

'.. the so-called "scientific revolution"... overturned the authority in science not only of the middle ages but also of the ancient world.... it outshines everything since the rise of Christianity and reduces the Renaissance and the Reformation to the rank of mere episodes, mere internal displacements, within the system of medieval Christendom.'

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In the judgement, then, of a highly respected Christian historian, Herbert Butterfield, there is some plausibility to the view that the "scientific revolution", associated with the sixteenth and seventeenth centuries, did not lack the magnitude and momentum needed to generate the subsequent and continuing ground-swell of secularization, unbelief, and atheism.

However, it is important to distinguish between the two main components in the scientific revolution. The discovery of the proper method of science was one thing. The various interpretations put upon it were quite another. As Albert Einstein is reputed to have told a group of inquiring epistemologists: 'Pay no attention to what the scientists say, but watch very carefully just what they do!' If I may use an older terminology, what the scientist does, that he knows exercise; but what he says is a thematization of what he does; and commonly the thematization imports not a little of the scientist's extra-scientific opinions.

So Isaac Newton proclaimed, Hypotheses non fingo. And it is true that his theory involved no such imaginable groups of events as Descartes' vortices. But it did involve the defect of imagination that assumed Euclidean three-dimensional geometry

to present necessary and eternal truths. Accordingly, it was revealed to be hypothetical when Einsteinian relativity brought Newtonian mechanics into line with Maxwell's electromagnetics. Again, when Laplace established the periodicity of a planetary system, he concluded that there no longer was any need for a Newtonian prime mover whose occasional interventions prevented planetary systems from running down. But he failed to anticipate Heisenberg's indeterminacy that qualified and, indeed, corrected his assumption that natural laws formulated what necessarily was so by acknowledging a more basic realm of statistical probabilities.

In brief, what the natural scientist thinks he does, is one thing; what actually he has been doing, can turn out to be something quite different. On the nature of science and on its proper method, it is not the individual scientist, no matter how celebrated, but the ongoing history of the subject that is the oracle. If it was in the seventeenth century that modern natural science achieved its break-through, still the nature of that achievement was known only exercite. The possibility of knowing it signate had to await Lobatchewski and Riemann, Einstein and Heisenberg.

What holds for natural science, is no less true of the historical sciences, the Geisteswissenschaften defined as the interpretative reconstruction of the constructions of mankind. In the words of Leopold von Ranke it was the aim of the German Historical School to narrate wie es eigentlich gewesen. When Wilhelm Dilthey to his chagrin discovered to what extent the narratives of the Historical School were influenced by the ideas of the Enlightenment and the Hegelians, the positivists stepped in rigorously to exclude all alien

presuppositions and eventually to catalogue their assumptions and precepts in the Introduction aux études historiques by C. Langlois and C. Seignobos. So at the beginning of the twentieth century doctrinaire positivism was in the ascendant, but in subsequent decades the writings of Karl Heussi in Germany, H. - I. Marrou in France, R. G. Collingwood in England, and Carl Becker in the United States did much to liberate serious workers from the positivist incubus. Once again, accordingly, it is not the pioneers in a scientific break-through but the later practitioners that can advance from performance to accurate statement, from knowledge exercite to knowledge signate.

I have been attempting to indicate in the briefest possible manner what in my opinion constitutes the essential root of contemporary secularization, unbelief, atheism.