Some reasons why cancer research is failing

Control of research by drug companies

How is it possible that so much money has been spent with so little result? One answer that has been put forward is that pharmaceutical companies have no desire to find a cancer cure – unless it is a cure that they can profit from. It doesn't take too much cynicism to see the validity of this argument. If it became possible to turn the clock back 200 years when cancer incidence was in the region of 1-2% of the population – compared with 30+% today – the pharmaceutical industry would suffer grievously. No industry will support the means by which its own profits will be threatened. On the contrary, it is very much in the pharmaceutical industry's interests to impede any such work. The most benign way in which this work can be impeded is simply to starve it of funds. In this way interesting but unprofitable possibilities are side-lined in favour of research into patentable drugs.

Most cancer research is conducted under the umbrella of one or other of the pharmaceutical companies. They provide much of the financing and the means by which a drug can be developed. If their search for a pharmaceutical cure is fundamentally flawed then all the money put into this kind of research will be wasted. The pharmaceutical companies are very happy with the current situation as the profit margins on the anticancer drugs they are currently marketing are very fat. Cancer is good for profits.

'The production of nonpatented drugs will give only moderate profits while the production of patented drugs will give abnormally high profits. Drug manufacturers have attempted, therefore, by every conceivable means to divert the market into the sale of high-profit patented drugs ' (Medical Committee for Human Rights, quoted in Moss, 1982)

If anyone should doubt the controlling influence of the drug companies on cancer research they should look at who is on the controlling boards of the largest cancer research institutions. Certainly, it is common for senior officers retiring from American regulatory bodies such as the FDA to be given directorships on the boards of the drug companies. So commercial interests and their influence in the halls of power must be accepted as one of the problems a new idea seeking acceptance must overcome.

Scientific Status

But money and commercial interests are not the only obstacles. Another obstacle relates to the status of the person demonstrating the proof or the institution where the work is undertaken.

We can see this clearly if we consider the following argument. It seems sensible to say that results emerge from effort and that therefore the greater the effort, the greater the results must be. If we follow this logic then we can also argue that the greater the amount of money we spend on a project, the greater the amount of effort that will result. So it follows that the places attracting the largest amounts of research money must be the places where the greatest scientific advances will take place. And since those institutes will also be where the scientists with the highest reputations will be employed, because their presence will attract research funding, we have a very tidy and comfortable picture of scientific eminence and scientific breakthrough walking hand-in-hand.

Conversely, of course, a poorly funded individual of little eminence cannot be expected to achieve much. Certainly, such a person cannot be expected to solve problems that elude the great minds

supported by access to large resources.

As a result of this and related, possibly unconscious, prejudices, established bodies will not accept any 'proof' simply because it has been demonstrated. They will, instead, be highly suspicious of any evidence that does not come from certain accepted sources. This is quite explicitly stated by Dr Robert Harris of the Imperial Cancer Research Fund who rejected the value of the work of Dr Joseph Issels.* (*Note: Issels work led Penny Brohn to set up the Bristol Cancer Help Centre)

'But you must remember that millions of pounds are spent on cancer research every year, and you can't expect anybody in this field to seriously believe that somewhere in Bavaria there is a man who's got hold of something which has escaped the rest of us.'

Curiously, however, there does appear to be a consistent pattern where the poorly funded individual of little eminence, either through rigorously logical reasoning, great genius, bold experimentation, rare opportunity, simple accident or plain dumb luck, does indeed find the answer – often only to be ridiculed or ignored by the great.

The most famous case in medical history concerns a Dr Ignaz Semmelweiss. It was in a Viennese hospital that Semmelweiss's attention was drawn to a curious fact. There were two maternity wards in the hospital. One was attended by the doctors and the other was attended by midwives. No doubt the wealthier ladies were favoured by the doctors while the poor had to make do with the midwives. Semmelweiss discovered that women patients who should have been clamouring for the attentions of the doctors were actually seeking to get admitted to the other ward. There were two possible reasons for this. Either it was a matter of modesty or ill-informed nonsense – as the professors insisted – or the women's excuse that fewer women died in the midwives' ward had some merit.

To determine the matter Semmelweiss studied the records and observed the matter in person. The results were clear. The women patients were right. A great many of the women in the doctor's ward died of puerperal fever, relatively few from the midwives' ward did so. What could account for this difference? Semmelweiss saw that the main difference was that the midwives washed their hands while the doctors did not. Worse, the doctors when not attending to their patients were in the next room doing post-mortems on patients who had died of puerperal fever to discover the cause of death. Semmelweiss started to wash his hands and the result was that few of his patients subsequently got puerperal fever. He therefore theorised that some form of invisible contagion was the cause of the disease – at that time, 1848 – Pasteur had not yet convinced the world of the germ theory of disease. Puerperal fever was common. 40% of women giving birth in hospital got it and and more than a third of them died. Semmelweiss, sought to persuade the other doctors of his findings – but he was a young provincial Hungarian in the best hospital in Vienna. His views were derided. When he published the results of ten years of observation in 1861, he suffered vicious attacks on his integrity and was forced to flee Vienna. He eventually suffered a complete psychological breakdown and committed suicide.

Semmelweis couldn't prove he was right. He didn't understand why he was right. But he was right. The sad truth is, experts resist change. And as a postscript to this story it should be noted that it was the women patients who saw the truth first. They saw the simple truth that medical experts refused to see for several decades longer.

Dr Eugene Robin calls events of this type 'iatroepidemics' – large scale attacks on public health caused by doctors. He lists radical mastectomy and tonsilectomy as two other common unnecessary procures which resulted and continue to result in unnecessary deaths. His calculation for 1984 was

that 1 child in 10-15,000 died as a result of a tonsilectomy and as 400,000 were conducted annually, the result would have been around 30 children dying needlessly each year in the USA. He lists three uses of radiation which had disastrous results. One was a programme to x-ray children believed to be at risk from enlargement of the thyumus gland – a condition known as status thymaticus. A number of these children later developed cancer of the thyroid gland. This case is particularly ironic because as Dr Eugene Robin explains: 'It is now known that the disease never existed.'

Other doctors think radiotherapy will one day in the future also be seen as an iatrogenic episode. One doctor, Dr Irwin Bross, who tried to investigate this question of whether radiation therapy was iatrogenic had his research funding cut off by the National Cancer Institute. Bross wrote:

'It is almost impossible to get 'peer review' that will accept a study of iatrogenic disease...For 30 years radiotherapists in this country have been engaged in massive malpractice – which is something a doctor will not say about another doctor.' (quoted in Moss, 1982)

Conformity

So, why is it that simple evident truths – or interesting possibilities – are so hard for the medical profession to accept?

One answer is conformity. Medical researchers conform to the same goal – to seek chemotherapeutic agents that will kill cancer (they test out 50,000 substances each year); they conform to the same method – the use of cancer cells that reproduce themselves in petri dishes; they conform in their funding sources – in America these must be approved by the National Cancer Institute and in Britain by the Medical Research Council. These deciding bodies are run by groups of respected scientists who have a shared vision of how the goal of cancer cure will be achieved. Anyone who does not share that goal will not get funding. Indeed, as Gerald Dermer discovered, they will be cold-shouldered. In this way an entire industry quickly develops a single perception.

Most cancer researchers wish to advance in their chosen careers. They wish to go from working as part of a team, to leading a team to heading an institute. To do this they need to publish results. In order to publish results they must persuade their mentors to add their names to their research – only the previously published get subsequently published. Their articles must also receive the go ahead from colleagues under the 'peer-review' system. So, they need to know the right people, they need to say the right things. If there are any fundamental flaws in fundamental assumptions, perceptions or methods of research then these flaws will invalidate the work of the entire industry. The laws of conformity will ensure that everyone is wrong.

If this is true, then the individual working far from these centres and uncluttered by a ruling theoretical orthodoxy is the one most likely to come up with something interesting, something that works, something true. However, this scientist would not find it easy to inform the world about his discovery because the same people who fund science are those that also validate and publish its results. New discoveries that are foreign to normal practice tend to be ignored or side-lined. Peer-review journals will not publish papers that go against the prevailing ethos. Conferences will not accept such papers. Research-funding bodies will not provide the necessary funds to continue the work. So the new discovery has to wait in the wings for unconscionable periods of time before it gets accepted – if it ever does. If the researcher attempts to go public by announcing the discovery to the world at large, he or she is vilified. Witness what happened to the two scientists who came up with the idea of cold-fusion. Hysterical claims of fraudulence have given way to something more

reflective – it appears there is a cold fusion effect.

Another force working against the development of new interesting ideas is that institutions are highly competitive. If the idea has emerged from a rival institution there will be a natural attempt to discredit it. If that doesn't work then it must somehow be taken over. Current research work is a highly prized secret which must not be revealed to the outside world. Failures are buried. Successes applauded unduly.

The Authoritarian Personality

The structure of the scientific and medical professions is very hierarchical giving great power and authority to those at the top and requiring submissiveness from those below. At the bottom is the patient. Top-down communication dominates. Obedience is assumed and required.

The concept of two fundamental opposing personality constructs – authoriarian and democratic - has been put forward by the American psychologist Adorno. Among the characteristics associated with the authoritarian personality are the following:

* a rigid adherence to conventional values.

* a submissive, uncritical attitude towards leaders of the group with which he or she identifies - they are imbued with idealised moral qualities

* a tendency to be over-sensitive to violations of the conventional moral order - and to react to these violations by condemning, rejecting and punishing people who violate them.

* a tendency to be opposed to subjective feelings, the world of the imagination, and to emotional generosity

* a tendency to think in rigid categories.

* a preoccupation with power and dominance - leading to the idealisation of, and submission to, power figures.

Since doctors and scientists live and thrive in professions that are highly hierarchical and authoritarian we must assume that they feel comfortable in such a structure. Science writer, Richard Milton thinks this is the case. He believes that scientists with authoritarian personalities will tend to do better in the scientific world than scientists with democratic personalities.

He quotes the case of a postgraduate student in the 1980s seeking to get support from his professor for permission to study hypnosis. The professor refused to allow it on the grounds that it was not a respectable field for research. It was not respectable because there was no serious literature, and there was no serious literature because no-one had done any research, and no-one had done any research because it was not a respectable field of research. Joseph Heller coined the term Catch-22 to define this form of circular argument. In this case, a potentially serious study of a subject about which little is known is starved of funds and professional support because it contravenes conventional attitudes.

Compare this with the following words Professor John Huizenga:

'It is seldom, if ever, true that it is advantageous in science to move into a new discipline without a thorough foundation in the basics of that field'

Huizenga appears to be saying that we should only study what we already understand and we should

ignore what we don't understand. This is troubling as, at the time of the statement, Professor Huizenga was co-chairman of a committee set up to investigate whether funds should be directed into a new area of research. Clearly, no new area of research can ever satisfy the requirements required to obtain funding.

This conservative caution may be viewed as the relatively benign face of a potentially malignant force. It is one thing not to favour an unconventional approach or subject, it is quite another to root out dissent - scientific or social. Yet the medical and scientific professions have shown that they are prepared, under the right circumstances, to go to great lengths to root out both dissidence and difference. The rise of Nazism in Germany, for example, could not have been possible without the support of the medical and scientific communities. They obliged. Without the doctors, the worst excesses of the Nazi vision would not have been possible. Robert Jay Lifton studied this matter and reported his findings in *The Nazi Doctors: Medical Killing and the Psychology of Genocide*. In the introduction to this book he says:

'... when we turn to the Nazi doctor's role in Auschwitz, it was not the experiments that were most significant. Rather it was his participation in the killing process - indeed his supervision of Auschwitz mass murder from beginning to end. This aspect of Nazi medical behaviour has escaped full recognition'

The entire German medical profession was one of the first professions to be Nazified. Before the concentration camps came into existence they were charged with carrying out mass sterilisations of those whose 'life was unworthy of life' the 'hereditarily sick': the mentally retarded, the physically handicapped, the epileptic, the schizophrenic, even the blind and deaf. Doctors were required to report anyone who came under these categories to designated health officers, themselves doctors, who arranged for their sterilization. The whole process was of course backed up by law and police power.

Not many doctors refused. Not many criticised this move. There was remarkably little opposition to this. The reason? They approved of the measures. The use of technology allowed the killing to appear to be 'surgical' and the ridding of 'diseased' members of society fit in well with the 'surgical' view that disease should be cut out to enable the rest of the body to return to full health.

As one doctor explained to Lifton: 'Of course I am a doctor and I want to preserve life. And out of respect for human life I would remove a gangrenous appendix from a diseased body. The Jew is the gangrenous appendix in the body of mankind.'

The point here is not to point the finger of blame at the present medical profession for murdering Jews, rather, it is to demonstrate that we are discussing a valid concept that has a profound influence on the medical and scientific professions. It was not just the German doctors. Russian doctors sent dissidents to mental hospitals, American doctors lobotomised the mentally ill, in most countries where capital punishment is carried out doctors are required to be ritually present - and it is also common, in countries where it is institutionalised, for doctors to be present during police torture sessions to assess from time to time whether it is safe to continue with the torture.

These are painful facts. They can be dismissed by saying they apply to other places and other times. But they do establish a general tendency. The doctor and the surgeon like to be in charge. They don't like patients who do not co-operate immediately. As Dr Steven Rosenberg says: 'Too many doctors are comfortable dealing with patients only when they can assume an air of unquestioned authority. Surgeons tend to be particularly authoritative.' Knowing this, we can see how a profession can

persevere for 25-30 years with a treatment like chemotherapy that they know doesn't work for the majority of cancers - yet they still give it. And a significant percent of patients die from this chemotherapy. Is this not in some ways comparable to the other historical horrors?

Some research has been done on medical students and their attitude to authority. This research has found that first and second year medical students have a strong sense of ethical sensitivity but that this deteriorates as they progress through the next three years of their medical studies Obviously the doctors that most patients first see, their GP, has to a certain extent opted out of this hierarchical world but only at the cost of being permanently last in the medical pecking order. The views of a GP carry no weight whatsoever in the medical field.

Research as a Game

And then there is the theory that medical research is like a game. This game theory was argued by Dr Ashley Conway in an article published in the magazine Complementary Medicine. First he distinguished between two types of expert. The type 1 expert is like an engineer. He knows how to do something useful. If there is a problem he seeks to solve it. When he has solved it he moves on. The second type of expert doesn't know how to solve problems, he simply knows a lot. Dr David Horrobin who first proposed this distinction suggests that the area of cancer research is dominated by Type 2 experts. As a result it has got nowhere. It doesn't actually want to get anywhere so that's all right.

Conway explains the incentives of turning research into a game. It allows for status recognition within a hierarchical system which has developed rules for how that status can be acquired. It also provides security.

'... you know where you are with the Game - it reduces uncertainty, maintains equilibrium ... blocks intimacy and keeps an emotional distance which achieves the important effect of making people predictable. The Game enables the Type 2 expert to avoid taking risks and therefore to avoid being wrong.'

Of course not all researchers are type 2 experts - but the majority, Conway argues, are. And what happens if a Type 1 expert comes along and solves a problem? One defence is simply to find a flaw with a minor detail and then to dismiss the whole on that basis.

Conclusion

It seems that modern, laboratory-based cancer research is unlikely to arrive at results likely to be of benefit to cancer patients. Not next month. Not next year. Probably not in a hundred years. This is a frightening conclusion to arrive at - but it seems inescapable.