

# A Millenarian Project? Bacon's Enlargement of the Empire of Knowledge<sup>1</sup>

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## Abstract

*The article sets off to explore Francis Bacon's millenarian project of advancing learning. The reformation of knowledge is envisaged by Bacon as a new stage in the progress of man, as a time when, by gaining a deeper knowledge of the world, man is restored to a state of control over the rest of creation. Bacon's project is often formulated in spatial metaphors since the time for the renewed dominion of man over nature is inaugurated by his conquest of space in an age of discovery and exploration.*

**Keywords:** Bacon, knowledge, map, millenarianism, science

## The restoration of man and the reformation of knowledge

For the most part, Francis Bacon's endeavour of advancing learning has religious overtones which seem to qualify it as a millenarian project. The restoration of man to a paradisiacal state by means of scientific progress announces a time when knowledge of the world is to serve the advancement and reinstatement of man to a position of command over nature. What is of particular interest is that that his apparent millenarianism is infused with the language of geography. My purpose is to explore the ways in which geography at the turn of the 16<sup>th</sup> century provides a cultural niche for the new science as promoted by Francis Bacon in his *Great Instauration*. To be more specific, I wish to find the reason why Bacon resorts quite often to the language of geography when he envisages the ways to advance learning, and to see what became of his new geography of science with its networks of natural historians. Perhaps there would be one more question to ask, namely, whether there is a connection between his imagined charts of collectors and his new map of the intellectual globe, that is, of the reformed classification of knowledge he suggests.

Before doing so, a few considerations on the concept of "map" and the way in which it becomes a means to forge a connection between geography and Bacon's project for the advancement of learning seem necessary. To this purpose, I wish to argue in favour of J. B. Harley's claim that the definition of maps needs to be freed from the notion of geographic content [see 8] and be given a larger scope according to which maps reveal our "spatial understanding of things, concepts, conditions, processes and events in the human world" [7, 54]. Such a point of view enables me to trace not only various links between maps of the mind and charts of the world, but also the values articulated in the context of the reformation of

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knowledge. What is more, it seems that there was a certain awareness that such a connection must exist at some level as early as the 16<sup>th</sup> century, when Gerard Mercator wrote in his introduction to the *Atlas* he had put together: “The universall Globe [...] is rather an object of the secret conceptions of humane understanding, than of the sharp-sightedness of our eyes” [7, 39], thus suggesting that the entire world was more the product of man’s imagination, based however on close scrutiny, but which could never be grasped in its entirety. Placed in the larger context of geography, cartography as such was assigned to the mathematical branch of this science.

## **Ships, globes, glasses, and the Pillars of Hercules: metaphors and tropes in the discourse of discovery**

For the time being, I wish to expand my considerations on some of Bacon’s works to this wider area and try to answer the question: what are the possible material reasons for which he resorts to the language of geography in *The Advancement of Learning*, *The New Organon*, *Valerius Terminus of the Interpretation of Nature*?

This brings us to the role of geography itself in the reformation of knowledge, a topic which has been dealt with in the past decades by authors such as David N. Livingstone, Lesley B. Cormack, and Peter Burke to name a few. As far as geography is concerned, at the turn of the 16<sup>th</sup> century, taxonomists such as John Dee and Nathaniel Carpenter had already acknowledged it as a mixed science with a theoretical underpinning and a practical purpose [see 5]. Separated from cosmography in an attempt to master the mortal world, geography with its mathematical, descriptive and chorographical branches relied on the inductive collection and tabulation of facts and aimed at using the knowledge thus gained. It was precisely this practical concern that provided natural inquiry with a new approach and, as Lesley B. Cormack argues with reference to mathematical geography, it “encouraged a reevaluation of the natural world based on both number and action” [see 5]. Whereas the first branch was seen as a form of applied mathematics which facilitated the production of new and improved charts and the search for accurate methods of navigation, descriptive geography enlisted a much greater number of authors at first eager to render enterprises of discovery and exploration more useful, and who later on adopted a highly moralistic tone. Such would be the case of Richard Hakluyt (*The Principal Navigations, Voyages, Traffiques, and Discoveries of the English Nation*, 1589) and Samuel Purchas (*Purchas His Pilgrimage*, 1613, and *Hakluytus Posthumus, or Purchas His Pligrimes*, 1625). All efforts to provide objective information (or even the claims to credibility made by these editors) containing descriptions and navigational details account for an impulse to represent the world as a comprehensible system and to gain control over it. Among the people who provide such reports, one may count merchants, politicians, scholars and ambassadors. Nonetheless, how relevant was geography for the early 17<sup>th</sup> century efforts to promote a new epistemological tradition? Livingstone tries to make a very strong point by claiming that the information overload triggered by voyages of discovery and exploration “brought an immense cognitive and cultural challenge to tradition” while “the emphasis on measurement and quantification [...] displayed the inductive impulse and empirical parsimony that provided geography with its cognitive niche in the scientific scheme of things” [10, 367]. That is not to say that geography was an entirely new discipline for its traditional roots may be identified in what Renaissance authors called cosmography (science of the globe, fundamental for practical and theological purposes: trade, warfare, medicine, the interpretation of the scripture) or traced in John Dee’s imperial project [10, 361]. What is more, the connection between geography and mathematics was so strong that certain branches of it such as cartography were seen as a perfect example of applied mathematics. Given its two-fold orientation toward practice and theory and the interdependence of the two, it occupied an intermediate position between data collection and interpretation, on the one hand, and, in most cases, the public use of the knowledge thus

obtained. And above all, geography gave its practitioners and especially its beneficiaries the feeling of control over the world which it had represented in systematic ways. Such outcome is comparable to the chiliastic overtones of the “new science” aiming at the restoration of man to his prelapsarian position and his regaining control over nature.

Before actually looking at the impact of geography and its language on Bacon’s image of the advancement of learning, one more point needs to be made. Even if there are numerous cultural historians and geographers who are eager to highlight the role of geography in the instauration of a new scientific tradition, there are others such as Daniel Rosenberg, Brian V. Ogilvie that point to similar changes in the work of Renaissance naturalists whose natural histories were faced with major taxonomic challenges as the world has opened up and ancient texts provided insufficient information [see 12]. The qualitative and quantitative shift toward empirical study had a major impact on the re-organisation of data according to the principle of similarity and the identification of types.

At first sight, such conclusions may render the claims concerning the instrumentality of geography in the reformation of knowledge relative, yet, that does not change the fact that at a time when the language of discoveries had gained popularity, Bacon resorted to it quite often with reference to his new image of learning. Perhaps, the best answer concerning the impact of geography on Bacon’s intended reforms is to be found in his work:

To circle the earth, as the heavenly bodies do, was not done or enterprised till these later times: and therefore these times may justly bear in their word, not only *plus ultra*, in precedence of the ancient *non ultra* [...]. And this proficience in navigation and discoveries may plant also an expectation of the further proficience and augmentation of all sciences; because it may seem they are ordained by God to be coevals, that is, to meet in one age. For so the prophet Daniel speaking of the latter times foretelleth, *Plurimi transibunt, et multiplex erit scientia*: [many shall pass to and fro, and knowledge shall be multiplied] as if the openness and through passage of the world and the increase of knowledge were appointed to be in the same ages; as we see it is already performed in great part; the learning of these later times not much giving place to the former two periods or returns of learning, the one of the Grecians, the other of the Romans (see Works Cited, 1, Francis Bacon, *The Advancement of Learning, Book II*, 340).

In the aforementioned passage from Book II of the *Advancement of Learning*, Bacon identifies geographic progress in particular as an incentive to scientific progress in general. The religious overtones cannot be ignored for they can be traced in other works as well and seem indicative of a millenarian program underpinning the entire reformation of science. Man shall thus be restored to his paradisiacal state and his enterprises will be “after the manner of heaven” or, as phrased in *Valerius Terminus of the Interpretation of Nature*, “it is a restitution and reinvesting (in great part) of man to the sovereignty and power (for whensoever he shall be able to call the creatures by their true name e shall again command them) which he had in his first state of creation” (see Works Cited, 1, Francis Bacon, *The Advancement of Learning, Book I*, 222).

Such restoration can be achieved not by trying to pry into God’s secrets and mysteries, but by imitating the Creator of all things in His goodness, which spells the moral aims of Bacon’s scientific project. Travel is perceived as a catalyst for a commerce of ideas, which, in its first stages, involves direct observation and data collection. The first chapter of *Valerius Terminus* includes a passage almost identical to the one from *The Advancement of Learning*:

for my understanding it is not violent to the letter, and safe now after the event, so to interpret that place in the prophecy of Daniel where speaking of the latter times it is said, Many shall pass to and fro, and science shall be increased; as if the opening of the world by navigation and commerce and the further discovery of knowledge should meet in one time or age” (see Works Cited, 1, Francis Bacon, *The Advancement of Learning, Book I*, 221).

Further on, Bacon moves from the word of God to the language of discovery and exploration and inverts the value of “old” and “new” while predicting that if “the new-found

world of land was no greater addition to the ancient continent than there remaineth at this day a world of inventions and sciences unknown, having respect to those that are known, with this difference", "the ancient regions of knowledge will seem as barbarous compared with the new, as the new regions of people seem barbarous compared to many of the old." (see Works Cited, 1, Francis Bacon, *The Advancement of Learning, Book I*, 223) In Book II of his *Advancement of Learning*, Bacon mentions Ortelius when comparing theoretical and practical knowledge. At this point, it would be perhaps worth taking a look at some of the ideas that underpin the work of the famous cartographer, *Theatrum Orbis Terrarum* (1570). In his case, of particular interest is his moral geography, for his map of the world, *Typus Orbis Terrarum*, a model for conceptualizing the globe, contains quotations from Cicero and Seneca framed in cartouches which Ortelius inserts in its four corners.

1. Top-left: For what can seem of moment in human occurrences to a man who keeps all eternity before his eyes and knows the vastness of the universe? (Marcus Tullius Cicero, Tusculan Disputations)
2. Top-right: For man was given life, that he might inhabit that sphere called earth, which you see in the centre of this Temple (/sky). (C. W. Keyes, ed., Cicero, *De Re Publica* de Legibus)
3. Seneca: Is this that pinpoint which is divided by sword and fire among so many nations? O how ridiculous are the boundaries of mortals! (T. H. Corcoran, *Seneca in Ten Volumes*, Vol. 7, *Naturales Quaestiones I*) [7, 81].

This kind of moral geography seems different from Bacon's. The anxiety of earthly entanglement, the vanity of earthly life, all delineate a moral space where man is left only the duty to deal with modest tasks and not the pursuit of vain glory. Yet, when Bacon operates a clear distinction between knowledge accessible to man and knowledge broken, he sets the boundaries of the chart that man is supposed to improve by means of diligent observation of nature. There is however a sense of limitation, of detachment that can be traced in *Typus Orbis Terrarum*, which is very much different from Bacon's vision of the natural world as an open space which triggers the need to accommodate further discoveries after mapping anew the realm of learning. His empire of knowledge evinces the same need to grasp human experience, but allows for the opening up of the universe.

When referring to it, Bacon resorts to metaphors that circulated widely in cartographic and descriptive geographic works late in the 16<sup>th</sup> century. Among these, "the glass" and "the globe" acquired particular significance with reference to the mind and the cognitive maps that could be drawn. I will defer this discussion to the last part of my article, where I wish to discuss the problem of regimes of visibility and their relation to the organization of learning.

At what we might call a surface level, though many objections can be raised against this perspective, Bacon sketches a chart of scientific networks meant to improve the commerce of ideas. Intellectual trade, seems to be his argument, can be facilitated by a brotherhood of learned, illuminated men, whose blueprint has often been identified in *New Atlantis*:

For as the proficiencie of learning consisteth much in the orders and institutions of universities in the same states and kingdoms, so it would be yet more advanced, if there were more intelligence mutual between the universities of Europe than now there is. We see there be many orders and foundations, which though they be divided under several sovereignties and territories, yet they take themselves to have a kind of contract, fraternity, and correspondence one with the other [...]. And surely as nature createth brotherhoods in families, and arts mechanical contract brotherhoods in communalities, and the anointment of God superinduceth a brotherhood in kings and bishops; so in like manner there cannot but be a fraternity in learning and illumination, relating to that paternity which is attributed to od, who is called the Father of illuminations or lights (see Works Cited, 1, Francis Bacon, *The Advancement of Learning, Book II*, 327).

If we take the College of the Six Days' Work for a model of the fraternities Bacon advocates, one of the most intriguing aspects of the *New Atlantis*, which has been commonly identified with a utopia, although, having in mind the furor caused by the Rosicrucian tracts and the work of Johann Valentin Andreae and his circle, I am inclined to view it as a fictitious experiment, is the issue of secrecy. What can we make of the manner in which information from all over the world is gathered? And what is to be made visible of the entire scientific enterprise? Finally, what is the relation between science and society? If Bacon attempts to legitimize a paradigm of how data collection and publication should function, then autonomy and secrecy are key-words [see 3]. The reader is left to imagine a series of practical aspects concerning Solomon's House, or, in other words, to rely on imagination when faced with *terra incognita*, which is perhaps why the topos of the new science and that of the New World converge here and in *The Advancement of Learning* [see 1]. Here we find a kind of intellectual imperialism which borrows its vocabulary from the discourse of discovery, exploration and colonisation and which argues in favour of voyages into uncharted territory, beyond the "horizon of experience" [1, 506]. This brings me to the question of whether or not we can look at the New Atlantis as an imagined experiment structured by the trope of discovery. Such a question was prompted by the case of the Protestant fraternity whose putative existence is revealed in the Rosicrucian tracts. In his article on Johann Valentin Andreae's utopian brotherhoods, Donald D. Dickson tries to find arguments that would confirm Andreae's actual involvement in drawing up of the *Fama* and the *Confessio*. He, too, claims that Andreae came up with a blueprint, *Christianopolis, Christianae societatis imago* (1619), for an enterprise whose aim was to reform society by matching theory and practice and that he and some of his friends, among whom Cristoph Besold, Tobias Hess, a student of Crusius just like Simon Studion, were forced into a model of epistolary fellowship as a consequence of the Thirty Years' War [see 6].

This is very similar to the paradigm described by David Lux and Harold Cook when they argue the "strength of weak ties" in communicating at a distance during the scientific revolution [see 11]. Their discussion extends to the problem of authority and credibility among the adepts of the new science, against whose background we can set the issue of secrecy in New Atlantis<sup>2</sup>.

## The two globes: the world and the mind

At the beginning of this article, my argument was that in Bacon's case we may argue that science is mapped on two levels: that of scientific networks and that of what he terms as the intellectual globe. Before tracing the main lines of how Bacon re-charts knowledge, let us dwell briefly on the metaphors of the glass and the globe.

In *The Advancement of Learning*, Bacon claims that the mind is "rather like an enchanted glass, full of superstition and imposture" (see Works Cited, 1, Francis Bacon, *The Advancement of Learning, Book II*, 396). It is in *Book I* of *The Advancement of Learning* that he states:

God has framed the mind of man as a mirror or glass, capable of the image of the universal world, and joyful to receive the impression thereof, as the eye joyeth to receive light; and not only delighted in beholding the variety of thins and vicissitudes of times, but raised also to find out and discern the ordinances and decrees, which throughout all those changes are infallibly observed. [...] For that nothing parcel of the world is denied to man's inquiry and invention, he doth in another place rule over, when he saith: the spirit of man is as the lamp of God, wherewith he searcheth the inwardness of all secrets [Proverbs, 20.27]. If then such be the capacity and receipt of the mind of man, it is manifest that there is no danger at all in the proportion of quantity of knowledge, how large so ever, lest it should make it swell or outcompass itself. [...] If any man shall think by view and inquiry into these sensible and

<sup>2</sup> Matters of secrecy emerge in various instances in the early modern period. Secret knowledge still elicits reactions ranging from curiosity to attempts to legitimate sinful curiosity by turning it into an intellectual endeavour devoid of the pejorative meaning attached to it. For further discussion, see [2].

material things to attain that light whereby he may reveal unto himself the nature or will of God, then indeed is he spoiled by vain philosophy: for the contemplation of God's creatures and works produceth (having regard to the works and creatures themselves) knowledge; but having regard to God, no perfect knowledge, but wonder, which is broken knowledge. And therefore it was most aptly said by one of Plato's school that the sense of man carrieth a resemblance with the sun, which (as we see) openeth and revealeth all the terrestrial globe; but then again it obscureth and concealeth the stars and celestial globe: so doth the sense discover natural things, but it darkeneth and shutteth up divine... To conclude therefore, let no man [...] think or maintain that a man can search too far, or be too well studied in the book of God's word, or in the book of God's works, divinity or philosophy but rather let men endeavour an endless progress or proficience in both (see Works Cited, 1, Francis Bacon, *The Advancement of Learning, Book I*, 265).

It is perhaps worth mentioning that the same vision of the amplification of the power and kingdom of man over the world can be identified on the frontispiece of *Instauratio Magna* (1620), where under the ship of learning sailing back through the pillars of Hercules, which traditionally marked the limits of human knowledge of the world, one can read the Latin inscription "Many shall pass to and fro and science shall be increased" [14, 495]. The frontispiece to *De dignitate et augmentis scientiarum* (1640) forges a clear connection between the terrestrial globe and the intellectual one. If we analyse these generic labels that enjoyed a wide circulation in the 17<sup>th</sup> century, we need to refer to Ortelius's *Theatrum Orbis Terrarum* and Mercator's *Atlas* one more time. From this point of view, maps, regardless of their nature and frame (globe, glass), become all-seeing eyes in control of spatial immensity or are viewed as glasses by means of which "the god's-eye view of geography is accommodated to the perspective of human sight" [7, 71]. So what do Bacon's intellectual maps tell us? That the mind needs to be a mirror of the universe, but he considers the act of mirroring not from without, but from within, from what the mind with its main faculties of memory, imagination and reason can accommodate as history, poesy and philosophy. What does Bacon's map of the intellect suggest at the social level? In chiliastic fashion, that man can regain control over the world extending the boundaries of his intellectual empire. In other words, Bacon suggests that man's reinstatement in his dominion over the world depends entirely on how his new dominion over the mind.

## Millenarianism challenged

Finally, a question arises with reference to the millenarian overtones of Bacon's project. Is it truly an instance of millenarianism in the sense of a process unfolding under the sign of providence toward the end of man's time on earth? It may be that such a reading is somewhat misleading for it is not an end that Bacon has in sight but rather the possibility to control nature by means of natural philosophy. However, the answer to this question is far from simple since the millenarian pull is rather strong. The restoration of human dominion over nature does not lead to any foreseeable end of the world although it draws, among others, on the Bible to justify scientific endeavours. Bacon's dares to challenge the notion that man's relation to nature can only be reestablished by God and, at the same time, remains cautious in delineating the limits of the human knowledge.

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## Un proiect milenarist: expansiunea imperiului minții din perspectiva lui Francis Bacon

### Rezumat

*Articolul își propune să investigheze proiectul milenarist al lui Francis Bacon de extindere a limitelor cunoașterii. Din perspectivă baconiană, reforma cunoașterii apare ca o nouă etapă în progresul omului, într-o perioadă în care, aprofundând cunoașterea lumii, omul își poate redobândi poziția edenică de stăpân al lumii. Proiectul acestuia recurge adesea la metafore spațiale, caci momentul în care omul dobândește din nou controlul asupra creației este inaugurat de cucerirea spațiului într-o epocă a descoperirilor geografice și a explorării.*

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