

SWIFT AND THE PHYSICO-THEOLOGISTS:
ABUSES IN LEARNING AND RELIGION

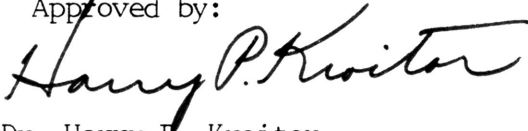
by

Richard Vogtel McLamore

Submitted in Partial Fulfillment of the Requirements of the
University Undergraduate Fellows Program

1985-1986

Approved by:

A handwritten signature in black ink, reading "Harry P. Kroitor". The signature is written in a cursive style with a large, prominent initial "H".

Dr. Harry P. Kroitor,
Faculty Advisor

April 1986

ACKNOWLEDGMENTS

I would like to acknowledge Dr. MargaretEzell's help in getting this research off the ground, my room-mates for not killing me when I decided to type at three in the morning, and all the people who let me borrow their typewriters. I am especially grateful that Dr. Kroitor fended off his despair long enough for me to get this paper done.

TABLE OF CONTENTS

Chapter One: Swift and the Physico-theologists	1
Chapter Two: The Commonwealth of True Philosophy	8
Chapter Three: The Mechanical Spirit	18
Chapter Four: Philosophical Reductions	27
Chapter Five: Philosophical Phobias: Abuses in Language	37
Chapter Six: Final Observations	45
Notes	52
Bibliography	53

SWIFT AND THE PHYSICO-THEOLOGISTS:
ABUSES IN LEARNING AND RELIGION

Modern science grew into respectability during the seventeenth and eighteenth centuries. Francis Bacon's writings combined with Newton's discoveries and other elements to help the natural philosophy emerge from its shady associations with alchemy, Rosicrucianism, astrology, and quack medicine. The new discoveries posed problems because they challenged accepted religious, educational, political, medical, and scientific beliefs. Scientists have defended their existence throughout history in a response to similar pressures — the terms "science" and "scientist" attained currency during the eighteenth century; the ambiguous words "philosophy" and "philosopher" were used instead to denote scientific study and scientists.¹ Scientists have not allayed public fears about their investigations—the mad scientists of science-fiction are an example of manifestations of such fears. Much of society still has the unsettling notion, exacerbated by investigations such as Dr. Mengele's, that scientific research is inhuman, irreligious, and amoral.

The assumption that science and religion are antagonistic lends weight to these assumptions. Richard Foster Jones, in Ancients and Moderns, explains that while Bacon recommended that religion be excluded from scientific experimentation, he did this for two reasons, one being that if an authoritative explanation is accepted as dogma it will prevent further investigation. In A History of the Warfare of Science with Theology in Christendom, Andrew Dickson White traces

several examples of how dogma prevented, if not proscribed scientific investigation. The other reason forms Bacon's objection to the medieval Scholastic philosophers' introduction of Aristotelianism into Christianity: "' Humane knowledge' is excellent in itself, but when it is incorporated with theology, both are corrupted." Jones uses this quotation from John Webster's 1654 treatise Academiarum Examen to illustrate the common opinion that "religious truths come only through the spirit of God" (Jones 102). This view appealed to Puritan Parliamentary rulers as it meshed with their doctrines. The puritans generally admired Bacon's utilitarian emphasis on the uses of experimental philosophy and their propagandists depict the considerable practical benefits that experimental philosophy offered versus the empty speculations based upon ancient philosophers' writings taught in the universities at the time. Several experimenters had met previously to share and discuss their work. During the late 1650's they began to pester Parliament to recognize and fund their organization in its attempts to advance learning and improve mankind.

Dorothy Stimson's Scientists and Amateurs relates the details leading to what became the Royal Society's institution. The experimenters had to wait until December of 1660 for official recognition, which came from Charles II, not the Long parliament. Charles' recognition of the Royal Society stemmed from his interest in experiments, but he had to be aware of its function in keeping influential gentlemen loyal to and from meddling in a newly restored monarchy. His attitude toward them is suggested by two subjects that he asked them to investigate: first, to

determine "why sensitive plants stir and contract themselves upon being touched," and second, to determine properties of various glass bubbles, which the Fellows analyzed by smashing to dust (Stimson 81). Charles did, however, commission Sir Christopher Wren, a Society charter member, to rebuild St. Paul's and the fire-destroyed London Churches.² The society's utilitarian ideal persisted and they were firm in their commitment to advance learning.

The Royal Society encountered early criticism that centered on its apparent impracticality and irreligion. To address these criticisms, the Society prevailed upon Thomas Sprat, a young cleric destined to become Bishop of Rochester, to write a volume vindicating their application of Bacon's new philosophy in an "enthusiastic support of experiment and observation as the basis for the advancement of learning" (Stimson 92) that was disguised as The History of the Royal Society. The Society was not yet four years old when Sprat began its History.

Boyle, Robert Hooke, John Ray, Wren, and Newton's works and discoveries show that the Society progressed in its investigations. Boyle's writings helped establish the Society as well as a belief stated in "The Usefulness of Experimental Naturall Philosophy" that "the two chief advantages, which a real acquaintance with nature brings to our minds are, first, by instructing our understandings, and . . . next, by exciting and cherishing our devotion" (Hall 141). In his attempt to "justify experimental philosophy in the eyes of religion" (Jones 202), Boyle introduces religion into science so as to appeal to "the divines we are answering" (Hall 148), which is the error for which he and Bacon,

his primary influence, attacked the medieval philosophers. The new philosophy developed its own canon through the writings of Puritan reformers such as John Webster and John Durie that thou shalt observe nature. Boyle, Hooke, William Derham in Physico-Theology and Astro-Theology, John Ray in Wisdom of God manifested in the Creation, and others add to this that thou shalt observe nature and find God's handiwork "visibly displayed in the fabrick of the world" (Hall 142). The practical utilitarianism that Bacon professed begins to be compromised by Boyle and the others in their pursuit of physico-theology.

The fashionable new philosophy uses Bacon to battle Aristotle, a new methodology of learning which avoids book learning and replaces it with observation, and by way of Derham and others, takes license to explain the true function of the cosmos as physico-theology becomes astro-theology.

Initial opponents of the new philosophers were varied; some mere reactionaries, while others based their attacks on political, educational and religious bases, while still others, Stimson notes, attacked the Society's fashionable reputation. Later critics could criticize Society members writings as well as their actions, which allowed more rigorous criticism of the framework in which physico-theology assumed an important role. Derham, Ray, and Thomas Burnet's writings attest to physico-theology's popularity and importance, as do the lecture series founded by Boyle in a codicil of his will of 28 July 1691.³ This series, presented under the auspices of the Royal Society, aimed "to satisfy real scruples, and to answer such new objections and difficulties as might be

started, to which answer had not been made before."⁴ The series presented eight sermons per year, preached to large audiences in London churches by notables such as Samuel Clarke, William Bentley, and Derham. The lectures were further intended "to be proof of the Christian religion against notorious infidels; viz. Atheists, Theists, Pagans, Jews, Mahometans; not descending lower to any controversies that are among Christians themselves."⁵ William Temple, Swift's mentor and patron, urged the value and depth of ancient thinking versus the shallow promises of the moderns, who seemed to attempt everything and accomplish little. Temple, Swift, and Richard Boyle also attacked the new philosophy's observational method as not delving into a true knowledge, but rather as a method concerned with superficialities. They singled out Bentley's Reflections on Ancient and Modern Learning as an especially superficial work.

Sometime around 1697, Jonathan Swift, freshly graduated from Trinity College, Dublin, began A Tale of a Tub. First published in 1704, together with "Battle of the Books" and "The Mechanical Operation of the Spirit" its express purpose is to attack "the numerous and gross corruptions in Religion and Learning."⁶ Bentley, Boyle, Derham and others associated with physico-theology are attacked in A Tale of a Tub, "A Full and True Account of the Battel Fought Last Friday, Between the Ancient and Modern Books in St. James's Library," and "A Discourse Concerning the Mechanical Operation of the Spirit in a Letter to a Friend, a fragment," yet critics have made little if any reference to physico-theologists as a group under attack in these

three works. Leslie Moore in an article published in Eighteenth-Century Studies, Spring 1986, connects Swift's "Meditation On a Broomstick" to a thorough attack and parody of Boyle's "Occasional Reflections" so that Boyle's "host of loaded branches" is rearranged so that all such pseudo-religious "vines and branches are flourishing hypocrites, a vineyard of broomsticks fit only for the fire" (Eighteenth Century Studies, vol 19, no. 3 332). Francis Deutsch Louis, in Swift's Anatomy of Misunderstanding, published in 1981, analyzes Swift's technique and how he wields it against his victims in A Tale of a Tub, but she does not mention physico-theology though it would illustrate her argument. George Griffith, in his 1970 Vanderbilt dissertation, Jonathan Swift's Relation to Science, reviews the literature which either dismisses, ignores, or begins to recognize Swift's concern for scientific research. Griffith does not mention physico-theology and does not list any works by Boyle, Ray, or Derham in his bibliography. Physico-theology is barely if at all mentioned in the major histories of seventeenth-century and eighteenth-century England. Basil Willey's Eighteenth-Century Background is an exception. This study will examine how Swift's attack against the abuse of religion and learning stems from his attack on the physico-theologists.

In A Tale of a Tub, "Battle of the Books," and "The Mechanical Operation of the Spirit," Swift consistently uses the technique of diminution. Beaumont's Swift's Classical Rhetoric traces Swift's use of diminution in tracts such as "A Modest Proposal." Martin Price's Swift's Rhetorical Art focuses on how Swift uses inversion to achieve diminution's satiric effect. Clearly, diminution is an important weapon in Swift's

arsenal because it enables him to achieve the vicious ironies that mark his satire. In the three works above, diminution is suggestive of more than a technical use of a rhetorical device for a specific purpose. The reductive nature of diminution reflects the major reason that Swift attacked the physico-theologists. The assumption that one can understand and explain God's laws reduces the power of God while simultaneously puffing up the importance of the interpreters. If this argument is granted, then one can readily understand why A Tale of a Tub was intended to be an attack against corruption in learning and religion. In his attack Swift delineates the consequences of this reductive-augmentive paradox. This study will show how these three works attack physico-theology on political, religious, philosophical, and linguistic grounds. Because Swift uses a persona in these three works, the major focus will be to show to what extent the persona and his observations and perceptions may be seen as representative of those that Swift would associate with the physico-theologists.

THE COMMONWEALTH OF TRUE PHILOSOPHY

To examine the political influences and beliefs of the physico-theologists and to compare them to those of the persona in A Tale of a Tub helps to determine why Swift's political attacks apply to the physico-theologists. Swift's political attacks are well known. Irvin Ehrenpreis's biography portrays the roots of Swift's political beliefs and their ramifications in his writings. According to Ehrenpreis, Swift denounces parties and factions, equating them with religious sects. In the "Sentiments of a Church of England Man, with Respects to Religion and Government," he identifies "the Dissenters with a mob of Republican, regicide, Puritan forebears" (Ehrenpreis 129). The "Sentiments," written around the time A Tale of a Tub was published, spells out what the Tale's "Digression Concerning Madness" portrays: sects, parties, and factions create bodies of

Madness [that have] been the Parent of all those mighty Revoltuions, that have happened in Empire, in Philosophy, and in Religion. For the Brain, in its natural Position and State of Serenity, disposeth its Owner to pass his life in the Common Forms, without any thought of subduing Multitudes to his own Power, his Reasons, or his Visions. (Tale 171)

The persona writes in favor of madness and "all those mighty revolutions" It is the prospect of one sect or faction subduing the multitudes, that, according to Ehrenpreis, leads to Swift's fear of democratic rule because it would allow the mob, or those able to use it for their own needs, to gain control of government. Swift preferred a government consisting of men bound to their country by interest and educated to know how best to govern. Such a body would be essentially united. Parliament would

be "an Arena where Miscellaneous local and economic rivals met to settle their secondary differences [and Swift] condemned the idea of a team of men pledging themselves to capture the vehicle of government and drive it as they liked" (Ehrenpreis 117).

The new philosophy wished to dismantle or, at least, drastically rearrange the English educational system into a configuration in line with the Puritan desire to produce a man who would "certainly prove a greater Scholar, than the walking libraries so called, although he could neither write nor read" (Jones 90). The preferred method was one that would include "the actual observation of things, and not the confused ideas gathered from the traditional misapprehension of nature [while] contributing to 'useful knowledge'" (Jones 95). The utilitarian influence derived from Bacon's writings becomes a puritanic materialism which decrees that "Languages are of value only as far as they transmit the 'Reall Truths in Science'" (Jones 94). The majority of the new philosophers had Puritan sympathies as evidenced in part by their attempts to gain parliamentary recognition. They challenged the bases of Swift's position with jabs such as John Webster's in Academiarum

Examen:

In political science Bodin and Machiavelli and diverse other modern authors may duly challenge as much praise in this point, as that of Aristotle, which the Schools do so magnifie and adhere to, yea even our own Countrey-man master Hobbs hath pices of more exquisiteness and profundity in that subject, than ever the Grecian wit can reach unto or attain. (Jones 104-105)

Webster reasons that Machiavelli, Bodin, and Hobbes deserve praise because they have observed the truths of political behavior and have developed an ethics which exploits its flawed truths, versus the ideals

and recommendations of which Aristotle writes. Webster thus prefers the exploitive material pragmatism of Machiavelli to Aristotle. Further, we can see that Webster has already reduced "master Hobbs's" book The Leviathan into those pieces which he admires, while ignoring those that led to Hobbes's censure as a heretic or Atheist. Swift replies in a related vein in A Tale of a Tub:

A certain Author called Homer, in whom . . . I have discovered many gross errors, which are not to be forgiven his very Ashes, if by chance any of them are left. For whereas we are assured he desgn'd his Work for a compleat Body of all Knowledge Human, Divine, Political, and Mechanick; it is manifest, he hath wholly neglected some, and been very imperfect in the rest . . . I have still behind, a Fault far more notorious to tax this Author with; I mean his gross ignorance in the Common Laws of this Realm, and in the Doctrine as well as Discipline of the Church of England.
(Tale 128)

This passage exposes the persona's inability to distinguish fact from fiction. The persona assumes that Homer must be a modern projector in "the Commonwealth of Learning" and attacks his utter failure as one. This exposes the persona as one, like Webster, who prefers an examination of a sordid, materially exploitable reality to the possibility of making something better from it, as did Homer and the ancients.

For Swift, a sound education provides well-rounded men capable of governing. Swift finds the best education in the works of Plato, Aristotle, and the ancients:

The Moderns . . . seemed very much to wonder how the Antients could pretend to insist upon their Antiquity, when it was so plain . . . the Moderns were much more the Antient of the two. As for any Obligations they owed to the Antients, they renounced them all. 'Tis true, said they, we are informed some few of our Party have been so mean to borrow their Subsistence

from You; but the Rest, infinitely the greater . . . were so far from stooping to so base an example, that there never passed till this very hour, six Words between us. For our HORSES are of our own breeding, our ARMS of our own forging, and our CLOATHS of our own sewing. Plato was by chance upon the next Shelf, and was observing those that spoke to be in the ragged Plight . . . their JADES lean and foundered, their WEAPONS of rotten Wood, their ARMOUR rusty, and nothing but Raggs underneath; he laugh'd out loud, and in his pleasant way, swore, By G---, he believ'd them. (Battle 227-228)

The irony in this quotation derives from the fact that the persona is trying to convince us that this battle has actually taken place. Swift uses his persona's epic descriptions to arrive at a prose mock-epic. Through this Swift contrasts Plato's ability to observe a situation and find its essential truth and the persona's inability to distinguish between fact and fiction. Swift criticises his persona's mind-set because the persona finds the aptest description for a dispute in a battle between opposing factions. Swift condemns the decrepit institutions of the moderns. For Swift, it is not enough to rely upon modern learning's new observations of nature, because these only convince men that they are the only reality, while also convincing men of their marvellous discoveries. Conversely, it is not enough to rely upon the Ancients. They too are a faction. Aristotle aims an arrow at Bacon, but it misses and hits Descartes, implying that Bacon has some value in Swift's mind. Boyle's chemists are led by Paracelsus and are termed "a Squadron of Stink-pot flingers" (Battle 236).

During Robert Boyle's lifetime, his scientific demeanor was "regarded as official English scientific policy" (Hall 5). During the Civil Wars,

Boyle originally intended to join the King's army in the family tradition. [But] . . . his sister Kath-

erine . . . a convinced Parliamentarian herself, soon dissuaded him from his intention . . . [and] introduced him to what he called 'several persons of power and interest in the Parliament and their Party,' who helped him secure the estate bequeathed him by his father. (Hall 10)

Hall, Stimson, and Jones all detail the Puritan flavor of the "invisible College" or our "new philosophical College" (Hall 12). Ultimately, Boyle was disinterested in politics, apparently content as long as he could continue to experiment. His example is not one that Swift found acceptable for one who possessed his potential influence. When even the "loyal Cromwellians began to think of, and then plan a royal restoration," Boyle left Oxford to retire to a friend's country house. He spent this time writing up past experiments since he had "no opportunities for making further experiments" (Hall 24). Once the Restoration was a certainty Boyle went to Holland to offer his services to Charles II and was thereafter often at Court as "a representative of a great family and a representative of the world of science" (Hall 25-26). He received patronage from Charles and helped establish the Royal Society. For all his real piousness Boyle's actions exhibit the selfish materialism that Swift attacks throughout A Tale of a Tub. Boyle's apparent political neutrality allowed him to profit from both the Civil Wars and the Restoration. This neutrality offered him personal benefits, but it also stripped him of the political power that he had a right, as well as an obligation in Swift's view, to exercise. Instead of this, Boyle chose to engage in activities of personal interest, such as demonstrating the Being and Attributes of God.

Age decreased Boyle's desire to involve himself with political re-

sponsibility, and while maintaining his ties with the Royal Society, in 1680 he refused its presidency "on the grounds that it might involve his subscribing to religious tests . . . [and] he would not swear to religious convictions which deviated, however slightly from those he actually" (Hall 28-29). Boyle's religious convictions were those of the physico-theologists as opposed to those of the whole of the Anglican church.

The Royal Society was designed so that "Royalist and Parliamentarian could find a common interest . . . in our promoting the new learning" (Hall 27). In a preface to A Tale of a Tub Swift's persona says:

The wits of the present Age being so very numerous and penetrating, it seems, the Grandees of Church and State begin to fall under horrible Apprehensions, lest these Gentlemen, during intervals of a long peace, should find leisure to pick Holes in the weak sides of Religion and Government. To prevent which, there has been much thought employ'd of late upon certain projects for taking off the force, and edge of those formidable Enquirers, from canvassing and reasoning upon such delicate points. (Tale 39)

The persona's word choices suggest that these gentlemen are to be treated much like young military rakes in search of females during a "long peace." Swift suggests that the Royal Society was in part sanctioned to prevent these gentlemen from causing domestic strife. The persona's attitude seems to vary as he can not decide whether or not to identify with the most modern of the "Junior start-up Societies" (Tale 64). His words imply that the Society Fellows have been duped into wasting their power, much as the whales are duped into chasing cast-off tubs. The comment continues:

They have at length fixed upon one, which will require

some Time as well as Cost, to perfect. Mean while the Danger hourly increasing by new levies of wits all appointed (as there is reason to fear) with Pen, Ink, and Paper, which may at an hours warning be drawn out into pamphlets and other Offensive Weapons, ready for immediate Execution: It was judged of absolute necessity that some present Expedient be thought on, till the main Design be brought on to maturity. To this End, at a Grand Committee, some Days ago, this important Discovery was made by a curious and refined Observer; that Sea-men have a Custom when they meet a whale by way of Amusement to fling at him an empty tub to divert him from laying violent Hands upon the Ship. (Tale 40)

The persona shows how seriously he takes himself by the terms he uses to describe the dangers presented by the wits. Swift, couched behind this, exploits the element of truth. The Royal Society Fellows could have immense power, were they not taken up with needless experimentation. Swift compares them to whales duped into wasting their power on a tub, while others control the government in which the Fellows have a right and obligation to be involved. Swift implies that the Society is only a stepping-stone until the "grand committees" can attain enough power to implement their "main designs." The passage continues:

This parable was immediately mythologized: The Whale was interpreted to be Hobb's Leviathan, which tosses and plays with all other Schemes of Religion and Government, whereof a great many are hollow, and dry, and empty, and noisy, and wooden, and given to Rotation . . . And it was understood, that in order to prevent these Leviathans from tossing and sporting with the Commonwealth (which of itself is too apt to fluctuate) They should be diverted from that Game by a Tale of a Tub. (Tale 40-41)

This passage, presented through the guise of a "most devoted Servant of all Modern Forms" (Tale 45), launches several of the targets at which Swift will shoot throughout the rest of his Tale. He attacks the "Rotation" inherent in the new philosophy and its schemes that have no

solid foundations, but are based upon superficial observations. This can also apply to the new philosophy, which will exploit whatever opportunity arises, regardless of previous commitments. Swift attacks the superficial observer, who like Boyle, is led by superficial observations to form exploitive and misleading conclusions. His inability to relate and maintain connections between his perceptions is what leads the persona to write "A Digression in Praise of Digressions" (Tale 143).

Swift argues that this inability to be consistent combined with the materialistic outlook produces political impotence. However, these are secondary to his attack on the "Commonwealth" and those political projectors who would wish for such a Puritan, republican government. He recognized that the Royal Society posed a potential political danger because of their interest in the educational reforms of the Puritan propagandists. It was composed of potentially influential gentlemen and possessed the means to impose its beliefs upon the country. This explains his attack on the Society's popularity and also on physico-theology and its popularity, as evidenced by the Boyle lectures. In addition, Swift was appalled by the notion of democracy. This formed an important part of the new philosophers' writings, as it showed in their

praise of the simple artisan and in the tendency to extol him as one more learned than the bookish man because he is in constant physical contact with material things. The spirit of a work democracy has entered the world. (Jones 108)

In order to emphasize that he is a true modern, Swift has his persona think only of the new philosophy as a "Commonwealth of Learning" (Tale 51). He also is led to describe the new learning as an "Army of

the Sciences" (Tale 145). His frame of mind is the sort that can envision "A Battle of the Books," a description of a battle between men and ideas reduced into their records, books. It is only natural that it acquires characteristics of the mock-epic. It is Swift's fear, grounded in the Civil Wars, that a person capable of asking the

Reader, to beware of applying to Persons what is here meant, only of Books in the most literal Sense. So when Virgil is mentioned, we are not to understand the Person of a famous Poet . . . but only certain Sheets of Paper," (Battle 214)

can also create a mock-government based upon superficial abstractions and generalizations. Swift found connections between the new philosophers and the "Dissenting rabble [which] had butchered Charles I, vandalised the Church and destroyed the monarchy" (Ehrenpreis 57). He clarifies his opinion with these ironic titles on the Tale's facing page:

An Analytical Discourse Upon Zeal: Histori-Theo-physiologically considered.

A Modest Defense of the Proceedings of the Rabble in All Ages.

These titles suggest physico-theology's influence and reflect the dangers of factions, sects, and political projectors. The persona who can propose "Physico-logical Schemes of Oratorical Receptacles or Machines" (Tale 61) and a system for the "Mechanical Operation of the Spirit" can also think it necessary to examine Zeal, defend the rabble, and praise madness. In Swift's view these are essential attributes of anyone who would join a sect or faction. The persona owns that he once had "the unhappiness to be an unworthy member" (Tale 176) of Bedlam, the academy of madness. Swift compares Bedlam to the Royal Society im-

plicitly. The persona's "Imaginations are hard-mouth'd and exceedingly disposed to run away with his Reason" (Tale 180). These are not the types of political projectors that Swift thinks should play any part in government. Swift is opposed to them because they are unable to reason sense from the facts that they observe. Further, they are only interested in that which is of immediate benefit. Swift believes that the physico-theologists pose a danger to the country because they argue the discovery of that which their

Imaginations have rendered sacred, to a degree, that they force common Reason to find room for it in every part of Nature; reducing, including, and adjusting every Genus and Species within that Compass, by coupling some against their wills and banishing others at any Rate. (Tale 57)

These are the political dangers of the physico-theologists. They were a group of potentially gentleman promising the commoners a world that would witness "the absolute perfection of the True Philosophy" (Sprat 29). Swift attacked them because the popularity that the Boyle lectures demonstrated showed that these projectors had popular appeal. Swift feared that such a popular and fashionable group, appealing to the zeal, enthusiasm, and the dreams of the rabble, could attempt to overthrow "the state if rebellion [could] further what they fancied as the true religion" by exploiting the rabble with their political projections (Ehrenpreis 126).

THE MECHANICAL SPIRIT

Physico-theology's political dangers also imply its greatest religious abuse: the reduction inherent in assuming that one man or a group of men can explain God's laws or workings. This position leads almost inevitably to a reduction of spiritual concepts into physical terms. It is clear that Swift has the persona view religion physically, reflecting Swift's interpretation and criticism of the physico-theologists. The persona explains his observations in terms of exploitive materialistic metaphors which lead him to recommend to the "diligent reader" that it would be best in understanding

the sublime throughout this treatise . . . [to put] himself into the Circumstances and Postures that the writer was in, [being] that the shrewdest pieces of this piece were conceived in Bed, in a Garret: At other times (for a Reason best known to myself) I thought fit to sharpen my Invention with Hunger; and in general, the whole Work was begun, continued and ended, under a long course of Physick and a great want of Money. (Tale 44)

Swift asks us to assume the role of a philandering rake who has taken up hack-writing in order to survive. He compounds this by making this Modern congratulate himself upon "reflecting, how much Emolument this whole Globe is like to reap by my labors" (Tale 106). In this quotation, the persona treats his own work in a reductive manner that recalls Webster's treatment of The Leviathan. Swift's attack on religious projectors becomes painfully ironic when he allows his irreligious, insensitive, and unlearned persona to relate the history of the Christian religion as the story of three fellow rakes and their pursuit of women and material wealth.

Swift's attack on physico-theology's abuse of religion centers on the reduction of the spiritual into the purely physical. Much as his scatological poetry emphasizes that there is nothing purely spiritual in this world, his criticism emphasizes the physico-theologists' spiritual ignorance. The physico-theologists offered many demonstrations of God's grandeur as displayed in the physical world. For the High Churchman Jonathan Swift, these explanations and demonstrations raised several questions. Of these, the most important is that if one accepts the physico-theologists' explanations as proof of God's plan for the cosmos, is one showing faith in God's powers or in man's ability to explain them to one's satisfaction? Swift's sermon "On the Trinity" states rather plainly that as to God's mysteries "all Mankind are equally ignorant and must continue so, at least until the Day of Judgement, without some new Revelation" (Prose Works IX 161). Swift also says that "the method taken by many . . . to defend the doctrine of the Trinity, hath been founded on a Mistake" (Prose Works IX 161). He thinks mistaken that method which endeavors "to find out further Explanations of this Doctrine . . . by rules of Philosophy" (Prose Works IX 160). The term philosophy clearly applies to the medieval scholastic disputations, but it also fits in its scientific usage, since many, among them Thomas Vaughan and Sir Thomas Browne, professed to find symbolism in numbers found in nature. Swift attacks this by having the Tale's persona include only three

Oratorical Machines [in his scheme, because] . . . the admission of [others] would overthrow a number which I was resolved to establish whatever Argument it might cost me; in imitation of that prudent method observed by many other Philosophers. (Tale 57)

Swift's position is that many things must be taken on faith and that "to declare against all mysteries without Distinction or Exception, is to declare against the whole tenor of the New Testament" (Prose Works IX 162).

The physico-theologists, however, maintained that "if Nature is God's own codex . . . it must have the best of all possible plans" and they set out to demonstrate "the divine wisdom in creating this universe" (Willey 43). This is Derham's aim in Physico-Theology and Astro-Theology, as it is Ray's in Wisdom of God in the Creation. Thomas Burnet's Sacred Theory of the Earth offers a dissenting variation on this theme, as he denies that this is the best of all possible worlds and concocts an elaborate scheme showing that the world is in a ruined state because of man's fall into sin. Burnet, a widely known religious projector, goes so far as to provide calculations to prove his claim that the pre-fall Earth was a perfect sphere which broke up and fell into the waters underlying the smooth land-mass because of man's fall and subsequent wickedness. Burnet links man's sin to the natural events of the world as a way of demonstrating that "the regular mechanism of second causes is the best evidence of God's Wisdom" (Willey 33). Burnet goes on to provide an eschatology based on natural causes. This is a clear example of trying to demystify a highly mysterious and faith-requiring situation. This theorizing led to his ouster from government office when he replied to critics who objected that "Moses described a terraqueous globe, and not Burnet's paradise" that "Moses must be interpreted so as not to be 'repugnant to clear and uncontested science'" (Willey 34). Burnet's theories and projections are clear to him

because he observed them, believing them to be "momentous Truths . . . for the universal benefit of Human kind" (Tale 180) and not because anyone else agrees with him. His theorizing also shows a blatant reduction of man's loss of grace and contact with God on a spiritual level into a material circumstance. Burnet is the kind of religious projector that Swift attacks in these three works.

William Derham, another religious projector, was a country parson who made notable collections of "birds and insects and studied meteorology, astronomy, bird-migration . . . and mechanics, . . . became a Fellow of the Royal Society in 1702" (Willey 39) while serving "his parishioners faithfully both as physician and as pastor" (Willey 39). In Physico-Theology, he counters Burnet with the sterling rebuttal that even if the Globe were such a rude, confused, inconvenient Mass as he [Burnet] pretends, "yet it is well enough for a sinful World" (Willey 41). And further, "Who would care to travel, if the earth were everywhere of an even, level, globous surface?" He proceeds along similar lines in Astro-Theology, maintaining that "All the Globes in the Universe are such, and consequently so many proofs of an Almighty First Mover" (Astro 67). In chapter IV, which is headed "Practical Deductions and Reflections upon the MAGNITUDE of the Heavens," Derham asks, "who can behold the Regions above . . . and at the same time not own them to declare the Glory of God?" (Astro 25). Again, "In this business of gravity, we have another manifest demonstration of the infinite C R E A T O R's Wisdom and Care, and another cogent argument to excite the highest Venerations and Praise in his Creatures" (Astro 149). This is a splendid

example of pseudo-scientific religious projections.

Swift clearly disapproves of religious projectors such as Burnet and Derham. In attacking such pseudo-science and pseudo-religion, he trades on the Royal Society's fashionability in the creation of his persona. The persona is so concerned with fashion and town affairs that he misinterprets the facts so that he creates the history of the Aeolists,

a sect . . . whose Tenents obtained and spread very far, especially . . . among everybody of good fashion. They worshipped a sort of Idol, who, as their doctrine delivered, did daily create Men, by a sort of Manufactory Operation. (Tale 76)

These Aeolists, full of "wind" and pumped up by one another, typify Swift's religious projectors. The persona manages to "mythologize" the old saying about nine tailors creating a man and applies it to an "Idol." Also, he asserts that their doctrine

that the soul was the outward, and the Body the inward clothing [was] proved by Scripture because 'in them we live and move and have our Being . . . By all which it is manifest that the outward Dress must needs be the Soul. (Tale 79-80)

The persona's mistaking a tailor for a god descended from "Jupiter Capitolinus" (Tale 76) leads him to couch his tale in terms of Peter, Martin, and Jack's exploits in the beau Monde, which is all the persona is concerned with. This aspect of the persona recalls "the crass materialism of the new science and the atheistic implications of the mechanical philosophy" (Jones 229). The persona describes every religious tenet or controversy as a ploy by which the three brothers can profit or make points with the ladies "in chief Reputation" (Tale 74). Swift condemns those religious projectors who tamper with simple

doctrine. These would include Burnet, Derham, Boyle, and Ray and are attacked through his characterization of Peter in the Tale.

Similar insights inform "The Mechanical Operation of the Spirit." Its full title, "A Discourse Concerning the Mechanical Operation of the Spirit, in a letter to a Friend, A Fragment" (Spirit 259), parodies Boyle's first published experiments "made with his new air pump . . . in the form of a letter addressed to Viscount Dungarvon, son of Boyle's eldest brother" (Hall 24). The persona combines the mechanistic view of creation,

there were diffused through the universe an intelligent being . . . careful to administer all things wisely . . . so far as is consistent with the good of the whole, and the preservation of the primitive and catholick laws established by the supreme cause; as in the . . . clock of Strasbourg. (Hall 146)

with a decidedly sexual influence:

it is manifest that the fanatick rites of These Bacchanals, cannot be imputed to Intoxications by Wine, but must needs have had a deeper Foundation. What this was, we may gather large Hints from certain circumstances in the course of their Mysteries. For in the first place, there was in their processions an entire Mixture and Confusion of Sexes; they affected to ramble about Hills and Desarts: Their Garlands were of Ivy and Vine, Emblems of Cleaving and Clinging . . . They bore for ensigns, certain curious figures, perched upon long poles made into the Shape and Size of the Virgin genitalis (Spirit 284-285)

That any rite could have something other than a physical foundation would never occur to the persona. As a result he concludes that "these Bacchanals" must have been nothing but orgies. Similarly, his discourse concerning "this Mechanical Operation of the Spirit . . .

as it is at present performed by our British Workmen" (Spirit 267). discovers that "all females are attracted by Visionary or Enthusiastick Preachers, tho' never so contemptible in their outward mien" (Spirit 288). The persona shows his Puritan materialistic sympathies in his use of the term "workmen." He removes all doubt of this in his description of "the Phoenomenon of Spiritual Mechanism" (Spirit 271), and he is "resolved immediately . . . to make it clear, that this Mystery of venting spiritual Gifts is nothing but a Trade, acquired by as much Instruction, and mastered by equal Practice and Application as others are" (Spirit 276). The persona considers the "spirit" to be a function of breathing and speaking, something which can be manipulated as an air-pump. The persona describes "the Master Work-man [who] shall blow his Nose so powerfully as to pierce the Hearts of his people . . . For the Spirit being the same in all, it is of no Import through what vehicle it is convey'd" (Spirit 279). In A Tale of a Tub, the persona traces the history of the

learned Aeolists [who] maintain the Original Cause of all things to be Wind . . . that is to say the Spirit, or Breath, or Wind . . . What are all these but several appellations for Wind? which is the ruling Element in every compound and into which they resolve upon their corruption. Farther, what is Life itself but as it is commonly call'd the Breath out of our Nostrils? (Tale 150-151)

The persona carries this reduction to its extreme: the spirit is only wind, yet everything is made up of wind, therefore everything is nothing but wind, which is Life's ruling "element."

Thus, Swift forces the persona to carry this reduction of "Mysteries we cannot comprehend" (Prose Works IX 167) to the point where

spirituality is treated as an operation on a par with shipbuilding or watchmaking and explained by "enthusiasts" and religious projectors. Such a reduction is seen as a justification, as it gives material reasons why spiritual "workmen" are as beneficial as their laboring brethren. This enthusiastic reasoning is plainly abhorrent to Swift, who extends this reduction throughout the persona's entire range of perceptions. The persona sees everything mechanically, which leads him to liken life to a long sea-voyage in which it is necessary to have many women, because on a sea-voyage it is necessary to have a large "store of Beef" (Spirit 286). His outlook is natural because of his education that emphasizes "the Preservation and Encrease of wealth by trades and mechanicall Industries" (Jones 157) over an education that prepares one to humbly wonder and obey God's commands to depend "upon his Truth and His Holy Word to believe a Fact that we do not understand" (Prose Works IX 164). Swift draws examples from nature to illustrate that "The growth of an Animal or of a Plant, or of the smallest Seed is a mystery to the wisest among Men" (Prose Works IX 164). This implies that it would take a fool to project explanations of these processes. Swift uses the persona to attack the reduction of divine mysteries by

those strong unbelievers who expect that all Mysteries
should be squared and fitted to their own Reason.
(Prose Works IX 167)

Swift attacks men such as Burnet, Vaughan, Ray and Derham. In the sermon "On the Trinity" he labels opinions such as theirs "miserably defective, absurd, and ridiculous" (Prose Works IX 167). These opinions place man's faith in his explanatory powers rather than in God's power. Swift attacks them as the feeble productions of second-rate religious

and scientific projectors. Their misplaced faith reduces the world to an array of materials that exist for man's exploitation by projectors bent upon imposing their systems onto a purely mechanical world. Swift attacks the physico-theologists because they reduce the spirit and its mystery, the faith which is a foundation of religion for Swift, to physical, materialistic terms, which can be profitably exploited for "the advancement of learning."

PHILOSOPHICAL REDUCTIONS

Swift portrays the physico-theologists as hack-theologians posing as modern Aquinases. Similarly, he attacks them as incompetent scientific projectors who damage science in order to make a name for themselves. George Griffith's dissertation, Jonathan Swift's Relation to Science, finds that Swift was familiar with most of the contemporary scientific trends and that he had clear ideas concerning its proper use within society. Griffith discloses that Swift's tutor at Trinity College, St. George Ashe, along with Sir William Molyneux "inaugurated the scientific movement in Dublin by starting their own group modeled after the Royal Society in London" (Griffith 54). The Dublin Philosophical Society was founded eighteen months after Swift entered Trinity College. In a piece entitled "A Dialogue in the Castilian Language," Griffith says that "Swift's use of technical subject matter and technical vocabulary reflects a considerable knowledge of science on Swift's part" (Griffith 56). Swift uses this technical knowledge to form definite ideas about the proper use and place of science within society. In A Tale of a Tub, he attacks physico-theology's improper exploitation of science. Specifically, he attacks the physico-theologists' reduction of God and the inflation of the scientist inherent in the use of an observational, materialistic science to explain God's laws. If religious projectors can puff up their egos at God's expense, then scientific projectors puff up their egos at the expense of their humanity. Swift also attacks their ridiculous schemes and experiments, implying

in "The Digression Concerning Madness" that this ridiculousness stems from the projectors' shoddy education. This shoddy education leads these projectors to concoct outlandish schemes with no basis in or regard for reality or common sense. Swift implicitly criticises a society that allows such scientific con-men a voice. In drawing his persona, he creates a figure fully unaware of the ethical problems his work implies. Swift can not leave this position unattacked.

Marjorie Nicholson, along with several others, has shown Swift's familiarity with experiments printed in the Philosophical Transactions of the Royal Society, which served as fodder for many of the "projections" in Book III of Gulliver's Travels. Evidence of experiments taken from the Philosophical Transactions can also be found in A Tale of a Tub. One of the "Students" bears a striking similarity to a projector described at the Academy of Lagado:

Accost the Hole of another Kennel, first stopping your Nose, you will behold a surley, gloomy, nasty, slovenly Mortal, raking in his own Dung, and dabling in his Urine. The best part of his Diet, is the Reversion of his own Ordure, . . . The Student of this Apartment is very sparing in his Words but somewhat over-liberal of his Breath. (Tale 178)

This description corresponds with that of the Projector found in the fourth paragraph of the fifth chapter of Book III of Gulliver's Travels:

To avoid offending him I durst not so much as stop my Nose. The Projector of this Cell was the most ancient Student of the Academy. His face and Beard were of a pale Yellow; his hands and Clothes dawbed over with Filth. His Employment . . . , was an Operation to reduce human Excrement to its original Food. (Prose Works XI 163-4)

The persona, as shown by his catalogue of pseudo-scientific treatises on the Tale's facing page, is the sort of projector who would

submit articles "Written for the Universal Improvement of Mankind" (Tale title page). The new philosophy caught this admirable desire to improve mankind and advance knowledge from Sir Francis Bacon's writings. Numerous mid-century writers, such as John Webster, John Durie, and Sir William Petty, published innumerable treatises attempting to show the benefits of Bacon's new philosophy. More often than not, however, these treatises were also Puritan propaganda. The Philosophical Transactions, in part descended from these writings, attest to the experimenters' industry, but one should question whether the time they spent gathering, observing, and testing objects was well spent. Swift leads us to this question in Gulliver's Travels by detailing the Lagodan projectors' schemes. The persona's schemes, projections, and attitudes require the same questioning.

Swift possessed

at least a passable understanding of the precise nature and value of the various scientific arguments favoring both the old and new doctrines . . . and was a perceptive critic of science, [but was also] a critic of the human condition. (Griffith 107)

Griffith asserts that "all of Swift's criticism reduces to a criticism of morals" and that Swift agreed that Science should apply "thought and labor to the mastery of nature" (Griffith 112). This is partly true; Swift does attack the physico-theologists' immoral or unethical use of science, but he goes further, attacking their unquestioning faith in their own powers. The new philosophy possessed a certainty, abstracted in part from Bacon's writings, that whatever it saw fit to do must needs be for "the universal Benefit of Human kind" (Tale 180, 184). While it

is true that the Tale is an attack on an immoral use of science, such a reduction detracts from the force of Swift's attack. Griffith's insight provides a valuable tool to help understand the essential unity of Swift's attack. The persona's ability to misinterpret, misunderstand, and be obfuscatory emphasizes Swift's criticism of those who blindly sought to master nature. Writers such as Burnet, Vaughan, Browne, and Derham would invent pseudo-scientific, pseudo-religious explanations for things that they could not sensibly explain. Swift does not attack their observations so much as he attacks how they misapply them to further their own schemes and projections. Burnet's Sacred Theory and the persona's history of the Aeolists in A Tale of a Tub are similar because of their misapplication of science.

Swift attacks the "incompetent scientist because he was incompetent, not because he was a scientist" (Griffith 122-123). Swift's circle of friends included many like Ashe, St. John, and Arbuthnot, who were acquainted with and interested in scientific research. G. R. Potter, in "Swift and Natural Science," says that "The virtuosos whom Swift knew best were not fools, and he did not think them fools" (Philological Quarterly XX, 114). Swift attacks the incompetents by basing his satires and personas upon real people and writings. This is essential for his satire to be effective. If there is no recognizable person or type under attack, the attack is wasted, as Swift notes in the persona's muddled praise of the bad satire that he deems praiseworthy:

Satyr is a sort of Glass, wherein Beholders do generally discover everybody's Face but their Own; which is the chief Reason for that kind of Reception it meets in the World, and that so very

few are offended with it. (Battle 215)

Swift, as we have seen, parodies Boyle's work in "The Mechanical Operation of the Spirit." Nicholson demonstrates that he parodies actual experiments. Miriam Starkman established detailed relationships between projectors and characters in A Tale of a Tub in her book Swift's Satire on Learning in A Tale of a Tub. Such a foundation in reality allows Swift to show that at its worst, the new philosophy produces men "who are impractical to the point of stupidity, indifferent to obvious common sense [and live] in a plane of abstraction remote from common human needs" (Griffith 126). these isolated, impractical men are also capable of actions remote from human needs and concerns. Such a man can blithely comment that "Last Week I saw a Woman flay'd, and you will hardly believe, how much it altered her person for the worse" (Tale 173). The persona relates this comment in a digression in the midst of the "Digression concerning the Original, the Use and Improvement of Madness in a Commonwealth" (Tale 162). The persona argues here that the most preferable knowledge is that "which converses about the Surface . . . the Outside [is] infinitely preferable to the In" (Tale 173). He can only imagine Reason as a projector "with Tools for cutting, and opening, and mangling, and piercing" (Tale 173). Reason, then, is something that upsets happiness, which the persona defines as being the "perpetual Possession of being well deceived" (Tale 171). Swift's attack firmly states that these men have lost their human capability of proper reason by following the methods of physico-theology.

The Royal Society's experimental procedures suggest the persona's view of Reason and Nature. In addition to such epic productions as Sir

William Petty's "History of the Common Practices of Dying," which pertains to fabric coloration, (Sprat 284) Sprat's History gives examples of experiments

of keeping Creatures many hours alive by blowing into the Lungs with Bellows, after that all the Thorax, and Abdomen were open'd and cut away, and all the Intrails save Heart and Lungs remov'd. (Sprat 218)

These quotations show that nature has become purely an experimental laboratory. Expressions of concern for the animals is token as Sprat also tells of

Experiments Medicinal, and Anatomical; as of cutting out the Spleen of a Dog: of the effects of Vipers biting Dogs: . . . of injecting various liquors, and other Substances, into the veins of several Creatures. (Sprat 223)

Sprat finds this last practice admirable enough that he later praises its originator, Sir Christopher Wren, for being

the first Author of the Noble Anatomical Experiment . . . By this Operation divers Creatures were immediately purg'd, kill'd, or reviv'd, according to the quality of the liquor injected. (Sprat 317)

Although these experiments did lay the foundation for the transfusion of new blood into medical thought, the trail of dead animals and the thinking which proposed such experiments was suspect. The physico-theologist, who "from his Experiments . . . has always before his eyes . . . Gods Works" (Sprat 349), is always capable of damaging those works in the name of science. The accompanying notion of progress ensures that he will praise his damage as actually being beneficial. This sort of inverted, self-deceptive thinking prompts Swift to ascribe "the Advance and Progress of new Schemes in Philosophy" to madness (Tale 162). Sprat's praise of Wren for what are essentially gruesome experiments suggests

the foundations for Swift's irony within A Tale of a Tub. Swift attacks those who think and act in this reductive, exploitive manner. In his view, only people inflated with false knowledge and thinking can damage nature and praise themselves for it.

Swift criticizes the scientific projector who abuses the new philosophy to promote his personal schemes. Burnet and Derham are examples of such projectors in the same way that they were abusive of religion. Swift attacks the mentality that reduces everything to a material level. His criticism is compounded by the fact that such experiments and projections were used to provide "stronger Arguments . . . for . . . belief, in the eternal power and Godhead" (Sprat 349). Swift is not against science and scientists, but he sees it as a tool to help mankind and not as the end of an abstract advancement of learning. He attacks the scientific projectors' wild speculations. His persona is a projector wholly caught up in forms, with little or no sense as to the foundations upon which those forms should rest and less interest in finding them:

Wisdom . . . 'tis a Nut, which unless you chuse with
Judgment, may cost you a Tooth, and pay you with
nothing but a Worm. (Tale 66)

Martin Price uses this passage to illustrate that although the persona "argues from analogy, . . . his analogies gradually become less and less apt. . . . It is not merely folly which Swift is castigating but a perversion of values" (Price 91). Louis adds to this that "there is no way to 'chuse' a nut with 'judgment': judgment of a nut has to wait until after we have cracked the shell and bitten in" (Louis 56). The

persona's lack of common sense exposes a quality that Swift felt essential in a good in a good scientist (Griffith 137). While the persona sees science and criticism as activities which lay faults in men and the world open "by Exantlation, . . . or Incision" (Tale 67), Swift suggests that science's proper use is as

an Art to sodder and patch up the Flaws and Imperfections of Nature, [and whoever does this] will deserve much better of Mankind, and teach us a more useful Science, than that so much in present Esteem.
(Tale 174)

The persona says this in almost the same breath as he mentions the flayed woman. He adds that a scientist is one "whose Fortunes and Dispositions have placed him in Convenient Station to enjoy the Fruits of this noble Art; . . . a Man truly wise, creams off Nature" (Tale 174). The persona shows that he can make good observations, but he lacks the ability to use them properly. His ideal scientist is one like Boyle who can afford to idle away time with his experimentation and who has no reason to be concerned with practical benefits. In this quotation the persona also shows his preference for an exploitive science. Because of this superficial materialism, Swift allows madness and "digression [to overwhelm] the Tale . . . the outside has replaced the inside" (Price 94).

Swift insists that a scientist must be in touch with the world and his humanity to be an effective scientist. The persona's flippant attitude towards the world is grounded in his treating it as a field for gathering observations and proposing experiments. This attitude finds its culmination in the projector of "A Modest Proposal," but the persona shows its characteristics, which consist of reducing the world and

its "creatures" to a menagerie of experimentation. Where in religion the physico-theologists replaced faith in God with faith in their unique demonstrations of his grandeur, in science they were more often concerned with "recording priority of discovery" (Stimson 66) than with the actual discoveries. The persona quotes St. Paul's "learning puffeth Men up," but he goes on to prove with his next syllogism that "Words are but Wind; and Learning is nothing but Words" (Tale 153). The persona ignores the next part of the passage from I Corinthians that forms a part of Swift's constructive criticism of science:

Knowledge puffs up, but charity edifies. If anyone thinks that he knows anything, he has not yet known as he ought to know. (Icor 8:1-2)

Swift asserts that scientists must use compassion and understanding along with their knowledge. His criticism of the physico-theologists goes beyond earlier criticisms and reveals his fundamental concern for humanity. The physico-theologists who exploit nature in order to propose schemes to demonstrate God's grandeur and give a Boyle lecture abuse science in order to acquire

that Praise [that] was originally a pension paid by the World: but the Moderns finding the Trouble and Charge too great in collecting it, have lately bought out the Fee-Simple; since which time, the Right of Presentation is wholly in our selves. (Tale 47)

This relegates the aim of improving man's quality of life to a position which is subordinate to that of the scientist's position and comfort. This attitude truly skims the cream off of nature, "leaving the Sower and the Dregs, for Philosophy and Reason to lap up" (Tale 174). Swift's position does not rule out research and it does not contain the "crass

materialism" found in mid-century writings and to a degree in Sprat's History. Swift brings a religious humanitarian's viewpoint to science: it is a branch of learning that can aid mankind, but if abused as an end in itself or some other abstract pursuit it can create scientists who lose touch with their humanity. The persona shows this when he dispassionately observes the skinned woman and can humbly propose

[that] by . . . duly distinguishing and adapting
 their Talents, [Lunatics] . . . might prove
Admirable Instruments for the several Offices
 in a State. (Tale 176, emphasis added)

This scientific projector believes that this would be a wise action, since he was once a "student" at Bedlam. He believes that all of his projects for "the Advancement of Universal Knowledge" (Tale 106) are worthwhile because he has produced them, which echoes Burnet's attitude. He has no real concern for anything save "all Modern forms" (Tale 45). He can state that he looks forward to passing a long life as a "Philosopher . . . with a conscience void of Offence" (Tale 71). Swift's implicit statement is that the persona has no conscience with which to be aware of his offenses. Swift's attack is obvious; such a man loses something of his humanity because his education does not allow him to have compassion. Further, such a projector abuses science by perverting it from its best use in order to impose his views on and gain a material advantage from the world. Instead of working to correct nature's flaws, the physico-theologist persona wishes to exploit them for his personal benefit. For Swift this is an unpardonable abuse of both learning and religion.

PHILOSOPHICAL PHOBIAS:
ABUSES IN LANGUAGE

Swift's attack on the physico-theologists' abuse of learning is displayed in the persona's use and misuse of language throughout the three works. I have already suggested how the persona undermines or exposes his positions through his use of language. The persona's inability to use language effectively underscores his reductive thinking in politics, science, and religion. Swift demonstrates his criticism that empirical science is ineffective by itself by showing that his persona can not think clearly. Swift understands that while classical education has its abuses, it can teach one to think and communicate ideas and observations effectively. The persona, lacking this education, is unable to constructively manipulate language.

Swift believed that the new philosophy and the physico-theologists deserved attack because of the Puritan materialism inherent in their abuse of Bacon's concept of "the Advancement of Learning . . . [as] exposing the deficiencies in knowledge" (Jones 42). Bacon wished to "turn men's faces from the past to the future" (Jones 42). To do this he condemns antiquity in order to "give [the moderns] a higher opinion of their ability and resources" (Jones 43). Bacon focused attention on

. . . the reaction of the understanding to words . . .
[believing] that words filled the understanding with
misapprehensions, because, being invented to accomo-
date vulgar minds, they were defective. . . . In
short, language does not impart to the mind a true or
accurate picture of material reality, but fills it
with more or less fantastic ideas of nature. (Jones 48)

Bacon's solution is to call "forcefully . . . men's attention back to

the physical world . . . for truth was to be found not in the mind but in the world" (Jones 50-51). Thus the new philosophy shrinks from man's ability to shape the world through thinking, action, and language, preferring to exploit it to give themselves a higher opinion of their ability. Locke's Essay on Human Understanding proposed that the sensory world impresses its truths into the blank slate of the human mind. This built upon Bacon's ideas concerning language. Its material reduction banishes spirituality from its language. Bacon and Locke's distrust of men's reactions to language follows from their distrust of the imagination. This leads to their distrust of the spiritual and all that can not be tangibly observed. This creates a religious position that is avoidable only if one maintains the separation between science and religion that Bacon recommended. The new philosophers who followed Bacon replaced this ambiguous spirituality with the materialism that prompts John Webster to praise mathematics because it enables "men to build houses, practice navigation, make war, and in general assist all mechanic operations" (Jones 102). Bacon's rallying cry worked to give the new philosophers faith in their ability to form the world in their image of material progress.

Swift understood the major implications of these premises and uses them to furnish "Matter for a Satyr, that would be useful and diverting" (Tale 4). He grounds his fundamental attacks on the abuses of "Learning . . . by way of digressions" (Tale 4). Bacon's empiric method suggests this approach because if one's consciousness can not shape or understand the world, then one is necessarily led "in . . . Disposure of

Employments of the Brain . . . to make Invention the Master, and to give Method and Reason the Office of its Lacquays" (Tale 209). "Method and Reason" relate to a mind that can properly shape and interpret its consciousness; thus it is natural for "a Servant of the Modern Way" (Tale 209) to ignore them because he is only taught sensory observations and impressions. Because these constantly change, the persona digresses due to the "unhappy shortness of [his] memory" (Tale 92). The numerous "Digressions in one another, like a Nest of Boxes" bear witness to this (Tale 124). Derham's rambling chapters also go out of their way to point out God's grandeur in objects that may or not be relevant to his immediate subject. Such projections abuse learning in two ways: they replace the whole of learning with its scientific, empiric part and they use this part for their own benefit. Physico-theology's foundation suggests its abuse of empiricism as evidenced by its projectors' attempts to instill awe and reverence by presentations of God's material power or skill, which they present as demonstrations of his wisdom.

Thomas Sprat's History of the Royal Society contains such attempts and it digresses to the extent that Sprat can not remain true to his title:

though this book does treat of many Subjects that are not Historical, yet I have presumed to name the whole a History, because that was the main end of my Design.
 The Style perhaps in which it is written, is larger and more contentious than becomes that purity and shortness which are the chief beauties of Historical writings: But the blame of this ought not to be laid upon me, as upon the Detractors of so noble an Institution: For their Objections . . . did make it necessary to write of it, not altogether in the way of a plain history, but sometimes of an Apology. (Sprat ad. to reader)

Sprat goes on to sandwich "the narrative it self" between a "short view of the Antient, and Modern Philosophy" and a section of experiments performed and treatises published by Society Fellows. Sprat notes that the Grecian wit "was admirably fit for the reducing of Philosophy into method" and that the Romans did not study nature, endeavoring after "no other skill than that of the Customes and Laws of their Country, the ceremonies of their Religion, and the Arts of Government" (Sprat 8,10). Sprat leaves himself and the Royal Society open to charges that by studying nature, they are out of touch with the customs and ceremonies of their religion and government.

Swift, as I have shown, does make these charges. He does this to further his attack on the abuses of learning by the physico-theologists. They are fundamentally out of touch with reality because they have replaced learning, the process by which one comes to understand one's place in nature, society, and religion with the scientific, materialistic part of its whole in order to gain material advantages from nature. The physico-theologists take this one step further, arguing that material nature gives suitable demonstrations of God's grandeur. The "conviction of things unseen" is no longer necessary because it is replaced with a conviction of man's ability to explain and exploit the natural world for material benefit. This becomes one of the hallmarks of the new philosophy, of which Sprat enthusiastically predicts that "we may well guess that the absolute perfection of the True Philosophy, is not now far off" (Sprat 29). The "true philosophy" diminishes its adherents' ability to take part in society and ultimately produces people less than totally

human because they lack the education that prepares them to take part in their government, society, and religion.

Swift illustrates this by showing his persona's inability to understand the English language in these three works. The persona uses the language, but "he does not comprehend what the image is supposed to do for the idea" (Louis 58) because he has not learned the meanings which underlie the superficial appearances of the words. This is what allows him to dedicate the Tale "to his Royal Highness, Prince Posterity" (Tale 30). He thinks that this "Prince" can save his tale from the fate of his fellow projectors' writings. Because he is not able to judge quality, he can not understand why broadsheets, pamphlets, and treatises all disappear from the world so quickly:

To affirm that our Age is altogether Unlearned, and devoid of Writers in any kind, seems to be an assertion so bold and so false, that I have been sometime thinking, the contrary may almost be proved by uncontrollable Demonstration. 'Tis true indeed, that altho' their Numbers be vast, and their Productions numerous in proportion, yet they are hurried so hastily off the Scene, that they escape our Memory, and delude our Sight. (Tale 34)

The persona argues with the terms that he is familiar and these are those of the theatre and the "demonstrations" of physico-theology. He confuses quantity for quality and shows his faith in material reality when he defends

the Grub-street Brotherhood against the two Junior start-up Societies, [who] ridicule them and their Authors as unworthy their established Post in the Commonwealth of Wit and Learning . . . I am informed, Our two Rivals have lately made an Offer to enter the Lists with united Forces, and Challenge us to a Comparison of Books, both as to Weight and Number. (Tale 64)

The new philosophy does not allow the persona any other methods of judgement. A similar premise underlies "The Battle of the Books" where the mock-epic catalogue of the modern forces and their bickering as to who is their leader takes thirty-two lines of prose, while

the Army of the Antients was much fewer in Number;
Homer led the Horse, and Pindar the Light-Horse;
Euclid was chief Engineer: Plato and Aristotle
 commanded the Bow-men, Herodotus and Livy the Foot,
Hippocrates the Dragoons. The Allies led by Vossius
 and Temple, brought up the rear. (Battle 238)

The persona assumes that battle is the natural, preferred method for settling disputes. He has knowledge of the number of battles, not their causes or results. We can find something of this in Sprat's praise of historical writings for their shortness, instead of what they can teach us about how or how not to act in society.

The persona believes that learning exists to provide a method for "forcing into the Light with much Pains and Dexterity, my own Excellencies and other mens Defaults" (Tale 132). This statement follows from Bacon's successful attempt to give the moderns "a higher opinion of their ability and resources, and to encourage them in their conflict with nature" (Jones 43). Swift lets his persona do this by condemning Homer for not knowing the contemporary English legal system and by observing that

the Whole Course of Things being thus entirely changed
 between Us and the Antients; and the Moderns wisely
 sensible of it, we of this Age have discovered a
 shorter, and more prudent Method, to become Scholars
 and Wits, without the Fatigue of Reading or Thinking.
 (Tale 144-145)

Swift inverts the contention of the new philosophers that their edu-

cational theories were better due to their physical exertion and shows that they require little or no thinking. He argues that this produces people who can not think. Swift forces the persona to undercut his own position while the persona thinks he provides arguments in his favor. The persona compounds his error by describing that

the choicer, the profounder, and politer Method,
[of using books] . . . is to get a thorough In-
sight into the Index, by which the whole Book is
governed and turned, like Fishes by the Tail.
(Tale 145)

Swift's attack is twofold and directed against those projectors like Derham who are concerned with indexes, abstracts, and other sorts of collections. His attack is also against the thinking that can observe a fish swimming and conclude that it must be governed by its tail. In Swift's mind such thinking also leads one to assume that the rabble must also govern the state and that zeal and enthusiasm are the proper ends of religion.

Louis says that "Swift exposes language as the chief medium of learning distortion," elaborating that the persona verbally splits such empirically indivisible concepts as "mind" and "body" (Louis 105). She explains that "the muddleheads of the Tale 'split empirically' what can only be split verbally, parting what no man could put asunder" and that "Bacon and his posterity used this verbal split as a safe-conduct to take the world apart" (Louis 106). The persona is an unwitting heir to this verbal split, taking the part that he has received to be the whole. His world is reduced because of the way his figurative educators, the physico-theologists,

have manipulated language and learning to serve their own ends. They reduce learning "to a depraved and debauched Appetite, as well as to a crazy Constitution . . . which argue the Nation to want a Heart and Hands of its own" (Tale 144). Swift's image is apt. Without the foundation of a total education in the customs, laws, and religion of one's country and society, Swift argues that one is incapable of performing any truly useful actions within that society. Unless knowledge combines with charity and understanding, he argues that it can get "astride on Reason . . . and common Understanding, as well as common Sense is Kickt out of Doors" (Tale 171). One can then "advance new Systems with such an eager Zeal, in things agreed on all hands impossible to be known" that one becomes like the crazed projectors in Bedlam or the island of Lagoda (Tale 166). Swift argues that to be a devoted servant of "the Rules . . . laid down by the Example of our illustrious Moderns" (Tale 92), is to diminish one's humanity. Learning becomes a tool to be manipulated, instead of a process that one engages in so as to be a constructive member in society. The physico-theologist projectors, in their abuse of language and learning, deny learning this possibility.

FINAL OBSERVATIONS

Seventeenth-century political, religious, and philosophic upheaval threatened established views. Cromwell's Commonwealth, Puritanism, and Sir Francis Bacon's writings were attacked as either subversive, atheistic, or absurd. These developments were generally associated with the Puritans. Their defenders claimed that the modern political thought of Hobbes and Machiavelli was truer and more accurate than existing works, that the Puritans had purged the last vestiges of papacy, and that Bacon's empiric new philosophy made possible many new discoveries. The Commonwealth's failure discredited the religious and political trends, but Charles II legitimized the "new philosophy" by recognizing and allowing the Royal Society to promote experiments in this new branch of learning. The Royal Society responded to new attacks with works such as Thomas Sprat's History of the Royal Society and Robert Boyle's many publications, which attempted to show that new philosophy could give material proofs of God's existence. Physico-theology sprang from these defensive demonstrations of that which religion relied on faith to prove. It had wide popular appeal and was associated with Society Fellows such as Boyle, Thomas Hooke, John Ray, and William Derham. The opposing camps grouped into factions known as "Ancients" or "Moderns."

In 1697, at a lively time in this debate, Swift began to write his satiric attack against the abuses of religion and learning. It appeared in 1704 as A Tale of a Tub, to which were added "The Battle of the Books and The Mechanical Operation of the Spirit." He created a "modern"

persona to relate a diversionary tale of the Christian religion, along with digressions attacking the modern learning. Swift follows these basic abuses and criticises the abuses they lead to in politics and science. The persona is a quack-scientist or projector who believes his schemes significant, when they are actually misinterpretations and faulty observations upon political, religious, and scientific matters.

Swift's use of a persona forces a particular analysis to determine the extent and target of his satiric attack. Swift attacks the opinions and thought processes of his persona in these three works. Because of this my operative question required that I show that the persona either does or does not represent the observations and perceptions of the physico-theologists.

Jonathan Swift's persona in A Tale of a Tub represents the views espoused by the physico-theologists in politics, religion, science, and learning. He is exaggerated to call attention to the abuses in religion and learning of which Swift felt the physico-theologists guilty. Swift makes use of an augmentive-reductive paradox throughout his exaggeration. He applies a man inflated with false knowledge and enthusiasm's reduction of the world to several situations which illustrate the persona's ability to confuse reality. Swift parodies the physico-theologists's methods in his illustrations of the persona's ineptness.

Physico-theology occupies an obscure niche in history. The most notable physico-theologists are dimly recognized today, while most are

not . . . to be heard of: Unhappy Infants, many of them
barbarously destroyed before they have so much as learnt
their Mother-Tongue to beg for pity. (Tale 33)

That Swift attacked the abuses of religion and learning in A Tale of a Tub, "The Battle of the Books," and "The Mechanical Operation of the Spirit" is recognized and justly praised. But to see these three works as broad-based attacks on the general abuses of religion and learning detracts from their impact. Swift attacks specific people and ideas, not generalities. W. A. Eddy's view that Swift's victims are unimportant is false. Swift's specific focus grounds his criticisms in reality, while allowing him to use this focus to offer constructive criticism. Swift attacks general criticism in the Tale's preface, saying:

I apprehend some curious Wit may object against me, for proceeding thus far . . . without declaiming, according to the Custom, against the Multitude of Writers whereof the whole Multitude of Writers most reasonably complains. (Tale 95)

General criticism can thus be a form devoid of meaning and focus. Unfortunately, most modern critics of Swift's work are still rather tentative about assigning victims. These works are admirable explorations of Swift's abilities, range, and motivations and their criticism has advanced greatly from Sir Leslie Stephen's Victorian assumption that Swift was necessarily an insane curmudgeon. Without works such as Martin Price's rhetorical analysis and Irvin Ehrenpreis's biography, this research would have been impossible. Their arguments are invaluable. However, their reluctance to suggest a specific focus for Swift's attack in these three works renders them unable to acknowledge the full range of his achievement.

Swift's specific satiric focus was the physico-theologists because they upheld positions that he found either dangerous or potentially

dangerous in politics, religion, science, and learning.

Due to its small size, England still maintains a nominally unitaristic government. In this centralized system, government's responsibility to its citizens necessarily deteriorates if any group or faction gains control of government to exploit it for their own ends. Today the opposition forms a check to prevent this from occurring. It was not apparent that this would occur in eighteenth-century England. Ehrenpreis shows that political parties were a new and disturbing element in a governmental body that prides itself on its essential unity. Swift believed that the Civil Wars were caused in part by the rise of political factionalism. Both parties tried to convince the country of their political truth and power. The Tale's persona is right when he remarks that pamphlets were offensive weapons. They attempted to influence public thinking and were often little more than the rantings of power-hungry bigots. Swift is aware of two reductions in these pamphlets: the reduction of a country's interests to those of a faction, and the reduction of a reader's thought to factional thinking. Swift finds the second the more dangerous because factions, to exist, must contain people. Swift asserts in the "Sentiments" that

to sacrifice the Innocency of a friend, the Good of our Country, or our own Conscience, to the Humor, or Passion, or Interest of a Party; plainly shews that either our Heads or our Hearts are not as they should be: Yet this very practice is the fundamental Law of Faction among us.
(Prose Works II 1)

Swift believed that the physico-theologists presented a potential political danger because of their connections with the Puritans and the Commonwealth, their attacks on the established learning, and their

threat to the established religion. The Long Parliament's crises remained embedded in Swift's memory. The physico-theologists possessed the characteristics of a faction and had a dominant special interest. The Boyle lecture series showed physico-theology's popular appeal and this helped occasion Swift's attack. This consists of exposing his persona as unable to think constructively. Swift did write political treatises, but Ehrenpreis points out that Swift often sacrificed his chances for material advancement to remain true to his beliefs. He did not think that factions could govern as well as a united parliament, and wrote to prevent them from gaining control of the government.

Swift's religious criticism of the physico-theologists centers on their reduction of a spiritual and material world into one purely material. Derham's demonstrations attempt to provide material evidence of God's wisdom without resorting to faith or spirituality. For Swift, this was an abomination. "The Mechanical Operation of the Spirit" was rightly perceived by many to be disgusting, but for mistaken reasons. Swift, by parodying Boyle's air-pump experiments, shows his disgust with physico-theology. "The Mechanical Operation" shows that Swift understood that to banish spirituality allowed men to view creation as a machine. Such thinking suggests the augmentive-reductive paradox that Swift traces throughout the three works. Physico-theology's religious abuses threatened the Anglican Church because it allowed religious and scientific projectors to present their unorthodox views in churches through programs such as the Boyle lectures.

Physico-theology threatened to stifle science in an avalanche of

demonstrations of God's grandeur. Swift bases his criticism on a belief that science can be a beneficial tool if used by men properly educated to utilize its potential. The Royal Society's early composition was bottom-heavy with dabblers, projectors, and superficial virtuosos. In Scientists and Amateurs Dorothy Stimson says that its scientists often had difficulties obtaining enough money to pursue research. Such action was a perversion of the Society's stated goals. Swift criticized this perversion in his presentation of the persona, who is a dabbler and virtuoso that believes projectors to be the new Aristotles. Swift saw physico-theology diminished science's effectiveness in correcting nature's flaws. He does not object to scientific research; he objects to forcing it to provide absurd and unnecessary proofs of God contrary to the Bible's calls to faith. Finally he objects to the paradoxical mechanistic reduction which would allow science to exploit creation without regard to its care.

These attacks are united by Swift's constant criticism of the reductive nature of the new philosophy's proposed empiric, materialistic education. Swift argues that science is only one branch of learning. To emphasize its role is to make the part function as the whole, or the surface become the entire object. This action harms both science and other forms of learning. In its haste to discredit the Ancient learning, the new philosophy disposes of conceptual and structural thinking and learning and replaces it with hands-on vocational learning. Swift objects that this threatens to produce people incapable of thinking properly.

These three works provide pages of demonstrations that the persona has no idea of what he speaks because he has only been taught forms. The new philosophy turned away from the ancients so effectively that they began to praise themselves in the excessive manner of Sprat's enthusiastic visions of "the perfection of the True Philosophy." They scorned the ancient writings while lavishing praise on projections based upon untested principles. Swift charges that these principles lack that which produces men capable of compassion because they allow men to believe that Creation exists solely for their material exploitation. Thus the persona can compare women to cattle and recommend lunatics for government offices. Swift's criticism of the new philosophy's materialistic education is that it produces projectors who are not men, but rather perverted forms of men. A Tale of a Tub, "Battle of the Books," and "The Mechanical Operation of the Spirit" illustrate Swift's conviction that

to move the Passions . . . is not the Business of a Christian Orator, whose Office it is only to work upon Faith and Reason. All other Eloquence hath been a perfect Cheat, to stir up Men's Passions against **Truth and** justice, for the service of a Faction, and by an Amusement of agreeable Words, make the worse Reason appear to be the better. (Prose Works IX 214)

NOTES

¹ For an example of this, please see Johnson's definitions of "philosophy" and "philosopher."

² Cf. Gardner's Art Through the Ages, seventh ed. p. 685.

³ For a more detailed discussion of the Boyle Lectures see H. P. Kroitor, "Cowper, Deism, and the Divinization of Nature," Journal of the History of Ideas, XXXI (1960), 511-526.

⁴ Cf note 3.

⁵ Cf. note 3.

⁶ Jonathan Swift, A Tale of a Tub, To which is added The Battle of the Books and the Mechanical Operation of the Spirit. A. C. Guthkelch and D. Nichol Smith eds. 2nd edition. London: Oxford, 1958. Hereafter cited as Tale, Battle, or Spirit.

BIBLIOGRAPHY

- Brownley, Martine. Clarendon and the Rhetoric of Historical Form. Philadelphia: Univ. Penn. Press, 1985.
- Burnet, Thomas. The Sacred Theory of the Earth. Basil Willey ed. Oxford: Oxford Press, 1960.
- Davis, Herbert J. Jonathan Swift: Essays on His Satire and Other Studies. New York: Oxford Press, 1964.
- _____. ed. The Prose Works of Jonathan Swift. 14 vols. Oxford: Oxford Press, 1962-1966.
- Derham, William. Astro-Theology. London, 1715.
- Ehrenpreis, Irvin. Swift: The Man, His Works, and The Age. 3 vols. Cambridge, MA: Harvard Univ. Press, 1967.
- Ford, Boris, ed. From Dryden to Johnson. Baltimore: Penguin, 1965.
- Griffith, George. Jonathan Swift's Relation to Science. Nashville: Vanderbilt, 1970.
- Hall, Marie Boas. Robert Boyle on Natural Philosophy. Bloomington IN: Indiana Univ. Press, 1965.
- Jones, Richard F. Ancients and Moderns. Berkeley: Univ. Calif. Press, 1965.
- Kroitor, H. P. "Cowper, Deism, and the Divinization of Nature," JHI, XXXI (1960), 511-526.
- Louis, Frances. Swift's Anatomy of Misunderstanding. Totwa NJ: Barnes and Noble, 1981.
- Price, Martin. Swift's Rhetorical Art. London: Archon, 1963.
- Moore, Leslie. "Instructive Trees:" Swift's Broom-Stick, Boyle's Reflections, and Satiric Figuration." Eighteenth-Century Studies, vol. 19 no. 3. (1986) 313-332.
- Potter, George. "Swift and Natural Science," Philological Quarterly, XX (April 1941), 97-118.
- Sprat, Thomas. History of the Royal Society. J. Cope and H. W. Jones, eds. St. Louis: Washington Univ. Press, 1958.

Swift, Jonathan. A Tale of a Tub: to which is added The Mechanical Operation of the Spirit and the Battle of the Books.

A. C. Guthkelch and D. Nichol Smith eds. Oxford: Clarendon Press, 1958.

White, Andrew D. A History of the Warfare of Science with Theology in Christendom. New York: The Free Press, 1965.

Willey, Basil. The Eighteenth Century Background. London: Chatto AND Windus, 1949.