

## UTOPIAN SCIENCE AND EMPIRE. NOTES ON THE IBERIAN BACKGROUND OF FRANCIS BACON'S PROJECT

### ȘTIINȚĂ UTOPICĂ ȘI IMPERIU: NOTE ASUPRA CONTEXTULUI IBERIC AL PROIECTULUI BACONIAN

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#### Abstract

*This paper will explore Bacon's perceptions of the scientific connotations of the Spanish empire and his reception of early modern Iberian science. Its aim is to analyze the extent to which the Iberian background played a role in the making of Bacon's project of a utopian imperial science, by drawing attention to some particular cases: the reception of the Jesuits, the natural histories, the chronicles of discovery, and the evaluation of Columbus' voyages. It is shown that Bacon's relationship with Iberian themes and sources was explicit in a few cases (Acosta, Columbus, Inca Garcilaso, the Jesuit order), while at other times the relationship is more indirect and implicit (Fernández de Oviedo, López de Gomara, Martire, Ramusio, Benzoni, Fernández de Quirós). It is argued that early modern imperial Spain seems to have been assessed by Bacon as a model of a growing empire, an empire whose greatness relied heavily on the Jesuit order and the colonization of America. The paper concludes that the attentive observation of the Spanish empire as well as the acquaintance with the Jesuits and the Iberian chronicles must have inspired Bacon's project of science and his ideas on the articulation of science with empire. At the same time, other past and contemporary authors and traditions found their place in Bacon's program for the reform of learning. This eclectic blend underlying this project rather than depriving the end result of novelty, allows us to realize the new decisive contents Bacon added to the diverse ideas and practices he relied on.*

**Key words:** Francis Bacon, Iberian science, empire, chronicles of America, Jesuits.

**Cuvinte cheie:** Francis Bacon, știința iberică, imperiu, cronici ale Americilor, iezuiți.

#### Introduction

Francis Bacon was convinced that a rightly reformed natural philosophy would be instrumental in constructing, expanding and governing a political empire. This articulation of science and empire has been signaled on many occasions in Baconian studies. [1] Some of these have claimed that Iberian influences and inspirations are traceable in Bacon's ideas of science, particularly in *New Atlantis* where the links with Spanish antecedents became more visible. This 'Spanish connection' has attracted the attention of the currently growing scholarship on early modern Iberian science. A number of scholars such as J. Pimentel, J. Cañizares Esguerra and A. Barrera Osorio have emphasized the Iberian background of Bacon's program, by maintaining that scientific institutions and practices of imperial Spain, as well as the ideas and images involved in its scientific contributions and travel literature, were in Bacon's mind when he designed his idea of science. [2] On the other hand, M. Portuondo has shown both the strong parallels and the important differences between the practices, the methodology and the scientific goals provided by Bacon and the Iberian royal cosmographers. According to Portuondo, while the experimental methodology permeated by legal procedures constituted an approach shared by Bacon and the Iberian

cosmographers, the different emphasis they placed on the quest for a new natural philosophy separated them. [3]

The motivation for this paper has been stimulated by the increasing scholarship on early modern history of science in the Iberian peninsula, which promotes a reassessment of the values and influences of the Iberian science regarding the complex process of the Scientific Revolution. This paper will explore Bacon's perceptions of the scientific connotations of the Spanish empire and his reception of early modern Iberian science. Its aim is to analyze the extent to which the Iberian background played a role in the making of Bacon's project of utopian imperial science, by drawing attention to some particular cases: the reception of the Jesuits, the natural histories, the chronicles of discovery, and the evaluation of Columbus' voyages. Far from offering a comprehensive survey, this paper tries to contribute to this topic by making some preliminary notes which might help to think further about the Iberian influences on the construction of Bacon's idea of science.

### **The greatness of Spain and the Jesuit order**

Bacon was preoccupied by the political tensions between Spain and England over and over again throughout his public career. His working notes, advices and reflections on the delicate question of how to delineate the English strategies towards Spanish expansionism and the Roman Catholic adversaries associated with it attest to his being quite well informed about the Spanish political plans and institutions. Bacon judged that Spain was both a powerful enemy of England and a model for a political expansive empire. During the period of his political fall, he composed *Considerations touching a war with Spain* (1624), a writing addressed to Prince Charles. There he offers a historical reconstruction and geo-political diagnosis of the Anglo-Spanish affairs suggesting that the greatness of Spain is built on four pillars. For our purposes, the important thing here is to note two of these pillars. One is the relevance of the colonies in so far as they are concerned with money, the principal foundation of the greatness of Spain: "Their greatness consisteth in their treasure, their reassurance in their Indies, and their Indies, if it be well weighed, are indeed but an accession to such as are masters". [4] The other pillar is the Church, that is, the "profession of the Catholics in all parts", to which the Jesuit order serves as a "great and effectual instrument." The Jesuits are said to be superior to other religious orders because they are "not cloistered but have a kind of apostolical employment for the winning of souls"; "they have the education of youth"; they are "confessors to the sick, and consulted with in making wills and testaments"; they "listen to matters of state, and some of them live in Courts of Princes." Bacon believed, as many of his contemporaries, that the Jesuits had secretly gone to England as infiltrated agents of the Pope and of Spain. Notwithstanding, he claimed that many Jesuits "are persons of reverence and great virtue in their course." [5]

One of the main targets of the Jesuit order was, indeed, to regain the British islands for the Roman Catholic Church. The extent to which the Jesuits were involved in this project is reflected in the number of British Protestants converted to Catholicism at the time. Among them was Tobie Matthew, one of Bacon's closest friends, converted to Catholicism during a stay in Italy and ordained a Catholic priest in 1614. Matthew was closely attached to the Society of Jesus and was almost certainly a member of it. [6] Through his friend, Bacon learnt about the projects and rule of the Jesuit order, had access to the works of its members and was informed about the political and intellectual news of the Continent. [7] It was through Matthew that Bacon became acquainted with Galileo's opinions on Copernicanism and Biblical hermeneutics. Thanks to Matthew's Jesuit contacts, Galileo and Bacon came to know their respective theories of the tides. [8]

Matthew's conversion notwithstanding, Bacon remained loyal to his friend. He trusted Matthew to the extent that he asked him to read and comment on his work in progress. To make sure that a wider European audience would not feel offended by his writings, Bacon was concerned with taking notice of the opinions of his Catholic friend. [9] Witness to his efforts to get

international visibility are his contacts with other Catholic, even anti-Jesuit, thinkers. We know that he maintained epistolary interchange with at least two Italian Catholic priests. One of them is Fulgenzio Micanzio, member of the Servite order (Servants of Mary) and advisor of the Venetian Republic. Micanzio was known as biographer of the Servite Venetian Paolo Sarpi, of whom he was a friend and amanuensis. As Sarpi became a friend and benefactor of Galileo, Micanzio himself was linked to Galileo's circle. [10] Regarding religious and political matters, Micanzio was committed to a tolerant and open-minded Catholicism which criticized the alliance of Spanish and Papal authoritarianism supported by the Jesuits. He and Sarpi worked staunchly for the construction of an antipapal alliance of Venice with France and the Protestant countries. To prevent the evils of the Jesuit politics, in 1617 Micanzio composed a book of advice to princes which was translated into English two years later. [11] Bacon became acquainted with Micanzio around 1616 through William Cavendish, who, with his assistant Thomas Hobbes, visited the Venetian court between 1610 and 1615. A fervent admirer of Bacon (by 1617 he had read the *Essays*, *De Sapientia Veterum*, and the *Advancement of Learning*), Micanzio asked Cavendish to get in epistolary touch with Bacon. Being deeply involved with the religious and political affairs of his day, Micanzio was particularly struck by the political and moral teachings of the *Essays*, to the extent that he promoted and diffused the Italian translation of this work. [12] Micanzio showed indefatigable enthusiasm in supporting Bacon's output and contributed to the spreading and translations of his writings into Italy, including the civil and natural histories and the *Novum Organum*. [13] It is interesting to note that Micanzio carried out tidal observations in Venice on behalf of Galileo. [14] This might be another link which connected Micanzio with Bacon's interests.

Another Catholic correspondent of Bacon was the Italian Barnabit Redento Baranzano, also known by his birth-name, Giovanni Antonio. Baranzano was a professor of philosophy at the University of Annecy. In his work *Uranoscopia* (1617) he defended Copernicanism and maintained an anti-Aristotelian stance. Forced by the censure of the Archbishop of Milan, Baranzano retracted from his former realistic adherence to heliocentrism, by claiming that the system is grounded neither in the Holy Writ neither in facts (*Nova de motu terrae Copernicolo iuxta Summi Pontificis mentem disputatio*, 1618). [15] Baranzano remained, however, critical of the Scholastic servile repetition of the Aristotelian philosophy. The rejection of the traditional methods of discovery and transmission led him to embrace Bacon's conception of natural history as the very foundation of natural philosophy. We know that Baranzano submitted his own works to Bacon and that, in reply, Bacon shared with him his working ideas on natural history and the *Instauratio Magna* plans. [16]

Notwithstanding his desire to attract a wide international audience, including Catholic and Protestant, Jesuit and anti-Jesuit audiences, Bacon did not moderate his criticisms of Scholasticism. In reply to Matthew's comments on his manuscripts, Bacon restated his original anti-scholastic stance: "as for your caution touching the dignity of ecclesiastical persons, I shall not have cause to meet with them any otherwise, than in that some school men have with excess advanced the authority of Aristotle." [17] Aristotle, added Bacon, has been "intemperately magnified with the schoolmen" and "allied" to the Jesuits, "by Faber, who was a companion of Loyola, and a great Aristotelian". [18] We can assume that Bacon was acquainted with the Jesuit textbooks and commentaries on Aristotle, such as the Coimbran commentaries. Besides, his acquaintance with Jesuit intellectual contributions is evidenced in the explicit references to the opinions of Francisco Suarez, Domingo Bañez and Juan Mariana on tyrannicide. [19] Finally, as we will see later, we certainly know that he read Jesuit natural histories.

Besides Jesuit theories and opinions, Bacon was concerned with the institutional and pedagogical organization promoted by the order. He admired the Jesuit educational system insofar as he thought that they were reviving the "ancient discipline". When compared with the current situation of English colleges, Jesuit education became far more valuable in Bacon's eyes, who came to invoke Agesilaus' words in praising the Jesuits: "they are so good that I wish they were on our side". [20] On his account, the Jesuits served to restore the Roman Church, ordained by God's

providence, and “have much quickened and strengthened the state of learning”, both through their own merits and by stimulating others to search for truth. [21]

As Stephen Gaukroger has argued, the organization of the House of Salomon reminds us of the bureaucratic and centralized control “of the Spanish empire, or even the Jesuits”. [22] The preoccupation with the administration and government of science occupied a central place in Bacon’s design. In this regard, Spanish governmental practices were invoked to ground the new “administration of knowledge”. Bacon believed that the reformed learning would yield the unity of the sciences, which is grounded in the fact that every particular science is dependent on the universal knowledge contained in the *prima philosophia*. Communicated by means of this common intellectual source, the particular sciences can give each other mutual assistance in correcting their theories and in expanding their achievements. The unity of the sciences, on Bacon’s approach, should be organized and administered according to the Spanish model, where lower level dependencies are submitted to a central council: “an administration of knowledge in some such order and policy as the king of Spain in regard of his great dominions useth in state; who though he hath particular councils for several countries and affairs, yet hath one council of State or last resort, that receiveth the advertisements and certificates from all the rest.” [23] Further, Bacon believed that at least in Tudor times Spain was “reputed to have the wisest council of Europe, and not a council that will come at the whistle of a favourite.” [24] That is the reason behind his recommendation that the English government set out, along with one council of State, standing specific commissions, such as commissions “for trade, for treasure, for war, for suits, for some provinces”, just like in Spain. [25]

### **Travelers and natural historians**

Spanish natural histories and treatises on cosmographical and military topics circulated widely in the English court, and were available to merchants, mariners, medical practitioners and learned people in general. Political and business concerns as well as the curiosity for the novelties of the New World converged and stimulated the huge amount of English translations of Spanish books produced during the “age of discovery”. [26] Bacon, of course, was not an exception and seems to have followed closely the literature coming from Spain and the American colonies. That notwithstanding, he hardly mentioned explicitly his sources on this topics, with two exceptions: Inca Garcilaso de la Vega and José de Acosta. Inca Garcilaso de la Vega (1538-1616) was born in Peru to a Spanish conquistador and an Inca princess. He left his native land for Spain in 1560 and worked as translator. A man of two cultures, his *Comentarios Reales* (published in two parts in 1609 and 1617) are counted among the most important chronicles on the New World. An English translation of selected chapters of this work, included in Samuel Purchas’s edition of Richard Hakluyt’s unpublished papers (*Hakluytus Posthumous or Purchas his Pilgrimes*) appeared in 1625. [27] Bacon mentioned Inca Garcilaso very briefly in *An Advertisement touching a Holy War* (1622), an unfinished dialogue which deals with the legitimacy of an offensive war against the infidels, particularly against the Turks. [28] In the introductory part, Martius (the character that represents a military man) exposes his assessment of the factual motivations and the enormous impact of the Spanish and Portuguese overseas campaigns, giving a speech that seems to stand for Bacon’s own opinion. It is sufficiently important to merit quotation in full: “The Castilians, the age before that wherein we live, opened the new world; and subdued and planted Mexico, Peru, Chile, and other parts of the West Indies. We see what floods of treasure have flowed into Europe by that action; so that the cense or rates of Christendom are raised since ten times, yea twenty times told. Of this treasure, it is true, the gold was accumulated and store-treasure, for the most part: but the silver is still growing. Besides, infinite is the access of territory and empire by the same enterprise. For there was never an hand drawn that did double the rest of the habitable world, before this; for so a man may truly term, if he shall put to account as well that that is, as that which may be hereafter by the further occupation and colonizing of those countries. And yet it cannot be affirmed (if one speak

ingenuously) that it was the propagation of the Christian faith that was the adamant of that discovery, entry, and plantation; but gold and silver and temporal profit and glory: so that what was first in God's providence was but second in man's appetite and intention. The like may be said of the famous navigations and conquests of Emmanuel King of Portugal." [29]

Martius and Pollio (a politician, another interlocutor in the dialogue) embody opposite ideas about the very nature of the infidels. Whereas Pollio maintains a pro-slavery stance, by claiming that infidels are uncivil and savage people whose "property" "passeth with the possession, and goeth to the occupant", Martius argues that "the people of Peru or Mexico" do not seem to be brute and savage as Pollio represents them. His description of different pagan cultures (including American and Asian), shows that they are far from constituting a uniform identity and concludes that the Turks are undoubtedly the most barbarian people. As for the West Indies, Martius' account gives far more details of the institutions and the religion of the Incas, than of the Mexican natives. According to Martius, although the Incas have some barbarian customs, they faithfully obey their monarchs, whose government has reduced the politeism of the different internal "nations" to the worship of one god, the sun. The Incas are said to have magnificent temples, a strict and regular justice for internal matters, and a moderate martial justice. Mexico's state is similar, Martius adds, and has an elective monarchy. [30] Some pages later, the character Zebedeus (a fervent Roman Catholic) replies to Martius that he should not allow himself to be deceived by the testimonies of Inca Garcilaso, since, due to the fact that Garcilaso was a descendent of the Incas, he "is willing to make the best of the virtues and manners of his country" and he does it "soberly and credibly enough". [31] Zebedeus' distrust of Garcilaso is part of his general point that a war against the infidels is genuinely grounded in the law of nature.

Purchas' selection of Garcilaso's *Comentarios reales*, which included the aspects of the Inca culture remarked by Martius, although with further insights, [32] was not available by the time the *Advertisement* was composed (1622). From the entries in Spanish in Bacon's commonplace book, *A promus or formularies and elegancies* (1594), [33] we can surmise that Bacon read that idiom, and conjecture that he read some of the Spanish editions of Inca Garcilaso, in case he did not have indirect notice of its contents. On the other hand, Martius' brief account of Mexico could have been extracted from Acosta's natural history. [34] José de Acosta (1539-1600) was a Jesuit Spanish missionary, elected provincial of Peru in 1576. He was the author of *Historia natural y moral de las Indias* (1590), one of the worldwide most popular narratives of America, translated into English in 1604. Acosta's chronicle provides an anthropologic and natural historical approach to Peru and Mexico along with a natural philosophical perspective. [35] In *Historia ventorum* (1622), the first complete natural history published by Bacon, he collected information on geographic places, tides and winds from Acosta and made explicit reference to him.

Finally, it is worth noting another Iberian source whose resemblances with the *New Atlantis* were remarked a long time ago by R. R. Cawley [36] and more recently by P. Salzman and J. Pimentel. [37] The source is the widespread *Terra australis incognita*, written by the Portuguese Pedro Fernández de Quirós, originally published in 1609 and translated into English in 1617. With the financial support of the Spanish Crown, Fernández de Quirós sailed from Lima to the South Pacific by the end of 1605 with the intention of reaching the Austral Indies. As the expedition reached Vuanatu (153° away from Australia), Fernández de Quirós was convinced that he had arrived at his destination and baptized it *Australia del Espíritu Santo*. He came to write over sixty memorials, campaigning for a colonizing expedition, of which the most relevant was *Terra Australis incognita*, a travel narrative addressed to the King of Spain. There Fernández de Quirós compared his crusade with Colon's great discovery and introduced the Southern continent as a privileged land, a kind of earthly Paradise, [38] offering a detailed and idealized description of its people, customs, geographic places and natural resources with the aim of persuading the King to colonize the land: "I doe affirme unto your Maiestie, that you may give command to have a goodly and great Citie built in this Port and Bay" (...) "those that shall inhabite there, shall have plenty of riches, and all other conveniencies which they can desire" ... "in the place there may be made the

discharge and unloading of all wares and merchandizes of... all which countries are under the command of your Maiestie. And if you shall acquire unto your selfe the Dominion of these Seignories which I do now present, I doe make so great an esteeme of them, that besides their being the Key of all the rest, they will (in my opinion) prove another China or Iapan, (...) to speake nothing of the augmentation of your power.” [39] From other memorials, probably unknown to Bacon, we learn that Fernández de Quirós also planned that the future colonized society of the Southern continent be ruled by a government whose first task would be to compose a kind of universal history and promote a new education in opposition to the traditional bookish and barren learning. None of this, however, is said or even suggested in *Terra Australis incognita*.

Cawley, Salzman and Pimentel point out the parallelisms between Bacon and Fernández de Quirós, acknowledging at the same time their differences. Cañizares Esguerra goes a step further, maintaining that the “millenarian, crusading, and utopian empiricist dimensions of Bacon’s project are all present in Fernández de Quirós’ writings”. [40] The parallelisms seem to me to be really undisputable. That notwithstanding, I would suggest that “all” the dimensions of Bacon’s project are by no means present in Quiros, particularly in the text that Bacon could have read. The route from Lima to the South Pacific, the Spanish language, the idealistic description of the virtues of the places and peoples, and the utilitarian idea of imperial dominion [41] are certainly elements shared by both narratives. It should be noted, however, that the advocacy of colonization has a more subtle and indirect character in Bacon, whereas in Fernández de Quirós it is fully emphasized and explicit.

Beyond these coincidences, the dissimilarities are also evident. Bacon’s *New Atlantis* combined the usual elements of travel narratives (typical of many Spanish authors, like Fernández de Quirós, but also of other English antecedents familiar to Bacon, such as Adams and Hakluyt) with the utopian narrative, whose most renowned exponents at that time were Thomas More, Tomasso Campanella, Valentin Andreae and others. [42] As Salzman notes, in the *New Atlantis* “the voyage allows Bacon to incorporate his scientific ideal within the society of Bensalem. As a travel narrative, the *New Atlantis* is full of allusions to the significance of colonial endeavours by England and its competing European powers in the quest for possession, as well as knowledge.” [43] It should be emphasized that Quiros’ chronicle does not exhibit the most characteristic element of Bacon’s utopia: the foundation of the utopian society on a scientific institution. On Bacon’s account, Salomon’s House is the light of Bensalem, the “noblest foundation [...] that ever was upon the earth”, an institution “dedicated to the study of the works and creatures of God”, to “the knowledge of Causes, and secret motions of things; and the enlarging of the bounds of Human Empire, to the effecting of all things possible.” [44] The foundational role played by science in society, the social status of the scientists, the organizational aspects of science, the collective, cooperative and social character of the scientific enterprise, the technological products envisaged, the preoccupation with the laws of secrecy and publishing of learning, etc., have no place in Fernández de Quirós memorials. The contrasts between Bacon and Fernández de Quirós in this regard are as patent as the coincidences.

### **Columbus and the new paths of knowledge**

Bacon was well aware of and deeply struck by the significance and the long term material, political, economic and intellectual consequences of the overseas explorations. The expansion of the geographical limits of the known world by the recent navigations captivated Bacon’s imagination and enlarged his expectations about the instrumental relevance of a proper scientific method to renovate human learning. “And surely it would be a disgrace to mankind if, while the expanses of the material globe, i.e. of lands, seas, and stars, have in our times been opened up and illuminated, the limits of the intellectual globe were confined to the discoveries and the narrow limits of the ancients.”[45]

Perhaps Columbus’ campaign was the deepest motivation for his project of imperial science. The fact that Columbus is the only clearly identified historical figure to whom the utopian

Bensalemites consecrated a statue in their gallery of inventors witnesses Bacon's extreme admiration for his crusade. [46] The comparison of the recent wonderful geographical discoveries with the future and promising scientific discoveries, the association of the *globus materialis* with the *globus intellectualis*, inspired Bacon's program to the extent that he compared himself with Columbus as a leader of a new path never traveled before. [47] Bacon thought that his mission of heralding the new science paralleled the destiny of other innovators, whose initiatives were rejected simply because they engaged new approaches. The skeptical reactions to the projects of Columbus and Alexander are invoked as exemplary precedents of the resistance to novelties, a situation far more pertinent in intellectual matters: "men doubt lest time is become past children and generation; wherein, contrariwise, we see commonly the levity and inconstancy of men's judgments, which till a matter be done, wonder that it can be done; and as soon as it is done, wonder again that it was no sooner done". So happens "in most of the propositions of Euclid; which till they be demonstrated, they seem strange to our assent; but being demonstrate, our mind accepteth of them by a kind of relation (as the lawyers speak), as if we had known them before". [48] In light of these historical precedents, Bacon believed that it was necessary to persuade the King and the community of learned men that the success of his project was achievable, in the same way that Columbus had to convince the Spanish monarchs of the reasonability of expeditions to the West. "I must open and lay out my conjectures which make hope in this business probable, just as Columbus did before his wonderful voyage across the Atlantic, when he gave the reasons why he believed he could discover new lands and continents beyond those known then, reasons which, though rejected at first, were afterwards proven by experiment, and were the origin and cause of events of vast consequence." [49]

It is interesting to note Bacon's preoccupation with the "conjectures" that led Columbus to his transatlantic voyages. In *Historia ventorum* published in 1622 he offered varying alternative grounds for his ideas concerning overseas lands: "Those who deny that Columbus conceived so firm and fixed [certam et fixam] opinion of the West Indies from the report of a Spanish captain, and think it improbable that he got the idea from obscure hints and rumors of antiquity, fall back on the notion that from the recurrent winds blowing to the Portuguese coast he guessed that there was a continent out in the west. But this is doubtful and lacks plausibility since the winds could scarcely cover such vast distances. Meanwhile it lends great prestige to this inquiry if the discovery of the New World can be credited to one axiom or observation of the many the inquiry comprises." [50]

By the same year, in the *History of the Reign of King Henry VII* Bacon offered further information and seems to have followed those who denied that Columbus was the first European to arrive in the New World, although in *New Atlantis* the Genoese is said to be "the discoverer of the West Indies": [51] "And there had been before that time a discovery of some lands, which they took to be islands, and were indeed the continent of America, towards the north-west. And it may be, that some relation of this nature coming afterwards to the knowledge of Columbus, and by him suppressed (desirous rather to make his enterprise the child of his science and fortune than the follower of a former discovery), did give him better assurance that all was not sea from the west of Europe and Africke unto Asia, than either Seneca's prophecy, or Plato's antiquities, or the nature of the tides and land-winds and the like, which were the conjectures given out whereupon he should have relied: though I am not ignorant that it was likewise laid unto the casual and wind-beaten discovery a little before of a Spanish pilot who died in the house of Columbus." [52] As can be seen, Bacon distinguished three alternative motivations for Columbus' "conjectures": 1) that Columbus learnt from a Spanish pilot about the existence of the New World (a tale usually known today as "the legend of the unknown pilot"); 2) that Columbus was inspired by ancient testimonies about distant lands; 3) that Columbus conjectured the existence of unknown lands from observing certain winds and tides along the Portuguese coasts. The legend of the unknown pilot widely circulated around sixteenth-century chronicles of America, since its first printed narration appeared in Gonzalo Fernández de Oviedo's *Historia general y natural de las Indias Occidentales* (1535). According to Fernández de Oviedo, some say that a caravel en route to England from Portugal was

blown off course and landed on some islands. The ship took on water and wood there and then set sail for home, but on the return trip most of the crew died. The pilot, with four or five crew members, survived and reached Portugal. Columbus took the pilot, a friend of his, into his home and was shown on a map where the pilot had arrived. Afterwards the pilot died, as had the rest of the surviving crew some time before. Although Fernández de Oviedo offered a detailed account of the story, he rejected it as false and vindicated Columbus as the genuine discoverer of the West Indies. [53] The story, however, was retold as a real fact by many chronicles of discovery. Worth noting is the world famous chronicle written by Francisco López de Gomara, *Historia general de las Indias*, originally published in Zaragoza in 1552. [54] In chapter XIII, entitled “The first discovery of the Indies”, Gomara repeated Fernández de Oviedo’s account implying that Columbus was not really the discoverer of the West Indies. A much shorter version that by no means questioned the veracity of the tale is to be found in Acosta’s history: “Having shewed, that there is no reason to believe, that the first Inhabitants of the Indies came thither purposely; it followeth then, that if they came by Sea, it was by chance, or by force of weather, the which is not incredible, notwithstanding the vastnesse of the Ocean, seeing the like hath happened in our time, when as that Mariner, (whose name we are yet ignorant of) (to the end so great a worke, and of such importance, should not be attributed to any other Author then to God) having (through tempest discovered this new world) left for payment of his lodging, where he had received it, to Christopher Columbus, the knowledge of so great a secret.” [55]

As for the second motivation for Columbus’ plans as distinguished by Bacon, most chronicles of discovery introduced the divergent opinions of ancient sources about the existence of distant lands and peoples. For instance, Acosta offered an account of the opinions of Parmenides, Aristotle, Plinius, Augustine, and Lactantius, along with some references in the Holy Writ. Bacon explicitly pointed out only two ancient antecedents exposed by Acosta. One of these is the story of Atlantis told by Critias in Plato’s *Timaeus*, probably by then the most famous narration of a distant lost land. The other, less known, is Seneca’s *Medea*, to which Acosta dedicated a complete chapter where it is claimed that some verses in Seneca’s plays prophesied the existence of the West Indies. [56]

Those who made the effort to vindicate Columbus, rejected the story of the unknown pilot and relied on the testimonies of Pietro Martire’s *De novo orbe Decades* (first collected edition 1516), the first printed chronicle of Columbus’ voyages to the West Indies. This work became worldwide known particularly thanks to the monumental and very influential collection of travel narrations *Navigazioni e Viaggi* (1550-9) of the Italian Giovanni Battista Ramusio. A considerable extent of Ramusio’s introductory discourse on the voyages to the New World is devoted to repair Columbus’ dignity in reply to what, on Ramusio’s opinion, were fictions designed by a Spanish campaign against his fellow countryman. Ramusio relied on Pietro Martire in affirming that Columbus’ ideas originated from his nautical experiences. According to the story that he extracted from Martire, on Portugal’s coasts Columbus frequently observed certain periodical winds that blew from the West during many days. From these repeated experiences Columbus conjectured that the winds came from a transatlantic land and he became anxious to prove the certainty of his opinion. [57] Another critical exposition of the legend of the unknown pilot is to be found in *Nova Orbis Novi Historia* of the Italian Girolamo Benzoni, first published in Venice in 1572. Benzoni repeated in full detail Gomara’s narration and immediately provided Martire’s exposition about the winds perceived by Columbus. [58] Benzoni was convinced that Columbus’ observations of those periodical winds were the real causes that inspired his voyages to America. Like Ramusio, he attempted to save the honor of the Genovese against the alleged Spanish attacks and claimed that Gomara intended to diminish Columbus’ “immortal fame” by corrupting the truth and blending it with subtle fictions. [59]





Figure 1. Title page of *Regimiento de Navegación* by Andrés García de Céspedes (Madrid, 1606)

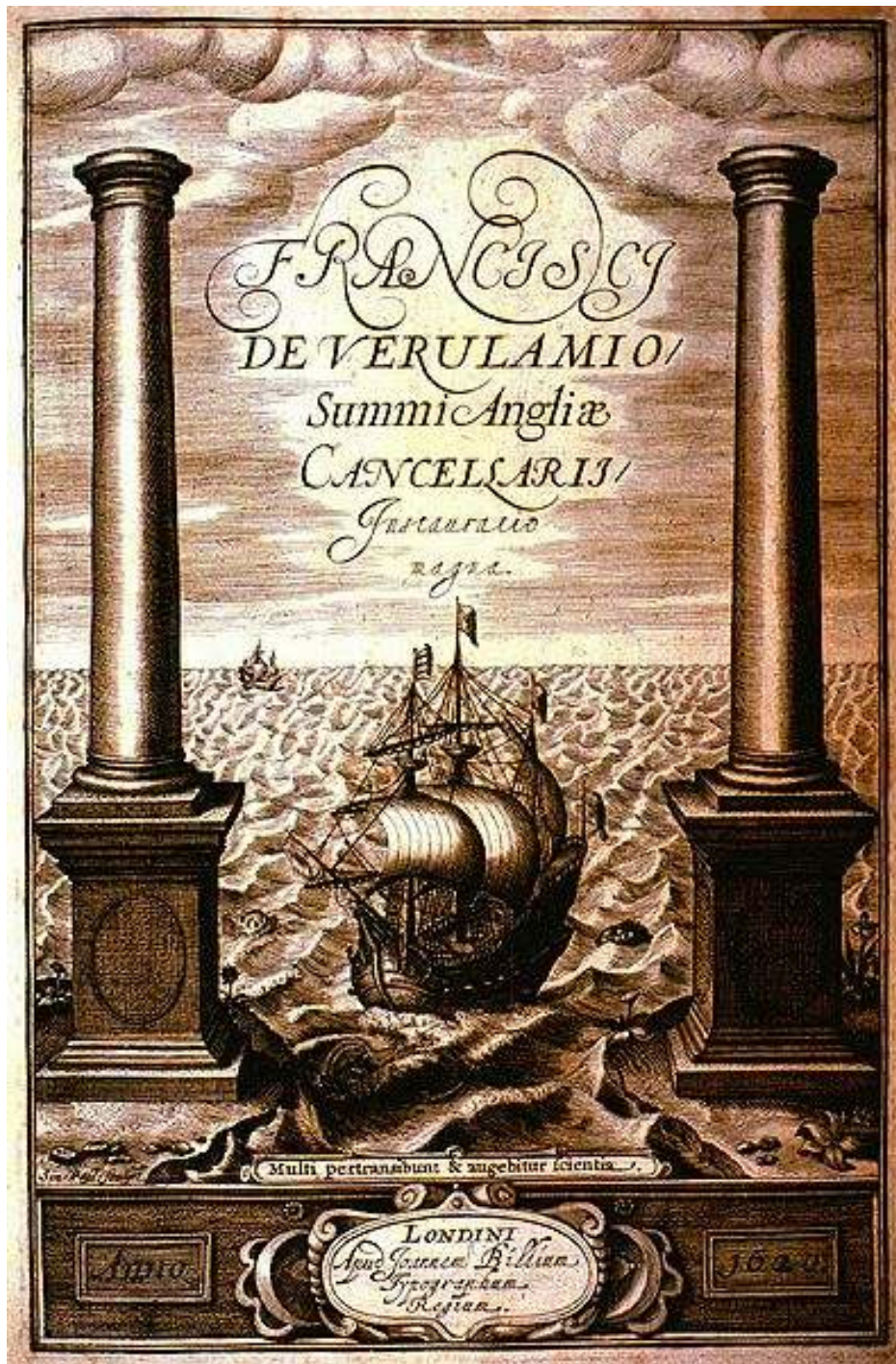


Figure 2. Engraved title of *Instauratio Magna* by Francis Bacon (London 1620)

### A brief note on the uses of iconography

A brief note is in order here relative to the cover illustration of the *Instauratio Magna*. In an article published in 2000, J. Pimentel drew passing attention to the “striking similarity” between the famous title page of the first edition of Bacon’s *Instauratio Magna* (1620) and the title page of *Regimiento de Navegación* (1606) (see Figure 1 and figure 2), [60] a navigation manual published in Madrid and composed by Andrés García de Céspedes, the major cartographer of the Council of the Indies from 1596 to 1611. [61] Some years later, J. Cañizares Esguerra, taking his lead from

Pimentel, added that both frontispieces are “identical”, a claim that seems to collide with what is added immediately after in a footnote, where he claimed that Pimentel detected the “similarities (and differences)” between the two illustrations. Besides, Cañizares Esguerra conjectures that it is “very likely that Bacon (...) purposefully sought to imitate” the original title page of García de Céspedes’ manual, since by then the English were avidly interested in the scientific practices and knowledge of their Iberian contemporaries. [62] A few pages later, this conjecture turns into certainty, without any circumstantial or textual additional evidence on its behalf. Bacon’s “very likely” deliberated imitation became a plain borrow. Now we are told that “Bacon borrowed from García de Céspedes the tropes and motifs to depict the arrival of modernity.”[63] At the very end of his article Cañizares Esguerra concludes: “It is just a matter of time before books in English on the Scientific Revolution begin donning dust jackets with the frontispiece in García de Céspedes’s *Regimiento de Navegación* instead of Bacon’s *Great Instauration*.” [64]

After this presentation, the anecdote of the twin frontispieces was retold by the scholarship as a kind of proof of the Spanish origins of Bacon’s ideas on science and empire. [65] The similarity (certainly not the identity) between the two illustrations is striking indeed. Beyond that, it seems to be necessary to be forthright about what may be grasped from the existence of two very similar illustrations. According to Graham Rees, Bacon oversaw every stage of the printing process of the 1620 edition, to the point that the printed texts “represent Bacon’s wishes with minute accuracy”. [66] Unfortunately, we do not have additional information as to his involvement with the decisions made about the illustration of the title page of the book. What does seem clear, however, is that he had the motto from Daniel’s prophecy (*Multi pertransibunt et augebitur scientia*) inserted in the engraving. About the designer of the illustration itself we do not have further evidence.

Already in 1979, British emblem scholars argued that the *Instauratio Magna* frontispiece “is a brilliant adaptation” of the emblem of the Emperor Charles V, invented for him by his personal physician, the Milanese humanist Luigi Marliano in 1516 (see Figure 3). [67] This emblem became worldwide famous, its weighty symbolic force rapidly spread over Europe in different heraldic and ornamental devices, [68] even in title pages of French, English and Dutch books. [69] We cannot ascertain that Bacon ever saw or was told about the engraved title of *Regimiento de Navegación*, but it seems indubitable that he was acquainted with the Habsburg iconography on which García de Céspedes’ title page relied. Hence, if Bacon decided to borrow the image of Hercules’ pillars for the cover of his opera magna, the model was widely available.



Figure 3. Device of Charles I of Spain, choir of Barcelona Cathedral, 1519

A far more challenging issue is to analyze the symbolic use of this iconography. From its creation, the emblem of Charles V was associated with the *Plus Ultra*, a formula meaning the decision to leave behind the geographical limits imposed by the columns of Hercules. Now, suppose that Bacon purposely “borrowed” the image from García de Céspedes or from Charles V’s emblem. Does it imply that he also “borrowed” the specific meaning that Bacon attached to this icon? The sense that Bacon ascribed to the ship sailing through the pillars of Hercules was introduced in one of his earliest philosophical writings, *The Advancement of Learning*, published in 1605, one year before than *Regimiento de Navegación* were published. There Bacon transplanted the symbol of the geographical limits of the known world to the intellectual limits of traditional learning imposed by authority: “For why should a few received authors stand up like Hercules’ columns, beyond which there should be no sailing or discovering, since we have so bright and benign a star as your Majesty to conduct and prosper us?”. [70] The first page of the *Instauratio Magna*’s Preface alludes immediately to the symbol of the columns of Hercules, in providing a brief diagnosis of the causes which led to the current stagnation of learning. Men’s false presumptions about the wealth of their knowledge represent the “fatal columns” insofar as they do not incite the wish and the hope to further explore the intellectual globe: “The consequence of wildly overvaluing their own strength is that they waste it on trivia and do not try to test it on business of real weight. These things are then like baleful pillars set up against the sciences”. [71]

Nowhere in García de Céspedes’ navigation manual do we find any trace of this approach. The frontispiece of *Instauratio Magna* could have been inspired by the huge and admirable success of the Spanish explorations overseas and by the images created by the empire so admired by Bacon. Nevertheless, what made the title page of the *Instauratio Magna* a pregnant symbol of the new science was not the illustration by itself but the contents of the book and its associated writings. Illustrations become symbols when they are permeated with a meaning and they perpetuate as far as their meaning turns out to be relevant to later generations.

## Conclusion

Although Bacon’s admiration for Columbus’ crusade appeared early in his works, the chronicles of discovery seem to have occupied his attention later, during his most active intellectual years, when he could focus on his scientific plans. The relationship with Iberian themes and sources was explicit in a few cases (Acosta, Columbus, Inca Garcilaso, the Jesuit order); at other times the relationship is more hypothetical, implicit and indirect (Fernández de Oviedo, López de Gomara, Fernández de Quirós, Martire, Ramusio, and Benzoni). As we have seen, references to and parallels with the chronicles of discovery are scattered in *New Atlantis*, *Advertisement touching a Holy War*, *Advertisement touching a war with Spain*, *History of the Reign of Henry VII* and *Historia ventorum*. All of these writings were composed during the last ‘quinquennium’ of Bacon’s life, a period of forced retirement from his public activities that began in 1621 as a consequence of his political fall. [72] It was also a time at which Bacon’s quest to acquire international notoriety was particularly emphasized, as his interchanges with Matthew and the Italian Catholics Fulgenzio and Baranzano attest.

Early modern imperial Spain seems to have been assessed by Bacon as a model of growing empire in contrast to the imperfect and timid British attempts to gain the world overseas. On his evaluation, the leading educational system and the learning of the Jesuits was one of the grounds of Spain’s greatness. To this ground, he added the economic wealth achieved thanks to the treasures obtained from the Spanish colonies. The financial, political and institutional support of the navigational expeditions was thought to be a fundamental issue in this regard. So was the administration of political power through specific commissions subordinated to a central council. Spain could be seen as a fortunate instance of the application of science to the construction and expansion of empire.

The attentive observation of the Spanish empire as well as the acquaintance with the Jesuits and the chronicles of the New World must have inspired Bacon's project of science and his ideas about the articulation of science with empire. At the same time, other past and contemporary authors and traditions found their place in Bacon's program for the reform of learning as far as natural philosophy, natural history, legal theory and political philosophy were concerned. In doing this, Bacon displays an eclectic blend of different sources and approaches. Rather than depriving this end result of novelty, Bacon's eclecticism allows us to realize the new decisive touch he added to the diverse ideas and practices he relied on.

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2. Pimentel, J., *Testigos del mundo ciencia, literatura y viajes en la Ilustración*. Madrid, Marcial Pons / Ediciones de Historia, 2003, pp. 91-95; Cañizares Esguerra, J., 'Iberian Science in the Renaissance: Ignored How Much Longer?' in *Perspectives on Science*, 12, (2004), pp. 86-124; Cañizares-Esguerra, J., *Nature, empire, and nation: explorations of the history of science in the Iberian world*, Stanford University Press, Stanford, Calif., 2006, chapter 2.; Barrera-Osorio, A., *Experiencing nature: the Spanish American empire and the early scientific revolution*, University of Texas Press, Austin, TX, 2006, pp. 30-31. As we will see later, many scholars relied on these studies.
3. Portuondo, M. M., *Secret science Spanish cosmography and the new world*, University of Chicago Press, Chicago, 2009, especially pp. 299-306.
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6. Feil, J., *Sir Tobie Matthew and his 'Collection of Letters'*, Unpublished PhD Dissertation. University of Chicago, 1962, chapter 4 and p. 176.
7. Matthews, S., *Theology and science in the thought of Francis Bacon*, Ashgate Pub., Aldershot, England, 2008, p. 12; 119-121.
8. Letter from T. Matthew to F. Bacon (1625), in WFB, XIV, pp. 531-532.; Feil, J., *Sir Tobie Matthew and his 'Collection of Letters'*, Unpublished PhD Dissertation. University of Chicago, 1962, pp. 89; 140-141
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*chiefe mysteries of jesuiticall iniquity, With the whole body of their statisme, and diuellish policy. Composed and published in Italian [by Fulgenzio Micanzio] ... and faithfully translated by I. B., etc. [The translator's dedicatory epistle signed: Isaac Bargraue.]* London, W. Jaggard for F. Paxton, 1619.

12. It is still uncertain who was the author of the 1618 Italian translation of the *Essays*, although it is sure that Matthew was involved in the edition. Feil, J., *Sir Tobie Matthew and his 'Collection of Letters'*, Unpublished PhD Dissertation. University of Chicago, 1962, pp. 111-114. On Bacon and Micanzio see Gabrieli, V., 'Bacone, la Riforma e Roma nella versione Hobbesiana d'un carteggio di Fulgenzio Micanzio', in Praz, M. ed., *English Miscellany*, 8, (1957), pp. 195-250.

13. Martinich, A., *Hobbes a biography*, Cambridge University Press, Cambridge, 1999, pp. 38-40, has a different a view. According to Martinich, even if Micanzio might really have admired Bacon, his desire to get in touch with him was rather motivated by his political and religious interests.

14. Drake, S., *Galileo at work: his scientific biography*. University of Chicago Press, Chicago, 1978, p. 37.

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<http://www4.desales.edu/SCFC/Studies/ATP-Galileo.pdf>, 2001 argues that Baranzano still defended the Copernican system as a good hypothesis, contrary to the established interpretation that Baranzano retracted completely from Copernicanism.

16. Bacon, F., *Letter to Baranzano* (1622), WFB, XIV, pp. 375-377, Pintard, R., *Le libertinage érudit dans la première moitié du XVII<sup>e</sup> siècle: nouvelle éd. augm. d'un avant-propos et de notes et réflexions sur les problèmes de l'histoire du libertinage*, Slatkine, Genève, Paris, 1983, pp. 133-134. I was unable to find out how Bacon and Baranzano did become acquainted.

17. Bacon, F. *Letter to T. Matthew* (1609) WFB, XI, 139.

18. Bacon, F. *Letter to T. Matthew* (1609) WFB, XI, 137. It seems that Bacon refers to Petrus Faber (Pierre Lefevre, Pierre Favre 1506-1546) co-founder of the Society of Jesus along with Ignacio de Loyola and others. Faber's mission was particularly conspicuous in central Europe. His writings were of spiritual rather than philosophical character. I was unable to find particular mentions to Faber's Aristotelianism in early-modern Catholic English contexts, nor in Tobie Matthew. It is not impossible that Bacon confused Petrus Faber with Jacobus Faber Stapulensis (Jacques Lefrèved'Étaples, 1460-1536), a French Catholic humanist, who sought to reform Aristotelianism and whose school flourished in Protestant universities.

19. Bacon, F. *Charge against William Talbot* (1613-14). WFB, XII, p. 9; Bacon, F. *The charge of Owen, indicted for high treason* (1615). WFB, XII, p. 162.

20. Bacon, F. *The Advancement of Learning*, WFB, III, p. 277.

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22. Gaukroger, S., *Francis Bacon and the transformation of early modern philosophy*, Cambridge University Press, New York, 2001, pp. 128-130.

23. Bacon, F., *Valerius Terminus*, WFB, III, p. 231; Cf. Reiss, T., "'Seated between the Old World and the New": geopolitics, natural philosophy, and proficient method' in Solomon, J. R., & Martin, C. G., *Francis Bacon and the refiguring of early modern thought: essays to commemorate The advancement of learning (1605-2005)*, Ashgate, Aldershot, 2005, p. 226.

24. Bacon, F., *Notes of a Speech concerning a War with Spain* (1622), WFB, XIV, p. 462.

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28. Bacon, F., *An Advertisement touching a Holy War*, WFB VII, pp. 28-30. This dialogue repeats Bacon's ideas on just war expressed in other writings of the same period, where some arguments rely on the doctrines of Aristotle and the Spanish Dominican Francisco de Victoria. On Bacon's views on war see White, H. B., *Peace among the willows. The political philosophy of Francis Bacon*, Martinus Nijhoff, The Hague, 1968, pp. 86-90.
29. Bacon, F., *An Advertisement touching a Holy War*, WFB, VII, pp. 20-21.
30. Bacon, F., *An Advertisement touching a Holy War*, WFB, VII, pp. 21-22.
31. Bacon, F., *An Advertisement touching a Holy War*, WFB, VII, p. 34.
32. *Observations of things most remarkable, collected out of the first part of the Commentaries Royall, writen by the Inca Garcilasso de la Vega, Naturall of Cozco, in nine Bookes: of the original, lives, conquests, lawes and idolatries of the Incas, or Ancient Kings of Peru*, in Purchas, S., *Samuel Purchas his Pilgrims in five books*. London, William Stansby for Henrie Fetherstone, vol. IV, (1625). See specially the selections from the first volume of Inca Garcilaso, chapter XIII pp. 1464-1485.
33. Bacon, F. *A promus or formularies and elegancies*, Introduction, WFB, VII, pp. 189-195.
34. Acosta, J. de, *The natvrall and morall historie of the East and West Indies: Intreating of the remarkeable things of heaven, of the elements, mettalls, plants and beasts which are proper to that country: together with the manners, ceremonies, lawes, governements, and warres of the Indians*, translated into English by E. G[rimenstone]. London, (1604), Val. Sims for Edward Blount and William Aspley, chapter 24, pp. 482-485. Spanish original edition 1590.
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36. Cawley, R. R., *Unpathed waters; studies in the influence of the voyagers on Elizabethan literature*. Princeton University Press, Princeton, 1940, pp.44-47 quoted Salzman, P., 'Narrative contexts for Bacon's New Atlantis', in Price, B., ed., *Francis Bacon's New Atlantis: New Interdisciplinary Essays*, Manchester University Press, Manchester and New York, 2002, pp. 28-47.
37. Salzman, P., 'Narrative contexts for Bacon's New Atlantis', in Price, B., ed., *Francis Bacon's New Atlantis: New Interdisciplinary Essays*, Manchester University Press, Manchester and New York, 2002, pp. 28-47; Pimentel, J., *Testigos del mundo ciencia, literatura y viajes en la Ilustración*, Marcial Pons / Ediciones de Historia, Madrid, 2003, pp. 91-95. Pimentel points out that the parallelisms between Bacon and Fernández de Quirós have been noted before by José Manuel Gómez Tabanera in 1995.
38. Pimentel, J., *Testigos del mundo ciencia, literatura y viajes en la Ilustración*. Marcial Pons / Ediciones de Historia, Madrid, 2003, pp. 73-84.
39. Fernández de Quirós, P., *Terra Australis incognita or A new Southerne discoverie of the fift part of the World, lately found out by Ferdinand de Quir, a Spanish Captai.*. London, IhonHodgetts, 1617, pp. 18-19.
40. Cañizares Esguerra, J., *Nature, empire, and nation: explorations of the history of science in the Iberian world*. Stanford University Press, Stanford, Calif., 2006, p. 22.
41. According to Pimentel, J., *Testigos del mundociencia, literatura y viajes en la Ilustración*. Marcial Pons / Ediciones de Historia, Madrid, 2003, pp. 84; 91, Fernández de Quirós named the city he created "Nueva Jerusalén", a name which reminds us Bacon's Bensalem. This name, however, was omitted in the English translation that Bacon most probably read, although perhaps he learnt this name from maps of the time.
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44. Bacon, F., *New Atlantis*, WFB, III, p. 145.
45. Bacon, F., *Novum Organum*, OFB, XI, pp. 132-133, book I, aph. lxxxiv. I have modified slightly this translation.
46. Bacon, F., *New Atlantis*, WFB, III, p. 165-166. The Bensalemite also alludes to other known inventors: "There we have the statue of your Columbus, that discovered the West Indies, also the inventor of ships, your monk that was the inventor of ordnance and of gunpowder."
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48. Bacon, F., *The Advancement of Learning*, WFB, III, p. 291. For a wide interpretation of this idea see Reiss, T., "'Seated between the Old World and the New": geopolitics, natural philosophy, and proficient method' in Solomon, J. R., & MARTIN, C. G., *Francis Bacon and the refiguring of early modern thought: essays to commemorate The advancement of learning (1605-2005)*, Ashgate, Aldershot, 2005, pp. 223-246.
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56. Seneca, *Medea*, 369-379. Cf. Acosta, J. de, *The natvrall and morallhistorie of the East and West Indies: Intreating of the remarkeable things of heaven, of the elements, mettalls, plants and beasts which are proper to that country: together with the manners, ceremonies, lawes, governements, and warres of the Indians*, translated into English by E. G[rimenstone]. London, 1604, Val. Sims for Edward Blount and William Aspley, Book 1, chapters 7 to 15.
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58. Although Ramusio and Benzoni told that they rely on Pietro Martire, I was unable to find this story in the original version of *De Novo Orbe decades*, nor in its modern and early-modern English translations (I checked the editions of Richard Eden, Hakluyt and MacNutt).
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61. García de Céspedes, A., *Regimiento de Navegación*, Madrid, 1606, Juan de la Cuesta. For a study of García de Céspedes' work see Portuondo, M. M., *Secret science Spanish cosmography and the new world*. University of Chicago Press, Chicago, 2009, specially pp. 271-291.



62. Cañizares Esguerra, J., 'Iberian Science in the Renaissance: Ignored How Much Longer?' in *Perspectives on Science*, 12, (2004), p. 89 and p. 89 note 3. The relevance given by Cañizares Esguerra to these similarities is not to be found in Pimentel, who just called the attention to them.
63. Cañizares Esguerra, J., 'Iberian Science in the Renaissance: Ignored How Much Longer?' in *Perspectives on Science*, 12, (2004), p. 94.
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69. Brendecke, A., *Imperium und Empirie: Funktionen des Wissens in der spanischen Kolonialherrschaft*, Bohlau, Köln, 2009, note 3 to page 11, remarked that similar designs were to be found in English, French and Netherlander titles of the time, although they do not imply the *Plus Ultra* metaphor.
70. Bacon, F., *The Advancement of Learning*, III, pp. 321-322.
71. Bacon, F., *Instauratio Magna*, Preface, OFB, XI, p. 10.
72. Precisely by this difficult time, with the help of Tobie Matthew, Bacon did sporadic bids for patronage to the current Spanish ambassador, Diego Sarmiento, Count of Gondomar. On this period of Bacon's life see Jardine, L., & Stewart, A., *Hostage to fortune: the troubled life of Francis Bacon (1561-1626)*, Phoenix Giant, London, 1998, chapter 17.

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