In the March 1988 issue, the Editor regretted his "inability to stimulate a flow of articles and manuscripts relating to the broader societal issues of the Information Age". This note is a response to his comments. It considers why IT researchers and practitioners have not contributed sufficiently to the social implications debates, and how this deficiency might be rectified.

Conventional Approaches to 'Social Implications'

Many years ago, MIT's Joe Weizenbaum, frightened by the simple-mindedness with which his Eliza experiments had been misunderstood, expressed serious reservations about artificial intelligence's implicit assumptions and directions. He came to be seen as an adversary of those who had been colleagues, as a whistle-blower, and that particularly dangerous opponent, a convert. Whether or not he intended to, he went out on an academic, intellectual, even spiritual limb. His work has had significant effect on people outside the computing-related disciplines, but is for the most part rejected or ignored by those inside them. The adversarial approach to the social implications of I.T. is not to be recommended, because of the intellectual isolationism it can lead to, and its inherently limited effectiveness.

Rather than becoming converts to the 'computing is dangerous' school of thought, some I.T. researchers and professionals have developed a double-life. They have continued to practise their main disciplines, but have undertaken parallel activities on unrelated social implications matters. This is akin to the international arms-dealer who commits some of his spare time to the local Boy Scouts troop (an activity which I am not in any way intending to belittle). This independent roles approach to the social implications of I.T. has been apparent amongst scientists and professionals of all kinds in relation to nuclear arms, and more recently SDI.

It is inherent in the adversary model that the individual abandons his discipline, and/or his discipline abandons him. The second model, on the other hand, enables the person to retain his credibility in his own area of expertise. However, this is achieved by ensuring that one's professional and 'social conscience' realms are not too tightly intertwined, and it requires considerable feats of ingenuity, persuasion, even sophistry, to inculcate an aura of authority in areas in which one has limited expertise.

A development on this theme is the dual-specialist approach. Stanford's Terry Winograd and NYU's Ken Laudon come to mind, both of whom have undertaken fairly formal studies of particular social implications matters, while maintaining their other, more mainstream activities in AI and MIS respectively. As long as you maintain respectability in the mainstream, your proclivities for soft, socially responsible interests will not do you too much harm, and you can speak with authority in both of them.

Another approach is to confine your comments on social implications to areas in which your authority is well-recognised. Well-known computer scientists David Parnas of Queen's College, Kingston Ontario and Brian Cantwell Smith of Stanford have not only undertaken research, written and spoken on SDI, but have also refused to use their particular knowledge and skills in its support. This approach has the benefits of considerable impact. It loses the individual some of his research grants, but protects his personal integrity and public credibility. But relatively few people have sufficient standing to use this authoritative renegade approach, and for the vast majority of us it would just be an excuse for inaction.

It is a human characteristic to seek out the company of others of like mind. As a result special-purpose organisations and pressure-groups exist, including the major players listed at the end of this note. Valuable though the efforts of these organisations are, their existence underlines the manner in which thinking about implications is being divorced from research in and practice of the technology.

Of course, an approach is available whereby we may excuse ourselves entirely. All that we have to do is define the observation and criticism of the IT disciplines as someone else's problem. After all we have Maggie Boden of the University of Sussex (a nsvcholoelozist/thilosonher) to comment on the artificiality of artificial intelligence. and MIT's Sherrr Turkle (the socioloest
Anyway Codes of Ethics are seldom enforced, or even remembered. Information flows on 'our side', it is by definition impossible to tell the difference between reality and imagination. Such threats may be real or imagined - but at the time, with propaganda emanating from the 'other side', and managed applicable is difficult in time of peace, and seriously problematical during periods when threats exist of terrorism or invasion.

But the meaning of the inevitable judgmental words (like 'nasty') are dependent on context. Agreement on the standards of Ethics frequently require a member to place the public's interests above his own, and to avoid nasty uses of technology. To what degree does a technologist have moral responsibility for the uses to which his technology is put? Professional Codes of Ethics frequently require a member to place the public's interests above his own, and to avoid nasty uses of technology. But the meaning of the inevitable judgmental words (like 'nasty') are dependent on context. Agreement on the standards applicable is difficult in time of peace, and seriously problematical during periods when threats exist of terrorism or invasion. Such threats may be real or imagined - but at the time, with propaganda emanating from the 'other side', and managed information flows on 'our side', it is by definition impossible to tell the difference between reality and imagination. And anyway Codes of Ethics are seldom enforced, or even remembered.

The Moral Issue

To what degree does a technologist have moral responsibility for the uses to which his technology is put? Professional Codes of Ethics frequently require a member to place the public's interests above his own, and to avoid nasty uses of technology. But the meaning of the inevitable judgmental words (like 'nasty') are dependent on context. Agreement on the standards applicable is difficult in time of peace, and seriously problematical during periods when threats exist of terrorism or invasion. Such threats may be real or imagined - but at the time, with propaganda emanating from the 'other side', and managed information flows on 'our side', it is by definition impossible to tell the difference between reality and imagination. And anyway Codes of Ethics are seldom enforced, or even remembered.
Researchers and practitioners in I.T. are dealing with a powerful tool. We have clearly before us, as archetypal anti-heroes, the nuclear physicists of the 1920's and '30's, who hid their heads in the sand, comforting one another that the implications of their work were unforeseeable. Or that if they were foreseeable, then their work was amoral, not immoral, because it was other people who would decide on the uses to which nuclear energy would be put. Should we indulge ourselves in our own modern versions of this avoidance approach, or risk our scientific detachment by becoming involved? To co-opt Kennedy's inversion of the question, if we believe our own hype that IT will have enormous impact, can we afford *not* to risk our scientific detachment and become involved?

I believe that the *moral responsibility of any professional must at least extend to an honest attempt to ensure that public debate is informed*. Further, *since the subject-matter is often obscure, the professional's role extends to ensuring that debate takes place*. At times, that step will drag the person into the role of a protagonist or antagonist. Clearly in those circumstances we are no longer entitled to claim the mantle of technologist-saint, but then aren't we all parents, voters, patriots, and even civil libertarians and ideologues as well?

If MIS academics and thinking practitioners are to stimulate and support public debate, we must make some changes in our conventions of behaviour. We do not need to compromise the precise, careful, scientific manner in which we undertake and report on our research. But we must stop sanitising our introductory remarks, and instead draw attention to the real importance of the topic we are dealing with. And the closing sections of our papers must not be confined to 'implications for further research', but must also directly address 'implications for people'.

It is also important that researchers not restrict their writing to the serious academic journals on which our career prospects and peer approval depend. We must also report the nature and implications of our work in more populist publications, in order to reach the great majority of practitioners whose professional reading does not reach the heights of MISQ.

Like many others, I missed the Editor's 'call to arms' in issue 10,1 of March 1986. As a result, although I have regarded this as one of the most important journals in which to read and to publish technical and managerial articles, I have never even considered looking in it for papers on technological implications. I therefore very much welcome the Editor's intentions.

However, I suggest that, by broadening the topic from mere 'social implications' to 'economic, legal and social implications', we may be able to overcome our reticence about thinking, talking and writing about the consequences of our work, and to integrate the consideration of implications with applications.

Reference List


Organisations and Current Chairmen

**IFIP Technical Committee TC9** (Relationship Between Computers and Society) of the International Federation for Information Processing - Prof. Hal Sackman, 13609 Bayliss Rd, Los Angeles CA 90049

**IFIP TC9 Working Group WG9.1** (Computers and Work) - Prof. Klaus Fuchs-Kittowski, Humboldt Universität Berlin, Sektion Wissenschaftstheorie und -organisation, Unter der Linden 6, psf 1287 DDR-1086 BERLIN G.D.R.

**IFIP TC9 Working Group WG9.2** (Social Accountability) - Mr Dick Sizer, 26 Avenue Rd, Farnborough Hants GU14 7BL U.K.

**ACM Special Interest Group on Computers and Society (SIGCAS)**, of the (charmingly named) Association for Computing Machinery - Ron Anderson, 13221 Lake Point Blvd, Belleville MI 48111

**Computer Professionals for Social Responsibility (CPSR)** - P.O. Box 717, Palo Alto CA 94302

**Social Implications Committee of the British Computer Society (BCS SIC)** - 13 Mansfield St, London W1M 0BP

**Economic, Legal and Social Implications Committee of the Australian Computer Society Inc. (ACS ELSIC)** - Roger Clarke, Department of Commerce, Australian National University, Canberra ACT 2611
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