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From 'Pacman' to 'Homelink': information technology and social ethics

The information-handling revolution is with us. The silicon chip, by vastly reducing the size and price of microelectronic components, opens the door to developing 'information technology', which is the *marriage* of computing with telecommunications. The applications of the microchip are global, and have potentially profound consequences for society, politics, economics and culture.

Games like 'Pacman' form the bait which has put more computers per person in British homes than anywhere else in the world. 'Homelink', advertised as the 'world's first homebanking service', shows how these computers may 'talk' with others. People can make cash transfers from their living rooms, by connecting computer, television screen, and telephone line (Prestel). This is just a step away from the 'wired society', where *interactive* cabling enables a whole new range of communications including, they say, computer democracy and computer education.

But few of the feverish workaholics in the 'sunrise' hi-tech zones have time to reflect on the ethical dimensions of computer and cable, and few of those concerned with ethical demand and ethical direction feel they have sufficient grasp of computer-aided design, co-axial cabling or direct broadcasting by satellite to be able to comment intelligently.

Hence we have an enterprise of immense importance and widespread impact which is growing at astronomic speed, but without the benefit of ethical wisdom as to the *direction* in which it should grow. Governments are locked into beggar-my-neighbour competition for microelectronic markets, hi-technologists are hooked on the quest for intelligent machines and computer-integrated manufacture. Even should they want an 'expert' ethical opinion, there is none. Not the goal of the race, but fear of the anticipated consequences of failing to join it, seems to be the key motivator.

In this paper I wish firstly to make a case that this centrally significant issue of the late twentieth century should be subject to ethical inquiry and guidance, secondly, to review some of the ethical options open, in the search for an adequate base, and thirdly, to show how this presents a serious challenge to Christian ethics, a challenge to make biblical insight relevant for today. In fairness, I must admit that I am neither an ethicist nor an electronic engineer by training. My interest in the question arises from the *social* analysis of information technology.

An information technology ethic?

As in any new field, problems of definition arise. Information technology (IT) is concerned with the processing, storing, retrieving, transmitting and receiving of information. 'Data' are basic facts, the items which are combined into what we call 'information', such that our 'knowledge' may be increased. Can there be an ethics specifically related to such a technology as deals with 'information'? (Some do not even seem to have considered this. When I asked a member of parliament about the ethical aspects of IT the only relevant questions he could conceive had to do with pornography on cable TV channels.) Or, if there is no *specific* ethic, are we seeking the extension of existing ethics in order to struggle with ongoing concerns which are *amplified* by the emergence of IT?

Clearly, the topic is enormous and unwieldy, especially as it refers to the convergence of hitherto largely distinct technologies. Yet some overview is essential. At present, the two partners in the marriage tend to talk past each other. One thinks of IT mainly in terms of computer-aided design and manufacture, robotics and automation, and the electronic office. The other has in mind new communications technologies such as cable television and satellite broadcasting. So ethical conversation could be similarly limited. Work-place issues, of job-contraction, deskilling, and dehumanizing, may be the only ones considered by one partner, whereas the other may think only about questions of content and control of communications channels, or of data protection.

Much hangs on a deceptively simple question: is technology neutral? Many assume it to be so. Let us remember that we are not discussing hardware, like microchips or machines, *per se*. Technology is merely a way of doing things. Only in its application do questions of value and ethics arise. So it is said. In fact, it

proves impossible clinically to isolate technology from the context of social relations, especially those of power. Using a mainframe computer in a bank, for instance, immediately channels human choices. The technology has certain purposes built into it. The human intentions embodied in it have to do with lower labour costs, efficiency, reliability, and so on. The bank may now only be used *in certain ways* by its clients, who have to get used to computerised accounts and, likely, less personal contact with bank workers, so we ought at least to be careful when using a notion like 'neutral technology'.

Again, take the case of cable television. Here is a technology, a way of providing a network of two-way · communication channels. Because the British government believes that the 'future' lies with cable, franchises have been granted to several companies to set up cable systems, initially luring customers with the promise of a wider range of entertainment channels. But is it 'neutral'? These cable companies are not setting up a public service (like the BBC), but a private, commercial system. So they target large cities, thus immediately risking discrimination against other, especially rural areas. And despite the utopian promises of computer democracy, using broadband cable, the vertical hierarchies of control within these companies speak more of profit-making than of establishing democratic communication networks.

The point is that technology is shaped by social factors and human choices. Interests and purposes of governments and firms are built into information technology. It would seem that in *this* sense the notion of 'neutral technology' deserves to be jettisoned. Questions of power, at least, are always involved. Sometimes, as heard in this statement by Franco Benedetti of Olivetti, this is painfully clear: 'Information technology is basically a technology of control and co-ordination of the labour force. A factor of fundamental importance in mechanising structured work is the capacity for control that the manager thus acquires'.[1] Whose interests does this technology serve? Who may use it, and who is excluded? Such questions point to a distinctly ethical dimension to IT.

A range of recognisable ethical issues is thrown up by IT. Questions of truth and falsity of information arise both with computer-use, and with the growth of teletext services. Who says what is to count as 'information', and who is to guarantee its

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1. Quoted in Brian Jenner (ed.) 1983, *Future Conditional,* London: Home Division of Methodist Church, p.59.

accuracy and veracity? (The French are developing a system of 'signing' computerised information.) Questions of liberty arise from the mushrooming personal databases which are another face of IT growth. Police computers now have the ability to hold extensive files on all British citizens. Other government departments and business organizations also hold much personal information. Without adequate protection, the threat of Big Brother is perfectly serious and real. Lastly (though there are no doubt others), questions of equity are raised by the development of IT. Are we heading, as seems not unlikely, for an 'information rich/information-poor' division both within Western societies and between North and South? Every time 'information' has a price put upon it, and is thus turned into a commodity, access to it is restricted to those who can pay.

Clearly, then, the benefits of IT for agriculture, industry, energy-conservation, medicine and education must be seen in the light of the potential problems also raised by it. I suspect that there are few, if any, ethical issues which are unique to IT. But the old issues which reappear in new, hi-tech guise are numerous. Because of the rapidity of change, the strength of the forces (big government, business, and military) impelling us into an 'information age', and the long-term consequences of decisions reached now, these issues are urgent, and should be high on the ethical agenda.

The ethical options

How should the ethical agenda be formed? What is an appropriate response to IT? Various options are on offer today, four of which may seem appropriate in some way to IT. I shall use the categories of ethics, and suggest how each be assessed.

Utilitarianism proposes that we engage in a quest for hard facts which will provide a firm foundation for ethical choice. If only we have the facts, we may know whether this or that aspect of technology is good or bad. Now, although it is highly desirable to have accurate knowledge of a particular technology's effects—any *mindless* Luddism or *ignorant* technophilia is obviously out of court—'facts' are actually hard to come by. In any case, they are seen quite differently by different persons. Herbert Schiller, for example, sees IT serving the cause of world-dominating cultural imperialism,[2] while Ithiel de

2. Herbert Schiller, 1982, *Who Knows: Information in the age of the Fortune 500,* New Jersey: Ablex.

Sola Pool sees only beneficent 'new technologies of freedom'.[3] Prediction, which this utilitarian approach really advocates, is inappropriate in a uniquely new situation. We simply cannot generalise from past experience. We have none. What is more, even if the utilitarians could tell us the consequences of certain actions, they must still offer criteria for assessing those consequences.

Existentialism gives us another option. As reason cannot arbitrate on the basis of facts, then individual choice becomes paramount. Certainly, we may discuss the various alternatives, but then we must jump one way or the other. There is no rational solution to whether IT ought to be developed for remote computer diagnosis or remote electronic warfare: we simply have to choose and live with the choice.

Unfortunately, much is already left to individual choice (due to reliance on market forces), and it is precisely this fact which is causing public concern. The information-rich/information-poor gap widens exactly because individual persons and firms are left so much to their own devices. Also, we would expect some 'outside' evaluation of some choices. No doubt there would be general agreement, for instance, that within a democracy, giving the police unlimited powers of surveillance is very dangerous.

Naturalism tries to base ethics in what is 'natural'. So where the scientist might call milk 'dairy produce', the 'naturalist' would call it 'food'. This is its natural purpose, to nourish. As food, it *ought* not to be wasted. Now, Protestants have objected to this doctrine on the grounds that it can become rather rigid and arbitrary, and scientists have at times rejected it because, they have said, the notion of 'purpose' has no place in scientific description. There may be ways around the former difficulty,[4] but as to the latter it is plain, as we shall see, that teleological explanation is still involved in science today. The fact/value distinction embodied in the 'scientific' objection is hard to sustain.

The natural ethic could possibly be of some use for our IT purposes, but only as it relates to some humanly desirable state. One could argue, say, that it is natural to protect people from the unwanted instrusions of powerful social agencies because of

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3. Ithiel de Sola Pool, 1983, *Technologies of Freedom*, Cambridge: MIT Press.

4. Oliver O'Donovan, 1980, The natural ethic, in David Wright (ed.), *Essays in evangelical social ethics*, Exeter: Paternoster Press.

their God-given human dignity. As far as the specifics of IT are concerned, the idea of finding a 'natural' use for a computer is clearly absurd.

Historicism, lastly, probably qualifies as the most important actual basis for choice in the hi-tech world, though it is seldom formally thought of as a basis of IT ethics. In this case, development is justified as part of the upward march of progress. Much of today's science and technology is done, it seems to me, within the implicit framework of an evolutionary world-view (this is the teleology referred to above). One hardly has to read between the lines in order to hear the evolutionary overtones in phrases like 'the information era', 'adapting to the next stage', and so on.

A curious paradox is that the same people who justify the headlong rush into artificial intelligence or interactive cabling on the basis of progress will often turn round and describe their technology as 'neutral' when questioned about its applications. In fact, the evolution-progress doctrine simply will not do. In what sense can it honestly be said that remote electronic warfare (to which development most of the big electronics trans-nationals contribute massively) is 'better' than other forms of warfare? They say that the computer will be to the information era what the car was to the industrial era. Enough said.

While Christians may well find agreement with one or other of the above options at specific points, it seems to me that the only realistic response to them is to forge a distinct alternative. One issue which crops up above is the distinction between fact and value. Naturalism tries to relate them explicitly, historicism does so covertly. But the theist declares that we *must* relate them for, as Arthur Holmes says, 'no facts are meaningless and nothing in creation is wholly value-free'.[5] The natural order is not a mechanism devoid of meaning, but a process in which God makes actual the good.

The world of 'facts' (and technology) is the world of creation, fall, redemption and the new age. This 'biblical drama' is, I am convinced, the best basis for Christian ethics.[6] The creation does tell us about the basic meaning of the world and persons, with God as meaning-giver. The Fall reminds us of distortions of

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5. Arthur Holmes, 1971, *Faith seeks understanding,* Grand Rapids: Eerdmans, p.110.

6. See David Lyon, 1980, The challenge of marxism, in David Wright, *op. cit.* The phrase 'biblical drama' comes from Richard Mouw, 1976, *Politics and the biblical drama,* Grand Rapids: Eerdmans. Christopher Wright makes a similar case in 1984, *Living as the people of God,* Leicester: Inter-Varsity Press.

meaning and relationship which affect analysis, emotion, and choice. The coming of Christ tells of opportunity for persons to relate once more to God, and for the curse's effects to be reversed. The new age draws us, with Christ's promise of the restoration of all things, challenging us to join God's project in present ethical action.

Let us tentatively place IT in this context. IT may be viewed as part of human stewardship in opening up the creation, easing the human lot and resisting the curse by eliminating drudgery and boredom, and fostering neighbour-love through the opening of new communication channels.[7] The Fall is implicated in it as well, though, as it was in the technolatry of Babel. Putting all one's faith in new technology, as happened at Babel, could again lead to the disintegration of human communication.

Redemption reminds us that technology may carefully be developed under God, with stringent concern to safeguard human interests. After the Old Testament redemption, God gave many directives to his people, relating to how life ought to be lived for the best. Their technology did not extend much beyond farming and house-building, but in each case regulation was required. Animals were to be restrained from damaging people and things, and houses had to be built with parapets around their flat roofs to protect life. Such things require more time and expense, but are indispensable to this ethic. Christian standards, in fact, should be set by the new age of justice and *shalom*, which means that strategies will often appear critical of today's social/technological arrangements. They cannot but be. The challenge is to find concrete ways of influencing change in the right direction.

There are, then, both good reasons for questioning the adequacy of several ethical options, and demonstrable relevance in an ethic based in biblical revelation. As far as IT is concerned, I believe this perspective pushes us towards a third way between, on the one hand, hi-technophilia and the 'silicon idol', and on the other hi-technophobia and neo-Luddhism.[8] Creative and responsible development of IT seems appropriate,

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7. See Michael Parsons, 1983, Theology and the information society, *Media Development,* pp.32-35.

8. Michael Shallis, 1984, *The silicon idol,* Oxford: Oxford University Press. Not all 'Luddism' is 'mindless'; see David Lyon (forthcoming) 'Marxist misgivings about information technology: help or hindrance in facing the future?' in Ajit Jian and Alexandra Matejko (eds.) *A critique of Marxist and non-Marxist thought,* New York; Praeger.

but only in the context of acute awareness and rejection of the patterns of exploitation, lack of care, and de-humanisation which already characterise present arrangements.[9]

The ethical challenge of IT

It is all very well to agree (if you do) that a biblical basis for IT ethics is superior to other proposed bases, but this simply puts the ball firmly in the Christian court. I doubt whether Christians are ready for the ball. A division has grown up in the Christian mind between 'personal' and 'social' ethics. Extensive attention is paid to the former, lamentably little to the latter (although at least more recognise this as a problem now). But all the while the world changes. Above all, our social systems are continually stretching, in time and space. This does not mean that ethic of immediate inter-personal relationships and local community is irrelevant. Rather, it must be supplemented with the ethic of the long-term and the global. This is the 'stretching' over time and space to which I refer.

Hans Jonas alludes to this contemporary challenge to ethics, arguing, somewhat as I have done, that science itself cannot answer today's problems. There is no technological 'fix'. His wistful question is 'whether without restoring the category of the sacred, the category most thoroughly destroyed by the scientific enlightenment, we can have an ethics able to cope with the extreme powers which we possess today and constantly increase and are almost compelled to use'?[10] My answer, of course, is that we cannot. But at the same time, I believe there are ways of demonstrating to those who do not share a biblical world-view the relevance of its ethical demands.

Key areas, where Jonas believes there is an 'ethical vacuum', are the *long-term* and the *global* aspects of new technology. Nature itself is now vulnerable to human activity (including its very destruction), in an unprecedented way. In relation to IT, it is clear for example that the establishing of a cabling infrastructure has long-term consequences—just as did the roads and railways of previous times. This means that there

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9. See Howard Davis, 1983, The ethical challenge of new technology, *Shaft*, pp.1-4.

10. Hans Jonas, 1973, Technology and responsibility: reflections on the new task of ethics, *Social Research*, p.52. See further, 1984, *The imperative of responsibility*, Oxford: Oxford University Press.

has to be greater serious attention paid to the *future* in political thinking. It will not do for governments to think only in terms of the length of their office. The issues are too important.

Likewise the global aspect. This presents a massive ethical challenge. Direct satellite broadcasting raises dangers of international propaganda campaigns by those with transmission-power. Capital is now electronically shifted round the globe at an incredible rate. Transnational corporations operate without reference to national economies. They also set up plant in different parts of the world without actually transferring any technology or skills for self-reliance to those places. This means that the North/South divide grows ever more rapidly. One could go on.

Even at a local level, the difficulties are tremendous. Government policy is dedicated to IT as the post-recession economic saviour. But what are the assumptions built into government reports and initiatives? Are they for a more humane, democratic, and peaceful world? And what are the reasons for firms, schools, and organizations adopting IT? The scramble to 'keep up', the desire to control workers, and the obsessive fascination with novelty do not seem far from the surface. All this calls for Christian involvement and comment, at precisely a time when no one seems willing to stop and reflect on where exactly IT is taking us.