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Force and Violence

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At the beginning of Aeschylus' *Prometheus Bound* two daimons, Force and Violence, servants of Zeus, compel the divine blacksmith Hephaistos to nail Prometheus to a rock at the end of the world. Hephaistos is unwilling; he pities his kindred god and only does his work under constraint. He says to Force and Violence, "in you the command of Zeus has its perfect fulfillment (*telos*); in you there is nothing to stand in its way" (15). That is, Hephaistos understands that whatever Zeus the Father commands indeed requires Force and Violence to bring it to full completion and perfection (*telos*), for nothing can withstand them; they are the manifestations of omnipotence. Hephaistos even hates his own peerless craft when it is commanded by such masters, who are "always pitiless, always full of ruthlessness" (42). The adamantine wedge he is compelled to drive through Prometheus' breast is meant to punish the crime of philanthropy, of loving men, "the creatures of a day," more than gods and of giving those men not only fire but all the crafts and knowledge that raise their humanity above abjectness. In that sense it can be said that the divine lover of men suffers impalement and torture as the fulfillment of the will of the Father, as Zeus is constantly called in this scene.

Force and violence appear before us as the ultimate ministers of that Father; like our benefactor Prometheus we await the hero, Heracles, half human and half divine, who will liberate Prometheus from the bondage and torture he suffers on our account. Many years later Francis Bacon will, I suggest, present himself as that hero, as the deliverer of mankind and the worthy rescuer of the Forethinker. In doing so Bacon intends to kindle a new light for men, the fire of a new science meant to heal the manifold woes of mankind. What is disturbing, though, is that Bacon enlists Force and Violence on the side of science as *its* indispensible ministers. As we catch sight of them again we, like Hephaistos, cannot help but shudder as they lay their hands on the body of Nature. One seems to see them putting Nature in the place where Promethus had been tortured and we are not comforted that one divine victim has been substituted by another. What is the nature of the violence

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which science, in Bacon's view, had to apply to Nature itself? Can there be any adequate justification for its use?

The origin of these matters lies in Prometheus's binding and in the precise Greek words employed. The character who speaks to us is named Kratos in Greek, from the verb *krateō*, meaning to be strong, mighty, powerful, to rule, hold sway, be sovereign, to conquer, master, lay hold of. So "Might" might be a better rendering of this word than "Force," for kratos suggests a kind of political domination which, though it is surely powerful, also rules through a certain authority which is not only "brute force" but connotes larger mastery.

Along with Kratos comes Bia, which in Greek also means force, power, or might, but with the connotation of hostile strength or violence. The word bia is used in phrases such as "the strength (*bia*) of Hercules" but it is also the legal term used to describe rape (*bias dikē*). As far as I can tell, *bia* has the sense of compulsion contrary to the will of the one compelled; Aristotle uses it as the opposite of persuasion (*peithō*) when he says that "some [opponents] need persuasion, and others compulsion (*bia*)" (Metaphys. IV.5.1009a18). So whereas Kratos is for the most part able to rule through lordly mastery Bia compells through violence, through a subversion of the desires of the ruled under overwhelming force. Such compulsion, Aristotle says, is "a form of necessity" (Metaphys. V.5.1015a26) and a painful necessity at that, for "necessity is held to be something that cannot be persuaded—and rightly, for it is contrary to the movement which accords with choice and with reasoning." Tellingly, Aristotle recounts as an example Electra's words in Sophocles' play as she is forced to endure the tragic events in her house, the death of her father and the arrogance of Aegisthus. She says of her endurance "Force makes this action a necessity"— that is, "What I do, I must do" (256). Aristotle's insight in choosing this example seems to be that it is of the essence of tragedy that its protagonists are in the hands of a necessity that grips them violently and painfully, as if to say that *bia* is the center of the tragic. In that sense *bia* is disclosed as not a random or senseless kind of violence but rather the onslaught of intelligent although inimical power.

Interestingly, in Aeschylus' scene Violence or *bia* is a silent role; only Kratos speaks, as if to suggest that Might commands through speech while Violence works in silence. It is crucial, though, that Hephaistos address Kratos and Bia in the *dual*, the Greek form used for natural pairs such as oxen but also and even more pointedly for pairs of heros like Achilles and Patroklos or Philoctetes and Neoptolemus. Such pairs have a deep affinity and intermingling that the ordinary plural would miss; they are, as we say, "two of a kind" with

the paradoxical blending of singularity and twoness that phrase implies. The duality of Might and Violence, then, signifies the inextricable connection between consensual mastery and the mastery conferred by sheer compulsion and painful necessity, signifies that the use of power implies or relies on a certain silent violence which accompanies it and ensures that it will not fail: all force is, at bottom, violent and all violence legitimates itself through its forceful mastery. In that sense Aristotle distinguishes violence (*bia*) from fraud (*apatē*) when he discusses the varying causes of political revolutions (Politics V.4.1304b12): violence does not rely on deception or treachery and, in that sense, fraud is a form of persuasion rather than the self-subsistent power that violence bodies forth.

It is this duality of force and violence which is evoked when Aristotle uses the term *bia* to describe what is usually translated the "unnatural" or "violent" motions which can be imposed on bodies, as opposed to the "natural" motions which those bodies would manifest, if left to themselves. As I understand Aristotle's discussion, there seems to be a certain primacy and uniqueness that characterizes the natural motion of a body which stands as a contrary to any of the violent motions which might be enforced on that body, "for naturally a thing moves in one way, while its unnatural movements are manifold" (De Caelo III.2.300a26). If violence is applied it seems that what is natural is obscured or effaced, at least while the violence acts, for the natural motion and the unnatural ones cannot coexist in the body, being contraries. For instance, when a stone is thrown during its violent arc its natural motion to come to rest is suspended, at least during the heighth of the seizure which may abate gradually as the violence somehow subsides. It was this very difficulty that led later Aristotelian commentators of the twelfth century such as Jean Buridan to speculate that such violent motions might be "impressed" on the underlying nature of the body; this concept of impetus (as Buridan called it) has an important relation to the growth of the concept of momentum in the hands of Galileo. Indeed, it is hard to understand how the body could "come to itself" and refind its nature after the violence ceases, for there does not seem to be any limit to the multiplicity or intensity of the unnatural motions that violence might compel. In this difficulty there emerges a disturbing sense of nature defenseless before such violent assaults, a sense that nature can only prevail over violence because violence tends to spend and exhaust itself, leaving a clearing in which somehow innate nature might reassert itself and regain its habitual sway. In that sense the violent is unintelligible because it is essentially willful and arbitrary, the passing fit that seizes hold of a nature which is at base passive and

patient. As the violent spasm passes away the habitual and hence intelligible course of nature resumes.

But in order for nature not to be overwhelmed by violence there needs to be some haven, some hiding place, in which what is enduring and natural can find refuge and bide its time until the violence is spent. It was such a refuge that Buridan sought, I think, in postulating that some enduring quality withstands the impress with which impetus stamps it; indeed, the Newtonian concept of inertia might draw its lineage from Buridan's insight. However, I think Bacon discerned quite independently that Nature is not really open but rather hidden and secret.

Bacon's insight stems from his general sense that God's works and powers alike are characterized by secretiveness, a sense that is founded in his reading of scripture and sacred history as much as in observation of nature. He delights in quoting the Wisdom of Solomon: *The glory of God is to conceal a thing, but the glory of the king is to find it out* (Prov. 25:2). By addressing this to King James in *The Advancement of Learning* Bacon sets out for the king's emulation the secretiveness of the Divine King, who yet invites His worthy elect to penetrate what otherwise might be improper for man to know. Indeed, Bacon acknowledges that there is a "proud knowledge of good and evil" (Adv III.265) which is not licit for man and which led to man's fall. However, Bacon distinguishes from this proud knowledge the knowledge of the power of God as manifest in His creatures, knowledge wherein "nothing parcel of the world is denied to man's inquiry" for, as Solomon said, "the spirit of man is as the lamp of God, wherewith he searcheth the inwardness of all secrets" (Prov. 20:27). Bacon further recognizes that this knowledge of Nature is rightful not because it is utterly innocuous; indeed he discerns "some nature of venom or malignity" that might taint such knowledge, regardless of its quantity, and which might lead to a prideful swelling were it not for "this corrective spice, the mixture whereof maketh knowledge so sovereign," which he calls charity. Quoting St. Paul's great praise of charity in II Corinthians, Bacon discerns in it the all-important corrective to a knowledge which could otherwise lead man to another prideful fall or at least to the vain noise of the "tinkling cymbal" of which St. Paul speaks.

From this Bacon draws what he considers

> the true bounds and limitations whereby human knowledge is confined and circumscribed ... The first, *that we do not so place our felicity in knowledge, as we forget our mortality.* The second, *that we make application of our knowledge to give ourselves repose and contentment, and not distaste or repining.* The third, *that we do not presume by the contemplation of nature to attain to the mysteries of God.* (Adv III.266)

In his delineation Bacon reveals his conception of science as essentially pious in intent since its utter freedom of inquiry is grounded on a religious sense of charity and a concomitant sense of pity for the sufferings of man. As man partakes of the divine quality of charity, he is allowed and even required to penetrate into the divine secrets in order to gain the power needed to give effective relief to the sufferings of his brethren. Bacon goes so far as to say that

> it behoveth him which aspireth to a goodness not retired or particular to himself, but a fructifying and begetting goodness, which should draw on others, to know those points which be called in the Revelation *the deeps of Satan*; that he may speak with authority and true insinuation. Hence is the precept *Try all things, and hold that which is good:* which induceth a discerning election out of an examination whence nothing at all is excluded. Out of the same fountain ariseth that direction: *Be you wise as Serpents, and innocent as Doves.* There are netiher teeth nor stings, nor venom, nor wreaths and folds of serpents, which ought not to be all known, and as far as examination doth lead, tried: neither let any man here fear infection or pollution; for the sun entereth into sinks and is not defiled. Neither let any man think that herein he tempteth God; for his diligence and generality of examination is commanded; and *God is sufficient to preserve you immaculate and pure.* (Meditationes Sacrae VII.245)

In this extraordinary passage Bacon reveals also the way in which he reinterprets Scripture in the light of his concerns so that what was hidden in the text might bear fruit in reassuring the sons of science (as Bacon calls them) of their divine license and vocation to delve into the deepest secrets of Nature.

To discern these secrets, however, man's ordinary endowment of thought and observation is not adequate, not only because we know so very little but even more because our sensibilities are so distorted. In one of his most arresting and thought-provoking passages Bacon describes

> a much more important and profound kind of fallacies in the mind of man, which I find not observed or enquired at all, and think good to place here, as that which of all others appertaineth most to rectify judgment: the force whereof is such, as it doth not dazzle or snare the understanding in some particulars, but doth more generally and inwardly infect and corrupt the state thereof. For the mind of man is far from the nature of an clear and equal glass, wherein the beams of things should reflect according to their true incidence; nay, it is rather like an enchanted glass, full of superstition and imposture, if it be not delivered and reduced. (Adv III.394–395)

It is as if the fall of man had distorted the mind of man from being a "clear and equal glass"—that is, mirror—of nature and rendered it so strangely deformed that it might not have notice its ruined condition, so all-pervasive and subtle is it. This is not the

cool doubt with which Descartes contemplated our claims to knowledge, but a compelling and disturbing sense of the perils of man's understanding. Indeed, for Bacon this may have been the crucial mistake of Aristotle and other ancient writers, for they treated our common sense and reason as if they were far more trustworthy than Bacon esteems them to be. Reconsidering the image of the cave that Plato presents, Bacon asserts that, were a child to have lived in such a cave and "came suddenly abroad, he would have strange and absurd imaginations" (Adv III.396). Not only would his eyes be dazzled in the way Plato had described but, even worse, his eyes would be corrupted with the shadows and might not at all be able to discern rightly the realm of light. This corruption of the "false appearances imposed upon us by every man's own individual nature and custom" Bacon later called the Idols of the Cave in the *Novum Organum*, as if Plato's cave had become for him an abysmal cavern whose walls were all curving and distorting mirrors in which shadows no longer faithfully follow their originals but rather give rise to monstrous illusions and a swollen idolatry which worshipped the dark grotto it wandered in.

Viewed in this way the image of the cave gives way to another even more ancient image, that of the labyrinth:

> But the universe to the eye of the human understanding is framed like a labyrinth, presenting as it does on every side so many ambiguities of way, such deceitful resemblances of objects and signs, natures so irregular in their lines and so knotted and entangled. And then the way is still to be made by the uncertain light of the sense, sometimes shining out, sometimes clouded over, through the woods of experience and particulars; while those who offer themselves for guides are (as was said) themselves also puzzled, and increase the number of errors and wanderers. In circumstances so difficult neither the natural force of man's judgement nor even any accidental felicity offers any chance of success. No excellence of wit, no repetition of chance experiments, can overcome such difficulties as these. Our steps must be guided by a clue ... (NO 12).

In Bacon's treatment of this story in *The Wisdom of the Ancients* (VI.734–736) the emphasis is on the artificer of the labyrinth, on Daedalus; Bacon is curiously silent about Theseus and particularly about Ariadne, whose love for Theseus led her to betray her father, Minos, by giving him the clue, the thread which enabled Theseus to emerge from the maze. What Bacon tells us about Daedalus himself is disturbing: Daedalus was "a man of the greatest genius but of very bad character," a banished murderer who killed a fellow pupil out of envy and found favor in his exile with such kings as Minos. Furthermore, Daedalus was a maker of "unlawful inventions" such as the brazen bull through which Pasiphae was able to satisfy her passion for the bull, as a result of which the monstrous

Minotaur was born. Bacon connects this with the general ambiguity of the mechanical arts, which provide many useful devices to which human life is indebted "and yet out of the same fountain come instruments of lust, and also instruments of death" such as "the most exquisite poisons, also guns, and such like engines of destruction" with which modern times are so surfeited. How very prescient, then, was Bacon's discernment of the flood tide of noxious or merely vain devices that have overwhelmed us and yet he still averred that "the mechanical arts may be turned either way, and serve as well for the cure as for the hurt and have power for the most part to dissolve their own spell" for "the same man who devise the mazes of the labyrinth disclosed likewise the use of the clue."

In Bacon's rendition, the labyrinth itself is not so much Nature as an image of the artifices and inventions which men make to subdue Nature to their use; the delusive turns of the maze are like the intricate variety, subtlety, and apparant likeness of one part to another which characterize "the more ingenious and exact mechanical inventions." In that regard, the labyrinth is an image of the working of man's sensibility upon Nature both in its powers and methods as well as in its ambiguity of use. Were it not for the clue which the artificer had to find the machine would not work, it seems, but also that clue somehow has the power to "dissolve the spell," to subvert whatever might serve mere lust or political necessity so that the hero, Theseus, might emerge victorious. In casting the myth into this form I think that Bacon, the author of the fragmentary work *The Clue to the Maze (Filium Labyrinthii)* (ca. 1607; III.503), comes before us as a new Theseus, and not at all as the dark artificer, Daedalus, whose sins are so clear to him. Jacob Klein has argued that Socrates emerges in Plato's *Phaedo* as a new Theseus who delivers men from the fear of the Minotaur, of Death. In contrast, Bacon proposes to postpone and allieviate death though scientific means not so much by teaching about the immortality of our souls but by scientific miracles that depend on saving secrets wrested from the labyrinth and from its dark artificer, secrets which enable the purified hero of science to enact divine pity on the suffering bodies of men. By emphasizing the replacement of Daedalus by Theseus Bacon asserts the way in which science, in his understanding, is not merely ingenious mechanical contrivances nor purely immaterial but rather emerges from the dark mechanism bearing a saving clue, a clue which after all the artificer had to discern as he wrought the labyrinth.

It seems important, however, that Bacon never shows us any purification of Daedalus himself from his envy and murderousness, although from the clue which he has found emerge the possibility of such good for mankind. Theseus must depend on Daedalus,

then, although he supercedes him. Even in his telling of the story of Icarus Bacon is entirely silent on the grief and chastisment that myth might well have disclosed of the old artificer who beholds, helpless, his son making towards the heights with the waxen wings his father made for him. As with Ariadne, Bacon veers away from pathos and instead asserts provocatively that "yet if he were to perish one way ... he chose the better. For sins of defect are justly accounted worse than sins of excess; because in excess there is something of magnanimity,—something, like the flight of a bird, that holds kindred with heaven; whereas defect creeps on the ground like a reptile" (SV VI.754). This has the sound of the Machiavellianism that sometimes characterizes Bacon's cool practicality in political matters; his praise of Icarus suggests his high valuation for a kind of daring that seems to him absolutely essential in the scientific endeavor, regardless of its moral and human cost, a daring that is compact with human overreaching but without which neither the labyrinth nor the clue might be found. Although Bacon does not say this, one might imagine Daedalus watching Icarus with a certain fierce joy in this daring son who was not less bold than his father. Bacon, at least, does not disown either of them.

Yet how can Theseus not fall victim to the idols which inhabit the cave, the idols thrown up by the "enchanted glass" of the human mind which, in Bacon's view, had turned the work of the ancients to naught? In naming this idol Bacon locates the center of his concern not so much in classical antiquity as in Biblical history for he brings to mind irresistably the figure of Moses, the smasher of idols and bringer of the true law. As Bacon himself names the idols of the theater, marketplace, and cave he steps before us as a new Moses.

Bacon extends this metaphor in several ways. He feels that the books of the new science will easily displace those of the old just as "the serpent of Moses ... may devour the serpents of the enchanters" (De Aug IV.290). In addressing the dryness which the masses might find in the most essential and austere passages of scientific knowledge Bacon invokes up the image of the manna, which he takes to be the food of the mind, in contrast to the flesh-pots of Egypt; as the Israelites wearied of heavenly manna, Bacon fully expects the dissatisfaction of the unscientific, who "taste well knowledges that are drenched in flesh and blood" (De Aug IV.383). Returning to the question of Egyptian magic it was King James I himself who noted in his *Daemonologie* that though Moses became learned "in all the sciences of the Aegyptians," he could not hear God in Egypt; as in Bacon's reading, Moses must depart from pagan sources in order to discern the true law and confound the

idols that defiled it.

It is, then, the purificatory power of the true God that cleanses and rectifies the distortions of the pagan thinkers and casts their idols down. Daedalus gave way to Theseus, who in turn gives way to Moses, who, though stained with human blood, is purified and sanctified by the Divine fire. At this juncture we are able to regain sight of our question concerning force and violence. Into Moses's hands God confided powers to work wonders and to liberate, powers different in kind than those of the rival Egyptian magicians, who were impressive enough but failed since they lack the purity and authority which God communicated to Moses. As God's deputy and executor Moses is licensed to use all needed force and even violence. This is manifest in the Biblical account of the uncompromising way in which Moses dealt with apostasy and idolatry among the Israelites. But even more tellingly the form taken by Moses's violent means is that of a *test*, really of an experiment in the scientific sense. Consider, for instance, the law prescribed in Numbers 5 for a woman suspected of adultery by a jealous husband; she must drink water mixed with burnt cereal offerings which, if she is guilty, will cause pain and execration to follow. Likewise, Moses made the idolatrous Israelites drink water mixed with the ground-up gold of the calf they had made (Exodus 32:20) not so much to punish them as to test them, a test which eventuates in the plague that follows.

The violence of experimentation is then legitimated and even necessitated by the relentless onward motion of the divine will, which tries and tests even as it purifies its exponents as well as its objects; as St. Paul put it, "our Lord is a refining fire." The true sons of science must be themselves refined in that fire which burns but consumes not before they can begin to question nature rightly. They must be tempered in the exact sense that a blade is tempered by being heated red-hot and then plunged into cold water: the extremes of heat and cold purge out a certain passionate and sensual responsiveness that would otherwise make the blade softer and less keen. Their sensibilities must be scourged of the familiar "knowledge drenched in flesh and blood" which is the common property of men; they must feed on the austere manna and achieve a kind of chastity immune to the seductions of mere appearances. In short, they must be tortured and tested before they can rightly proceed to testing and torturing Nature herself.

Thus purified they can use force and violence not only legitimately but even as a duty. Bacon here recalls the story of Proteus, the Old Man of Sea who could assume a thousand shapes but whom Menelaos had to hold fast by force in order to compel an answer to his

questions. Nature is likewise Protean and the sons of science, like Menelaos, are enjoined by the divine oracle to seize her and compel her to answer, for Bacon tells us that "the vexations of art are certainly as the bonds and handcuffs of Proteus, which betray the ultimate struggles and efforts of matter. For bodies will not be destroyed or annihilated, rather than that they will turn themselves into various forms" (NO 277–278). Thus it is that "the nature of things betrays itself more readily under the vexations of art than in its natural freedom" and hence we are called to "squeeze and vex" Nature under duress (NO 25). The underlying justification for this licence to vex Nature is that, for Bacon, the distinction between natural and violent motion "is itself drawn entirely from a vulgar notion, since all violent motion is also in fact natural; the external efficient simply setting nature working otherwise than it was before" (NO 64). In so doing Bacon feels that he is performing "the office of a true priest of the sense (from which all knowledge in nature must be sought, unless men mean to go mad) and a not unskillful interpreter of its oracles; and that while others only profess to uphold and cultivate the sense, I do so in fact" (NO 22). He further asserts that these radical means must be employed because such "helps" are absolutely neccesary as correctives to the distortions in the human mind. In so doing Bacon feels me can attain "the pure knowledge of nature and universality, a knowledge by the light whereof man did give names unto other creatures in paradise, as they were brought before him, according unto their proprieties" (Adv III.264–265).

It seems to Bacon that the result he strives for can only be achieved though such Draconian methods, and no less. Yet Bacon does acknowledge some hesitation about the unlimited use of such torture; he notices that in some cases when bodies are "tormented by fires or other means, many qualities are communicated by the fire itself and by the bodies employed to effect the separation which did exist previously in the compound; whence strange fallacies have arisen" (NO 213). That is, as in legal cases employing torture, Bacon notices that a "false confession" might be obtained; the suspect may confess anything in order to be released; the sample may simply melt or dissolve under the heat without revealing anything substantial. Further, Bacon does say that such means of investigating living organisms might be "too inhuman" and thus not be allowed; he limits the use of torture to the "inanimate" sphere and carefully guards living creatures.

In his retelling of the story of Prometheus in *The Wisdom of the Ancients* Bacon enlarges the scope of these qualifications. By the "school of Prometheus" Bacon means "the wise and fore-thoughtful class of men," those who relentless investigation seek to

expand the benefits of Providence to men, in contrast to the followers of Prometheus's brother Epimetheus, "who take no care for the future but think only of what is pleasant at the time , ... [of] many empty hopes, in which they take delight as in pleasant dreams and so sweeten the miseries of life." But even while they try arduously to bring about these good results they are themselves tortured; "they stint themselves of many pleasures and of the various agreeableness of life, and cross their genius, and (what is far worse) torment and wear themselves away with cares and solicitude and inward fears. For being bound to the column of Necessity, they are troubled with innumerable thoughts (which because of their flightiness are represented by the eagle), thoughts which pick and gnaw and corrode the liver" (SV VI.751–752). Thus there is a just symmetry between their vexation and torture of Nature and the inward torture that they suffer. Only Hercules, signifying fortitude and constancy of mind, can come to save them from their torments. Bacon also emphasizes what he calls "the last crime of Prometheus, the attempt upon the chastity of Minerva" which he interprets as that of "trying to bring the divine wisdom itself under the dominion of sense and reason: from which attempt inevitably follows laceration of the mind and vexation without end or rest." In Bacon's recounting, it was this crime more than any other that moved Jupiter to send the vulture to gnaw Prometheus. This crime was not a deviation but an integral expression of Prometheus's nature, as if it were the natural continuation of his bold desire to bring divine secrets to men or perhaps a phase in that project, as if the divine fire could not be brought to men without violent ravishment of Divine Wisdom. Yet Bacon draws back here, saying that "men must soberly and modestly distinguish between things divine and human, between the oracles of sense and of faith; unless they mean to have at one a heretical religion and a fabulous philosophy." Somehow the restless, erotic quality of Promethean striving must be bridled and rendered chaste or else spend all its strength fathering chimaeras, alluring but empty universal visions that are mocking images of true religion and also lack the saving concrete power of specific inventions for the good of men.

This restless striving also finds its proper object in unravelling the secrets which are so characteristically emphasized in Bacon's treament of natural science. Not every possible sort of violent assault will wrest the secrets from Nature; the ardor of the seeker has to be tempered to the measure of the secret, which lays certain demands on those who would penetrate its mysteries. Most notably, the secrets of nature are, for Bacon, *encoded* in a divine cipher whose decoding will require all the care not just of a few

rare minds but rather a sucession of many workers all arranged in what Bacon calls a "machine"—a highly articulated organization in which many persons of variable capacities are required in order to penetrate the code at last, through their concerted work. This vast collective undertaking Bacon also calls the "games of Prometheus," recalling the legendary torch races that honored the fire-bringing Titan. In this relay-race "the victory may no longer depend upon the unsteady an wavering torch of each single man; but competition, emulation, and good fortune be brought to aid" (SV VI.753). Their cooperative effort also harnesses the individual envies, desires, and appetites of the participants together so as to redirect what otherwise might be chaotic or fragmentary passages of individual passion to the larger, less personal, work at hand. Varying the approach of Plato's Republic, the creation of the new city of scientists is meant to call to order the individual souls of the scientists by directing their erotic drives towards these new public objects and away from the divisive obsessions of private eros.

Whether this is possible or not, Bacon means by this plan to render the scientists really fit to conquer nature though the humility and fidelity with which they observe her. Such a conquest is not at all like the victory of sheer force that seems to begin Aeschylus' *Prometheus Bound*; Nature is not impaled like Prometheus but rather her secrets are disclosed to her interrogators only insofar as they have shown themselves worthy, for such encoded secrets cannot be simply divulged or blurted out. There are only a few that can rightly aspire to being what King Lear called "God's spies" (V.iii.17). Only those whose sensibilities have been scourged and disciplined sufficiently are capable of breaking the code; indeed, it seems that the very process of breaking the code involves so much humiliation and painful trial that the decoding itself chastens and legitimates the decoders. Because of this safeguard which Bacon ascribes to the secretiveness of God and Nature it seems that an attempt to use mere violence to penetrate the secret not only will not succeed but may recoil disasterously, for "force maketh Nature more violent in the return."

If that is the case, Bacon has amended and corrected the story of Prometheus and, in particular, has restored hope to mankind, not the blind hope of Aeschylus' play, but a hope that lies on a surer foundation, on what Bacon tellingly called "a true and legitimate marriage between the empirical and the rational faculty" rather than on the rape of Minerva which was Prometheus's final crime. Yet paradox shadows Bacon's whole undertaking. In telling the story of the Sphinx Bacon reminds us that "when the Sphinx was subdued, her body was laid on the back of an ass: for there is nothing so subtle and abstruse, but when

it is once thoroughly understood and published to the world, even a dull wit can carry it" (SV VI.757). The decoders might be purified by their high labors, but when the secret is revealed any ass can understand it. Once revealed, the great secret becomes somehow banal and flat; the miraculous operation quickly becomes mechanical and humdrum. If the awesome and sacred quality of such secrets can so quickly drain away, what has happened to that noble chastity and humility which the secrets seemed to demand of their seekers? Were the "secrets" themselves really anything more than the banalities they became? And if they confer such power, what now prevents that power from being terribly misused?

Here one remembers the quiet remark of the Father of Salomon's House at the end of the *New Atlantis*: "we have consultations, 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: though some of those we do reveal sometimes to the state, and some not" (NA III.165). Even in that fabulous, chaste island, "the virgin of the world," whose kings have willingly suffered the scientists of Salomon's House to set up to promote their researches what amounts to a powerful state within a state there are still certain matters that are not fit for the king to know. Bacon's whole enterprise seems to rest on an exalted piety both of the scientists and of the state, a piety which is imperiled at every turn. Bacon certainly remembers Prometheus's hapless brother Epimetheus, who could not refrain from opening Pandora's box, even though Prometheus himself was wise enough to restrain himself.

It may be that this terrible risk must be run because the need of man is so very great. Bacon, like Prometheus, is moved by pity for man and his miseries and offers him a profound tool, but one filled with violent possibilities to match the force that is needed to amend man's estate. For Bacon as for Aeschylus fire is the perfect symbol for this saving force, so full of violent percussions and collisions, "the help of helps and the means of means" (SV VI.748). But Bacon also is aware that Prometheus awaits the deliverance that only Hercules can bring and even notes that "the voyage of Hercules especially, sailing in a pitcher to set Prometheus free, seems to present an image of God the Word hastening in the frail vessel of the flesh to redeem the human race." However, he purposely refrains "from all licence of speculation in this kind, lest peradventure I bring strange fire to the altar of the Lord." Strange fire: this phrase captures something of the danger and fascination of Bacon's project, for it recalls his description in the essay "Of Beauty": "There is no excellent beauty that hath not some strangeness in the proportion." Perhaps the paradox

and strangeness of the modern scientific endeavor is not the least part of its beauty. It stands before us always youthful and questionable, in need of pardon, as Bacon says of the beauty of youth. If indeed it has turned the natural into the violent Bacon craves for it the pardon sought by ardent charity, for "the kingdom of heaven suffereth violence, and the violent bear it away" (Matthew 11:12).

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This essay is a companion to my essays "Knowledge and torture: the name and fate of Oedipus" and "Children of Orpheus: the dialogue between ancient and modern music." I have been instructed and inspired throughout my work by John C. Briggs, *Francis Bacon and the Rhetoric of Nature* (Cambridge: Harvard University Press, 1989).

References are by standard line numbers or by volume and page in the standard editions of Bacon's works, J. Spedding (ed.), *Complete Works of Francis Bacon*; the abbreviations are SV: *De Sapientia Veterum (Of the Wisdom of the Ancients)*; Adv: *The Advancement of Learning*; NA: *New Atlantis*; De Aug: *De Augmentis*; E: *Essays (1625)*; NO: *Novum Organum*, cited by page number from Francis Bacon, *The New Organon and Related Writings* (New York: Macmillan, 1960).