Neuroscience, Responsibility and the Law

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A group of fifteen neuroscientists, philosophers and lawyers met under the auspices of the Network at Drynachan Lodge near Inverness in Scotland to discuss the issue of responsibility as understood by modern neuroscience on the one hand and our legal system on the other. Drynachan is the shooting lodge of the Cawdor family and is situated in a remote site on the banks of the River Findhorn. As such it provided a perfect retreat for reflection on our theme, and our proceedings were made all the more congenial by the warm and generous hospitality of COUNTESS ANGELIKA CAWDOR.

Our first foray into this field was our May Dialogue of 1994 entitled 'Mind, Behaviour and the Law'. Here Peter Fenwick and Sandy McCall Smith, now professor of law and medical ethics at Edinburgh, laid out the groundwork on which this seminar was based. With his extensive court experience, PETER FENWICK was in a good position to open the conference and took us back to an incident at the Old Bailey when the judge asked him to come back the following day with his definition of the mind. Basic to the notion of responsibility in a legal context is intention: the guilty mind (*mens rea*) is held responsible for actions, but is there such a thing as a guilty brain? Here we have two discourses of mind and brain, the essential question being the relationship between the two. In cases where the mind is absent or innocent, as in sleepwalking, the defence is upheld. More marginal, however, are instances where it can be argued that a high dose of a drug such as Valium has adversely affected impulse control.

This picture suggested a spectrum of both consciousness and responsibility, a point taken up by PROFESSOR SUSAN GREENFIELD of Oxford. She argued for the basic plasticity of the brain, that more experience leads to more individuality and that consciousness may be likened to a light in a room which may be brighter or dimmer depending on a person's state. Active interaction with the environment is a crucial factor, represented as a dialogue involving constant interception and interpretation. There is thus no simple factor in delineating responsibility. PROFESSOR DEREK BRYCE-SMITH from Reading contributed a biochemical perspective with his report of chemical and nutritional influences on brains and behaviour. He has been involved in studies of young delinquents, the vast majority of whom are hyperactive. When treated for various dietary deficiencies, lead overload and zinc depletion, behaviour can show dramatic improvements. He stressed that dietary factors could therefore play a significant role while maintaining that we need to adopt a multi-factorial approach.

Peter Fenwick, Norris McWhirter and Bill Fulford in discussion. Photo: DL

SANDY MCCALL SMITH and PROFESSOR BILL FULFORD from Warwick tried to get behind human action. Most theories of responsibility are based on the notion of choice reflected in the deliberate acts of agents. In fact, Sandy pointed out, much human action does not fit this pattern, and is done either unthinkingly, spontaneously, or even, in some extreme cases, in dissociative or extreme states. Some acts are not fully chosen in the sense that they may derive from external coercion or pressure, while much action is derived from habit and custom. Character, however, was an important consideration since a judgement can be made about whether an act was in our out of character, thus providing a wider context for discussion. He felt that the retributive model of punishment had failed and that education should include the development of moral imagination and sensitivity. Bill asked about the relationship between legal and moral responsibility, looking at various cases involving delusional states, including that of guilt. Thus the idea of graded responsibility emerged again. In practice, grading only emerges after sentencing, and the severity of the sentence is affected by the judge's view of the extent of responsibility. Responsibility is required as a justification for any punishment, which can then be treated as a just desert meted out for a culpable act.

The next session looked at freedom of the will and the problem of determinism. DR MARY MIDGLEY pointed out that the word determinism can be used in either a personal or impersonal sense. We are inclined, other things being equal, to take the word in its personal sense, so that we interpret it to mean that our actions are controlled by external forces from outside ourselves. She argued that the notion of determinism itself is in a mess and actually makes no sense. An example from Richard Dawkins is the transfer of autonomy to small parts of cells inside human bodies, which are then treated as if they were independent designers and users of the wholes to which they belong. Mary also criticized Colin Blakemore's mechanistic understanding of the brain and robustly insisted that epiphenomenalism was a contradiction: 'the people who promote it show that they don't believe in it themselves. If they believed in it, they would certainly not go to the trouble of composing arguments about it'.

JUSTICE DR DAVID HODGSON came to the conference all the way from the New South Wales Supreme Court. He felt that the burden of proof was to show that we did not have free will. Intention is clearly related to the voluntary, and cannot simply be written off as an illusion. The basis of causation lies in reasons and choices, and alternatives are generally open. Disadvantages may make it hard to arrive at a right choice, thus introducing the question of the threshold of responsibility. GRAHAM MARTIN from Edinburgh introduced a continental view by bringing in Bergson's analysis of time and causality, showing that there is an asymmetry of the closed past and open future, as well as indicating the shortcomings of

abstraction which artificially chops time up into segments. Our discussions moved us towards the use of the word freedom rather than the expression free will. We also considered the role of the social in defining consciousness and the importance of the subconscious.

PROFESSOR HILARY ROSE from London reminded us of some of the implicit context of our discourse. Anglo-Saxon capitalism, she maintained, has unduly accentuated individualism; feminist understandings have yet to percolate generally into the culture; much of the consciousness literature is concerned with cognition rather than emotionality; and general notions of responsibility are gendered - we have differing expectations of men and women. An interesting line emerging from this presentation was whether the adversarial court process itself was not a kind of boys' game. PROFESSOR STEVEN ROSE from the Open University emphasized the importance of translation between languages or levels of explanation. He argued that responsibility is untranslatable into biochemistry and that biological systems are radically indeterminate. He was unhappy with our formulation of dichotomies into mad or bad, organic or functional, nature or nurture, preferring to understand the world in terms of dynamic process rather than object continuities.

JOHN CORNWELL from Cambridge spoke about his book *The Power to Harm*, in which he had analysed the Prozac trial where the case concerned a mass murder by a man on the drug. Different versions of human identity and responsibility were advanced during the trial, ranging from the self as chemical software through various forms of determinism to premeditated responsibility. He commented on the cynical invoking of models of human behaviour that must surely contribute towards the distrust shown by juries of expert witnesses. The power and promise of the human genome project has encouraged journalists to magnify genetic claims - and perhaps despair over social remedies has driven people in the direction of genetic solutions under the false impression that this is the ultimate and determinant cause.

NORRIS MCWHIRTER surveyed the recent history of moral education and deplored its rush to ditch traditional values and embrace personal sets of values even at primary school age. There was a feeling that the moral capital of Christianity was being used up and that a climate of relativism undermined the sense of right and wrong by not giving children a framework from which to start. We recognized an expansion of our area of moral concern at the same time as criticizing television for blunting our sensitivity. Some degree of social conditioning was necessary for social stability, but there was a good deal of support for the idea of Virtue Ethics and BARONESS MARY WARNOCK'S suggestion that the sense of wanting to be good had to be taught. I put forward some ideas on the fundamental values in a holistic theory of morality based on the idea of sympathy deriving from an underlying unity of consciousness. This seems to me to underlie the Golden Rule and is highlighted in near-death experiences involving a life review in which one seems to experience the results of one's actions and thoughts on others. Some participants expressed surprise at agreeing with the moral ideas of Adam Smith, but all felt that the development of empathy had a role to play in the emergence of an 'ethic of care'.

While no firm conclusions were reached, there was a general consensus about fruitful directions for future work. The interdisciplinary nature of the gathering meant that we had all learned something from each other and that our understanding of the complexity of the issues had been enhanced. We have to begin from an understanding of the nature of consciousness and therefore of the self. The self was seen in terms of process, history and

narrative rather than rigid structure, but it is still a dynamic whole with the brain as a particular factor in background conditions. The issue of freedom and determinism had to be analysed at a number of levels, and it is crucial to know what can legitimately be said at any given level. Translation between levels is essential, but we should resist the temptation to reduce the cause of behaviour to a particular level or metaphor within our respective disciplines: there is still a gap between a disturbance in the brain and the actual selection of an action. Just as consciousness can be understood in terms of a spectrum, so responsibility can be graded. Accountability and blame underlie philosophies of punishment, but we should be sensitive in apportioning punishment and treatment. Proper nutrition had a larger role to play than many had hitherto suspected, and formed part of an integrated approach. In a pluralistic society, education in values is still vital, as is the development of a moral imagination that makes us more sensitive to the imperative of the Golden Rule. A compassionate society requires a compassionate education and the development of a compassionate understanding that includes forgiveness.

We are sure to see many more cases in the near future where these issues of responsibility will debated in the courts, with expert witnesses on either side. Our meeting unravelled some of the assumptions underlying the various possible approaches to responsibility and we hope that our proposed book will aid clearer thinking about these complex issues by charting a principled but middle course between the competing claims of determinism, culture or social milieu and personal accountability.