KartenWissen

Territoriale Räume zwischen Bild und Diagramm

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Map Knowledge

It is known precisely when the territory, in medieval times, became a map. The tale of this metamorphosis is documented in a booklet – *Tractatus de Fluminibus seu Tyberiadiis* – written in the year 1355 by Bartolo da Sassoferrato, one of the most prominent jurists of Christendom. During a summer vacation, Bartolo took a walk in the countryside near Perugia. While gazing at the meanderings of the Tiber river, he found himself devising a way to assign right of ownership on the alluvial lands newly created by the whimsical and unforeseeable watercourse. He stopped to consider this prospect for awhile, and continued to walk. During the night he had a dream: God appeared to him and gave him a set of drawing instruments, urging him to find a solution, with the promise of many new discoveries. For this reason, in France until the year 1789, every question concerning boundaries was called ‘Tiberiade’, in reference to Bartolo’s revolution.1

Territory is a word which stems, not from ‘terra’ (land), as people normally think, but rather from ‘terror’, as the Justinian Code (Digestum 50, 16, 239) explains. Bartolo’s fear of transforming the living world into a dead geometrical scheme is an effect of this terror, whose root can be traced to the origins of western culture. Agathemerus writes that Anaximander, a pupil of Thales in the seventh century B.C., “was the first one who had the audacity to draw the Ecumene on a small table”2 made of terracotta or bronze. For this reason, Anaximander was judged to be most impious: according to the story, he dared to represent the earth from above in a way that only Gods could do. In fact, things were more complicated than this. For the Greeks, nature was not a combined group of things, but an ongoing perpetual process; nature was movement. From this perspective, Anaximander’s project appeared scandalous because it aimed at immolating Earth by delving into the knowledge (of the dominion) of Earth itself. It is only because, with Anaximander, the Earth becomes a corpse that the rigour (the rigidity) of death becomes the equivalent of the rigour of science; *rigor mortis* only allows the measurement of what was once alive but is no more. Anaximander might not have been the first one to talk about such a reduction in the Western World, but he is certainly the first one to execute it in geometrical forms and make it so pervasive that it stands at the center of a complex Weltanschauung.4 Precisely such a deliberate reduction of reality into a corpse-like geometrical scheme explains Anaximander’s tragic supremacy, his role of precursor strangely assigned to him by western tradition, despite the fact that maps existed long before his time.

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1 See Bartolus: Tractatus, fol. 106 v.
2 See De Dainville: Cartes.
3 Muller: Geographi, p. 471.
4 See Farinelli: Segni, pp. 8–9; Farinelli: Geografia, p. 81.
Michel Serres writes that the difference between the Babylonian tables dating back to the third millennium B.C. and kept in the British Museum and Anaximander's table corresponds to the difference between local and global. The former tables have at their center the city and the river Euphrates; Anaximander's table, on the other hand, provides a model of the world as a whole. These reflections, however, concern merely the descriptive plane. More significant in this respect are a series of bronze and silver circular tetradrachms coined in Ephesus during the fourth century B.C. On the reverse, these show the map of the city's hilly surroundings traversed by the tributaries of the river Meander. On the recto, a Persian satrap, holding an arch and the baton of command, is hurrying on; on the opposite side, a series of valleys stretch amidst woody hills depicted with plastic precision. The absence of anything that would suggest human intervention — such as roads and cities or any other kind of nomenclature — is noteworthy. Precisely because of such absences, it can be concluded that this coin was meant for local circulation limited to Ionia. However, one could object that until recently also the Brazilian Cruzeiro and the Taiwan dollar carried on their reverse a map showing rivers and mountains, reminiscent of the silent maps of our childhood. The images impressed on these coins and the stories that they still convey to us show that we still believe in maps just as we still believe in coins.

What is common to modern maps and coins is not merely a question of more or less limited circulation, but rather their symbolic regime; this is functional to the exchange value rather than the use value of things. Whether or not the exchange value contains as much as an 'atom' of use value, as Karl Marx holds, or whether exchange value and use value are, on the contrary, driven by the same logic does not interest us here. What is important is the fact that the role of geographical maps at this point is not concerned with the recognition and localization of things on earth, but rather with their possibility to be transformed into commodities, as the case of maps on coins devoid of any names plainly shows. This idea is clearly illustrated at the end of the nineteenth century by the author of the translation of that part of earth that we now call India into a geodetic map: a "sound, square, geographical" map "based on systematic measurement", i.e. triangulation, every point on a boundary-line, every peak in a mountain system, every landmark of any importance in the countryside, has a value whose correctness can be proved just as easily in a London office as in the open field. And this value is not only incontrovertible, but absolutely distinctive, because every point on the surface of the entire world has its own special position in terms of latitude and longitude, with which no other point can interfere.

The analogy between cartographic representation and the market, which is its realization, can be clarified by rephrasing Thomas Holdich's assertion using the language of Marxism: natural forms become forms of value, commodities show a phenomenal form different from natural forms only with respect to the exchange value these have in common with other commodities. Figures on a map share the same destiny: despite their

6 See JOHNSTON: Map.
7 See MARX: Capital, p. 4.
8 See BAUDRILLARD: Critique, p. 171.
9 HOLDICH: Use, p. 473.
differences, all things coexist beside one another; at the same time, they also submit to the same regime which assimilates them all. Commodities have a value only because all other commodities have a value in relation to the same equivalent, that is to say an equivalent commodity excluded from the realm of commodities represented on the map. The map is, in turn, the agent that produces a general form of value. Such a general equivalent is space, intended in the Ptolemaic sense of the standard linear interval between two geometrical points, in relation to which each use value, that is to say each place, is destined to disappear. In the middle of the sixteenth century, the introduction of the graphic scale in maps marks the beginning of the systematic use of space as phenomenic form for the value of goods, in other words, as a universal commodity in relation to particular types of commodities. In this way, the map with its properties becomes the model of territory and produces the general form that stands for modern territorial value. In other words, space and money become the same thing; cartographic symbol and money function exactly in the same way: the former in relation to the map, the latter in relation to the market. The consequence of their mutual, incessant tension towards the equivalence of all things has led to the poor generalizations that presently mark our relations with the world.

A few years ago, Immanuel Wallerstein wondered whether India really existed. He reached the conclusion that India existed only as 'an invention of the modern world-system', in the same way as any other Nation State. Much earlier, as early as the end of the nineteenth century, the major expert on the land-systems of British India explained that India did not exist at all, because no country in the world is called by this name: “Within the borders of the area that is designated with this name on the maps, there are a series of provinces populated by different races often speaking different languages.” What nowadays escapes English social science was perfectly clear to the British Empire's civil servants and beforehand to Metternich, who, two centuries ago, at the Congress of Vienna, triumphantly declared that reality is its geographical, or more precisely, cartographic expression.

The above statement remains valid even when it is re-phrased in more radical terms: reality is the product of its treatment, and the latter is in turn the product of geographic – or better cartographic – expression. On the reverse of the above-mentioned tetradrachms, space does not feature yet. In its place, we find the portrait of a territory delimited by monetary circulation, the image of the natural form of things, of their use value. More importantly, the coin signifies natural data and, simultaneously, the potential equivalence of each element with the others and their possibility to be interchanged; and this is the reason for which names or representations of roads that already existed are missing, because these are not significant. Such a mutual function has a two-fold preliminary characteristic. Firstly, it consists of a simultaneous representation secured by the image itself. This is a fundamental aspect of commodities which

10 See Marx: Capital, pp. 24-29, 36-37.
12 See Harvey: Spread.
13 See Wallerstein: Science, pp. 141-145.
14 See Baden-Powell: Land, p. 5.
15 See Johnston: Map, p. 92.
enables them to reveal their values in the same equivalent – in other words, according to a general expression of values. Secondly, it coincides with the form of the vehicle of the representation itself, namely, the coin, which is also the main agent in the market.

Alfred Sohn-Rethel’s reflections are useful in understanding the functional identity of map and currency in the form of coins; both of these, he remarks, are Ionic inventions that can be dated back to the seventh century B.C. It could be objected that the introduction of money occurs at the beginning of the seventh century, while the first map appears at the end of the same century. This, however, means that the map can be defined, using the words of Marx, as an ‘extended reproduction’ of the coin, a general sign that testifies to the existence of the market, that in this period is on the point of being born. At the same time, the coin also works as an unavoidable interface between what, according to Sohn-Rethel, is already directly connected: on the one hand, the money, that is to say the real abstraction in the exchange process, on the other, thought in abstract form. It follows that when, for example, Immanuel Kant breaks up the object in abstract substance and phenomenon, he makes a distinction between exchange value and use value of the goods. According to Sohn-Rethel, concepts exist in consciousness but do not originate from it. It is precisely money – the expression of the abstract exchange of things – that establishes the connection between social reality and conceptual ideals of formal abstractions. These are precisely the same abstractions of modern science notably represented by Galileo Galilei’s mathematical knowledge of nature, whose data have no direct relation to perceptions. This knowledge helped to destroy the unity of mind and hand typical of artisanal production and paved the way to capitalistic production through the imposition of laws based on exchange-abstraction and money: “laws of uniformity, divisibility, of a particular kind of movement and quantification”. The introduction of mathematics in the productive process – in construction and in particular in military architecture concomitant with the development of firearms – further favoured the development of capitalism.

Considering all this, we can reasonably conclude that the first and main agent of the introduction of mathematics was the map, rather than money. Sieges, obsidional techniques and the use of openings for firearms required in fact precisely drawn fortifications and the development of the geometrical image for the modern city. The isometric drawing method used in representing the front of buildings as we are accustomed to seeing them, i.e. their use value, gives way to the geometrical drawing produced by the impassable and de-humanized vertical viewpoint and an expression of their exchange value; at the same time, quality of manufactured goods gives way to issues of dimensions and measures, a mere matter of quantities. If money changes the nature of the relationship among human beings, it is the map that changes the way we think of things, and, preceding that, the way we name things.

17 See SOHN-RETHEL: Geld, p. 21.
19 See SOHN-RETHEL: Geld, pp. 59–61, 24, 21, 30–35.
21 See SOHN-RETHEL: Geld, pp. 41, 86.
22 See DE DAINVILLE: Langage, p. 218.
There is a distinct history of the invention and construction of the Orient. There are descriptions of the way the Western world is presently seen by its enemies. Despite all the volumes that have appeared in the West, a real history of the invention of the concept of ‘the West’ and how this appears in the eyes of those who are part of it remains unwritten. Michel Foucault would say that even now there is no complete genealogy of the Western world. This, I wish to argue, is the reason why there are still problems in recognizing the real value of map knowledge, its central role in molding all ideal models. The West is cartography, and modernity is the first invention by western cartography: Martin Heidegger would have been more precise had he defined modernity as the era of geographical representation rather than ‘the era of the image of the world’. In the same way as space – the form of modernity – modernity also originates from a grin, that same implicit and deferred grin that gives a name to America. It is known that a name is a petrified laugh, a laugh caught in the process of becoming something else, deferred, crystallized and finally made permanent. The American laugh, the name ‘America’, marks the end of the Columbus tragicomedy, the end of the adventure of an explorer who did not realize what he had discovered, unaware of his real function to reduce the world to a map. Gary Wills is wrong when he accuses Christopher Columbus of having sailed for his adventure with “the map of the old world in his mind”, a map whose image nothing would have shaken or erased. He is wrong because it is not so much a question of what is old and what is new, rather of the relation between the map and the world, of the world’s subordination to the map, a relation that was unknown to the ancients, and that starts with the modern period. The difference between Amerigo Vespucci and Columbus is the degree of consciousness that characterizes and shapes their respective actions. Columbus is the protagonist in a cartographic project that is controlled by someone else, more precisely he is the unaware agent of Paolo dal Pozzo Toscanelli’s project. Vespucci’s role also is decided in the end by a cartographic act, but this takes place after everything has already happened. In both cases cartography prevails over geography, cartographic ethos imposes itself on individual will.

However, there are differences between the two explorers: the first understands almost nothing about what is happening to him, the second understands almost everything. Such a difference is shaped by their different relationships with cartographic representation: Columbus receives a complete cartographic representation and produces the prognosis that it incorporates; Vespucci, too, the first cartographer and the one responsible for the Padron real in the Spanish Court, fabricates maps, but he does not fail. The famous letter sent by the Florentine on the 4th of June, 1501 from Cape Verde to the Medici is very significant: He complains about the Alvarez Cabral expedition because it includes neither mathematicians nor cosmographers, and, as a consequence,
one can discuss the nature and the form of the Brazilian coast only ‘discontortamente’, tortuously. This adverb uses a contrast, or better a negation, to highlight the new values of rectilinearity and orthogonality, that is to say the new spatial values, required and imposed by the modern cartographic image of the world to the world itself.

In this respect, the fortune of Vespucci is the ruin of Columbus, and their intertwined stories are in fact one single story: the story of the modern relation between reality and the linguistic and cartographic sign. It is a story that right now, at the end of the era of the New World, should be re-considered in order to attempt to shed some light on the nature of the very New World that is ahead of us. Such a re-consideration can be mapped out through the following two questions: why was it an arbitrary act to call America by this name? – And if this is the case, what does this name really mean?

Emile Benveniste identified a contradiction in the way Ferdinand de Saussure defines the linguistic sign and the central importance he attributes to it: Saussure states that language is form, and therefore the linguistic sign does not bring together a thing and a name, rather a concept and an acoustic image. He, however, also adds that the sign “is arbitrary in relation to meaning”, because “it has no natural relation with reality.” Benveniste claims that here, reality, although explicitly excluded from the definition of the sign, sneaks in from behind causing a fundamental contradiction: if language is form and not substance, linguistics should be a science of forms, centered around an understanding of the sign and not at all concerned with reality and things.

Benveniste interprets such a huge anomaly as a more or less conscious homage to the historical, relativistic and comparative ethos typical of the late nineteenth century: such an attitude begins with the realization of the infinite diversity of cultural phenomena to conclude that nothing was necessary; it recognized ‘universal dissimilarity’ to end up professing ‘universal contingency’. According to Benveniste, on the other hand, the sphere pertaining to the arbitrary nature of language should be narrowed: this does not concern the relation between the signifier (that is, the word) and the signified, as Saussure thought, but, rather, the mere fact that a certain sign is related to a certain aspect of reality. However, the relation between the signifier and the signified is necessary, as both are harmoniously impressed in the mind of the speaker, and by so doing evoke each other: the “mind does not contain empty forms, meanings without names”. Benveniste, more than Saussure, believed that the mind functioned like a map.

Let us leave this issue for the moment and return to Vespucci, or better to Vespucci’s luck: Let us consider the well-known amapamondo, the ‘flat figure’ (as opposed to the ‘spherical body’) that Martin Waldseemüller adds to the 1507 Cosmographiae Introductio, which bears, for the first time, the name of America (fig. 1a). This, like the mind, contains forms that are given names and, therefore, convey concepts. The names appearing on the newly discovered continent are few: there are names for the Antilles; there is a handful of toponymies mainly around the Brazilian and Florida coasts, point by point; and in the inland, together with the expression “TERRA INCognITA” repeated twice, north and south of the Gulf of Mexico, there are only two other names, namely, “PARIAS” around the Tropic where New Spain is and “AMERICA” in the

32 See MAGNAGHI: Vespucci II, p. 35.
33 SAUSSURE: Course, pp. 84, 87.
heart of Brazil (fig. 1b). While local toponymies are written in small letters, all other names are in capital letters. In addition, the last one appears to be written in larger print than the others, similar to the letters of the name “SPAGNOLIA” (now Haiti), a name followed by the predicate “INSULA” written in smaller letters.
As Consuelo Varela has noted, the popularization of the name ‘America’ is owed to this map, rather than the text that accompanied it. Whatever the case may be, besides definite descriptions of the yet unknown natural landscape of the New World, Waldseemüller’s map contains only two kinds of names: those which refer to points and lines (that is to say to localities, rivers, capes and mountain chains) and other names which designate whole areas. – In other words, the process of nomination on the map follows a geometric logic that is organized around the articulation of a Euclidian syntax based on the relationship between points, lines and surface areas.

There are two consequences: firstly, there are no names on the map, except for proper names – when I say names here I imply that which refers (and can only refer) to one and only one of the three elements, according to a biunivocal relation. Secondly, when names refer to surface areas, there is a relationship between the body of the printed letters and the extension of the area itself; and this explains why the name “AMERICA”, the one written in the largest print, devoid of all punctual values because it refers to a wide area, becomes the name for the whole island and later for the whole continent, once it is printed on the map. And the Introductio significantly confirms that this was precisely the intention of its author. Now we can return to semiotics. As Saussure has stated, “the method that uses words to define things is not a good one.” So, let us attempt to reverse this process, let us start from the map to attempt to define words. The definition of America is an exemplary case of arbitrariness (intended in an historical sense, and not in the semiological sense according to Saussure) of the linguistic sign. This is not to say, as Benveniste would put it, that this word has “no natural relation” with the reality it refers to. Rather, I would like to mention that the example of America shows Benveniste and Saussure in agreement, demonstrating the common cartographic roots of their thought, the very essence of their common position. On the one hand, the map is the only representation in which sign, meaning and reality enter into a relation with one another, causing the contradiction that Benveniste notes in Saussure. On the other hand, in the attempt to resolve this contradiction, Saussure reaffirms the necessity of the relation between the signifier and the signified that actually occurs only in the geographical image. This does not contain empty forms and anonymous concepts, and for this reason, according to Saussure and Benveniste and following a tradition that dates back at least to Thomas Hobbes and John Locke and stretches on to Kant, it can be considered a paradigm for the mind. If we agree that the map stands for a unique and original sign, this idea is also expressed by Saussure, when he writes that:

[I]t is not thought that creates sign, rather it is sign that guides thought in a primordial manner (as a matter of fact sign creates thought and in its turn leads thought to create signs that are not so different from those that it has received).  

These considerations can be useful in reviewing the Gallery of Vatican Maps painted after 1580: appearing at the top of some maps is the word “Ditio” (“Ditio Veronensis, Ditio Bononiensis and so on: from the Latin word dire, which means ‘to say’). – This word is placed immediately above an image that, differently from all other images and defying

36 SAUSSURE: Course, p. 25.
37 SAUSSURE: Writings, p. 28.
our expectations, does not bear any indications of borders. This is proof of the exhaustive character of a definition that only ostensibly refers to the linguistic expression, but that in actual fact is the product of a pure and simple tabular extension, so much so that the borders of the thing represented, in other words, the borders of the representation itself, have become unimportant; such borders are those of the representation itself, because the thing represented has become its image and vice versa. With modernity, the limits of the world become the limits of the geographical table, which is the thing that establishes or expresses what exists on earth.

This started perhaps with Toscanelli’s *Carta dell’Oceano*, a copy of which Columbus carried with him and which, along with the map of the New World by Waldseemüller, marks the beginnings of modernity. According to this map, the New World is not simply the fourth part of earth that had just been discovered, but rather, the whole world, including that part of the world that was already known to the ancients and which in this way acquires new meaning, existence and essence. This has decisive consequences for the analysis of cartographic logic. In international geographical debates, the reflection on the nature of maps still remains where Brian Harley had left it some years ago, that is to say at the point in which the map acquires a textual (i.e. literary) character, which can be understood by way of deconstructive techniques, on the belief of the supremacy of models derived from observations about natural language over all other models.  

But there is yet another possibility, the possibility of finding another explanation, according to which cartographic language is more important than verbal language and explains the aporias of the latter, in the belief that exactly this kind of consciousness is the only and authentic reason for which Vespucci was able to understand better than others what was really happening. It is exactly this kind of consciousness, and only this, which enables us to understand what is now happening.

According to Kant, his own revolution was the discovery that, just in order to understand anything, it was necessary to establish a geography of the black space of our mind, and not a geography of the visible. In order to understand what the modern world is – and, at least in part, was – it is necessary to understand that it is the copy of the map, and not vice versa. Take for instance the case of the State, the case of the modern, territorial and centralized State, according to the definition coined by Carl Schmitt. This kind of State – our State – is completely different from the old, feudal and aristocratic State coming from the microterritoriality (*Kleinstaaterei*) of medieval times, when the States were fragmented into a scattering of small sections. On the contrary, the modern State must be continuous (which means unbroken, made of a single piece), homogeneous (which means entirely made of the same substance, which in this case is the culture of citizens, the sum of their mental models) and finally isotropic (which means that all its parts must be oriented towards a single direction, normally defined by the fundamentally central position of the capital city).

But continuity, homogeneity and isotropism are, in fact, the properties which, according to Euclid, define the geometric nature of extensions. In other words: just in order to exist, in modern times States must acquire the nature of a geometric table, of a
map, which in this way becomes the model for the establishment of their bodies. Thus, we literally live on a map, and from Aristotle,\textsuperscript{39} to Hobbes,\textsuperscript{40} to Locke\textsuperscript{41} and to the latest cognitive sciences, for instance, Peter Gärdenfors' conceptual geometry of thought,\textsuperscript{42} our mind is a map: which is the reason why, nowadays, reality is nothing but the fragile diaphragm between these two maps, and the most powerful move of our knowledge.

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\textsuperscript{39} See \textsc{Aristotle: Metaphysics I, 9}, 992b33; \textsc{Aristotle: Anima III}, 4, 429a.
\textsuperscript{40} See \textsc{Hobbes: Leviathan}, p. 472.
\textsuperscript{41} See \textsc{Locke: Essay}, p. 6.
\textsuperscript{42} See \textsc{Gärdenfors: Spaces}.


MAGNAGHI, ARTURO: Amerigo Vespucci. Studio critico, con speciale riguardo ad una nuova valutazione delle fonti e con documenti inediti tratti dal Codice Vaglianti (Riccardiano 1910), vol. 1, Rome 1924. [= Vespucci I]

MAGNAGHI, ARTURO: Amerigo Vespucci. Studio critico, con speciale riguardo ad una nuova valutazione delle fonti e con documenti inediti tratti dal Codice Vaglianti (Riccardiano 1910), vol. 2, Rome 1924. [= Vespucci II]


SOHN-RETHEL, ALFRED: Das Geld, die bare Münze des Apriori, Berlin 1990.


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Fig. 1a and 1b: From the author’s archive.