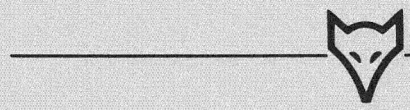
Sha Xin Wei



THE AUTHOR

Michael Cooley was born in Tuam in the west of Ireland in 1934. He was educated at local Catholic schools and later studied engineering in Germany. In industry he specialised in engineering design and gained a PhD in computer-aided design.

Mike Cooley was national president of the Designers' Union in 1971 and a TUC delegate for many years. A design engineer for eighteen years, he was a founder member of the Lucas Aerospace Combine Shop Stewards' Committee and one of the authors of its Plan for Socially Useful Production.

He has lectured at universities in Australia, Europe and the United States. He is currently guest professor at the University of Bremen, and visiting professor at the University of Manchester Institute of Science and Technology. He has written for a variety of publications worldwide including the *Guardian*, the *Listener* and the *New Scientist*. He has produced over forty scientific papers and is author or joint author of eleven books in English and German and has contributed to some thirty-five more. His work has been translated into over twenty languages from Finnish to Japanese. He is an international authority on human-centred computer-based systems and in 1981 was joint winner of the $50,000 Alternative Nobel Prize, which he donated to the Lucas Combine Committee.

Mike Cooley is chairman and director of several manufacturing companies in his capacity as director of technology of the Greater London Enterprise Board. He has been married for twenty-six years to a physics teacher, Shirley, and they have two sons.

ARCHITECT OR BEE?

The Human Price of Technology

Mike Cooley

New Edition,
with a New Introduction by
Anthony Barnett

A Tigerstripe Book

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LONDON

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To Ernie Scarbrow and the late Danny Conroy,
secretary and chairman of the Lucas Aerospace
Combine Shop Stewards' Committee,
whose imagination and selfless dedication
was an inspiration to me. As mentors and friends
they epitomised for me all that is best
in the trade-union movement.

For Kim Wei
Thanks for coming
to our meeting
Mike
11.9.06

A bee puts to shame many an architect in the construction of its cells; but what distinguishes the worst of architects from the best of bees is namely this. The architect will construct in his imagination that which he will ultimately erect in reality. At the end of every labour process, we get that which existed in the consciousness of the labourer at its commencement.

KARL MARX *Capital*

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INTRODUCTION

This book was published out of their back room in 1979 by Mike and Shirley Cooley in response to demands that Mike's argument, in talks, speeches and articles, be made more permanently available. It became a minor legend in its own time. In Britain, over 7000 copies of the first edition of *Architect or Bee?* sold through informal networks. A German translation has now sold 20,000 copies; there have been Swedish, Australian and American editions. In the USA almost every innovative thinker on the social aspects of technology and design cites Cooley. Readers of this new edition will see immediately one of the reasons for the book's appeal. Mike Cooley addresses one of the most central and most difficult issues of our time in a fashion that is completely accessible to people who have no technical knowledge whatsoever.

I first heard of one of the book's chief ideas long before I saw the book itself. This idea whispered, 'It can be done.' It was an idea that said, there is still a *reason* to hope. Although it is not often acknowledged, hope thrives on reason – and on experience. This was another part of the legend (and the truth): the author was an engineer, a scientist with shop-floor credentials; he was saying something practical. The argument that I heard by word of mouth and that warmed the embers of my hope was simplified by its transmission. New technology, said the grapevine, *can* be used to increase the skill of workers without decisive loss of productivity. Therefore the tremendous progress in control and communication, whether globally or in terms of plant and automation, need not turn us into its helpless collaborators. Instead, modern gadgetry can be used to let us be masters of our own destiny.

The argument is immensely attractive because it appeals to a desire that it is almost impossible to express in contemporary capitalism without sounding soft in the head. It refuses to accept as

inevitable the division of life into separate spheres of consumption and production, of leisure and work. Cooley insists that modern production itself can at last be made interesting. That in addition to the grind (and we all need a bit of grind) there could be skilled purpose, hence some fulfilment not just in privileged middle-class jobs but also in the factories.

This is quite complicated for a whisper, I realise! I am trying to describe in words a cross between a flash of inspiration and a simple mechanical proposition such as how to use a screwdriver. The way it came across was this: 1) new technology can be very dangerous but it can also be a force for good; 2) its terrific power can be turned to our advantage so that we can *do* more and do it better; 3) this is not just the thought of a kind-hearted left-wing professor but of a practical engineer supported by shop-floor workers at a large plant.

Like all ideas that make you say 'Really?', this one counters a dominant notion: in this case the notion that most of us are condemned to be powerless victims of new technology. Instead, Cooley argues: 1) do not be Luddite about electronic advances; 2) respect and fear its capacity to turn us into vegetables but do not believe that this is inherent in the new technology or even inevitable; 3) seek instead to turn the machines against their present masters, indeed this will be crucial to escape subordination. The attraction of such an argument is obvious. It is modern without being modern*ist*. It is not 'old-fashioned', a fatal characteristic in an age of style, yet it upholds long-standing values which refuse to bend to fashion.

How did my enthusiasm for this idea stand up in the face of the book itself? First I was impressed by the intensity of the critique of automation, new technology and 'Taylorism' – the approach named after the American who first developed time-and-motion studies and applied them to the workplace. By the time I read *Architect or Bee?* I had already heard Mike Cooley talking about 'new technology networks' and devices designed for 'socially useful production', and so I witnessed his passion for machines. The book brings out the fact that he has a much greater passion for human beings, their relationships with each other and the world.

One of the book's qualities is its far-sighted comprehension of

the effects of new technology as implemented by present policies. Cooley describes the way computer-controlled machines almost steal the skill of the best workers, to deskill those who will follow into preordained routines. He launches an attack, at once savage and meticulous, on the effects of electronically controlled division of labour. In an interesting new passage in Chapter 4 of this edition he argues that the deskilling of workers is accompanied by the deskilling of consumers. If you fear that you are being turned into a bee in the huge hive of industry with its modern cities and their laid-out suburbs and electronically supervised security, or, even worse, a drone, then here is a book to confirm many of those fears.

Yet this is not a pessimist's essay. Cooley's grasp of the cunning and force that deprives people of their skill and self-confidence stems from his observation of what factories do, while his anger stems from his knowledge that machinery can be organised quite differently. To sustain this critique Cooley mounts a serious attack on the division of labour, obviously, and also on the division of knowledge and authority. He is fond of quoting a Chinese saying:

> I hear and I forget,
> I see and I remember,
> I do and I understand.

His point is not limited to the assertion that we learn by doing. He takes it further; those who know what they are doing – craftspeople with skill and experience – are the ones who best understand what needs to be done.

There is a stunning example at the fulcrum of this book. Cooley was working in Lucas Aerospace in 1975 when 4000 redundancies loomed for its work force of 18,000. The Shop Stewards' Combine Committee drew up a letter which outlined the skills and the capacities of the company's employees and sent it to 180 authorities in the trade unions, in universities and institutions, who had concerned themselves with the problems of structural redeployment. The letter asked them, with these resources what should a company like ours do? What should we be making? Put on the spot, the authorities had no concrete answers. Then the stewards put the same question to their fellow workers, who responded with

150 ideas for products that Lucas Aerospace might make, some of which are described in Chapter 7.

In Sweden Mike Cooley was made joint winner of the Alternative Nobel Prize in 1981, and his award of $50,000 went to the Lucas Committee. Nonetheless Lucas Aerospace would have none of these ideas. Despite the protests from the work force the management forced Cooley out of his job as a senior design engineer. Furthermore, his national union leadership connived in the removal of this 'troublemaker' with his new-fangled proposals and hostility to bureaucracy. The redundancies went ahead, the new products were not made.

It is not my task in an introduction to try and defend or elaborate an author's thesis. But it may help if I describe its originality. Cooley is a socialist. But his argument is an anti-Leninist one in so far as Leninism insisted on the need to introduce correct doctrine into the masses from outside. Lenin, indeed, keenly advocated Taylorism in the USSR as the scientific way to organise work. And yet Cooley is not a 'workerist', who thinks that 'workers know best' as if they already have the correct strategy instinctively inscribed upon their hearts. Someone who praises 'the indispensable advantages of mathematics', who insists on the progressive nature of intensive training schemes and who advocates long apprenticeships can hardly be confused with those who 'believe' in the spontaneous reactions of the underdog. Cooley is a new sort of socialist.

In 1981 the new Labour administration of London under the leadership of Ken Livingstone made Cooley the head of the technology division of the Greater London Enterprise Board. From this vantage point he has been able to set up new technology networks in the British capital and he has helped to initiate a Europe-wide, EEC-funded £3.8 million ESPRIT project to develop a computer-integrated but human-centred manufacturing system. Thus his experience has widened considerably since the first edition, and this new edition of *Architect or Bee?* has been both rewritten in parts and expanded by whole sections to incorporate new material. In the discussion of local government this includes some sharp political reflection on the young leftists with little but their own arrogance to recommend them, who found themselves

'in charge' of those whose interests they claimed to represent. There is a blistering account of a 'training adviser' who 'designed a building course to produce a builder in one year' when she knew nothing of the building industry. The account is even more blistering when you hear Cooley talk in private and in detail, free from the risk of libel action, about this and similar incidents.

Cooley, then, is a socialist who offers no easy answers but has a simple and hard-headed sense of direction. This is what impressed me most when I read the book. In particular he believes in work; in the experience that applied effort can bring; in skill, and the thought that it contains; and above all in the human character of working with purpose. For Cooley, 'the future is not "out there" in the sense that a coastline is out there before somebody goes to discover it.' It has yet got to be built by human beings.

ANTHONY BARNETT