting migratory phenomena into the light of globalization, and not only with the view of a normative integration to such or such host community. It is also trying and understanding how supranational institutions develop in terms of justice or economy for instance, as in terms of regulation of the energetic production or action on the climate. It is also putting the networks at the heart of analysis, be they dependent on the internet or on other information technologies.
- 22 What is called 'global change' refers us to the co-dependence of the human and social world AND the nature and earth world. The integration of the SSH allows for a complex and global analysis of concepts and normative bases underlying the interpretation of global-change based risks. Collective and individual decisions processes in societal emergence situations support public policies, taking into account the data coming from the civil society's 'stake holders' and creating new social, sanitary, environmental indicators. It allows for a broadening of the research scope through the reinforced practice of space and time comparisons, including extremes, the taking into account of conceptual innovation, from the loss of bio-diversity to spatial law, from crisis situations to vulnerability, from individual and collective capabilities to gender inequalities.
- 23 The co-dependence, the corollary of which is that local phenomena have more and more global consequences, cannot be apprehended without taking the emergence and self-

organizational phenomena into account, which belong to technical, social, economic and environmental phenomena. Concepts and methods coming from studying complex systems are fundamental in that sense, if one is to give society a grip on phenomena tending to acquire their autonomy.

- 24 In accordance with their vocation, the SSH's ability to be located both in time and space predisposes them, as suggested by their innovating contribution to remote works through time and space, to confront knowingly and in coordination with other sciences the 'challenges' and the issues of the contemporary societies and their projections of future transformations, be they natural, technological, social, political or cultural.

Mobilization of science and society

- 25 The societal challenges express global emergences and difficulties, i. e. questions to which research should bring, if not answers, at least analyses or orientations for action : climate change, natural resources management, energetic transition, human and environmental protection, flood of 'big data' and their treatment, sanitary risks in a global economy... on which a mobilization of the whole science stakeholders is necessary.
- 26 The concept 'societal' is to be understood, as seen above, not as the domain of a discipline (the SSH), but as a human and social dimension of science. The project is not to integrate the SSH to other scientific sectors as an immanent complement to each challenge. Beyond the existing actions and structures, one has to operate a qualitative and quantitative leap within the articulation and the integration of competences and contributions of diverse origins (for example, for the energetic challenge : physicians, energeticians, chemists, but also sociologists, economists, political scientists, landscape, environment and architecture specialist and researchers etc. as well as industrialists, small and medium-sized companies, associations, collectivities) beyond any implicit hierarchies of academic standards.
- 27 During the 20th century, biology was revolutionized by the development of microscopes. At the 21st century, the convergence of 'big data' and high performance calculators provides new tools to all sciences. Through the mediation of whole segments of social activities by data processing methods, new types of data (ex : social networks, GPS tracks, utilization of web service data, 'crowd-sourcing') and data of an unheard of richness are at the disposal of researchers and society. Together with the technological innovations and the development of new standards for studying complex systems (integrating several levels of organization and multiple time and space scales) this qualitative and quantitative transformation of our relationship to things social is probably one of the keys to our understanding of global social phenomena. Such a coupling implies an important synergy between the SSH research and the research on complex systems, as well as pooling competences and infrastructures at a scientific community scale. A deepened reflection on the societal upheaval that these macrosopes inevitably bring with them is therefore necessary.