

dutifully report the dire statements from the House of Lords committee and other groups, but there is no popular concern. Save British Science tries hard but has limited political impact. Profound popular ignorance of science and economics is one cause of this failure. Even among doctors concern about the underfunding of medical research is sotto voce compared with concern about underfunding of the health service. Yet in the longer term the effect on British medicine may be much more drastic.

What is needed is some concentrated, sophisticated, and well funded campaigning. The government must have the message rammed down its throat if necessary; the public at large (also known as the electorate) must be encouraged to care; and those all important "opinion formers" must have the economic importance of research spelt out to them. The British have much to learn here from the campaigning of scientists in Australia.<sup>5</sup> The Federation of Australian Scientific and Technological Societies represents 60 000 members, has a budget of \$A100 000, and has a full time legally trained executive director. It has used the media and political machinery in a sophisticated way and finally got its message through to the government by an economic analysis explaining how Australia's future depended on scientific research. Meanwhile, the Australian Society for Medical Research,

which consists almost entirely of medical researchers under 40, has campaigned tirelessly to raise the public profile of medical research and impress on politicians the importance of being generous with funding.

Britain needs an equivalent of both organisations. Perhaps then a British prime minister might slash the amount spent on defence research, hugely increase expenditure on civil research, and make a statement similar to that made by Bob Hawke, prime minister of Australia in 1989, when he underlined how the country's future depended on science.<sup>6</sup> He set a national strategy for science and greatly increased funds for research. Leadership from the very top is essential for such a dramatic turnaround. Maybe John Major, who left school at 16, can surpass Margaret Thatcher, the first British prime minister with a science degree, in providing leadership for science.

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## Postnatal depression and infant development

### *Emotional and cognitive development of infants may be adversely affected*

Although the impact of parental psychiatric disorder on school aged children is well described,<sup>1</sup> only recently has attention turned to the possible consequences for infant development of maternal depression in the postnatal months. This is of particular concern: firstly, because of the high incidence of non-psychotic postnatal depression (about 10%),<sup>2,3</sup> and, secondly, because in many cultures mothers largely constitute infants' social environment and mediate their experience of the external world.

Young infants are highly sensitive to the quality of the care they receive. Even neonates respond selectively to social stimuli.<sup>4,5</sup> By 2 weeks they preferentially respond to their caretakers' characteristics (for example, voice and smell)<sup>6,7</sup> and by 6 weeks become distressed if their interpersonal contacts are disrupted, even slightly.<sup>8,10</sup> The infant's interpersonal environment is likely to be substantially influenced by maternal depressive symptoms such as persistently low mood, social withdrawal, irritability, impaired concentration, hopelessness, guilt, and anxiety.<sup>3</sup>

Recently work has begun to elucidate the course of infant and child development associated with postpartum depression. Several studies have reported appreciable difficulties in the mother-infant relationship in the early months: depressed mothers are typically unresponsive to infant cues, being either withdrawn with flatness of affect or else intrusive and hostile.<sup>11-13</sup> The infants in turn are withdrawn from maternal contact and are discontented,<sup>11,12</sup> and this withdrawal is generalised to interactions with other adults.<sup>14</sup>

Researchers have assessed the longer term impact of postpartum depression on the child, largely by interviewing the mother about the child's current behaviour some years after the postnatal episode.<sup>15-20</sup> This research has produced inconsistent findings. Although the balance of evidence suggests that serious behavioural disturbance in the preschool

years probably does not follow postnatal depression, less serious difficulties might result.

Recent follow up studies of postpartum samples have found that the mother-infant relationship and the cognitive development of the children were adversely affected.<sup>13,21,22</sup> In these studies direct assessments were made of the infants and young children of mothers whose mental state had been assessed postpartum. In one study<sup>13</sup> infants of postnatally depressed women were found to be more insecure on an assessment of their relationships with their mothers than infants of non-depressed controls.<sup>23</sup> In a second study the development of a group of 19 month old infants of women who had experienced postnatal depression was compared with infants of the same age of non-depressed mothers.<sup>21</sup> On the basis of standardised assessments of the mother-infant interaction in the home it was found that the index mothers and children were more likely to display difficulties in their interaction—for example, the mothers helped their children less in play; and the infants behaved more negatively towards their mothers.

Two studies have found that postpartum depression may adversely affect the cognitive development of infants.<sup>13,22</sup> In one of these studies cognitive deficits were found to relate significantly to the quality of the mother-infant relationship in the early postpartum weeks. In these studies the adverse effects on emotional and cognitive development were found despite the maternal depression mostly remitting within a few months, and after account was taken of the effects of social class, marital discord, maternal depression occurring beyond the first year, and (in some cases) paternal psychiatric history.

These findings argue forcibly for the early detection and treatment of postnatal depression. Yet, despite the considerable input of health service resources to mothers of young infants, the primary health care team identifies few cases of postnatal depression.<sup>24,25</sup> Rates of detection may now sub-

stantially improve because a suitable tool for identifying the disorder has been developed.<sup>26</sup> This simple screening questionnaire, which relies on self-reporting, has been specifically designed for use by the primary health care team during routine contacts and has been well validated in the community.<sup>27</sup> The important topic of predicting at risk women before delivery is being addressed in current research.

Health care professionals should be aware of the possibility of problems in the mother-infant relationship arising because of postnatal depression. Postnatally depressed mothers are likely to be socially isolated and emotionally unsupported,<sup>28 29</sup> and general practitioners, midwives, and health visitors are particularly well placed to provide support through their routine professional contacts—thereby dealing with the very deficits that are associated with maternal depression. Health professionals therefore need to pay attention to the emotional aspects of pregnancy, childbirth, and early infant care and to ensure that the topic is covered during training.

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## Brain, mind, insanity, and the law

### *Sleepwalkers aren't insane*

Recently a defendant, who claimed to have been sleepwalking during an attack, was found not guilty by reason of insanity on a charge of wounding with intent. He was ordered to be admitted and detained in such hospital as the secretary of state should direct. Last month he appealed against the judge's ruling that sleepwalking was an insane automatism, but his case was dismissed. In giving the reserved judgment Lord Chief Justice Lord Lane said: "What the law regards as insanity for the purpose of these enactments may be far removed from what would be regarded as insanity by a psychiatrist."

This highlights yet again the difficulty that both the law and the medical profession face when a defendant chooses to plead not guilty by reason of automatism. Medically, an automatic act occurs in a confusional setting over which the individual has no control and for which he may have no memory.<sup>1 2</sup> Automatism result from brain dysfunction. A doctor's prime concern is for the patient rather than the consequences of the automatism. In law the main emphasis must be the protection of the public. It is these two different views that have led to the current complexity of the law on automatism and to the inadvertent stigmatisation of some offenders.

The law defines two types of automatism—sane and insane. Sane automatism occur when the factor leading to the offence is external to the person. Legally, sane automatism might include the jerking of a limb caused by a bee sting and after concussion or an injection of too much insulin. Automatism due to diseases of the mind—insane automatism—result from internal factors, inherent in the individual. Their range is very wide, including cerebral tumours, arteriosclerosis, epilepsy, personality factors, hysterical dissociative states, anxiety, and depression. Lord Justice Denning gave the reason for this distinction.<sup>3</sup> "It seems to me that any mental disorder which has manifested itself in violence and is prone to recur is a disease of the mind. At any rate it is the sort of disease for which a person should be detained in hospital rather than be given an unqualified acquittal." Few doctors would disagree with these sentiments, but confusion arises because the law is using its own criteria of insanity.

The explanation lies in earlier judgments. In *R v Kemp*<sup>4</sup> Judge Devlin maintained that what constituted a disease of the mind was a question for the judge. He said, "The law is not concerned with the brain but with the mind. In the sense that mind is ordinarily used, the mental faculties of reason,