THE SCHOLASTIC AND EXPERIMENTAL METHODS
IN THE WORKS OF B.G. FEIJOO

by

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ABSTRACT

The conflict between the scholastic and experimental methods in the works of Feijoo is essentially the conflict between traditional and contemporary thought. In this study, therefore, both methods are interpreted in a very wide sense. The scholastic method represents the traditional studies of grammar, rhetoric and logic. The experimental method represents the empirical attitude and the innovations in mathematics that begin in western Europe during the seventeenth century.

The first chapter of this study defines the conflict between tradition and innovation as it appears in Feijoo's first published work, Apología del Scepticismo Médico. The second chapter examines the traditional aspects of Feijoo's thought as they manifest themselves in his use of scholastic logic. The third chapter considers Feijoo's debt to the innovations of Descartes. The fourth chapter examines his approach to traditional physics, modern physics and the experimental method. The final chapter shows how Feijoo's attitude to ancient and modern thought appears in his aesthetic theories.
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ABBREVIATIONS

Ad. : Sobre el Adelantamiento de Ciencias y Artes, C.E. 3. xxxi.
At. : Causas del Atrasso que se Padece en España, C.E. 2. xvi.
Aul. : Dictado de las Aulas, T.C. 8. iii.
Crit. : De la Crítica, C.E. xviii.
Dis. : Abusos de las Disputas Verbales, T.C. 8.i.
Div. : Divorcio de la Historia y la Fábula, T.C. 5. viii.
El. : La Elocuencia es Naturaleza y no Arte, C.E. 2. vi.
Im. : Despotismo o Dominio Tyránico de la Imaginación, C.E. 4. viii.
Log. : De lo que Conviene Quitar y Poner en la Lógica, T.C. 7. xii.
Mag. : El Gran Magisterio de la Experiencia, T.C. 5. xi.
Mat : De los Philósofos Materialistas, C.E. 4. ii.
Med. : Hay Medio entre el Espíritu y la Materia, C.E. 5. ii.
Mod. : Consectario contra Philósofos Modernos, T.C. 1. xiii.

1. Cartas Eruditas, volume three, letter thirty one.
2. Teatro Crítico, volume eight, discourse three.
Nsq. : El No Sé Qué, T.C. 6. xii.
Per. : La Introducción de algunas Voces Peregrinas, C.E. 1. xxxiii.
Phy. : De lo que Sobra y Falta en la Phísica, T.C. 7. xiii.
Pie. : Piedra Philosofal, T.C. 3. viii.
Raz. : Razón de el Gusto, T.C. 6. xi.
Ref. : Reflexiones sobre la Historia, T.C. 4. viii.
Scep. : Scepticismo Philosófico, T.C. 3. xiii.
Soph. : Desenredo de Sophismas, T.C. 8. ii.
Sum. : De lo que Conviene Quitar en las Súmulas, T.C. 7. xi.
INTRODUCTION

The importance given, on the one hand, to Feijoo's battle against the teaching of the schools, and on the other hand, to his preference for empirical evidence, is recent. The contemporaries of the Benedictine who were concerned with his opinions on traditional and modern thought sought mostly to defend accepted scholastic studies. Their attacks, strongly influenced by their interests, too often resemble invective and do not provide a valuable picture of the Benedictine. One of the less heated appraisals of Feijoo was published by Mayans y Siscar in 1731:

The reading of this man occupies almost all the people of Spain for no other reason except that ignorant and uneducated people are amazed by the variety of so many topics; Feijoo is, nevertheless, endowed with extraordinary talent, something which nobody denies him ... His composition is tainted with clear but foreign words. He has been attacked by many; but since he has encountered weak adversaries, he laughs at their attacks. He may perhaps be unable to endure as much from a powerful adversary if his work should be examined in a critical manner.

More recently, Menéndez Pelayo describes Feijoo's work as a series of short essays in the English manner, at times on historical criticism, at times against magic and superstition but giving emphasis to experimental physics and medicine. Feijoo's fight against, "la substitución de la
fé en el absurdo, típica del hombre primitivo, por la fe en las cosas demostrables mediante el raciocinio o la experimentación, que caracteriza el hombre civilizado".\(^3\) is the aspect of the Benedictine's thought which Marañón considers central. He shows that Feijoo deplores an excessive emphasis on speculative activity and favors the more practical sciences.\(^4\) Marañón attributes this attitude to the influence of Francis Bacon.\(^5\) But Delpy has shown that Feijoo did not have the patience to use a microscope which he returned to Sarmiento.\(^6\) This would not appear to be the act of a man dedicated to experiment and observation.

It is important, when considering Feijoo's attitude to experimental science, to distinguish between empiricism and experiment. If empiricism is the "fundamental recognition of the essential function of experience in the study of nature and the conviction that the senses have to furnish the date",\(^7\) then Feijoo favors this approach.

If the classical definition of the experimental method is that of Galileo, Feijoo is its doubtful advocate because he does not show anywhere that he understands such a method. The method of Galileo consists of the "metodo hypothesis and defines a specific task to test the hypothesis and the "metodo compositivo" which demonstrates through the performance of the task the validity of the hypothesis.\(^8\)
That Feijoo made an important contribution to Spanish thought is not denied here. But it is maintained that the critical attitude for which he is famous is not the result of his exposure to experimental science and that the value of his contribution to eighteenth-century Spain is to be found elsewhere than in his introduction of the experimental method into that country. It is to be found in his knowledge of the critical attitudes of Descartes and his followers; attitudes which were beginning to appear in Spain when Feijoo was writing.
FOOTNOTES

1. A. Millares Carlo, "Feijoo y Mayans", Revista de Filología Española, X (1923) p. 60.


4. Ibid., p. xix.

5. Ibid., p. xxxiii.


8. Ibid., p. 339.
CHAPTER I

The advances in mathematics and physics that were revolutionizing western European thought in the seventeenth century were scarcely beginning to be recognized in Spain when Feijoo published his first work, *Apoloquia del Scepticismo Médico*.

Born in 1676, the Benedictine was educated in a tradition that was still very much that of the grammarians and rhetors of antiquity. The grammar of antiquity consisted of the study of syntax and morphology through the best authors. Rhetoric was the study of figures of speech and forms of argument. Both disciplines dealt with stylistic and semantic problems. Specific fields of activity, e.g., philosophy, logic, or astronomy were considered only as they occurred in the classical authors. The introduction of the seven liberal arts by Augustine, M. Capella and Cassiodorus served to divide the study of grammar into more specialized disciplines.

Logic dominated the study of grammar in the medieval schools. The grammarians "tried to construct a Latin for which the authority was not usage but reason, finding
logical explanations for the existence of the different parts of speech and for the relationship between them".2

This combination of grammar, rhetoric and logic seems to have provided the greater part of scholastic studies in Feijoo's time. The value of these studies was being attacked by those who favored a return to a more practical, empirical attitude to education. Their proposals were criticized for two reasons: empirical knowledge was based on opinion and was invalid; empiricism led to heresy. Feijoo's Apología defends the Medicina Scéptica of Dr. Martín Martínez from these accusations. Martínez had been attacked by Bernardo López de Araújo y Ascárrago in a work called Centilena Médico-Aristotelica Contra Scépticos.

Both Plato and Aristotle were used as authorities, to prove that true knowledge was based on something other than experience. Knowledge based on experience was opinion. True knowledge involved universals:

Individuals among sensible things are in a state of flux... None of them is permanent, but... the universal exists apart from these and is something distinct from them... Without the universal it is impossible to acquire knowledge.

Araújo supported the tradition in which conditions that were universally true were established through textual analysis and dispute rather than through observation and experiment. In this tradition the "lectio" involved reading a text,
commenting on it, and defining problems that arose in it. This was followed by the "disputatio" in which arguments were formulated pro and contra. The literary manifestations of this method were characterized by the formulation of problems as "quaestiones". These were followed by objections and counter-objections. The above can be called, in very general terms, the scholastic method.

The more commonly-known works in the scholastic tradition limited themselves to theological implications of certain texts. Abelard's Sic et Non, for example, is a formulation of "quaestiones" which involve the problems encountered in the "sententiae" of the Church Fathers; nevertheless, texts in metaphysics and medicine are also considered. Since the tradition had become principally theological, any contradiction of authoritative texts risked being heretical. Peter of Capua writes in the thirteenth century:

Such is the way of dealing with theological questions according to the master. First, build a solid foundation on authority, second, construct walls of arguments and questions, third, cover with a roof of conclusions and demonstration, so that in the house of God authority proposes what is almost certain, whether an argument or a question be discussed or whether a conclusion elucidates or discourse relates clearly.

Medicine was among the first disciplines to reject a great deal of the scholastic tradition because it was the only faculty in the medieval universities that included,
"further training in natural science after the arts degree". This is not to say that the study of medicine was the only factor that led thinkers to question the adequacy of the scholastic approach. Willey suggests "a disharmony between traditional explanations and current needs". Kristeller considers that the humanist resuscitation of Greek texts and the study of Arabic texts contributed to radical changes in ways of thinking.

The scholastic commentary itself was being extended in the fourteenth and fifteenth centuries to include various biological works by Galen, Averroes and Avicenna. It is true, however, that the interest in these was prompted by theological topics. The time at which the soul enters the body, for example, is discussed along with the development of the foetus. Various commentaries deal with the nature of movement in animals. But it is some time before the study of anatomy is given much importance.

Martínez is first criticised on his concept of what constitutes valid knowledge since he advocates basing the study of medicine on opinion rather than on universal truths. Feijoo both upholds the traditional concept of knowledge and the concept proposed by Martínez. He quotes Francisco Valles, the commentator of Hippocrates and Galen, from the Philosofia Sacra, "Knowledge therefore is universal,
and intelligible. And the physician may labor as much as he please, he cannot liken his conclusion with true knowledge (Ap. 12)". Feijoo follows this with the words of Martínez:

En lo físico nos ha concedido Dios el uso de algunas verdades pero nos ha ocultado el íntimo conocimiento de ellas que presume tener la arrogancia dogmática. Sabemos que el opio adormece, que el fuego quema, que la luz alumbría; pero como hagán ésto no nos es concedido (Ap. 15).

Feijoo then distinguishes between knowledge of phenomena or "efectos sensibles" and knowledge of the causes of phenomena, "intimo modo de obrar (Ap. 17)". It is a certainty, he continues, that rhubarb purges, but it is uncertain by what virtue (virtud) it does so. It is not known whether this occurs in the classical sense of combining the four elements or in the modern sense of attraction and movement of particles.

Martínez is accused of heresy, first, because of his scepticism and second, because of his contradiction of religious authority. When the scepticism of Martínez is considered heresy Feijoo remarks:

Creer (Martínez) aquellos fenómenos, que la observación y la experiencia persuaden; duda de sus íntimas causas, y tal vez las juzga impenetrables por lo menos con aquel conocimiento que puede engendrar verdadera demonstración a priori (Ap. 25).
Martínez had contradicted religious authority because he maintained that there were errors in the work of Aristotle. Araujo points out that Benedict XII addressed a Bull to the Dominican Order in which he declared that there were no errors in the works of Thomas Aquinas. Araujo insists that, as a consequence, there could be no errors in the works of Aristotle.

Feijoo refutes this by maintaining that "error" is applied to theological error; that the Pope had not declared ex cathedra and in rebus fidei aut morum and that both the Jesuits and the Scotists contradict Aquinas on various points without being accused of heresy (Ap. 44-45). He cautions against confusing philosophical error with theological error. He writes, "Ocasionan grave daño, no solo a la Philosofía, mas aun a la Iglesia, estos hombres que temerariamente procuran interesar la doctrina revelada en sus particulares sentencias philosóficas (Ap. 25)".

Feijoo maintains that most of the thought of Aristotle remains unquestioned by Martínez. If anyone is discrediting Aristotle it is Araujo, whose incomplete knowledge does not do the philosopher justice, "Funda la Obra de Araujo un particular resentimiento a los que seguimos la Escuela Aristotélica, viendo tan mal defendida en ella la doctrina de nuestro Maestro (Ap. 5)".
FOOTNOTES


2. Ibid., p. 208.


CHAPTER II

Martínez had been criticised for dismissing the value of the "súmulas" or the handbooks of logic used in the schools. Feijoo defended Martínez and suggested that the time spent on these handbooks, whose study took anywhere up to a year, could easily be reduced to two months, "y no han menester más sus estudiantes, para hacerse, como se hacen después muchos, eminentes en otras ciencias (Ap. 31)". These handbooks, he continues, are studied simply with a view to proving theological doctrine. It is maintained that these studies sharpen the mind but there are many other disciplines that may be studied for the same purpose (Ap. 32). Theology is served adequately by being defended, whereas medicine is concerned with the discovery of the unknown:

En esta facultad (medicine) no es necesario desenredar sophismas, sino descubrir verdades; examinar los pasos de la naturaleza en las enfermedades, las diferencias de ellas, de sus síntomas, y buscar remedios oportunos (Ap. 35).

This cannot be accomplished by the dialectic of the "súmulas" or by the study of peripatetic physics, "Nada de cuanto contienen los cursos de Artes conduce para conocer las señales diagnósticas, ni prognósticas de las enfermedades (Ap. 37)".
The study of the "súmulas" had, according to Feijoo, been harmed by the excessive emphasis placed on some aspects of the formal disputatio. This emphasis had led to a preoccupation with the properties of terms, to a concern with the solution of sophistries and to the use of very rigid forms. Feijoo writes about the properties of terms:

Las siete partes de ocho que se gastan en tantas divisiones de términos, y proposiciones, modales, exponibles, exceptivas, reduplicativas, suposiciones, apelaciones, ampliciones, restricciones, alienaciones, diminuciones, conversiones, equipolencias y reducciones, de nada sirven; lo primero, porque todo esto luego se olvida, de modo, que apenas entre cien Theólogos, Juristas, o Médicos se hallara uno que conserve todas aquellas baratijas en la memoria: lo segundo, porque aunque no se olvide, apenas tiene jamás uso en la disputa (Sum. 2).

How had logic been reduced to these "divisiones de términos"? The tradition to which they belong consists of Aristotle's Organon, the Roman interpretation of Aristotelean and Stoic logic and the logic of the medieval universities. The works included in Aristotle's Organon are the Categories, the Topics, the De Sophisticis Elenchis. His most important contributions to logic are considered to be the Posterior Analytics and the Prior Analytics.¹

Aristotle's concept of the function of logic suffers from the ambiguity for which much of his work is famous. In the Prior Analytics logic is the science of demonstration and is composed of characteristic elements, e.g., propositions, terms (subject and predicate) and syllogism. In
the *Topics* and the *Rhetoric* it is principally the use of the syllogism in the reduction of the problematic to the probable. In the *De Sophisticis Elenchis* it is the method used to solve paradoxes and sophistries.

After the twelfth century the knowledge of ancient logic became more wide-spread, but the ambiguities which had been implied remained so that some of the most important controversies confined themselves to the purpose and nature of logic. As a consequence, medieval logicians brought into prominence isolated aspects of ancient logic; the study of the properties of terms and the study of sophistry. The study of sophistry ("fallaciae") incorporated the paradoxes of the Stoics and the problems that arise in the *De Sophisticis Elenchis*. The study of the properties of terms ("proprietates terminorum" was expanded to include a great deal of new thought. ²

This study, a combination of logic and grammar, underwent many changes before Feijoo's time. It began with a small number of classifications. William of Shyreswood, for example, states in his *Introductiones in Logicam*, "The properties of terms are four . . . and these are signification, suppositio, copulatio, and appelatio". As a study which is "intended to provide an account of the different roles that words or phrases can have when they appear in propositions", the "proprietates terminorum" were also con-
cerned to a great extent with grammatical distinctions and were not completely new. The term *suppositum*, for example, occurs in Priscian's *Institutiones Grammaticae*.

A typical handbook of logic with which Feijoo may have been familiar is the *Summulae Logicales* of Petrus Hispanus. Intended as a compendium of practical rules for students of elementary logic and as an aid for scholars participating in the disputationes of the schools; it was still generally used during the seventeenth century in Europe and had been "accepted as a standard textbook of logic through all the later Middle Ages".

It will be sufficient to examine briefly four concepts of the "proprietates", *suppositio*, *amplificatio*, *restrictio* and *appellatio*. These are called by Feijoo, "suposiciones, amplificaciones, restricciones, and apelaciones". The more important and more difficult to define is *suppositio*. Kneale finds Peter of Spain's account of this concept too vague to be satisfactory. However, a modern editor of Peter's work attempts to clarify the meaning of *suppositio* by relating it to *significatio*:

Signification is prior to supposition because a term must have meaning, that is, it must represent something before it can enter into significant speech and denote anything. . . .

The word "house" first must be known as a sign before that which is designated by "house" functioning as a sign may be known . . . .

In the statement "every man is mortal" we do
not advert to the sign "man" or its meaning
but to the things in the objective order
which are designated by "man", that is, to
the specific things to which mortality is
attributed.

Any further reflection on the word "man" becomes suppositio,
"the acceptance of a term, already significant, as denoting
something". 7

Amplification and restriction are simpler grammatical
concepts which refer to the functions of adjectives; and
appelation "is the acceptance of a term for an existing
thing in contra-distinction to supposition which is the
acceptance of a term for both existing and non-existing
things." 8

In the eighteenth century this type of reasoning
was being abandoned and Feijoo himself repeatedly condemns
its use. But the empirical attitude which he so much
admired was unpopular in Spain. As a consequence, we find
Feijoo falling back on a method which he condemns but with
which he is thoroughly familiar.

Elsewhere he complains that the concept of significatio
is inadequate. The growth of plants, he states, had been
described in various ways, "Virtud seminal, Disposiciones
previas, Corrupción de una forma, Introducción de otra,
Atracción del jugo nutricio, Conversión de el en la propia
substancia . . . . (Scept. 83)". But terms like substance,
accident, body and spirit, he complains, make the problem
more vague. He makes a plea for leaving words and returning
to things:

Dichas voces solo significan aquellas operaciones, que están patentes a nuestra experiencia, sin revelar sus causas, o el modo con que se hacen. Los rústicos saben muchas más voces que nosotros, significativas de las varias operaciones con que la naturaleza successivamente va perficionando aquella obra. Son por eso unos grandes Filósofos (Scept. 83)?

At this point he seems to imply that a more accurate description of "aquellas operaciones, que están patentes a nuestra experiencia" is needed rather than a simple naming of these operations followed by a description of the properties of the terms used.

But earlier in the same essay he involves himself in a lengthy digression on properties of terms. While attempting to define "plant" he considers "viviente insensible" and rejects "insensible" as a negative term which adds nothing to the definition of a positive phenomenon. He will not accept "viviente vegetable" because the existence of animals is considered partly vegetative and because we can only conceive of "vegetative" as a lack of our own "sensory activity". He then examines a solution which appeals to significatio, "Ni aprovechará responderme, que es carencia de parte del modo de significar, no de parte de la cosa significada, quedamos totalmente a oscuras". He nevertheless continues with the properties of terms:
Las expresiones negativas son positivas de parte de la cosa significada, cuando niegan alguna imperfección en el objeto; porque la carencia de imperfección es carencia de carencia, siendo cierto, que toda imperfección consiste en carencia de perfección positiva: por cuya razón estas voces: Infinidad, Inmensidad, Indivisibilidad, aunque negativas del modo de significar, son positivas de parte de la cosa significada. Pero la voz insensible, o insensibilidad, aplicada a la planta significa carencia de perfección, y así es negativa aun de parte de la cosa significada (Scept. 57).

It is perhaps this reliance on the traditional aspects of logic to which Pérez-Rioja refers when he states, "Nuestro Benedictino, sin embargo, no abandona jamás la estructura silogística de sus discursos y cartas ...".

The study of paradoxes had once been very important and still remained so in Feijoo's Spain, "Throughout later antiquity two great schools of logic were distinguished, the Peripatetic . . . . , and the Stoic which was developed by Chrysippus from the teaching of the Megarians". The Stoics became famous for their paradoxes, some of which are listed by Feijoo, "El Mentiroso, el Enganador, la Electra, el Sorites, el Velado, el Corrupto, el Calvo". These paradoxes have always aroused controversy. A modern writer believes that "the Megarian study of paradoxes was a serious affair and not mere perversity". Feijoo thought otherwise.
He notes that in *De Sophisticis Elenchis* Aristotle had divided false paradoxes into thirteen categories: those that are false because of the diction and those that are false because of the thing expressed by the diction. The Benedictine reduces all this to "ambigüedad de expresión (Soph. 1)". He considers the syllogism, "Socrates is different from Corisco, Corisco is a man, therefore Socrates is not a man" and concludes that the key to the difficulty lies in the ambiguity of the word "different".

Feijoo discusses at some length the condition of the scholastic *disputatio* in his time. He begins, "He oído, y leído mil veces (mas quien no ha oído, y leído?) que el fin, si no total, primario de las Disputas Escolásticas, es la indagación de la verdad (Dis. 1)". This end is thwarted by "la establecida precisión de conceder, o negar todas las proposiciones de que consta el argumento (Dis. 22)". The form of the *disputatio* contained the assumption that every statement is true or false so that every statement had to be affirmed or denied. Feijoo would change this, "No decir concedo ni niego sino dudo". If one disagreed with the major proposition, "Lo mismo es decir el que defiende dubito de maiori, que decir nego maioem. Si sucediere, que el arguyente pruebe la verdad de su proposición, podra entonces el que defiende concederla sin desayre suyo . . . . (Dis. 22)". This device would serve
to avoid all the time-consuming forms of admitto, permitto, omitto, transeat.

Even in theology these abuses occur. In this discipline the dependence on the syllogism has grown too great (Aul. 3). Aristotle, according to Feijoo, never used syllogisms. Aquinas used them as sparingly as possible, "No se ve en él réplica o contra réplica alguna, ni jamás a los agrumentos responde con la fórmula de ir aplicando successivamente a cada proposición el concedo, el nego o el distinguo . . . (Aul. 12)". In disciplines other than theology the respect accorded to the syllogism is also excessive. This respect was continued even after it could clearly be seen that many syllogisms led to fallacies, "la falacia del syllogismo consiste, según el mismo Aritóteles, en la apariencia que tiene de ser buena la ilación, siendo mala en realidad (Soph. 2)".

For the Benedictine, contemporary logic is full of futile questions. It serves no use to consider problems which, "saliendo de la lógica jamás se tocan en otra parte (Log.2)". The following is a controversy that Feijoo deplores:

Disputase porfiadíssimamente sobre si el objeto de la lógica es ente real, o de razón? Si es el modo de saber formal, o el objetivo? Jamás en otra Facultad se tocan estos assumptos, ni otros que necesiten su inteligencia (Log.2).
Logic should be used to serve other sciences rather than being studied as a science, "La lógica es un Arte instrumental cuyo fin es dirigir al entendimiento para adquirir las demás Ciencias (Log. 1)". It ought to serve physics, law, theology, and medicine but it does not do so, "se ha de sudar en cavilaciones, que jamás han de servir ni en la Physica ni en la Medicina (Log. 1)".
FOOTNOTES


6. Ibid., p. 263.


8. Ibid., pp. li-lvii.


11. Ibid., p. 115.
CHAPTER III

Comments on Feijoo's use of Cartesian thought have been limited to his criticism of Descartes' cosmology. Since this criticism has been adequately considered by Delpy and by Staubach only the influence of Cartesian methods of inquiry on the Benedictine will be examined here.

Feijoo was not familiar enough with the techniques of empirical inquiry to be able to reject completely the scholastic tradition which he admits is inadequate. At times he is able to solve problems by using empirical data, at times he uses traditional methods and at times he uses alternative methods. By stressing the importance of rigorously examining all premises before accepting them and by basing his method of reasoning on mathematical models, Descartes provided an important alternative to the scholastic method.

It has been shown how Feijoo would change the form of the disputatio by allowing the participants to doubt rather than affirm or deny. Elsewhere he disproves a paradox in a dialogue between "Dialéctico" and "Crítico" in order to give the reader an idea, "de el método Analý-
tico, más oportuno en varias ocasiones, que el Escolástico, para mostrar la vanidad de argumentos cavilatoros (Soph. 15)."

The argument defended by Dialectico is based on the ambiguity of the word "montón". Crítico will not accept any proposition using this word until Dialéctico defines it in a satisfactory manner. Dialéctico replies, "pues ni vos, ni you entenderemos otra cosa con essas voces, que lo que entiende todo el mundo". Crítico is not satisfied with this and Dialéctico modifies his answer to, "una colección de muchos granos de trigo". Crítico then asks for the number of "muchos". He does not receive a reply and suggests his own explanation:

En el lenguaje Philosófico, o Metaphysico también el número de dos basta para constituir multitud, y dos en este idioma rigurosamente se dicen muchos. Vedlo en vuestro Aristoteles, \textit{lib. r. Metaphys. cap. 2.} donde dice, que no hai medio entre la unidad, y la pluralidad \ldots. Vedlo también en Santo Thomas, \textit{I. part. quaest. II. art. 2.} donde pregunta: \textit{Utrum unum, et multa opponuntur} (Soph.)?

The above are only vague reminiscences of a Cartesian emphasis on more rigid scrutiny of premises. In the last example scholastic authorities are used in a method that is not scholastic.

There are more precise reminiscences of Cartesian methodology in Feijoo's work. He quotes what a commentator of Descartes, René Rapin, had written about the condition
of Spanish philosophy (Log.). He related Rapin's belief that Spain was very advanced in speculative work in the seventeenth century but had sacrificed, "la pureza de la razón natural por la sutileza de sus racioncios . . . . sus Philosofos hallaron el Arte de tener razón contra lo que dicta el buen juicio . . . . No era en el examen de las cosas mismas donde apuraban el discurso sino en los conceptos y en los términos (Log. 6)". In the previous essay Feijoo had emphasised the fact that the central points in the "súmulas" could be learned in a very short time and had advocated the condensation of their content into a few general rules (Sum.). This insistence on the reliability of natural reason and on the reduction of the study of logic to a few general rules is reminiscent of Cartesian opinion:

No . . . concluyo que las Súmulas son inútiles, sino que la utilidad que se puede sacar de ellas se logrará con los poquísimos preceptos generales que se reducen a dos pliegos. Con ellos, y una buena Lógica natural se puede cualquiera andar arguyendo por todo el mundo. Y si la Lógica natural no es buena no sirve la Artificial sino para embrollar y confundir (Sum. 19).

This natural logic may be compared with the natural reason often referred to by Descartes. In the beginning of the Discours the latter had written:

If I write in French, which is the language of my own country, in preference to Latin, which is that of my teachers, it is because I hope that those who make use of their natural reason without prejudice will be better judges of my opinions than those who believe only in the writings of the ancients.
There is here an attitude; a confidence in the ability of normal man to reason clearly without having memorized long lists of syllogistic figures or definitions of " proprietates"; common to Descartes and Feijoo. Although it is difficult to disagree with Ardao when he states that the "sentido de confianza en las luces de la razón natural . . . fue propio del empirismo clásico . . ."; it seems more accurate to assume that the emphasis on natural reason was derived by Feijoo from Descartes rather than from an empiricist like Francis Bacon or John Locke.

Another attitude common to both the Benedictine and Descartes is the emphasis on simplification. Feijoo writes of "poquísimo preceptos generales" and Descartes writes of "simple natures". Here is a passage from the Récherche de la Vérité:

Those branches of knowledge, which are not beyond the capacities of the human mind, are linked by a bond so marvellous and are capable of being deduced from one another by inference so necessary that it is not essential to possess much skill or dexterity in order to discover them, provided that, beginning with those that are most simple we learn gradually to raise ourselves to the highest.

Feijoo maintains that even though many allow certainty in mathematics, this discipline is not beyond doubt (Pie. 8). Simple proofs may establish some certainty but long proofs raise difficulties. Descartes had considered this type of
problem in his *Regulæ ad Directionem Ingenii*. He introduced the solution in his concept of *ennumeratio*. Feijoo does not mention the work although he raises the same point, "Aun muchas demonstraciones Mathematicas, especialmente las muy compuestas, no son incompatibles con el miedo, o duda reflexa de si hai en ellas alguna oculta salencia, por lo qual dexen de ser verdaderas demostraciones (Scep. 10)". Beck tells us that in his formulation of *ennumeratio*, the French thinker attempted to eliminate, as far as possible, "from the deductive process any dependence on memory which must condition the process at least in its early stages and must, to that extent, detract from the certainty of the conclusion". ⁶

Perhaps the Cartesian concept that may most clearly be encountered in the work of Feijoo is that of "clear and distinct ideas". Feijoo writes of those who deny the validity of their perceptions:

Pero no tan grosseramente, que no usen de él para dirigir las acciones communes de la vida humana, y civil. Gobernábanse por él para vivir, más no para philosophar. La representación de los sentidos les servía para buscar lo útil y huir lo nocivo, más no para determinar por ella la Theoría del objeto (Scept. 11).

One reason why the denial of percepts occurs is that the imagination can establish sensory experiences that have not in reality occurred (Scept. 12-15). In the *Discours*, the refusal of Descartes to accept anything but clear and
distinct ideas leads him to his final doubt; that all experience could be a dream fabricated by a demon. Feijoo writes:

De aquí forman los Scepticos más rígidos un argumento molestísimo para probar que de todo se debe dudar; porque, dicen, nadie tiene certeza de si duerme, o vela; luego nadie puede tener certeza de si ve, oye o palpa, estos o aquellos objetos; pues por más que juzgue que está velando puede ser que esté durmiendo, y que se le represente, como visto, u oído, lo que es solo imaginado (Scep. 16).

To this problem he applies Descartes' solution which involves the acceptance of self-evident, simple concepts. A proposition may be directly or indirectly true (immediata, mediata) "Es una proposición evidente con evidencia immediata, cuando por sí misma, sin el adminículo de prueba alguna se presenta con tal claridad al entendimiento, que este está precisado, con invencible necesidad a assentir a ella 'Scep. 19)". An indirectly true proposition may be inferred from a direct or self-evident one.

Feijoo will not go as far as to agree with the theory of innate ideas. He states that Descartes accepts neither a limited universe nor an infinite one because these concepts are not innate:

Assientan, que no se ha de dar assenso a alguna cosa, de la cual no se tenga idea clara. Y lo que vemos es, que las que unos tienen por ideas claras, para otros son muy obscuras. Las que unos tienen por ideas innates, o partos de la naturaleza, de otros son reputados por abortos precipitados del juicio. (Mod. 21).
He agrees with Descartes that ideas come from God but maintains that we have limitations. These cause faulty inferences, e.g., we may believe that a stick immersed in water is actually bent, "Si tuviessen presente esta doctrina los Cartesianos, acaso fiarían menos en sus congenitas ideas (Mod. 22)".

In the first volume of the *Teatro Critico* he cannot accept Cartesian doubt because it leads to a denial of the existence of God, "y es impossible dudar de la existencia de Dios, sin dudar de todos los mysterios (Mod. 37)". But, as Delpy points out, the Benedictine accepts Cartesian doubt as a positive thing in one of his Cartas, 7 "destinada a sujetar a nuevo examen aquello mismo que se tiene por cierto, para assegurar, o comprar más su certeza (Ant.)" such is Feijoo's later opinion of Cartesian doubt. He compares this doubt with the *quaestio* of Aquinas, *Utrum Deus sit?* According to Feijoo, this question or doubt is only the formulation of a proposition to be proven (Im. 8).

Unlike Descartes, the Benedictine believes that there is no knowledge without sensible occurrence:

La evidencia experimental es propia de algunas verdades singulares, que a cada individua constan con infalible certeza, como a mí ahora, el que tengo tal o tal desseo, que pienso en tal o tal cosa, que padezco algún dolor, que estoi posseido de algún afecto determinado; v. gr. gozo, tristeza, ira (Scept. 20).
He claims that ultimately all knowledge, including knowledge of the Cartesian cogito, is based on experience, "Aquella primera Maxima, o proposicion, yo pienso, de donde infieren inmediatamente la propria existencia, y mediatamente todas las demas verdades demostrables, no consta sino con evidencia experimental (Scep. 21)". Descartes had maintained the traditional concept of knowledge:

These laws derived from experiments are merely hypotheses, and knowledge derivative from sense experience does not constitute "real knowledge" that is, the knowledge by which we apprehend the fundamental principles of scientific explanation, the premises of scientific deduction.

Nevertheless, Feijoo, in the Apologia, admitted that the ideas of Descartes could be used to advantage by empiricists. The insistence of Descartes on clear and distinct ideas led him to a mechanistic view of the universe. Feijoo commented, "Para examinar la naturaleza sensible, creo que las reglas mecánicas son mas acomodada, ... Sobre este capítulo más tuvo que expurgar Aristoteles que Descartes (Ap. 50)".

Feijoo had agreed with the distinction that Martinez made between "racionales" and "dogmáticos". The Cartesians were "racionales" who, according to Martínez, "sin consultar la naturaleza, deciden en materias por la preocupación de sus ideas". The Aristoteleans were "dogmáticos" because, "de una experiencia sola, mal entendida, deducen una con-
elusión philosophica, que a su parecer se sigue por racional consecuencia (Ap. 69)

The influence of the Cartesian method on Feijoo may have been direct through such works as the Discours or indirect through works influenced by Descartes such as the Logique at Port Royal. Writing about the futility of metaphysical speculation on physical processes the Benedictine had stated:

Si a un hombre, que anda bien, y con buen aire, se empeñasse un docto en enseñarle a andar científicamente, embutiendo todas las reglas del movimientó, instruyéndole en la particular aplicación de ellas a cada uno de los miembros del cuerpo, explicándole el numero, y textura de los musculos, que sirven a aquel ejercicio, no diríamos, que se tomaba un trabajo, sobre prolijo, ocioso, y escusado . . . (Scept. 31)?

The following is a translation of a similar passage from the Logique of Port Royal:

It would be ridiculous for a Master of Walking to pretend to tell us, that the Animal Spirits were to be sent into certain Nerves; that such Muscles were to be moving; or to teach us to move such joints, and to set one Leg before another. 'Tis true, Rules might be given for all these things but that these actions would ever be performed by the help of any rules were ridiculous.

The mechanism implied by Descartes had led, writes Feijoo to a very harmful type of empiricism, materialism. Descartes based his physical system on first matter, Materia prima, which the peripatetics considered to be, "pura potencia en actualidad". But he relegated all forms to
the imagination except the rational soul which he placed in the pineal gland.

Since it is through his intelligence that man's rational soul manifests itself and since animals have no intelligence, Descartes maintained that they have no rational soul and as a consequence are machines. It is but one more step, Feijoo suggested, to deny the existence of man's soul, a thesis which he attributes to the "materialists" or those who, "imaginando haver logrado por este camino la empresa de excluir de la constitución de los Brutos la alma sensitiva, juzgan, que siguiendo la misma senda, solo les es un paso más que dar . . . para despojar también al hombre de la Racional (Med. 34)".

Hobbes and Locke tended to deny the existence of the "forms" or "essences" on which the concepts of soul depended. A defence of these philosophers had been formulated at the Sorbonne in 1752 and Feijoo was called upon by one of his readers to explain it. He begins by giving a brief explanation of "materialism" and the "materialist" philosophers. He uses as a criterion the concept of the corporeal soul. After stating that this concept was adopted by Democritus and the Pythagoreans (Mat. 2) he laments that among the moderns, "creció considerablemente el número de los sectarios de este delirio, a quienes se da el nombre de Materialistas; pues no admiten substancia alguna, que no sea material o
corpore (Mat. 4)". He cites the Bishop of Montalban from the Gazeta de Madrid of April 18, 1752 who outlined the problem:

Baxando al hombre a la condición de los brutos, no le atribuye mas que una alma material, y le reduce a la vergonzosa necesidad de buscar siempre lo que mas lisonjea su amor propio: que confundiendo todos los estados, y todas las clases, trata la subordinación de derecho bárbaro, la obediencia de debilidad, y el Principado de tyranía (Mat. 5).

Feijoo adds to the above the fact that the denial of all substantial forms leads to the denial of God's existence, a development with difficult social implications, "pues quitado enteramente el temor de la Deidad, respecto del castigo; qué freno queda al hombre, para retraerle de aquellos delitos, que puede, o espera ocultar a los demás hombres (Mat. 6)"?

Nevertheless, "materialist" philosophers have rarely denied the existence of God; a fact that Feijoo explains by their wish to avoid political censure so that Epicurus, Lucretius, and Pliny the Elder could deny the spiritual soul and be tolerated and admired because they approved of religious cults and rituals (Mat. 7-8).

Feijoo cannot accept a completely empirical view of reality, "Como esto pudieron llegar a concebir que una substancia, que es solitariamente materia, entiende y discurre (Mat. 10)"? He will accept any concept of matter
as long as it is allowed to possess transcendental properties. He will allow that matter has various "material" properties, extension, divisibility, impenetrability, mobility etc., "Pero todo género de conocimiento, percepción, o sensación; quién no ve, que es estrañísimo a la idea que tenemos de la materia (Mat. 11)"?

Feijoo cites two arguments used by the materialists. The attributes of matter: extension, divisibility, lend themselves as little to the functions of the sensible soul as to those of the rational soul. A rock is equally incapable or capable of the functions of the former: sight, hearing, taste, feeling, pleasure or pain. It is equally capable or incapable of the functions of the latter: understanding, discourse or reflection (Mat. 85).

The second argument maintains that the understanding and discourse are properties of matter which are inexplicable (Mat. 36). Feijoo feels that he has refuted these arguments when he accuses their proponents of a false assumption, "que no hay medio entre Espíritu y Materia (Mat. 39)". This, he states, is the position of Pierre Bayle. Feijoo's refutation, however, is wholly dependent on traditional methods of argument:

Todo lo Inmaterial es espiritual, usando voces de la Escuela de este modo: todo lo inmaterial precisamente substantive niego: todo lo inmaterial, tam substantive quam adjective, concedo. En estas dos palabritas
Although Feijoo disapproves of some of the conclusions that can be reached by adhering closely to the thought of Descartes and although he reverts to traditional methods of argument when attempting to refute these conclusions; the critical attitude for which the Benedictine is famous owes a great deal to the French philosopher. This is a debt which Feijoo himself acknowledges:

Aunque Descartes en algunas cosas discurrió mal, enseñó a innumerable Filósofos a discurrir bien. Abrió la senda legítima al discurso; es verdad que dexando algunos tropiezos a ella, pero tropiezos que se pueden evitar o remover (At. 18).
FOOTNOTES


6. *Ibid.*, p. 120.


CHAPTER IV

Feijoo's frequent references to Francis Bacon have caused critics to give excessive emphasis to his influence on the Benedictine. Ardao writes the following:

Sus numerosas referencias a Bacon son de dos clases: las destinadas a exaltar su papel histórico como reformador de la filosofía científica, al introducir y fundar el método experimental; las que tráían a cuenta algunas de sus opiniones o contribuciones en tal o cual cuestión particular.

Marañón calls Feijoo Bacon's apostle in Spain and Delpy states that it would be difficult to find in the Benedictine's work a name more often praised than that of Bacon. The same Delpy tells how Feijoo, having acquired a microscope, loses patience and returns it to Sarmiento, "en lui faisant remarquer qu'il n'a pas la patience de prospector les atomes". The French critic concludes that Feijoo had neither the preparation nor the patience nor the temperament "de ceux qui peuvent laisser un nom dans les sciences."

It is very widely maintained that Francis Bacon's criticism of Aristotle marks him as one of the founders of modern science. One writer calls this opinion "une mauvaise plaisanterie" since a great deal of what Bacon wrote had already been expressed in the sixteenth century. It is nevertheless true that Bacon's literary ability gave un-
known or unpopular ideas importance, "Bacon's great service to 'science' was that he gave it an incomparable advertisement, by associating with it his personal prestige, his 'Elizabethan' glamour, and his great literary power."\(^6\)

There were very strong objections to experimental enquiry. It was lacking in academic dignity and it led to heresy. Bacon countered these objections by maintaining that experiment led to greater faith and that scholars must no longer feel above the mechanical arts, "The ultimate end of science for Bacon was a practical one: improvement of the living standard, relief, and—if possible—abolition of distress, anxiety, and grief."\(^7\) If Feijoo derives from Descartes the tendency to question fundamental premises he derives from Bacon the moral justification for the questioning.

Although Feijoo's scepticism and his praise of experimental science manifest themselves in his criticism of Aristotle, he does not question a great deal of the peripatetic philosopher's thought. The fact that Aristotle favored an empirical approach to nature leads to many of Feijoo's favorable judgments, "Nadie puede condenarle (Aristotle) como falso, si solo como imperfecto (Phy. 35)". Feijoo himself shares some of the imperfections of Aristotle's attitude.
Aristotle's works on natural philosophy lack a critical approach towards what the author has seen personally or learned from others as well as an appreciation of the great complexity of the most simple physical phenomena. Moreover, the opportunity to test the validity of a hypothesis by verifying the conclusions that can be drawn from it under the circumstances intentionally created is not provided. "The empirical attitude towards nature had not yet become an experimental attitude, and the recognition of the importance of observation had not yet been supplemented by the recognition of the indispensability of experiment."^8

Feijoo claimed that he could teach the system of Aristotle to an intelligent man in one half-hour, "con explicarle lo que significan estas voces, Materia primera, Forma substancial, accidental, Potencia o virtud radical, y remota, próxima y formal (Phy. 35)". With these concepts mastered he will be able to explain anything, "Cuando le pregunten, porque tal cosa produce tal Efecto, responda que porque tiene una Virtud, o Qualidad (Phy. 36)". Asked why a clock moved one could reply, "por la forma artificiosa de la máquina, la qual tiene Virtud artificial para causar esos movimientos (Phy. 38)".

The nature of matter and motion are aspects of traditional physics that most preoccupy Feijoo. He accepts
that matter is a composition of elements and makes some
observations on the nature and number of the elements. The
Aristoteleans claim these to be Air, Earth; Fire and
Water; the chemists salt, sulphur, mercury and water and
the Cartesians, subtle matter, globulous matter and the
matter of the third element (Scept. 54).

Feijoo does not accept the Aristotelean division
for various reasons. Each element was said to be the apex
of one of the qualities, cold, heat, moisture or dryness.
It is an arbitrary division, according to the Benedictine,
and it is doubtful whether moisture and dryness are quali-
ties since humidity depends on a quantity of liquid. It is
equally difficult for him to accept that water is the coldest
element since if it were, drinking it would be very harmful
(Scept. 56).

Medicine has suffered from the division of the body
fluids into four humours: blood related to air, choler to
fire, melancholy to earth and pituitary humour to water.
It is not accepted by all that the number of humours is
four; some add lymph and pancreatic humour, whereas others
admit nothing but blood. It seems to Feijoo that the
elements should explain the composition of the human body
although the latter contains many elements that have no
equivalents in tradition (Scep.57). He attempts to clarify
the question by criticising the example that Aristoteleans
use to prove the existence of the four elements. The example they gave was that of wood burning:

Quando un leño se abrasa, se ve revolverse en los cuatro elementos Aristotelicos. Al principio se destila un poco de agua; luego se enciende el fuego; al fuego se sigue el humo, el qual, se conoce ser de naturaleza aria, en que sube a la región del aire; y finalmente, que da la porción terrea en la ceniza (Scep. 58).

Feijoo objects, first, that dry wood does not emit water when burnt. Second, that ashes are more than earth since chemists have been able to reduce them to various substances including salt. Third, that smoke is more than air since it produces soot and Robert Boyle has reduces soot to six different substances (Scep. 60).

Lack of interest in the properties of movement is, according to the Benedictine, the second important defect of traditional science. There are a number of "operations" that cannot be understood without knowledge of new discoveries in motion, "sus diferencias, sus propriedades, sus efectos, las leyes que observa en su direccion, aceleracion, comunicacion, etc. (Mag. 17)". Without these studies one cannot understand modern philosophy:

Pónese éste (a modern philosopher) v.g., a explicar, porque ocurrio motivo para ello (motion) como los cuerpos movidos circularmente, durante el impetu, y cessando el estorbo, que los precisaba el Movimiento circular, se apartaban de el centro por la linea tangente de el círculo; como en el movimiento reflexo de los cuerpos sphéricos el ángulo de reflexión es igual al ángulo de
But Feijoo is unable to choose any theory of movement as certain. The Aristotelean explanation that proposes movement of generation, corruption and place which occur through a change in the quality of matter is not well accepted, "todo es question y Pendencia (Scept. 67)". More modern explanations are equally unconvincing. He accepts the proposition that falling bodies accelerate but conjectures that the rise of light objects may well be caused by the fall of heavy objects (Scept. 70).

In summary, his attitude to traditional science is not as negative as it has been represented. He accepts many of the important concepts of Aristotelean physics and maintains that they ought to be studied, "No pretendo que no se lea en las Escuelas la doctrina que Aristóteles enseñó (Phy. 14)". Feijoo does not outline a detailed method by which experiment could be undertaken. He merely recommends that more time be given to "exploring nature".

Feijoo's extensive praise of the empirical education is an allegory in which the principal characters, Idearia and Solidina, represent the imagination and experience respectively (Mag.). The former represents the scholastic and Cartesian sciences and the latter the experimental sciences.
The teaching of Idearia is concerned with "exponer a los oyentes con voces nuevas, o inusitadas, las quimeras, que pasaban en el dilatado país de la imaginación (Mag.1)". Solidina's teaching, on the other hand, is humble and has an almost pastoral quality as she enters rustic country cottages, "domesticándose con todos, y enseñando con voces claras, y usuales, doctrinas verdaderas y útiles (Mag.2)". The followers of Idearia consider Solidina to be, "vil, mecánica, y grossera (Mag.2)". As a consequence she must restrict herself to less frequented parts where she spends her time on "objetos sensibles".

Idearia is the proponent of systems. Her followers accept such statements as that universals exist, "que hay un hombre que es todos los hombres" and that inanimate objects have appetites and preferences (Mag.3). Her Cartesian followers propose that animate objects except man are machines, that the universe is infinite, that the movement of bodies is eternal, that imagined space is real and that everything on the surface of the earth is in continual motion and moves thousands of leagues every twenty-four hours:

... que en todo se debe creer a la imaginación, y en nada a los sentidos; que éstos engañan groseramente en todas sus representaciones; que ni el Cisne es blanco, ni el Cuervo negro, ni el fuego caliente, ni la nieve fría etc. (Mag. 4).
The central distinction made by Feijoo is that, "La Experiencia solidamente prueba sus máximas con demostraciones sensibles; la Imaginación en la vaná representación de sus ideas funda las opiniones (Mag. 8)". One cannot even depend on the strict "rationalism" of Descartes since the Benedictine at this point draws little distinction between the ideas of the "imagination" and those of "reason". Reason unassisted by experience had made little progress. No mechanical nor liberal art necessary to the public welfare had ever been aided by reason and imagination (Mag. 10). The many concepts invented over the centuries had offered little aid in the "feliz producción de esta, o aquella planta . . . (Mag. 10)".

This severe criticism of speculative activity stems from Feijoo's narrow defence of empiricism. The tendency to regard nature as a work of art moving towards the beautiful and the perfect and the tendency to regard those who were "senza lettere" and those who did not write in Latin as inferior served to make experimental investigation a vulgar and undignified occupation. James Watt complained that his fellow Englishmen looked upon his experiments as the work of a "mere mechanic". Luis Vivés in his De Tradendis Disciplinis tells scholars not to look down on manual workers or be ashamed of asking them to explain technical questions. Feijoo continually rejects the opinion
that empirical philosophy is unacceptable because it is a pastime "poco decoroso a la nobleza Philosófica (Mag. 33)". He remarks that even Aristotle urged men not to be above examining the least attractive works of nature (Mag. 34).

It was objected that experimental physics dealt with objects of sensation and was inferior to "physica científica." The object of the latter was said to be "el Ente natural sensible" but Feijoo cannot understand the distinction. He writes:

Es manifiesto, porque no hai otra experiencia, que la que se tiene, mediante la percepción de los sentidos, o no hai otra acción experimental que la misma percepción sensitiva: luego essa misma Physica Científica, de quien hablan, es Physica Experimental. Si los Escolásticos la cinén a unas maximas puramente theoreticas, y abstractíssimas, no es culpa de la Ciencia, la qual por si essencialmente pide mas extensión . . . (Phy. 7).

Feijoo cannot understand the aversion to experience, "contra toda razón asquean la Experiencia, como indigna de la nobleza de las Escuelas (Phy. 12)". It is dangerous to apply the same criterion to a discipline as to a social class, "La philosophía no sigue las reglas de la nobleza, que la que prueba mas antigua es la mejor. Si ella en si es falsa no será después de muchos siglos de possession más que un error envejecido (At. 10)".

Apart from being a rather indecorous occupation, experimental philosophy is a foreign heresy that arouses suspicion. Experiment was based on the assumption that the
"notorios Mahometanos (At. 35)". He adds that Aristotle was very likely a heretic (At. 36) and concludes by stating that it is the task of the Inquisition to judge the orthodoxy of foreign works, "Con ciencia, y advertencia, permite (the Inquisition) en Hespana, la lectura de los Tratados Physicos de Boyle, y Newton, por mas hereges que sean ...(At. 37)".

The Benedictine himself has met with opposition because of his defence of experiment. Objections were raised by a certain Flandes who suggested that Feijoo was guilty of various errors. He claimed that a group has formed which he calls "la Tertulia de Mañer". The group includes "el Doctor Mayans" and Diego de Torres, "escribirán desde luego las glorias de España, el origen de la Ciencia en ella ... (Aut. 4)". Flandes is opposed to "las improportionadas plantas venidas de el Norte, donde los Autores viven elados en la Fe, y Caridad (Aut. 16)". Feijoo's answer is to show that innovations come from Italy as well as from the north and that northern authors are capable of writing pious works. He cites Robert Boyle's De Amore Seraphico and De summa veneratione debita Deo ab humano intellectu. He suggests that experimental philosophers need only be concerned with immediate causes and concern themselves with, "solo aquel mecanismo segundo, o gruesso, digámoslo así, que se hace sensible, o en si mismo o en sus efectos (At. 21)".
universe could be understood in terms of such concepts as extension and motion. In these terms the universe becomes a machine and although this is compatible with the Platonic and Christian concepts of harmony and perfection in nature it is not consistent to think of the universe as a machine without including both man and God. The dilemma is the following:

Recognizing the outstanding importance it (classical mechanism) has had for the progress of our theoretical understanding and our practical control of nature, (some) regard it as nothing short of disastrous in its general influence on philosophical and scientific thought as well as on society. II

Feijoo, nevertheless, attempts to allay the fears of his suspicious contemporaries. He illustrates the type of suspicions that have arisen by creating a debate between a traditionalist, Theopompo, and a modernist, Charistio. Only the latter is familiar with modern philosophy, "Se pone muy de intento a explicar los varios sistemas Physis de los Extranjeros, especialmente el de Descartes, el de Gassendo, y el de Newton, tocando algo de passo de el de Leibnitz (At. 31)". From the cosmology of Descartes he proceeds to that of Ptolemy, Tycho Brahe and Copernicus. He follows this by considering some of the innovations produced by experiment, the vacuum pump and the barometer.

Theopompo regards the above as the heretical product of, "ayres infectos de el Norte". Feijoo suggests that St. Thomas makes use of the work of Averroes and Avicenna,
When volume two of the Teatro is written Feijoo is convinced that the advantage of empirical philosophy is that it is not subordinate to a system, i.e., it is a method rather than a system, "Sin meterse en sistema alguno demuestra claramente el peso, fuerza elástica de el ayre, y por uno, y otro dan explicación manifiesta de muchos, y grandes efectos, lo que es imposible a la Filosofía Escolástica (Mag. 20)". However, when Feijoo becomes familiar with the work of Newton he realizes that experiment can also lead to systems:

Si por sistema, se quiere entender un complexo, o un todo de doctrina, cuyas partes estan ligada, o como contenidas debaxo de alguna razón genérica, y común a todas, Systema es el de Newton, pues quantos phenomenos hay en la Naturaleza reduce a la reciproca pesantez de los cuerpos (At. 10).

Feijoo must nevertheless, reconcile the mechanism and heresy involved in accepting the work of Newton. Nature, he states, has an order but it is not that conceived by man but by a Divine Artificer:

Suponen los hombres, y suponen bien, que Dios obra siempre con orden, y proporción; pero aunque bien suponen discurren mal, porque piensan, que no hai otra orden y proporción que la que a ellos se representa como tal; Obra Dios con proporción; pero una proporción altíssima, y muy superior a todas nuestras reglas (Mag. 21)

The universe, he continues, moves according to the will of God which Newton has formulated into specific laws, "Esta (God's will) por si, y sin instrumento intermedio, tiene
He must also explain how he can accept propositions based on the system of Copernicus, as those of Newton are. He points out that Copernicus lived and died a member of the Roman Church; that his uncle was bishop of Uvarmia and made his nephew Canon of the same church (Newt. 5). He then lists among a group of predecessors of Copernicus who had proposed the movement of the earth around the sun, the famous humanist Cardinal, Nicolas of Cusa, "A quien Trithemio llama príncipe de los theologos de su tiempo (Newt. 6)". He even excuses Descartes, "Ninguna infamia contraxo tampoco de sus apasionados Descartes, Gassendo y Galileo, hombres de insigne Ingenio, y nada notados en orden a la Religion (Newt. 7)". He concedes that the trail of Galileo lent some unpopularity to the system in Italy but that it regained its influence—mainly because of the work of Newton—so much so that in 1746 the editors of the *Memoires de Trevoux* could write that almost all physicists were Copernicans (Newt. 12).

In spite of the objections to Copernicus, Newton was well received in Italy. The French were reluctant to accept him because of the impact of Descartes. In 1747 the Jesuit father Novati published a poem, *De Iride et Aurora Boreali*, with a commentary in prose by father Joseph Roger Boscovich,
teacher of philosophy at the College of Rome, "en cuyo Escrito los dos Jesuitas se declaran por Profesores del Newtonianismo en todos sus puntos capitales . . . (Newt. 14)".

In the following year Boscovich published his Dissertatio de Lumine, an explanation of Roemer's theories on the properties of light. The work of Boscovich greatly impressed Feijoo. Roemer had worked with the system of Copernicus and Boscovich, basing his calculations on the work of Roemer, claimed that the light from the sun required a quarter of an hour to reach the earth. He assumed that the sun is eighty million miles from the earth and "concluye, que la luz, en cada minuto segundo, corre el espacio de más de sesenta mil leguas, o más de ciento y ochenta mil millas (Newt. 17)".

Feijoo does not accept the system of Copernicus but he does not reject it. He admires experimental science because it can result in the improvement of social conditions. He hardly distinguishes between empiricism and experiment. The empiricism of Locke and Hobbes is unacceptable because it challenges too aggressively established religious opinion. The empiricism of Newton is acceptable because it does not challenge these opinions. Without this challenge an empirical attitude can be morally beneficial:
Por ventura es poco útil aquella satisfacción, y honesto deleite, que recibe el alma en instruirse de los arreglados movimientos de los cuerpos Celestes, y de aquella admirable harmonica relación de unos con otros (Ad. 80)?
FOOTNOTES


4. Ibid., p. 155.


8. Ibid. pp. 69-70.


11. Dijksterhuis, pp. 3-4.
CHAPTER V

Feijoo's opinions on aesthetic questions show the same conflict between traditional and modern thought as do his opinions on science and methods of inquiry.

The principal concepts involved in his theory of perception, from which his aesthetics evolve, are the "entendimiento, intelectiva and the imaginativa". All of these are functions of the soul:

Yo contemplo en la Imaginativa does especies de dominio: Uno respecto de el cuerpo, otro respecto de el alma. El primero se puede reconocer por dominio legitimo, como de superior a inferior; porque al fin, el cuerpo es cuerpo, no mas que materia, y la Imaginativa potencia del alma, aunque sensitiva. El segundo viene a ser como tyránico, violento, usurpado porque es de inferior a superior; de parte sensitiva a la racional (Im. 10).

There is in this passage the traditional Aristotelean division of the soul and the body in which the soul is superior to the body as form is superior to matter. In the process of perception the body provides the sense data and the soul provides the form that these data assume. What we perceive, states Feijoo, is transmitted by the activity of the imagination of the intellect, or a combination of both, to the "entendimiento" which in turn is governed by the will. We act on what we understand, "Puede la voluntad abrazar como honesto un objeto, que no sea honesto, o como útil el que
Imagination and intellect are two different activities. The imagination concerns itself with immediate impressions and images, "un bien leve, inconstante, y fugitivo (Im. 11)". The intellect makes solid and lasting distinctions. It is an activity that distinguishes the real from the unreal or merely possible, the good from the bad. It involves a process where the individual dissociates himself momentarily from his environment in order to reflect and categorize. If the perceptions which we "understand" have been considered principally by the intellect, the action that follows will be based on valid data. But if the perceptions are transmitted by the imagination, the action that follows will be based on fleeting impressions and vague distinctions. Feijoo maintains that actions based on these impressions may be harmful. The harm that results from depending on the imagination can be seen in the effects of art on some sensibilities:

Pocos son los que ignoran, o por lo que experimentan en si mismos, porque lo oyeron a otros, lo que passa en los que tienen el corazón más sensible, o el alma más dispuesta, ya a los sentimientos de la ternura amatoria, ya de la compasión de los
males agenos, ya de la estimación afectuosa de las virtudes, o aversión a los vicios, que reconocen en otros, cuando leen una Comedia, una Novela, o cualquiera Historia fabulosa; donde se representan con imágenes vivas, expresiones insinuantes, y descripciones patéticas, sucesos ya prósperos, ya adversos. . . . Sin embargo de saber, y representarles el entendimiento que toda aquella narración es fabulosa, sin mezcla de un átomo de realidad, experimentan en su corazón todos aquellos afectos, que podrían producir los sucesos, siendo verdaderos y reales (Im. 14).

The imagination deals immediately with sense data and considers them in the form of images and impressions. The most affected by the imagination are "los que tienen el corazón mas sensible etc". The influence of the intellect must predominate if the individual is to distinguish what is true from what is false.

The ability to distinguish is complicated, Feijoo continues, by the fact that the individual will always avoid what he considers distasteful and involve himself in activities which he believes to be pleasant, "A las inclinaciones se sigue el gusto, o deleite en el ejercicio de ellas (Raz. 8)". Furthermore, pleasure is always good, "Luego el gusto en razón de gusto siempre es bueno con aquella bondad real, que únicamente le pertenece, pues la bondad, que toca el gusto en el objeto no puede menos de refundirse en acto (Raz.3)".

Under normal circumstances everyone finds the taste
of partridge delightful, Feijoo states, and furthermore he agrees that it is pleasant, "Quando uno en día que está prohibida toda carne come una bella perdiz, aquel acto es sin duda inhonesto; con todo nadie por eso, dice, que tiene mal gusto en comer la perdiz (Raz. 4)". Pleasure is always good but actions that involve pleasure may be immoral. An individual in a certain environment and of a certain temperament experiences all the sensations that accompany the sight of a partridge and his intellect relates them to his understanding. He understands the taste of partridge to be delightful and his will moves him to eat. The act is immoral but it is understood to be immoral.

It would appear that one of the effects of objects that inspire aesthetic contemplation, be they partridges or novels, is that the individual involved with them may experience pleasure. This pleasure may move him to honest or dishonest actions but if dishonest actions occur when the activity of the intellect is predominant, they do so after an accurate appraisal of the situation.

The situation becomes unpredictable when the imagination is very influential:

En todas aquellas ocasiones (las cuales son muy frecuentes) en que por la grande impresión, que hizo el objeto en la Imaginativa, es muy viva la imagen de el (objeto) que esta potencia presenta a la voluntad; haviéndose entonces la voluntad como un niño, que prefiere el bullicioso retintín de un cascabel a la sonora gravedad de una Harpa (Im. 11).
This explains to Feijoo the extreme vacillations in fashions. An object previously considered unpleasant becomes pleasant when a person becomes aware of the fact that it is favored by those of whom that person approves. Conversely, a pleasant object becomes unpleasant when it has become aware of the fact that it is favored by those of whom that person approves. Conversely, a pleasant object becomes unpleasant when it has become popular with those of whom an individual disapproves. The Jews came to dislike mana, Feijoo writes, not because they were tired of it but because they were deceived by their imaginations (Raz. 18).

Although Feijoo concludes that the imagination can lead people astray he will not deny that its influence remains essential to the artist. What approximates some of Feijoo's most important statements on the nature of the creative process involves a discipline with which he was very familiar, oratory. He is concerned with the state of oratory in contemporary Spain and accuses his colleagues of being too academic in composing their sermons. He urges them to keep in mind the purpose they wish to achieve and to reach it as methodically as possible. He states that the method of constructing arguments must not be too obvious, the divisions too apparent. Sermons ought to be written so that the transitions are not too abrupt, so that "solo resplandezca la unidad (G12. 35)".
The writers of sermons must first establish themselves in the accepted manner of delivering sermons, "En esto pueden entrar con menos miedo aquellos que ya tienen bien establecidos sus creditos en el modo de predicar ordinario (G12. 35)".

When asked how he developed his style Feijoo wrote, "Ni he tenido estudio, ni seguido algunas reglas para formar el estilo. Mas digo; ni le he formado ni pensado en formarle (El.)". Imitation only serves to prevent the most obvious errors. Style is nature, the nature of the author expressed, and the nature of the author is his temperament, "su orgánica y natural disposición". Neither imitation nor adherence to rules will guarantee good style, "Si el componer el estilo por imitación sale mal, el formarle por la observación de las reglas aun sale peor".

Rules may be helpful in the arts that deal with solid forms but they fail in "materias puramente intelectuales". The reason for this is that, "No hay geometría para medir, v.gr., si una metáfora salió ajustada o no a las reglas (El.)". Style should be the result of temperament or natural disposition and the only thing that will guarantee effective or outstanding style is a temperament endowed with "genio":

El genio puede en esta materia lo que es imposible al estudio. A un espíritu que Dios hizo para ello, naturalmente se le
presentan el orden y distribución que debe dar a la materia sobre que quiere escribir. . . . Es una especie de instinto lo que en esto dirige al entendimiento. Mas por sentimiento que por reflexión distingue el alma estos primores. En la invención de ellos esta ocioso el discurso, dejándolo todo a cuenta de la imaginación (El.).

Genio seems to consist of an indefinable ability to find new symmetries and combinations. It contains an element of the supernatural and becomes the Platonic fury, "Los grandes practicos del arte suponen como esencial en los verdaderos Poetas un fuego divino, que los anima (G12. 41)."

Since the symmetries conceived by the artist with "genio" are completely new, they have not been defined prior to their appearance and the intellect of the observer is at a loss when first confronted with them. The observer only knows that there is a mysterious quality in the object which arouses his delight. It is described by the Benedictine not as the beauty that arises from adherence to any theoretical considerations, but as, "Otro género de primor misterioso (Nsq. 1)". It is something which delights the taste and tortures the understanding. The clear distinctions that result from the application of rules and precepts are not possible. The beauty grasped by the imagination remains indefinable.

The conflict implied in Feijoo's aesthetic opinions is as follows: Those who experience works of art must be
protected from false impressions. Those who create works of art must, first, master the accepted forms and expose themselves to great examples of their specialty and second, they must let their "temperaments" and their "imaginations" express themselves as naturally and as forcefully as possible. The observer must deny the imagination but the creator must encourage it. This contradiction has led to various classifications of the Benedictine's aesthetics.

Feijoo's insistence on the artist's freedom has led both Delpy and Montero Díaz to consider his aesthetics as a prelude to the romantic cry for freedom from restrictions. Montero Díaz writes, "igualmente revolucionario cuando se mostraba precursor de la estética romántica como cuando combatía duramente los viejos prejuicios escolásticos . . ."¹ He quotes one of Feijoo's most positive approvals of individual genius, "Es menester numen, fantasía, elevación, para asegurarse el acierto (Per. 33)". He then concludes, "Estas palabras son vivo resumen de su pensamiento. Libertad plena del artista para escribir, para imaginar, para juzgar. Independencia total del poeta y del crítico".²

However, Montero Díaz himself points out that Feijoo's concepts of "gusto" and "ingenio" are influenced by that of Gracián and finds a great many similarities between the two writers. He also states, "El pensamiento científico se movía encadenado por la lógica minuciosa y mecánica de
los últimos escolásticos. El pensamiento literario por la retórica y los preceptistas.\textsuperscript{3} This parallel is clearly drawn by Feijoo himself:

El símil más justo (aunque no absolutamente perfecto) que en cuanto al uso de utilidad hallo para el arte de la retórica, es de la lógica o arte sumulística. Da ésta reglas para razonar bien, como aquel para hablar bien. Pero del mismo modo que el que no tiene bastante entendimiento para discurrir bien, discurre defectuosamente por lo común, por más que haya estudiado las reglas sumulísticas, y el que tiene entendimiento discurre con acierto aunque las ignore: ni más, ni menos, el que no tiene genio, nunca es elocuente por más que haya estudiado las reglas de la retórica . . . (El. 15-16).

Although Feijoo's definition of "genio" derives a great deal from Gracián and traditional theory it must be pointed out that the Benedictine in the above discourse equates "genio" with such concepts as "luz nativa del entendimiento" and "un buen golpe del ojo del entendimiento". In the latter sense, "genio" could well be something that approximates the "reason" of Descartes and enlightened thought.

The second type of "genio" appears to be intended by Feijoo when he approves of historical accuracy and disapproves of poetic inaccuracy. His concept of historical accuracy, however, is unique. He maintains that the sacred scriptures are accurate but that accounts of the deeds of Greek heroes are not. He seeks to destroy the analogies that some contemporary writers made between Biblical and pagan figures. He is concerned specifically
with the analogies between Prometheus and Moses, Epimetheus and Adam, and Pandora and Eve. His approach is to consider false any references made to these figures by Antiquity. Of Aeschylus he writes, "Y que caso se debe hacer tampoco de lo que dice un poeta, y poeta Griego, en una pieza de Teatro (Div. 22)"? We are not to look for accuracy in Greek tragedies, "Assí el texto de una tragedia jamás se debe alegar cuando se trata de examinar la verdad (Div. 22)". Lucian is also not to be believed because he gave, "pleníssima libertad a su imaginación (to invent) . . . quantas graciosas ficciones (Div. 23)".

The conflict between historical accuracy, the activity of the intellect on the one hand, and poetic fiction, the activity of the imagination on the other hand, assumes important proportions in Feijoo's judgment of Virgil and Lucan. Lucan's Pharsalia is superior to Virgil's Aeneid, according to the Benedictine, because the former remained faithful to historical events whereas the latter created imaginary characters and situations. This opinion prompted a lengthy refutation by J. de Aguiree.

Aguirre, in his work El Príncipe de los Poetas, Vigilio, does not deny Lucan's fidelity to events. He cites both Isidore of Seville and Luis Vives to show that Lucan was more historian than poet. He then casts serious doubts on Lucan's status as a poet. Using Aristotle,
Petronius Arbiter and Horace as authorities he defends the poet's right to invent whatever he feels is appropriate. This leads to his damaging condemnation of Lucan and to his refutation of Feijoo's opinion of the Cordoban poet, "Luego quanto el Poema tenga más de ficción, tanto será mas Poema: luego, si nada tiene de ficción, como la Pharsalia, nada tendrá de Poema".

In the case of Lucan, Feijoo would seem to indicate that "genio" is not the ability to invent but the ability to recreate events accurately. He warns historians against the temptation of writing poetically, "El segundo riesgo del estilo sobresaliente es que en vez de tomar la pluma hacia la cumbre del Olimpo, tuerza el vuelo hacia la de el Parnaso; quiero decir, que en vez de arribar a la sublimidad propia dé lo historico se extravie a lo poético (Ref.)."

Just as there are no rules for poetic inspiration there are no rules for the application of "genio" to the composition of history, "Lo peor es, que no pueden darse reglas para vencer tropiezos. Todo lo ha dé hacer el genio, la comprensión, la perspicacia del escritor. (Ref.).". The composition of literary criticism also seems to deny poetic inspiration, "Un buen entendimiento, justo, cabal, claro y perspicaz es quien constituye un buen crítico (Crit.)."
The conflict that occurs in Feijoo's aesthetic ideas reflects the conflict between traditional and modern thought that is characteristic of all his work. Traditionally the artist was free to be as inventive as he could. But since during an aesthetically pleasant experience an individual might have his sensibilities overwhelmed with delight and as a consequence might be in danger of not distinguishing the real from the unreal, the Benedictine proposed that aesthetic delight had to take second place to historical accuracy. The latter are neo-classical opinions; a work of art must instruct as well as delight.
FOOTNOTES


2. Ibid., p. 9.

3. Ibid., p. 20.

4. J.X. de Aguiree, El Príncipe de los Poetas Virgilio etc., En la Imprenta y Librería de Manuel Fernández, Madrid, 1764, p. 31.

5. Ibid., p. 69.

6. Ibid., p. 73.
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