industrial complex who want to run society in the same way that they run their factories and armies. But now, instead of having to worry, about personnel incentive programmes, waste, time-consuming inter-office bickering, in-house pufering and philandering, insubordination, the costly ritual of hiring and firing and so on, they need only punch buttons and transmit the appropriate signals to achieve every general's, manager's, president's, premier's dream of the efficient society. These Electroligarcha might comprise, say, forty or fifty individuals whose brains would remain entirely untouched. On their orders, however, everyone else would have varying numbers of electrodes implanted in his or her

the second rank in such a society, might comprise to per cent of the population with fifty implanted electrodes each. Remotely programmed and controlled by the Electroligarchy, they would exhibit unswerving allegiance to their 'masters'. The Electrons, however, would be society's most creative components. The Electroligarchy would be clever enough, in a corporate way, to give the Electrons their heads - at least to the extent that they could still come up with innovations and discoveries with which to enrich society, such as it would be. The Electrons would be drawn from the society's reserve of scientists, economists, scholars, poets and other 'thinkers'. They would not be so controlled that they could no longer experience unhappiness or some of the other emotions that often goad individuals on to do creative things. But their potential for hostility and rebellion would be considerably attenuated. And, of course, like all the members of the Electrohierarchy, they would be programmed

to force that they had been partially robotised.

Positrons might occupy the next rung down the ladder, possibly comprising 30 per cent of the population. Each would possess some two hundred embedded electrode. These individuals would make up the white-collar support contingent. The Positrons would help put the theories, plans and projects of the Electrons into practice. They would be less imaginative and less intelligent than the Electrons, hence more closely controlled and regimented. They would be characterised by dedication, driven by the desire to implement the goals set by the Electrons. Emotionally, they would be wholly positive

With computer programming it may be possible to create within the mind synthetic experiences of almost any description. In addition, it may prove possible to transmit ectronically coded information directly into the brain via the implanted electrodes, creating a radical new approach

Dorman D. Israel, a Fellow of the Institute of Radio Engineers, for example, predicts that brain implants will be much sought after around the turn of the century to implement new means of communication (direct electronic thought transference) and enhance creative capabilities. Writing in the Proceedings of the IRE as if from the perspective of the year 2012, Dr Israel notes that by the year 2000 people will be able to transmit their thoughts over substantial distances 'but always by appointment - a most fortunate limitation'. By 2012, he goes on, things will have advanced to the point that 'newborn infants can be operated upon and the latest submicroelectronic equipment installed in the brain and at certain critical points in the spinal column so that they are almost certainly assured not only of the benefits of full non-radio communicative powers but also there is reason to believe that their scientific creative ability will be enhanced. Logically enough, this operation must be performed within two weeks of birth because if the infant is only slightly exposed to contact with its family who still have not completed their "unlearning" and readjustment (to the new technology), he might never become a good subject for the modern system of communication."

Sizeable segments of society may already have undergone electrode implantation by the time the 'takenver' plot is first hatched. By simply commandeering the by then existing computer-co-ordinated system, the Electrocrats would find that most of their work had already been done for them. When the individual dials into the central computer from his own home requesting, say, pleasurable experience number 547Z, he may then receive instead a carefully contrived series of electronic impulses that instil in him an unswerving loyalty to his unseen masters. Or possibly the stimulation he receives might simpy obliterate his will to resist a physical takeover or fill him with a completely debilitating fear of authority. That dramatic behavioural control is possible with Ess.

thinkers, enthusiastic components of the laching the most they accomplished, the more pleasure the laching the most electronically. They would receive electronically. They would receive mining of the Electrone electronically. I new would maintain minim of the Electronical regativism, but they would maintain minim of the Electronical regativism, but they would maintain minim of the Electronical regativism, but they would maintain minim of the Electronical regativism.

only to make them more pursuance of the would have to make frequent contact.

At the lowest level might come the description of the population with five hundred elevations with five hundred elevations of the blue-collar people, the factory each. These would be the blue-collar people, the factory workers, the would be the blue-collar people, the lactory workers, the soldiers, scertairies, bus drivers, all those ory workers, the tive, often menial tasks. They would be the sper and more reliable than automatic equipment and the sper and more reliable than automatic equipment and the sper and more reliable than automatic equipment and the sper and more reliable than automatic equipment and the control of the special c

possible, implementation would still remain a major obstacle. It would almost certainly be a mistake, he wever, to assume automatically that it would be impossible to implant elecautomatically unat in world train. It might be to implant elec-trodes in everyone's brain. It might be relatively easy provided people could be persuaded to unce tree implantation provided people could rapidly growing a creo implantation relimitarily. In a world rapidly growing a customed to artiroluntarity. In a works repropries spare customed to artificial external and internal prostheses, spare part surgery and organ transplants, the idea of implanting part surgery and brain is bound to become less and less to relate wires in the campaign along oreign and repugbrain is bound to become less and less of the la wires in the nant. And to push the campaign along reign and repugnish offer a number of incentives, perhaps our Electrocrats even cash 'rewards'. Possibly the implant lead deductions of bablyhood into a matter of (national Programme could refusal to participate would call one security) so that question, Instantaneous communications and electronically selling points. Classification and the communications of the More likely, lowever, is the possibility that people will be some of the More likely, lowever, is the possibility that people will electronic entertainment. As we shall see later in this wired in such a way that one can ereate, with the mere cause the individual to halfucinate as vivilly as if on LSD.

## BIONIC MAN. The Dream - and the Nightmare

Will intelligent machines replace

Will man live forever with his own brain and a body of mechanical parts? Has this next step in our evolution

AS MAN BECOMES MACHINE presenter evolutionary evidence that in the relatively near future Man and Machine will cease to be separate. Thus Man and Mare than speculation—for a new pene and prediction is now being developed which can see, leaving not robots is feel. Medical researchers are creating ern, talk, and even miles deficient natural ones. Current difficultion organs to exist a deficient prosthesis is brinack fectioniques, when experimental science and science in closer the lime when experimental science and science in closer the lime.

In this brilliant, readable – and frightening – book, the most able and controversial science writer of our generation offers a shallering vision of future human evolution.

MR RORVIK WRITES WITH FRIGHTENING PLAUSIBILITY OF A FUTURE THAT MAY ALREADY HAVE BEGUN Manchester Evening Men

FASCINATING, TERRIFYING

David M. Rorvik's sensational international bestsoller IN HIS IMAGE is also in Sphere Books.

0 7221 7501 6 CURRENT EVENTS/SCIENCES BEREERAL

MORED EINCODES ET DE AUSTRALIA ST 95 - NEW ZEALAND IZ 15 - Fing 21 May MORES ES IN

ESB, bound to have a sweeping impact in all of the medical sciences, may prove a particular boon to the psychiatric profession. Indeed, it has already been used to control rage in individuals prone to outbursts of violence.
(It has also been demonstrated effective in curbing other seizures, such as those associated with epilepsy.)

It seems logical to assume that people will not only be willing to let medical technicians wire their brains with electrodes but that they will even pay to have this done. VUIVERSIC SAENT # ICARD.

A considerably more elaborate 'Big Brother' is now in the making. Called an 'electronic parole system', it will be used to keep tabs on the exact location of the individual and to monitor a number of his physiological responses.

In the realm of law and order, police in some areas may soon be equipped with two-way radios implanted in their helmets, through which they can instantaneously tap into a centralised computer that keeps in its continuously updated memory detailed dossiers on every criminal and criminal suspect in the country. complete with licence numbers, physical descriptions, alianes

records and so on (IBM), they could also be used by the average housewife to keep track of her young offspring. By punching the proper mode on the household computer screen, she could quickly determine the whereabouts of her youngsters, and whether they were in danger or engaging in 'antisocial' behaviour, whatever that turns out to be in a fully computerised society. Very possibly, Big Brothers of this era will come equipped with a 'deterrent function', possibly a mild shock, which will serve as the electronic successor to the old-fashioned 'no-no'. A pleasant vibration, on the other hand, might serve as an electronic expression of 'that's a good boy' or girl, as the case may be.

With computer time sharing and large, centrally located computers to serve entire communities (perhaps on a cable-TV-style subscriber basis), developers such as those at Information International Inc. in Cambridge, Massachusetts, think the fully robotised home could be economically feasible for middle-income families within fifteen years. A number of the components of such homes have been realised in prototype and seem very near the production stage.

A number of scientists, including Nobel laureates Six Peter Medawar, Francis Crick and Linus Pauling, believe that incompatible persons should be restrained by law from marrying one another or, in any event, from having children with one another. Dr Pauling has suggested, only half in jest that people who carry defective genes should have that

formation tattooed on their foreheads) Dr Crick has stated that having children 'ought to be as much a matter of public concern as driving a car', something that required a licence

Man has always regarded his machines, though things of his own making, with something akin to awe. Man is constantly, in his legends and his lore and now, too, in his laboratories, attributing to them anthropomorphic features. And, as often as not, we have regarded machines as possessing the power not only of man but of superman; hence the evolution of robotical fantasies from the time of the the evolution of rocotical fantasies from the fine of the ancient Greeks to the present, when fantasy begins to imping on reality. The Greeks had a phrase that is still with us today: theos ek mechangs, better known in the Latin as generally and the still and the still with the still and the sti and today denotes an entity, be it god, man or simply thing, that emerges suddenly and unexpectedly to provide a seemdrum or difficulty. or taking in the seemingly insoluble conundrum or difficulty. or taking in the seeming in t

since seemingly insoluble problems are more than ever with us. But it will almost certainly assume new significance as the god, or, as some would have it, the 'ghost', in the machine turns out to be the man himself, albeit man of an entirely new order, 664

#7718 (P. 74) "But look how the World is being prepared 1801 Mechanical Loot, an Ottertomic Erain, a Computer Delty, which they will then be willing to worship become it is their own creation, the work of their own hands."

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