

The Watch on the Heath
Science and Religion before Darwin

Keith Thomson

HarperCollins 314pp £20

ISBN 0-00-713313-8



IN HER AUTOBIOGRAPHICAL MEMOIR *The Downing Street Years*, Margaret Thatcher quipped: 'All election victories look inevitable in retrospect: none in prospect.' Most scientists feel the same way about evolution, wondering in amazement how so many people for so many centuries could have clung to the biblical account that God took only six days to create the world – complete with fossils – exactly as it is now. James Ussher, Primate of All Ireland in the mid-seventeenth century, is now notorious for his insistence that the earth began on Sunday October 23rd, 4004 BC (the precise time of 9am was a Cambridge refinement). In *The Watch on the Heath: Science and Religion before Darwin*, Keith Thomson helps modern readers jump through some theological hoops to understand why Charles Darwin's predecessors were so resistant to evolutionary ideas.

A former professor of biology, Thomson brings to his task not only scientific expertise but also a familiarity with the Bible so formidable that he corrects mistakes in Victorians' quotations. Armed with this double authority, Thomson judges from the vantage point of modern knowledge yet expounds with great clarity the dilemmas confronted by naturalists who wanted to embrace evolutionary suggestions without relinquishing the security of scriptural tradition. He borrows his title from the philosophical clergyman William Paley, now renowned for his watch analogy even though Cicero had formulated the basic conceit almost two millennia earlier. Cicero maintained that just as when you look at a sundial and recognise a craftsman's handiwork, so too the complex organisation of the world demonstrates an underlying purpose. Updating the technology, Christian writers converted this teleological argument into evidence for a Divine Designer, and Paley was one of natural theology's most influential proponents.

Required reading for Darwin and his fellow Cambridge undergraduates, Paley encouraged his readers to reflect on the differences between stumbling over a stone and a watch on a heath. 'The inference,' he claimed, 'is inevitable; that the watch must have had a maker.'

Like a preacher explicating a biblical text, Thomson returns again and again to this key image, systematically exploring the implications it held for Enlightenment readers. Starting with John Ray, the Cambridge plant collector, he examines Darwin's precursors and the predicaments they faced in reconciling biblical pronouncements with their observations of reality. Why, Ray wondered, had God designed human eyes with the nerves in front of the receptors, partially blocking the view? Perplexed by some large bones, Robert Plot – curator at Oxford's Ashmolean Museum – concluded that they had belonged not to elephants, but to the giants described in Genesis. Puzzling over animal remains in a Yorkshire cave, William Buckland

washed away the Flood with an early palaeontological experiment – by feeding cow bones to his pet hyena, he proved from the toothmarks that an ancient hyena had dined off tigers and rhinoceroses (Buckland served his own guests crocodiles and badgers).

Thomson seriously undermines his arguments about the relationships between science and religion by repeatedly and anachronistically using the word 'scientist', which was invented only in 1833. He remains trapped in the Victorian rhetorical claim that science and religion were at war, which was formulated when clergymen and scientists vying for social supremacy found it advantageous to place themselves in opposing camps. Thomson applies this distinction to the eighteenth century, even though his aim is to demonstrate that it had not yet been established. Thus in a characteristic flourish, Thomson describes Paley as seeking 'to turn the ploughshares of science into swords of religion' – but for many English natural philosophers, most famously Isaac Newton, Christianity was central to experimental

investigation. Even Darwin (who died in 1882) never called himself a scientist; reflecting back on his changing beliefs, he wrote that it was only after *The Origin of Species* that he became an 'Agnostic', a term coined by his bulldog, Thomas Henry Huxley.

Thomson concludes by urging that science and religion join forces to search for new approaches to age-old problems. As he rightly stresses, evolutionary ideas had a long pre-Darwinian history. Furthermore, far from being an instant success, Darwin's theory of natural selection was hotly contested for many decades. Cartoons satirized the religious fervour with which 'rabid Evolutionists' asserted their doctrines, and similar zeal still pervades scientific debates about evolution's mechanisms. But most vitriol is reserved for Christians unconvinced that the Bible has got it wrong. Ironically, since propagandists such as Richard Dawkins are ultimately forced to fall back on insisting that science must be right, they behave like high priests of their own faith.

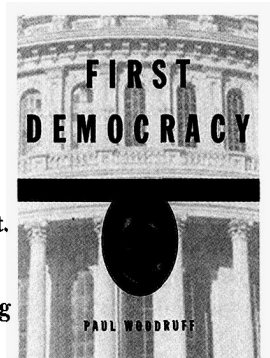
Patricia Fara

First Democracy
The Challenge of an Ancient Idea

Paul Woodruff

Oxford University Press 284 + xvi pp. £14.99 ISBN 0195177185

REINHOLD NIEBUHR CLAIMED that 'Man's capacity for justice makes democracy possible, but man's inclination to injustice makes democracy necessary.' Neibuhr's pronouncement is better than most. It acknowledges that the kinds of governments we call democracies, throughout history, come into being when forms of government that operate to the advantage of smaller power groups (kings, dictators, juntas, aristocracies, oligarchies) become intolerably unjust. It is arguably naïve in positing that democratic governments arise in the interests of justice. Paul Woodruff's meditation on ancient and modern democracy shares Neibuhr's naivety.



Good thing, too. Many American classicists of a liberal persuasion are dumbfounded at the way prominent American classical historians like Donald Kagan and Victor Davis Hanson have used their scholarly authority, on the fifth-century Athenian historian Thucydides' account of the Peloponnesian War (431-404 BCE) and on warfare and the Greek polis respectively, in support of neoconservative political doctrine and the unilateral might-makes-right-irrelevant foreign policy of the Bush administration. They ignore the clear lesson of Thucydides' history and the way Athens misused its unsurpassed military strength, cultural prestige and democratic energies in the mid to late fifth century. A democratic superpower acting myopically in what it thinks is its own self-interests, while asserting its pro-democratic benevolence – what Athenian imperialist statesman Pericles called 'spreading *kharris*' – will ultimately do irremediable harm to itself and other states at least in equal measure. Whether Hanson and Kagan are nakedly cynical, blinded by neocon doctrine, or giddy to be in the orbit of real power, is hard to tell.

Woodruff's humanistic philosophical take on ancient Athenian political history and modern American democracy restores some common sense. In fact, Woodruff sees common sense as a central feature of democracy, one that has to be nurtured, respected, and protected. In *First Democracy*, Woodruff lays out the Athenian *politeia* taken in the broad sense of the cultural attitudes and principles that made the Athenian experiment as successful as it was.

Woodruff is a first-rate student and translator of Greek philosophy, tragedy and history, and has long been interested in the Greek enlightenment of the fifth century. His last book,

Reverence: Renewing a Forgotten Virtue (2002) also argued that a better understanding of ancient Greek and Chinese culture could benefit us.

In *First Democracy* he takes us beyond his own clear explanation of the mechanisms and practices of Athenian democracy, how and why they evolved and how they worked. He fixes our attention on the mindset and beliefs that supported for over two centuries what he clearly views as a noble experiment.

Woodruff believes that all democracies are experiments in the process of becoming. They are successful insofar as their citizens, of whatever political persuasion, believe in and work to sustain seven principles: freedom from tyranny (and from being a tyrant), harmony, the rule of law, natural equality, citizen wisdom, reasoning without knowledge and education (in the Greek sense of *paideia*). Woodruff argues that each of these principles was easier to follow in sixth-through fourth-century Athens than in the twenty-first-century United States. Nonetheless, there are good reasons for democracy to fail under any conditions in any period.

Human nature is the main culprit. It leads citizens of democracy, individually or in groups, to distrust, to pervert or to subvert what Woodruff calls the 'two explosive ideas' vital to the health and growth of democracy: 'that we all know enough to govern our public life together, and that no one knows enough to take decisions away from us and do a better job of deciding, reliably and over the long haul.'

Woodruff admits he is a scholar with a bias. He admits that Athenian democracy was imperfect. But he also believes that it generally worked for Athens, especially – and this is crucial to making his argument credible – during the fourth

century. Most critics of ancient democracy concentrate on the defeat of Athens at the end of the Peloponnesian War without noting that democracy had an eighty-year run afterwards. Three generations of Athenians enjoyed its benefits.

Woodruff further argues that the failures of Athenian democracy should not be viewed as failures of the underlying ideas. He believes that philosophers and historians who attack democracy for being unstable, erratic, undisciplined, unlawful and tantamount to the 'tyranny of a mob of unqualified people' are dead wrong.

This is a tricky gambit that should fascinate, puzzle, and frustrate other readers as much as it did me. The Athenian system was notable for the degree to which individual citizens had a say in government. Common citizens were chosen by lot to serve annually in the council of 500 (*boulé*). In a normal generation, every citizen had something like a one-in-four chance of serving for a year in the Athenian equivalent of the American congress.

Important legislative or foreign policy issues were eventually debated in the citizen assembly, open to all citizens, but held in an area, the Pnyx, that could accommodate around 6,000 of the adult male population of around 40,000 citizens. The assembly made wrong choices, some disastrous. It voted to annihilate the neutral island-state of Melos

in 416 BC and later to launch a risky expedition against the island of Sicily with the conservative statesman Nicias in charge. Woodruff traces these terrible errors of democratic judgment to failures to trust in the open exchange of ideas within the assembly (Nicias and Sicily) and to involve all factions in the community in decision-making (Melos).

In Woodruff's view, democracy could have made the right decisions in these cases if the citizens of Athens and the negotiators dealing with the oligarchic leaders in power in Melos had confidently insisted on open and honest deliberations and then reached decisions calmly and with a view to the common good, rather than following factional self-interest. This comes dangerously close to 'but if only' pleading.

The sad fact is that, again and again in human history, oligarchic or tyrannical groups will distrust and manipulate the people in a democracy. And all parties will look primarily to their own advantage.

First Democracy closes with an afterword that entertains the question: 'Are Americans Ready for Democracy?' Although Woodruff does not say so, I think the Athenians would recognize the kind of democracy the Bush administration thinks we are ready for. They would call it oligarchic tyranny. At the end of the fifth century it did them no good.

Tom Palaima

THIS MONTH'S REVIEWERS

Patricia Fara is the author of *Pandora's Breeches: Women, Science and Power in the Enlightenment* (Pimlico, 2004).

Ronald Hutton is the author of *Debates in Stuart History* (Palgave, 2004).

Tom Palaima is Dickson Centennial Professor of Classics at the University of Texas at Austin

Simon Underwood is Lecturer in Biological Anthropology at Oxford Brookes University.