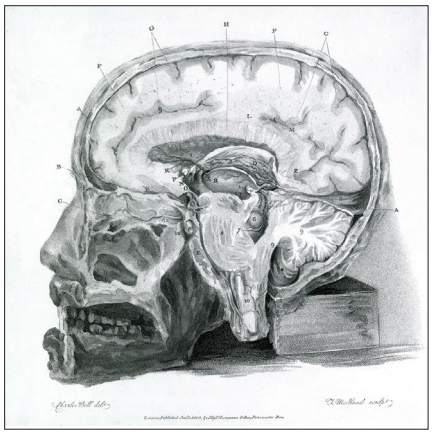
The implications of brain lateralisation for modern general practice



Anatomy of the Brain. 1802. From: The Anatomy of the Brain Explained in a Series of Engravings, by Sir Charles Bell. Credit: Wellcome Library, London.

INTRODUCTION

Iain McGilchrist, an Oxford literary scholar turned psychiatrist, recently published *The Master and His Emissary: The Divided Brain And The Making of The Western World*.[1] His thesis, based on an extensive review and synthesis of the neuroscientific, philosophical, and humanities literature, is that there are two fundamentally opposed realities, different modes of experience, which contribute to how humans understand the world. These differences are rooted in the bi-hemispheric structure of the brain and although the hemispheres are functionally integrated on a day-to-day basis, their different priorities are likely to come into conflict in the long term. He hypothesises that this conflict explains many aspects of contemporary Western culture and I believe McGilchrist's thesis sheds light on many of the issues we find ourselves now facing in general practice.

BRAIN LATERALISATION

Lateralisation of brain function is widespread in vertebrates.[2] Birds and mammals developed bi-hemispheric brains, which brought evolutionary advantages through being able to perform cognitive tasks that demand simultaneous, but different, use of both hemispheres, for example, finding food while being vigilant for predators.[3] The advantages accrue not only at individual but also at population level, where lateralisation produces advantages in social cohesion, for example, by being able to relate to others as a potential mate or friend. As the brain evolved, the cerebral hemispheres increased in size. The expansion of the frontal lobes in humans has allowed us to stand back from the world, ourselves, and the immediacy of experience. This enables us to plan, to think flexibly and inventively, and to take control of the world around us. It also permits a broader empathy. In addition to increasing in size, the human brain became progressively more asymmetrical. This was accompanied by a relative reduction in inter-hemispheric connectivity.[4] The modern brain has therefore been characterised as two autonomous systems that bring two different experiential worlds to the mind.[1]

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The right hemisphere's broad, vigilant attention sees things as a whole and in their context. Through its connections to the limbic system and other subcortical structures, and regulation of the hypothalamic–pituitary axis, it has affinity with emotions and bodily experience. It is also the site of relational, empathic skills. It has primacy for metaphor and gestural language, and also specialises in non-verbal communication. These features enable people and things to be 'present' to us in their embodied individuality, changeability, and interconnectedness, as part of a whole that is in continual flux. It yields a world that is individual, changing, evolving, interconnected, and implicit, where things are never fully known.[1]

The left hemisphere, with its narrow, focused attention, allows us to step outside the flow of experience. Through its capacity for denotative language and serial analysis it 're-presents' the world as explicit, abstracted, compartmentalised, fragmented, disembodied, and more static, that is, in a form that is more useful for manipulation of the world and one another. It is the locus of conceptualised knowledge whereas the right hemisphere embodies intuitive perception.

The two hemispheres are functionally integrated because both takes on the world are necessary for day-to-day living. Working together they allow, for example, both intuitive and conceptualised thinking. When working in harmony a right–left–right progression exists. What begins in the right hemisphere's world is sent to the left for processing and then returned for a new synthesis to be made. The new whole is greater than the sum of the parts.[5] However, although cooperation is important it is also vital to keep the worlds separate. This is mediated in part by the corpus callosum, and other subcortical structures that are involved in inhibition of function as well as transfer of information.

There is evidence at a global level that one or other hemisphere's particular cognitive and perceptual style may influence an individual's experience of the world not only during day-to-day function, but also over the longer periods of time that form the basis of conscious experience.[1] The left hemisphere has the advantage for a number of reasons. The left hemisphere is most accessible to conscious experience. Its serial, language-dependent thought

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processes allow elaboration of its own workings over time into systematic thought, giving it permanence and solidity. The inhibitory influence of the left hemisphere is also greater than the right.[6]

At the collective level McGilchrist hypothesises that the hemispheres' different priorities have come into conflict in Western society, with shifts of balance between these priorities evident over the last 2000 years. These, he argues, are functional shifts initiated by imitation of beliefs and practices, ways of seeing the world, and ways of being that favour one or other hemisphere. The balance in the modern world, he argues, has swung irrevocably towards that of the left hemisphere.

HEMISPHERE IMBALANCE AND ITS EFFECTS ON THE MODERN MEDICAL AND WIDER SOCIETY

Modern UK society shows signs of such imbalance. Society has become more impersonal, with increasing focus on material things at the expense of the living world. The vulnerable are being made scapegoats for the failures of the economic system. Social cohesion is being neglected, with increasing social isolation among its members. There is a growing lack of trust between people and between people and the government leading to resentments and a desire for uniformity with the loss of individuality. People within society increasingly attach importance to being in control while taking less responsibility. Technology, and the control it offers over illness and the postponement of death, has created unrealistic expectations of modern medicine. In matters of health when illness or accidents occur, which are seen as beyond one's control, control may be reasserted by looking for others to blame. Exploitation of the environment is valued for its short-term utility while the wider issue of our relationship with the natural world is ignored, with dissenters ridiculed.

Modern medical culture reflects wider society's orientation; with increasing specialisation there has been a loss of holism. Experiential knowledge and the practical acquisition of embodied skills have been replaced by representations to be evidenced by paper qualifications. Expertise is being superseded by 'expert' knowledge based on theory, which is also used to wield power over individual doctors.[7] The concrete is increasingly replaced with the theoretical or abstract, which is seen as more convincing. This promotes the primacy of propositional knowledge and the downgrading of tacit knowedge.[8] Skills are reduced to algorithmic procedures that can be regulated by administrators.[7]

The medical world has become more virtualised through increasing involvement in strategic planning, paperwork, and bureaucratic procedures at the cost of contact with patients in the real 'lived' world.[7] There is increasing reification where quantity is the only criterion that is understood and can come to replace considerations of quality altogether.[7] Uncertainty is not tolerated and inflexibility results. The role of the GP, which often cannot be quantified or regulated, and involves a degree of altruism, becomes an object of suspicion.

As GPs, our individual and collective ideals are consistent with integration and harmony between the different takes on the world. We value using our knowledge and skills — acknowledging the contribution made by both reason and imagination to their development — to help treat our patients holistically and empathically. We value being part of a society that respects individuality, has an ethic of care toward its most vulnerable, and a sense not only of where it is going, but also where it came from. Thus, the lateralisation model provides both a mechanism and a metaphor for the tensions and conflicts we face in general practice today.

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