Hard Reading: Learning from Science Fiction

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Introduction

Getting Serious with the Fans

This piece started off as a 45-minute talk at the 1972 Novacon in Birmingham. In later years I became a regular performer on the Tolkien circuit in the USA, paid at rates far higher than anything in the UK academic world, can claim always to have given satisfaction, and also picked up awards for lecturing – another thing that was never forthcoming in the UK, no matter how good you were. Still, I don’t think I have ever enjoyed myself more or reached the same level of form as I did back at successive Novacons. I was really into the material, it was the first chance I had ever had to talk about it publicly, the audiences were both supportive and argumentative … I wish I’d been able to keep it up. There were no doubt many reasons this was not possible, like being too busy myself, but I think one reason was a sort of underlying dichotomy within fandom. There were some fans who wanted to talk about science fiction (as I did), but there were others who really wanted to talk about being fans, or to set up ‘fanac’ (i.e., ‘fannish activities’), which would give them something to talk about in the future. I think the latter group became dominant: long talks about the roots of sf in intellectual quarrels in the nineteenth century – dull, drop them off the programme. It didn’t always work like that, and I can remember still doing the same sort of thing, for instance, at the 1979 WorldCon in Brighton (another occasion where I was telling authors like Bob Shaw and Poul Anderson what they were really thinking, which for once went quite well), and again at the 1984 Eastercon in Leeds. But those talks were pre-computer, and the scripts have long since been lost.

This essay, however, was written up for *Foundation*, and then formed the basis of the entry on ‘History in SF’ in the first Clute and Nicholls *Encyclopedia of Science Fiction* (1979), still surviving, though much expanded and updated (twice) (1993 and 1999). The article has also been translated into French, as ‘L’Histoire dans la science-fiction’, in Gérard Klein and Daniel Riche (eds), *Change: science-fiction et histoire* (Paris, 1981).
The strong point about it, I think, is the little diagram on p. 82. This argues that the reason why ‘change-the-past’ stories have turned into a genre with continuing possibilities for variation is that there is a tension inside them, or maybe several tensions: between what I call ‘Malthusian’ and what are generally called ‘Whig’ versions of history; between the idea that history is a product of great impersonal forces and the idea that it is the result of decisive action by great individuals; between the idea that history has an irresistible logic, and the idea (which is the basis of the ‘alternate history’ mode discussed in items 7 and 8 below) that its major effects are created by tiny chance variations. Along with this goes a running contrast between two human types, the one created by his/her environment and never able or willing to escape from Huxley’s ‘glass bottles’ of social conditioning, the other taking an anthropological view of his/her own society, as well as other people’s, and ready to use that knowledge to achieve their goals. This last contrast is frequently a theme in sf; see Vance’s extended presentations of it as discussed in item 6, or Poul Anderson’s ‘van Rijn’ stories, notably the significantly entitled *The Man who Counts* (1957), which, as noted in the ‘Personal Preface’, was one of my first readings in the field. My point, anyway, is that these tensions, these questions to which we do not know the answer, are what provide the energy of the plots, beneath the surface of human dilemmas and individual successes and failures.

One tension I did not take up in the piece is the question so important to sf, what is the role of technological advance? Is this the real determiner of history? An argument to that effect is put very straightforwardly by the Christopher Anvil story in *ASF* (Oct. 1962), ‘Gadget versus Trend’. The story says, in effect, that one gadget invented by an engineer will outweigh any amount of sociological trends, no matter how inevitable these are said to be. There is a view the other way, which says – usually looking at the contrast between Chinese and European civilisations – that gadgets will only be accepted if they can be incorporated into existing sociological structures, or, of course, exploited by rebels against those structures. Robert Heinlein’s ‘Let There be Light’ (1940) shows an inventor pushing his ‘sun-trap’ device through socio-economic barriers, Ursula Le Guin’s ‘The New Atlantis’ (1975) shows just such a device being suppressed (see, this time, item 14, below). And then there is the view which says that when it is ‘steam-engine time’ or ‘steamboat time’, steam-engines and steamboats will be invented. In other words, major technological advances rest on an often unrecognised build-up of minor advances, but, once the parts are available, someone will combine them. Again, the brilliant individual is not indispensable. If Thomas Edison hadn’t invented all the gadgets he did, surely someone else, before long,
would have done so instead. As I say, we don’t know the answer to these questions, and it is hard to imagine how anyone could set up an experiment to test them. Competing cultures create something like an experimental situation, but hardly under laboratory conditions.

Still, what all this goes to show, I hope, is once again that sf is serious, even when it is being playful. These are all major issues, and it may be only the long prosperous afternoon of Western society post-1950 that has prevented them from becoming more contentious. The six essays after this one all in their different ways are connected to the same subject. The next two are on the issue of cultural contest, the two after that deal with ‘alternate history’, and the last two look at a particular type of ‘alternate history’, the ‘world where magic works’, considering also the relationship between magic, religion and science.
Science Fiction and the Idea of History

Just over half-way through his juvenile novel, *Citizen of the Galaxy*, Robert Heinlein gets his hero Thorby involved in a play. The play is a historical one, dramatising the origins of the queer, nomadic, matriarchal, spaceship-society of Free Traders among whom Thorby now finds himself, and is to be produced publicly at their great Gathering. But it is introduced irreverently, like this:

Aunt Athena Krausa-Fogarth ... had the literary disease in its acute form; she had written a play. It was the life of the first Captain Krausa, showing the sterling nobility of the Krausa line. The first Krausa had been a saint with heart of steel. Disgusted with the evil ways of fraki, he had built Sisu – single handed – staffed it with his wife – named Fogarth in draft, changed to grandmother’s maiden name before the script got to her – and with their remarkable children. As the play ends they jump off into space, to spread culture and wealth through the galaxy.

Within the plot of *Citizen of the Galaxy* itself, this play has a very obvious function: it is an attempt by the dictatorial ‘Grandmother’, who runs the ship, to involve Thorby in her society’s mythology and make it impossible for him to get away. (Significantly, he is helped to escape just before the play opens.) But the description of the play quoted above is enough to show the true weaknesses, or rather falsities, of ‘Grandmother’s’ position. For one thing, it is the essence of the nomads’ philosophy to believe themselves different from fraki, i.e., the planet-bound; yet clearly their ship must have been built somewhere and its crew must have had a planetary origin. Indeed, they must have been fraki, and their motives for going into space can hardly have been those of people established in nomadism for generations. Aunt Athena’s interpretation of the decision as a purely moral one is thus improbable and anachronistic, while her
motive for seeing it that way is indicated by the insertion of her own name in the script, and by the alteration of it to ‘Grandmother’s’. The play projects the self-image of a society, exclusive (the word ‘fraki’), arrogant (‘their remarkable children’), materialistic (‘culture and wealth’) – but not, one must add, without its virtues.

Heinlein is aware of all these falsities, and indeed uses the play to make them ironically clear. He is aware also of the tendency of most human societies to rewrite history in conformity with their current self-images; Thorby’s difficulty all through the book is that of breaking through the basic, unquestioned assumptions of the various societies he comes into contact with, in order to find out what is true. It would be possible to write about *Citizen of the Galaxy* on its own as exemplifying the struggle between these two attitudes: the introspective, self-regarding, moralistic one of people certain of their own position in the universe, and the functionalist, quasi-anthropological one of those who move from one role to another. But it is more useful to suggest that in science fiction as a whole one can see something like such a contest; also that its existence is a feature of modern times alone. In history as in the physical sciences, science fiction relies on a view of the world, which, if not exactly created in the 1920s, does not go back so very much further, and in many people’s minds has not been accepted even yet.

The origins of this ‘world view’ are no doubt endlessly debatable. There is no event in historical studies comparable with the appearance of *On the Origin of Species* (1859) for biology or Lyell’s *Principles of Geology* (1830–3) for geology. One book, however, which at least exemplifies the way in which views of history and of society were forced to change is Thomas Malthus’s *An Essay on the Principle of Population* (1798; rev. edn 1803).¹ This, of course, is not primarily historical at all; Malthus’s main concern is with his own present and with the future, and his central thesis is a socio-economic one: that the population is always rising up to and beyond the level of food supply, and as regularly being cut down again by famine and its attendants: war and disease. Malthus goes on from this thesis to suggest that the only way of stopping the permanent and dreadful oscillation (apart from ‘vice and misery’) is through ‘moral restraint’ – a theory which has a history of its own. Nevertheless, Malthus’s importance for this present article is that although his main

¹ Quotations in this article are from the two-volume Everyman edition, a reprint of the 7th edition. I have been encouraged to choose Malthus as an example rather than, say, Ricardo or Marx, because he crops up frequently enough in science fiction to show that he has made some impression on a few authors, especially (I would think) Frederik Pohl.
interests were not historical, he did suggest, both directly and indirectly, new attitudes to history and to society. The direct influence can be seen, for example, in his complaints that, though population pressure and its oscillations have been a force throughout human history, earlier historians have taken little account of it. When writing about the Germanic invasions of the Roman Empire, for instance, he notes (I. 61) that it is of less interest to consider the motives of the leaders, the Alarics and Theoderics, than to wonder why they were provided with so many ‘willing followers’ – a fact he would explain simply by the permanent threat of starvation. Since his time there is no doubt that historians have been more willing to consider economic and impersonal matters of this kind. But Malthus’s indirect influence is more pervasive. Though he does not in fact offer opinions about historical matters, if his thesis is accepted, then clearly a different view of people’s motivations in history must be taken. He seems to suggest, for instance, that individuals are less important than, and may even be created by, general social conditions. To put it crudely, one might think it less a case of Alaric leading the Goths than of the starving Goths pushing Alaric, with the further corollary that if Alaric had not existed the role would have been thrust on someone else. Whether this particular instance is true or not hardly matters, for one might conclude also, from the Essay on the Principle of Population, that these ‘general social conditions’ could be powerful in ways less obvious than simple starvation. Malthus noted, for example, that the Dutch mortality rates bore a close resemblance to the marriage statistics. One cannot imagine that many people actually said, or thought, ‘Hurrah! Granny’s dead, now there’s room for our children’. Yet in a statistical mass something like this motivation seemed to be present. What the Essay on the Principle of Population suggested to many readers was that the whole of society was bound by invisible but powerful forces, hardly detectable through the experience of any one person (which was why earlier historians had said nothing about it), but nevertheless there. To some this was an exciting prospect: it meant that one could hope to change society for the better by using these forces (e.g., to promote ‘moral restraint’). To others it was profoundly depressing. In Crime and Punishment (1866), Dostoyevsky has one of his characters remark that ‘in our age even pity has been outlawed by science and … in England, where they seem to be very keen on political economy, people are already acting accordingly’.2 It is easy to trace the origins of this back to Malthus’s argument (II. 39) that it is impossible to ‘raise the condition of a poor man’ by giving him money ‘without proportionably

2 David Magarshack’s translation (Penguin, 1951), 31.
depressing others in the same class'; and the argument (difficult though it might be for poor men to grasp) was no doubt believed and acted on by many not naturally uncharitable Victorians. Malthus and his peers, then, forced on their contemporaries a different and rather darker view of human society, one in which the individual will seemed less powerful and the statistical mass more so.

One casualty of this general change was that style of history exemplified by Heinlein’s ‘Aunt Athena’ and often called nowadays, following Herbert Butterfield’s famous book of 1931, ‘the Whig interpretation of history’. It has not been a total casualty. In my own schooldays I was subjected to bits of the English version of this history, basically a nineteenth-century ‘self-image’ seeing in the past a gradual climb towards constitutional democracy and parliamentary government, and dwelling therefore on Anglo-Saxon institutions, on Magna Carta, on the Battle of Crécy (where English yeomen, it was stressed, defeated French knights), on the Spanish Armada, the Civil War, the revolution of 1688, the two-party system, and so on. The gaps in this history are obvious, and it is no doubt more rarely found than it was. But other national versions of it still flourish. Heinlein himself, in Citizen of the Galaxy, shows a quite un-ironic loyalty to the American branch of the ‘Whig interpretation’, which runs from the Pilgrim Fathers to 1776, the Alamo and Abraham Lincoln, all centred on the themes of external independence and internal definition – one wonders whether Thorby could be made, in 1973, still less in 2016, to accept so readily that Lincoln had ‘freed the slaves’. But nevertheless, people are on the whole nowadays quicker to see the defects of history of this type – namely, that it ascribes too high a role to individual heroes, and tends to assume that those heroes (gifted with implausible foresight) did what they did because they knew their actions would lead to something like the present situation.

Science fiction authors – to return to the main subject – are in general extremely sensitive to such defects. They do their best to avoid ‘Whig interpretations’ and not to project current self-images and ideals into either the past or the future. But, as with Heinlein, this does not mean that they are not aware of such ideals and images. Indeed, as it is the main purpose of this article to suggest, many science fiction stories depend for their success on a strong tension between those two

3 A good account of them collectively is R.E. Heilbroner’s The Worldly Philosophers, rev. edn (1967).

4 Another science fiction author who shows a weakness for it is Asimov. At the end of his The Stars Like Dust (1952) a fairly implausible importance is attached to the Constitution of the long-extinct USA.
views of history, and of society, which one may label, for the moment, ‘Malthusian’ and ‘Whig’. The former is impersonal, technical, economic; it depends on the assumption that societies are bound together by very powerful forces, invisible but not unreal, which can in some circumstances be used positively but which may all too easily betray the careless or ignorant reformer. The latter is mythopoeic, hero-making; it assumes that history is purposive, leading strongly or inevitably towards the superior institutions of the present (or of an imagined future). It is perhaps predictable that the former should be the stronger. Nevertheless, it is not quite a foregone conclusion. The interaction between the two views has provided many fine stories. It allows one also to see how strongly science fiction has developed, and how authors seem to have affected each other in developing a consistent world picture.

The tension between the two views can be seen most obviously in the many stories about time travellers who return to change the past. Of these the most famous must be L. Sprague de Camp’s *Lest Darkness Fall* (1941). But, before considering that, it is useful to have for comparison a lesser-known story by the same author, ‘Aristotle and the Gun’ (*ASF* (Feb. 1958)).

The hero (or perhaps the villain) of this story is an American scientist named Sherman Weaver. He is working on a project to build a time machine when Washington cuts off his appropriation. He resents this bitterly, the more – as he confesses – because it is done by non-scientists, and he is himself an awkward and misanthropic person with little ability to succeed socially in any way except through science. He therefore decides that before closing down entirely he will try to go back in time and put the world on a line where science, that unqualified good (as it seems to him), will be advanced earlier and more quickly. The key personality whom he decides to try and affect is Aristotle, during that period when he was tutor to Alexander the Great in Macedon.

Briefly, Weaver does go back; he represents himself as a travelling Native American philosopher; he shows Aristotle a telescope, teaches him geography, astronomy, physics, etc. and tries always to stress to him that the key to all these advances is scientific method, ‘the need for experiment and invention and for checking each theory back against the facts’. This, he feels, is in the long run more important than any single invention or piece of information. Aristotle absorbs all this most thoroughly. But, unfortunately, he lives in a military court, and Weaver, partly through his own naivety, runs into trouble with Macedonian ‘security’. In the end, he has to draw and use a gun, but is overpowered and on the point of execution when catapulted back into his own time. He looks around eagerly for signs of the ‘super-science’ he meant to
create, but finds himself in a wilderness. He has, indeed, altered the course of history, but away from science rather than towards it. America has only been contacted and not conquered by a relatively barbarous Europe, the Native Americans advancing towards a kind of feudalism. Weaver is enslaved, works his way up at last to being a librarian, and finds the mistake he made, in a résumé of the Aristotelian treatise (clearly based on the events of his own visit), ‘On the Folly of Natural Science’. In this Aristotle explains that there are three reasons why ‘no good Hellene should trouble his mind with such matters’:

One is that the number of facts which must be mastered before sound theories are possible is so great that if all the Hellenes did nothing else for centuries, they would still not gather the amount of data required. The task is therefore futile. Secondly, experiments and mechanical inventions are necessary to progress in science, and such work, though all very well for slavish Asiatics, who have a natural bent for it, is beneath the dignity of a Hellenic gentleman. And lastly, some of the barbarians have already surpassed the Hellenes in this activity, wherefore it ill becomes the Hellenes to compete with their inferiors in skills at which the latter have an inborn advantage. They should rather cultivate personal rectitude, patriotic valor, political rationality, and aesthetic sensitivity.

Weaver has inculcated scientific method – but forgotten to make it attractive. His final motto is ‘Leave Well Enough Alone’.

Now (as may be obvious even from this summary) this is a good story on its own; and it has a point to make about scientific method: that however attractive it may seem to us, this is largely a result of the fact that it works! Yet scientists who lived before this was obvious must still have had some motivation. However, the true point of the story, I would suggest, is about history. Weaver’s hobby is the history of science – he even writes for *Isis*. But ‘no history is more whiggish than the history of science’. And, as a ‘Whig historian’, Weaver is regrettably convinced that the ideals of his own time are immutable and eternally applicable. He is as misled as Heinlein’s ‘Aunt Athena’ and (such being the respect still paid to science and to its mythology/history) more dangerously so. ‘Aristotle and the Gun’ is thus a pointed parable of the downfall of one misguided interpretation of history.

5 The remark comes from J.D.Y. Peel’s *Herbert Spencer: The Evolution of a Sociologist* (1971). However, the point is made more familiarly and at greater length in Arthur Koestler’s book *The Sleepwalkers* (1959).
The comparison with de Camp’s earlier work, *Lest Darkness Fall*, is obvious. In this also, a modern man, Martin Padway, finds himself thrown back in time (though in this case accidentally) to a sixth-century Rome under Gothic occupation, at the start of the Dark Ages. He too exerts himself to change history, in what is basically a twentieth-century direction. But unlike Weaver he seems to succeed. For this there are several reasons. One is that he is not himself a scientist, but an archaeologist (as he puts it himself, ‘a historical philosopher’). As a result, he has no particular wish to urge people towards twentieth-century solutions to their problems, whether these might be scientific method, or democracy, or a secularised society. It is, for instance, obvious to him that the orthodox Church is hopelessly corrupt, while even more than the corrupt clerics he fears the honest and dedicated ones with their attendant enthusiasts, ‘no doubt because their mental processes were so utterly alien to his own’. Yet when threatened by these forces he wastes no time on indignation, using instead a kind of blackmail; and though his actions may be morally dubious, they do at least show him recognising that his enemies have a kind of sense and consistency which is not to be dispersed, as Weaver might have thought, by a short explanation of the virtues of religious tolerance.

In the same way, Padway does not boggle at the customary high interest rates, at the inability of the rich to understand investment or of the Goths to understand tactics; he sees all too clearly that people are moulded by their environment and that his superiority over the others (while not to be denied – cf. item 5, below) comes only from his different background. He cannot, then, simply tell people things which contradict all their previous experience. Indeed, another reason for his success is that he tells very little to anyone. At no point does he try to teach theory or scientific method. Instead, the list of things he introduces very largely consists of items that work straight away without much need for explanation: Arabic numerals, double-entry bookkeeping, distilling, horse-collars, telescopes, military staff co-ordination, political propaganda, etc. Of course, they are intended to have just as disruptive an effect as Weaver’s theorising in ‘Aristotle and the Gun’; but the challenge they present is not immediate, while

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6 Some of these have taken their place in science fiction folklore. One finds very similar lists in M.W. Wellman’s *Twice in Time* (1951), or in H. Beam Piper’s ‘Gunpowder God’, *ASF* (Nov. 1964). Poul Anderson’s much more original story in *ASF* (Oct. 1963), ‘The Three-Cornered Wheel’ (see again, item 5, below), still turns on a very similar point – the introduction of calculus to a static alien civilisation.
the rewards are. One notes that items which do not fit this pattern (like Copernican astronomy) are introduced in a much more roundabout way, while printing, the major invention introduced, is used at first only for the attractive but undignified purpose of a gossip and scandal sheet. All in all, Padway has a much lower opinion of himself and his world than Weaver – he even has expensive failures, like his inability to produce either a decent clock or fireable gunpowder. The last reason for his success is a strong awareness that he is ‘living in a political and cultural as well as in an economic world’. But even when he remembers that, one should note that he still thinks of the political and cultural rulers as products of forces outside themselves; it is this that preserves him from simple horror at the bloodthirsty habits even of his associates and people he likes.

Padway, in short, is more tolerant than Weaver. I should stress that this tolerance does not go very far. Padway is not prepared to like the sixth-century world or to behave in a sixth-century manner, and his determination to make changes is as strong as Weaver’s. But he is prepared to accept that the people and their habits have a kind of logic. He behaves as an anthropologist rather than a missionary.

This may nowadays seem a very natural, indeed inescapable response, and it is significant that de Camp has to work harder at creating Weaver as a character than at Padway. But proof of the distance science fiction has travelled comes from a comparison of Lest Darkness Fall with a very similar book written 52 years earlier, Mark Twain’s A Connecticut Yankee in King Arthur’s Court (1889). The two books are, in many respects, astonishingly close, so much so that it is hard to believe that de Camp had not some idea of rewriting Twain in his mind. In Twain’s book, as in de Camp’s, a ‘modern’ man is catapulted back to the sixth century, though in this case to Arthurian Britain rather than Gothic Italy, while in Twain’s book also the ‘Yankee’ does his best to change matters by the introduction of printing, advertising, gunpowder and pragmatic engineering. Some devices overlap. Both Hank Morgan and Martin Padway, for example, gain a reputation for wit by translating, literally, the clichés of their own century, and both have troubles with sub-editors. But such similarities are far outweighed by one enormous difference: both Hank Morgan and his creator hate and despise practically

7 After this piece came out I got a letter from de Camp, which, unfortunately, I have not kept. In it he said he was not reacting against Twain, but against a much dumber imitation of Twain, which had come out as a serial in Astounding a few months before. I have never been able to trace this. Either de Camp’s memory or mine is at fault.
everything they meet in the past, from the institutions of feudalism to the widespread drunkenness, from the unrealistic art to the indecent conversation, and, above all, both project hatred and fear of established religion and especially of the Roman Catholic Church.

This may seem a hard saying, and (Twain being an accepted ‘classic’) critics have on the whole preferred not to say it. There are two arguments that might be used in defence of *A Connecticut Yankee*: one, that Hank Morgan is an ‘unreliable’ narrator whose opinions are to be distinguished from his author’s; two, that the book is, after all, a comic one and not meant to be taken seriously. There is a grain of truth in both arguments, but no more. For the first one, it is true that in places Hank’s Philistinism is meant to reflect on himself – for example, when he criticises the art of the Arthurian court and goes on in a general way to compare Raphael unfavourably with nineteenth-century insurance ‘chromos’, or ‘three-colour God-Bless-Our-Homes’. Nevertheless, even there the final criticism of Raphael’s ‘Miraculous Draught of Fishes’ – that it is unrealistic – is, I feel, meant seriously; and in other places Twain seems to drop the ‘Hank Morgan’ personality altogether in order to lecture the reader directly, even going so far, on occasion, as to add genuine historical references to assure the reader that what he says is true. Furthermore, though Twain exploits the ‘culture gap’ between the sixth century and the nineteenth for comedy, that comedy always has a touch of anger in it. We are given, for instance, the comic picture of knights riding around with advertisements on their shields, or of a sewing-machine being rigged up to an ascetic pillar-squatter to turn out shirts. But the purpose of the former (as Hank admits) is to make ‘this nonsense of knight-errantry’ ridiculous, while the latter simply treats the unfortunate saint as a mad machine. Twain is also quite clear that both are intimately bound up with sobriety, modesty, capitalism and religious nonconformity.

*A Connecticut Yankee* is ‘Whig history’: it presents a flattering self-image of Twain’s own (adopted) society, the winners in the American Civil War. If nothing else proves this, it stands out from the Yankee’s crusade against slavery, an institution of negligible importance in any Arthurian story from the *Gododdin* to Malory, and clearly imported with all its trappings from the cotton plantations of the southern states of America, not to mention Twain’s own native Missouri. As such, the novel is of extreme historical interest, but open to criticism in a way (or so I imagine) that would be impossible with de Camp’s more cautious cultural relativism. In a curious way Twain parallels de Camp’s character Sherman Weaver seventy years later; both (at least on the evidence of this book by Twain) are ‘mono-culturalists’ – they see the logic of history as pointing only to themselves.
Twain has had a good deal of influence over the years, if not on de Camp, then certainly on the similar, but feeble, ‘Leonardo da Vinci’ story, Manley Wade Wellman’s *Twice in Time* (1951), and I suspect on several other ‘alternate universe’ stories as well. But, on the whole, authors have seen its weak points. There are, for instance, two very strong attacks on his point of view by relatively ‘mainstream’ authors, both of them deserving some analysis. The first is Rudyard Kipling’s short story ‘The Eye of Allah’, reprinted in his collection *Debits and Credits* (1926). Unlike anything discussed previously, this is not a ‘time travel’ story. But it is one about anachronism – specifically, about the microscope which one of the four central characters, the artist-monk John of Burgos, has brought back to his monastery from Arab Spain. He wants it only to provide inspiration for the devils he draws on his manuscripts; but two of the other characters present, the doctor Roger from Salerno and the friar Roger Bacon, see immediately its wide importance – the one medical, the other optical. But, at the end of the story, after hearing all the others out, the abbot Stephen takes the microscope and destroys it. From this extremely bald summary one might think that the story confirms Twain’s picture of the medieval Church as an obscurantist organisation, or that it fits the rather common science fiction pattern of the ‘Galileo’ or ‘persecuted innovator’ story (see, e.g., ‘The Thing in the Attic’ in James Blish’s *Seedling Stars* (1957)). But neither of these is true. Abbot Stephen is neither stupid nor bigoted. At the start of the crucial conversation he takes off his official ring, to show that he listens as an individual; only when he puts it back on does he speak from authority, with the threat of force behind him. Nor, indeed, is he personally unaffected by the decision, having at the time a mistress, desperately ill, whose only function in the story is to make it obvious that he realises the misery to which loss of the microscope (and the theory of germs) must condemn the world. Since Kipling goes to such lengths to excuse the abbot, one wonders why he is made to decide the way he does. The reason is given, with typical indirection, as the party walk out on the monastery roof after dinner and see:

three English counties laid out in evening sunshine around them; church upon church, monastery upon monastery, cell after cell, and the bulk of a vast cathedral moored on the edge of the banked shoals of sunset.

The scene is one of utter social stability, guaranteed by the Church. What the abbot fears is any premature disruption of this; and his awareness that science is connected with belief-systems and so with politics is clearly
meant to be taken as correct. At the end he confesses that he has seen microscopes before, while a prisoner of the Saracens, and seen also:

what doctrine they drew from it ... this birth, my sons, is untimely. It will be the mother of more death, more torture, more division, and greater darkness in this dark age. Therefore I, who know both my world and the Church, take this Choice on my conscience. Go! It is finished. He thrust the wooden part of the compasses deep among the beech logs till all was burned.

‘It is finished’, of course, translates the ‘Consummatum est’ of Christ on the Cross. The words show that Stephen realises that what he has done is also in some sense a crucifixion.8

Kipling’s story, then, takes the point common to both Twain and de Camp – that science cannot be dissociated from cultural change – but defies both of them by suggesting that sudden cultural change, however great the potential benefits, may not be desirable. In a short story written some thirty years later, William Golding suggested further that the forces opposed to cultural change are so strong as to make anachronisms like the medieval microscope not only undesirable but next to impossible. His story, ‘Envoy Extraordinary’ (1956, but reprinted in his 1971 collection, Scorpion God), betrays the influence of science fiction relatively clearly.

In it, as in ‘The Eye of Allah’, there are no ‘time travellers’. But the central character is a wildly anachronistic Greek called Phanokles, who appears in a late Roman Empire setting possessed of all the attitudes of the twentieth century. In particular, he has discovered steam-power and proposes to build a paddle-steamer. To this the materialist and sceptical Emperor gives a grudging assent, largely to please his enthusiastic grandson, Mamillius (in love with Phanokles’s sister). But the other grandson, the ambitious and soldierly Posthumus, gets to hear of this and thinks it a plot to supplant him. He arrives at the harbour with massive force; and the core of the story lies in the attempts made by the Emperor, by Phanokles, and by the grandson Mamillius, to persuade or overpower him. Phanokles’s arguments are frankly useless. He tries to convince Posthumus of his good intentions and of the benefits steam can bring, only to find that even the galley-slaves are against it (fearing redundancy), while the soldiers are terrified of the peaceful, sordid, loot-less existence he seems to promise. More effective is the Emperor’s device of inspecting his guard at great length in full

8 For a longer but similar account of this story, see the chapter on ‘Healing’ in Tompkins 1959.
armour in blazing sunshine, so that his long and patriotic harangue is punctuated by the ‘Crash’ of disciplined soldiers fainting. But, in the end, the situation is saved by deeds not words: the steamship *Amphitrite* runs amok in the bay and sinks half the invading fleet by accident, and Phanokles’s sister, the dumb and beautiful Euphrosyne, removes the arming-vane from Phanokles’s artillery-shell, and blows Posthumus to bits. The comedy of the story lies essentially in the success of the Emperor’s pragmatic man-management as opposed to Phanokles’s naive ideals of progress (with which a modern reader is at first disposed to sympathise). At one point Phanokles proposes the well-known Wellsian truism, that ‘Civilization is a matter of communications’.9 ‘I see’, replies the Emperor, thinking of Caesar and Alexander and no doubt of that other would-be world conqueror, Posthumus, ‘They should be made as difficult as possible’. Similarly, at the end, when Phanokles has just invented printing, the Emperor at first shows enthusiasm, thinking of public libraries. Then mature consideration takes over:

_Diary of a Provincial Governor. I built Hadrian’s Wall. My Life in Society, by a Lady of Quality … Prolegomena to the Investigation of Residual Trivia … In the Steps of Thucydides … I was Nero’s Grandmother …_

And then the reports! He sends Phanokles as far away as possible, as ‘envoy extraordinary’ to China. Of all the inventions, he keeps only one – the pressure cooker, to rejuvenate his own palate. So, in the end Phanokles is rejected, like Kipling’s John of Burgos, but (one should note) not simply in the interests of public order. Despite the comic tone of the story there is one moving moment, when the galley-slave who has tried to kill Phanokles gives his reason for fearing him. It is not that he wants to be a galley-slave. But, anticipating the future proposed for him, he quotes the speech of Achilles’ ghost in Book 11 of the _Odyssey;_

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9 In chap. 25, sect. II of his *Outline of History, 6th edn* (1931) H.G. Wells asserts that the Roman republic was doomed (a) by its lack of printing and (b) by its cumbersome method of non-representative government. In the next two chapters he goes on to compare the Roman Empire unfavourably with the Chinese. Golding’s early works show repeated responses to Wells, and his hostile relationship with the _Outline of History_, which Golding’s father venerated, is documented in Carey 2009. I would add that even _Lord of the Flies_ arguably owes its frame to the _Outline_. Certainly, Phanokles is very much a ‘Wellsian’ man, with his technical and democratic bias and his belief in the ease of progress. The _Outline of History_ has probably been as influential as any book in spreading a progressive and materialistic (but rather ill-natured) view of history.
'I had rather be slave to a smallholder than rule in hell over all the ghosts of men'. Bad as his life is, the mechanised world of Phanokles seems to him a living death. Though Golding does not quite endorse this, he makes the human resistance to scientific progress evident in a way done by none of the authors discussed earlier.

What these five stories have in common is a tension between our present view of society (as exemplified by the ‘time traveller’ or the anachronism) and some ancient view (as exemplified by the various resistances put up by Goths, Romans, Macedonians or medievals). Only Twain, of the four authors cited, sees this tension as one between good and evil, leaving the ancient society with nothing to say for itself: he is the only ‘Whig’ among them. But in spite of the general similarity of theme, it should be obvious that all the authors provide quite different answers to the same kind of question. This similarity-in-difference can best be represented by a graph. One axis grades the stories along the line ‘whether it is more, or less, desirable to change the past’, the other along the line ‘whether it is more, or less, possible’ (see Figure 1).

No two stories are very close together. To take the most extreme cases first: Twain, in *A Connecticut Yankee*, sees it as 100 per cent desirable to change the past, but is clearly uncertain about its possibility (for at the end the Yankee, having defeated the nobility, loses to the Church and Merlin in a way that makes him approach despair). That story therefore occupies position (1). Kipling, by contrast, feels that it might
have been easy for history to have taken another turn (indeed, it costs abbot Stephen great pain to prevent it), but finds it undesirable because potentially disruptive. He is therefore at (2); (3) is William Golding. Phanokles’s vision of the future has little charm for him, and he sees also a determined resistance to it by rulers and ruled alike. De Camp takes up both (4) and (5), i.e., ‘Aristotle and the Gun’ and Lest Darkness Fall respectively. In both cases he admits the desirability of changing the past, though Weaver’s feelings about this are stronger than Padway’s; but (through faults of technique perhaps) Weaver in ‘Aristotle and the Gun’ finds history all too easy to change but impossible to change successfully.

It must be stressed that this graph is not merely a visual aid. The tension between ‘desirability’ and ‘possibility’ is what all the stories are really about. If it did not exist, then they would be simply about survival, i.e., what the inventor or time traveller might have to offer. But instead they are about what he has to offer that the world is able to accept! Without some sense of the way in which people are moulded by their social conditions and philosophical assumptions, the last qualification is meaningless, and so are the stories. One may feel (like Twain and to a lesser extent, de Camp) that modern men are wiser and less hidebound than their predecessors, in which case the stories deal with modern men overcoming more or less excusable resistance; or else (with Kipling and Golding) that the ancients had a good deal on their side, in which case the stories involve merely a choice of one set of advantages and disadvantages or another. But either alternative depends in some degree on the analysis of history, and on viewing it moreover not just as a sequence of events but as an interaction of forces. It is this last point which is the novelty of Malthus; this also which is signally lacking in history as dramatised by Heinlein’s ‘Aunt Athena’.

There are then several remarks which might be made in conclusion. One is that stories of this type seem to be something genuinely modern. One cannot imagine any author or reader from an earlier age having the background of ideas about history, or science, or society, which would enable him to appreciate what is going on in them. Another is that, apart from the many other stories which could simply be placed on the graph without further explanation,

10 Such as Dean McLaughlin, ‘Hawk among the Sparrows’, ASF (July 1968) [somewhere between (5) and (1)] or Arthur Porges, ‘The Rescuer’, ASF (July 1962) [anywhere above (2)].
created a ‘parallel universe’ or else have destroyed his own. Both these possibilities lend to recognisable story types, the first to the one about the ‘parallel universe’, where history has taken a slightly different turn (e.g., Philip K. Dick, *The Man in the High Castle* (1962), Harry Harrison, *A Transatlantic Tunnel, Hurrah!* (1972), Ward Moore, *Bring the Jubilee* (1953), Randall Garrett, *Too Many Magicians* (1967), and since then a whole plethora of stories, by Harry Turtledove among many others), the second to the ‘Time Patrol’/‘Change War’ type (e.g., Fritz Leiber, *The Big Time* (1961), Isaac Asimov, *The End of Eternity* (1955), Poul Anderson, *The Guardians / Corridors of Time* (1961/1965), etc.). Intergeneric types are not impossible either (I think of the H. Beam Piper ‘Gunpowder God’ series). The point is, however, that all these stories also owe their very potentiality to modern conceptions of history, and are attractive to us at least partly because they show us how we too might be different if subjected to a different set of social pressures.

My third and last point is that the consideration of history in science fiction need not stop there. A good deal has already been said in this article about the tension between an individualist view of history and that view which holds that personalities are more or less accidental. To show that this too is important in science fiction I need do no more than mention Asimov’s *Foundation* series. This is set very much in the future and contains no time travellers or anachronisms. Still, it must be obvious to everyone that the trilogy (as it was when this piece was first written) could not have been written without some sense of historical analogy, while for much of the time the stories do nothing but dramatise the subordination of the individual will to the ‘laws’ of sociohistory. Could Asimov have written as he did without the groundbreaking theories of Malthus and his many successors, down to A.J. Toynbee?11

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11 It is said that John W. Campbell Jr., Editor of Astounding/Analog for many years, had a potted version of ‘cyclic history’, presumably deriving from Toynbee, which he would lend out to favoured authors like Asimov – and perhaps Poul Anderson and Frank Herbert, both authors from the Campbell stable with a strong reliance on the cyclic history theme.