

Knowing Space / Spatialization

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Knowing space is of universal social interest and the topic of some of the most historic knowledge projects and texts produced by human cultures. How is space known? How might we take stock of our spatial knowledges across cultures? What are the elements of a genealogy of space? If history and geography have a descriptive bias, a genealogy would go in a different direction, attempting to both avoid describing and ‘speaking for’ while critically exposing the conditions and formations of timespace discourses (however fragmented and discontinuous).

Yet conceptions such as space and time, are intrinsic to the intellectual ordering of our lives and our everyday notions of causality. When we turn to our daily speech, read the headlines of our newspapers, or scan learned journals, we find an unexpected cornucopia of spatial references, elaborate expressions and elegant spatial metaphors which position the term within our own knowledge as well as practice. ‘Space’ evidently plays an important role in knowledge and in knowing the world. Nearly every philosopher and social thinker has dealt in some way with space or spatiality. Analysis is complicated by the intangibility (virtuality) of physical space. ‘*Space*’ is also translated in different ways between languages and between disciplines: engineers conceive of space as a void; physicists, mathematically as a set of dimensions (eg. from 2-dimensions of a surface up to 11-dimensions in particle physics). And, in the late twentieth century, social scientists began to understand space not as a void but as a qualitative context situating different behaviours and contending actions.

Etymology / Translation

The *Oxford Dictionary* presents more than 17 definitions for ‘space’, which is (like the French *espace*, and the Italian *spazio*) etymologically descended from the Latin *spatium* but whose English-language meaning is often more closely related to the Latin *extensio*. Hindu philosophy defines *Akasa* (*akasha* - space/ether. Sanskrit, from *kas*, ‘to shine’) as an infinite but indivisible imperceptible substance that has as its sole nature to be a static principle of extension (in contrast to movement, *prana*), or an eternal matrix or context of accommodation (*kham-akasa* see *Khândogya-Upanishad* I. 9, 1). Italian and French writers such as Lefebvre (1981), Castells, Bachelard (1981) and Zevi have felt at ease with the use of the full range of meanings, denotative and connotative, of ‘*spazio*’ and ‘*l’espace*’. In the *Dictionnaire Larousse*, ‘*l’espace*’ denotes ‘place’ (*lieu*), ‘site’ or an area, ‘surface’, or ‘region’. ‘*L’espace*’ does not mean just ‘space’. By contrast, English-language theorists have often limited their appreciation of space to a quantitative definition with reference to distance and to time (and vice versa e.g. graphically on a calendar).

Shan Hai Jing* / *Kitab nuzhat

A small selection demonstrates the relevance of a genealogical approach, for the first geographers are historians and mythographers. One of the first books, *Shan Hai Jing* (*The Guideways through Mountains and Seas* (P'o Kuo (Guo Pu), 1985)), though misinterpreted as mythology by subsequent generations, was originally a geographical compendium describing the character of regions at the edges of the Zhou Dynasty empire (approx 1046-771BC). Virtually

spanning recorded history, including the history of European contact and spanning the history of printed books, commentaries on *Shan Hai Jing* mirror cultural changes in the successive dynasties. Its classification changes in Chinese historiography from bestiary and mythology, to between travelogue and strategic guide, depending on the extent to which it was found to be useful to the Imperial court as an empirical reference in dealing with peripheries and foreign contacts.

As Herodotus remarked map-makers both challenged and structured how the Earth was understood as a flat plane (Herodotus e.g. IV:36). For example, Ptolemy's later concepts of latitude and longitude were related in part to an interest in defining *Klimata* - ecologico-ethnological characteristics of regions (Ptolemy 1969). The most voluminous 12th century knowledge project was the geographical encyclopaedia *Kitab nuzhat al-mushtaq fi ikhtiraq al-afaq* (*The Recreation for Him Who Wishes to Travel Through the Countries*) (Idrisi Muhammad ibn Abd al-Aziz (Al-Idrisi & Sezgin, 1988)). The *Kitab nuzhat* built on previous Arab geographies but also involved teams that did fieldwork. Although this Sicilian masterwork was unknown in Rome until the 16th century, its organization of research and its narrative and cartographic representation of knowledge – including a large silver globe (destroyed 1160) and a circular map were, in the most profound sense, world views which influenced far more than cartographic practice: It inspired Imperial desires and possibly Columbus and anticipated the organization of state knowledge-enterprises in later centuries, from the Inquisition to the collecting practices of Napoleonic armies to Royal Commissions.

***Extensio* / Topology**

However empirical geographies have attempted to be, there has been no consistent historical consensus on the nature of space that would establish cartographic method once and for all. Statements of the 'problem of space' by Aristotle, Euclid, Descartes, Leibniz and Newton, Kant, Hegel, Nietzsche, Husserl, Merleau-Ponty, and Heidegger, along with modern writers such as Lefebvre, have marked out entire epochs in the treatment of space (1981). Enlightenment philosophies of space depended on Euclid's geometry and presumed a three-dimensional *extensio* known through geometry. However, the Aristotelian tradition casts space as a mental categories by which objects are named and classified. And by contrast, Kant cogently argues that space is neither cognitive nor subjective (Kant, 1953:41-51). Privileging only relations over a geometrical reality involves attributing to space relations which are proper to objects. But if all continuous motions in a three dimensional space are real, not much is saved by denying the reality of space itself. At a minimum, space can be successfully argued to be an intangible substance and the substantial bearer of topological properties whose consequences we can notice in ordinary experience.

Classical approaches emphasizing three dimensional space break down both in everyday usage and metaphor as well as with the mathematical exploration of a second major anomaly in Euclidean geometry: the 'Parallel Postulate' - through one point in a plane it is possible to draw only one straight line parallel to a given straight line in the same plane. This Euclidean law can be violated if the three-planar dimensions of space are warped – such as in the geometries produced by Lobachewsky and Riemann in the first half of the 1800s. The art of Escher demonstrates the paradoxes of these mathematical 'phase spaces' – more projected topographies of mathematical solution sets than any Euclidean 'lived space'. Physicists and mathematicians

envisioned an infinite number of spaces, all in motion with respect to each other. This opened up a relativist plurality of spaces and helped legitimate the possibility that the history of the earth and its discoveries might be construed differently in different sociocultural spaces. Ever since, Cartesian absolute space has become just the topological space that describes the human experience of embodiment. Other mathematical topologies may better describe the social configurations of those bodies in everyday life (Von Uexküll). Thus we are led to examine alternatives which might more appropriately describe the complexity of global culture than the commonsense, Euclidean 'spatialization'. In this plurality of spaces, it makes sense to talk of 'social spaces', which gain meaning as the changing topologies mapping affinities between bodies, meanings and sites (Poincaré, 1952:50-58; Mach, 1901:94).

Social / Space

Durkheim audaciously proposed a correspondence between social structure and the society's notion of space laying the ground for structural anthropological studies. He provide the example of the Zuñi Indians, concluding that their space was nothing else than, 'the site of the tribe, only indefinitely extended beyond its real limits' (Durkheim and Mauss, 1963:12). One could venture from reports of Aboriginal conceptions of space as the 'Dreamtime', that landscape can become even more than sedimented traces but an historiography, read through embodied presence, perigrination and pilgrimage. This view of social space is topological. It emphasizes qualitative heterogeneity, varying not only from place to place, region to region (some being perhaps sacred, others profane); but it is not locked within one topology: from the mid-1950s space is argued to be contested within societies. This heterogenous social space must be produced and reproduced as a cultural artefact.

The multiplication of spaces was deeply disturbing to the commonsense mind of both the European Left and Right. The implied subjectivity and relativism threatened the stability of objective reality, of what could be taken for granted as truth. Space, it was argued, must, 'exist before social groups can be perceived to exhibit in their disposition any spatial relations which may then be applied to the universe; the categories of quantity have to exist in order that an individual mind shall ever recognize one, the many, and the totality of the division of his society' (R. Needham, 'Preface', in Durkheim, 1963:xxvii). Such opinions are part of an attempt to re-align social science with the natural sciences (thus to re-achieve the lost Kantian orthodoxy of one space: the alignment of 'social space' and 'physical space'). This was crucial to the Nineteenth century achievement of a homogenous spatialization allowing and legitimating the power practices of an expansive European imperialism (Lefebvre 1981).

Piaget's experimental research challenges the Kantian assertion that space and time *are a priori* modes of conception. For Durkheim also,

space is not the vague and indeterminate medium which Kant imagined; if purely and absolutely homogeneous, it would be of no use, and could not be grasped by the mind. Spatial representation consists essentially in a primary coordination of the data of sensuous experience. But this co-ordination would be impossible if the parts of space were qualitatively equivalent... To dispose things spatially there must be a possibility of placing them differently, of putting some at the right, others at the left, these above, those below, at the north of or at the south of....

space could not be what it is if it were not, like time, divided and differentiated. ...All these distinctions evidently come from the fact that different sympathetic values have been attributed to various regions... and that almost necessarily implies that they be of social origin (E. Durkheim, 1976:11).

Knowledges of 'space' are part of social and cultural processes. Yet social space is not just a cognitive mapping (cf. K. Lynch). It cannot be derived entirely from forms of social solidarity. This would render space entirely cultural and thus epiphenomenal. Space could be discarded as inconsequential. How might one understand conflicts over social space or the production of 'counter-spaces' of resistance? How might one understand the juxtapositions within social space and its nested spaces within spaces in which very different rules apply?

Spatialization / Difference

In the late 1960s, Lefebvre turned Durkheim's hypothesis of countless social spaces back on the West to consider struggles over the organization and meaning of space. What are the real relations masked by the spatial phantasmagoria of a Cartesian absolute, *a priori* and ineffable 'social space'? Is this contradictory and paradoxical structure not a type of cultural 'signature' of a dominant 'modern' technocratic and capitalist 'social spatialization'? This made social space appear to be a homogeneous, smooth order. 'Distance' became its most important feature. Rigorous discussions of the spatialization of this system were marginalized, even though influential writers of the first half of the century had placed a priority on the geographical expansion of capitalism as a 'fix' for system contradictions and inefficiencies. But the importance of non-Euclidean mathematical spaces in science set the stage for late twentieth century re-appreciations of social space.

Making *distance* the basis of the social appreciation of spatialization, is Eurocentric and technocratic. Distance – a word we should be extremely careful about – has been treated as an invariant quantity with a meaning in and of itself regardless of cultural variations in the qualitative meanings associated with distance. In such a spatialization of the world, alternatives are masked (Shields 1991). We need to know space as not just about relations and distance between elements but as a social produced *order of difference* that can be heterogeneous in and of itself. 'Knowing space' is not enough - trigonometric formulae, engineering structures, shaping the land and dwelling on it. We need to know about 'spacing' and the spatializations that are accomplished through everyday activities, representations and rituals.

References

- Bachelard, G. (1981). *La poétique de l'espace* (10e éd. ed.). Paris: Quadrige/PUF.
- Durkheim, E. (1976). *The Elementary Forms of the Religious Life* (2nd ed.). New York: George Allen and Unwin.
- Durkheim, E., and Mauss, M. (1963). *Primitive Classification*. Chicago: University of Chicago Press.
- Idrisi Muhammad ibn Abd al-Aziz (Al-Idrisi), & Sezgin, U. (1988). *Kitab Anwar uluw al-ajram fi al-kashf an asrar al-ahram*. Frankfurt: Mahad Tarikh al-Ulum al-Arabiyyah wa-al-Islamiyyah.
- Kant, I. (1953). *Prolegomena to any Future Metaphysic* (G. R. Lucas, Trans.). Manchester:

- University of Manchester Press.
- Lefebvre, H. (1981). *La Production de l'espace* (2nd ed.). Paris: Anthropos.
- Mach, E. (1901). *Space and Geometry in the Light of Physiological and Psychological and Physical Inquiry*. Chicago: University of Chicago Press.
- P'o Kuo (Guo Pu). (1985). *Shan Hai Jing; Leendary Geography and Wonders of Ancient China* (H.-C. Cheng, H.-C. P. Cheng & K. L. Thern, Trans.). Taipei: National Institute for compilation and Translation. Also available in ebook format via University of California Press.
- Poincaré, H. (1952). *Science and Hypothesis*. New York: Anchor.
- Ptolemy (1969). *Geographia*. Amsterdam,: Theatrum Orbis Terrarum.
- Shields (1991). *Places on the Margin*. London: Routledge.

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