

Der Voraufklärer: Francis Bacon

Francis Bacon wurde am 1561 im elisabethanischen England geboren. Durch die Beziehungen seines Vaters hatte er schon früh Kontakte mit den höchsten Staatsämtern, machte eindrucksvoll juristische wie politische Karriere, und führte ein durchaus luxuriöses Leben, bis ihm 1621 eine Anklage des Parlaments einen Großteil seines Vermögens kostete. Im Zuge einer weitgehenden Untersuchung wurden ihm zahlreiche Fälle von Korruption während seiner Amtsausübung als Lordkanzler vorgeworfen; danach widmete er sich ganz der Forschung und dem Schreiben, bis er im April 1626 an einer Lungenentzündung starb, die er sich während eines wissenschaftlichen Experimentes im Schnee holte.

Inwiefern ist die Philosophie Bacons so wichtig für die Aufklärer? Was macht seine Philosophie aus?

Krohn [Kro 87] sieht zwei Ausgangspunkte: Erstens die Anfänge der modernen, von Erfindungen und Entdeckungen getragenen Gesellschaft, zweitens der noch vorherrschende Geist der Renaissance, der “die Ziele der Zukunft in den verschiedensten Idealen der Vergangenheit sucht” [S. 9]

“Bacon war der erste Philosoph, der das Ausmaß dieser Diskrepanz begriff und sein Werk unzweideutig unter die Aufgabe stellte, Einsicht und Verantwortung für den Fortschritt dieser neuen Gesellschaft zu wecken. In einer Philosophie der Entdeckungen und Erfindungen sah er die Option, die Natur so zu erkennen, daß Erkenntnisfortschritt und materielles Wohl der Menschheit zusammengehen können und einander binden” [S. 9]

“Die Werke der Wissenschaft können allen nützen, ohne jemandem schaden zu müssen. Dies ist die Keimzelle des auf Technologie gestützten Fortschrittsoptimismus der Neuzeit” [S. 82]

“The Advancement of Learning”, das wichtigste Werk vor seinem Hauptwerk, der “Instauratio Magna” (und übrigens eines der wenigen Werke, die er zu Lebzeiten als abgeschlossene Arbeiten publizierte, der Rest war fragmentarisch), erschien in englischer (statt lateinischer) Sprache, und lässt ziemlich deutlich darauf schließen, dass Bacon auf ein möglichst großes Publikum zielte. Die Betonung liegt oft auf der Notwendigkeit und Wichtigkeit des Wissens. (vgl. Aph. 3, 129). Im “Advancement” findet sich eine deutliche Passage:

“Knowledge may not be as a curtesan, for pleasure and vanity only [...] but as a spouse, for generation, and fruit, and comfort.” [Zag 99, S. 60]

Im Aphorismus 3 des *Novum Organum* weist Bacon auf die Beziehung zwischen Wissen und Macht hin, und hieraus entspringt wohl auch die berühmte Interpretation “Wissen ist Macht”.

Bacon war auch einer der ersten seiner Zeit, der an den antiken Vorbildern rüttelte. Die Vorsokratiker schätzte er wohl mehr als die spätere Philosophie Aristoteles’ und Platons (vgl. Aph. 63), da diese die Welt allein mit Gedanken zu erklären versuchten und jene viel mehr Wert auf die Untersuchung der Natur gelegt hätten. Dies war Bacon wichtig: nur durch die Erfahrung der Natur und deren genauen Beobachtung kann “wahres Wissen” erlangt werden (vgl. Aph. 1). Vor allem das eigene Erfahren, die kritische Betrachtung der alten Dogmen, ist wichtig (vgl. Aph. 90). Der traditionelle Unterricht an den Schulen musste sich radikal verändern, wenn die Wissenschaft sich weiterentwickeln sollte. Die Leute sollten ermutigt werden, selbst Schlüsse zu ziehen, die sogar (oder gerade) von den Lehrmeinungen abwich. Während seiner politischen Beratertätigkeit versuchte er auch aktiv, die Königin von seinen Thesen zu überzeugen. Die Titelwahl bestärkt die Absicht, eine neue Philosophie zu begründen: Ein “*Novum Organum*”, ein Werkzeug, abgeleitet von den als “*Organon*” bekannten Aristotelischen Logikabhandlungen, gleichermaßen “*Nova Atlantis*” von Platos “*Atlantis*“-Betrachtungen.

Deutlich kritisch betrachtet Bacon die bisherige wissenschaftliche Methodik und fordert zugleich eine neue (die er auch detailliert darlegt). Er teilt jene methodischen Fehler auf in vier Idole (vgl. Aph. 38-62; dazu eine sehr verständliche Zusammenfassung in [Zag 99, S. 82ff.]); die “*idola theatri*”, die “*idola fori*”, die “*idola specus*” und die “*idola tribus*”, der Reihe nach also die “*Idole des Theaters*” (Festhalten durch Überlieferung und Schultradition, falsches Vorgaukeln wie im Theater), die “*des Marktes*” (leere Rhetorik und der Glauben an Begriffe statt an die tatsächlichen Dinge), die “*der Höhle*” (eigene liebgewonnene Meinungen, jeder in seiner geschlossenen “*Höhle*”), und letztlich die

“Idole des (menschlichen) Stammes” (Subjektivierung des Objektiven, Anthropomorphisierung). All diese Voreingenommenheiten sind der wahren Forschung und Wissenschaft hinderlich und müssen überwunden werden. Vergleicht man diesen Ansatz mit den späteren Ausführungen Kants, so kann man das “sapere aude” als Aufforderung auch hier ausmachen.

Nicht mehr das Wissen selbst ist Zweck, sondern das Mittel zum Fortschritt, der wichtigste Ziel ist zum Wohle der Menschheit. Erlangtes Wissen dient also als Basis für weitere Entwicklungen, die wiederum Wissen generieren. Das funktioniert nach Ansicht Bacons allerdings nur durch die rationale Anwendung einer (seiner) neuen Wissenschaftsmethodik, die er vor allem in der “Instauratio Magna” darlegt.

Sehr interessant ist die Idee der kooperativen Forschung, die in der Utopie-ähnlichen Geschichte des “Nova Atlantis”, des neuen Atlantis, deutlich wird. In der Form eines zeitgemäß populären abenteuerlichen Reiseberichts aus der Sicht eines spanischen Seefahrers schreibt Bacon über die Begegnung der Reisenden mit einer hoch entwickelten Kultur auf einer Insel, fernab von der restlichen Welt. Die Einwohner leben unter paradiesisch erscheinenden Umständen in einer Gesellschaft, die getragen ist von den Erfindungen eines effizienten Wissenschaftssystems.

Bacon führt ein organisiertes, hierarchisches System der Forschung ein, das auch schon an anderer Stelle auftaucht (hier im “Novum Organum”):

“It is not a way over which only one man can pass at a time (as is the case with that of reasoning), but one in which the labours and industries of men (especially as regards the collecting of experience) may with the best effect be first distributed and then combined. For then only will men begin to know their strength, when instead of great numbers doing all the same things, one shall take charge of one thing and another of another” [Spe 61, IV, S. 102]

Verschiedene Gruppen sind verantwortlich für verschiedene Teilbereiche (s. Text unten). Bacon plädierte zwar für ein demokratisches, offenes System der Wissenschaft, und grenzt sich damit auch von der bisherigen Tradition ab. Die Forschung muss allen zugute kommen, freie Kommunikation soll zwischen den Mitgliedern der Gesellschaft herrschen. Andererseits aber sieht er auch die angebliche Notwendigkeit von Mechanismen, die die uneingeschränkte Verbreitung des Wissens hemmen sollen. In “Nova Atlantis” geschieht die Forschung dann auch nicht durch alle Einwohner, sondern nur durch eine ausgewählte Forschermanschaft, die im wesentlichen nur aus 36 Personen besteht. Es wird ausgewählt, was in welcher Weise allen zugänglich gemacht wird. Das Abwägen des Nutzens von neuem Wissen liegt in der Hand des Wissenschaftsbundes, welcher streng hierarchisch aufgebaut ist. Die These: Die Vermehrung und der Nutzen von Wissen geschieht nur, wenn es sich auch für die Verantwortlichen auszahlt (und bewirkt Schaden bzw. verfällt an Wert, wenn es sofort “ausgeschüttet” wird). Nicht anders argumentieren die Verfechter des heutigen (angelsächsischen) Copyrights. Informationsethik pur, und heute aktueller denn je! (vgl. auch [Pel 93, S. 146 ff.]

Es lassen sich also ausreichend Stellen finden, die deutlich machen, warum die Philosophen der Aufklärung so viel Respekt vor Bacon hatten; denn schließlich entsprachen viele seiner Gedanken und Forderungen ganz denen der Aufklärung. Allerdings führte dies auch zu einer weitgehend akritischen Annahme der Baconschen Philosophie. Erst später, nach den Lobpreisungen des 18. Jahrhunderts, wagten sich die Kritiker wieder hervor.

Zitate (vgl. [Pel 93, S. 320]):

D’Alembert: “Le plus grand, le plus universel et le plus eloquent des philosophes”

Diderot: “Ce grand genie”

Voltaire: Portrait Bacons in “Lettres su les Anglais” 1734.

Auch Kant verwendet für seine “Kritik der reinen Vernunft” ein Motto aus der “Instauratio Magna”.

Textstellen

Instauratio Magna, Novum Organum, Teil I: Aphorismen [Mon 54]

1. MAN, as the minister and interpreter of nature, does and understands as much as his observations on the order of nature, either with regard to things or the mind, permit him, and neither knows nor is capable of more.

2. The unassisted hand, and the understanding left to itself, possess but little power. Effects are produced by the means of instruments and helps, which the understanding requires no less than the hand. And as instruments either promote or regulate the motion of the hand, so those that are applied to the mind prompt or protect the understanding.

3. Knowledge and human power are synonymous, since the ignorance of the cause frustrates the effect. For nature is only subdued by submission, and that which in contemplative philosophy corresponds with the cause, in practical science becomes the rule.

[...]

38. The idols and false notions which have already preoccupied the human understanding, and are deeply rooted in it, not only to beset man's minds, that they become difficult of access, but, even when access is obtained, will again meet and trouble us in the instauration of the sciences, unless mankind, when forewarned, guard themselves with all possible care against them.

39. Four species of idols beset the human mind: to which (for distinction's sake) we have assigned names: calling the first idols of the tribe; the second idols of the den; the third idols of the market; the fourth idols of the theatre.

40. The formation of notions and axioms on the foundation of true induction, is the only fitting remedy, by which we can ward off and expel these idols. It is, however, of great service to point them out. For the doctrine of idols bears the same relation to the interpretation of nature, as that of confutation of sophisms does to common logic.

41. The idols of the tribe are inherent in human nature, and the very tribe or race of man. For man's sense is falsely asserted to be the standard of things. On the contrary, all the perceptions, both of the senses and the mind, bear reference to man, and not to the universe, and the human mind resembles those uneven mirrors, which impart their own properties to different objects, from which rays are emitted, and distort and disfigure them.

42. The idols of the den are those of each individual. For everybody (in addition to the errors common to the race of man) has his own individual den or cavern, which intercepts and corrupts the light of nature; either from his own peculiar and singular disposition, or from his education and intercourse with others, or from his reading, and the authority acquired by those whom he reverences and admires, or from the different impressions produced on the mind, as it happens to be preoccupied and predisposed, or equable and tranquil, and the like: so that the spirit of man (according to its several dispositions) is variable, confused, and as it were actuated by chance; and Heraclitus said well that men search for knowledge in lesser worlds, and not in the greater or common world.

43. There are also idols formed by the reciprocal intercourse and society of man with man, which we call idols of the market, from the commerce and association of men with each other. For men converse by means of language; but words are formed at the will of the generality; and there arises from a bad and unapt formation of words a wonderful obstruction to the mind. Nor can the definitions and explanations, with which learned men are wont to guard and protect themselves in some instances, afford a complete remedy: words still manifestly force the understanding, throw every thing into confusion, and lead mankind into vain and innumerable controversies and fallacies.

44. Lastly, there are idols which have crept into men's minds from the various dogmas of peculiar systems of philosophy, and also from the perverted rules of demonstration, and these we denominate idols of the theatre. For we regard all the systems of philosophy hitherto received or imagined, as so many plays brought out and performed, creating fictitious and theatrical worlds. Nor do we speak only of the present systems, or of the philosophy and sects of the ancients, since numerous other plays of a similar nature can be still composed and made to agree with each other, the causes of the most opposite errors being generally the same. Nor, again, do we allude merely to general systems, but also to many elements and axioms of sciences, which have become inveterate by tradition, implicit credence, and neglect. We must, however, discuss each species of idols more fully and distinctly, in order to guard the human understanding against them.

[...]

63. Aristotle affords the most eminent instance of the first; for he corrupted natural philosophy by logic: thus, he formed the world of categories, assigned to the human soul, the noblest of substances, a genus

determined by words of secondary operation, treated of density and rarity (by which bodies occupy a greater or lesser space) by the frigid distinctions of action and power, asserted that there was a peculiar and proper motion in all bodies, and that if they shared in any other motion, it was owing to an external moving cause, and imposed innumerable arbitrary distinctions upon the nature of things; being everywhere more anxious as to definitions in teaching, and the accuracy of the wording of his propositions, than the internal truth of things. And this is best shown by a comparison of his philosophy with the others of greatest repute among the Greeks. For the similar parts of Anaxagoras, the atoms of Leucippus and Democritus, the heaven and earth of Parmenides, the discord and concord of Empedocles, the resolution of bodies into the common nature of fire, and their condensation, according to Heraclitus, exhibit some sprinkling of natural philosophy, the nature of things, and experiment, whilst Aristotle's physics are mere logical terms, and he remodelled the same subject in his metaphysics under a more imposing title, and more as a realist than a nominalist. Nor is much stress to be laid on his frequent recourse to experiment in his books on animals, his problems, and other treatises; for he had already decided, without having properly consulted experience as the basis or his decisions and axioms, and after having so decided, he drags experiment along, as a captive constrained to accommodate herself to his decisions; so that he is even more to be blamed than his modern followers, (of the scholastic school,) who have deserted her altogether.

[...]

90. Again, in the habits and regulations of schools, universities, and the like assemblies, destined for the abode of learned men, and the improvement of learning, every thing is found to be opposed to the progress of the sciences. For the lectures and exercises are so ordered, that any thing out of the common track can scarcely enter the thoughts and contemplations of the mind. If, however, one or two have perhaps dared to use their liberty, they can only impose the labour on themselves, without deriving any advantage from the association of others: and if they put up with this, they will find their industry and spirit of no slight disadvantage to them in making their fortune. For the pursuits of men in such situations are, as it were, chained down to the writings of particular authors, and if any one dare to dissent from them, he is immediately attacked as a turbulent and revolutionary spirit. Yet how great is the difference between civil matters and the arts; for there is not the same danger from new activity and new light. In civil matters even a change for the better is suspected on account of the commotion it occasions; for civil government is supported by authority, unanimity, fame, and public opinion, and not by demonstration. In the arts and sciences, on the contrary, every department should resound, as in mines, with new works and advances. And this is the rational, though not the actual view of the case: for that administration and government of science we have spoken of, is wont too rigorously to repress its growth.

Nova Atlantis

“[...] that every twelve years there should be set forth out of this kingdom, two ships, appointed to several voyages; that in either of these ships there should be a mission of three of the fellows or brethren of Saloman's House, whose errand was only to give us knowledge of the affairs and state of those countries to which they were designed; and especially of the sciences, arts, manufactures, and inventions of all the world; and withal to bring unto us books, instruments, and patterns in every kind: that the ships, after they had landed the brethren, should return; and that the brethren should stay abroad till the new mission, the ships are not otherwise fraught than with store of victuals, and good quantity of treasure to remain with the brethren, for the buying of such things, and rewarding of such persons, as they should think fit. Now for me to tell you how the vulgar sort of mariners are contained from being discovered at land, and how they must be put on shore for any time, color themselves under the names of other nations, and to what places these voyages have been designed; and what places of rendezvous are appointed for the new missions, and the like circumstances of the practice, I may not do it, neither is it much to your desire. But thus you see we maintain a trade, not for gold, silver, or jewels, nor for silks, nor for spices, nor any other commodity of matter; but only for God's first creature, which was light; to have light, I say, of the growth of all parts of the world.”

[...]

“For the several employments and offices of our fellows, we have twelve that sail into foreign countries under the names of other nations (for our own we conceal), who bring us the books and abstracts, and patterns of experiments of all other parts. These we call merchants of light.

We have three that collect the experiments which are in all books. These we call depredators.

We have three that collect the experiments of all mechanical arts, and also of liberal sciences, and also of practices which are not brought into arts. These we call mystery-men.

We have three that try new experiments, such as themselves think good. These we call pioneers or miners.

We have three that 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.

We have three that bend themselves, 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 demonstration 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.

Then after divers meetings and consults of our whole number, to consider of the former labors and collections, we have three that take care out of them to direct new experiments, of a higher light, more penetrating into nature than the former. These we call lamps.

We have three others that do execute the experiments so directed, and report them. These we call inoculators.

Lastly, we have three that raise the former discoveries by experiments into greater observations, axioms, and aphorisms. These we call interpreters of nature.

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