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The Territory is not the Map: steps towards a new science

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ABSTRACT

This paper argues that an integrative science of territory is desirable and possible. It first examines certain prerequisites for the establishment of a new science and notes that these could be easily met by a science of territory. Next, it examines one of the most authoritative contributions to the notion of territory in the Anglophone literature, that by Robert Sack, revealing the complexity and interest of the topic. Related to this and briefly reviewed is GIScience research on boundaries. The paper then sketches out a possible theoretical framework for a science of territory, based on the notion of 'object of discourse'. The idea is that the richness of concepts underlying the notion of territory, ranging from parts of space to human intentionality, may be captured on four different levels of meaning that work together but may be approached by methods appropriate to each. The paper closes with some suggestions about possible organizational forms to help establish a science of territory.

KEYWORDS

Science of territory, influence, space, social relations, object of discourse.

INTRODUCTION

The starting point for this essay is the following statement from p. 13 of the 'Debate Paper': "Si l'on considère que le territoire est l'objet d'une discipline autonome, "la science du territoire", alors il faut en définir les concepts, les lois, et les méthodes d'analyse". Implicit in this choice is my belief that there can indeed be a *science du territoire* that is different from the sum of the disciplinary parts that have a territorial dimension. This of course is not an immediately obvious proposition. The objective of this paper is to contribute to the discussion that is the theme of this meeting, taking sides in support of the position that a 'science of territory' can be rigorously and usefully defined. The argument is developed as follows: Section 1 briefly discusses some prerequisites for a new science, indicating that a science of territory is possible in principle. Section 2 briefly examines the work of Robert Sack on human territoriality, as well as a couple of other relevant publications from the anglophone geographic information science (GIScience) literature. Section 3 outlines a conceptual model that could potentially serve as a starting point for the new science of territory, and section 4 closes with certain practical considerations.

1. SOME PREREQUISITES FOR A NEW SCIENCE

Nowadays the new sciences that emerge are of two opposing kinds. On the one hand there are the successful former scientific specializations that become sciences on their own right, such as Photonics or Communications. On the other hand there are the cross-cutting 'meta' sciences such as Complexity Science and Geographic Information Science, which are not about finding out how the world works, but rather about studying

the properties of different kinds of *representations* of the world. A science of territory would be of the latter kind.

But first: What are the requirements that must be met before we can declare the birth of a new science? There are several, and here is an informal and certainly incomplete list. One practical requirement must surely be that the science in question should have a sufficiently broad audience, that is, be of interest to sufficient numbers of scientists, professionals, and others to be worth the effort of defining and supporting it. Among the conditions for a viable new science are: a theme of broad interest, preferably cross-disciplinary, the existence of related literature of sufficient quality and quantity to be taken seriously by its intended audience, and a demonstrated need, or at least desirability, for a new perspective that can provide a common language and foster a systematic approach to disparate sets of problems. The Debate Paper for this meeting makes a strong case to the effect that a science of territory would meet this first criterion.

Another requirement concerns the intellectual merit of the potential new science. It must be distinctive in its approach and methods and clear about the defining properties of its objects of study, so that it cannot be mistaken as a sub-field of something else. It should also be rich enough to help generate robust research programmes that might not have existed without it. Finally, a third important requirement for a new science is that it be integrated within the web of the sciences as it exists at a given time. For example, astrology and parapsychology are not accepted as sciences, even though they may meet several aspects of the first two requirements, because they are outliers disconnected from practically all sciences of our age. Unlike astrology and parapsychology, a science of territory would be strongly connected with at least two major scientific enterprises of the day: the study of geographic space, and the study of complex systems. It thus seems that, *in principle*, a science or sciences of territory is (are) possible. What follows is an attempt to move the argument from the possible to the actual.

2. ROBERT SACK'S THEORY OF TERRITORY AND THE ROLE OF GEOGRAPHIC INFORMATION SCIENCE

Mentions of territory are plentiful in the Anglophone social science literature, well beyond the obvious disciplines of geography and political science. To my knowledge no-one has examined this notion as deeply or has provided as useful a theoretical framework for it as the US geographer Robert Sack (1986), whose monograph on human territoriality still stands as possibly the most complete treatment of the topic. This section provides a brief overview of those aspects of Sack's work that may be the most relevant to a potential science of territory. Further, because boundaries of some sort or other are part of the essence of territories, this section also addresses some work on this topic from the field of geographic information science.

Sack (1986, p.19) defines territoriality as "*the attempt by an individual or group to affect, influence, or control people, phenomena, and relationships, by delimiting and asserting control over a geographic area. This area will be called the territory.*" The author is quick to clarify that 'control'- and also, 'power' – as used in this work are neutral terms, that is, they do not necessarily have authoritarian or aggressive connotations. Among the hundreds of possible examples are: the control that people have over who may enter their property and under what conditions; the control that a national park has over the kinds of recreational activities that may take place within its boundaries; the control that a region has (or would like to have) in keeping out a contagious disease; or the power a trade alliance has to impose regulations for its members to follow. For Sack (p.2), "Territoriality is intimately related to how people use the land, how they organize

themselves in space, and how they give meaning to place.” Further: “Territoriality ...is an historically sensitive use of space, especially since it is socially constructed and depends on who is controlling whom and why [we may add: ‘and when’]. It is the key geographical component in understanding how society and space are interconnected” (p.3). Thus: “Territoriality, then, forms the backcloth of human spatial relations and conceptions of space...Human spatial relations are the results of influence and power. The territory is the primary spatial form power takes.” (p.26).

Sack (1986, p.19) also makes a clear distinction between place and territory: “Unlike many ordinary places, territories require constant effort to establish and maintain... Circumscribing things in space, or on a map ... identifies places, areas or regions in the ordinary sense, but does not in itself create a territory.” This notion of human agency being central to that of territory also makes it unlikely that the methods of quantitative geography and spatial analysis alone would be sufficient to tackle the territorial problematic. As Sack puts it: “Emphasizing distance has led to a geographical logic based on the metrical properties of space... The logic of territorial action is more complex than the logic of distance because territoriality is embedded in social relations. Territoriality is always socially constructed...and territoriality can have normative implications as well” (p.26).

These selected quotes from Sack (1986: see also p.21) provide us with an essential though incomplete conceptual vocabulary for a potential science of the territory. First, there is a *geographical area* that must be *classifiable* (as a parish, a gang’s turf, a clan’s domain, a resort, an agricultural cooperative, a marine preserve, a city, a state, an economic union ...), and that must *bounded* in some way because no territory can be an infinite plain, just as no human powers can reach out to infinity. Second, a territory must be recognizable as such through some *form of communication*, which may be as tangible as a wall, as symbolic as graffiti or a posted sign (e.g., NO TRESPASSING or YOU ARE NOW ENTERING X), as conventional as a series of coordinates on a map, or as fleeting as a pointing gesture (‘this all is ours’). Third, it must involve an attempt to exercise *control through rules and regulations* – written or unwritten – that are meant to influence behaviour and interactions. These range from the dress code for dinner on a cruise ship to the building and traffic regulations in a city, to the usually unwritten rules that govern relations between the sexes, races, religions, and social classes in different societies. Further concepts and ideas deriving from the quotes above are: the differences between space, place and territory; the historically contingent use of the land; the socio-spatial organization of society; a socially constructed space; differing human conceptions of space; human agency and intentionality; and the normative dimensions of territory. These are only some of the notions that a science of territory should be able to address and combine into new patterns towards the study of new kinds of problems.

Despite Sack’s (1986) skepticism concerning the ability of “the logic of distance” to handle the questions of territories and territoriality, it is evident that quantitative approaches must be part and parcel of a science of territory. Boundedness, for example, is a fundamental characteristic of territories that is clearly amenable to quantitative analysis. Researchers in geographic information science have investigated the properties of both the well-defined boundaries typical of administrative and political territories (Frank et al. 2001), and of the ill-defined boundaries typical of most everything else (Burrough and Frank 1996). The former collection focuses on the problems of representing in GIS databases the spatio-temporal changes of areas delimited by convention, while the latter deals with the challenges of assigning boundaries to areas whose distinctiveness is the result of natural or social bottom-up processes, and which therefore lack a clear geometric delimitation. In addition to boundaries, most kinds of phenomena relating to territories may be at least partly amenable to spatial analysis

methods. The question is how the ideas, concepts, approaches, and kinds of information alluded to in this section may come together in a new science of territory. The next section briefly outlines a tentative proposal to that effect.

3. TERRITORY AS 'OBJECT OF DISCOURSE'

A science is characterized not only by its domain of interest but more importantly, by its distinctive approach to the study of that domain. A science of territory must not only deal with notions as disparate as boundaries, socioeconomic relations, rules, and human agency: it must also integrate such notions in a consistent framework that can also be practically implemented.

The following sketch is based on the notion of 'object of discourse' as developed in Couclelis (2010) but which is adapted from earlier writers that go back to Aristotle. An object of discourse is whatever we can talk about, regardless of whether it is real or imagined. The Atlantic Ocean is an object of discourse, and so is the continent of Atlantis. Thus we can talk about the state of Israel, which at this time is a territory with well-defined boundaries, but also about a Palestinian state, a territory that does not yet exist except as an idea. An object of discourse has four dimensions. The *formal* dimension (as in 'form') has to do with what kind of object something is: it is concerned with those properties that distinguish one category of things from another. The *constitutive* dimension has to do with what the object is made of and in particular, its parts (material or abstract), and how these are connected. The *agentive* dimension addresses the processes by which things come to be or their roles as agents in other processes or their function relative to some end. Finally, the *telic* dimension refers to the purpose of things or the reasons why things happen. These are four distinct levels of meaning that together characterize a complex object such as a territory but which may be studied by different methods relatively independently of each other. Because territories are intentional human creations, their *telic* dimension – the reason for their existence – is their most essential property, out of which most of the others follow. The preferred logical order of their four levels of meaning is thus from *telic* to *agentive* to *constitutive* to *formal*.

Let's take the state, a typical kind of territory as an example. Its purpose is – say – to nurture societal welfare within its boundaries and to represent and defend its interests vis-à-vis other states (*telic* dimension). To do so the state must act through a large number of coordinated measures, from the creation of a spatial administrative hierarchy and the planned development of spatial infrastructure to the imposition of laws and the signing of international agreements (*agentive* dimension). These measures in turn seek to control the nature, powers and behaviour of the entities comprising the state (e.g., the administrative jurisdictions, the corporations, the political parties, the civil institutions, the army, the individual citizens, etc.), and the nature of the relations among these entities (*constitutive* dimension). Finally, a state has an indefinite number of distinguishing characteristics such as geographic location, area, population size, GDP, etc., that help classify it as a European, say, or as a rich state or a new state (*formal* dimension). The context of study will decide the relevant selection of information from each level. This kind of analytic breakdown by levels of meaning may be applied to any kind of territory, from private properties and nature preserves to international alliances such as NATO and the EU. Moreover, because geographical objects of discourse need not be grounded by actual coordinates, virtual territories such as the global zones of influence created by information and communication technologies may also be represented.

4. TOWARDS A SCIENCE OF TERRITORY

The framework outlined above represents only one of several possible approaches to a science of territory. Its purpose is simply to suggest that in principle, such a science can exist. It can facilitate communication among the numerous scientific and professional fields that implicitly or explicitly have as their object of study territories large or small, formal or informal, spontaneous or planned, contiguous or not, well-bounded or not, overlapping or not, contested or not, physical or virtual, actual or potential. Considerable commonalities should exist among all these kinds of territories based on the fact that they are all intentional human creations that use particular combinations of means and ends – successfully or not – to achieve results that usually translate into geographic patterns on the ground. There is little doubt that a science of territory would draw on both qualitative and quantitative methods and information, and that the latter would most often be geographical, since a territory is by definition an area in geographical space.

It is worth considering the form of organization that such an integrative, interdisciplinary science might assume. Several models come to mind, listed here from least to most structured. First is the GISDATA model of 1990s Europe, run by an informal network with a single academic at the helm. The ESF-funded GISDATA convened a series of interdisciplinary 'specialist meetings' on topics of interest to the geographic information science community, all of which resulted in influential edited books. Next is the Center for Spatially Integrated Social Science (CSISS) at the University of California, Santa Barbara (UCSB), the mission of which is to help integrate the social sciences by highlighting the spatial dimension underlying so much of social science research, a goal promoted through a variety of technical resources and interdisciplinary meetings (Goodchild and Janelle 2004, Janelle and Goodchild 2009). It is not too far-fetched to imagine a 'CTIS' (Centre for Territorially Integrated Science), an actual Centre based in Paris with a mission and strategies parallel to those of CSISS. A more ambitious model in terms of resources is that of the Santa Fe Institute in the USA, a large interdisciplinary institute for the study of complex systems, with resident researchers and major outreach programs. Finally, the US National Science Foundation (NSF) has just launched 'Science Across Virtual Institutes' (SAVI), an effort to motivate collaboration among scientists around the globe.

To sum up: in my view a science of territory is possible, it would facilitate the work of academics and professional in a wide range of domains, and it could be organized along the lines of any of several successful models. It's time for a call to action: 'Allons enfants du Territoire! Une science nouvelle est arrivée'.

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