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Superstition, Idolatry and the Advancement of Learning
From the Brotherhood of Light to the Solomon's House

ABSTRACT: In this article, I offer a survey of Bacon's use of the term superstition, tracing the evolution of his views on the matter, as well as the articulation of what I call a "problem of superstition." The problem of superstition regards the discipline of assent, but also the formation of a certain capacity of distinguishing truth from "superstition and impostures." In his early writings, Bacon suggested that certain forms of knowledge can cure superstition and entitle a select group to become "sons of science." I claim that Bacon abandoned this solution. Instead, in his late writings, the recipe from keeping superstition at bay is based on collaborative practices of what I will call "externalizing assent". I show how such mechanisms of externalizing assent are vividly illustrated in Bacon's description of the ranks and functions of Salomon's House, the blueprint institution for the production of knowledge.
SOMMARIO: Nell'articolo presento un'indagine sull'uso del termine superstizione negli scritti di Bacon, tracciando l'evolversi delle sue idee sul tema e l'articolarsi di quel che definisco il "problema della superstizione". Il problema della superstizione riguarda la disciplina dell'assenso, ma anche il formarsi di una certa capacità di distinguere la verità dalla "superstizione e dalle imposture". Nei suoi primi scritti, Bacon suggerì che alcune forme di conoscenza costituissero un rimedio per la superstizione e permettessero a un selezionato gruppo di persone di diventare "figli della scienza". Secondo me, Bacon successivamente ha abbandonato questa soluzione e nei suoi ultimi scritti ha basato il rimedio per tenere a bada la superstizione su pratiche collaborative di ciò che chiamerò "assenso esternalizzato". Nel testo mostro come tali meccanismi di esternalizzazione dell'assenso siano illustrati nel descrivere i ranghi e le funzioni nella Casa di Salomone, l'istituzione progettata per produrre la conoscenza.
KEYWORDS: Francis Bacon; Idols; Superstition; Brotherhood of Light; *New Atlantis*

1. INTRODUCTION: A "MALEFICIATED" MIND

Bacon's discussion of superstition moves quite liberally between three different meanings of the term. On a more traditional sense, superstition is a feature of doctrines. Thus, Bacon speaks, for example, of the superstitious doctrine of the Epicureans who claim that the gods have human shapes;[1] but also, of the superstition of "the Schoolemen" who "like astronomers", feign "Eccentricks, and Epicycles […] to save the phenomena".[2] Superstitious doctrines can be found in mathematics, philosophy and theology. Their common feature seems to be the formulation of existential claims for what are basically the products of human imagination.

1. OFB IV, 116-117.
2. OFB VIII, 55.

Bacon's second meaning of superstition refers to superstitious practices. Such are the practices common of 'mixing' contents of different disciplines, i.e, mixing science and religion, theology and literature, or philosophy and theology. But practices of observations can also be superstitious when the investigator falls prey to his own idols and sees in nature what belongs to the "caverns of his mind". Alchemists, or the proponents of magnetic philosophy are enthralled by their own superstitious practices; they not only imagine and assert, they eventually grow used to see a distorted world.[3] Superstitious practices produce superstitious philosophies; but they are more problematic than that, because they also produce a deluded mind. They infect the fantasy and even distort and break the solidity of the sense-perception.[4]

Last but not least, a third meaning of superstition refers more generally to the nature, functions and mechanisms of the mind. In this more technical sense, superstition denotes the effects of a particularly distorted mechanism of assent, one influenced by the idols of the mind. It characterizes the process and mechanisms of cognition which begins by identifying the individuals of common experience. This very identification can go wrong if, instead of "carving nature at its joints," the mind goes "her own way".[5] This is how badly formed notions arise from the empirical investigation of nature: I am observing the sky at night, looking for planet Mars. My mind divides the field of observation according to its own fancy, or according to the received tradition, into various constellations of the Zodiac. The constellations are parts of the sky; but they are not parts of Nature. They are mere figments my imagination. I say that Mars is in Leo, and has a retrograde motion. More figments of imagination – and received doctrines and prejudices -- are entering into my description of what my eyes will see. I imagine the celestial spheres and various epicycles, and the distinction between 'real' and 'apparent' motions. It is not merely that I believe in the superstitious doctrine of the simple and crystalline celestial spheres; my whole mind is infected by it. The way I see, understand and carve nature in my attempt to observe the sky at night is irremediably flawed by superstition.

These three meanings are of course not entirely independent. Superstitious doctrines are the result of superstitious practices and all originate, ultimately, in the superstitious nature of the mind. The mind, in turn, gets ensnared by doctrines – these are what Bacon calls the "idols of the theatre" – and produces more superstition both at the level of practices and at the level of new theories and doctrines.[6] As it has been already noted, key to understanding the superstitious mechanisms of the mind is the distorted mechanism of assent.[7] There is something in superstition that commands the assent; superstitious theories are convincing and seductive, and they trick the mind into

3. For a discussion see Jalobeanu 2019: 8-36.
4. See for example OFB XI, 100-101.
5. OFB VI, 96-99.
6. Jalobeanu 2019.
7. On the more general problems of assent in the seventeenth century see Corneanu 2007: 17-55; Corneanu 2016: 201-229.

assenting to become a follower of a particular doctrine. This is how sects are born.[8] Superstitious practices are also infectious; and, as Bacon claims, the "root of all superstition" reside in our distorted common notions and the universal idols of the tribe. Because, as he claims time and again

> For the Mind of Man is farre from the Nature of a cleare and equall glasse, wherein the beames of things should reflect according to their true incidence; Nay, it is rather like an inchanted glasse, full of superstition and Imposture, if it bee not delivered and reduced.[9]

The question is whether the mind can ever be "delivered and reduced" and what would that mean. In this paper I claim that Bacon's ultimate answer to this question is negative. Meanwhile, I will also show that what I call the 'problem of superstition' was the driving force behind his numerous attempts to revisit the problem of knowledge-formation until he found a way forward. But, as we shall see in what follows, it was a surprising solution; one that abandoned completely the ideal of clearing the mind of all perturbations and proposed, instead, a form of collective wisdom figurately expressed in the fable of *New Atlantis*.

2. THE PROBLEM OF SUPERSTITION

The reader of the *Novum organum* faces a paradox. On the one hand, the first book ends on a note of hope, suggesting that superstition will disappear once the interpretation of nature is put in place, because the interpretation of nature is "the true and natural work of a mind freed from the fetters that restrain it".[10] On the other hand, the second part of the *Novum organum* is so sketchy and unfinished that it is clear that the interpretation of nature is a project for future generations and not an individual solution for the naturalist. A couple of years later, in 1623, Bacon prefaces his *Historia naturalis et experimentalis* with a stronger statement, suggesting that the project of curing the mind through a form of philosophical discipline is hopeless and should be abandoned. Together with the *Novum organum*.

> At the same time this thought comes to mind: that there are without doubt many capacious, candid, sublime, subtle, solid, and steadfast intellects scattered the length and breadth of Europe. And what if one such intellect were to appropriate the plan and purpose of my *Organum* and put it to test? He still does not know how to proceed, nor how to get ready to re-equip himself for philosophy. If it were something which could be achieved by poring over books of philosophy, by disputation, or by meditation, he, whoever he may be, might be up to the job, and do it well. But if I refer him (as I do) to natural history, and the experiments of the arts, he is at a loss: it is not what he is used to, and he has neither the time nor the money for it. […] And so it comes down to this, that my *Organum*, even if it were finished, would

8. Jalobeanu 2019.
9. OFB IV, 116.
10. OFB XI, 197.

> not carry forward the Instauration of the Sciences much without Natural History, whereas Natural History without the Organum would advance it not a little.[11]

Did Bacon really argue for a different method? Present-day scholars fail to agree on this point. And yet, Bacon's claims are sustained by his practice, i.e., by his sustained efforts, in the last years of his life, to assemble the blueprint of a large-scale natural historical project.[12] This is doubled by further reflection on the nature of superstition which shifts the focus from the nature of the mind (and its idols) to the nature of investigative practices (and their associated methodology). The preface to the *Historia naturalis et experimentalis,* and the subsequent *Norma historiae presentis* outline a complex, multi-dimensional project which requires bracketing, at last for a while, philosophizing (i.e., using the intellect to form notions and abstract axioms) in order to engage in practicing observation, experimentation and classification, i.e., the forms of activity characteristic of natural and experimental history.[13] The two intellectual products, natural philosophy and natural history are placed in sharp contrast to one another; and it looks like the key difference between the two regards precisely the superstition. The preface to *Historia naturalis et experimentalis* is a full-blown attack on the superstitious nature of all natural philosophies, ancient and modern. In it, Bacon revisits criticisms formulated already, in earlier writings, but places them in a different context and adds to them supplementary weight. Philosophy does not generate superstition only because its speculative tendencies; but also, because its aspiration towards comprehensiveness and systematicity. Bacon claims that all philosophical systems are, in fact, attempts to emulate the Divine act of creation. In this way, philosophies produced in the "cells" of one's own "fantasy, as if from Plato's cave" [*Phantasiae suae cellulis, tanquam ex specu Platonis*] are attempting to "dictate to nature" and install their dominion over it [*Natura praeimus, & dominamur*]. In other words, the natural philosopher commits at least two sins. The first is a sin against God, whose power he emulates. The second is a sin against Creation, on which traditional philosophers attempted to impose their own systems of notions and categories. As Bacon emphasizes time and again, these are forms of idolatry and tyranny.[14] Furthermore, philosophy is passible of yet another form of tyranny, that over the minds of others. In this sense, he claims in the *Sylva sylvarum* that the introduction of "new doctrines is […] an affectation of tyranny over the understandings and beliefs of men".[15]

Few interpreters took at face value Bacon's claims that all systematic philosophy is superstitious; that all philosophers, ancients and moderns are not merely deluded creators of fables, but "arch-heretics" intentionally attempting to ensnare the minds of

11. OFB XII, 11-13.
12. Jalobeanu 2015; Jalobeanu 2021b: 98-119.
13. Jalobeanu 2020b: 1-5; Anstey & Jalobeanu 2022: 222-238.
14. OFB XII, 11.
15. *Works* II, 672.

men.[16] And yet, it is only by taking such claims seriously that we can understand the problem Bacon was facing, as well as the shift in Bacon's interest from the restorative project of the *Novum organum* to the foundational project of the *Historia naturalis and experimentalis*, i.e., the shift from logic to natural history. At the core of this shift lies what I will call in this paper, the problem of superstition.

The problem of superstition is double layered. First, a deformed mind, like a distorted mirror, produces superstitious doctrines, or is locked in superstitious practices. This happens because the mechanism of assent is distorted. Impressions presented to the mind are already emotionally colored, passions interfere in the process of judgment and the mind assents with what is ultimately a false opinion. Bacon's early writings already list numerous difficulties, or "impediments" – internal, as well as external – which contribute to the distortion of assent. Most famously, the "theory of the idols" reads like a classification of these impediments.[17] However, this is not all. The preface of the *Historia naturalis and experimentalis* presents us with a second layer of distortions and deformities of the superstitious mind, one that involves the intention to deceive. The mind produces self-deceptions originating in the desire to be "like God"; and intentionally aims to deceive other minds into believing these fabrications. The preface of the *Historia naturalis et experimentalis* describes this second layer of the problem of superstition in terms of a 'second fall'. The first fall was a result of a particular transgression: Adam wanted to be like God in respect to the knowledge of good and evil. By contrast, superstitious philosophers want power, as well as knowledge: power over nature, and power over other minds. In Bacon's terms:

> They [Adam and Eve] wanted to be like God, but their descendants want more still. For we conjure up worlds, and dictate to nature like despots; we want to have things our own way and in accordance not with the Divine Wisdom, or how we find the actual facts, but with depths of our own folly. Indeed, I do not know whether we more abuse the things themselves or our own wits but we plainly set the seal of our own image on the creature and works of God rather than carefully examining and recognizing the seal that the Creator has set upon them. Thus again do we deservedly lose our power over created things; and while after the fall of man some degree of control over the recalcitrance of creatures still remained – so that they could be subdued and steered by true and solid arts – yet to this too we for the most part forfeit through our insolence, and because we want to be like God, and follow the dictates of our own reason.[18]

This 'second fall' sharply contrasts with Bacon's more optimistic views on the human nature expressed in his earlier writings. In the *Valerius Terminus* and the *Advancement of learning* Bacon explicitly exempts the desire to search for the secrets of nature from

16. Among the notable exceptions are the works of Sophie Weeks, Guido Giglioni and Sorana Corneanu who are addressing, each in her own way, the same problem of superstition. See for example: Weeks 2019: 1-39; Corneanu 2015: 337-364; Giglioni 2012: 62-86.

17. More recently, Sophie Weeks has also gone beyond classifications, and attempted to describe the physiology of the idolic mind in Weeks 2019.

18. OFB XII, 9.

the scenario of fall and salvation. In the *Valerius Terminus* he claims that the "thirst for knowledge" was not a "humour of the mind" but "an emptiness or want in nature and an instinct from God".[19] Even in its fallen and distorted form, this "instinct from God" would sparkle the desire to knowledge which, if correctly directed and carefully "bounded by religion", will yield results (i.e., non-superstitious descriptions of nature). Moreover, in the *Valerius Terminus* Bacon seems to believe that there is a harmony of purpose and structure between human mind and Nature. Because

> whatsoever is not God but parcel of the world, he hath fitted it to the comprehension of man's mind, if man will open and dilate the powers of his understanding as he may.[20]

Therefore, in these early writings, error and superstition seem arise only from transgression, such as the attempt to mix science and religion, or to inquire into the mysteries of divinity. And the mind has religion as a

> singular help and a preservative against unbelief and error; for, saith our Saviour, *You err, not knowing the Scriptures, nor the power of God;* laying before us two books or volumes to study if we will be secured from error; first the Scriptures revealing the will of God, and then the creatures expressing his power; for that latter book will certify us that nothing which the first teacheth shall be thought impossible.[21]

In the later *Historia naturalis et experimentalis* this optimism is gone. Reading the two books can breed superstition, and the desire to understand nature with the help of philosophy, far from being a remedy against superstition, is an incentive to it. The superstitious mind breeds speculative theories and this happens from an inner tendency to idolatry, a desire "to be like God" by "conjuring up worlds", trying of command nature and "exult over God's works" [*de operibus Dei triumpharunt*].[22] We do not merely deal with a distorted and diseased mind but with a more substantial evil. This explains, I think, Bacon's vocabulary and choice of terms. For example, in the "Rules of the present History" [*Norma historiae praesentis*] Bacon talks about his attempts to regulate observation, experimentation and experimental recordings in the following terms.

> I intersperse advice and cautions about the fallacies of things, and the errors and snags which may crop up in the course of inquiring and discovering, so that all spectres can as far as possible be driven off as if by exorcism [*tanquam Exorcismo fugemus*].[23]

In other words, the investigator of nature works is not in a privileged position with respect to the speculative philosopher. The investigator of nature works also with a mind possessed, a "maleficiated mind". As William Rawley puts it in his preface to Bacon's posthumous *Sylva sylvarum*:

19. *Works* III, 220-221.
20. *Ibidem*, 221.
21. *Ibidem*.
22. OFB XII, 10-11.
23. *Ibidem*, 14-15.

> he knew well that there was no other way open to unloose men's minds, being bound and, as it were, maleficiated by the charms of deceiving notions and theories, and thereby made impotent for generation of works, but only nowhere to depart from the sense and clear experience; but to keep close to it.[24]

This choice of vocabulary is significant. It reflects Bacon's preoccupation with, but also his deeper understanding of the difficulties involved in the problem of superstition. We can see the same concern in some other of his late works as well. For example, in the 1625 edition of the *Essays,* Bacon reworks some of his earlier essays on superstition, cunning, vain-glory, prophecy and atheism. He adds to the essay on vain glory a final, catch-phrase

> Glorious Men are the Scorne of Wise Men; the Admiration of Fooles; the Idols of Parasites; and the Slaves of their own Vaunts.[25]

Meanwhile, glory and reputation give rise to fame which, Bacon claims (in *Of Seditions and troubles*) is a "relique of seditions past" and a "prelude of seditions to come". Fame commands action and enslaves the understanding; glory and fame contribute to the formation of sects. And sects are, according to Bacon, "greatest Vicissitude of Things amongst Men" for they "rule in Mens Minds".[26] Again, in *Of Seditions and troubles* the first cause of civil revolt is said to be the "innovation in religion". Mark how in all these essays, superstition is responsible for human actions leading to civil disorder and unrest. From the mind, superstition spreads to the society, infecting the body of the commonwealth. And it is the worst of all plagues. In the essay on *Superstition*, Bacon claims that superstition is worse than atheism.[27]

> Atheisme leaves a Man to Sense; to Philosophy; to Natural Piety; to Lawes; to Reputation; All which may be Guides to an outward Morall virtue, though Religion were not; But Superstition dismounts all these, ad erecteth an absolute Monarchy, in the Mindes of Men.[28]

Bacon is following here Plutarch's essay on superstition. And it is worth noting that in Philemon Holland's translation of Plutarch's *Moralia*, published in 1603, the position to which Bacon refers here is summarized in the following manner:

> he saith in the first place, that superstition is the most unworthy and unseemly of all the passions of the soule […] That the superstitious man is in continuall per-

24. *Works* II, 335.

25. OFB VIII, 162.

26. *Ibidem*, 173.

27. The 1625 edition of the Essays adds a quote from Plutarch's essay *Of Superstition* which is not mentioned in the first version of Bacon's essay on superstition, that from the 1612. The quote also illustrates my point about Bacon's depiction of superstition as something monstruous, a form of madness. Here is the quote: "Plutarch saith well to that purpose: Surely (saith he) I had rather, a great deale, Men should say, there was no such Man, at all, as Plutarch: then they should say, that there was one Plutarch, that would eat his Children, as soon as they were borne, as the Poets speake of Saturne". *Ibidem*, 54.

28. *Ibidem*.

> plexity, he dreadeth his owne idole no lesse than a cruell tyrant, and imagineth a thousand evils even after his death.[29]

Superstition is a form of idolatry; the superstitious mind is possessed and bewitched. Bacon uses the same language and the same terminology as Holland in linking superstition and idolatry; the inner recesses and specters of the mind, and the outer tyranny that superstition can exercise over other minds, in the whole social body. And to all these, the 1625 edition of the *Essays* adds a disturbing conclusion, in some added lines at the end of the essay *Of Superstition* which read like a hopeless verdict.

> There is a Superstition, in avoiding Superstition; when men thninke to doe best, if they goe furthest from the Superstition formerly received: Therefore, Care would be had, that (as it fareth in ill Purgings) the Good be not taken away, with the Bad; which commonly is done, when the People is the Reformer.[30] (55-56)

This applies mainly to new religious sects; but Bacon's claim is more general and, as we have seen, he sees "sectarianism" as a more general tendency of the superstitious mind.[31] Not only that superstition breeds superstition, but the mind can encounter superstition even when trying to run away from it. It is almost as if there is no way out from the problem of superstition; all production of human thought simply bears its stamp. This echoes the opening of the essay *Of Truth* which speaks of the "delight in Giddinesse" which characterizes the sceptic's attitude; sceptics, Bacon claims, merely "affect" free-will and "count it a Bondage, to fix a Beleefe". In fact, this attitude originates in a much more positive, affirmative, and substantial evil, what Bacon calls a "natural, though corrupt Love of the Lie it selfe".[32]

We see thus in Bacon's late writings an increase awareness of the problem of superstition and the difficulties it poses to any attempt to produce knowledge. Moreover, we see him convinced that natural philosophy is not a solution to the problem of superstition but a large part of the problem itself. If there is to be any cure, it cannot begin with philosophy. Can natural and experimental history provide a remedy against superstition? Bacon's answer is positive, but its details are far from clear. I think that this lack of clarity originates in the fact that Bacon gives, in fact, not one but two different answers to the problem of superstition. The first answer, which I will sketch in the next section of this article, aims to rethink natural and experimental history as a medicine of the mind. By and large, I suggest it does not really work; and Bacon is forced to think of a different kind of answer, which I aim to uncover in the last part of this paper.

29. Plutarch, *The Philosophie commonly called The Morals* (London, 1603), 259.
30. OFB VIII, 55-56.
31. Jalobeanu 2019.
32. OFB VIII, 7.

3. NATURE, "SONS OF GOD" AND "SONS OF KNOWLEDGE"

As we have seen already, in Bacon's earlier works, we find a more moderate, optimistic view on the nature of superstition and the possibility of finding roundabout ways to circumvent one's own idols. The most optimistic position can be found in the *Meditationes sacrae*, where Bacon adopts a Ciceronian stance, saying that true religion stands in the middle between two extremes: superstition and atheism. Both extremes are seen as deformations of the natural light, one (superstition) in the direction of dogmatism, the other in the direction of impiety.[33] Thus,

> True religion therefore is seated in the mean, between Superstition with superstitious heresies on one side and Atheism with profane hersies on the other [*Itaque religio vera sita est in mediocritate, inter superstitionem cum haeresibus superstitiosis ex una parte, et atheismum cum haeresibus prohpanis ex altera*).[34]

It looks therefore that at least those minds illuminated by true religion have the means to avoid and the instruments to recognize superstition. This position is fully spelled-out in another theological text, the *Confession of faith*. There, Bacon claims that the "sons of God" received "a revocation in part of the curse".[35] But who are these "sons of God"?

> amongst the generations of men, [God] elected a small flock, in whom (by the participation of himself) he purposed to express the riches of his glory; all the ministration of angels, damnation of devils and reprobates, and universal administration of all creatures, and dispensation of all times, having no other end, but as the ways and ambages of God to be further glorified in his Saints, who are one with [their head] the Mediator, who is one with God.[36]

In the *Confession of Faith,* Christ, the Mediator is the means of communication between God and the Creature, a form of union between God and humanity – at least that part of the humanity who is saved ("the Saints"). As Stephen Matthews has shown, the doctrine exposed in the *Confession of Faith* is at odds with that of Calvin. For Calvin, Christ's incarnation is a response to Adam's sin and the only way in which Christ acts as a Mediator is by bringing some parts of humanity back on the path of salvation. For Bacon, however, Christ's incarnation is central to the Creation and expresses God's participation to the Creation, before and after the Fall.[37] Moreover, Bacon claims that Christ's sacrifice

33. Atheism, in the *Meditationes sacrae* is a particular form of heresy, that denying the power of God. So, in general terms, is a form of superstition. The only difference is its negative formulation; Bacon seems to believe that this is what makes it less dangerous, the fact that it is interrogative and non-dogmatic. In representing the true religion as the middle way between these two extremes Bacon adopts the strategy advocated by Cicero's *De natura deorum*, a work that Bacon often quotes, as, for example, in *The Advancement of Learning*.

34. *Works* VII, 241, 252.

35. *Ibidem*, 221.

36. *Ibidem*, 220.

37. Matthews 2008: 41-47.

> reneweth in us the image of God in holiness and charity; though both imperfectly, and in degrees far differing even in God's elect, as well in regard of the fire of the Spirit, as of the illumination.[38]

The image of a "elected flock", a fraternity in Christ, whose "image of God in holiness and charity" is "partially restored", by degrees, is not quite Calvinist either. Bacon's 'election' differs in important points from a strict doctrine of predestination. In fact, his Christian brotherhood resembles more a Christianized version of a "golden chain" of wise and philosophers who received an initial revelation, a *prisca theologia* and passed it down, from a generation of elects to the next. The different degrees of 'illumination' are also rather reminiscent of Neoplatonism, Orphic mysteries, and philosophical initiations than of the doctrine of double predestination. The elects are said to have minds free of superstition because they have received the illumination (by degrees) of true religion, which means that they have in them, in various degrees of perfection, faith and charity. They are the "sons of God"– which means, in fact, that they are the sons of Christ, the Mediator, whose miracles have to do, according to Bacon, with healing, prolongation of life, and charity.

> All his miracles were for the benefit of the human body, his doctrine for the benefit of the human soul. The body of man stands in need of nourishment, of defence from outward accidents, of medicine. He gathered the multitude of fishes into the nets, whereby to supply men with more plentiful food. He turned water into the worthier nourishment of wine, to glad man's heart. […] He restored motion to the lame, light to the blind, speech to the dumb, health to the sick, cleanness to the lepers, sound mind to them that were possessed of devils, life to the dead. There was no miracle of judgment, but all of mercy, and all upon the human body.[39]

Christ is a healer and restorer of human body; and the head of a fraternity of healed minds. "Sons of God" are thus the answer to the problem of superstition; they have faith, charity and a degree of illumination which would allow them to avoid superstition and see some parts of the hidden truths and mysteries of nature. Meanwhile, this solution poses both theological and philosophical problems and rests on precisely what Bacon attempted so much to avoid: an inexcusable 'mixture' of science and religion. And yet, I think it took him a while to discard it completely.

In Bacon's more philosophical texts we do not have the "sons of God", but there is a parallel and quite interesting term: "sons of knowledge". They, too, constitute a brotherhood, what *The Advancement of Learning* calls "the Brotherhood of Light". The model of this brotherhood parallels, that of the visible church, but also that of nature:

> as Nature created Brotherhood in Families, & Arts Mechanicall contract Brotherhoods in communalties, and the Annoyntment of God superinduceth a Brotherhood in Kings and Bishops: So in like manner there cannot but bee a

38. *Works* VII, 224.
39. *Ibidem*, 244.

> fraternitie in learning and illumination, relating to that Paternitie, which is attributed to God, who is called the Father of illuminations or lights.[40]

In other early works, such as the *Redargutio Philosophiarum*, these "sons of knowledge" are presented, in a very similar vein, as descendants of a golden chain of philosophers who could resist superstition. The *Redargutio Philosophiarum* stages a discourse in which a father-like figure speaks in front of an assembly of such "sons of knowledge" about forms of discipline that would cure the mind. The discourse touches the doctrine of deification:

> We are agreed, my sons, that you are men. That means, as I think, that you are not animals on their hind legs, but mortal gods. God, the creator of the universe and of you, gave you souls capable of understanding the world but not to be satisfied with it alone. He reserved for himself your faith, but gave the world over to your senses. Neither of these oracles did he wish to be clear, but wrapped in obscurity. Yet have you no ground for complaint that he makes you exert yourselves. Your reward is to know the excellence of things.[41]

Therefore, knowledge is not only possible, but it is also a duty for the "sons of science"; and knowledge can be transmitted, or, at least 'intimated' within this brotherhood of light. But this can only be done "by degrees". The mind can be "healed" and then "exercised" through the appropriate form of training which can kindle and "excite" the "native spark of reason" while also performing a sort of exorcism and restore the mind within its own bounds, freed from "the dazzle of an alien and intrusive beam".[42] How can all this be done is not entirely clear, since, in the *Redargutio Philosophiarum* we only have an introductory and general *oratio ad filios*. But the outline of it suggests a complex educational program of teaching and learning which begins with the criticism of the ancients and the understanding of the "dangers" of "abstract philosophies", followed by redirecting one's attention towards Nature through observation, experience and experiment (the couple *experientia* and *experimentum*). The focus of this educational program is on history – divine, natural and human – and the mind has to learn to spot and understand the 'signs' of truth or the signs of the advancement of learning throughout history. Meanwhile, the text emphasizes in in strong terms the religious duty. The claim is that

> [God] did not give you rational souls in order that you should place in the men the faith you owe to Him. He did not give you reliable and trustworthy senses in order that you might study the writings of a few men. Study the Heaven and the Earth, the works of God himself, and do so while celebrating His praises and singing hymns to your Creator.[43]

This Creator is said to be "Father of men and nature as well as of lights and consolation" [*Quique ut hominum et rerum, ita luminum et consolationum pater est*] and the

40. OFB IV, 60.
41. Farrington 1964: 106.
42. *Ibidem*, 107.
43. *Ibidem*, 106.

oration contains a prayer that this "Father of lights" bless the "marriage of mind and nature" so that from this union "may issue, not monsters of the imagination, but a race of heroes to subdue and extinguish such monsters".[44]

The text of the *Redargutio Philosophiarum*, like Bacon's many other texts, is unfinished. But that much is clear: at some point in his career, Bacon seemed to believe that superstition can be cured and that the answer lies in some form of teaching and learning how to become a member of this fraternity of knowledge, how to be a "true son of knowledge" or a member of this Brotherhood of light. This seems to be at odds with the much less optimistic picture we can find in the later natural histories. And yet, we can find a brotherhood of sorts in these late writings as well. This is the Salomon's House; the institution for the production and preservation of knowledge depicted in the posthumous *New Atlantis*.

4. EXTERNALIZING THE ASSENT: SALOMON'S HOUSE AND THE PRODUCTION OF KNOWLEDGE

In the *New Atlantis* Bacon imagines a society of "sons of knowledge" which looks, at the first sight, somewhat similar with his earlier attempts to depict a Brotherhood of Light. It is a society which looks in certain respects like a monastic order, a society with a very long tradition, a society dedicated to the production of knowledge, but one which also has moral, technological and political powers. Its members have the same impeccable moral outlook and outwards expression of piety, dignity and pity that Bacon seemed to appreciate so much in his earlier writings as well. However, the "society of Salomon's House" or the "order of Salomon's House" is characterized in a peculiar manner not only by its knowledge of the "works of creation" and the "secrets of nature" but also by the special capacity of its members to "discern […] between divine miracles, works of nature, works of art, and impostures and illusions of all sorts".[45] This special power features heavily in Bacon's story of the *New Atlantis*. It is because of this special power of discerning superstition and imposture that the Fathers of Solomon's House are chosen as appropriate repositories of the Word of God in the celebrated episode of the conversion of Bensalem to the Christian religion. It is also because of this special power to resist superstition that the Fathers of Salomon's House are said to have received the mission to investigate the works of creation, and this is how they acquired a second name, "the College of Six Day's Works", "instituted […] for the finding out of the true nature of all things".[46] It is also because of this special power to discern superstition that the Fathers can pursue their "trade of light".[47] But how did they acquire this capacity?

44. *Ibidem*, 131.

45. Bacon 2002: 464.

46. *Ibidem*, 471. We have seen in section 2 that imposture is a form of superstition. In the context of the *New Atlantis* illusion is also a form of superstition as it becomes clear from the story of the "Christianization" of Bensalem. We are told that a cross of light appear on the sky and that the Father of Solomon's house certified it as a miracle. This seems to have happened precisely because of his superior skill to discern true miracles from illusions that led to superstitions and false religions.

47. *Ibidem*, 472.

One way to answer is to assimilate Bacon's literary devices with his earlier depictions of similar societies of illuminati. However, the story and pattern of Solomon's House differs in significant ways from Bacon's earlier attempts to imagine a society of wise man engaged in the exploration of nature. First, the capacity to distinguish between miracles, true works of nature and superstition and impostures seems to be naturally acquired and precedes revelation; or, at least, the reception of the Scriptures. As the story goes, the suggestion seems to be, rather, that the Fathers of Solomon's house have exercised this capacity in their experimental work. Among the laboratories described in Bacon's story, there are those introduced as

> houses of deceits and the senses; where we represent all manner of feats of juggling, false apparitions, impostures, and illusions; and their fallacies. And surely you will easily believe that we that have so many things truly natural which induce admiration, could in a world of particulars deceive the senses, if we would disguise those things and labour to make them seem more miraculous. But we do hate all impostures and lies: insomuch as we have severely forbidden it to all our fellows, under pain of ignominy and fines, that they do not shew any natural work or thing, adorned or swelling; but only pure as it is, and without all affectation of strangeness.[48]

Scholars have often commented upon this and similar passages, suggesting that one can interpret them rather disingenuously as saying that the members of Solomon's House are perfectly equipped to produce something that looks like a miracle, i.e., to perform feasts of imposture on a grand scale.[49] However, if we read the above quote in the light of our problem of superstition, we see that Bacon offers here an answer. His model institution consists of people who cannot be deceived, people who can resist superstition simply because they have acquired expertise through practice. They can produce seemingly miraculous things and often also do that in order to understand the fine borderline between the familiar and the unfamiliar, between *mirabilia* and true miracles. And, last but not least, they have natural (and experimental) histories of superstition as guides. Incidentally, we can find the sketch of such a natural history of superstition in the companion to the *New Atlantis*, the *Sylva Sylvarum*.[50]

Second, and more importantly, Solomon's House is peculiar among Bacon's devices in so far as it is neither a society of equals, nor a republic of the wise, but a highly hierarchical, extremely specialized structure for the production of knowledge. Its fellows perform very specific activities, always the same. Twelve are "merchants of light", namely travelers who collect and bring back "books, and abstracts, and patterns of experiments" from other countries. Three Fathers are called "Depredators". They "collect the experiments which are in books", which means, that they read and commonplace books, collecting experimental recipes, descriptions and ides under several headings. This activity is a common activity for any Humanist philosopher and Bacon himself

48. *Ibidem*, 486.

49. Much has been written on the "code" of the *New Atlantis*. For a sample see Wortham 2002; Renaker 1990: 181-193; Spitz 1960: 52-61; Garber 2014: 91-107.

50. In Century X of the *Sylva Sylvarum*.

has all sorts of considerations about proper and more efficient ways of commonplacing, which always begins with a process of "depredation".[51] Three more fellows are said to collect experiments from arts and sciences, presumably from other sources than printed books; from patents, collections, from conversation with the practitioners and so on; they deal in what at the time was called the trade of secrets, hence they bear the appropriate name of "Mystery Men". Another three have a different office: they "try new experiments" – and hence are called "Pioners" or "miners". Then, there are other three which organize the work done so far. They

> draw the experiments of the former four into titles and tables, to give the better light for the drawing of observations and axioms out of them. These we call Compilers.[52]

Each of these groups is performing a particular task involved in the process of gathering what Bacon calls "natural and experimental history". It is a highly specialized and compartmentalized process of collecting experiments form a wide range of sources which ends with organized compilations of experiments, old and new, organized in tables, the ideal form Bacon had in mind for a natural and experimental history. Mark that all these members of Solomon's House do not necessarily have knowledge, properly speaking, and some exercise a very limited set of operations, directed towards fulfilling their particular duty. Their common product are the tables of the natural and experimental histories. These tables are, in turn, an object of investigation for the other fellows. Three groups are investigating the tables, with three very different purposes: to use them to invent and direct new experiments, to execute these new experiments and to develop practical applications from these experiments, things useful for man's life. Or, in the language of the *Novum organum,* new *experiments of light* versus new *experiments of fruit.* At this level, Bacon introduces "consultations" among the members, which means also a less specialized, more reflexive form of activity involved in developing and executing new experiments. But, again, each of the three groups does very different things. For example, here are the Benefactors. They are

> looking into the experiments of their fellows, and cast about how to draw out of them things of use and practice for man's life, and knowledge as well for works as for plain demonstrations of causes, means of natural divinations and the easy and clear discovery of the virtues and parts of bodies. These we call Dowry-men or Benefactors.[53]

The activities of the Benefactors seem to be the following: by looking at very large collections of experiments drawn in tables, they attempt to spot those which can be 'fruitful' and produce further results. Bacon's late natural histories are often emphasizing this fruitful character of certain experiments or discoveries, the potential of developing certain experiments in new fields. To take one example, the work of the Benefactors would be to observe and investigate the fabulous properties of nitre to enter into the composition of explosives (such as the gunpowder) but also to serve as a fertilizer, and

51. On Bacon's methods of reading and research see Vine 2008: 1-31; Vine 2018.
52. Bacon 2002: 486.
53. *Ibidem*, 487.

to inquire further into its medicinal properties. The particular expertise of the Benefactors seems to be connected with the capacity to develop experimental investigations in an orderly manner, by using the appropriate methodology of the *experientia literata*.[54] This allows the transfer of working methods and results from one field to another, for example, which is one of Bacon's favorite examples of the 'fruitfulness' and productivity of experimental investigations. But Benefactors have more expertise than that. As their name says, they specialize in the knowledge of a particular type of experiments, the experiments of fruit. They are able to spot among the various outcomes of a particular experimental investigation, those that can be put to work in the service of humanity – that can be used to make human life easier, or longer, or more serene. In my example with the niter, the benefactors will develop fertilizers (something the reader can find in Century V of the *Sylva Sylvarum*, for example) as well as more general inquiries into the properties of the niter to cool down the spirits and contribute, perhaps to the prolongation of life. Do Benefactors have knowledge? They do, but of a very special kind. They have specialized knowledge, what we call today expertise. Are their minds "free of superstition"? The answer is not necessarily. They can perform their duties because they have a clear purpose; and the group of three acts as a mechanism that can check errors in the process of developing new experiments. We can also imagine that the three fellows act together to keep each other's idols (positive biases, idiosyncrasies) at bay. But they do not have knowledge of causes. They are merely experts in spotting the potential of fruitfulness of observations and experiments.

By contrast, another group of experimenters are set to work on something else. They have to "consider [...] the former labors and collections" and, starting from them, "to direct new experiments, of a higher light, more penetrating into nature than the former". These are "the Lamps". Lamps develop in another sense the potential fruitfulness of the various items gathered in the tables. Like the Benefactors, they are also experts in "seeing" how experiments can be further developed, but they look for causal connections and what Bacon calls, in the *Novum organum*, "experiments of light". Experiments of a "higher light" send to a different route of knowledge than the one taken by the benefactors. In their work, Lamps have to extract axioms from tables, test them and develop new, more powerful experiments from them. If this reading is correct, then Bacon is alluding here to another sense of 'fruitfulness' and productivity, one attached to axioms. He sometimes says that axioms have generative power – and the higher the axioms, the more generative power they have.[55] The Lamps' expertise gives them the special skill to do this more advanced work. In a sense, they have more theoretical knowledge than any of the others so far. But their knowledge is also specialized and directed towards obtaining particular results. Thus, there is no need to assume that Lamps' minds are "free of superstition", or that they have "pure knowledge". This becomes more apparent if we consider the third group of "developers of experiments",

54. On *experientia literata* as a methodology of experimentation see Jalobeanu 2016: 324-342; Jalobeanu 2021a: 594-617.

55. Jalobeanu 2020a: 325-339. Another useful discussion of "fruitfulness" is in Corneanu 2015: 337-364.

the three Inoculators, who are said to work on the execution of these novel experiments proposed by the Lamps. They are clearly introduced in order to respond to the possible worries some might have that the Lamps would fall prey to biases in assessing the results of their proposed experiments. Positive bias is avoided if someone else is performing 'your' experiment; and hence we might say that what the Inoculators are performing are, in fact, tests.

Mark that Benefactors are devising and developing their own experiments, while the Lamps give ideas (and presumably recipes and 'patterns') to the Inoculators. This peculiar dissimilarity points towards Bacon's concerns over positive biases but also raises interesting questions regarding "inventions" or "discoveries". The "ordinances and rites" of the Solomon's House glorify the inventors. Or so the story goes

> we have two very long and fair galleries: in one of these we place pattens and samples of all manner of the more rare and excellent inventions: in the other we place the statua's of all principal inventors. There we have the statua of your Columbus, […] the inventor of ordnance and of gunpowder: the inventor of music: the inventor of letters: the inventor of printing: […] Then have we divers inventors of our own, of excellent works.[56]

In light of the picture of distributed knowledge I describe above, one wonders how are these inventors established. Clearly, "inventors" can only be the Benefactors – and, as it is apparent from Bacon's list, "inventions" refer mostly to those fruitful works which have contributed to the relief of man's estate. Or, perhaps, inventors are only selected from the last group on Bacon's list, those who are said to "raise the former discoveries by experiments into greater observations, axioms and aphorisms" and are called the Interpreters of Nature. They seem to head the institution and they are likely depositaries of all knowledge produced at the inferior levels. And yet, Bacon's structure does not allow this conclusion. The Interpreters of Nature also have a highly specialized knowledge. What they do is to theorize on the basis of the experimental knowledge accumulated by all the others. They are proposing axioms of greater generality and explanations (what Bacon calls "greater observations").[57] Despite their names, the Interpreters of Nature are not the depositaries of the complete knowledge produced by the organization. They also have more skills than knowledge. They can spot regularities among the experimental results and propose explanations but they do not construct bodies of systematic knowledge. I find it extremely interesting that Bacon gives the interpreters the task to write in "aphorisms". Aphorisms are another shortcut for fruitfulness and productivity; aphorisms are pithy sentences likely to raise questions, incite the mind to look further, provide it with "imperfect axioms" to work upon.[58]

As Richard Serjeantson noted a while ago, the various "offices" of Solomon's

56. Bacon 2002: 487.

57. In his natural and experimental histories, Bacon theorizes the use of *observationes* – theoretical explanations of provisional characters inserted in order to facilitate the next step of the construction. As he puts it in the *Norma historiae praesentis*, "I append my observations on the history and experiments so as to make the interpretation of nature readier". OFB XII, 15.

58. Jalobeanu 2020a.

House parallel the operations of Bacon's method, as presented in the *Novum organum*.[59] However, what is in the *Novum organum* a set of operations performed in an integrated manner by the same mind is here distributed among groups, each in control of a set of highly specialized activities. Sophie Weeks has suggested that Bacon's interpretation of nature works with a "methodological segregation of faculties".[60] In the process described by the blueprint of the Solomon's House I see a further step into operationalizing and externalizing the mental operations. The hierarchical structure of Solomon's House depicts an attempt to externalize the process of assent, to embody it into a different kind of "machine" than the "machine of the intellect". This machine is the social organization of a society for the production of knowledge.

In this social machine, each group performs highly specialized tasks. Individuals do not work all together, but in groups of three. The role of the groups seems to be the limiting and control of positive biases and the keeping in check of the individual idols. Assenting to a particular proposition, or to a particular experience, or sense-data, is – thus – not an individual decision anymore; it is subject to deliberation, rules and methodologies. Moreover, the groups themselves are sometimes subject to control, in a mechanism of check and balances, as we have seen in respect to Lamps and Inoculators.

Moreover, if we compare the activities the Benefactors, Lamps and Inoculators with those performed by the Merchants of Light, Depredators, Miners and Compilers, we can see that Bacon imagines three different stages, or steps, in this externalizing the assent. The first stage correspond with what is in the individual mind sense-experience and the formation of perceptions. Four groups of three do the work of "experience" in the Solomon's House. The result of the regulated assent is to be found in the tables organized by the Compilers. The reader can imagine that the results in the tables emerge from complex selection procedures; groups have to examine and accept/reject phenomena. Then, observations have to be ranged and classified – and this is said to be another subject of deliberation.

We can see Benefactors and Lamps (with their Inoculators) as dealing with assent at another level. Their work involves imagination, since they have to 'invent' new experiments. Deliberation takes place here on more than one level: first, one has to decide whether a particular experiment is new; whether it is working; whether it is productive; and whether it is beneficial for the humanity at large, or quite the opposite.

Interpreters of nature also need to deliberate and give assent to axioms. And this also has to take place on more than one dimensions. They have to assess axioms in terms of truth and productivity; in terms of coherence with other axioms, in terms of their place in the overall structure of science.

At each of these three different levels, groups are dealing with different kinds of knowledge and perform, sometimes, different kinds of (mental) evaluations. In a certain sense, the groups are situated in a hierarchy; and the higher they are, the more knowledge they possess. Meanwhile, it is clear from Bacon's description that different

59. Serjeantson 2002: 82-105.
60. Weeks 2019.

groups are acquiring different kinds of expert knowledge. They acquire a specialization, i.e., what we call today skills and expertise. In the end, no group can be a depositary of all the knowledge produced by the institution. It looks like Bacon depicts here an organization in which knowledge is distributed; in the social machine, each group has some knowledge, no-one has all.

Meanwhile, of course, knowledge is something more than the sum of the expert skills. And there is a sense in which we can see this social machine as a machine of learning. Individuals working within a small group eventually learn better how to control their inner idols with the help of others; they also acquire experience and – at least in the case of the groups involved in higher level theoretical activities – a better picture of the general purposes, structure and results of the machine taken as a whole. It is not only that the *results* of this social machine are better, the workings of the machine – and its individual components – are better (say, operations are performed faster, or certain errors are not even produced etc.). However, ultimately, no individual intellect is cured of idols, set straight or subject to illumination. But less and less superstition is produced and superstitious practices are spotted and eliminated. And, given a sufficient time, one can see both a growth of knowledge and an increase of the reliability of empirical knowledge, together with a diminishing quantity of speculative, superstitious knowledge.

5. CONCLUSION

We have seen that Bacon offers basically two different solutions to the problem of superstition. One is that of the progressive illumination, a model reminiscent of Christian Neoplatonism. Sons of God or sons of knowledge receive this mysterious illumination and transmit it further, through teaching and learning inside of a brotherhood which resembles very much an ancient school (or sect) of philosophy.[61] My claim in this paper is that Bacon abandoned this road in his later writings, in face of his increasing worries concerning the depths and difficulties of the problem of superstition. The second solution is entirely different. It involves an attempt to externalize the mechanism of assent, to embody the operations of the mind in a social machine for the production of knowledge: the strictly organized hierarchy of the Solomon's House. The similarities of language and imagery we find in Bacon's works tend to obscure the radical differences between the two solutions. Because the second does not solve the same problem as the first. It provides no individual solution to the problem of superstition, no cure for the mind, no illumination and presumably no salvation. It merely provides a machine for producing relatively reliable knowledge, while eliminating speculation, dogmatism, allegiances to particular philosophies (idols of the theatre) and superstitious practices. At the individual level, the minds engaged in the process of inquiry are no less superstitious; they are merely bound by rules, more specialized to perform expert operations and much more cautious. They are also less self-centered. The organization of Solomon's House instrumentalizes not only the process of assent, but also one of the virtues

61. See also Jalobeanu 2008: 197-231.

so central for Bacon's earlier projects of medicining the mind, the virtue of charity. In the earlier *Advancement of learning*, the charity was said to be a "corrective spice" of all thought; it was only through thinking for others, that one could hope to avoid the pitfalls of the idolatrous mind. As Sorana Corneanu has shown, charity, for Bacon, does not relate to the products of knowledge but to the attitudes and the motions of the mind; it is a moral and religious virtue turned epistemic; and its main purpose is to keep the mind fixed on the true ends of knowledge, engaged with others, away from one's idolatrous self.[62] In Bacon's earlier versions of the Brotherhood of light, the corrective spice of charity is strongly connected with teaching and the model of master-disciple relationship characteristic of the "golden chain". In the rigorous structure of the Solomon's House, however, the "corrective spice of charity" gets instrumentalized. It is not necessarily about investigating nature for the sake of humankind. As many have noted before, the institution of Solomon's House does not function explicitly in the benefit of the people of Bensalem. The social machine as such does not work as a Benefactor – because "benefactors" are merely a wheel in the machine. In this sense, Bacon's cautious political ending makes sense. He claims that the results of knowledge are carefully handled; through 'consultations' a collective decision is made on

> which of the inventions and experiences which we have discovered shall be published, and which not; and take all an oath of secrecy, for the concealing of those which we think fit to keep secret.[63]

Collective decisions are made with the common good in mind; and this requires a superior level of knowledge. Meanwhile, at the individual level, charity is transformed. Thinking of others is transmuted into thinking with others; and the "corrective spice of charity" which, in earlier works, was supposed to keep the mind de-centered and directed towards the common good, gets here transformed into procedures for working together in a selfless manner. In the collective body of Solomon's house, each of the fellows becomes a part of the whole; they work together, they possess knowledge in common, there is no ego left to interfere with the process of assent, there is no self-love to distort the observation of nature. In this roundabout way, a process of learning transforms the individual mind. But it is a different, procedural kind of learning. We can perhaps say that in the mind of the expert, a well-exercised prudence covers, as a veil, the "universal madness;" and that this is what allows sciences to take off the ground.

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62. Corneanu 2015.
63. Bacon 2002: 487.

ABBREVIATIONS

OFB = F. Bacon, *Oxford Francis Bacon*, Oxford, Oxford University Press, 1996-:
I, *Early Writings 1584-1596*, ed. by A. Stewart and H. Knight, 2012;
IV, *The Advancement of Learning*, ed. by M. Kiernan, 2000;
VI, *Philosophical Studies c.1611-c.1619*, ed. by G. Rees, 1996;
VIII, *The Historie of the Raigne of King Henry the Seventh*, ed. by M. Kiernan, 2011;
XI, *The Instauratio magna, Part II: Novum organum*, ed. by G. Rees and M. Wakely, 2004;
XII, *The Instauratio magna, Part III: Historia Naturalis and Historia Vitae*, ed. by G. Rees and M. Wakely, 2007;
XIII, *Instauratio magna: Last Writings*, ed. by G. Rees, 2000;
XV, *The Essayes or Counsels, Civill and Morall*, ed. by M. Kiernan, 2000 [1985].

Works = *The Works of Francis Bacon,* ed. by J. Spedding, R. L. Ellis and D. D. Heath, 14 vols., London, Longman and Co., 1857-1874.

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