A geography that does not encompass a thorough knowledge of contemporary reality cannot achieve the necessary strength to be a powerful instrument for the transformation of reality. Thus, the fundamental question that geography must ask itself is “how and why to express the relations between society as actor and the territory as the object acted upon and, on the contrary, between the territory as actor and society as the object of action” (Santos et al. 2000:13). Responses to this question–already developed previously by Santos, especially in his A Natureza do Espaço (1996)–would bring enormous contributions to the theoretical development of the discipline, since that would necessarily lead to a “totalizing” approach that would be more lasting and effective. This totalizing approach, in turn, would authorize political interventions of interest to “the greater part of the population” (Santos et al. 2000:13).

This essay will seek to develop some of the discussions that appear largely in the sixth part of the Manifesto by [i] identifying the broader causes that led to the recent fragmentation of scientific knowledge and [ii] showing how problems, themes and geographical concepts were used by other disciplines in a period in which there seemed to be greater coherence between the areas of knowledge. Although there are different views on the definition of what the central categories of geography are, there seems to
be quite a consensus that it must work primarily with notions like space, milieu, territory, region, place, landscape, frontier and area, among others. Geography is also concerned with themes such as location, distance, diffusion, duration and so on.

**The Ascension of Technoscience and the Fragmentation of Scientific Knowledge in the 20th Century**

The recent ascension of a specific form of science, termed “technoscience”, is at the root of the disintegration of the disciplines that began in the 20th century. This technoscience, which has its distant genesis in the Humboldtian model of the university, has been developed successfully in North America, with a significant difference from the German model: all areas of knowledge—to a greater or lesser degree—are divorced from philosophy and from the broader questions related to the ethics and political consequences of the production of knowledge. In other words, the innovations in each area of knowledge have lost their more comprehensive concerns (those of a speculative character), guaranteeing a constant self-reflection on their nature and historical function. The production of knowledge thus gained an eminently pragmatic appearance, orienting itself toward solving the problems of specific social actors, and doing so promptly. The legitimacy of this fragmented way of doing science derived from the exponential growth of economic productivity that it has always sought to generate. In one of the sharper critiques of this exacerbation of specialization, Ortega y Gasset (1960) asserted that the universities would form “new barbarians”, who know much about their areas of specific interest (and partial problems) and little—or nothing—of their broader historical and geographical contexts.

It is worth remembering that there is another determining factor that helps us to understand the ascension of technoscience in the contemporary world: the method of financing university research in the United States. This financing is on the one hand the result of the donations by companies, former students, and/or philanthropists (that is, it derives from the grand fortunes accumulated in the North American territory), or is the result of investments from what Fred Cook (1964) called the “Warfare State”, that is, the tremendous scientific dynamism of North American universities and research institutions is in large part the result of the enormous investments of the state and
Pentagon, which are able to maintain a high level of innovation in the military-industrial complex, and which in turn preserves the US as the principal economic, military, scientific, and technological power in the world today.

This political-institutional mechanism that has been developed over the 20th century has already been noted by North American geographers. In an important text written in 1963 on geography, Edward Ackerman asserted that “[i]n our desire to make our declaration of independence viable, we neglected to maintain a view of the advancing front of science as a whole … We neglected an axiom: The course of science as a whole determines the progress of its parts, in greater or lesser degrees” (1963:432, 1976:56). He adds: “The geographer should seek his [sic] personal identity in the mirror provided by all sciences” (1963:434, 1976:61). The North American author hit upon the diagnosis of the problem, but omitted the treatment. For all the quantitative geography that would derive from its progressive suggestions—as in the case of the classic work of Harvey (1983)—geography should approach knowledge such as physics, systems analysis and statistics, and also adhere more closely to the “revolution of rationalism” that “economic structure” of the period. Combining with this rationalism seems to have contributed to geography’s divorce from humanist philosophy, bringing it even closer to the partial tasks that technoscience invited it to perform.

**Interfaces of Geography in the Age of Non-Fragmented Knowledge**

Contrary to what this movement of the ascension of technoscience pointed to in the post-Second World War period, in the first decades of the 20th century virtually all areas of knowledge developed on a humanist and comprehensive basis, “naturally” interdisciplinary, and also engaged in a solid dialogue with geography. Among the most innovative and solid proposals for the renewal of scientific knowledge at the time, the operationalization of categories and problems that are eminently geographic was not uncommon.

It is possible that the economy is the field of knowledge that has the most interrelations with geographic knowledge, even from the beginning of its systematization (Dockès 1969). Starting from the mercantilists, through to the physiocrats, until we arrive at so-called “classical political economy” inaugurated by
Malthus, Ricardo, Smith, but also by Von Thünen, it is quite common for these authors to use typically geographical concepts to analyse the growth of cities, and to understand the wealth of countries and dynamism of regions and economic frontiers. In the 20th century, it is worth remembering that at least three of the most important economists of the so-called “development economy” were important articulators of concepts with geographic content. This is the case of François Perroux (1903-1987), Gunnar Myrdal (1898-1987) and Albert Hirschmann (1915-2012), for example.

The dialogues taking place in psychology were also animated by the categories of geographic knowledge. Consider the well-known proposal of the “perception of space” made by William James (1842-1910) in his classic Principles of Psychology (1924). According to the author, to “study consciousness it is necessary to localize (to place) it in the physical milieu that it has as its mission to know”. In the last century, the main theorist of dynamic psychology, Kurt Lewin (1890-1947), showed that every human being has a “life space”, and that “all scientific psychology must take into account total situations, that is, the state of the person and the environment” (1973:29). The “life space”, for him, could be considered as “the totality of possible events” (1973:31), and it is the individual's relation to these events that gives him or her the field of possibilities of action. “To each part of the life space there is a co-ordinated region”, asserts Lewin (1973:114).

It is possible to see similar content in the genesis of contemporary sociology. The emphasis on discussing urban problems locates the origins of contemporary sociology in close proximity to those of North American urban geography. “Moral region”, “natural areas”, “spatial zone”, “social distance,” and so on are notions widely used by the principal authors of North American sociology at the beginning of the 20th century. A form of sociology developed in France, at almost the same time, that still had a large degree of connection with geography: the so-called “social morphology”. Initially developed by Émile Durkheim (1958-1917), social morphology was established as a sub-field of sociology by the efforts of two important French intellectuals, Marcel Mauss (1872-1950) and Maurice Halbwachs (1877-1945). In order to create an identity for a sociology on the rise, in The Rules of Sociological Method Durkheim argues that “the determinant cause of a social fact must be sought between
the antecedent social facts, and not between the states of individual consciousness” (Durkheim 1927:135). He grants scientific status to what he calls the “facts of social morphology”. The main concept upon which he proposes to base his social morphology is “social milieu”, which is divided between “things” and “people”. With regard to “things”, these are defined as “the material objects that are incorporated into society, the products of previous social activity, the law, established customs, literary and artistic monuments, and so on” (Durkheim 1927:138). He adds that the “principal effort of the sociologist should therefore be to propose the discovery of the different properties of this milieu which are likely to exert action on the course of social phenomena” (1927:139). For Mauss, social morphology would serve to describe and explain the “material substrate of societies, that is, the form that they take on in order to establish themselves in the soil, the volume and the density of the population, the way they are distributed, as well as the ensemble of things upon which collective life rests” (1974:237).

Finally, one could not help but be reminded of all the argumentative wealth to be found in the dialogue of the Annales School historians with knowledge of geographic content. Founded by Lucien Febvre (1878-1956) and Marc Bloch (1886-1944), the most striking result of this mutual fertilization between the two disciplines is Febvre’s seminal book entitled *A Geographical Introduction to History* (1991). In it, the author shows that whatever they do “men [sic] can never entirely escape the influence of the environment” (1991:286). Strongly influenced by Jules Michelet (1798-1874) and the geographer Vidal de La Blache (1845-1918), Febvre and Bloch led a generation of historians who saw in the category of “region” one of the main theoretical tools for the achievement of their studies (as was the case of Georges Duby, Pierre Vilar and Emmanuel le Roy Ladurie, for example). In the period immediately following, the main articulator of the interactions between historical and geographical knowledge was Fernand Braudel (1902-1985). Through his two principal works, *The Mediterranean* and *Civilization and Capitalism*, Braudel developed what was to be called “geohistory”, defining the main human temporality not as that of individual or conjunctural facts, but as the “longue durée”. At the foundation of the *longue durée* would be precisely a “geographic time”, “an almost motionless history, which is that of man [sic] in his
relations with the environment that surrounds him, a slow history, of slow
transformations” (Braudel 1995:25-26).

Final Considerations
Among the many important contributions that the Manifesto presents, the main one
discussed here concerns the risks posed by the process of the fragmentation of scientific
knowledge that appears to be increasing in this period of globalization. Santos’ proposal
to develop a geography through the inseparable links between “objects” and human
“actions” seems to have, in his mind, the comprehensive and transformative nature that
the grand theoretical systems have had throughout history, as was the case with those
theories that we have briefly covered here. Proposals such as these can deal with the
“utilitarian and productivist modernization” currently underway, and developing them is
essential in order to avoid the “fragmentation of the geographical discipline”, and to
give us a “more complex and unitary geography” (Santos et al. 2000:7-8).

Endnote

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This essay, together with nine companion pieces, are available online at
https://antipodefoundation.org/supplementary-material/the-active-role-of-geography/
(last accessed 8 December 2016). A translation of Milton Santos et al.’s “The Active
Role of Geography: A Manifesto” by Lucas and Tim, together with an introduction by
Lucas, are available in Antipode 49(5).

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