sectors tend to come through the same somewhat military system of education — the *grandes écoles* — and interchange and interaction between civil service and industry is traditionally much stronger in France than in Britain.

Thus the change under Mitterrand is not so much a change of principle as of degree. There is, however, in this socialist government, an increased tendency to make appointments on political and ideologial grounds, and voices in the electronics industry in particular are beginning to question the experience and suitability of some of their new leaders.

Moreover, the government has selected electronics to be the centrepiece of its five-year plan for the regeneration of French industry, putting the field on a par with nuclear power and space technology — the other areas very successfully championed by past French governments. But electronics is a very different game. In nuclear power, and in space, there is essentially one customer — the government — at least in the first decade or so while the business is being established. Here, a simple military regimentation of the industry towards well-defined goals will work, as all levers are in the government's hands. But in consumer electronics, for example, there are millions of customers, and there must be flexibility in response to changes in demand and competition. Even the products may change radically. It is doubtful if even the French government machine will be supple enough to deal with this by central planning, however complex the plan.

It may be, therefore, that the great government effort on electronics will work only in those areas where electronics is most like nuclear power and space, in having small, well-defined markets with few customers. This would mean that France should be watched now not for its calculators or video recorders, nor for its consumer products, but for what is called "professional electronics" — defence equipment, where there is a large French and foreign market, electronics for broadcasting and so on.

However, there is one clear thing that a great centralized plan for electronics could do. The importance of components (chips) and of software is increasing in all parts of the industry as one influential (and sceptical) director in the French electronics industry, M. Pierre Aigrain, points out. If the government can put these crucial parts of the French electronics house in order, and bring them to bear on the rest of the industry, whatever can be done by central control will have been done. Other, that is, than providing some real (rather than promised) investment.

Father William's jaw

The cost of caring for old people in the United States will grow dramatically if nothing is done.

Last week's $98,300 million tax bill, passed by the US Congress with such fanfare, held portents of future problems for old people in the United States, for it showed the tremendous pressures that have mounted on the cost of caring for them. And while scientists like to think that the orderly world of their laboratories is far removed from political fights over Medicare and Medicaid, the research priorities of biomedical scientists in the next few years could have an impact on future costs of caring for the elderly, not to mention an impact on their well-being. US biomedical research and social policy, then, are linked.

The new law, for example, will reduce the chief health programme for the elderly, Medicare, which now costs $53,000 million, by $13,300 million over the next three years and increase the costs paid directly by old people by, for example, making elderly hospital patients bear some of the costs of radiology and pathology.

The move to reduce costs collides head-on with the increasing number of old people in the US population, whose government-supported health care will have to be paid from the taxes of a relatively smaller group of younger, working people (*Nature* 26 August, p.779). The resulting battle will make this year's skirmishes between the "gray lobby" seeking to retain federal benefits, and Reagan-inspired budget cutters, look almost trivial.

Matters are not helped by the fact that the present system of Medicare and Medicaid encourages doctors to treat hospitalized patients with acute problems while most custodial care, long term care and outpatient care, is not covered.

The system reinforces what Robert N. Butler, the outgoing director of the National Institute on Aging, calls "Peter Pan Medicine": a young or middle-aged person with an acute problem but good chances of recovery is a subject of interest and is given the maximum care at no extra cost, while an older person, whose health problems are limited to outpatient visits, is not allowed to charge to the government the cost of medication and, if in hospital, is considered a less interesting case and so gets relatively little attention.

Even worse off are those in nursing homes, for long the step-children of the health care system. Federal insurance does not extend to the costs of nursing homes and Medicare pays only for those who have entered a home after an acute illness in hospital, and then only for 100 days. Meanwhile there is no evidence that nursing homes are any good, having been divorced from the mainstream of research, teaching hospitals and medical practice for so long. There are no teaching nursing homes, although the National Institute on Aging plans to try some, and there is currently only one registered nurse for every 68 residents in the country's 60,000 nursing homes. Many do not even have a regular doctor available.

Demographics will only make this worse. There were 1.3 million people in nursing homes in 1978; there will be 2.1 million in the year 2003. In the present political climate it is impossible to believe that federal benefits will be extended to include long-term care. But could not the need for long-term care be reduced by a better understanding of its medical causes? Why are people in nursing homes to begin with? Could science enable nursing homes to go the way of the TB sanitorium?

Most people enter long term care because they are senile, many of them suffering from Alzheimer's disease. Here, at least, recent progress in understanding the disease at the cellular level and its possible association with slow viruses holds out some hope. Another major reason people are sent to nursing homes is urinary incontinence, about which little is known. Next come infectious diseases, notably pneumonia and influenza, but also herpes zoster (shingles), tetanus and even tuberculosis and chickenpox, causing one in four deaths of elderly people. Here, a better understanding of the effects of ageing on the immune system could help.

Finally, there are bone fractures, encouraged by osteoporosis which could perhaps be minimized by better care in middle age and early old age, perhaps through fluoride and calcium supplements, treatments with oestrogen, progesterone, and vitamin D, and even exercise. Butler goes farther to say that biomarkers, "clocks" to detect how far organ and bodily functions have aged, may make it possible to run short clinical trials, obviating the need to wait many years for a result. This could make possible more direct study of the ageing process, and whether factors such as early diet are linked to old- age symptoms.

These are long-term goals but not far fetched ones considering the high potential social payoff. The "gray lobby", caught in yearly battles, seems unlikely to make a high priority of broad-based biomedical research, with its ifs and buts and necessarily long-term payoffs. It is the research community who hold the keys to the elderly's best hopes 20 years hence and who should take the initiative.

Only the scientists can perhaps ensure that we approach the ideal of a healthy older person, who is not senile, whose bones are not too frail, who is not humiliated by incontinence and who does not die of diseases a child would shake off.

The elderly might even come to resemble Lewis Carroll's Old Father William whose muscular jaws and hearty eating were attributed to the arguing he did as a youngster. Old Father William could stand on his head, somersault backwards, eat a goose, bones and beak, and kick his son downstairs. One thinks of him as a shrewd old fellow, who surely did not cost the state any money.

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