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Author(s): Walter E. Houghton, Jr.
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THE ENGLISH VIRTUOSO IN THE SEVENTEENTH CENTURY (II)[67a]

By Walter E. Houghton, Jr.

§4. *The Sensibility: Antiquities and Science*

In *The Revival of Learning,* Symonds has described "the admiration, curiosity, and awe" excited in men like Petrarch and Poggio "by the very stones of ancient Rome," and illustrated by the life of Ciriaco of Ancona (1391–1452), how antiquarian research was shot through with romantic sentiment.[68] The ancestor of a thousand virtuosi, Ciriaco travelled to "every part of Italy, Greece, and the Greek islands, collecting medals, gems, and fragments of sculpture, buying manuscripts, transcribing records," everywhere driven on by a passionate enthusiasm, not only for the rare and the curious, but for everything that might, in his own words, "awaken the dead." It was this further motive, this desire for some living contact, however vicarious, with the heroes of old, classical and national, which most inspired the collecting of statues, coins, and paintings, and the biographies that combined *icones* with *elogia.* This was as true of England as of Italy, when, in the seventeenth century, the field of antiquities was explored with a new spirit and a new purpose quite different from that of Parker and Camden and the Society of Antiquaries. The two attitudes clashed as early as 1618, when Edmund Bolton wrote in the *Hypercritica:*

> Unless the Charity or Ambition of writing be extraordinary, it is otherwise an Affliction for those Minds which have been conversant in the Marvels and Delights of *Hebrew, Greek* and *Roman* Antiquities, to turn over so many musty Rolls, . . . so many dull and heavy paced Histories, as they must who will obtain the Crown and triumphal Ensign of having compos'd CORPUS RERUM ANGLICARUM.[69]

[67a] Part I, which contained three sections on "Definitions," "Sources and Origins in England," and "The Growth of the Movement, 1590–1640," appeared in the previous number of *The Journal of the History of Ideas,* III (Jan., 1942), pp. 51–73. Footnotes in Part II are numbered continuously with those in Part I.

[68] J. A. Symonds, *The Renaissance in Italy,* part II: *The Revival of Learning* (1888 ed.), pp. 143, 155–157.

[69] *Hypercritica* (1618?), in Spingarn, *Critical Essays,* I, 97.

In this dichotomy there is no question where Peacham belongs. The final paragraph of his chapter on antiquities manages at once to explain his respect for Camden and Selden—"the glory of our Nation" and "the rising Starre of good letters and Antiquity"[70]—and to express an attitude fundamentally different. He is talking about the "learned pleasure and delight" to be found in antique coins:

> I will let passe the content a man has to see, and handle the very same individuall things which were in use so many ages agoe . . . . But would you see a patterne of the *Rogus* or funerall pile burnt at the canonization of the Romane Emperors? would you see how the *Augurs* Hat, and *Lituus* were made? Would you see the true and undoubted modells of their Temples? . . . Repare to the old coynes, and you shall find them . . .
>
> Besides, it is no small satisfaction to an ingenuous eye to contemplate the faces and heads, and in them the Characters of all these famous Emperours, Captaines and illustrious men whose actions will bee ever admired, both for themselves, and the learning of the pennes that writ them.[71]

While the historical value of numismatics is recognized, the learned pleasure is scarcely that of hard-won knowledge; it is the thrill of immediate touch with an ancient and heroic civilization.

The same kind of delight, subjective and romantic, is characteristic of Evelyn. In the important letter to Pepys on how to be a virtuoso, the roll call of a hundred worthies beats out an incantation, as if the very sound of their names would charm them to life. On ancient coins, "who is not delighted to behold the true effigies of the famous Augustus, cruel Nero, and his master Seneca? Vespasian, Titus, Nerva, Trajan, Antoninus, Severus, the great Constantine, and his devout mother Helena? For we have in medals the beautiful Cleopatra and her paramour; Drusilla, Livia, Julia, Agrippina. . . ."[72]

[70] *Op. cit.*, p. 51.

[71] *Op. cit.*, pp. 123–124.

[72] *Diary and Correspondence,* III, 298, dated Aug. 12, 1689. Cf. below, §5, for Evelyn's parallel passage on portraits, which demonstrates the unity of reaction to painting and antiquities. For sculpture, and for an extreme case of the same sensibility, notice Evelyn's account (I, 138, for Nov. 23, 1644) of Hippolito Vitellesco, librarian of the Vatican, who frequently talked with his statues "as if they were living, pronouncing now and then orations, sentences, and verses, sometimes kissing and embracing them." Cf. Part I, p. 61 f., for the same basic attitude toward *living* heroes.

Hero-worship, soon to grow factitious in the heroic play, shades into worship of every fragment of the past, however inconsequential. If Colonel Hutchinson "was not so much affected with the antiquity as the merit of the work," he was an exception to the rule.[73] In the Palazzo Barberini, it was not the great collection of medals, marbles, and manuscripts that Evelyn found most exciting, but "an Egyptian Osyris, remarkable for its unknown material and antiquity."[74] The medieval worship of Christian relics, no longer possible for a Protestant, is sublimated into the Renaissance worship of classical relics, so that while Evelyn smiles at a fragment of the cross and some of Judas's pieces of silver, shown him at a church in Rome, his credulity is untaxed by a great nail of Corinthian brass which, he is told, came from "Nero's golden house."[75] No less than Ciriaco's, his travels are a passionate search not only for whatever is "rare and singular," but for all that can revive, in a moment of wonder, the golden age of the ancients. In spite of its dry and matter-of-fact tone, Evelyn's diary is actually the record of a sentimental journey a hundred years before Sterne.

In the fields of science, the same general reaction was produced, of course, by the same kind of stimulus, natural and artificial rarities, only here, as in the case of antiquities, with a further and special form of delight. In the study of the earth, "consider," says Peacham, "the wonder of wonders, how the Ocean so farre distant, holdeth motion with the Moone." Read of "what strange Earthquakes, removing of whole Townes, Hilles, &c. have beene upon the face of the Earth." Is geometry no more than a dull study required for building and engines of war? By no means. It is an "admirable Art, that . . . dares contend even with natures selfe, in infusing life as it were, into the senceless bodies of wood, stone, or mettall: witnesse the wooden dove of *Archytas*," the wooden eagle and iron fly of Regiomontanus. Or think of the "delight and admiration" of seeing at Mechlin "a Cherry stone cut in the forme

[73] Lucy Hutchinson, *Memoirs,* p. 19.

[74] *Diary,* I, 112 (Nov. 7, 1644). Cf. I, 139 (Nov. 28, 1644).

[75] *Diary* I, 180 (Feb. 27, 1645), and I, 169 (Feb. 13, 1645); and cf. I, 98 (Oct. 22, 1644). Cf. (Part I, p. 68) Marmion's Veterino who possessed Nero's silver box. We see the truth in Samuel Butler's jibe at the virtuoso, significantly called "The Curious Man," in *Character Writings of the Seventeenth Century,* ed. Henry Morley (1891), p. 340: "He is one of those that valued Epictetus's lamp above the excellent book he wrote by it."

of a basket, wherein were fifteene paire of Dice distinct." And so, he concludes, "see the effects of this divine knowledge, *able to worke wonders beyond all beleefe.*"[76]

The same passion for the marvelous, whether strange phenomena of nature or ingenious inventions of man, is everywhere present in Evelyn. The superb cabinet of Signor Rugini abounded, above all, "in things petrified, walnuts, eggs in which the yolk rattled, a pear, a piece of beef with the bones in it, a whole hedgehog . . divers pieces of amber, wherein were several insects, in particular one cut like a heart that contained in it a salamander without the least defect."[77] Almost as fascinating were actual monstrosities—pearls and stones of unnatural size, "a cock with four legs," "a hen which had two large spurs growing out of her sides."[78] And complementing such miracles of nature were the artificial miracles of man, the suprising inventions like hydraulic organs, singing birds moving and chirping by the force of water, or "a conceited chair to sleep in with the legs stretched out, with hooks, and pieces of wood to draw out longer or shorter."[79] Nowhere, I think, does he show the slightest concern with what to Bacon was the main *raison d'être* of the study of nature or mechanical art—the discovery of law; which is hardly surprising, since a rarity explained is no longer a rarity:

> What pleased me most was a large pendant candlestick, branching into several sockets, furnished all with ordinary candles to appearance, out of the wicks spouting out streams of water, instead of flames. This seemed then and was a rarity, before the philosophy of compressed air made it intelligible.[80]

One is reminded of the lingering regret with which Browne explodes some of the fabulous rarities of natural history. Sprat might deny that the new philosophy "makes our Minds too *Lofty*

[76] Pages 67, 69, 73–74, 75, 76. The last italics are mine. The virtuosi were apparently fascinated by minute carving, especially on fruit stones: cf. Butler, cited in the previous note; and especially *Musæum Tradescantianum: or, A Collection of Rarities Preserved at South-Lambeth neer London by John Tradescant,* ed. R. T. Gunther (Old Ashmolean Reprints I, 1925), in a section partly devoted to "Mechanick artificial Works in Carvings," pp. 36–41. The first edition is 1656.

[77] I, 221 (Sept. 29, 1645).

[78] I, 97–98, 23 (Oct. 22, 1644, and Aug. 13, 1641).

[79] I, 185–187 (May 5, 1645), 115 (Nov. 10, 1644). Cf. I, 122–124 (Nov. 17, 1644), and for a "whimsical chair," I, 140 (Nov. 29, 1644).

[80] I, 26 (August, 1641).

and *Romantic;*" he might protest that the Royal Society "endeavours rather to know, than to admire; and looks upon *Admiration,* not as the End, but the Imperfection of our *Knowledge.*"[81] These were fine Baconian sentiments, but the virtuoso members were, in fact, anti-Baconians, reluctant to serve the cause of science at the expense of romantic wonder. And Sprat recognized as much when he wrote:

> In every one of these *Transplantations* [of vegetables and living creatures], the chief Progress that has hitherto been made, has been rather for the *Collection* of *Curiosities* to adorn *Cabinets* and *Gardens,* than for the Solidity of *Philosophical Discoveries.*[82]

In a word, the virtuoso stops at the very point where the genuine scientist really begins, which is the distinction we started with, and have now explored until we have caught the quality of delight and the special kind of curiosity on which it thrives, namely, wonder and admiration for the rare, the strange, and the incredible.

Such an appetite was bound to exist, of course, in the transitional period of the Renaissance. A new intellectual curiosity, not yet equipped with scientific procedures, was exploring a world still largely unknown, and a universe still largely miraculous. And in the same period, hardly a voyage but brought home extraordinary tales and specimens of natural history, with the result noticed by John Gerard in *The Herball, or Generall Historie of Plantes* (1597). In his youth, he said, golden rod, the best herb for the stopping of blood, was held in great estimation because it then "came from beyond the sea," but now is little valued since it was found in Hampstead wood:

> which plainly setteth forth our inconstancie and sudden mutabilitie, esteeming no longer of any thing, how pretious soever it be, than whilest it is strange and rare.[83]

Ironically enough, it was Bacon himself who, in spite of every precaution, helped to extend this taste through the seventeenth century. Because he would not have any phenomenon excluded from

[81] Pages 334, 335. Cf. Bacon, *The Advancement of Learning,* in *Works,* III, 314.

[82] Page 386.

[83] I quote from the second edition, enlarged and amended by Thomas Johnson (1633), p. 430. Cf. Evelyn, *Diary,* III, 258 (letter to William London, Sept. 27, 1681): "In your account of plants, trees, fruits, &c., there are abundance to which we are here utter strangers, and therefore cannot but be desirable to the curious."

careful examination, he had called not only for histories of Creatures and Mechanical Arts, but also for a history of Marvels:

> We have to make a collection or particular natural history of all prodigies and monstrous births of nature; of everything in short that is in nature new, rare, and unusual.[84]

It was in vain that he warned against including "fabulous experiments, idle secrets, and frivolous impostures, for pleasure and novelty;" and strongly insisted that the end of the work was by no means "to gratify the appetite of curious and vain wits, as the manner of mirabilaries is to do.[85] The caution was powerless to curb the appetite of the virtuosi, to which Bacon's project, and its adoption by the Royal Society (they proposed to study "the Common, or Monstrous *Works* of *Nature*"),[86] lent specious support. The advancement of learning might justify even such a prize wonder as Peacham's, to be seen, he says, at Swartwale near Brill in Holland—"a Mermaides dead body hanging up;" or the prize exhibits in the Tradescant museum—"a natural Dragon" and "two feathers of the Phoenix tayle."[87]

The love of marvels was also encouraged from another quarter, in the cause not of science but of religion. In the seventeenth century the common apologia for natural philosophy, outlined by Bacon, was, of course, the study of nature as the second book of God, where man could read in the creature the power and wisdom of the creator. In theory the attributes of God could be found among his ordinary works, and the proper reaction of wonder could be had by men of no special learning. But in practice the apologists for science tended to stress the extraordinary works of God, that is to say, the unfamiliar, either in the sense of uncommon, found rarely and in distant corners of the globe, or in the sense of unknown, unrecognized by men without special learning or special apparatus. The obvious argument was that then the admiration would be all the greater, and the resulting praise be all the "more suitable to the *Divine Nature,* than the blind Applause of the

[84] *Novum Organum,* bk. II, sec. xxix, in *Works,* IV, 169. The main accounts of the history of marvels are in *The Advancement of Learning* and the *De Augmentis,* in *Works,* respectively, III, 330–332, and IV, 294–296.

[85] *Works,* IV, 295.

[86] Sprat, p. 251.

[87] Peacham, p. 69; *Musæum Tradescantianum,* pp. 6 and 2.

Ignorant."[88] So it was that Baptista Porta urged the study of everything curious, "secret and concealed," because "the most Majestick Wonders of Nature" will best teach us to "admire the Mighty Power of God, his wisdom, his Bounty, and therein Reverence and Adore him."[89] In Peacham's chapter on natural history the same correlation is made:

> Excellent is that Contemplation, to consider how Nature (rather the Almighty Wisdome) by an unsearchable and stupendious worke, sheweth us in the Sea the likenesse and shapes, not onely of Land-Creatures, . . . but of Fowles in the Ayre.[90]

In this case the parentheses may well betray a mere rationalization of "profane" wonder. Certainly that is the charge which Meric Casaubon brought against the virtuosi in 1669. The glory and wisdom of God, he said, is made the pretence for "hunting after Novelties." Because these "sick brains" will wonder at nothing "but what is unusual, far fetch'd, and seldom seen," they will not recognize God in the sun or the moon, in the vicissitudes of the year, or the flux and reflux of the sea, "because daily and ordinary." They can find Him only, they say, in "a Meteor, the shooting of a Star, as they call it, or an *ignis fatuus.*"[91]

More often, I suspect, we need not question the religious orientation. If Sir Thomas Browne could never content his contempla-

[88] Sprat, p. 349. Cf. Browne, *Religio Medici* (1642), in pt. i, sec. 13, in *The Works of Sir Thomas Browne,* ed. Charles Sayle (1927), I, 22: "The Wisdom of God receives small honour from those vulgar Heads that rudely stare about, and with a gross rusticity admire his works; those highly magnifie him, whose judicious inquiry into His Acts, and deliberate research into His Creatures, return the duty of a devout and learned admiration."

[89] *Natural Magick . . . wherein are set forth All the Riches and Delights of the Natural Sciences* (1589), anonymous English translation (1658), preface, sigs. C1, C1[v]. See Preserved Smith, *A History of Modern Culture,* I (1930), 60–61, for a notice of Porta which brings out his virtuosity.

[90] Page 69. And cf. p. 125.

[91] *A Letter of Meric Casaubon DD. &c. to Peter du Moulin . . . Concerning Natural Experimental Philosophie* (1669), p. 22. Cf. a different angle of attack, but one which also assumes the same element of natural theology, in Pope's *Dunciad,* bk. iv, ll. 453–454, 457–458:

> O! would the Sons of Men once think their Eyes
> And Reason giv'n them but to study Flies!
> . . . . . .
> Learn but to trifle; or, who must observe,
> To wonder at their Maker, not to serve!

tion "with those general pieces of wonder, the Flux and Reflux of the Sea," he found in the vast, and still more so in the minute, phenomena of nature a genuine source of "devout and learned admiration."[92] Yet in illustrating this, the following passage manages to reveal, in two respects, how close this wonder is to the profane:

> Ruder heads stand amazed at those prodigious pieces of Nature, Whales, Elephants, Dromidaries and Camels; these, I confess, are the Colossus and Majestick pieces of her hand: but in these narrow Engines there is more curious Mathematicks; and the civility of these little Citizens, more neatly sets forth the Wisdom of their Maker. Who admires not *Regio-Montanus* his Fly beyond his Eagle . . .?

The sudden leap of Browne's mind to this illustration has a double significance. It suggests, I think, that the kind of experience he found in natural theology could be very similar to what he found in mechanics; which simply indicates how readily the secular and the religious view of marvels could be blended and mutually encouraged.

The second implication is more interesting. When we ask what is stimulating the wonder, we realize that it is not so much God's wisdom as his ingenuity—that is, precisely the same kind of skill shown by Regiomontanus himself; and indeed the connection is clear enough in the metaphor of engines and "curious Mathe-

[92] *Religio Medici,* pt. i, sec. 15, in *Works,* I, 24. This is also the reference for the quotation that follows. I do not mean to imply that Browne *is* a virtuoso. In many respects he fails to fit the type—his serious concern with metaphysics, his Platonic and mystical turn of mind, both are far from the study of things as they are; and on the other hand, G. K. Chalmers, in "Sir Thomas Browne, True Scientist," *Osiris,* II (1936), 28–79, has shown conclusively that much of his work was a serious and valuable contribution to scientific knowledge. To a considerable extent, however, Browne shares the tastes and the sensibility of a typical virtuoso. R. R. Cawley's article on his reading [*PMLA,* XLVIII (1933), 426–470] demonstrates his passion for books like Petrus Bellonius, *Les observations de plusieurs singularitez et choses memorables en Grece, Asie, Judée, Egypte, Arabie, et autres pays estranges* (1553); and Evelyn (*Diary,* II, 71, under Oct. 18, 1671) speaks of Browne's "whole house and garden being a paradise and cabinet of rarities, and that of the best collection, especially medals, books, plants, and natural things," a description paralleled earlier in the diary by scores of visits to Italian virtuosi. It is only the extremes of the movement which Browne satirized in *Certain Miscellany Tracts* (1683), no. xiii, called "Musæum Clausum, or Bibliotheca Abscondita: containing some remarkable books, antiquities, pictures & rarities of several kinds, scarce or never seen by any man now living."

maticks.''[93] No doubt this is a special case in natural theology, but it is the rule in mechanics. All the machines that fascinate the virtuosi, from trick mirrors and minute carvings, to artificial storms and *automata,* are highly ingenious: they are all ''strange inventions of Witt.'' The phrase is Nicholas Breton's, but it is not applied to mechanical arts, it is applied to poetry;[94] which at once suggests that the appeal of mechanics was only a special form of the Renaissance passion for intellectual subtleties.

In Harvey and Puttenham, for example, we find a demand for the same kind of enjoyment. To Harvey the test of great poetry is ''that singular extraordinarie veine and invention . . . in all the most delicate and fine conceited Grecians and Italians, . . . whose chiefest endevour and drifte was to have nothing vulgare, but in some respect or other, and especially in lively Hyperbolical Amplifications, rare, queint, and odde in every pointe.''[95] In Puttenham's essay, the insistence on ''a certain noveltie and strange maner of conveyance,''[96] is illustrated not only by hundreds of tropes, but by anagrams, emblems, acrostics, and epigrams. Thirty years later, in both Burton and Peacham, the same literary ingenuities reappear, side by side with the ingenuities of science; and Peacham's phrase for the first applies equally to the second—''conceits of wit and pleasant invention.''[97] Indeed, we remember that Plat's drinking-glass and Bate's pot and Evelyn's chair were all ''conceited''; and that Casaubon charged the virtuosi with affecting the unusual and the far-fetched.[98] Surely it is no coincidence that Gimcrack's best friend is Sir Formal Trifle, ''the

[93] Cf. Descartes, *Discourse on the Method* (1637), part v, in *The Philosophical Works of Descartes,* translated by E. S. Haldane and G. R. T. Ross (1911), I, 116, where a reference to people familiar with "how many different *automata* or moving machines can be made by the industry of man," is followed by the sentence: "From this aspect the body [of each animal] is regarded as a machine which, having been made by the hands of God, is incomparably better arranged, and possesses in itself movements which are much more admirable, than any of those which can be invented by man."

[94] *The Court and Country* (1618), in *Inedited Tracts,* ed. W. C. Hazlitt (1868), p. 178.

[95] Smith, *Elizabethan Critical Essays,* I, 114–115.

[96] *Ibid.,* II, 142.

[97] Burton, p. 463; Peacham, pp. 231–234 (the phrase quoted is on page 231).

[98] Above, note 91. And also Part I, p. 71, where Drebbel's perpetual motion is called a "wittie invention."

greatest Master of Tropes and Figures;"[99] or that Donne's flea and Regiomontanus his fly are creatures of the same age. If the roots of metaphysical poetry lie in the disintegration of the scholastic mind, may this not also, in part, explain the passion of the virtuosi for mechanical subtleties?[100]

To some extent, however, the explanation lies in the persistence of another medieval tradition. We notice that the required reaction of wonder is produced not merely by the ingenuity, but by the "mystery" that shrouds the creation of the machine, or its action: the effect is magical. It is not surprising, therefore, to find the trick pots and deceptive mirrors of the virtuosi and the three types of automata—vehicles, animals, and perpetual motion devices—all present in the so-called books of "secrets" or "experiments" that make up a large part of the literature of natural magic.[101] The tradition goes back as far as the pseudo-Aristotelian *Liber Secretorum* and the works of Hero of Alexandria, was carried on by Roger Bacon and Albertus Magnus, and was given fresh stimulus in the mid-sixteenth century by Alexis of Piedmont, Baptista Porta, and many others. Burton's citation of such authorities in his passage on mechanics for the virtuosi shows unmistakably the source of their interest.

Yet here again we find that Bacon himself, for all his scornful criticism of natural magic and of virtuosity, lent dubious authority to the study of the miraculous. Even in the curriculum of Solomon's House "artificial miracles," as Evelyn called them, had their place:

> We imitate also flights of birds; we have some degrees of flying in the air; we have ships and boats for going under water, and brooking of seas; also swimming-girdles and supporters. We have divers curious clocks, and other like motions of return, and some perpetual motions. We imitate also

[99] Shadwell, *The Virtuoso,* act I, in *Works,* III, 107. Cf. Butler's comment in his character of a virtuoso, in Morley, *Character Writings,* p. 343: "He differs from a pedant as things do from words, for he uses the same affectation in his operations and experiments as the other does in language."

[100] The best statement known to me on the relation between scholasticism and metaphysical poetry is in W. J. Courthope, *A History of English Poetry* (1895) III, 103–117.

[101] See Lynn Thorndike, *A History of Magic and Experimental Science* (1923–1941), I, 187–193, on Hero; II, 654, 720–812, on the medieval tradition; VI, 215–218, 418–423, on the sixteenth century. Also, John Ferguson, *Bibliographical Notes on Histories of Inventions and Books of Secrets* (1883).

motions of living creatures, by images of men, beasts, birds, fishes, and serpents. We have also a great number of other various motions, strange for equality, fineness, and subtilty.[102]

This would seem to threaten the sharp opposition I have raised between Bacon and the virtuosi, but actually his purpose here and his attitude are consciously opposed to theirs. The injection of swimming-girdles warns us at once that he must have viewed the study of automata as a potential contribution to the ultimate benefit of man; and this is borne out by a section in the *Novum Organum:*

As by rare and extraordinary works of nature the understanding is excited and raised to the investigation and discovery of Forms capable of including them; so also is this done by excellent and wonderful works of art; and that in a much greater degree, because the method of creating and constructing such miracles of art is in most cases plain, whereas in the miracles of nature it is generally obscure.[103]

And then, a little below, he not only urges his disciples not to limit their studies to those machines that "excite wonder," but he distinguishes between "false" and "true" wonder in sentences which perfectly set off the virtuoso from the scientific spirit:

For wonder is the child of rarity; and if a thing be rare, though in kind it be no way extraordinary, yet it is wondered at. While on the other hand things which really call for wonder on account of the difference in species which they exhibit as compared with other species, yet if we have them by us in common use, are but slightly noticed. . . .

As among the singularities of nature I placed the sun, the moon, the magnet, and the like,—things in fact most familiar, but in nature almost unique; so also must we do with the singularities of art. For example, a Singular Instance of art is paper, a thing exceedingly common.[104]

In short, the case of miraculous machines exactly parallels the case of natural marvels: for Bacon, material for objective examination; for the virtuosi, rarities latent with subjective wonder.

In this instance, however, we have the added appeal of magic. Whereas Bacon talked of penetrating readily to the plain method of constructing such miracles of art, Baptista Porta warned his

[102] *Works,* III, 163–164. Evelyn's remark is in the *Diary,* I, 187 (May 6, 1645).

[103] Book II, sec. xxxi, in *Works,* IV, 170.

[104] Same section, pp. 171–172.

readers that "if you would have your works appear more wonderful, you must not let the cause be known: for that is a wonder to us, which we see to be done, and yet know not the cause of it."[105] It is clear that in the tradition of natural magic Bacon was attracted to the "natural," the virtuosi to the "magic." Or to put it more precisely, the virtuosi valued the tradition for the very element which Bacon singled out to condemn—experiments "wonderful rather for the skill with which the thing is concealed and masked than for the thing itself."[106] So it was that for Evelyn an automaton was not a machine to be "explained" but a magic toy to be enjoyed. At the villa Borghese he noted

> amongst other toys that of a satyr, which so artificially expressed a human voice, with the motion of eyes and head, that it might easily affright one who was not prepared for that most extravagant sight.[107]

If Evelyn was not quite a Baconian, there is no question about John Wilkins and his Oxford group from which Sprat traced the origin of the Royal Society. Wilkins, indeed, was called "the principall reviver of experimentall philosophy (*secundum mentem domini Baconi*);" and the master's lodgings at Wadham College was, I think, consciously associated with Solomon's House.[108] Yet when we examine their study of automata and of optics, as compared with Bacon's in the *New Atlantis,* we find the clearest evidence for that dilution and distortion of the scientific mind which this essay has traced more than once to the spirit of virtuosity.

When Wilkins published a volume on mechanics in 1648, he called it *Mathematicall Magick, or, The Wonders that may be Performed by Mechanicall Geometry,* and explained in his preface:

[105] *Natural Magick,* bk. i, ch. 3, p. 4. Cf. Leurechon, *Mathematicall Recreations* (1653 ed.), sig. A5: "To give a greater grace to the practice of these things, they ought to be concealed as much as they may, in the subtiltie of the way; for that which doth ravish the spirits is, *an admirable effect, whose cause is unknowne:* which if it were discovered, halfe the pleasure is lost."

[106] *De Augmentis,* bk. iii, ch. 5, in *Works,* IV, 367.

[107] *Diary,* I, 123 (Nov. 17, 1644).

[108] See Evelyn's letter to Boyle (May 9, 1657), in *Diary,* III, 92; and the significant description of the Oxford group by Charleton in words taken directly from the *New Atlantis,* quoted below (202). The description of Wilkins is quoted, I gather, from Charleton by Humphrey Rolleston, "Walter Charleton, D.M., F.R.C.P., F.R.S.," *Bulletin of the History of Medicine,* VIII (1940), 403, but he gives no reference.

This whole Discourse I call *Mathematicall Magick,* because the art of such Mechanicall inventions as are here chiefly insisted upon, hath been formerly so styled; and in allusion to vulgar opinion, which doth commonly attribute all such strange operations unto the power of Magick.[109]

The explanation is hardly complete, for a title that spoke of the wonders of mathematical magic was primarily chosen, I have no doubt, for its appeal to the country gentlemen for whom the book was written. Part one on the six mechanical faculties—the balance, lever, wheel, pulley, wedge, and screw—was designed as practical information to guide "such Gentlemen as employ their estates in those chargeable adventures of Drayning, Mines, Cole-pits, &c."; but part two was to provide the same audience with the "great delight and pleasure" of *"divers kinds of* Automata, *or Self-movers"*—artificial birds, diving boats, sailing chariots, perpetual motions and perpetual lamps. If the ostensible object is to explain the machines, the method is largely descriptive, and occasional remarks betray a sensibility very un-Baconian: speculations on perpetual motion "doe ravish and sublime the thoughts with . . . cleare angelicall contentments."[110] It looks as though Wilkins' book were descended as much from Leurechon's *Mathematicall Recreations,* with its "Secrets and Experiments" in mechanics, as from the *New Atlantis.* The complete give-away appears in Evelyn's account of his visit to Wadham College on July 13, 1654. Among Dr. Wilkins' *"magical curiosities,"* he found "a hollow statue, which gave a voice and uttered words *by a long concealed pipe that went to its mouth, whilst one speaks through it at a good distance."*[111] What a travesty of Bacon—a pure trick, and not even a piece of genuine mechanics. This is not to deny Wilkins' serious concern with scientific development; he was a Baconian as well as a virtuoso. As such he is the central type in the Royal Society, lying between the real natural philosophers, men like Boyle and Hooke, Ray and Newton, and the mob of gentlemen who played with science, as they wrote, with ease.

It is Walter Charleton, however, who provides the perfect illus-

[109] Signatures A4^{v}–A5.

[110] The quotations are, respectively, on sig. A4^{v}, and pp. 145, 293. Notice that Wilkins admits (p. 232) that perpetual lamps have no place in a book on mechanical geometry, and then includes them because of their "subtilty and curiosity."

[111] *Diary* I, 308. The italics are mine. Cf. Wilkins, *Mathematicall Magick,* p. 177, which shows where he got the idea.

tration of how the *New Atlantis* could be transformed as it passed through the virtuoso sensibility, and specifically, the sensibility of Wilkins and the Oxford group. Of the study of optics in Solomon's House Bacon had written:

> We represent also . . . all delusions and deceits of the sight, in figures, magnitudes, motions, colours: all demonstrations of shadows. . . . We have also helps for the sight, far above spectacles and glasses in use. . . . We make artificial rain-bows, halos, and circles about light. We represent also all manner of reflexions, refractions, and multiplications of visual beams of objects.[112]

In 1657 Charleton was describing recent studies at Oxford, and after speaking of Wilkins' work on the real character, he came to optics:

> It is *their usual recreation,* to practise all Delusions of the sight, in the Figures, Magnitudes, Motions, Colours, Distances, and Multiplications of Objects: And, were you there, you might be entertained with such admirable Curiosities, both Dioptrical and Catoptrical, *as former ages would have been startled at, and believed to have been Magical.* . . . They will imitate Nature to the height of perfect resemblance, in counterfeiting Rainbows, Halo's, and Circles of various Colours of Lights, by artificial Refractions of their beams. . . .
>
> Were Friar Bacon alive again, he would with amazement confesse, that he was canonized a Conjurer, for effecting far lesse, than these men frequently exhibit to their friends, *in sport.*[113]

The verbal similarities are so close as to leave no doubt that Charleton had Bacon's passage before him (he had mentioned Solomon's House a few pages earlier). Since he had lived at Oxford from 1635 to 1650 and worked under Wilkins, the plagiarism simply proves how consciously the Oxford group took that utopia as their guide: their activities could be described by quoting Bacon. But it is the difference, so well revealed by the phrases in italics, which is more significant. What to Bacon was wholly serious and utilitarian has become for Charleton, and for the group he is describing, a recreation, a sport, a game of magic.

The conclusion we reach is that the virtuoso sensibility found satisfaction in mechanics at that moment of history when its

[112] *Works,* III, 161–162.

[113] *The Immortality of the Human Soul, Demonstrated by the Light of Nature,* (1657), pp. 46, 47. (The italics are mine.)

achievements were still sufficiently unfamiliar, in fact and in theory, to retain the aura of magic. When every road is filled with chariots that "move without an animal," and every toystore with trick mirrors and walking tin beetles, the same sensibility can be found only among schoolboys, or in the vaudeville audience of Professor Moskowski, the Great Magician.

Finally, in any attempt to explain the cult of the rare and the marvellous, we must not overlook the element of affectation, springing from the third motive for virtuosity, the desire for reputation. And because the virtuosi were gentlemen, and gentlemen on the defensive, the affectation was highly class-conscious. We see this in Burton's gibe that the curious man cultivates "all things opposite to the vulgar sort, intricate and rare, or else they are nothing worth";[114] and see it more pointedly in Bacon's charge that a "humour of vain and supercilious arrogancy" has caused the neglect of "experiments familiar and vulgar." "For it is esteemed a dishonour unto learning to descend to inquiry or meditation upon matters mechanical, except they be such as may be thought secrets, rarities, and special subtilties," where the exception plainly covers the whole field of virtuoso mechanics.[115] We remember that Evelyn once abandoned the history of trades, which Bacon is urging here, because of "the many subjections, which I cannot support, of conversing with mechanical capricious persons"; and that most contributions he did make were clearly rarities and subtleties—annealing in glass, enamelling, marble paper, the rolling press.[116] The affectation, which no doubt was as often unconscious as deliberate, was not simply a question of manners, of social fastidiousness. When Bacon speaks of "arrogancy," he is thinking of the intellectual pride that characterized the whole tradition of mechanical magic, the theory of special wisdom revealed only to "magi," and the sole concern with "secrets" unknown to the vulgar artisan, and kept secret by methods of writing deliberately obscure. A virtuoso like Baptista Porta is simply echoing a "magician" like Roger Bacon when he hesitates to make his rarities known to the public because

[114] Part 1, sec. 2, memb. 4, subsec. 7, p. 313.

[115] *The Advancement of Learning,* in *Works,* III, 332.

[116] *Diary,* III, 115 (letter to Boyle, Aug. 9, 1659), and III, 92 (letter to Boyle, May 9, 1657). See my article on "The History of Trades: its Relation to Seventeenth-Century Thought as seen in Bacon, Petty, Evelyn, and Boyle," *Journal of the History of Ideas,* II (1941), 46–48, 52–56.

"there are many most excellent Things fit for the Worthiest Nobles, which should ignorant men (that were never bred up in the sacred Principles of Philosophy) come to know, they would grow contemptible, and be undervalued."[117] Or again, Evelyn refuses to publish his essays on "Painting in Oil, in Miniature, Anealing in Glass, Enamelling, and Marble Paper" because if he did so, he would "debase much of their esteem by prostituting them to the vulgar."[118] Whenever he thinks of men concerned with mechanics, he thinks of two classes—"persons of mean condition" and "the more polite and enquiring Spirits."[119] In the light of other connections explored above, it is relevant to remember that the same strain of social-intellectual affectation partly promoted the poetry of wit, especially that of Donne and the metaphysicals.[120]

§ 5. *The Sensibility: Painting*

An interest in painting seems to lie essentially outside the main channels of virtuoso thought and feeling. No doubt the collection of rarities would naturally enough include pictures, but the basic desire for things as they are, and the insatiable appetite for the strange and ingenious, are not the characteristics of aesthetic appreciation. The fact is, however, that a genuine taste for art did not exist among the English virtuosi of the seventeenth century. On the contrary, they looked at painting in the same way that they looked not only at coins, but even at nature and mechanical inventions.[121]

The pleasures of the imagination as defined by Addison are plainly the pleasures of the virtuoso, and as plainly the pleasures of a "scientific" imagination:

[117] *Natural Magick,* sig. C1^{v}. Cf. Roger Bacon, *Letter Concerning the Marvellous Power of Art and of Nature,* translated by T. L. Davis (1923), pp. 38–41. Hugh Plat, *The Jewell House of Art and Nature,* sigs. B3^{v}–B4^{v}, criticizes this affectation from a Baconian point of view.

[118] *Diary,* III, 92 (letter to Boyle, May 9, 1657).

[119] Above, text of note 114, and *Evelyn's Sculptura,* ed. C. F. Bell (1906), p. 151. Also, *ibid.,* p. 114, where the virtuosi are called "the refin'd, and extraordinary spirits in all the *Arts* and *Sciences.*"

[120] Cf. the quotation from Harvey above, text of note 95. The best statement is by Chapman, in the dedicatory epistle to *Ovid's Banquet of Sense* (1595): the relevant remarks are quoted in George Williamson, *The Donne Tradition* (1930), pp. 60–61. See in general, R. L. Sharp, "Some Light on Metaphysical Obscurity and Roughness," *Studies in Philology,* XXXI (1934), 497–518.

[121] In addition to the evidence that follows, see the comment and list of sources in G. M. Trevelyan, *England under the Stuarts* (1928 ed.), p. 7.

A Man of Polite Imagination is let into a great many Pleasures, that the Vulgar are not capable of receiving. He can converse with a Picture, and find an agreeable Companion in a Statue. . . . It gives him, indeed, a kind of Property in every thing he sees, and makes the most rude uncultivated Parts of Nature administer to his Pleasures.

By the Pleasures of the Imagination. . . . I here mean such as arise from visible Objects, either when we have them actually in our View, or when we call up their Ideas into our Minds by Painting, Statues, Descriptions, or any the like Occasion.[122]

In spite of the word "Ideas," it is highly doubtful if Addison recognizes here any real distinction between art and nature: the pleasures of painting are of precisely the same kind as those of actual vision. Or putting it differently, the aesthetic standard adopted is the standard of verisimilitude. The discourses of Jonathan Richardson make it clear that Addison was reflecting the normal point of view. *The Connoisseur: An Essay on the Whole Art of Criticism as it relates to Painting* (1719) and *A Discourse of the Dignity, Certainty, Pleasure and Advantage, of the Science of a Connoisseur* (1719), are frankly designed to teach gentlemen "how to judge of the Goodness of a Picture," since very few "have a Just Idea of Painting." "'Tis commonly taken," says Richardson, "to be an Art whereby Nature is to be represented; a fine piece of Workmanship, and Difficult to be perform'd." It is therefore his first concern to convince gentlemen and "Low, Pretended Connoisseurs" that on the contrary "the Great, and Chief Ends of Painting are to Raise, and Improve Nature."[123] In short, the virtuosi have conceived of art as imitation in the literal or scientific sense, in place of imitation in the classical sense.

This indeed had been the popular conception ever since the time of Zeuxis and Apelles, repeated not only through literature, but also in treatises on painting. Lomazzo himself had said emphatically (and his words were passed on directly to the English nobility in Haydocke's translation):

Painting is an arte; because it imitateth naturall thinges most precisely, and is the *Counterfeiter* and (as it were) the very *Ape* of Nature: whose quantity, eminencie, and colours, it ever striveth to imitate . . . by the helpe of *Geometry, Arithmeticke, Perspective,* and *Naturall Philosophie,* with most infallible demonstrations.[124]

[122] *The Spectator,* no. 411, June 21, 1712.

[123] *Two Discourses* (1725 ed.), no. I, p. 40; no. II, pp. 8–9.

[124] *A Tractate Containing the Artes of curious Paintinge* (1598), p. 14.

The virtuoso found the same theory in the literature of courtesy—in Castiglione's discussion of the relative merits of painting and sculpture (which can imitate nature more exactly?), or in Peacham's definition of painting as "onely the imitation of the surface of Nature."[125]

Apart from theory, the practise of art as a gentleman's study was not intended in the least to develop an "aesthetic sense" or give play to the imagination. Its purpose was training in exact reproduction, partly for use in war and navigation (sea-charts, maps and sketches of the enemy's country),[126] and partly for foreign travel, where it was indispensable before the days of the camera, especially for the virtuoso, as we see from the following passage in Peacham:

> It bringeth home with us from the farthest part of the world in our bosomes, whatsoever is rare and worthy the observance: . . . the formes and colours of all Fruits, severall beauties of their Flowers; of medicinable Simples never before seene or heard of: the orient Colours, and lively Pictures of their Birds, the shape of their Beasts, Fishes, Wormes, Flyes, &c. . . .
>
> It preserveth the memory of a dearest Friend, or fairest Mistresse . . .[127]

It will be noticed that Peacham makes no distinction between painting or drawing as a scientific tool, and painting or drawing as an art, since both have the same photographic aim; and as the century advanced, these studies became more and more closely associated with natural history and mechanics. From the passage just quoted it is only a step to Evelyn's advice to William Landon that his account of the Barbadoes should contain careful "draughts of the animals, plants, and other things that you describe in the natural part."[128]

[125] *The Courtier,* pp. 79–80; *The Compleat Gentleman,* p. 125.

[126] Elyot, *The Govenour,* in ch. viii, p. 29; Sir Humphrey Gilbert, *Queene Elizabethes Achademy* (c. 1572), ed. F. J. Furnivall (1869), p. 5; Peacham, p. 124.

[127] Pages 124–125. Cf. Evelyn on his travels, *Diary,* I, 104 (Nov. 2, 1644), 120–121 (Nov. 14, 1644).

[128] *Diary,* III, 257 (Sept. 27, 1681). The application of art in the same way to antiquarian studies appears in the diary for August, 1645 (I, 220), when Captain Powell "presented me with a stone he had lately brought from Grand Cairo, which he took from the mummy-pits, full of hieroglyphics; I drew it on paper with the true dimensions, and sent it in a letter to Mr. Henshaw to communicate to Father Kircher, who was then setting forth his great work 'Obeliscus Pamphilius,' where it is described."

This typical remark illustrates what C. F. Bell had in mind when he spoke of Evelyn and his contemporaries holding "a system of ideas which aspired to include the exact sciences and the fine arts in one great harmony of knowledge."[129] However vaguely realized, that system is implicit in a review of Evelyn's translation of Fréart's, *An Idea of the Perfection of Painting* (1668), which appeared, significantly, in *The Philosophical Transactions of the Royal Society.*[130] The reviewer hopes that the book will "animate many among us to acquire a perfection in Pictures, Draughts and Chalcography, equal to our growth in all sorts of Optical Aydes." And although he recognizes in theory, as of course Evelyn did too (it was stated by Fréart), that painting and drawing could pass beyond "reality" in their "Emulation of all Beauties . . . whether Angelical, Divine or Humane," he concludes by asking, "what Art can be more helpful or more pleasing to a Philosophical Traveller, an Architect, and every ingenious Mechanician?" In this way, the growth of science confirmed the conception and developed the practice of art as literal imitation.

Once that conception is adopted, there are two possible responses to the actual work of artists: either to the subject alone, irrespective of the art, of the painting as painting, or simply to the skill with which reality has been reproduced. Both responses are found in Evelyn,—indeed, only those responses; and when we remember that Evelyn was as distinguished a connoisseur and critic as any Englishman of the century, we have a significant measure of virtuoso taste. The first is seen in Evelyn's complaint to Pepys about the pride of painters who refuse to add the names of their sitters:

> I am in perfect indignation at this folly, as oft as I consider what extravagant sums are given for a dry scalp of some (forsooth) Italian painting, be it of Raphael or Titian himself; which would be infinitely more estimable, were we assured it was the picture of the learned Count of Mirondola, Politian, Guicciardini, Machiavel, Petrarch, Ariosto, or Tasso; or some famous pope, prince, poet, or other hero of those times.[131]

The subordination, to put it mildly, of the aesthetic to the antiquarian point of view could scarcely be more explicit. Evelyn

[129] *Evelyn's Sculptura,* p. xvii.

[130] III (1668), 784–785. I owe the reference to Bell.

[131] *Diary,* III, 295 (Aug. 12, 1689).

looked at an unknown face in a portrait precisely as he looked at an unknown face on a coin: the color, the design, were ignored. When Peacham said it was "not enough for an ingenuous Gentleman to behold *these* with a vulgar eye: but he must be able to distinguish them, and tell who and what they be," he happened to be talking of statues.[132] He might as well have been talking of coins—or portraits. And in both cases the appeal is exactly the same. As Evelyn passes from the collecting of coins to portraits, he uses the same rhetoric of proper nouns to excite in Pepys the same desire for contact with an heroic past. Adorn your library, he says, "with the pictures of men illustrious for their parts and erudition," great captains and politicians, the worthies of Europe and England —"Sir Walter Raleigh, Sir Philip Sidney, Cecil, Buckhurst, Walsingham, Sir Francis Bacon, King James and his favorite Buckingham, and others (who made the great figure in this nation)."[133]

When Evelyn turns from subject to artist, he naturally insists upon historical accuracy and reserves his greatest praise for verisimilitude. The preface to his translation of Fréart's *The Idea of the Perfection of Painting* contains an outburst against anachronisms, condemns a picture of "our first parents with navils upon their bellys," and explains the superiority of certain modern painters as due to their being "learned men, good historians, and generally skill'd in the best antiquities."[134] Raphael's portrait of Guicciardini taking dictation from a minister of state is called an "incomparable piece" because the earnestness of the face "looking up in expectation of what he was next to write, is so to the life, and so natural."[135]

From delight in photographic imitation, it is only a step to delight in actual deception, a taste so common in the Renaissance that Bacon included the Arts Jocular, "the deceiving of the senses," in the *De Augmentis Scientiarum,* and Richard Haydocke could refer to the "pleasures and recreation" of "this Arte of Painting, whereby the unskilfull eye is so often cozened and deluded, taking counterfeit creatures for real and naturall."[136] Even

[132] *The Compleat Gentleman,* p. 109. The italics are mine.

[133] *Diary,* III, 294, 297, in letter dated Aug. 12, 1689. See above, text of note 72, for the passage on coins.

[134] In *The Miscellaneous Works of John Evelyn,* ed. William Upcott (1825), pp. 560, 561.

[135] *Diary,* II, 116 (Nov. 16, 1677); cf. I, 221 (Sept. 29, 1645).

[136] Bacon, *Works,* IV, 395; Haydocke, preface, sig. ¶ iii^{v}.

more astounding than the grapes of Zeuxis, or the horses of Apelles, which Haydocke describes, was a picture Evelyn saw in Richelieu's garden:

> At the end of it is the Arch of Constantine, painted on a wall in oil, as large as the real one at Rome, so well done, that even a man skilled in painting, may mistake it for stone and sculpture. The sky and hills, which seem to be between the arches, are so natural, that swallows and other birds, thinking to fly through, have dashed themselves against the wall. *I was infinitely taken with this agreeable cheat.*[137]

This is not a minor aberration. After a close study of Evelyn's criticism, C. F. Bell concluded that "an effect of salient relief, and what the French call *trompe-l'oeil,* was in his opinion, as in that of most of his contemporaries, the consummate triumph of graphic art."[138] By the eighteenth century this might be the taste of "Wretched Connoisseurs,"[139] but in the seventeenth it was the taste of intelligent virtuosi, brought up on the theory of representation and the function of drawing in war and science; and more than that, men naturally fascinated by another strand of natural magic as popular as the automata—deceptive mirrors and artificial storms. In a chamber of the Borghese palace, Evelyn wondered at another perspective, "composed by the position of looking-glasses, which render a strange multiplication of things resembling divers most richly furnished rooms."[140] At the villa of Cardinal Aldobrandini, nature was imitated as ingeniously by science as by art: "the representation of a storm is most natural, with such fury of rain, wind, and thunder, as one would imagine oneself in some extreme tempest."[141]

The more we examine the normal response to painting in the seventeenth century, the more convinced we become that it con-

[137] Haydocke, sigs. ¶ vi–¶ vi^{v}; Evelyn, *Diary,* I, 57 (Feb. 27, 1644). The italics are mine.

[138] *Evelyn's Sculptura,* p. xvi.

[139] Richardson, *Two Discourses,* no. II, p. 36.

[140] *Diary,* I, 123–124 (Nov. 17, 1644).

[141] I, 186 (May 5, 1645). For other examples of mechanical imitation, see above, text of notes 93 and 94. An artificial garden was seen at Theobald's in 1592 (Rye, *England as Seen by Foreigners,* p. 44); and one of Addison's pleasures of the imagination is a mechanical landscape (*The Spectator,* no. 414, for June 25, 1712). Needless to say, when Bacon included "Deceits of the Senses" in Solomon's House (*Works,* III, 164), he repudiated the attempt to "induce admiration" by disguising things "to make them seem more miraculous."

tained no element different from the response to antiquities or to scientific phenomena; and that on the contrary, the fine arts simply provided the same satisfaction in another medium.

The wide circumference of virtuoso activity has its common center—the study of things as they are in themselves for the subjective pleasure they can yield. Whether focussed on coins or ancient statues, natural history or mechanics, drawings or portraits, the curiosity is avid for what is strange and rare; and the resulting delight is that of wonder and admiration. No one has described the sensibility we have been analyzing better than Descartes, and in a passage making, by implication, the same contrast with the scholarly or philosophic temper that has been fundamental to this analysis. His remarks on wonder in *The Passions of the Soul* may therefore stand here as an ideal summary:

> When it is excessive, and causes us to arrest our attention solely on the first image of the objects which are presented, without acquiring any other knowledge of them, it leaves behind it a custom which disposes the soul in the same way to pause over all the other objects which present themselves, provided that they appear to it to be ever so little new. And this is what causes the continuance of the malady of those who suffer from a blind curiosity—that is, who seek out things that are rare solely to wonder at them, and not for the purpose of really knowing them.[142]

§ 6. *The Decline of the Movement: 1680–1710*

Of all the aspects of the virtuoso movement, its decline toward the end of the century is best known. The satirists saw to that. As early as 1667 Sprat recognized in "these terrible Men," as he called them, the greatest enemies of the Royal Society,[143] though in fact they were enemies only of the virtuosi. The real scientists, men like Hooke and Boyle, Ray and Newton, were then as always beyond the reach of ridicule, but gentlemen with a social standing to maintain and no passionate attachment to research, are, and were, highly vulnerable. When William Wotton in 1694 sought to explain why "Natural and Mathematical Knowledge . . . begin to be neglected by the generality of those who would set up for Scholars," he discounted the attacks of men like Stubbe and Casaubon,

[142] Article lxxviii, in *The Philosophical Works of Descartes,* translated by Haldane and Ross, I, 365–366. *Les Passions de l'Ame* was written in 1645–1646, and first published in 1649.

[143] Page 417.

who had argued that science would "introduce Skepticism at least, if not Atheism, into the World." The real cause, he thought, lay elsewhere:

> The sly Insinuations of the Men of Wit, That no great Things have ever, or are ever likely to be perform'd by the *Men of Gresham,* and, That every Man whom they call a *Virtuoso,* must needs be a *Sir Nicolas Gimcrack:* together with the *public ridiculing* of all those who spend their Time and Fortunes in seeking after what some call useless Natural Rarities; who dissect all Animals, little as well as great; who think no part of God's Workmanship below their strictest Examination, and nicest Search: have so far taken off the Edge of those who have opulent Fortunes, and a Love to Learning, that Physiological Studies begin to be contracted amongst Physicians and Mechanics. For nothing wounds so much as Jest; and when Men do once become ridiculous, their Labours will be slighted, and they will find few Imitators.[144]

This quotation tells much of the story, and much of it was justified. Evelyn was not a Gimcrack, and yet the rarities he sought—"eggs in which the yoke rattled, a pear, a piece of beef with the bones in it,"—are quite as funny and bizarre as the items in Gimcrack's famous will—three crocodile's eggs, the skin of a rattle-snake, and so on.[145] These are indeed useless rarities and the wits were right —but for the wrong reasons. When Mary Astell ridicules the virtuoso for knowing all about silkworms except how to make them "serviceable to Mankind," she was adopting a standard of immediate utility which is, of course, fatal to the full advancement of science, as Bacon recognized.[146] Or again, while ignorance of bio-chemistry may be offered in excuse, the choice of insect study for special ridicule was scarcely a happy one. When Shadwell laughs at "a Sot, that has spent 2000*l.* in Microscopes, to find out the Nature of Eels in Vinegar, Mites in Cheese, and the Blue of Plums, which he has subtilly found out to be living Creatures," the laugh is now on Shadwell.[147] It is neither the rarities themselves nor the particular experiments of the virtuosi that could justly be called useless. What was useless is indicated by the heterogeneous and indiscrimi-

[144] *Reflections upon Ancient and Modern Learning* (1697 ed.), pp. 418, 419.

[145] *Diary,* I, 221 (Sept. 29, 1645); and cf. the list on I, 158 (Feb. 4, 1645). Gimrack's will is by Addison, in *The Tatler,* no. 216, Aug. 26, 1710.

[146] *An Essay in Defence of the Female Sex,* p. 103; Bacon, *Works,* IV; 29, and elsewhere.

[147] *The Virtuoso,* act I, in *Works,* III, 113.

nate character of both, betraying at once the lack of any principle of selection and any concentration of energy. The minutes of the Royal Society are filled, literally, with hundreds of topics discussed and dropped, promises for papers never written, isolated experiments never repeated. And we know the explanation, the passion for "things," the thirst for curiosities. Shaftesbury was wrong when he said their cabinets were full of "Trash and Trumpery," or satirized their "Contemplation of the *Insect-Life,*" but he was right when he claimed that "in seeking so earnestly for Raritys," the virtuosi fell in love with "Rarity *for Rareness-sake.*"[148]

The context of this passage makes the charge of uselessness from another angle, far more damaging, the angle not of science but of man. To study "the Habitations and Œconomy of a Race of *Shell-Fish*" seems to Shaftesbury utterly trivial in comparison with the study of "*Mankind* and their Affairs." Or as Shadwell put it earlier, in the mouth of Gimcrack: "'Tis below a *Virtuoso,* to trouble himself with Men and Manners. I study Insects."[149] The protest goes deeper than virtuosity. While the Restoration conception of men and manners is superficial in comparison with Shakespeare's, its adoption as the right subject of human art and thought was nevertheless a reaffirmation of the humanist tradition in the face of scientific revolution. On this front, therefore, the wits have the whole-hearted support of men like Stubbe and Meric Casaubon, South and Eachard, Worthington and Temple. Casaubon's *Letter to Peter du Moulin* shows clearly that the issue was joined on the question of education. Is it true that natural philosophy is "the onely, useful, true, solid learning"? Can we agree with Comenius and Dury, with Glanvil and Sprat, that this is the great study to which "all Schools and Universities" should be fitted, and the nobility of the land invited, "as to the employment of all employments most worthy their entertainment"? Surely, Casaubon answers, history and military exercises, fitting men "to do their King and Countrey service, . . . will much more become them, then attending on furnaces, or raking into the entrals of men, or beasts."[150] In this first encounter, the victorious defence of a

[148] *Characteristics of Men, Manners, Opinions, Times* (1723), III, 156–157. This part of the *Characteristics* was first published in 1714. Descartes, quoted above, end of section 5, makes the same point.

[149] Act III, in *Works,* III, 142.

[150] *A Letter . . . to Peter du Moulin* (1669), p. 24.

classical over what was then called a "mechanical" education, helped to undermine a movement so closely identified with the Royal Society.

In the meanwhile, however, the older pursuits were carried on. A Society of Virtuosi was founded in 1689, composed of "Gentlemen, Painters, Sculptors, Architects";[151] and Addison, who laughed at the study of natural rarities, never hesitated to recommend coins and medals, painting and sculpture. On those sides the movement continued in the eighteenth century. But for deeper reasons than any yet mentioned, its vigor was permanently impaired. From the analysis we have made, this might seem a consummation devoutly to be wished, yet such a conclusion would be radically unjust. In order to define the virtuoso sensibility, emphasis has had to be placed on its extreme manifestations, those most open to criticism, both then and now, so that the solid intellectual core has tended to be overlooked. As a matter of fact, even the Gimcracks contributed their infectious enthusiasm to the cultivation of painting, antiquities, and especially of science; and moreover, as Wotton pointed out, every virtuoso was by no means a Gimcrack. No doubt the same traits may be found in Evelyn, but the respect that he instantly commands marks the difference between a fashionable fool and a gentleman of culture. In other words, if we define the virtuosi as men powerfully attracted to the strange and the rare, we must not forget they were also powerfully attracted to learning; and who shall estimate how deeply they contributed to the quickening and disseminating of Renaissance culture among the aristocracy, and the transformation of the "degenerous gentleman" of the Tudors, with his passion for hawks and his contempt for knowledge, into the educated Cavalier and country gentleman of the Stuarts? That is why the decline of the movement about 1700 is devoutly to be regretted.

Though positive proof is not available, there is reason to believe that the number of gentlemen devoted to learning of all kinds, and not simply to science, was far fewer in 1720 than in 1680. This was due in part to conditions more favorable to active life; in part to the resulting growth of attitudes toward learning hostile to virtuosity. In 1667 Sprat noticed that "now the World is become more *active* and *industrious*," the nobility "more apply themselves

[151] Lionel Cust, *History of the Society of Dilettanti* (1914), pp. 6–7.

to *Trafic* and Business than ever,''—a fact which, instead of lamenting, he is only too willing to encourage:

> Nor ought our *Gentry* to be averse from the promoting of *Trade,* out of any little Jealousy, that thereby they shall debase themselves, and corrupt their Blood: For they are to know, that *Trafic* and *Commerce* have given Mankind a higher Degree than any Title of *Nobility,* even that of *Civility* and *Humanity* itself. And at this time especially above all others, they have no reason to despise *Trade* as below them, when it has so great an influence on the very *Government* of the World. . . . It is now most certain that in those Coasts, whither the greatest *Trade* shall constantly flow, the greatest *Riches* and *Power* will be establish'd.[152]

This business ideal is not, of course, new in Sprat: it is in Burton as well as Bacon; and it harmonizes with the bourgeois demand for applied science that is apparent throughout *The History of the Royal Society.* What is new, at least in extent and candid acceptance, is the penetration of this ideal throughout the aristocracy, and the increasing attraction of business as a career for gentlemen. The inevitable effect on the life and studies of the virtuoso comes out significantly in Locke's *Thoughts Concerning Education* (1693), the major treatise on courtesy in the late century, and therefore Peacham's *Compleat Gentleman* in a new age. Locke is not writing for a man of leisure, but for a ''man of business in the world.''[153] As a result, he recommends study only for use, partly in the broader sense of moral training, but partly in the sense of worldly success, in the City or Westminster. He admits geometry and natural philosophy into the curriculum, though without enthusiasm, heaps scorn on poetry and music, ignores antiquities, and discards painting.[154] The atmosphere apparent in Sprat's account of the age has here determined and crystallized a theory of learning incompatible with virtuosity. In the question common a generation later, ''Why should my Son be a Scholar, when it is not intended that he should live by his Learning,'' the identification of study with use is complete.[155]

[152] Pages 407, 408.

[153] Section 182. I quote from *The Educational Writings of John Locke,* ed. J. W. Adamson (1922 ed.). "Business" has its older and broader sense of active life, political as well as commercial.

[154] Sections 181, 190–194; 174, 197; 203.

[155] Swift, *An Essay on Modern Education* (1729) in *Satires and Personal Writings by Jonathan Swift,* ed. W. A. Eddy (1932), p. 83.

The plea for practical studies is an explicit criticism of academic education, and Locke was not alone in feeling that the universities filled one's head with a "deal of trash," niceties of grammar, subtleties of logic and metaphysics. The product was not a man of business, but a pedant, ignorant of the world and hopeless in polite society.[156] This criticism was traditional (it had been made, for example, by Montaigne) but it was repeated with new conviction in this period of increasing trade and refinement. At first thought the virtuosi would seem quite safe from this attack on their enemies, but the attack was, in fact, a boomerang. In his highly interesting account of the decline of learning since the Renaissance, Temple found one explanation in the ridicule of pedantry. The pedants, he said, deserved all they got, but unhappily "the Learned began to fear the same Fate, and that the Pidgeons should be taken for Daws, because they were all in a Flock: And because the poorest and meanest of the Company were proud, the best and the richest began to be ashamed."[157] As the phrasing implies ("best and richest"), it is not scholars but gentlemen that Temple has in mind; and his report of a fashionable flight from learning is confirmed by Shadwell and John Norris, by Shaftesbury and Swift.[158] So it was that in the extreme recoil from pedantry, the middle ranks of the virtuosi were broken and thinned; and their sons, to avoid being thought pedants, were often content to be ignorant, so long as they were fine, gentlemen. This is not my own theory; it is Shaftesbury's observation:

> Our Youth . . . seem to have their only Chance between two widely different Roads; either that of *Pedantry* and *School-Learning,* which lies amidst the Dregs and most corrupt part of antient Literature; or that of

[156] Section 94.

[157] "An Essay upon the Ancient and Modern Learning" (1690), in Spingarn, *Critical Essays,* III, 71. This result is latent in Butler's observation, from his character of a virtuoso (written about 1664), in Morley, *Character Writings,* p. 343: "Nothing is more pedantic than to seem too much concerned with wit or knowledge, to talk much of it, and appear too critical in it."

[158] For Shadwell and Shaftesbury, see just below in my text; for Swift, note 159; for Norris, *A Collection of Miscellanies* (1710 ed.), p. 125: it is now counted [that is, in 1678] "a piece of *errant Pedantry,* and defect of good Breeding to start any Question of Learning in Company." And with special reference to the virtuosi of the Royal Society, he notices (p. 126) that "as for Learning (which is the only thing they are supposed able to Discourse well of) *that* in point of *Civility* they decline."

the *fashionable illiterate* World, which aims merely at the Character of *the fine Gentleman,* and takes up with the Foppery of modern Languages and foreign Wit.[159]

This tendency had existed before the Restoration. It had been satirized by Shirley in *The Lady of Pleasure* (1637), where its origin in the reaction from pedantry to French fashions was explicitly noted.[160] But after 1660 what had been a social anomaly before, became an accepted ideal, complementing the man of business, and so doubling the forces hostile to the virtuoso. The wits might laugh at Gimcrack, but it is only the gallants who "laugh at any Gentleman that has Art or Science," and who are "the only Animals that live without thinking." "If they go on as they begin," wrote Shadwell in 1676, "the Gentlemen of the next Age will scarce have Learning enough to claim the Benefit of the Clergy for Man-slaughter"; which, with due allowance for satiric exaggeration, is an astute prophecy of the "fashionable illiterate world" described by Shaftesbury and Swift.[161] Its generic causes are many and complex, but they include those suggested by Swift: French tutors and drawing-masters, army officers returned from campaigns in Flanders to become "Dictators of Behaviour, Dress, and Politeness," and the growth of coffee-houses.[162]

The last suggestion is particularly relevant, since the substitu-

[159] *Characteristics,* I, 334. Cf. Swift, *Satires and Personal Writings,* p. 78: "The Current Opinion prevails, . . . that Universities make young Men Pedants; that to dance, fence, speak French, and know how to behave your self among great Persons of both Sexes, comprehends the whole Duty of a Gentleman."

[160] Act II, sc. i, and act III, sc. ii, in *James Shirley,* ed. Edmund Gosse (The Mermaid Series, 1888), pp. 281–286, 310–313. This cult of ignorance should be distinguished from the stubborn persistence of the medieval tradition that no gentleman should stoop to learning, which is reflected in English courtesy from Elyot to Defoe, including Peacham's reference (end of epistle dedicatory) to the common education "of these ignorant times; . . . which is, to weare the best cloathes, eate, sleepe, drinke much, and to know nothing." Properly speaking, this is the "degenerous gentleman," who by the seventeenth century is usually a country squire. The "fine gentleman," is a later development, centered at London and Westminster, and growing out of a horror of pedantry in a *nouveau riche* society looking to France for the right manners and the right values.

[161] All three quotations are from *The Virtuoso,* acts II and I, in *Works,* III, 131, 106. It is interesting to notice that the most vicious attack in Shadwell's satire is reserved for the gallants, and not for the virtuosi, who at least respected and cultivated learning, however absurd their methods of study might seem.

[162] In *Satires and Personal Writings,* pp. 78–80.

tion of the chocolate-coffee-gaming-houses for the gallery and the cabinet, of gazettes and conversation for books and collections, was bound to sap the strength of virtuosity, and facilitate the transition from gentleman-scholar to gentleman of the world. Roger North was speaking of Cambridge when he noticed that by the eighteenth century, instead of returning to their studies after chapel, as they used to do, the students repaired to the coffee-houses, "where hours are spent in talking, and less profitable reading of newspapers."[163] Something quite similar was happening, I think, to the virtuosi in London. "I have heard," remarked Swift, "that the late Earl of Oxford, in the Time of his Ministry, never pass'd by White's Chocolate-House . . . without bestowing a Curse upon that famous Academy, as the Bane of half the English Nobility."[164]

In the face of these conditions, the virtuosi themselves attempted to complement the attack on fashionable ignorance by bolstering the prestige of learning among gentlemen, and facilitating its acquirement. Before 1681 Evelyn had written a discourse "to show how far a gentleman might become learned by the only assistance of the modern languages," and containing a list of authors with "a method of reading them to advantage." He explains his motive to Pepys:

> It was written with a virtuous design of provoking our court fops, and for encouragement of illustrious persons who have leisure and inclinations to cultivate their minds beyond a farce, a horse, a whore, and a dog, which, with very little more, are the confines of the knowledge and discourse of most of our fine gentlemen and beaux.[165]

On a larger scale and with deeper concern (the implications were clearer by 1714), Shaftesbury attempted to rescue the word "virtuoso" from contempt; to broaden the old ideal, purified of scientific contamination; to revive the middle group; and once again to

[163] *The Life of the Hon. and Rev. Dr. John North,* in Roger North, *The Lives of the Norths,* ed. Augustus Jessopp (1890), II, 292. For similar evidence, see *The Life and Times of Anthony Wood,* ed. A. Clark (1891–1900), II, 429. It is true that claims were often made (see John Houghton, quoted in David Ogg, *England in the Reign of Charles II* [1934], I, 101, and the anonymous author of *The Coffee-Houses Vindicated* [1675]) that learning was advanced rather than retarded by the coffeehouses, but what was meant was either "knowledge of the world" or else the spread of learning downward through the middle-classes.

[164] *Satires and Personal Writings,* p. 79.

[165] *Diary,* III, 261–262 (letter dated Dec. 6, 1681).

unite the courtier with the scholar. Speaking of the "Virtuosi or refin'd *Wits* of the Age," he continues:

> In this . . . general Denomination we include the real fine Gentlemen, the Lovers of *Art* and *Ingenuity;* such as have seen *the World,* and inform'd themselves of the *Manners* and *Customs* of the several Nations of Europe, search'd into their *Antiquitys,* and *Records;* consider'd their *Police, Laws* and *Constitutions;* observ'd the Situation, Strength, and Ornaments of their *Citys,* their principal *Arts,* Studys and Amusements; their *Architecture, Sculpture, Painting, Musick,* and their Taste in *Poetry, Learning, Language,* and *Conversation.*[166]

This is the broad ideal of the eighteenth-century virtuoso; but its very breadth suggests cultured refinement more than passionate study, and in any event it never won wide support. The decline of culture among the aristocracy, which was complete in Arnold's barbarians, had already begun by 1700. The golden age of the virtuosi was over.[167]

Cambridge, Mass.

[166] *Characteristics,* III, 156.

[167] A note on bibliography. In England the only phase that has been described is the satiric attack of the wits, most fully by C. S. Duncan in *The New Science and English Literature in the Classical Period* (1913), supplemented by an article, "The Scientist as a Comic Type," *Modern Philology,* XIV (1916–1917), 281–291. Duncan's work is without much historical perspective or critical insight, but it provides a good survey for the period after 1660 and mentions a number of minor satires I have omitted. Though limited by his focus on Swift, Gustav Hübener called attention to an important aspect of virtuosity in "Die Entstehung von *Gulliver's Travels* und die 'Curiosity'-Kultur," *Neophilologus,* VII (1921), 35–37. Though they make no effort to isolate or describe the virtuoso movement as such, there is relevant material in Lewis Einstein, *The Italian Renaissance in England* (1902), especially pp. 134–139, 149, 206–207; Foster Watson, *The Beginnings of the Teaching of Modern Subjects in England* (1909); Louis B. Wright, *Middle-class Culture in Elizabethan England* (1935), ch. 15, "The Strange World of Science"; and R. F. Jones, *Ancients and Moderns; a Study in the Background of the "Battle of the Books"* (1936). Apart from the few but illuminating remarks of J. E. Spingarn, *Critical Essays of the Seventeenth Century* (1908–1909) I, xc–xci and ciii, the only previous attempt I know to analyze virtuosity is Secor Browne's *Curiosity that is Endless: a Study of John Evelyn as a Virtuoso* (Harvard Honors Essay, 1938, in MS. in the Harvard College Library).