CHAPTER 1

Varieties of Things

Objects of Knowledge and Ba
in the Early Royal Society of L

The founding of the Royal Society of Lon
cial step in the development of modern sc
of Charles II to the throne of England,
Robert Boyle, William Petty, John Wilki
ert Moray, and Christopher Wren met to
mote a new approach to the study of nat
tablish earlier, more informal meetings o
the still-dominant scholastic philosophy
opportunity to gain Royal support. In 166
ter and an impressive program of empiri
carried out.[1]

And yet historians have always shown
work of the early Royal Society. The
revolution of the sixteenth and seventeen
the transition to a Copernican worldvie
tronomy and physics. According to this n
ton added the final synthesis of previous
onstrating how Copernican astronomy c
mathematical physics of Galileo. While
he did not employ hypotheses and his eig
fied a Baconian reading of his accomplis
have remained unconvinced. When com
phasis on matters of fact and aversion to
to have advanced by rejecting their Bacon

[1]Thomas Birch, *The History of the Royal Soc*
ral knowledge, from its first rise, 4 vols. (London

The changing historiographical fortun
flect the waxing and waning of the reput
losopher of science. Where inductivism
success of science, historians could take f
arriving at true knowledge were applie
Bacon's significance for the history of sc
covery of a method capable of applicatio
and observations of the self-professed Ba
the air-pump and the microscope, extend
experience and subjected our view of nat
tion, rather than the authority of Aristotle

With the development of varieties o
neo-Kantian epistemologies in the twenti
philosopher of science receded, and with
the Royal Society.[2] The process had its
where reaction against utilitarianism pr
Additionally, professionalized research,
coming individual and group differences
emphasis on the communicability and te
lied any need for a logic of discovery.[4] I
David Brewster drove a wedge between
nian method canonically associated with
of the context of discovery/context of ju
preserved Newton's heroic status by rej
conform to an inductive process of disco
to be seen more as a prophet of science
among defenders of inductivism.[5]

[2]David C. Lindberg, "Conceptions of the Sci
terfield: A Preliminary Sketch" in idem and Rol
Scientific Revolution (Cambridge: Cambridge U
17.

[3]Otto Sonntag, "Liebig on Francis Bacon and
373–86.

[4]Lorraine Daston, "Objectivity and the Esca
597–618, pp. 608–9.

[5]Richard Yeo, "An Idol of the Market-Place
Britain," *HS*, 23 (1985), 251–98, pp. 266–67, 27
Bacon's ideas, see Antonio Pérez-Ramos, *Fran
Maker's Knowledge Tradition* (Oxford: Clarend

Contemporary historical research has
cance of Bacon's method even for the sc
early Royal Society. Michael Hunter's ex
Society emphasize its methodological ecl
a set of general commitments rather than
far as its self-professed goals of implem
natural knowledge, he deems it a relativ
keep pace with its promise. Charles Webs
Baconian commitments obscure significa
the Royal Society, serving more to legiti
research.[6]

A new generation of scholars has tak
that no abstract methodological doctrine
ral philosophical practice, which has its
them, methodological doctrines are best s
ric, good for justifying new approaches in
as actual guides for research.[7] This skepti
more contextually sensitive varieties of s
has been the same: scientific method em
practice from method.[8] The overall thrust

[6]Michael Hunter, *Science and Society in Re*
bridge University Press, 1981), pp. 11–21; Micha
ence: The Experience of the Early Royal Socie
1989), pp. 6, 11–12; C. Webster, "The Origins
106–28; P. B. Wood, "Methodology and Apolog
Royal Society," *BJHS*, 13 (1980): 1–26.

[7]Steven Shapin and Simon Schaffer, *Leviath*
and the Experimental Life (Princeton, N.J.: Prin
Peter Dear, "Totius in Verba: Rhetoric and Auth
76 (1985): 145–61; John A. Schuster, "Methodol
to the Future Historiography of Method," *Met*
also John A. Schuster and Richard Yeo, "Introdu
Politics and Rhetoric of Scientific Method: H
1986), ix–xxxii; Schuster, "Cartesian Method
Structural Analysis" in Schuster and Yeo, *Scienti*

[8]N. Jardine, *The Birth of History and Philos*
of Tycho against Ursus" with Essays on Its Prou
Cambridge University Press, 1984); Richard W
tion, Confirmation and Reality in the Natural a
ton University Press, 1987).

scholastic learning, artisanal practice, or
science are the new arenas of dispute.[9]

Lost in the shuffle has been the signific
the reform of knowledge itself. While thi
situated with respect to social class, reli
identified with any single group or dogm
tique of scholastic learning came to be ass
of Francis Bacon. To understand the signi
of science held for the generation befor
need to pay attention to the heterogeneou
ency coalescing around his name and th
nize each other as part of a common enter

The Historiography of Baconianism

Commitment to Bacon's program for t
edge was evident in the interests and w
naturalists and artisans. Bacon's writings
trades and natural history an epistemic si
viously possess, enabling scholars, virtu
identify themselves as part of a common p
glican, and distinctly class-conscious gent
engaging "mechanical, capricious person
mer Samuel Hartlib's interest in a Bacon
comed the interest in questions of trade a
Fellows like William Petty and Robert Ho

[9] Mario Biagioli, *Galileo, Courtier: The Prac*
lutism (Chicago: University of Chicago Press, 19
cial Bricolage, and Etiquette" in Roy Porter an
Revolution in National Context (Cambridge: Ca
ven Shapin, *A Social History of Truth: Civility*
England (Chicago: University of Chicago Press, 1
rience: The Mathematical Way in the Scientific R
cago Press, 1995); Pamela H. Smith, *The Busine*
the Holy Roman Empire (Princeton: Princeton Un
Science and the Secrets of Nature: Books of Secre
ture (Princeton: Princeton University Press, 199
Book: Print and Knowledge in the Making (Chica

[10] Evelyn to Boyle, Aug. 9, 1659 in Robert B

Unfortunately, the heterogeneous nat
English Baconianism has routinely been u
movement into separate camps of seriou
blers, or proto-professional researchers
the Royal Society, significant differences
position and method of the society have t
liance upon a tacit model of professionali
period.[11]

Opinions are divided on whether the
against Bacon. In some cases, biographers
ciently broad-minded so as to avoid the
strictly interpreted. Thus, 'Espinasse dist
ralistic approach, which allowed an im
from Boyle's neglect of the subject, truer
riment.[12] On this view, strict Baconians n
struing their confidence about method as
rapher Barbara Shapiro similarly notes he
contrast to "the sensationalist Baconians,
tists and who refused to recognize the in
other forms of abstract reasoning."[13]

While some historians are concerned
of select Royal Society fellows from thei
empiricism, others are concerned to disti
ers. Thus, M. M. Slaughter borrows a

Robert Boyle, Thomas Birch, ed., 6 vols. (Hildes
lung, 1965–1966), VI, 287–88, p. 288.

[11] Michael Hunter and Paul B. Wood, "Towar
for Reforming the Early Royal Society," *HS*, 24
Establishing, 185–244, analyze debates over me
to see as expressing legitimate disagreements ov
nian methodological program, rather than in te
Within the historiography of the Royal Society,
fessionalized scientists and dabbling amateurs h
spite the widespread rejection of the simplistic
son, *Scientists and Amateurs: A History of th*
Schuman, 1948).

[12] Margaret 'Espinasse, *Robert Hooke* (Berk
1956).

[13] Barbara Shapiro, *John Wilkins: An Intelle*
of California Press, 1969), pp. 56–57.

pure Baconians from Hugh Trevor-Roper
role in the changing form of Baconianism
the Royal Society.[14] In this interpretation
and the vulgar Baconian reformers' pol
Webster inverts this picture, attributing th
tion period to its socially active Baconiani

Further vexing our understanding of t
place of the virtuosi, those gentlemen-a
and wonders. The presence of virtuosi cr
losophers is held to explain the hodge-po
serious science recorded in the Society's
siders the virtuosi "antipathetic to the
notes an "unconstructive mentality" en
"illustrated by many of John Evelyn's c
ceedings at the Royal Society: he often no
'rare' and 'wonderful', and tended to ign
Society's business."[16] Houghton remark
think, does [Evelyn] show the slightest c
the main *raison d'etre* of the study of nat
covery of law; which is hardly surprising
longer a rarity."[17]

[14] M. M. Slaughter, *Universal Languages an*
teenth Century (Cambridge: Cambridge Unive
Trevor-Roper, *Religion, Reformation and Socia*
Macmillan, 1972), pp. 258, 289. Walter E. Houg
Relation to Seventeenth-Century Thought as See
JHI, 2 (1941): 33–60, p. 39, similarly distingui
with Baconian natural history and the manual ar
who were less experimental and "were primarily
strict sense."

[15] Charles Webster, *The Great Instauration: S*
1660 (London: Duckworth, 1975).

[16] Hunter, *Science and Society*, p. 67.

[17] Walter E. Houghton, "The English Virtuos
(1942): 51–73, p. 193. A similar theme is develop
Enchantment (Chicago: University of Chicago P.
significance of the virtuosi for the new philosoph
For discussion of the coexistence of Baconian a
ambivalence about the early Royal Society, see
sion: Selected Studies in Scientific Tradition and