



DIVIDED BRAIN, DIVIDED WORLD

WHY THE BEST PART OF US STRUGGLES TO BE HEARD

JONATHAN ROWSON AND IAIN MCGILCHRIST
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Lotto, Lorenzo (1480–1556), Madonna and Child, the Infant Saint John and Saint Peter Martyr. Museo di Capodimonte, Naples.

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Contents

Preface: RSA's Social Brain project becomes a Centre	3
Introduction	4
Part one: Inquiry into the strength and significance of the argument	7
What is the argument, and why does it matter?	8
Probing the argument	23
Exploring practical and policy implications	31
Part two: Reflections	50
Reflections	51
Afterword	77
Appendices	80
Appendix 1: Questions for discussion at the RSA Workshop	81
Appendix 2: RSA Workshop	83
Endnotes	93

'If I am right, that the story of the Western world is one of increasing left hemisphere domination, we would not expect insight to be the key note. Instead, we would expect a sort of insouciant optimism, the sleepwalker whistling a happy tune as he ambles towards the abyss.'

Iain McGilchrist, *The Master and his Emissary*¹

Preface: RSA's Social Brain project becomes a Centre

The notion that we are rational individuals who respond to information by making decisions consciously, consistently and independently is, at best, a very partial account of who we are. A wide body of scientific knowledge is now telling us what many have long intuitively sensed – humans are a fundamentally social species, formed through and for social interaction, and most of our behaviour is habitual.

Since its inception in early 2009, RSA's Social Brain project has sought to make theories of human nature more accurate through research, more explicit through public dissemination, and more empowering through practical engagement. Over the last four years, our work has gradually grown from being a stand-alone awareness-raising project to a much wider programme of research, consultancy and thought leadership. We have illustrated the practical and policy relevance of our ideas through deliberative research on social and cultural norms in the police service, worked with taxi drivers to improve the fuel efficiency of their driving, and proposed a thorough rethinking of the Government's Big Society initiative, based on a critique of its psychological foundations.

More recently we contributed to an evidence review for the Joseph Rowntree Foundation on the role of perceptions of risk and trust in care-based relationships in the context of an ageing society. We are currently helping a major retail bank on how to get people to spend less and save more, and advising NSPCC on a national behaviour change campaign to reduce aggression. We are also rethinking the role of behaviour change in the context of climate change by squarely focusing interventions on 'climate ignorers' – those who accept their complicity in climate change but don't live as though they do. More fundamentally, we are about to begin a two year programme of research and events on how new conceptions of human nature may help to reconceive the nature and significance of the spiritual dimension of our lives.

All of this work is connected by a deep conviction that we need to become more reflexive about human nature to address the major adaptive challenges of our time. Our work strives to link theory to practice in ways that make a distinctive and enduring contribution to social innovation. Our main practical aims are to support personal development and wellbeing, inform educational practice and improve financial and environmental behaviour. We work with a variety of partners and funders in public, private and third sectors and our staff are supported by a large advisory group, including several RSA Fellows.

The RSA Social Brain Centre has emerged from these developments, with the shift of title reflecting the RSA's continuing commitment to work in this area. The Centre was launched formally in November 2012, and was marked by the workshop exploring the practical relevance of Iain McGilchrist's ideas, which is unpacked in the remainder of this document.

Dr Jonathan Rowson

Director, RSA Social Brain Centre

Introduction

The discussion and reflections that follow feature an inquiry into a singularly profound, complex and fascinating thesis about the relationship between our brains and the world. Through this inquiry, I attempt to illustrate what a mature discussion about the social and political relevance of neuroscience might look like. While there are no explicit and crude injunctions of the form ‘because the brain is like X we should therefore do Y’ in what follows, I do attempt to carefully understand how a particular perspective on the brain might inform our attempts to act more effectively in the world.

In light of the public prestige of neuroscience, it is important and timely to move beyond what Raymond Tallis calls ‘*neuromania*’.² The belief that we can explain all our behaviour with reference to our brains is clearly misplaced, and brings with it what Nik Rose has chillingly called ‘the neuromolecular gaze’, creating justifiable fears of alienating forms of neural reductionism and unwarranted pharmaceutical control.³

But it would be a mistake to throw out the neural baby with the manic bathwater. In recent years we have also witnessed widespread *neurophobia*, a misplaced overreaction to neuromania that suggests we cannot infer anything important about our behaviour from our brains.⁴ However you define and conceive the relationships between, for instance, brain and mind, mind and individual behaviour, and individual behaviour and social and cultural phenomena, the nature of our brains must be implicated *in some way*, and possibly in quite important ways.

My hope is that the discussion that follows introduces a constructive middle way to talk about the social and cultural relevance of our understanding of the brain.⁵ Rather than thinking about the link between brain and behaviour as if it always has to be direct and reductive, and then proceeding to argue about the significance of the link, the discussion that follows takes a different route. Iain McGilchrist’s work provides a fresh and powerful perspective because the route from brain to behaviour is mediated by phenomenology and values.

If you have ever had the feeling that the world is deeply out of kilter in a way that you can’t quite articulate, suspect that the growing neglect of arts and humanities is even more tragic than most people believe, or are hoping for some insight into why we might be blinkered enough to destroy our own planet, the following discussion will hopefully offer some valuable intellectual resources. *The Master and his Emissary*,⁶ the book that informs the following discussion, is about the profound significance of the fact that the left and right hemispheres of our brains have radically different ‘world views’. The hidden story of Western culture, as told by the author, is about how the abstract, instrumental, articulate and assured left hemisphere has gradually usurped the more contextual,

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The hidden story of Western culture, as told by the author, is about how the abstract, instrumental, articulate and assured left hemisphere has gradually usurped the more contextual, humane, systemic, holistic but relatively tentative and inarticulate right hemisphere

humane, systemic, holistic but relatively tentative and inarticulate right hemisphere.

The book has enjoyed considerable commercial success and enormous critical acclaim,⁷ but McGilchrist's book is not particularly accessible, even to an intelligent lay audience. The RSA has already hosted an event, which I was honoured to chair, and we produced a podcast, video, and RSAanimate, which has been viewed by over a million people at the time of writing.⁸ However, I personally found the argument powerful and timely enough to want to go beyond simple dissemination in three main ways:

The first opportunity is literally prosaic – the book and references together comprise about 350,000 words. Most thoughtful and influential people who are intrigued by the argument, and would like to read the book, are never likely to have the time. Iain himself has said that if he hadn't written the book, he would never have got round to reading it. In the discussion, we have tried to distil the argument without compromising its integrity, and while this proved harder than initially hoped, it can now be read at one (long) sitting.

Secondly, although lucid, the book details a very complex and subtle interdisciplinary argument of a broadly philosophical nature that is easy both to positively affirm without understanding, and to dismiss too casually. I wanted to guard against the association of this work with the eager misuse of 'left brain thinking' and 'right brain thinking' in popular psychology and management literature, but I also wanted to raise some of the main over-arching objections that question the legitimacy of brain-based explanations of the world in general. The discussion format hopefully helps to highlight the critical turns in the argument, and invites further challenges from readers.

Thirdly, although McGilchrist recognises that his thesis lends itself to practical questions, he chooses to focus on 'diagnosis' and leaves the reader with no tangible injunctions on what to do with the material they have read.



The final section was by far the hardest to work through, because it is so difficult, particularly for anybody frustrated by intractable social problems, not to want to reach for tangible practical and policy implications in areas that seem to urgently need fresh insight, including education, mental health, climate change and finance. I hope we have made some headway here, at least enough to provoke constructive feedback.

The Social Brain Centre chose to focus on this piece of work to mark the launch of The Centre for a variety of reasons: First, deep problems need deep insight. In the context of regretfully not being able to attend the workshop, Oxfam's Kate Raworth mentioned, appositely, that 'these are rich times to be rethinking the world'.⁹ If we are going to make 'behaviour change' about more than the technocratic application of behavioural insights to mostly minor problems, we need to work hard to think about the influence of deep structures and root causes, including planetary boundaries, political systems, social networks, inequality, the structure of the macroeconomy, and, in this case, the structure of the brain. If we don't link up behaviour change to deep and systemic influences, we will be stuck with superficial tinkering rather than meaningful social innovation.

The second reason for focusing on *The Master and his Emissary* is that we value reflexivity, and Iain's work helps to promote it. Without an appreciation for the recursive nature of self-awareness and behaviour, we will not be able to achieve the forms of agency and autonomy that are implicitly or explicitly demanded of us to adapt to modern challenges. Neurological reflexivity is fundamentally about the interdependence of mind and world, which is central to Iain's work. Simply state, knowing more about hemispheric division has an impact on the relevance of that division.¹⁰

Finally, the RSA Social Brain Centre works on three thematic areas: decisions, habits, and attention. Our focus on attention is part of what makes our work distinctive within the field of behaviour change. Iain's work is fundamentally about patterns of attention, and by giving this work prominence here, we are trying to highlight the central relevance of attention to cultural challenges and social change. While the behaviour change agenda has rightly focussed on automatic behaviour, we should not forget the power of our controlled systems to adapt and adjust in the light of important new perspectives. Indeed, understanding and appreciating such perspectives may require particular kinds of attention that, if Iain McGilchrist is to be believed, are under valued, and under threat.

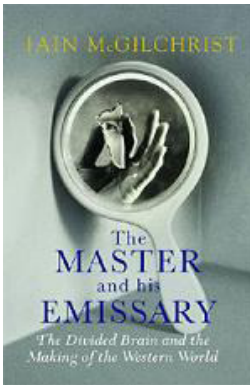
Dr Jonathan Rowson

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Iain himself has said that if he hadn't written the book, he would never have got round to reading it

Part one

**Inquiry into the strength and
significance of the argument**



What is the argument, and why does it matter?

IM: The suggestion is that, slowly but surely, the left hemisphere's perspective shapes our culture in such a way that the culture begins to respond to it as the dominant one

JR: Iain, let me begin by stating the argument as I have come to understand it, and you can tell me how you might express it differently or more fully.

You seem to be saying that the left hemisphere of the brain is gradually colonising our experience. While the brain hemispheres are connected by the corpus callosum, and both are involved in everything we do, if we cease to ask what the hemispheres do eg language, reasoning, creativity, forecasting, and instead ask how they do it, we find very significant differences in the two hemispheres. For instance the left hemisphere tends to decontextualise issues while the right contextualises, the left tends to abstract while the right makes vivid and concrete, the left seeks instrumental feedback while the right prefers affectively nuanced responses, and the right hemisphere appears to be much more receptive to evidence that challenges its own position. Both of these 'hows' are important and necessary, and the evidence for these differences is meticulously unpacked in your book in a cautious but extensive inductive argument.

You are clear that there is insufficient evolutionary time in Western cultural history for left or right hemisphere dominance to manifest at the structural level of the brain.

So you are not saying the left hemisphere is getting bigger or denser or better connected than the right. The point is that the left hemisphere's 'way of being' is more culturally contagious than the 'way of being' of the right hemisphere.

The suggestion is that, slowly but surely, the left hemisphere's perspective shapes our culture in such a way that the culture begins to respond to it as the dominant one.

Your thesis matters because there is a very real danger that we may reach what you call 'a hall of mirrors' in which the explicit, instrumental, defined, confident, abstract voice (not unlike the current voice of the materialistic orthodoxy in neuroscience or the neoliberal voice placing unqualified faith in markets) becomes the only one we appreciate, while the relatively implicit, intrinsic, fluid, visceral perspective of the right hemisphere begins to sound diminished and irrelevant.

Is that about right? If so, can you give some practical examples to illustrate the nature of this change?

IM: *Let's begin with the financial crash. It was fuelled by a belief that human behaviour can be confidently predicted by algorithms ... Financial institutions disregarded the importance of trust, and instead traded in a war of all-against-all, inducing an atmosphere of paranoia, deception and chicanery. All these are features of the way the left hemisphere conceives the world*

IM: I think that is a good initial formulation. As you say, it is not about *what* each hemisphere *does*, as we used to think, because it is clear that each is involved with literally everything. It is about *how* it is *done* – an approach, a stance, a disposition towards things. Above all, this is not about ‘thinking versus feeling’. It is – as Mary Midgley perceived in her review in *The Guardian* – about two kinds of thinking.¹¹ And, contrary to popular belief, it is the right hemisphere’s, not the left hemisphere’s, thinking that is more accurate, more down to earth – in a word, ‘truer’ to what is.

Practical examples

IM: But you ask if there are practical examples of what I see as us drifting ever more into the left hemisphere’s version of the world.

That’s not hard. Let’s begin with the financial crash. It was fuelled by a belief that human behaviour can be confidently predicted by algorithms, whereas in fact we not only don’t know – but in principle can never know – enough for this sort of prediction to be valid. This false belief also allowed people to feel that their wise intuitions about the differences between individual borrowers, or individual economies, should be over-ridden, because such context-dependent uniqueness was nowhere to be found in the model. The situation was compounded by an absorption in the virtual – complex self-referring systems of numbers – to the extent that we lost track of what these figures represented in the real world. Financial institutions disregarded the importance of trust, and instead traded in a war of all-against-all, inducing an atmosphere of paranoia, deception and chicanery. All these are features of the way the left hemisphere conceives the world, not the way the whole brain would have seen it.

Equally I could point to the mass of petty legislation, and the obsession with accountability and audit in all walks of life, designed to fill the vacuum left by trustworthiness and merely serving further to erode trust; a litigious culture, which imposes a heavy burden on the economy and saps morale; the bureaucracy and micromanagement that stifles originality in research and ensures mediocrity; the narrow-minded obsession with economic gain here and now that attacks educational institutions and the world of scholarship; the managerial culture that is destroying professionalism in medicine, and substituting machine-like ‘decision trees’ for skill and judgment; the neglect of practical hands-on, embodied experience and common sense, that turns nurses and policemen into office-based paper-pushers with degrees; the exploitation of the natural world as if it were just so much resource to ‘go get’; and so on.

Sometimes people seem to think that when I talk about the hemispheres this is ‘just’ metaphorical. But it is not. There is evidence that autistic spectrum disorders and anorexia nervosa, both of which mimic, and almost certainly involve, right hemisphere deficit states, are on the increase. But it goes much further than that. It affects us all. After a talk I gave recently in Toronto, a member of the audience came up to the microphone. What she said struck me forcibly. ‘I am a teacher of 7–11 year-olds’, she began. ‘My colleagues and I have noticed in the

last three or four years that we have started having to teach children how to read the human face.'

Of course, in itself it's alarming that a proportion of our children are no longer able to understand implicit communication, not even so much as to respond appropriately to the face of their fellow human beings. In the past such problems would have been confined to children on the autistic spectrum. But more than that – it fell into place with other messages I had been getting from teachers since the publication of the book. These teachers reported that in just the last few years their children had become unable to carry out tasks involving sustained attention, tasks that ten years ago almost every child would have been able to do easily. When you put that together with research suggesting that children are now less empathic than they used to be, you get a startling picture. Because each of these faculties – the ability to read faces, to sustain attention and to empathise – as well as being essential to the human world, is particularly reliant on the right hemisphere of the brain. So their relative demise is precisely what you would expect if my hypothesis is correct.

JR: The main thing I want to clarify is that you are not 'reducing' everything to the brain, but at the same time you do seem to be saying the brain is a kind of touchstone, and it serves to give the argument a foundational feel: can you help clarify?

JR: That's a striking example. But it is curious that you mention just 'the last few years' rather than the longer time frames that are unpacked in your book. What might be going on there?

IM: Well, these particular faculties are also likely to be impaired by over-reliance on TV and computers, the 'virtual' reality that comes through a screen, and which is expanding exponentially. Instead of spending much of his early years engaged with his mother's face (which is how children crucially develop the sense of a secure self, distinct from, but not entirely separate from, others), a child now is likely to spend more time interacting with a piece of equipment. There he will expect to be constantly distracted and over-stimulated, and in due course to watch scenes of violence with calm detachment. All that is true. But then this virtuality and emphasis on technology is also in itself a reflection of a world dominated by the left hemisphere.

JR: The impact of technology on our capacity to pay attention, sustain concentration, appreciate implicit communication and so forth is certainly an important issue, not least because some (Nick Carr, Susan Greenfield, Kenneth Gergen) feel this is an acute and growing problem that we need to address, while others dismiss such fears as reflex technophobia without any evidence to back it up, and are quick to point out that many, though not all (eg Jaron Lanier) of those expressing such fears have relatively limited experience of the technologies in question, which are often intensely social and creative in nature, with exacting intellectual content. I think there is an important discussion to be had here, but I would prefer to focus for now on making sure the core argument is as clear as possible.

Is the brain 'foundational'?

JR: Your thesis seems to entail an implicit theory of consciousness, in particular how different aspects of the brain relate to mind, and mind

IM: *I am not one of those people, of whom there appear to be all too many these days, who think that they have said something profound – even perhaps revealed the real, the ultimate truth – about a human experience simply by re-describing it at the neuronal level*

to world. You don't wade into the major debates in the philosophy of mind, perhaps wisely, but you do seem to have views on these fundamental ontological matters that underpin your argument. The main thing I want to clarify is that you are not 'reducing' everything to the brain, but at the same time you do seem to be saying the brain is a kind of touchstone, and it serves to give the argument a foundational feel: can you help clarify?

IM: I am not one of those people, of whom there appear to be all too many these days, who think that they have said something profound – even perhaps revealed the real, the ultimate truth – about a human experience simply by re-describing it at the neuronal level. That is just naivety. People got terribly excited when they found what was referred to as the 'neural circuitry' involved in falling in love – but what exactly did they expect? A blank? *Something* lights up in my brain when I eat a cheese sandwich – it just doesn't taste of cheddar.

The brain: divided and asymmetrical

IM: But it is odd that in recent times science has largely ignored two absolutely fundamental and incontrovertible findings about the brain. First, that it is, literally, profoundly divided. And second, its obvious asymmetry: there are clear observable differences at every level.

JR: And in the book you spend some time detailing those differences.

IM: The two hemispheres are different sizes, shapes, and weights (the right hemisphere is bigger and heavier in all social mammals); have expansions in different areas, different gyral conformations on the surface, and in places different architecture of the underlying cells; have different proportions of grey matter to white, different sensitivity to neuroendocrine influences, and rely on different preponderances of neurotransmitters. And in psychometric testing they consistently yield different results, which is in keeping with something any clinician could tell you: when there is damage to one hemisphere or the other, through injury, tumour or stroke, there are consistent differences in what happens to the subject and his world depending on which hemisphere suffers the lesion.

JR: So I guess you are saying something like this: if people are getting so excited about the brain in general – as they clearly are – why are they not saying more about perhaps the most obvious feature of it, namely that it is so fundamentally divided in so many different ways, and not just divided, but also profoundly asymmetrical?

IM: Exactly. And the first of these facts is particularly odd, because the power of the brain consists precisely in the number and complexity of its connections. Having it divided, on the face of things, is a massive waste of 'computing power'. Add to this that the main band of fibres connecting the two hemispheres, the corpus callosum, has got smaller over evolution, rather than larger, and in any case spends much of

its time facilitating the blocking or inhibition of action in the other hemisphere, and it looks like quite some investment has gone into keeping the two hemispheres apart. Why?

JR: *You make the point that it is not what each hemisphere does that is significant, but rather how they are, their way of being. But I think for lay people, and perhaps even for many scientists, that's really hard!*

JR: Why indeed? What is it about the nature of the difference between the hemispheres that, despite their ongoing interaction and interdependence, a considerable degree of separation and neural inhibition is nonetheless somehow 'adaptive'? You try to answer this at length in the book, and make the point above that it is not what each hemisphere does that is significant, but rather how they are – their way of being. But I think for lay people, and perhaps even for many scientists, that's really hard! What things do just seems to be the default way that we think about how one thing compares with another, and we reserve the 'how', the 'way of being' that you mention for people.

Hemispheres: It's not what they do, it's the way that they do it

IM: Well, that is indeed a crucial point, and it's the only conceivable explanation of how we came to neglect these obvious hemisphere differences. Dogma came to obscure facts. Because we thought of the brain as a machine, we were asking 'what does it do?' and getting the answer 'they both do everything'. If instead we had thought of the brain as part of a person, rather than a machine, we might have asked a different question: 'what's he or she like?' How, in other words – with what values, goals, interests, in what manner and in what way – did this part of a person do what he or she did? And we would have got quite another answer. For each hemisphere has a quite consistent, but radically different, 'take' on the world. This means that, at the core of our thinking about ourselves, the world and our relationship with it, there are two incompatible but necessary views that we need to try to combine. And things go badly wrong when we do not.

So when people say, what does looking at the brain tell us about the human world that we couldn't have found out some other way, I say – nothing. But that's also true of a map. There's nothing on it you couldn't have found out by wandering aimlessly around in the rain for quite some time. But would you throw away the map for that reason?

JR: Interesting. So you are not giving the brain extra explanatory power because it is the brain as such, but because it is something we now have a fairly large amount of information about, and it would be foolish not to at least try to apply some of that knowledge to making sense of the world?

IM: It's like this. Suppose it could be shown – because it can – that our brains are so constructed as to enable us to bring into being and conceive the experiential world in two quite distinct, complementary, but ultimately incompatible, ways. Suppose each has its uses, and that – here's why the brain view helps – these versions of the world, which have importantly different qualities, are generally so well combined or alternated from moment to moment in everyday experience that individuals are *not aware of this being the case*.

Now suppose also that it could be shown – because indeed it can – that these ‘takes’ on the world are not equally well grounded: the part of the brain that makes one of these views possible (the right hemisphere) takes into account more and better integrated information, over a broader range, than the other (the left hemisphere). One *sees* more, in the broadest sense of the word.

Now further suppose – because this is in fact demonstrably the case – that persons who, by experimental contrivance or through injury or disease, have to rely only on the part of the brain which sees less (the left hemisphere) tend to be unreasonably certain, more rigid and exclusive than those who are, for similar reasons, obliged to rely on the part that sees more (the right hemisphere), who are more tentative and more able to see other points of view. And suppose it could be shown – because, again, it can – that while most people, most of the time, draw on each hemisphere, individuals often show a bias towards drawing on one more than the other, with predictable results for that person’s understanding of the world.

I think it would be a bold person who claimed that this did not add anything to our understanding of what it means to be a human being – didn’t tell us something we would have found hard to deduce from mere observation, without study of the brain. And, as you know, my thesis is that, much as a bias of this kind can become characteristic of an individual’s thinking, it can become characteristic of the thinking of the group of individuals who shape a culture.

IM: We use our left hemisphere to grasp and manipulate, and the right to understand the world at large and how things within it relate to one another, as well as our relationship with it as a whole

JR: I was with you completely until that last leap, which I suspect not everybody will take as self-evident. That’s useful, because in a moment there are three distinct philosophical challenges about the argument as a whole that I would like you to help allay in the second section of the discussion. But first you mentioned that we don’t need neural ‘explanations’ to make sense of everything, and I imagine you would say something similar about evolutionary psychology, but still, many will want to make sense of why it might be that we have these two modes of being. Is there an important evolutionary drive here?

The evolution of two types of consciousness

IM: Survival requires the application of two incompatible kinds of attention to the world at once. A bird, for example, needs to pay narrow-beam sharply focussed attention to what it has already prioritised as of significance – a seed against a background of grit or pebbles, or a twig to build a nest. At the same time, it must be able to bring to bear on the world a broad, open, sustained and uncommitted attention, on the look-out for whatever else may exist. Without this capacity it would soon become someone else’s lunch while getting its own. Birds and animals all have divided brains, and regularly use one hemisphere for vigilant attention to the world at large, so as to make sense of it, including to bond with their mates, and the other for the narrow attention that enables them to lock onto whatever it is they need to get. Humans are no different in this respect: we use our left hemisphere to grasp and manipulate, and the right to understand the

world at large and how things within it relate to one another, as well as our relationship with it as a whole.

It is the left hemisphere that controls the right hand which for most of us is the one that does the grasping, and provides that aspect of language (not all of language) that enable us to say we have ‘grasped’ something. But it is the right hemisphere that is the basis of our nature as the ‘social animal’, which Aristotle saw as our defining feature.

It is easy to think of attention as just another ‘cognitive function’. But it isn’t. It is an aspect of consciousness: a machine can process data but it cannot attend. The nature of the attention we choose to pay alters the nature of the world we experience, and governs what it is we will find. This in turn governs the type of attention we deem it appropriate to pay. Before long we are locked into a certain vision of the world, as we become more and more sure of what it is we see. To a man with a hammer everything begins to look like a nail. And some beautiful research demonstrates that what we do not expect, we just do not see.

JR: So it’s as if we live simultaneously in two different worlds, but we don’t realise how radically different they are, and nor do we sense that they are competing.

IM: Exactly

JR: So it’s as if we live simultaneously in two different worlds, but we don’t realise how radically different they are, and nor do we sense that they are competing?

IM: Exactly. We are, as Kant put it, ‘citizens of two worlds’. But as we live headlong we can lose sight of that – in fact our consciousness appears (and no doubt has to give the illusion of being) seamless. Which is where looking at the brain comes in. It gives us something concrete, external to our minds, to look at. If our minds are generated by the brain, or at least mediated by it, the structure of the brain will undoubtedly tell us something about the structure of mind.

What are these two worlds like? Even a summary of all the differences in the kind of world that each hemisphere brings about would be very extensive, since each hemisphere plays a part in everything we experience. We would need to cover differences in the ways of conceiving and construing knowledge itself, what we mean by newness, by wholeness, by types and aspects of reason and emotion, and aspects of language, music, space, depth and time, as well as the body, morality and the self. So here I am going to do no more than point to some of the global ways in which they differ.

One way of looking at the difference would be to say that while the left hemisphere’s *raison d’être* is to narrow things down to a certainty, the right hemisphere’s is to open them up into possibility. In life we need both. In fact for practical purposes, narrowing things down to a certainty, so that we can grasp them, is more helpful. But it is also illusory, since certainty itself is an illusion – albeit, as I say, a useful one. Similarly the right hemisphere appreciates that all things change and flow, and are never fixed and static as the left hemisphere sees them. Nor are they isolated and atomistic (left hemisphere), but reciprocally interconnected (right hemisphere).

There is no certainty, fixity or isolation in nature. Things we make give the illusion of being so. Machines give us the idea that the world is made from bits put together. At least in the so-called ‘life’ sciences, we still imagine that things are mechanical, in just this way, while in

IM: *The amazing thing is consciousness itself, and it doesn't get more explicable by saying 'it's matter'. You have just kicked the can further down the road*

physics the idea was discarded around a hundred years ago. We talk of the brain having wiring, circuitry and switches, of its 'functioning', 'processing' information, etc. From this you might deduce that we knew exactly what sort of thing a brain was, or at least what sort of thing a neurone was, but in reality we don't have the slightest idea. In fact every individual cell is a quite extraordinarily complex self-regulating and self-repairing system entirely unlike any wire that ever existed. It forms tens of thousands of connections. As there are billions of neurones involved, the number of connections is virtually infinite. And everything in such a system is reciprocal rather than linear. This is not like anything we can know.

Implicit theory of consciousness?

JR: So relationships of one sort or another are primary, rather than parts. Again it feels like there is an implicit theory of consciousness here. I don't want to get needlessly sidetracked on a question that many think will confound people indefinitely, but what is your ontological 'take' here? Is the world ultimately comprised of mind or matter, or both, and how should we go about approaching that question?

IM: Well, we think we can make consciousness explicable by 'reducing' it to matter. In the first place, nothing can ever be 'reduced' to anything else.

JR: Briefly explain, please.

IM: Because things are unique, whole and indivisible, as the right hemisphere realises, not just instances of a type, substitutable by something else, and mechanically put together from bits, as the left hemisphere believes. Each thing is precisely itself and not another thing, as Wittgenstein was fond of observing.

But even if we choose to 'reduce' consciousness to a property of matter, it does not make it any easier to account for. We then have to sophisticate our idea of matter (no bad thing), since it becomes something so extraordinary that it can give rise to consciousness.

JR: A practically-minded colleague who read a draft of this discussion said they felt a bit lost by this claim – what would it mean to sophisticate our idea of matter?

IM: It is often thought that we cannot know the whole until we understand the 'parts'. But it is just as true that we cannot understand what sort of thing these 'parts' we identify are, without knowing what sort of a whole they go to make up – they don't exist separately from the wholes in which they inhere. The argument is bi-directional or, rather, forms a hermeneutic circle; there isn't a privileged direction which enables us to establish one thing and then the next, because each thing is constantly being altered by the context of the whole. If consciousness is 'just' matter, then matter immediately becomes something extraordinary – there's nothing 'just' about it, if this thing that looks so unlike consciousness has the potential for consciousness to come

about. The amazing thing is consciousness itself, and it doesn't get more explicable by saying 'it's matter'. You have just kicked the can further down the road.

Though people talk of the problem of consciousness, I would be inclined to turn things on their head and say, 'What problem? The real problem is matter.' Consciousness we know inside and out; but matter, that is closed to us. In fact it is its closed quality, its way of offering resistance to consciousness, that defines it. The existence and nature of matter is at least as hard to explain as the existence and nature of consciousness – I would say harder: it is just the familiarity with which we treat it every day that makes matter seem simple.

Presentation and re-presentation

IM: *Things as they are, fresh, embodied and unrepeatable – truly 'present' – are preferentially dealt with by the right hemisphere; as they become familiar, abstracted and generalised – no longer present, but 're-presented' – they are transferred to the left*

JR: This distinction between what is familiar to perception and what is fresh seems to have broad application in your argument. Is this why you make so much of the distinction between presentation and re-presentation?

IM: Familiarity and everydayness, at least in the sense that they make something more like a cliché, more like an icon (in the computer sense), a 're-presentation' rather than a real thing that is fully present, are also features of the left hemisphere's world. Things as they are, fresh, embodied and unrepeatable – truly 'present' – are preferentially dealt with by the right hemisphere; as they become familiar, abstracted and generalised – no longer present, but 're-presented' – they are transferred to the left. It is like comparing a world in all its richness with a useful map of that world, which leaves almost everything out, except the strategic essentials. We have become like people who have mistaken the map for the thing itself.

Many time-honoured problems in philosophy seem to hinge on which of these versions of the world one prioritises. But this is not just interesting from a philosophical point of view: it has massively important consequences for the sort of world we are busy creating now. If I describe what the left hemisphere sees, by contrast with what the right hemisphere sees, you will understand what I mean.

JR: I would like you to do that, and also clarify what exactly you mean when you say 'the left hemisphere sees' – why the visual reference?

IM: In almost every language, seeing is a metaphor both for perception and for understanding. What I mean by it is that the two hemispheres differ in their awareness, therefore both in what they literally perceive, and, more broadly, in what they then make of it – the world they construct from their perceptions.

Not what but how: The 'worlds' of the left and right hemispheres

IM: Because of its narrow focus and emphasis on getting certainty, the left hemisphere sees only bits and pieces, fragments which it

attempts to put together to form a whole. The left hemisphere alone encodes tools and machines. In the living world, context is everything, but this is neglected by the left hemisphere. Thus the left hemisphere prefers the explicit, without understanding that rendering things explicit, and isolating them under the spotlight of attention, denatures and ultimately kills them, just as explaining a joke or a poetic metaphor robs it of its meaning and power. The view through the lab window distorts the meaning of everything most precious to us – the natural world, sexual love, art and spirituality all fare badly when treated in this detached and decontextualised way.

The left hemisphere focuses on detail at the expense of the bigger picture, and on procedures at the expense of their meaning. This loss of proportion and preference for the forms of things over any real world content, lend themselves to a ‘tick box’ mentality, which is also an aspect of its risk-averse nature. Since its purpose is control in the service of grasp or manipulation, rather than understanding of the world, it is anxious and even paranoid if it senses loss of control. This makes it prone to bureaucracy, and indeed one could see the bureaucratic mind as an epitome of the left hemisphere’s take on the world, prioritising not just control but procedures that are explicit and that favour abstraction, anonymity, organisability and predictability over what is individual, unique, embodied and flexible. In the process justice gets re-interpreted simply as equality.

JR: It’s just worth adding here that by highlighting these limitations you are not just cheerleading for the right hemisphere – both hemispheres have important limitations?

IM: *We have become like people who have mistaken the map for the thing itself*

IM: I spend a lot of time these days going round the place speaking up for the left hemisphere. Woody Allen said that the brain was his second favourite organ: one might say that the left hemisphere is my second favourite hemisphere. We desperately need both in order to reason properly and to use our imagination creatively. If I seem to have a lot to say in favour of the right hemisphere in the book, it is because there was a balance here that needed to be redressed – and still does. A completely false view prevailed that the right hemisphere was somehow airy-fairy and unreliable and simply added some emotional colour to the perceptions of the ‘intelligent’ left hemisphere. But it is in reality the right hemisphere that sees more, that is more in touch with reality, and is more intellectually sophisticated (incidentally, there is evidence that those of highest intelligence, whatever their discipline, may rely more on the right hemisphere).¹²

The left hemisphere does not understand things, so much as process them: it is the right hemisphere that is the basis of understanding. This has an impact on the way we live now: because the left hemisphere is better than the right hemisphere at manipulating both figures and words, but less good than it at understanding their meaning (or in fact meaning in any sense), information becomes more important for it than knowledge, and knowledge than wisdom, which is implicit, paradoxical, and discoverable only by experience. Similarly, skills and judgment, embodied, implicit and born of experience, seem

merely unreliable versions of a procedure, and have to be ‘operationalised’ by algorithms that a machine could follow. This produces a standard product that is guaranteed to rule out any form of excellence.

Systems become designed to maximise utility, that is to say the efficiency that one would require of a machine: quantity, speed, and reliability of production. The problem here is that while this may apply to making plastic spoons, it does not apply to any human relationship, such as that with a teacher, a doctor, a policeman, a clergyman, a judge, or a social worker, all of whom will do a worse job by doing more, more quickly and to a standard template. Reasonableness, a highly sophisticated quality that used to be thought a goal of education, as well as a hallmark of civilisation, becomes replaced by mere rationality, and there is a resounding failure of common sense.

Reason and rationality

JR: Perhaps you could say something more about this distinction that you highlight in your book, because at first blush it sounds like a minor semantic quibble, but the distinction has real practical import, and relevance, for instance, for our adherence to what has been called ‘*zombie economics*’¹³ in which we continue to use ‘rational’ economic models that we know do not make sense of ‘reasonable’ economic behaviour in the real world.

IM: *People who are rational, but not reasonable, are impossible to live with: they can’t see, for example, that what might be appropriate in a court of law is not appropriate in the bedroom*

IM: The difference I am seeking to point up here is one that is recognised in other languages – certainly in Greek, Latin and German – by having two quite distinct terms. Rationality is the mechanical following of the rules of logic. Reason is the sort of judgment that comes from combining this with the fruits of experience, and leads to wisdom. People who are rational, but not reasonable, are impossible to live with: they can’t see, for example, that what might be appropriate in a court of law is not appropriate in the bedroom. And it leads us to imagine that human minds are like computer programmes designed to maximise return on investment: it is amazed to learn that people often forgo their own good for the pleasures of community, or actually become demotivated by some kinds of reward.

Rationality does not understand how the uniqueness of things, especially of contexts, means that general rules can only ever be highly approximate, and are often plain wrong. Uniqueness, the quality of a thing, is not understood by the left hemisphere, and so quantity, what it can measure, alone counts in its world. Because of its need to collapse things to a certainty, false distinctions and dichotomies thrive, with an emphasis on ‘either/or’ rather than ‘both/and’.¹⁴ Matter becomes mere resource to be exploited, and human mental processes are divorced from the body which shapes them, with the consequence that things become both more abstract, and more reified, more merely material, at the same time.

The left hemisphere must conceive of society as an aggregate of individuals, seen as equal, but inert, units. The right hemisphere alone can understand that individuals are unique and reciprocally bound in a network, based on a host of things that could never be rationalised,

IM: *The left hemisphere is not, as is sometimes thought, unemotional and down to earth. Anger is one of the most clearly lateralised emotions and it lateralises to the left hemisphere*

creating something much greater than the sum of its parts, a society; and that that society has no meaning apart from them, but neither do they apart from it. The left hemisphere's 'mis-take' on this tends towards a mechanistic idea of society that does not take into account emergent properties of a system, or complex reciprocal and fundamentally unpredictable interactions. It leads to a loss of social cohesion, and an emphasis on a mass of rules, regulations, and mechanisms of accountability which are supposed to substitute for trust. This has huge financial and social costs, as well as costs in terms of the further erosion of trust and morale.

The left hemisphere is not, as is sometimes thought, unemotional and down to earth. Anger is one of the most clearly lateralised emotions and it lateralises to the left hemisphere. The left hemisphere is manifestly not in touch with reality, and when it does not understand something it simply makes up a story that makes sense in its own terms and tells it with conviction. It prioritises as 'truth' the internal consistency of a system rather than its correspondence with the world outside the window. It tends to deny problems, abjure responsibility and take an unreasonably positive view of itself and its capacities. All of this can be demonstrated by ingenious experiments, detailed in *The Master and his Emissary*. As a result, according to it we are passive victims of the wrongdoing of others, more spectators than actors in the world, yet unwarrantedly optimistic about where we are going. In relation to that last – and very important – point, when individuals are asked to complete self-rating scores with one hemisphere isolated at a time, and these are compared with scores completed by their acquaintances, the left hemisphere reveals itself to have an unwarrantedly high opinion of itself compared with the right hemisphere. People with right hemisphere injuries, thus relying to a greater extent on their left hemisphere, have completely unrealistic ideas about their limitations, and are harder to help. They will even completely deny an obviously paralysed limb, and if ultimately forced to confront it, they will claim it belongs to someone else – say, the person in the next bed.

In a world in which the right hemisphere plays little part you would expect art in general to become conceptual, visual art to lack depth or perspective (both of which are provided largely by the right hemisphere), and music to be reduced to little more than rhythm, since in the normal course of things this is all the left hemisphere provides, melody and harmony being heavily dependent on the right hemisphere in most people. Language would become diffuse, excessive and lacking in concrete referents. There would be a deliberate undercutting of the sense of awe or wonder, which suggest the existence of something beyond what the left hemisphere can conceive: and the left hemisphere would be unreasonable and intemperate in rejecting the idea of a transcendent or spiritual realm.

JR: This seems to be the crux of the argument, and I think it's where many people struggle to grasp the urgency of your claim. Your argument is about the brain, but your concern is with fairly rapid cultural change, and if the brain doesn't change as such, what, then, drives the change?

IM: *The left hemisphere is also, as I suggest in the book, the Berlusconi of the brain – a political heavyweight that controls the media. It does the speaking, constructs the arguments in its own favour*

IM: No, it is not that the brain has changed significantly in terms of its structure in the last 500 years or so. It's more about function: the bihemispheric structure constrains our choices, and we tend nowadays to construe the world, ourselves and experience using only one part of it, and rely on that part more and more. It is like a form of blindness. At other eras of human history and in other cultures people were aware of much that it seems we have forgotten (not, as we fondly think, 'outgrown' because of our intelligence or sophistication). We may be the least perceptive, most dangerous people that have ever lived, and at the same time we have more power, for good or ill.

The questionable 'success' of the left hemisphere

JR: I know you have particular perspectives on danger and perception here, but not everybody will agree with the strength of that claim. Stephen Pinker's recent book on the world becoming less violent¹⁵ comes to mind, as does Matt Ridley's passionate if somewhat zealous faith in human innovation.¹⁶ However, while it might be difficult to agree on the nature and degree of the problems we face, and the extent to which they are caused by the 'blindness' you highlight, I am curious to know more about your case for how that 'blindness' itself comes about.

IM: If I am right that we are living in the West in a culture dominated by the take on the world of the left hemisphere, how did this come about? Surely, you may say, it's because it has proved itself more successful than any of the alternatives. Well, that all depends on what you mean by success. It is, I repeat, a culture that is very good at using the world, as if it were just a heap of resource to further our plans. But are our plans necessarily wise?

I think its success can be attributed to several things. First, it makes you powerful, and power is very seductive. Second, it offers very simple explanations, that are in their own terms convincing, because what doesn't fit the plan is simply declared to be meaningless. For example, to declare talk of 'consciousness' a delusion or a linguistic error has the virtue of simplicity. It may not, however, satisfy the more sceptical among us, those who are not in thrall to our left hemisphere's way of thinking. If what does not fit the model is just discarded we will never learn, never sophisticate our model of reality, and our understanding will come to a standstill where it is. Third, the left hemisphere is also, as I suggest in the book, the Berlusconi of the brain – a political heavyweight that controls the media. It does the speaking, constructs the arguments in its own favour. And finally, since the Industrial Revolution, we have constructed a world around us externally that is the image of the world the left hemisphere has made internally. Appeals to the natural world, to the history of a culture, to art, to the body, and to spirituality, routes that used to lead out of the hall of mirrors, have been cut off, undercut and ironised out of existence, and when we look out of the window – we see more of the world we had created in our minds extended in concrete all around us.

JR: When you say that, part of me nods along, but I am conscious that many others believe the Industrial Revolution, for instance, was a huge step forward for mankind, improving the material conditions of life by several orders of magnitude for millions.¹⁷ I understand that some of that depended on colonial exploitation, and couldn't have happened without the abundant use of non-renewable fossil fuels, but still, is there not a danger that people will become resistant to your broader argument if you call into question human achievements that most assume to be steps forward?

IM: I am not doubting what you say about material benefits – although the evidence is that people are not in fact happier because of material improvements in their standard of living.

It seems hard for many people to believe this, but once you have the basics of food and shelter, the rest does not correlate with an increase in happiness. And we should not neglect the fact that there are huge costs to industrialisation – for example, the break-up of stable communities, the loss of practical skills, and the disruption of ancient ways of life that are closer to the earth, things that we know do give life meaning and contribute to happiness and fulfilment.

The left hemisphere's purpose is to use the world. It sees everything – education, art, morality, the natural world – in terms of a utilitarian calculus only. If decisions are to be made about the value of a university faculty, of teaching the humanities in schools, or of what research project to fund, arguments are mounted, often with considerable ingenuity, but in the only permissible language, that of a financial balance sheet. If a quarry is planned that will destroy a wilderness, pollute a landscape and violate the holy place of a native people, the arguments will be only about how much 'value' (money) can be extracted, and what the value of tourism or the 'leisure industry' might otherwise have been to the local economy. If it can't be measured it apparently doesn't exist. Yet everything most valuable defies measurement in this way.

JR: *That's a pretty important claim for anybody trying to act constructively in the world. Why exactly do things that are most valuable evade measurement?*

JR: That's a pretty important claim for anybody trying to act constructively in the world. Why exactly do things that are most valuable evade measurement?

IM: There's a famous saying attributed to Einstein: 'Not everything that counts can be counted, and not everything that can be counted counts'. But why is this? One obvious factor is that the most valuable things are not tangible and are therefore not entities to be numbered. But they could be measured in other ways – subjective scoring based on self-report, for example, or asking what money or tangible goods one would be prepared to give up in exchange. These methods have their uses but also have inherent limitations; and they miss the point that the worth of truly valuable things changes with context, and may not increase as we have more of them.

Just as we don't live to eat, but eat to live (however much we may enjoy the business of eating), we don't live to make money but make money in order to live better lives. The culture of a people does not serve as a decorative addition to life, there to help one relax after one

is tired from the real business of amassing wealth, but is what gives meaning to life, and wealth is only good in so much as it enables a richer culture to flourish. This is not done by immersing ourselves more and more in technological gadgetry that removes us from the business of embodied existence.

JR: ‘The business of embodied existence’ is an arresting way of putting it. Is alienation from the body part of what left-hemisphere dominance brings about?

JR: ‘The business of embodied existence’ is an arresting way of putting it. Is alienation from the body part of what left-hemisphere dominance brings about?

IM: Yes, and it is more important than it sounds.

At the literal level, the right hemisphere is more in touch with the body: for instance it is the right hemisphere that has the ‘body image’, which is much more than just a visual image. It’s more of a ‘multimodal’ image, a sense of the body as a coherent, living (and lived) whole, that is part of us, not a container *in* which we happen to live. By contrast the left hemisphere sees the body as an assemblage of parts, more like a machine. And the right hemisphere has richer connections with the body via the limbic system, an ancient part of the brain that we share with animals and which integrates thought with feelings and information from the body, as well as via the hypothalamic-pituitary-adrenal (HPA) axis, which regulates autonomic responses.

But that is not all. In a much more general way it is the right hemisphere that enables us to feel ourselves to be part of the living web of experience, not detached observers seeing the world pass on a screen. Embodied beings in a concrete, incarnate world. It is the one, as I say, for which life is present, not represented – literally ‘re-presented’, after the fact.

Probing the argument

JR: By now the reader should have a fair sense of your argument as a whole, and it seems a good moment to raise some of the major challenges that might be waged against it.

The mereological fallacy: from parts to wholes

JR: The first, beloved by certain philosophers, most famously Bennett and Hacker,¹⁸ is the so-called ‘mereological fallacy’ which as you know is about ascribing the properties of wholes to parts, which would mean that the left or right hemisphere doesn’t have any kind of agency in itself, so it makes no sense, literally has no meaning, to say: ‘The left hemisphere is or does X, Y or Z’.

JR: Just to be clear, you are not speaking only of cases where people have one hemisphere effectively ‘switched off’, it is rather that even when both hemispheres are ‘on’, ie in normal consciousness, that left and right hemispheres can still be described as if they were operating by themselves?

IM: Exactly

IM: Let me just respond to that first. I am the last person to believe that wholes can be reduced to their parts – as you know, one of the persistent themes of my book is precisely that this is a fallacy. People like Bennett and Hacker are obviously right, in a literalistic sense, that the left hemisphere doesn’t ‘believe’, ‘intend’, ‘decide’, ‘like’ or anything else of the kind, since these are all predicates of the mind of a person, not the brain – *of course* I agree.

But I think the point is relatively trivial, and easily resolved, in relation to the hemispheres. For example, when I say that ‘the left hemisphere likes things that are man-made’, this could be paraphrased as ‘a human being relying on his left hemisphere alone likes things that are man-made’. All that happens is that every time you say ‘the left hemisphere’ you substitute it with ‘a human-being-reliant-solely-on-his-left-hemisphere’. But this is tedious. Everyone understands the point, which is why all neuroscientists invariably commit this fallacy (and, yes, it is a fallacy, I agree) to some degree. But we enter the realms of unsatisfying pedantry here, in my view. I don’t think there is a devastating philosophical issue here waiting to explode in my face. I had either to talk about the hemispheres as machines, as scientists usually do, which is also to commit a fallacy, or as having concerns, interests and values, which suggests they are at least part of a person. I prefer the latter, and am unrepentant.

JR: Just to be clear, you are not speaking only of cases where people have one hemisphere effectively ‘switched off’, it is rather that even when both hemispheres are ‘on’, ie in normal consciousness, that left and right hemispheres can still be described as if they were operating by themselves?

IM: Exactly. Of course I am not suggesting that one hemisphere ever actually goes blank! If you were to scan anyone's brain at any time you would find activity going on in almost all of it, and certainly in both hemispheres. Brain imaging can give the impression that only some tiny parts of the brain are active, the bits that 'light up' on a scan. But this is an artefact of the process, dependent on the threshold the researcher chooses. If you set the threshold low enough, you would see activity everywhere. No, my point is that we can choose to attend to a problem, or a person, or the world at large, according to either of the broad 'takes' each hemisphere provides, but in practice nowadays in the West we seem to use increasingly only one.

Methodological individualism?

JR: I have noticed, especially with sociologists, anthropologists and some philosophers, there is a huge reluctance to make precisely those kind of leaps, for instance from individual brain to individual mind, to social and cultural phenomenon

JR: The second major challenge concerns the problems involved in deriving explanations of social and cultural phenomena from explanations of properties of individuals. It is not to say that you can't do this at all, but just that it's not straightforward. There are various ways of giving such explanations well or badly, and a huge related literature in the philosophy of social science. The social world has emergent properties and perhaps even what Durkheim called 'social facts', that some think have no aetiological relationship to properties of individuals, never mind individual brains. I have noticed, especially with sociologists, anthropologists and some philosophers, there is a huge reluctance to make precisely those kind of leaps, for instance from individual brain to individual mind, to social and cultural phenomenon. I imagine you have faced objections of this kind already – are they equally easy to deal with?

IM: I agree that a culture is not the same as a person, but we undoubtedly say of a culture that it has certain values, and a certain outlook on the world. That's not just a coincidence, or just a manner of speaking: I can't imagine how one could talk of such things without in fact making the comparison with a *person's* values or outlook on the world. We would probably agree that, for example, the Enlightenment was an optimistic movement in the history of ideas, which placed a high value on individual self-determination and the ultimate ability of man to tame and subjugate nature to his will. We could not possibly mean that in any radically different sense from the way we would mean it of an individual, and more likely than not we would be thinking of actual Enlightenment thinkers, of their outlook and pronouncements.

Moreover we can measure the characteristic ways of thinking, and even perceiving, of a culture, just as we can of individuals. This has been done repeatedly in the last 20 years, comparing Western subjects with Far Eastern subjects. The evidence is that the two populations differ in what they see – literally in how they register a visual image, for example – and in how they think, how they would set about solving a problem. That is a fascinating story in itself and I go into it in more detail in the book. But essentially what transpires is that while Far Easterners attend to the world in ways typical of both the left and right hemispheres, and draw on strategies of either hemisphere more or less equally, we in the West are heavily skewed towards the attentive viewpoint and strategies of the left hemisphere alone. This is nice confirmatory evidence.

IM: *As for the attempt to reduce human behaviour to brain science: we not only do not have enough knowledge for that now, we never will have, because the whole project is founded on a philosophical error, a basic category mistake*

I might add that social historians and anthropologists of the eminence of Robin Briggs, Howard Kushner, Andrew Scull and Ellen Dissanayake have found my application of the thesis to cultural history illuminating and convincing.

JR: That makes sense to me, though I imagine there is scope to challenge this relationship between individuals and cultures more generally. The third overarching objection I have noticed is the one stated by Anthony Grayling in his review, namely that we don't know nearly enough about the brain yet to make credible links between the brain and the world. In his words: 'far too much is made to turn on the suppositious and slender state of knowledge in brain science.'¹⁹

IM: I had not realised till I read those words that Grayling was an expert on the state of knowledge in brain science. Be that as it may, one needs to distinguish two quite different undertakings. One, which I believe to be futile, and this may be what Grayling is getting at, is the attempt to reduce human behaviour to brain science: we not only do not have enough knowledge for that now, we never will have, because the whole project is founded on a philosophical error, a basic category mistake.

The other is the link between phenomenology and the brain, something of which we do have intimate and extensive knowledge. The link between the brain and the world does not have to be argued for: when bits of the brain go missing so do parts of the experiential world. We have known that for thousands of years, and we just happen to know a hell of a lot more about it in the last 100 years. Specifically we have a huge body of data concerning hemisphere difference: it starts on the hospital ward where one sees, as a matter of everyday experience, what a difference laterality makes to the effects of a stroke on a person's temperament, personality, attentional skills, ability to empathise, verbalise, reason and so on; and it has been expanded by a huge volume of painstaking research. In the book I refer to about 2,500 sources. Perhaps Grayling would like to check them out for himself.

But I suspect that for the likes of Grayling – to whom, by the way, I am indebted for some very generous comments on my work – there never could be enough data. He rather disarmingly confesses to being 'quite considerably a left-hemispheric creature'. The left hemisphere puts together one thing it considers certain with another and another, as if one were putting together stones to build a wall. But there are some things one can see only by grasping the whole. This is like the famous picture of the Dalmatian dog that I include in my book: it contains hundreds of splodges of black, but there is no way one can say of one, out of context, 'this is part of the shade of a tree', and of another 'this is part of a dog'. You have to see everything together to make an intelligent assessment of what is going on, and for that *par excellence* you need the right hemisphere to be functioning.

JR: Taking those three answers together, I feel persuaded, but I want to put in one last word for the sceptic. Are you saying that the evidence points towards these two fundamentally different and sometimes antithetical ways of being, or is it truer to say that by making a kind

of philosophical gestalt shift from ‘the what’ of hemispheric function to ‘the how’ that the evidence floods in to place to support it? To the extent that it’s the latter, what would falsification look like?

Could there be a kind of critical test in the Popperian sense, or is your point precisely that your thesis is not so much a scientific hypothesis to be falsified but more like a philosophical outlook to be challenged at the level of its overall coherence and explanatory power?

Forgive me, that’s several questions, but they are related, and perhaps you could help to disentangle them? I am trying to make sense of what it would mean to test your profound thesis to destruction.

Evidence

IM: The link between the brain and the world does not have to be argued for: when bits of the brain go missing so do parts of the experiential world

IM: The first thing to say is that I am acutely aware that I haven’t the space here to lay out the detail of what is a complex and many-stranded argument and to give clear scientific evidence. As a result the reader is being asked to take a lot on trust. If I were that reader I wouldn’t stop there – I’d want chapter and verse. For that one would need to go to the book itself. It took 20 years to write, argues its case in detail, and, as I say, cites a mass of evidence. The complete bibliography is available in the hardback edition and on line, so it’s clear what I am relying on. I have tried to be true to the balance of evidence, and never relied on evidence where I knew that the balance was against it. For clarity’s sake my editor insisted, rightly I believe, that discussions on the assessment of conflicting evidence should go into footnotes, so the footnotes are extensive and important, but my reasoning has been transparent. Also my practice has been as much as possible to cite numerous different strands of evidence, from different methodologies, for any point I am making – eg, from brain lesion studies, commissurotomy (‘split-brain’) patients, hemisphere isolation experiments and so on, not just from, say, neuroimaging.

As to how the evidence works, it could be made to follow either pattern you suggest. After all, if you think about it, I could have laid it out like this:

Premise	We know that birds and animals attend to the world in different ways with either hemisphere.
Testable hypothesis	‘Humans do so too’.
Evidence	Overwhelmingly that they do.
Premise	Such differences in attention must have certain predictable consequences for the nature of the world perceived by that hemisphere.
Testable hypothesis	‘The left hemisphere will see the world as fragmented, isolated entities, the right hemisphere as interconnected and whole’.
Evidence	Overwhelmingly that this is the case.

And so on, from which an entirely coherent and consistent pattern emerges.

JR: I have done what I can for now to raise doubts about your argument, and to balance that, could you please tell me just a bit about the reaction from scientific colleagues and philosophers, including the events where your ideas have been tested? If your answers to the questions above did not fully satisfy, are there testimonies of trusted experts that may help readers to give you the benefit of the doubt?

IM: *It obviously is about two competing sets of values – those enshrined in two different perspectives on the world subtended by the two brain hemispheres*

IM: Well, you will see from my website²⁰ that many of those best placed to assess the validity of the hypothesis – world-leading neuroscientists such as VS Ramachandran, Jaak Panksepp, and Colwyn Trevarthen, just to name a few who actually know the brain lateralisation literature in detail (Trevarthen even worked with Roger Sperry at CalTech on the first split-brain patients) – are convinced of its importance, as are a host of neurologists, neuropsychologists and psychiatrists. As I hoped, philosophers such as Mary Midgley, Rupert Read, Timothy Chappell, Arran Gare and the Cartesian scholar John Cottingham, among others, have engaged positively with my ideas, and I gave a paper a few weeks ago at a philosophy conference in Oxford organised by Roger Scruton and Ray Tallis where I was able to debate some of the points you have raised here. I addressed a conference of ordained scientists at Lambeth organised by Archbishop Rowan Williams that explored my ideas, and they have been well received by physicists in particular.

Political challenges

JR: In addition to what might best be called philosophical challenges above, another challenge is that your argument could be seen not so much as an argument about the brain hemispheres, or even about two ways of being, but about competing sets of values, with the corollary that your personal view is that one set is to be preferred. How would you respond to the two parts of that claim?

IM: It obviously is about two competing sets of values – those enshrined in two different perspectives on the world subtended by the two brain hemispheres. That doesn't seem to me to undermine the argument that they happen to be embodied in the cerebral hemispheres – that's not my choice, it's what the evidence suggests.

As to the second point, I can't deny that I prefer the values of the right hemisphere (though needing to pay due respect to those of the left hemisphere). But it's not just a matter of my opinion. What the brain shows – what it adds to the argument – is that, indisputably, one view of the world sees more, and is truer to what is. That can be demonstrated, proved to be the case. That it also happens to be the view of the hemisphere which is more capable of empathy, more in favour of consensuality and co-operation, just happens to be a bonus.

The fact that it is not just neuroscientists, neurologists, psychiatrists and psychologists, but philosophers, theologians, cultural historians and critics, artists and composers who have been struck by the hypothesis suggests to me that it has intuitive validity. Many of the distinctions that emerge – between rationalism and

reasonableness, between denotative and connotative language, between the explicit and the implicit, between information and wisdom, between the abstract and the embodied, the general and the unique, the parts and the whole – strike people immediately as having importance.

JR: I agree, but if you'll bear with me, how confident are you that you are right at every level of your argument? For instance I saw a review in *The Economist*²¹ where they pounced on your admission near the end of the book that your argument from neuroscience was perhaps not essential to the broader argument about cultural change.

IM: *There is simply nowhere in the brain that could possibly tell us we are machines ... And that is the difference. Because it is in principle a verifiable matter whether the brain hemispheres do or do not have the characteristics I describe*

IM: At the end of the book I say words to the effect that, though it would surprise me if the hemispheres were not literally related to these two ways of looking at the world, that would not ultimately matter, because they would still constitute a powerful metaphor. This has caused confusion amongst those who don't value the tentative and uncertain, don't see that the world is not black and white, 'either/or', and think of metaphor as a kind of untruth. So this was taken as an admission that I didn't believe my own argument. But that's not it at all. All I meant to suggest was that ultimately the identification of the brain correlates of this dichotomy are not the point – in other words, I am not a reductionist, so it is the human experience that ultimately counts.

However it would be quite extraordinary if the differences I refer to, the same distinctions that artists and philosophers have for centuries pointed to as irresolvable conflicts in the human mind or spirit, were not associated with the division between the hemispheres, given that the evidence from brain science, that that is precisely what they are, is so extensive, coherent and compelling.

JR: I take the point, but I know so many neurophobes that I wonder if people feel that you might be using the brain to smuggle in a politically loaded worldview. In my experience people resist any kind of neural explanation, no matter how sophisticated, because they think it is an attempt to give epistemic warrant for political and ethical views, even if they are normally more about endorsing simplistic accounts of 'the survival of the fittest' or our lack of free will. In this case you are not presenting that kind of world view, but is there still a sense in which your argument is political?

IM: I have sympathy with the general point you are making, and I do think that the brain can sometimes be used as a clincher for an argument where it has no warrant to clinch anything. Brain science, and science in general, has been used as a way of forcing a view of ourselves on us which is absolutely unsustainable, as malignant pieces of machinery enslaved by our genes. But the point is that that is just bad science. There is simply nowhere in the brain that could possibly tell us we are machines, or malignant, or lacking in free will. That is not the kind of thing that study of the brain could ever do. And that is the difference. Because it is in principle a verifiable matter

whether the brain hemispheres do or do not have the characteristics I describe. Either the attentional differences between the hemispheres are what we find, or they are not. That the attentional differences result in different views of the world and difference priorities is both inevitable *a priori*, and demonstrably the case. It is not a matter of interpretation, as it would be to say that knowledge of our brains shows we are Machiavellian machines.

What you do with that politically is up to you. By inclination, I am not much interested in politics. But if my hypothesis is right, it will have relevance to politics, as to everything human, since it touches the core of what it is to be a human being, neither Machiavellian nor Erasmian, but both; neither selfish nor selfless, but both; neither entirely free nor entirely ensnared by genes. Capable of at least two essentially incompatible world views at once.

JR: Granted, but if we strip away the content and just feel for a moment the form of the argument, I imagine there are some who think it is just too neat somehow – that there are these two ways of looking at things, these two fundamentally different ways of being. I can imagine people thinking it doesn't sound right, if only because surely there are more than two fundamental ways of being. Is that why you need the hemispheres as the reference point, to ground the argument and show the fundamental divide?

IM: *It has been said that the world is divided into two types of people, those who divide the world into two types of people, and those who don't. I'm with the second group*

IM: It has been said that the world is divided into two types of people, those who divide the world into two types of people, and those who don't. I'm with the second group. But while there are some dichotomies that have no basis (like 'good' and 'bad' drivers, where there is only a continuum), there are some that it would be irrational to pretend don't exist (as between Hinduism and Islam, or processes of analysis and synthesis). It's not to say they can't complement each other and work together in all manner of ways and degrees: but they just are different. By combining the zeros and ones of a binary code one can produce almost anything, but the code still has that binary structure.

The division of the cerebral hemispheres falls into this last category, a 'dichotomy' which it would be profoundly irrational to ignore just because we don't like dichotomies. Evolution has taken care to preserve, and even to intensify, the division of the brain, this organ whose whole purpose is to connect. So let's not say we are doing the dichotomising when we take a look at why that should be. Every intelligent person should want to know why this is the case. As I have often said, the distinction is not absolute, there is overlap, and, above all, we need both hemispheres, not just one. At the end of the day, though, there are undoubtedly differences, and in my view they desperately need to be understood. The last thing we should do is ignore them simply because this dichotomy doesn't fit the view of the world we already happen to have.

JR: Right, so in a sense you seem to be saying: let's not allow the fear of being seen to be 'divisive' blind us to perhaps the most important division of all?

JR: *Right, so in a sense you seem to be saying: let's not allow the fear of being seen to be 'divisive' blind us to perhaps the most important division of all?*

IM: *Precisely*

IM: Precisely.

JR: In any case, it's not as if people don't like such divisions at all. To begin to open up to practical applications, I wonder if you could say how your work connects with some recent work that is also scientifically grounded, but has a more obvious practical edge. For instance, how do the hemispheric divisions connect with Daniel Kahneman's distinction between automatic and controlled processes, or *Thinking Fast and Slow*? I also know you liked Jonathan Haidt's book, *The Righteous Mind*, where he discusses the evolutionary foundations of moral psychology, but also highlights how we use reason (rationality?) to justify our moral intuitions, and are often blind to the moral intuitions of others?

IM: Kahneman's book goes over familiar ground – some of it familiar, to be fair, because of some nice research of his own over the years. But it doesn't really impinge on my thesis at all. If you like, he is cutting the cake horizontally, and I am cutting it vertically. He is contrasting instinctive, 'quick and dirty' reactions, with higher, slower and more deliberative cogitation. This is not a distinction between right and left: both hemispheres have both. It certainly isn't the case, above all, that the right hemisphere tends to be the 'quick and dirty' one – precisely the opposite.

As I say in *The Divided Brain and the Search for Meaning: Why Are We So Unhappy?*²² a short essay published as an e-book, it turns out that it is the left hemisphere that tends to jump to conclusions, while the right hemisphere is, as Ramachandran says, the devil's advocate, asking the awkward questions. Equally the left hemisphere's view is the one that is more rough and ready, despite its obsession with precision. Through that very obsession, it is obliged to represent the world as static and made up of fixed and distinct pieces – which we know it isn't. It is less truthful, but provides a quick and dirty approximation of the world that is useful.

What is important to understand here is that, contrary to the received view, the intuitive and holistic has its representation, not just as instincts at the lowest level of the brain, but in complex thinking at the highest, in the right frontal cortex.

I very much admire Haidt's book. What I find exciting about it is that he demonstrates precisely how loaded so much of the thinking we take to be objective is, and how narrow we can be when we think we are being open-minded – how restricted the basis of our moral judgments has become. And in fact what he shows, though he had not read my book when he wrote it, and therefore does not use the terms, is exactly the slide into the left hemisphere's way of thinking that I suggest has taken place.

Exploring practical and policy implications

JR: Many people who grasp the essence of your argument, and who have contented themselves with your answers to the challenges above, will no doubt be eager to understand what follows in terms of actions, in terms of the ‘So what?’, or ‘That’s fascinating and inspiring, but what do we do now?’ However, thus far you have been fairly reticent about being explicit or prescriptive on this matter. Why is that?

IM: *Raising consciousness of what we are doing wrong is the first step on the path to recovery, and that it is often a matter of what not to do, rather than what to do, that opens up the field of possibility for change*

IM: It probably sounds like a cop out, but I do believe that prescriptions are one of the reasons we are so messed up nowadays. We always have to have a plan, an algorithm, a set of bullet points, and that immediately narrows things down, so we imagine that we just need to put this plan into action. It discounts the creative, the spontaneous, the improvised, the unexpected, the fruits of the imagination of those who take the ‘plan’ forward. What I can see now is limited; what others may see is limitless. Our plans are always at too local, too detailed a level. For example, if you want to educate people, you don’t give them a lot of procedures to carry out or just information to spew. You inculcate habits of mind: curiosity, a habit of sceptical questioning, enthusiasm, creativity, patience, self-discipline – the rest comes naturally. Equally you can’t go into a country and set up the structures of democracy. That is back to front, and they will inevitably fail. What is needed is a habit of mind that sees the value in democratic institutions; in time they will then emerge naturally, and flourish.

JR: Tony Blair often says that democracy is a way of thinking not just a way of voting ...

IM: I am more interested in indicating the right questions than giving the right answers. For me to give a list of bullet points – ‘Eight Things You Should Do to Save the Planet’ – would be to enact the left hemisphere’s agenda. I am a physician and a psychiatrist, and in my experience getting the diagnosis as accurate as possible is primary. I also know that raising consciousness of what we are doing wrong is the first step on the path to recovery, and that it is often a matter of what *not* to do, rather than what to do, that opens up the field of possibility for change. There is much we should stop doing, in other words, and allow things that are currently crushed almost out of existence – so much so that we no longer even *know what they are* – to flourish.

The answer is in the hearing and the understanding of the answer ...

JR: I am sure many would sympathise with this approach, and also appreciate the difficult position you are in. Those who are impressed by your intellectual authority and persuaded by the argument in the book will understand that you are not a policymaker or a legislator, and I can feel the strain in pushing too far for practical or policy recommendations. Nonetheless, when you say prescriptions are part of the problem, I would add that ‘waiting for the real experts’ might be another. We are never going to have an uncontested epistemic warrant for any course of action, and to some extent I feel we will always have to make our best guess and get on with it. In this respect, while you have opened people’s eyes to a way of looking at the world’s problems, I suspect you nonetheless see the resulting vision more clearly than most others. Can you not at least advise us on how we should start looking for practical applications?

JR: When you say prescriptions are part of the problem, I would add that ‘waiting for the real experts’ might be another. We are never going to have an uncontested epistemic warrant for any course of action, and to some extent I feel we will always have to make our best guess and get on with it

IM: I can, but the problem is that if my response is not actually couched in terms of the brain, it’s bound to look exactly like an answer that anyone else could have given. The difference is not in the answer itself, but in the hearing or understanding of the answer, which can only come from reading the book and seeing why it is important to look at the world this way. Which is why I keep emphasising that it is a complete change of heart or mind in the hearer, not a policy of bullet-point type, that is needed. In other words, the focus is wrong if people expect me to come up with ‘solutions’ that look quite different from anything they have ever heard before (‘everyone should live on unripe pears and stand on their heads for half an hour before bed’ – well, I imagine some guru somewhere has in fact recommended it already, since truth is stranger than fiction). They’re not going to be. It’s just that, if you read my book, you’d see why certain responses are so much more compelling than others.

The conundrum is this. To my delight, but nonetheless to my astonishment, people from all over the world and all walks of life write to me saying that this book has changed their lives. If that is right, it must have practical consequences. But the consequences won’t be of the kind that have never been thought of before! It’s just that the compelling reason for adopting them wasn’t there before, in the same way, or to the same degree.

JR: You seem to be saying that the hemispheric perspective serves not so much as an axiom in a deductive argument about how we should live, but more like a major resource in a broader inductive argument how we should act, given the fullest possible understanding of ourselves?

IM: That is true, though it is a slightly separate point from the one I am making about the nature of the consequences. I certainly believe we will never solve the major global problems we face by tinkering with the current model. My hope is that a better understanding of

the limitations of the mechanistic model offered to us by our left hemispheres will lead us to think differently about our situation in ways that I cannot now envisage, but which are available to all of us if we look for them.

IM: *Freemarketeers agree that government is an evil, true, but only because they have an inflated idea of what the market can and should achieve: socialists think the market an evil because they have an inflated idea of what government can and should achieve*

JR: By ‘the current model’ do you mean ‘capitalism’, or is it more nuanced or perhaps more fundamental than that?

IM: Capitalism is an aspect of it, and, to paraphrase Churchill, I suppose one might think of capitalism as the worst possible system – apart from all the others.

JR: Ed Miliband just said something similar,²³ and more generally it feels like we are in a time where it we are generally accepting that we are stuck with capitalism and trying to make the best of it...

IM: Certainly a socialist state is not what I am advocating, and there are different types of capitalism. Of these the most malignant is where money breeds money, a triumph of virtuality, in which what is actually happening is that society is rewarding people extravagantly for indulging in their tendency to gamble, and what gets lost in the virtual calculus is that ultimately others must pay for this. As in pyramid selling, there is an illusion that ‘all will win prizes’: when the music stops, as it eventually must, some have lost and some have gained. Wealth is not really ever created, except by *non-virtual* labour in the real world. It has just been redistributed towards those who are busy working the system.

But I mean something much broader than this, a complete shift of perspective.

Economy and government are not ends in themselves

IM: The point about the reference to the story of the Master and his emissary is that the emissary, however expert at what he does, serves the Master, and cannot himself become the Master. We first need to think why we have a society, with a government and a market, at all. We have a society not to serve the government and the market; government and the market are no more than highly necessary evils. They enable the true business of a society to continue without its foundering for lack of life’s essentials: enough to eat and drink, adequate shelter from the elements, and as little antisocial behaviour as possible. Freemarketeers agree that government is an evil, true, but only because they have an inflated idea of what the market can and should achieve: socialists think the market an evil because they have an inflated idea of what government can and should achieve. But neither can provide a better future. What we need to see with 20/20 clarity is that neither of these is any use in itself. Our society is worthless unless it serves something higher than itself, higher than the government and the market – therefore the answer can never be better government or a less trammelled economy in themselves. These are only means to an end.

The meaning of life comes from what can't be argued for

JR: In that case, at the risk of asking the perennial question, what is it that you think actually gives meaning to our existence?

IM: First let me say that there are some things that can be understood only by experience, not by logical persuasion – and if you do not have the experience you will never understand. Take something as fundamental as sex. If you had to explain to a Martian what this involved, there is no way he would be encouraged to try. The same is true of meditation: ‘sit still in a rather unnatural position and let your mind go blank for as long as you can manage’. Or going for a walk in the mountains: ‘get up and go out into the cold, expect to get wet, expend energy that you do not need to expend, take a chance on falling and breaking something, or ending up dead’ – no-one would go. And the same could be done for music, art, and rituals and ceremonies of all kinds (whether social, religious, academic or state) – all of them ridiculous and impenetrable unless you go to meet them on their own terms. If that is what you do, however, then they may begin to disclose a little of what it is they have to offer. The same could be said for working with others, working to help others – and all forms of work, in fact, that are not directed solely at significant monetary reward. And just think what having children looks like, when objectively described. Yet for many people their family is what gives life most of its meaning. It is these sort of things – the experience of love, of the spiritual realm, of a sense of closeness to nature, of music, art and the rituals and ceremonies that form an essential part of our sense of ourselves individually and as a society, that bring meaning in their wake. And there is barely one of these that is not under attack in some form as a result of the way we live now.

IM: *The left hemisphere is overconfident – tends to underestimate its limitations and dismiss its errors. Hence the climate change deniers, and those who serenely forecast that technology will find a way of repairing what it has undone*

JR: I quite often feel that we are, as you suggest we would be if your thesis is right, ‘ambling towards the abyss’, but I also know that many think such a view as needlessly pessimistic. Leaving existential concerns to one side, at a very practical level, we are clearly living in a period with lots of what are sometimes called ‘wicked problems’ – multifaceted and not lending themselves to simple solutions – for instance: adult social care, terrorism, deep global recession, nuclear proliferation, climate change.²⁴ For now, I want to focus on a few that we can discuss together because they may be related: climate change, mental health and education, and see if other important issues arise along the way.

Climate change

JR: Firstly, on climate change. I imagine your thesis has things to say not merely about environmental degradation, but also about denial?

IM: About denial and short-sightedness. Again it is to do with a habit of mind. I mentioned above that the left hemisphere is overconfident – tends to underestimate its limitations and dismiss its errors. Hence the climate change deniers, and those who serenely forecast

that technology will find a way of repairing what it has undone. It might, but since we have no idea now what form that will take, it looks like blind faith. Remember that the left hemisphere's agenda is grasping, manipulating and getting hold of resources: grain for food, twigs for shelter, prey. It has a narrow focus, because that is what is required to grasp and manipulate effectively. It also does not see what else is there: it comes already with its preconceived idea of what it wants and simply focuses on that. This is not to denigrate its usefulness; we would not have a civilisation without it. But it is not nearly enough on its own, and without the bigger picture, the guiding vigilance for the unexpected, which the right hemisphere provides, it could also *lose* us a civilisation.

IM: *Climate change is the consequence of rapacity and greed for 'resources' ... It betokens a disregard for the natural world as a living organism, with beauty and vitality of its own – instead it has become a mechanical heap of potential 'goods' ... It is bound up with our 'busy-ness'*

Climate change is the consequence of rapacity and greed for 'resources' (as an aside, it is revealing that what used to be called 'Personnel' – something to do with persons – is now called 'Human Resources' – a bunch of stuff to be exploited). It betokens a disregard for the natural world as a living organism, with beauty and vitality of its own – instead it has become a mechanical heap of potential 'goods' (it's also revealing that 'goods' are not actually 'good' except in respect of their being consumable). It is bound up with our 'busy-ness' – being forever on the move, go-getting, rather than tending, and working with the grain of, nature where we are. We are moving too fast, without a clear idea of where we are headed. And climate change comes of not seeing the consequences of individual actions, both as they spread outwards into the surrounding world, and spread forward in time: the context is stripped away, we think of individual acts, here and now, not of the bigger picture. This leads to thinking of the kind: 'What I do is no worse than what x or y do – so it is all right'. Or the argument that developing countries should be allowed, out of a misplaced sense of equality, to pollute as heavily as we did in the bad old days. Madness!

JR: Funny to see that cast as madness, because in this light it certainly looks mad, but for an economist or political negotiator that sort of argument feels more like a fair compromise!

IM: Let me back-track historically a little. With the Enlightenment came a hardening up of the left-hemisphere point of view. Many of the aims of the Enlightenment were, of course, laudable, and much of what it brought we have to be thankful for. After all, the left hemisphere, the emissary of the story from which my book takes its title, is, at its best, the right hemisphere's – the Master's – faithful servant. But its problems are those of hubris: believing itself to be the Master, believing that it understands and can control everything, whereas in fact it is ignorant of what the right hemisphere knows. Thus the problem of the Enlightenment was its faith that, as long as we continue to think purely rationally, and prioritise utility, we can understand, and thereby come to control, everything.

With the rise of capitalism and the coming of the Industrial Revolution (both children of the Enlightenment), one sees a further cementing – literally – of the left hemisphere's vision. The thinking they both involved is instrumental and competitive and they promote

a more atomistic and competitive model of society, a more detached and manipulative stance in relation to one another and the world at large, which comes to be seen as just a heap of resources.²⁵

Common cause?

JR: The 'Common Cause' Report was endorsed by various major NGOs and makes a similar claim, that we may win a few battles – for instance by improving energy efficiency as part of 'green growth'- but lose sight of the wider 'war', in this instance reinforcing extrinsic and materialist values

JR: The 'Common Cause' Report,²⁶ which you may be familiar with, was endorsed by various major NGOs, and makes a similar claim, that we may win a few battles – for instance by improving energy efficiency as part of 'green growth'- but lose sight of the wider 'war', in this instance reinforcing extrinsic and materialist values. When you mention that tinkering with the current model is not enough, is your point that reform is the enemy of revolution' in the sense that minor adjustments and improvement just strengthen the root of the problem?

IM: We must step back to see the bigger picture. Living headlong we skim over the surface of the world rather than allowing ourselves to enter into its depth. At the same time, as it might seem paradoxically, our view is too 'close up': always in a hurry, we are narrowly focussed on a few salient things and miss the broader picture. We need to find a more natural, a slower, more meditative, tempo. That way too we see more.

So although we can think of temporary fixes, the problem is not the sort that can be cured by a tweaking of what we are already up to. It demands a change of mind, a change of heart. We need to think at a much bigger and broader level, and ask the difficult questions.

JR: No doubt these big-picture shifts are fundamentally important, but for every injunction you indicate above – 'step back to see the big picture'; 'find a more meditative tempo', 'ask the difficult questions' – part of me agrees completely, but part of me wants to say: 'How? What would that look like? Who would do it? Who would try to stop it? What would we do then?'

It feels almost churlish to feel this way, but I suspect I am not alone in thinking that the overall shift of perspective you argue for will only look feasible if such questions are taken into account. Perhaps that is asking too much of both the argument, and you as its main proponent, but if we stick to the question of 'what to do' about climate change, can you see how we might adapt to the challenge of making this overall shift? How could it begin to transpire, and might it even already be happening?

IM: The questions you ask are the right ones, though whether one person could or should ever attempt to answer them all, I am not sure. I can give some idea of what it might look like, and I will try to do so in what follows. As to who must do it, we must all, from the ground up be involved with and committed to resolving these problems – not just a government on its own, and not just isolated groups of individuals without government support. The vested interests that will be against it are commercial, and we cannot do much against them as long as we carry on being brainwashed by the rhetoric of consumerism. Once again, the solution involves not just a few measures of the kind that

we are already taking, only stronger: it involves a complete re-think of what our lives are about.

For example, one of the worst aspects of modern life is the divorce between work and the community where one lives, the image of which is the packed commuter train. This way of living destroys communities, takes a huge toll on individual health and happiness, wastes energy on a massive scale and pollutes the environment. One might be tempted to think that one part of the solution to that would be the internet, which allows people to work from home. And that is surely an advantage we could build on – but only if there is a change of heart about what work itself is. Because if it carries on being, as it is for so many people, virtual and mechanical, you end up with a lot of people even more isolated than they were when they had to go into an office, and no real community reviving around them. Work needs to be more actual, hands-on, involving the learning and exercise of real skill, and involved with the lives of those with whom one lives. For professionals, such as doctors, teachers and solicitors, it always has been to a large extent, and for too many others it used to be, but no longer is.

JR: A similar claim is made by Matthew Crawford in ‘The Case for Working with your Hands’.²⁷ I suspect we are becoming increasingly alienated from the world around us. But again I wonder whether the hemispheric perspective really adds to your argument?

IM: The alienation you speak of is ultimately not because of something we have done, such as build large cities, but because of an attitude of mind that lies even deeper. It is the one that makes virtual work more important – better paid and of higher status – than the practical job that is done with one’s hands in the real world. That is the left hemisphere’s point of view.

Working too hard

JR: And it’s not just the kind of work we do, but the amount of it too? (And by ‘we’ here I mean people in post-industrial, developed societies.)

IM: *The alienation you speak of is ultimately not because of something we have done, such as build large cities, but because of an attitude of mind that lies even deeper*

IM: We work too hard. We are hooked by the greedy machines of capitalism. I have seen the toll this takes among my patients. Many of us lack employment altogether, but those who are lucky enough to be employed have to work ever harder, faster and longer – for what? The logic of the left hemisphere is that if something is good, more of it must be better. It is also concerned with amassing goods for use, and expert at seeing us as disconnected from the world we are engaged in exploiting.

Now we find that the retirement age is being put back. The working day is extended. Though the average labourer’s hours have decreased, most of the rest of us work longer than people in similar jobs used to do forty or fifty years ago. Moreover, at that time a single person’s wages were enough for a family to live on: now two people often struggle to meet their needs working longer hours. The machinery of the market used the legitimate arguments for women’s equality to its own

JR: *The New Economics Foundation has been arguing for some time for a shorter working week, even as little as 21 hours ... this will be good for wellbeing, balance out employment opportunities and rapidly reduce carbon emissions, without diminishing living standards. I am guessing that this kind of perspective – though the devil is of course in the detail of the macroeconomic models – is the sort of thing you might mean by a more fundamental shift in our attitude?*

ends. It was a way to get twice as many people into the workforce. But now we are no better off, just both parents in a family now have to work, whether they want to or not. It is a case of what I call the football match paradox. One person stands up to get a better view, the person behind stands up to see beyond his neighbour, and soon everyone is standing – but the view is no better than when everyone was able to sit down. It's just that, like it or not, no-one can now sit down any more.

Resolving it is like dealing with the Prisoner's Dilemma – we can only achieve our goals by thinking consensually rather than atomistically. Actually I know of an amusing small example where such thinking seems to have worked. At an open air concert in Hyde Park, attended by the Royal Family, it poured with rain. Everyone put up umbrellas, and no-one could see anything. The Prince of Wales was sitting at the front, and he and his party, I am told, put down their umbrellas so that those behind could see better. One by one the umbrellas went down, and once more all could see what they had come to see. Such connected, altruistic thinking is foreign to the left hemisphere's calculus of benefit.

JR: The New Economics Foundation has been arguing for some time for a shorter working week, even as little as 21 hours per person.²⁸ The claim is that this will be good for wellbeing, balance out employment opportunities and rapidly reduce carbon emissions, without diminishing living standards. I am guessing that this kind of perspective – though the devil is of course in the detail of the macroeconomic models – is the sort of thing you might mean by a more fundamental shift in our attitude?

IM: Well, it's an example of a step in the right direction. I was very struck by the experience of going to stay with a former teacher of mine who went to live on a self-sufficient small holding in Wales in the 1970s. He and his family bred or grew all their own food. I expected to find the days packed with labour, and was astonished at how much leisure time there was. He explained that there were a couple of times in the year when they were very busy – lambing and harvest – but even those were fun because the local farmers all mucked in and helped one another. Otherwise there was a great deal of leisure time. A Langland scholar, he pointed out that Langland twitted the peasants of his day for their habits of lying around drinking and refusing all but bread made with the finest flour. He helped me see that it was only when, in the eighteenth century (the age of 'Enlightenment' and the rise of capitalism), people started to realise that they could grow far more than they needed, sell it and get rich, that the farm labourers' lives became intolerably hard. Once more the problem of the narrow left hemisphere 'logic' that seeks power but impoverishes a community. Also – a vital point – the left hemisphere view is narrow not only in space, but in time. It is effectively the short term view – what's good for me here and now, not what's good for us all in the longer run. Now we have no leisure to enjoy what we earn. A civilisation depends on leisure. But that is not just absence of work. It involves something so hard that many people would rather fill their lives with 'busy-ness': learning to be still. In the absence of this, leisure is

just an unwanted space where boredom must be driven out by constant stimulation of one kind or another. Leisure is pointless without knowing what to do with it – otherwise it just gets filled up with ‘noise’. In any system that is full of noise the true message will be lost. As Josef Pieper observed over half a century ago in *Leisure, the Basis of Culture*, true idleness is being *unnecessarily busy*, not opening oneself to that stillness out of which all spiritual and artistic, as well as scholarly, achievements, as well as the sense of oneness with nature, must come.

JR: When you say ‘learn to be still’, I think of the famous Pascal quotation – that all our miseries stem from not being able to sit quietly alone in a room – but you seem to mean something else here – that we should – what – buy less, be less ‘driven to distraction’, meditate more?

IM: Obviously stillness is particularly hard to achieve if we are constantly uneasy, craving something more, something new, as advertising and the media constantly exhort us to do, at the beck and call of our phones, our computers, busy getting money and getting goods – never getting to know ourselves, who we really are. This was the ultimate goal of human life that was carved over the entrance to the Oracle at Delphi: ‘Know thyself’. In terms of the hemispheres, it is the left hemisphere that is acquisitive, competitive, distractible, and ultimately unable to perceive the meaning of life, or of ourselves. We are over-busy, busy a lot of the time doing – ultimately – nothing that counts ‘all day long’.

IM: *It is a case of what I call the football match paradox. One person stands up to get a better view, the person behind stands up to see beyond his neighbour, and soon everyone is standing – but the view is no better than when everyone was able to sit down. It’s just that, like it or not, no-one can now sit down any more*

JR: That makes good sense to me, and is a tangible example of why the hemispheric perspective might be relevant, in this case for our arguably perverse attitude to work. From the left-hemispheric perspective – the one you believe is increasingly dominant – work becomes something we use to acquire things and to gain various forms of power. While these goals might be legitimate ones for working people they should be in the service of something other than the goals themselves. The balancing perspective that asks: ‘Are the things that I am gaining important? What does my contribution mean? How does it link to wider sources of value?’ These questions that you suggest are posed by the right hemisphere – are not heard as they once were, and will increasingly go unbidden if we continue on our current course.

IM: I believe so. And I am not saying that work is not often intrinsically valuable – it gives worth and purpose. But in that case, precisely, it is being valued for something other than its utility in amassing wealth. It is hugely important that we break out of the purely utilitarian calculus according to which financial considerations are the only ones that count. So many important issues these days are argued on the wrong grounds – those of immediate benefit (or not) to the economy. One has only to listen to the Today programme – time and again one hears opposing factions in any debate root around for economic grounds on which to argue a case that has far deeper and broader foundations, and often misrepresent their own cause in doing so, because it is assumed that no other criterion will cut any ice these days.

In the past a foundation of spiritual values (whether or not individuals succeeded in living up to them is quite another matter), a sense of how what we do here might look *sub specie aeternitatis*, framed human intention, and an education in the humanities underwrote that at the secular level. Now each of these lodestars has been jettisoned, and the intuition of another realm of value – other than the material one – has been largely lost. I know that other concerns, those for the long-term health of the environment, for example, have to some extent filled the vacuum, but their nature is more limited.

Mental health

IM: *The alienation you speak of is ultimately not because of something we have done, such as build large cities, but because of an attitude of mind that lies even deeper*

JR: On mental health – there seems to be some equivocation about how levels of wellbeing have changed, and how best to characterise the relationship between income and wellbeing. My impression is that your view, broadly, is that if nothing else we are much less happy than we might be. Why do you think that, and what might we begin to do about it?

IM: In as much as happiness can be measured, the evidence is clear. We are certainly no happier, and almost certainly less happy, than when we were materially enormously much less well off.

JR: Are you sure? My impression is that the evidence is a bit more equivocal?

IM: It is clear, and applies to Britain, the rest of Europe, the US, Japan ... everywhere it is the same story. Which should make us stop in our tracks and ask what we are trying to achieve in despoiling the planet, making ourselves ill, and degrading social trust in the effort simply to amass wealth.

JR: Assuming that's right, bizarrely it doesn't seem to make us stop in our tracks. Again it looks like a kind of denial?

IM: That's true, but it is also a failure to be able to take on board something so contrary to the beliefs that the left hemisphere holds – getting more goods in the material realm must equate with greater well-being. One distinguished elderly colleague of mine could not accept that people were less happy, because, as he pointed out, 'they have washing machines now – they must be happier'. At some level material well-being was, for him, well-being, so the information 'did not compute'.

What's less certain is whether *depression* is actually on the increase. The figures suggest that 25 percent, even up to as much as 50 percent of us, will experience a diagnosable mental illness during our lives. There are many possible confounding factors, including raised awareness (both in the public and the medical profession), reduced stigma (leading to more readiness to seek help), the need to establish illness in the context of personal injury claims, or in order to get hold of scarce resources for a child, diagnostic fashions, and the readiness of Big Pharma to capitalise on the fuzziness of diagnosis.

Having said all of that, there is evidence that our way of life does make us sick, and it seems fairly certain that depression is on the increase. One way to look at this is to study the trends across immigrant generations at a moment in time: Mexican immigrants to the USA start with a low level of mental illness, but increase in proportion to the time spent in the US. The lifetime prevalence of any mental disorder in one large study was 18 percent for Mexican immigrants with less than 13 years in the US, 32 percent for those with more than 13 years, but only for those born in the US did it approximate, at 49 percent, the national rate for the whole US.²⁹

When one considers that we have got better and better at manipulating the world, yet less and less able to discern any meaning in our lives – the topic of an e-book I released earlier this year – this is perhaps not surprising. The stability of social networks outside work, a sense of being trusted by, and able to trust, one’s work colleagues, a sense of belonging, a sense of mastery of a skill, are all important to human happiness and are less common now than they were before. The secret to happiness, known to every CBT therapist, never mind to generations of the spiritually wise, is to appreciate and be grateful for what one has, not constantly comparing oneself and what one has with other people, or some imagined ideal. Yet our society is founded precisely on propagating this unhealthy comparative attitude of mind.

JR: *Does it follow from your argument that advertising should be curbed and economic growth should be less of a priority? It feels slightly absurd to have ended up here, after starting with hemispheric differences, but is there a sense in which it follows?*

IM: *Yes*

JR: Which is at least partly about advertising, but also the political emphasis on consumption-filled economic growth, and I imagine you can link this to the left hemisphere’s tendencies in certain ways. Tim Jackson even speaks of ‘the social logic of consumption’ in that we increasingly use what we buy to project status and identity, which we then compare with others who are doing the same thing. But I just want to tease the implications out a bit. Does it follow from your argument that advertising should be curbed and economic growth should be less of a priority? It feels slightly absurd to have ended up here, after starting with hemispheric differences, but is there a sense in which it follows?

IM: Yes. Chasing the phantom of endless economic growth is destructive of the world and of our happiness, and the ever-presence of advertising is a terrible blight on modern cities. But far worse, in such places, it requires a constant effort to block it out: it’s a sort of awful mental pollution that drifts into one’s consciousness whatever one may be doing, like the plastic bottles that till the end of time will drift onto the remotest and most beautiful beaches of the world.

But we were talking about health and happiness, so let’s leave that to look again at the bigger picture. Let’s return to first principles – not the left hemisphere considerations of what we can have and control, but the right hemisphere ones of who we are and how we relate to others that live alongside us and that came before and will come after us. If we do so we can see right away that there are a couple of things we must address.

We are too isolated, most of us don’t have a sense of connectedness with a community in the way we used to – and we need to do

something about that. We need to have a broader context in which to see ourselves and our lives – and we need to do something about that. Some of that comes through education, and I am sure we will discuss that, but some comes from access to what we would have to call a realm of spiritual value. That doesn't mean signing up to a religion. In a way, spirituality is simply a question of having an open enough mind to see that there are things in the world at large that transcend what we can know and fully comprehend, that are not fully accounted for in a reductionist, materialist account. Rationally this is extremely likely: it would be extraordinary if we just happened to have arrived at such a summit of evolution that our brains allow us to understand and be aware of all that exists. The fact that it may look that way to us now does not prove anything, except the impossibility of conceiving what it is that one cannot conceive. If a squirrel could reflect, it would imagine that it understood everything, too – it couldn't conceive of the kind of understanding it didn't have.

Children should not grow up ignorant of the fact that other peoples in all parts of the world at all times and in all places have had religions. It should not be implied that this is just a sign of foolishness and ignorance. It might well be our own lack of insight. After all, what we don't expect we simply won't find. It's in any case a good discipline to keep an open mind, not to think one knows it all, and to respect and to some extent feel in awe of what is greater than ourselves. By the same token, it's a disastrous belief that we understand everything and have it all under control.

IM: *Spirituality is simply a question of having an open enough mind to see that there are things in the world at large that transcend what we can know and fully comprehend, that are not fully accounted for in a reductionist, materialist account*

The value of the spiritual

JR: I am glad to hear you say that we need to broaden our notion of the spiritual, and link it to a wider sense of epistemic humility.³⁰ Curiously, that is both very similar to the harsher forms of scepticism – in the sense of questioning what we can legitimately know – but also radically different in the sense that it doesn't limit itself to what is already known by only one sanctioned method. If I have read you correctly, you seem to be saying that this kind of spiritual openness is completely 'reasonable' because, rather than in spite of the fact, that it is not 'rational'.

IM: It is irrational, and in the end unscientific, to imagine that we *understand* everything because we have a way of analysing it into ever smaller parts. We are seduced by the simplistic take on the world offered to us by our left hemisphere, the part of us that we know actually sees less, and certainly understands less. The worst and most damaging aspect of this is the arrogance of those scientific materialists who believe they know it all – the internet is full of the evidence of their rage and intolerance towards anyone who does not buy their philosophy. Their minds are as firmly closed as those of any religious fundamentalist – and let me make clear that I find religious fundamentalism every bit as mindless and as damaging.

The arts, I believe, have a pivotal role in putting us in touch with the transcendent, with whatever it is that is beyond us. They are core to a civilisation, measures of its health, and should be treated as such

IM: *The arts, I believe, have a pivotal role in putting us in touch with the transcendent, with whatever it is that is beyond us. They are core to a civilisation, measures of its health, and should be treated as such by government*

by government. They are not an optional extra. But they also matter too urgently to become purely intellectual games. They need to have viscera, and affect us viscerally. Which is not at all the same as saying ‘gutsy’, in the sense of constantly ‘shocking’ and ‘daring’ – in fact rather the opposite. They need to stop being just ‘clever-clever’, ironic, disaffected, ‘above’ it all in a place from which one can see that ‘really’ there is no meaning to anything. Seeing no meaning may say more about you than about the world you are looking at.

How to bring these things about? Well, first of all we need smaller communities. We are not equipped to deal with social groups on the scale of a modern city. When Johnson said that ‘when a man is tired of London, he is tired of life’, he was talking of a city less than a tenth the size it is now, and very much more like a collection of villages. In smaller communities we recognise one another, learn about one another, feel we know whom we can trust, and are able to form bonds. We also need to live closer to our ultimate context, the natural world. We are part of it, not as we see ourselves, standing over *against* it, taming or subduing it to serve our deracinated urban existence. We can bring this about without losing the sense of overall connectedness. In the past, often small communities were inward-looking, developed antipathies through ignorance, and became too certain of what they believed. One of the advantages that has come with technology is that we can remain far more in touch with one another and with what others are thinking than we could before.

JR: That’s true, and the shift you allude to sounds desirable, but also painfully at odds with where we are heading. Current estimates suggest that by 2050 there will be 9 billion people on the planet, three-quarters of whom will live in cities.³¹ So how might that kind of change come about? The growth of cities is closely related to the drive to increase productivity through economies of scale, so you have partly addressed that kind of limited perspective already, but the numerical challenge is still stark. Speaking at the RSA, David Attenborough said we need to talk about limiting population growth, but that, for example, requires considerable courage and conviction.³²

IM: I would agree with Attenborough about that. Smaller communities with closer bonds, less commuting and less pressure for high incomes would enable mothers to spend more time with their children. Much of the development of a child’s sense of its identity as separate and distinct from, but still warmly connected to, others comes from the intercourse between the baby’s face and the mother’s face in the first two and half years of life. Fathers are quite capable of looking after children, playing with them, and do need to be involved with children – it’s good for the fathers as well as for the children – but no-one can substitute for a mother. There are important differences between the sexes which have simply and unrealistically been ignored for too long, because they are awkward.

Working less hard would mean we would have to reassess what our true needs are. At present they are unrealistic, and rely on a consumption of resources that can’t be sustained and the willingness of people to be exploited in countries that are not industrialised to the

same degree – yet. This can't go on. This would mean contemplating something that looks from the present standpoint simply like a drop in the standard of living.

Vicious circles

IM: *But we are caught in vicious circles. Many things seem crucial for a good life only because of the very mess we have got into*

IM: But we are caught in vicious circles. Many things seem crucial for a good life only because of the very mess we have got into. We have less and less time, so we need to rely more and more on gadgets and machines to shore up our lives – an aspect of the pressure under which we live, the lack of leisure. We need expensive foreign holidays when we want to relax, because we have made the places we live in so alien, so limiting and so sad. As a result, we need to experience vicariously the vitality of relatively undeveloped communities, in the process eroding the very thing we see as valuable. We need costly cars and train tickets because we are not really embedded in the place where we live: our lives are scattered abroad precisely because of the availability of transport. We also need them for the pointless, destructive process of commuting because we work far from where we live. We need money for expensive distractions such as computer games, because we can't find any adequate satisfaction in the impoverished 'real life' environment we have created around us.

Although it might look like a reduction in the standard of living it could be the foundation of greater happiness and stability for a society. There would be many compensations in terms of reduced anxiety and worry, re-established connections with one another, and the satisfactions of hands-on work in the place where we live. People would grow more of their own food and rely less on costly imports that are good neither for us, nor for the environment. We would at once use fewer resources, create stronger social bonds, and, with them, the possibility of generating trust.

JR: That seems coherent, but we have reached – as I imagined we might – the kind of position advocated by those who think that the pursuit of economic growth in the developed world is now doing more harm than good. My impression is that the vicious circles you mention are fuelled by – and can ultimately be traced back to – the social logic of consumption and the perceived need to increase GDP by a certain percentage year on year. Many view that emphasis on growth as a necessary objective in order to deal with our existing debt problem, and to create jobs, especially for the young, but I think you have highlighted that there might be another way. Michael Sandel,³³ for instance, recently highlighted a need to reverse this subtle but pernicious shift from being countries that have market economies to becoming countries that are market economies.

Trust

IM: No government worth the name should be thinking only about enlarging the economy. But more leisure is not necessarily worse for the economy, in any case. In Europe it is the Germans that work the shortest hours and the Greeks the longest.³⁴ This no doubt has something

to do with the respective levels of corruption in the two societies. Untrustworthiness is costly: a few do excellently well by doing very little, while the rest must slave to make up. It has often been pointed out that groups with a high level of mutual trust, such as Orthodox Jews, can out-compete others in certain areas of trade because they know they can rely 100 percent on one another's word. The City of London used to trade on that, too, to an extent: a gentleman's word was his bond. Foolishly such attitudes came to be seen as old-fashioned, and we were exhorted to 'get real': Machiavellian, in other words. The costs have been colossal. So have the costs of the mutual suspicion with which the sexes have learnt to view one another, and the suspicion that attaches to all adults' relations with children. Victims are everywhere. (Lack of trust, paranoia, the sense of being the victim of others' misdoing, unwillingness to accept responsibility – all these are characteristic of right-hemisphere deficit states. This is a literal fact, demonstrable by brain lesion studies, not just a manner of speaking.) But those are huge topics that would take us far longer than we have to explore.

JR: Indeed! It might just be worth mentioning though that, in so far as the loss of trust is a symptom of left-hemispheric dominance, British Social Attitudes surveys suggest not only that we have relatively low levels of trust compared to other countries, but that we are becoming less trusting over time.³⁵

Education

IM: Education is the perfect example of how we get things wrong by not taking a broad enough, or long enough, view. The emphasis now being called for on technical training – business, admin, computing, science – is precisely the opposite of what we need

JR: When you spoke at the RSA³⁶ you said that education was a big part of the answer, and I recently read a review that said your book was the best defence of the arts and humanities ever written in the English language³⁷ ... What would an education for health and wellbeing entail that it doesn't currently?

IM: Education is the perfect example of how we get things wrong by not taking a broad enough, or long enough, view. The emphasis now being called for on technical training – business, admin, computing, science – is precisely the opposite of what we need. So is the emphasis on 'relevance', on the here and now and the contemporary – that's the very last thing we need. It seems to me that one of the main purposes of an education is to broaden minds, not narrow them further. That means not learning more and more about what we are already familiar with, and hardening up the sort of thinking we have anyway, but understanding other points of view, the ways people would have thought about the problems we confront in other times and other places. It cannot be strongly enough emphasised that scholarly learning is in and of itself valuable, regardless of any functional application of immediate interest to the economy. We will perish if we do not explore avenues we have no way of knowing now will be fruitful. Once we want to see only more of what we already know about, we have fossilised. However it is a characteristic of the left hemisphere 'take' on life that it sees only what it predicts it will see, focuses narrowly on the issue in front of it, is over-confident in

its assessment of what it understands and knows, and has one driving value – utility.

At the same time we need to understand the values and mores of those who forged the foundations of our own culture and civilisation. Too often when these things are brought into the curriculum it is with a sense of ironic, knowing, superiority to the ways of other times. It has become politically incorrect to laugh at the ways and manners of other cultures, but not at those of past ages. So the chance of learning from them is lost. Even the great works of literature of the past are not met on their own terms, but judged by our own narrow ones, and found to be examples of colonialism, racism, sexism, class struggle, or whatever. But we must meet art on its own terms, if we are to appreciate it, understand it and grow from the experience – not with our agenda already set.

JR: Which I imagine means we also need to value and praise different kinds of traits?

IM: *One of the gravest problems with the current state of medicine is that doctors too often no longer have a background in the humanities, and see themselves as, in effect, high-grade technicians. They misconceive the nature of what they are about*

IM: The highest praise of a wise person in the past was that he or she possessed ‘reason’ and ‘judgment’. These skills – for such they are (not just forms of knowledge) – depended on what Aristotle called *phronesis*, a complex of rationality tempered with experience, intuition, a sense of proportion, of what is appropriate, and much else besides. Those who have been technically trained only, and think according to sets of rules, guidelines or procedures, but have no background in the humanities generally – history, literature, art, philosophy and so on – can have no way of understanding what it is they are dealing with, no context in which to set it, no sense of proportion to apply to it, no sense of what would be appropriate here, and have impoverished intuitions. The humanities help us see the broader context, how people in other times and other places thought and lived – vital if we are not to become terminally narrow-minded, congratulating ourselves on being progressive, while in fact being complacent, conservative in the most negative sense. Then we become so certain we are right that we think we have the duty to ‘educate’ the rest of the world into our way of thinking. There is a fascinating conflict here between the lip service paid to respect for other cultures, often very far in their points of view from our own, and the dogma that only modern Western liberal thinking is ‘enlightened’.

Even science, important as it is, is not an education in itself; while it is a vital part of what we should learn at school it is never enough to focus narrowly within it. It provides no context in which to understand what it teaches. It depends on questioning facts, but never gets round to doubting its own dogmas. That would be to enter the territory of philosophy. Until 50 years ago, you could not have become a scientist or an administrator without having studied and absorbed a good deal of the classics and humanities. Our system now for the first time makes this possible. One

of the gravest problems with the current state of medicine is that doctors too often no longer have a background in the humanities, and see themselves as, in effect, high-grade technicians. They misconceive

IM: *The alternative to experience is theory, and I do not know of a theory sufficiently convincing that it would lead me to discard what seems to me evident through experience – not just in the narrow sense of what I myself might have learnt through schooling, but what seems to me to be the ground of all civilised endeavour*

the nature of what they are about. Add to that a managerial culture that is imposing itself on our doctors, teachers and even, little by little, on judges, and the effect is complete. One can't help thinking that the more broadly educated professionals of the past would have simply refused to be bamboozled by the impoverished pseudo-culture of managerialism: they would have recognised it for what it is – an attempt to replace a broad, humane culture, and its values, with the desiccated language and bankrupt procedures of bureaucratic control.

You can't instil 'citizenship' by classes. This is once again a solution at too superficial a level. It doesn't consider the roots. Equally I don't want a doctor who is, disconcertingly, the product of a course in social skills. I want a doctor with humanity, and part of that will come from him or her having a richer inner world. Too many doctors and neuroscientists adopt unreflectingly the model of the body as a machine, because they have no background in the humanities and philosophy that would alert them to the problems with such a view, and it therefore seems obvious to them that this must be right.

Quite apart from conveying information – knowledge, at any rate, is important – schools should be places where children are taught to use their imagination, ask difficult questions, think flexibly, concentrate effectively, sustain attention and learn self-discipline. If we are honest, they are all too rarely any of these. Children need to be encouraged to question the accepted views of our own age, not just the things their teacher doesn't like. No person should leave school so ignorant as to believe that he or she really knows much at all.

Good teachers should be trusted, not micromanaged and over controlled. There is too much constraint of the syllabus and too much monitoring of staff and pupils alike.

If you were Secretary of State for Education ...

JR: It may not be entirely fair to ask you this, but in light of the above, if you were Michael Gove or the equivalent, considering the constraints of democratic accountability and the need to educate millions of varying abilities and backgrounds, would your overall approach just be to trust teachers more. If so, on what basis would you have that trust?

IM: Well, the *quid pro quo* for this position is that it should be easier for a head to get rid of an ineffectual teacher. We should be more honest with them. But we should also be more honest with pupils.

What does this mean in practice?

There should be no pretence that learning is always easy or in the most obvious sense, fun, but it should be clear that patience, skill and hard work will be rewarded in time, and that real rewards need to be earned. To pretend otherwise is a hopeless basis for achievement of any kind and a poor preparation for life. The habit of being quiet and not requiring stimulation should be encouraged by de-emphasising the constant stimulation provided by technology, though technology has a place in education, too. Self-discipline and respect for one's fellows, one's teachers and one's self go hand in hand and should never be undermined.

IM: *An economy exists to support a civilisation, not to become the purpose of it. If we forget that, we become barbarians, and betray the very values we believe so important that we even feel justified in imposing them on others*

For the more intellectual, it means re-embedding things in the humanities. There should be a strong encouragement of history, classics, philosophy, literature, music, drama and art. All children should learn practical embodied skills in the crafts and arts, working not just with machines and ideas, but with actual materials, such as wood, metal and fabric, to make things that are both useful and beautiful. All children should be taught mindfulness and some form of spiritual exercise. They should learn some sort of practical life-skills, such as how to recognise cognitive distortions in oneself and others, and how to mediate in disputes. These are quite practical things that can easily be taught, and transform lives. Getting rid of many of the ‘soft’ subjects that have crept in over the last few years should make room for these. It’s also an unkind and destructive policy that imposes an expectation that most people should go to a university: this has simply led to a further expansion of such ‘soft’ subjects, the devaluation of degrees, a waste of time for the unwary students, and false expectations which inevitably lead to disappointment, bitterness and accusations that failure is due to some form of discrimination.

JR: This is all fascinating, but at this point I can imagine readers might feel the discussion has lost sight of its moorings in the brain hemispheres. To put it combatively, is your warrant for the above claims that you yourself know the benefits of such an education, and want more people to see the world as you do, or do the suggestions above flow from more objective premises?

IM: With respect, you asked me what I would do if I were Michael Gove, and I told you. As to experience, the alternative to experience is theory, and I do not know of a theory sufficiently convincing that it would lead me to discard what seems to me evident through experience – not just in the narrow sense of what I myself might have learnt through schooling, but what seems to me to be the ground of all civilised endeavour. And, as far as the hemisphere hypothesis goes, to me what I have said follows, as night follows day: embodied skills, a proper humane context for the understanding of what we learn, an emphasis on the implicit as much as the explicit, on quiet, sustained attention rather than constant stimulation that fragments attention, a belief in the broader picture, and in the values of more than just pleasure and utility – the terms on which everything in the left hemisphere’s world has to be validated.

If we do not think in this broader and more long-term way, we will try just to patch up the current morally bankrupt system of competitive capitalism by training narrower and narrower technicians so that we can out-compete other economies. An economy exists to support a civilisation, not to become the purpose of it. If we forget that, we become barbarians, and betray the very values we believe so important that we even feel justified in imposing them on others.

JR: Although I agree with much of what you say, I expect some people would say that your vision was unrealistic, even ‘Romantic’? How would you respond to that?

IM: Watch an animal explore its environment. It tries something and then recoils, it tries something else and recoils again, but then goes forward and onward until it recoils again – and so it finds the right path to what it is seeking. This is an intelligent way to succeed and to survive. An animal that ploughs on regardless of evidence that it is in danger will not survive. Many great steps forward in the history of ideas have come when we stopped doing something that had come to seem natural, and opened ourselves to something new. Of course there is actually nothing new under the sun, and that something ‘new’ came about because people were not afraid to revisit knowledge and ways of thinking and being that had become lost. The Renaissance is a prime example, of course, of a society that leapt forward by looking to the past, but there are many others. Civilisations wax and wane. They all fail ultimately. There is no such thing as eternal progress. That is just a belief, a dogma, that flies in the face of history and experience. There is no reason to believe ourselves to be immune – in fact there are a number of good reasons (climate change being one) – that suggest our civilisation has not long to go. Blame our blind optimism for that.

IM: I call myself a hopeful pessimist. In respect of where we are currently headed, yes, I am a pessimist. In respect of our potential to adapt and change quickly, I am hopeful

A lot of what I have to say will sound like a step back. It will be called ‘Romanticism’. Rationally, a step forward is as likely to be a mistake as a success. There is at most a 50-50 chance that a departure from the long history of human experience will be positive. To believe otherwise is itself a sort of Romanticism – but one that is not paying attention to experience or evidence. The fact is that we are not getting happier. We are not getting wiser. We are not living in harmony with the planet on which our existence, never mind our happiness, and our sense of fulfilment, depends. But we should never worry about saving the planet: the planet will survive well when it has got rid of us. It is we who need saving from ourselves.

In closing

JR: Thank you for your generosity in enduring my questions and giving such thoughtful answers. How should we close this discussion? Gramsci famously said that we should have ‘pessimism of the intellect, but optimism of the will’. Is that where we are now?

IM: I call myself a hopeful pessimist. In respect of where we are currently headed, yes, I am a pessimist. In respect of our potential to adapt and change quickly, I am hopeful. I sense that people are sick of the current worldview in the West (alas, all too quickly being espoused by the East that used to know better). In response to my book, people of all walks of life all over the world have written to me. They are looking for a change in direction, and I think all I have done is to give them courage to believe in what they already really know at some level – something which has not been articulated in quite the same terms before. In many ways my message is a very positive one. We have been sold a sadly limiting version of who we as human beings are, and how we relate to the world. Inside each one of us there is an intelligence, in fact a superior intelligence, that sees things differently from the way we have been sold – if we would only listen to it. Let’s hope that we can.

Part two
Reflections

Reflections

The RSA hosted a workshop on 5th November 2012 and invited participants at the workshop to write short follow-up pieces.³⁸ A few of the people who were invited but unable to attend also took this opportunity to share their perspective. In the 13 pieces that follow, there is a range of critique, clarification and illustrations of relevance in particular domains, including economics, behavioural economics, climate change, NGO campaigning, patent law, ethics and art.

Ray Tallis

Gigantic generalisations overlook the teeming ocean of particulars.

This failure to address the metaphysical and ontological problems of the relationship between brain and consciousness means that his theory lacks a ground floor

Ray Tallis

The research brilliantly summarised in I.M.'s mighty work of scholarship focusses largely on the deficits that are seen in different kinds of brain damage. The alterations in perception, memory, emotion, drive, personality etc that follow from brain damage do not, however, demonstrate the bits of brain that are affected are the locus for these things.

Firstly, even the most elementary experience or memory involves large areas of the brain, and the brain is engaged bilaterally in every aspect of the ordinary experience of everyday life – as I.M. himself admits at one point.

Secondly, the stand-alone brain, never mind a stand-alone hemisphere, is not a *sufficient* basis for any aspect of consciousness, even less those complex manifestations of individual and collective behaviour that I.M. is concerned with. The brain is a *necessary* basis for all of these things but, beyond the brain, the body and the surrounding world are also necessary for ordinary consciousness and everyday individual and collective behaviour and it is here, not inside the brain, where the trends that I.M. worries over unfold.

At the very least, persons are embodied-brains-in-worlds that have their own extracranial history. (See below). Being-there is essentially relational and we cannot find the nature of being-there if we confine ourselves to, or give priority to, one of the relata, namely the individual brain or parts of it. There is considerable ambivalence, what is more, in I.M.'s view of the relationship between the mind and the brain: he says the former may be 'generated' by the latter or 'mediated' by it – rather fundamental equivocation. And it is not clear what 'mediated' means here. This failure to address the metaphysical and ontological problems of the relationship between brain and consciousness means that his theory lacks a ground floor.

Notwithstanding these problems with his thesis, I.M. personifies the brain and bits of the brain – claiming that they are 'at least part of a person'. For example, he contrasts the 'abstract, instrumental and assured

The left hemisphere, we are to believe, is rather more than somewhat bureaucratic while the right hemisphere is 'more in touch with reality'. What does 'reality' mean in this context? He may argue that he is talking only metaphorically but the metaphors are often presented as literal truth and they are necessary to carry his argument

Ray Tallis

left hemisphere' with the 'contextual, humane, systemic, but relatively tentative and inarticulate right hemisphere'. The right hemisphere, it seems, is the kind of character you would like to have a beer with while the left hemisphere is a geek. (Although I.M. says that he spends a lot of time defending the left hemisphere, he is doing so largely against his own attacks. With such friends, the left hemisphere doesn't need enemies!)

The left hemisphere, we are to believe, is rather more than somewhat bureaucratic while the right hemisphere is 'more in touch with reality'. What does 'reality' mean in this context? He may argue that he is talking only metaphorically but the metaphors are often presented as literal truth and they are necessary to carry his argument.

The thesis – itself highly systematising, linguistic, explicit etc – looks rather left hemisphere according to his own characterisation of that pushy item. The laboratory findings (massive quantities of painstakingly acquired, precise data, 2,500 sources) which seem left hemisphere products of 'the narrowly focussed attention to that which has already been prioritised as significant' underpinning his arguments seem themselves to have been gathered by what he would regard as left hemisphere activity. Does he repudiate his own work – given that he says that the left hemisphere 'doesn't understand things but only processes them'? Or indeed, the great monuments of natural science upon which our survival, health, comfort and safety in daily life depend? (He is critical of the 'life sciences' – which would presumably include the neurosciences he draws upon throughout his book – as in thrall to the left hemisphere, seeing the living world as machine-like.) The suspicion that I.M.'s thesis may be self-undermining is reinforced by his claim that the left hemisphere is out of touch with reality. Doesn't this make it rather odd that he relies on the neurological data presumably gathered by that hemisphere to support his extraordinarily ambitious account of 'reality', a reality that encompasses the history of mankind?

The indicative, as opposed to the subjunctive, mood in which *The Master* is written suggests that I.M. feels that he is dealing with *certain* facts (left hemisphere according to his own thesis) rather than *uncertain* possibilities (right hemisphere according to his thesis); for example, his assertion that 'the left hemisphere's purpose is to use the world. It sees everything – education, art, morality, the natural world – in terms of a utilitarian calculus only' sounds pretty certain to me.

It may be that my own left hemisphere has atrophied but I would hesitate to make such sweeping generalisations. And I wouldn't be at all certain of the truth of such massive claims as that 'Far Easterners attend to the world in ways typical of both the left and right hemispheres, and draw on strategies of either hemisphere more or less equally, while we in the West are heavily skewed towards the attentive viewpoint and strategies of the left hemisphere alone'.

And consider the assertion that 'since the Industrial revolution we have constructed an image of the world externally that is an image of the left hemisphere internally'. Who are 'we'? What 'image' of the world (as if there were only one image and one world) are we talking about? And what would an 'image of the left hemisphere' be? I suspect that we are dealing with a somewhat simplistic circularity here: the left hemisphere is seen as

It is here, and not in the intracranial darkness, that we should look for the motors of history, of cultural change and the evolution of civilizations. Histories, cultures, societies, institutions, have their own internal dynamic

Ray Tallis

(say) the locus of rationality and the image of the world post Industrial Revolution is rational (or rationalistic) and therefore the latter is a passive reflection of the former. At any rate, such gigantic generalisations overlook the teeming ocean of particulars that make up our shared world, and overfly the infinite variety of the lives of billions of people and the countless cultures and micro-cultures in which they live.

It is tempting to ask: From what hemisphere is he able to observe the two hemispheres, pass judgement on them, and see their rivalry as the motor of the unfolding of human cultures? Does he have a third hemisphere? Or does he have something that is not a hemisphere at all? In short, is he talking from a standpoint that transcends his hemispheres?

I suspect he is; it is the standpoint from which we all speak when we speak about pretty well everything: namely the shared, extracranial human world woven over the millennia out of a zillion human (whole person) interactions. And it is this that he seems to by-pass when he argues that the outcome of the rivalry or balance between the two hemispheres plays a major role in determining the predominant characteristics of cultures, civilisations or epochs. And I would argue that this extracranial viewpoint is the one we adopt when we comment on our own and others' brains and cultures. This is more relevant than neural circuitry. It is the community of human minds, the human world, which has gradually built up at least over the hundreds and thousands of years, since hominids emerged.

It is here, and not in the intracranial darkness, that we should look for the motors of history, of cultural change and the evolution of civilizations. Histories, cultures, societies, institutions, have their own internal dynamic. To take a single example, the Council of Trent was the mighty effect of mighty causes and the mighty cause of mighty effects that cannot be usefully captured in neural terms.

*Ray Tallis is a philosopher, humanist, retired medical doctor, neuroscientist and author of *Aping Mankind: Neuromania, Darwinitis And The Misrepresentation Of Humanity*.*

Rita Carter

We should stop for a moment to see why the left hemisphere perspective is so resilient ...

As I understand it, McGilchrist's argument is this:

1. The bihemispherical nature of the brain affords each individual two distinct 'takes' on the world:
 - i. Left: reductive, abstract, deluded, grasping, certain, confident, narrow and articulate.
 - ii. Right: tentative, aware, insightful, inarticulate, etc.
2. An individual's 'take' at any moment depends on which hemisphere is functionally ascendant.
3. When people en masse tend toward a certain 'take' it creates a culture which reflects that perspective, and that in turn

(recursively) determines the typical ‘take’ of individuals within the culture.

4. The cultural and individual ‘take’ on the world has varied from time to time.
5. Currently it is leaning towards the left.
6. A shift towards a right hemisphere perspective would return us to a more humane and ‘better’ culture.

I agree entirely with Iain on (1) and (2) and I find (3), (4) and (5) perfectly plausible. I do not, however think that (6) follows seamlessly.

Iain, thanks to his immense scholarship and rigorous analysis, has put the case for (6) more convincingly and credibly than anyone else. It is not, however, a unique, or even unusual call. That we need to alter our ‘atomist’ or ‘selfish’ view is a familiar cry (eg the call for the ‘Big Society’). You don’t have to be overly cynical, however, to observe that these calls do not translate into real change; just sentimentality and hot air. Rather than trying to construct another initiative for change, therefore, perhaps we should stop for a moment and try to see why the left hemisphere perspective is so resilient.

I offer this:

While I agree that a shift to a right hemisphere perspective would make for a ‘better’ world as measured by criteria such as ‘kind’, non-punitive, generous and so on, it doesn’t necessarily follow that this ‘better’ world makes those within it happier.

Of course, there is a huge sociological literature on this which may give the lie to the statement above (I don’t know). However, I think there is some use in looking at it at the neurological level:

Iain points out that anger (a feature of today’s world which he understandably identifies as a negative) is lateralised to the left. Conversely, anxiety, shame and fear are lateralised to the right. While a world peopled by anxious, shameful, fearful people may be ‘better’ than a world peopled by those who are shameless, fearless and aware of their limitations it would not necessarily be a happier place. Indeed, *by definition*, I would argue that a shameless, fearless and deluded population is happier than a fearful, shameful, insightful one. (Many might say that ‘happiness’ borne of self-delusion is ‘false’ happiness, but I believe there is no such thing as false happiness, any more than there is false hope. Hope is hope, and happiness is happiness.)

The ‘take’ problem arises, I think, when you have a mix of the confident, self-deluded etc, and the self-aware. A solution can only be wrought by those with power, and power accrues to those with certainty, delusion and fearlessness. But the only ones who see, or indeed, have, the problem, are the self-aware. So the ones with the problem cannot solve it and the ones with the solution do not see the problem.

Conventionally we assume that we should force the powerful ones to see the problem and bring about a solution.

There is another way though: instead of calling for a shift to the right, what about encouraging a universal shift to the left. Let us all be certain, blinkered, deluded ...

A solution can only be wrought by those with power, and power accrues to those with certainty, delusion and fearlessness. But the only ones who see, or indeed, have, the problem, are the self-aware. So the ones with the problem cannot solve it and the ones with the solution do not see the problem

Rita Carter

I offer this in a slightly mischievous way. But there is a degree of seriousness about it ... after all, a *real* sense of perspective is always uncomfortable ...

Rita Carter is a science writer, lecturer and broadcaster specialising in the human brain science.

Theresa Marteau

The provenance of a problem does not necessarily imply its solution.

This book is in a deserved class of its own for the breathtaking range and erudition of his account. But to seek a guide to action from this magnum opus is misguided

Theresa Marteau

The Master and his Emissary is an extra-ordinary book that re-presents our experiences of ourselves in a compelling narrative, starring two brain hemispheres and the cultural history of the Western World. Crudely, the central thesis is that a shift in balance between the two hemispheres, resulting in a dominance of the left hemisphere, can explain the imbalances many of us recognise in the lives we lead and the world we have created. There are of course many other ways of explaining such imbalances using a range of disciplines and theoretical perspectives. This book is in a deserved class of its own for the breathtaking range and erudition of his account. But to seek a guide to action from this magnum opus is misguided. The provenance of a problem does not necessarily imply its solution. Indeed, the sting in the tail of the book's thesis is that looking for such a guide is to fall into the grasp of the author's least favoured (but sometimes second favourite) hemisphere. For those optimistic (or foolhardy) enough to seek ideas on effective interventions to change behaviour across populations to, for example, achieve more sustainable lifestyles in the face of climate change and the growing burden of chronic non-communicable diseases, there is little of immediate application in this book. More is to be found in the behavioural sciences literatures and recent critiques of neoclassical economics. This is not a criticism of the book – which is hugely rewarding to those who take the time to read it – but rather a footnote on what the book did not set out to do and indeed does not. As the last of us sleepwalks into the abyss whistling a happy tune, this book may well provide one of the most lucid explanations to future inhabitants of our planet.

Professor Theresa Marteau is the director of the behaviour and health research unit at the University of Cambridge. Her current research focus is upon developing ways of changing behaviour at population levels, drawing on neuroscience, behavioural economics as well as psychology.

Mark Vernon

A way of attending that does not come naturally in the modern world ...

The book brings three thoughts sharply to my mind. The first is about how we do ethics. Two approaches have dominated in the modern world – utilitarian ethics, which focuses on the attempt to measure and maximise things like happiness; and deontological ethics, which focuses on the attempt to

It will no doubt be a difficult, even painful, task to cultivate a way of attending that does not come naturally in the modern world, that is to cultivate the open and connecting in a milieu that prefers the focused and directive. But it seems pretty clear that having access to both kinds of attention is crucial

Mark Vernon

reason out what we should and shouldn't do. These might be the preferred approaches one would expect in a world that trusts the human capacities McGilchrist associates with the left hemisphere. But there are all sorts of reasons for believing that they are now not serving us well – and they also sideline and misunderstand a third tradition that it seems possible to associate more with the capacities associated with right hemisphere functioning. This is virtue ethics. Virtue ethics takes the ups and downs of life as the basic stuff of ethics and cultivates the ability to reflect upon experience so as to learn from mistakes, tolerate the uncertainties of living, nurture the habits that enable one to flourish, and over time gain a feel for how to live well – that lived sense of understanding we might call practical wisdom.

The second thought is not unrelated and has to do with McGilchrist's central thesis that the way the hemispheres function constrains how we perceive the world. If it is right that we have broadly two ways of attending to life, one focused and directive, the other open and connecting – and this seems right to me as it is something that has been repeatedly observed by adepts in spiritual traditions – then it will presumably also be the case that we can nurture our attention so as to develop different perceptions of and approaches to life. It will no doubt be a difficult, even painful, task to cultivate a way of attending that does not come naturally in the modern world, that is to cultivate the open and connecting in a milieu that prefers the focused and directive. But it seems pretty clear that having access to both kinds of attention is crucial.

The third thought is related again, and concerns having a capacity for uncertainty – an ability to stay with the anxieties of doubt and not reach out after faux-certainties; as well as an ability to resist the temptation to need to be doing something, anything, and/or unconsciously seeking escape in distractions. The psychotherapist Donald Winnicott called it 'going on being', arguing that trusting life itself rather than the nervy isolated self, is fundamental if creative and unexpected insights are to unfold. Again, this would seem to be a far more difficult state to sustain when the capacities associated with the right hemisphere are lost or denigrated.

*Dr Mark Vernon is a former anglican priest, a journalist and author of several books including *God: All That Matters* (Hodder Education, 2012).*

Tom Crompton

It is the circularity that is key ...

I attended the workshop as an erstwhile NGO campaigner. I spent many years believing in the persuasive power of presenting the facts of environmental challenges like climate change. I assumed that if only we all *understood* the scale of such challenges, then we would be galvanised into demanding proportional government action. But I am now persuaded by the psychologists who point out that this is wrong. Actually, though the facts are important, if they don't fit with our values it seems likely that we'll simply reject them.

The left hemisphere, as Iain describes this, privileges values of control, use and pleasure; mirroring the 'self-enhancement' values of power, achievement and hedonism described by social psychologists. The right hemisphere, on the other hand, privileges values of care and connection with something beyond the self; mirroring the 'self-transcendence' values of benevolence and universalism

Tom Crompton

Social and environmental concern – and motivation to take action in line with such concern – is shaped importantly by our values. And our values, in turn, are shaped by many aspects of our experience – including our education, the social institutions with which we interact, and the public policy environment in which we live. Gifted politicians grasp this intuitively. Margaret Thatcher, for example, was clear on this point: 'Economics are the method', she said in 1981: 'the object is to change the heart and soul.'

Those values associated with greater social and environmental concern are called 'self-transcendence' values. They are held in opposition with 'self-enhancement' values. Momentarily and subtly engaging self-enhancement values (briefly showing people pictures of desirable consumer goods, for example) suppresses self-transcendence values, and thereby reduces pro-social and pro-environmental concern. Repeatedly engaging these values (through inundating citizens with commercial advertising, for example) seems to serve to strengthen these values in a 'dispositional' way, more permanently eroding social and environmental concern. So – almost irrespective of the social or environmental issue about which an organisation or individual is concerned – common cause can be established in working to help strengthen self-transcendence values in society, and to reduce the importance that we attach, collectively, to self-enhancement values.

In recent years I have worked with many social psychologists and have become convinced of the powerful evidence for these conclusions. But until I read Iain's book, I knew nothing about brain laterality. In reading it, I was struck by how closely the insights that Iain draws from his understanding of the brain corroborate the conclusions of social psychologists working on values. This is all the more striking given that the conceptual and empirical traditions upon which these two bodies of work draw are so very different.

The left hemisphere, as Iain describes this, privileges values of control, use and pleasure; mirroring the 'self-enhancement' values of power, achievement and hedonism described by social psychologists. The right hemisphere, on the other hand, privileges values of care and connection with something beyond the self; mirroring the 'self-transcendence' values of benevolence and universalism. Iain describes the competitive nature of the relationship between hemispheres – echoing social psychologists' description of the dynamic tension between self-enhancement and self-transcendence values. He also perceives (as psychologists have argued) that instrumental appeals to the left-hemisphere (or the use of 'self-enhancement' values) in order to encourage the uptake of a social or environmental behaviour may be counter-productive if this serves to shift the balance in favour of the left-hemisphere (or strengthen self-enhancement values) in the longer term.

Crucially, Iain describes, too, how we configure our societies in ways that can serve to shift the balance, such that the 'left hemisphere's values simply become further entrenched' (p.244). 'Our experience of the world', he writes, 'helps to mould our brains, and our brains help to mould our experience of the world' (p.245).

It is this circularity that is key from the perspective of those seeking a more sustainable and compassionate world. Collectively, we decide how to organise our societies, and this organisation serves to further entrench

particular values: values that may undermine – or otherwise build – our motivation to respond to problems like climate change.

Tom Crompton, Ph.D., works for WWF. For more information on Common Cause – a project which applies social psychologists’ understandings of values in order to support social and environmental change – please visit www.valuesandframes.org.

Jeremy Holmes

Inequality is what drives left hemisphere dominance.

The really good thing about McGilchrist is that he takes the ‘personal is the political’ (70s feminist slogan) a stage further, and shows how context shapes not just our selves but our brains, and vice versa

Jeremy Holmes

From a sociological/political point of view, the really interesting aspect of McGilchrist is the way different societies ‘pull out’ different potentials from the neurome; of course it works the other way round as well, since our biological potential determines to an extent what can be ‘pulled out’.

I think McGilchrist’s model is essentially a rather hierarchical model, although he might argue that he is merely trying to rehabilitate the neglected and underpowered right hemispheric perspective. His title-story is about a Master and an honest servant who has ideas above his station. I’d argue that what’s needed is a democratic balance between the hemispheres and their social manifestations. McGilchrist appears to have little concept of power and how it operates in society. Here I find Pickett and Wilkinson hugely convincing: inequality is what drives left hemisphere dominance.³⁹ Democracy is the coming together of the weak against the strong, and we need both, and both hemispheres. I know McGilchrist would say he agrees and he’s just trying to redress the balance, but actually I don’t really think he’s worked out how they can work together harmoniously and democratically – not that anyone else has either!

Recently, while sitting in a plane at thirty thousand feet, eating a black-berry (the edible variety), my left brain concentrated on spearing it on the end of a fork while my right contextualised the absurdity and planet-destroyingness of it all. The really good thing about McGilchrist is that he takes the ‘personal is the political’ (70s feminist slogan) a stage further, and shows how context shapes not just our selves but our brains, and vice versa.

*Professor Jeremy Holmes is a psychiatrist affiliated to the University of Exeter. His extended review of *The Master and his Emissary* was recently published in *Psychoanalytic Psychotherapy*, Vol. 26, No. 2, June 2012, 160–170.*

Siva Thambisetty

The gradual slippage from reasonableness towards ‘rationality’ has profound implications for the private ownership of information.

Iain McGilchrist’s suggestion that left-hemisphere dominance gradually creates a ‘hall of mirrors’ full of self-referential logics resonated very

We can expect confirming information to be incorporated and disconfirming information to be filtered out. This appears consistent with McGilchrist's view of the left hemisphere growing in dominance

Siva Thambisetty

strongly with my understanding of legal and institutional processes in the patent system.

The patent system is multi-institutional and decisions often combine rich contextual and historical reasoning with technical and scientific facts. This diffusion of reference points between judicial and administrative institutions has led to an over-use of certain heuristics that seems to mirror the directional view of 'reason' being trumped by 'rationality' so dramatically described by Iain McGilchrist and highlighted in section 1.9 of the discussion document.

Over the last 20–30 years, patent law seems to have closed off spaces for normative, contextual and policy based reasoning in favour of highly technical, operationalised legal tests. Such legal tests are often detached from public policy concerns, but nonetheless enjoy a self-perpetuating and objective status. This shift is in evidence in the following developments:

Withholding the extension of property rights over certain kinds of inventions is a profoundly normative question that is tied to the nature of information as a public good that is both non-rivalrous and non-excludable without such property rights. However, interpretation of exclusions from patentability have largely been reduced to linguistic silos that can be side-stepped by avoiding or specifying certain terms in patent applications. At least three instances come to mind:

The European Patent Convention excludes animal varieties from patentability but the narrow interpretation of the term by the European Patent Office means that genetically modified animals may be patented. Applicants have only to ensure that the term 'animal variety' is not used in the application. Similarly, computer programs are explicitly excluded but may be patented so long as the patent description incorporates 'technical' components as banal as servers or other general-purpose equipment. Thirdly, most 'diagnostic methods' are now patentable provided at least one step in the process of diagnosis is practised away from the human or animal body which can be easily incorporated into the description of the diagnostic method invention.

Only technical inventions are patentable. The European Patent Office adopts a very low threshold for 'technical' such that both the banal (like servers); and the ephemeral (improved internal functioning of a computer) can amount to technical. Once this low threshold is crossed, the evaluation shifts to whether the invention is 'inventive' enough to be patentable. This shifts the burden of justification from why property rights should be granted to explanations of why a particular subject matter should be denied patent protection (on grounds of not being 'inventive', or being inadequately disclosed for instance). In my view this represents the gradual slippage from reasonableness towards rationality that McGilchrist alludes to and it has profound implications for the increasing privatisation of information and technical advances.

The second aspect that comes to mind is a question of institutional design in the patent system. Keeping open multiple outcomes of reasoning through a rich understanding of the context of patentability can be resource intensive and impractical. However, maintaining an institutional memory of the point at which resources are committed to a

particular outcome would be a very useful way of building in sources of negative feedback.

A related aspect comes from ideas that grew out of the social acceptance of technology. It takes time and resources to learn new things, and we often learn by trial and error. People are more likely to do something that many others are also doing and may adapt their own behaviour based on what they expect other people to do. Learning effects (where knowledge gained in the operation of a complex system leads to higher returns from continuing use); coordination effects (when the benefits received from choosing a particular standard increase as others adopt the same option); and adaptive expectation (derived from the self-fulfilling character of certain kinds of expectations) may all arise. These learning needs and behaviours can be demonstrated in the way legal standards are first formulated and evolve through the domestic and institutional cluster of the patent system.

It has also been argued that actors who operate in complex and opaque contexts such as in the patent system are heavily biased in the way they filter information into existing ‘mental maps’. We can expect confirming information to be incorporated and disconfirming information to be filtered out. This appears consistent with McGilchrist’s view of the left hemisphere growing in dominance.

The above brief institutional description of learning resonates well with the patent system where a self-perpetuating dynamic squeezes out contextual reasoning in favour of seemingly superior and sterile ‘objectivity’. However the main question that underpins patent law – the proprietisation of non-rivalrous and non-excludable information – remains a nuanced jurisprudential question, that risks being caricatured in the form of decision making algorithms used by patent offices. In this respect, Iain McGilchrist’s work is again highly pertinent.

Siva Thambisetty is a lecturer in law and regional champion for India at The London School of Economics. The ideas above have been widely developed in her scholarship, details of which can be found via: www.lse.ac.uk/collections/law/staff/sivaramjani-thambisetty.htm.

David Archer

People’s thinking has been in thrall to a particular limited focus of attention.

My personal take on what I heard in the discussion was that in recent times across many areas of life, work and politics, people’s thinking has been in thrall to a particular limited focus of attention. A narrow, deconstructed, linear view of the world which seeks to optimise individual components, usually those that a person or organisation can directly control.

Reading the arguments in Iain’s book prompted me to re-assess how to help people to:

- a. Recognise that this is not the only way to see the world and that other perspectives exist. Perspectives that take a broader view,

My personal take on what I heard in the discussion was that in recent times across many areas of life, work and politics, people’s thinking has been in thrall to a particular limited focus of attention. A narrow, deconstructed, linear view of the world which seeks to optimise individual components, usually those that a person or organisation can directly control

David Archer

see the world as more connected but also more uncertain and to explore ways of improving the functioning of the whole system even if the steps to that improvement appear clumsy and cannot promise specific outcomes.

- b. Consider the constraints that may narrow their own perspectives on an issue – whether these constraints come from the working of their brain, the culture they are embedded in or the technology they have access to.

In our discussions I used my own experience of playing trumpet (badly) in a number of different contexts. In an orchestra my narrow focus is on reading the notes on the score in front of me and playing my part in time, but in a jazz band all my attention is on listening to what my fellow band members are playing and trying to respond to it with an occasional glance at the chords if I feel I might be getting lost. I might be a better musician if I could combine these two approaches but in fact I find this very difficult. I am able to perform in different musical contexts by closing down one form of attention in order to focus on another without distractions. And I see people doing something similar in all sorts of organisational contexts too.

Whether the origin of these different forms of attention lies in the two hemispheres of the brain I leave to others to decide but I did find the concepts and some of the language in Iain's work useful. And I can see how I might use them to help groups appreciate the value of difference and so come to better informed decisions around a Board table.

David Archer is an RSA trustee, director of socia and co-author of the book Collaborative Leadership: How to Succeed in an Interconnected World.

Adam Cooper

That description matched my experience of the use of economics within Government ...

The first question is whether the book identifies a problem that government is best placed to fix. And of course, whether one sees a problem really depends on what your idea of 'right' or 'good' is

Adam Cooper

How much can *The Master and his Emissary* inform national policy? The first question this raises for me is whether the book identifies a problem that government is best placed to fix. And of course, whether one sees a problem really depends on what your idea of 'right' or 'good' is. During the session I was struck by Iain's description of the left hemisphere as being highly analytic, abstract, perhaps overly confident in its abilities, and so often over-reaching into areas which are not its forte. What struck me was how that description matched my experience of the use of economics within government. As such, I could build an argument that says, government policy-making is too left-brain oriented, or more specifically, government use of economics is too left-brain oriented? But to what extent does that simply recast the problem in different terms? And to what extent is it a problem? If I was a government economist, I might conclude that there is no problem to be solved or described.

Even if we accept the problem, to what extent does the neuropsychological description of it help? Does it matter that there might be a

It doesn't really matter that it is left vs right, or frontal vs parietal, or medial vs lateral, it's the constellation of effects, and knowledge that falls out of synthesising the understanding of that constellation that are likely to be useful for policy

Adam Cooper

neuropsychological underpinning to this effect, or is it sufficient for us to observe the outcome and identify strategies to rebalance our thinking so as to bring about a better (ie more left an right brained) outcome? It may matter in identifying possible solutions, if we grant it problem status: maybe there are properties of the brain, left or right hemisphere, that we can exploit to provoke more balanced thinking? And even if that is so, aren't we almost certain to derive policy options for tackling it which interface not with the hemisphere directly (eg via transcranial magnetic stimulation), but rather with the person which the hemispheres 'support'. Hence the hemispheric property of any effect may simply serve as a gateway to knowledge which may then generate policies which seek to exploit some property of the brain. Ultimately though, it doesn't really matter that it is left vs right, or frontal vs parietal, or medial vs lateral, it's the constellation of effects, and knowledge that falls out of synthesising the understanding of that constellation that are likely to be useful for policy.

But of course, it may be entirely unfair to subject *The Master and his Emissary* to such an analysis – I'm sure Iain didn't write it with the Research Excellence Framework impact agenda in mind ... but nevertheless I'm hoping this exercise is instructive in thinking how some of the farther reaches of cognitive neuropsychology and philosophy might inform something as here and now as public policy.

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Nathalie Spencer

Many cognitive biases seem to be directly reflected in McGilchrist's description of the left hemisphere.

Exploring Iain McGilchrist's left hemisphere versus right hemisphere framework from a behavioural economics stance, many of the descriptions McGilchrist makes of the different hemispheres feel familiar. While I myself have not yet worked out the intricacies of the connection, it seems very probable to me that the two models are linked in important ways.

A point which resonated deeply with me, and which was discussed to a degree in the workshop, is that it can be incredibly uncomfortable to view the world around us in the way of the right hemisphere. In economic experiments, many people are found to be ambiguity averse;⁴⁰ that is, many of us have a preference for certainty (over uncertainty). So it is not surprising to me that we would display the tendency to sink into the comfort of the left hemisphere way of thinking.

Next, it strikes me that many cognitive biases seem to be directly reflected in McGilchrist's description of the left hemisphere. For example, the confirmation bias (the tendency to seek out or interpret information in such a way as to confirm or support pre-existing beliefs) and narrow bracketing (evaluating a situation within only a narrow context) have obvious links to McGilchrist's description of the left hemisphere. A subtler connection can be found to other cognitive biases such as anchoring in that when we anchor to an irrelevant figure we are failing

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Nathalie Spencer

to contextualise and recognise that every situation is unique, and instead we inadvertently just grab a hold of a given number nearby.

Along the same lines as cognitive biases is the use of heuristics. McGilchrist says that the left hemisphere 'is obliged to represent the world as static and made up of fixed and distinct pieces – which we know it isn't. It is less truthful, but provides a quick and dirty approximation of the world that is useful.' The use of heuristics or rules of thumb defies the deliberate 'rational' thought assumed in standard economics. But their use can also be thought of as rather efficient, as they often lead to results that are 'good enough' or even better than those achieved by slower, more measured thought, without using up as much precious cognitive resource.⁴¹ Reference to Daniel Kahneman's dual-system framework⁴² of thinking was not made in the workshop, but was made briefly in the paper and seems to me to be an area ripe for further discussion. It is not yet clear to me how we can best relate the hemispheric division to Kahneman's System 1 automatic reactions and System 2 deliberative thought. A section in the paper begins with stating that the two theses are distinct, but then suggests similarities between the left hemisphere's and System 1's way of thinking. I think there may be more to be said about this connection, and perhaps in a future workshop or publication the extent of the link between the two frameworks could be explored in more depth.

If, as was discussed in the workshop, McGilchrist's framework is more about attention specifically than about general cognition as a whole, does this suggest that we could reframe cognitive biases, preferences such as ambiguity aversion, and tools such as heuristics as issues specifically of attention as well, and review them from this angle? I would be interested to explore this, and also the relationship between left hemisphere way of thinking and these aforementioned features of human decision making prevalent in behavioural economic thought, more closely.

Nathalie Spencer is a behavioural economist and senior researcher at the RSA Social Brain Centre.

Emma Lindley

The experience of reading a book can be as profound and transforming as any rite of passage.

I have at least one thing in common with Iain McGilchrist, in that the subject of both our undergraduate degrees was English literature. It is perhaps partly because of this that I have a particularly deep appreciation of and respect for 'the book'. The experience of reading a book can be as profound and transforming as any rite of passage. A book can turn our familiar impression of the world and the people in it upside down. A book can change our attitudes, take us through uncharted territory, and make us feel and even act differently.

It is absolutely clear to me that Iain McGilchrist's major work, *The Master and his Emissary*, has made a profound impression on those around me who have read it. I understand from having listened

If it is not possible to simplify McGilchrist's thesis to allow those who have not read his very lengthy book to assimilate its key messages, it will be extremely difficult for his ideas to become widely disseminated and to have the influence which they deserve, and the world needs

Emma Lindley

to discussions between its readers, and from reading a range of critical and discursive writing about the book that it is tremendously broad in scope, extraordinarily convincing, and navigates smoothly between vastly contrasting epistemologies. However, apart from a few extracts, I have not actually read it. Nevertheless, it isn't always necessary to have read a book first hand and in full in order to appreciate its message and understand its significance.

I do know that McGilchrist's book is the product of many years of research, and it refers to many hundreds of scholarly articles and books, significantly from neuroscience, but also from psychiatry, psychology, philosophy, and social science. Without a background in neuroscience it would be foolish and presumptuous for me to comment on the neuroscientific findings set out and discussed by McGilchrist. However, as a social scientist with a particular interest in English literature, I find McGilchrist's account of 'left hemisphere' and 'right hemisphere' ways of making sense of the world engaging as metaphor. It is deeply significant that in Western society, for all sorts of reasons, there has been too much emphasis on analytic, virtual, certain, tick box, accountancy-audit thinking ('left hemisphere'), at the expense of the less certain, grounded-in-reality, empathic, living ('right hemisphere') way of engaging with the world.

But, when it comes to how we might apply McGilchrist's theory to make positive changes to the things I really care about, I still need to be convinced. I think I may understand the broad message about the different ways of engaging with the world, how each has a vital role to play, and how if 'the left hemisphere' dominates and suppresses 'the right hemisphere', the result can be disastrous. On an intellectual level, I can see why this is important. But as yet I simply don't have an affective sense of how his thesis might make it easier to narrow the gap between the world we have and the world we'd like.

Part of the reason for this might be because I have a general scepticism about and suspicion of Grand Theories. While they can be seductive, and tend to be very satisfying, I also think there's a danger they end up missing a great deal, excluding not just anomalies but everyday multiplicity. Although the workshop we had at the RSA went some way towards creating a platform to promote the development of practical strategies of application, it isn't one on which I yet have a firm foothold.

Perhaps the only way I'm really going to feel the intensity and profundity of McGilchrist's argument is to read the book. I'm not opposed or averse to doing so, but this does underscore another problem, which is that if it is not possible to simplify McGilchrist's thesis to allow those who have not read his very lengthy book to assimilate its key messages, it will be extremely difficult for his ideas to become widely disseminated and to have the influence which they deserve, and the world needs.

The excellent RSAanimate presentation was a creative attempt to get his ideas across 'in a nutshell'. I hope that the present document goes some way towards framing and applying McGilchrist's work, which allows his ideas to be more widely accessible and inclusive. I also hope that its readers and others will engage with us in the challenge of continuing to broaden the reach of McGilchrist's work. Were this to happen, it could truly be at the forefront of a movement for enlightened social change.

Emma Lindley is a social scientist with a particular interest in education about mental illness and senior researcher in the Social Brain Centre.

Michael Gibson

Our view of the world is a peculiar, paradoxical synthesis which fails to surprise us.

Why was I so utterly enthralled by Iain McGilchrist's *Master and his Emissary* when I first began to read it a year ago? The answer is simple enough: it was because he quite obviously had found the answer to a crucial question that I myself had raised some forty years ago and had been unable to answer.

But first, something about myself:

I spent over three decades working as an art critic in Paris and, if I am to believe what a Parisian art dealer told me one day, I had the reputation of 'actually looking at the paintings I wrote about'. This certainly raises some questions about what the other critics were up to. What is certain is that I gradually learned to read paintings (to the extent at least that it had anything to say) the way others read novels, and one of my recent books (*The Mill and the Cross*) subjects Bruegel's *Way to Calvary* to this sort of treatment.

In those years, like so many others, I clearly felt that all was not well with the world and, in 1975, I summed up my perception of our industrial society in these words:

Polyphemus, with a single eye in the middle of his forehead, has made his home in the dark socket of a cave which he seals up with a heavy stone. Bottled up in there with his companions, Ulysses (who claims his name is Nobody), is destined to die. Polyphemus, according to his promise, is saving him for the last, but he will devour him in the end.

Ulysses imprisoned is a figure of our present situation. Only we know that Ulysses will manage to escape, whereas in our own case nothing is assured.

After which I went on to provide a more detailed assessment of our predicament:

The mark of the Cyclops is that single round eye. He only has half of the vision that humans enjoy. The depth which our eyes perceive, and which allows us to move with ease about the world, is a product of those two distinct and apparently irreconcilable angles from which we approach all things: the lucid glance which seeks out the given and perceives all causes, and the prophetic glance, which senses the possible and defines our purpose. This double vision catches all things under two different aspects. Yet we do not sense this difference in everyday life, and our view of the world is a peculiar, paradoxical synthesis which fails to surprise us, until we stop to think.

Although I knew nothing about hemisphere functions at the time, I can't help feeling that the eye stands in quite nicely for the hemisphere to which it is attached. Yet this was not exactly what I had in mind then, since I was explicitly referring to cause and purpose. But it was only upon reading Iain's book that I came to realise how close I had been to

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the mark when I declared that 'our view of the world is a peculiar, paradoxical synthesis which fails to surprise us.'

It was no doubt our 'failure to be surprised' that led us into the trap in the first place.

Still, something had to be undertaken to get us out of this predicament and so I concluded with what might be viewed as a cry for help. 'Is there anyone out there who knows how to reason this monster and get us out of this trap?'

Suppose a beyond that might be foreign to the world that Polyphemus is capable of recognising, but which would nonetheless be founded *within* it. Such a beyond, if it exists, would constitute the specific realm of the philosophy of culture, just as the realm of the philosophy of science is embodied in the propositions of the sciences of nature. Some sort of 'outside the world' must be found if a meaning is to exist, an answer to the questions that solicit us. But if we are to escape from the sealed cave in which we have been trapped, this 'outside' must also be made to appear legitimate to the hungry keeper blocking the exit. Polyphemus must be made to acknowledge that a portion of the world lies beyond his grasp, and that the propositions of the natural sciences do not account for every aspect of reality. As things now stand, however, Polyphemus is determined to take no other proposition into account.

And while those familiar with Iain's thesis may find my appeal rather to the point, I certainly hadn't an inkling of how we were to go about 'converting the Cyclops'.

This being the case, you can imagine my extreme delight when I realised that this was *precisely* what Iain McGilchrist had set out to do in the interval – and had indeed *successfully accomplished*: he had found a suitable way of addressing our left hemisphere Cyclops and of forcing him to 'acknowledge that a portion of the world lay beyond his grasp'.

I should perhaps make it quite clear that my Cyclops stands, not for the industrial society (though it is indeed *his* society) but for the half-brained cultural outlook which has momentarily engulfed the industrial world and has reached its brilliant but totally misguided zenith in such bodies as the Rand Corporation (‹rational choice›) and Goldman Sachs (‹greed is good›). The Cyclops is part of our own mind, and it is his triumph *in our own minds* that has given us the world we now live in.

So the good news today is that the devouring monster can indeed be made to understand the scientific discourse thanks to Iain McGilchrist's sweeping scientific, philosophical and literary vision, which provides us with precisely the language we needed to 'reason the monster'.

To this I would like to add, and this will have to be my modest contribution to this scintillating event, that just as the Cyclops needs to be fed the (to him) totally ungraspable half of the truth when it is set before him in scientifically persuasive terms, so too, the other half of our mind (let's call it Titania for the occasion), needs to be provided with the sort of translation that recasts the purely factual and causal findings of the sciences into the sort of metaphorical and purpose-laden idiom that our imagination understands so well.

In this task, works of the imagination should obviously prove helpful.

Not that one should expect mere intuition to rush to the defence of solid science. The opposite is usually the case. But under certain

circumstances perhaps, and with the fond blessing of the sciences, intuition may prove helpful in preparing the ground which will then have to be dug up in order to lay the enduring foundations of knowledge.

I actually set out on precisely such an intuitive venture at the turn of the millennium by writing an elaborate fictional defence of the imagination. Four years later, I had on my hands a thousand-page, three-volume manuscript entitled *Chronicles of the Greater Dream*. Published under the pseudonym of Miguel Errazu (the third volume this year), this trilogy turned out to be quite as long as Iain's *Master*, which is indeed so very long that its author engagingly admits that if he hadn't written the book he most likely would never have had the time to read it.

The *Chronicles* do seem to reflect an intuitive view of the matter that Iain McGilchrist develops in a proper scientific form. And I suspect that both forms are necessary, to provide the same information that both hemispheres need, in an analytical and a metaphorical form.

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Simon Christmas

We should not ask how Iain's argument could have practical implications: it is already having them.

I think that is key to its impact: it speaks to an audience who have already fumbled their way to an intellectual discontent for which Iain's argument provides a shape, a story, a narrative

Simon Christmas

From what Iain says, I understand that many people have already expressed their gratitude to him for writing *The Master and his Emissary*. I am one of them; and while I can only speculate why others have been grateful, I do have an idea what difference the book has made to me.

First, it has given me a better way of grasping many things I had already thought or felt. By doing so, it has made those thoughts and feelings clearer and more meaningful. Iain himself notes that there is little in the book that one might not arrive at by some other route. I think that is key to its impact: it speaks to an audience who have already fumbled their way to an intellectual discontent for which Iain's argument provides a shape, a story, a narrative.

Secondly, by doing so, the argument does not just give me an individual, intellectual benefit. It delivers something much more basic: a sense that I am not alone. Opportunities to talk to others – such as that provided by the Social Brain Centre – amplify this.

Thirdly, and by no means least, the book brilliantly characterises the predicament I and those others find ourselves in. The 'hall of mirrors' is perhaps the most powerful metaphor in the book, a modern answer to Plato's cave, a vivid expression of not only the cultural trap we have sprung, but also the challenge we face – all of us face, including those sympathetic to Iain's argument – breaking free.

None of the above count as behavioural outcomes of the kind a high-ranking policy-maker might be interested in; but they are of immense personal importance, and are still working their slow subtle effects on the actions I take – such as giving up half a day of my life to attend a seminar at the RSA, or making the time to write this.

In light of which, we should not ask how Iain's argument could have practical implications: it is already having them. A more fruitful question may be to ask how and why the book's impact has so far been limited. For my part, I suspect the source of the limitation lies in the book's main strength: the very things that make it so powerful for an audience of the already-discontent also confine it to that audience.

I'm not talking here about the length of the book. *Nudge*, while a short book, is probably about twenty times longer than it needed to be, yet people seem to have waded through it in their thousands. Nor am I recommending a bullet-points and toolkits approach. I am talking about rhetoric and story-telling.

In particular, the characterisation of the two hemispheres in the book worries me. I can't quite shake the image of a moustachioed and top-hatted left hemisphere tying a quaking and pathetic (both senses) right hemisphere to the train tracks. Put simply, the left hemisphere is the villain of the piece, and I am not sure this helps. Even if true, it doesn't help: one doesn't win arguments by being right.

It would help even less if people started making the all too easy leap (without Iain's blessing, I know) from a villainous left hemisphere to villainous 'left brain people'.

To recast the argument and retell the story in ways that will draw in different audiences, we – by which I mean those of us who have already bought the story as it stands and think it worthy of a wider hearing – will need to use both our hemispheres. Yes, we will need to master the facts and logic that will appeal to others' overweening left hemispheres: but we will also need to empathise and feel our way into the perspectives of fellow human beings who do still have a right hemisphere, but rely more on the perspective offered by the left – by habit, by choice, or because they feel they have to. One can sometimes win arguments by first listening and understanding.

If I have a criticism of Iain, it is not that he has written a book that appeals only to one audience. How could he have done otherwise? And what a necessary book! It is that, when asked questions about that book, his answers all too often seem to amount to little more than 'Yes, I said that on page x'. Because the book is so compendious, this is normally true. But the rhetorical effect is a strange one – as if the only way of escaping the 'hall of mirrors' is to enter a web of footnotes. The challenge, it seems to me, is not to defend the argument but to extend it; and this will require not the left hemisphere's habit of fitting everything into what it already knows, but the right brain's openness to newness and surprise in whatever it encounters.

Simon Christmas is an independent social researcher with extensive experience across the public and private sector. He is a visiting senior research fellow in the Centre for Public Policy Research at King's College London.

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Simon Christmas

John Wakefield

It provides a new sort of understanding of a problem already perceived but seemingly without solution.

It is perhaps misleading of Iain to deny that his thesis tells us anything about the world that we could not discover through other forms of human inquiry. On the contrary, it not only tells us that what we know is constrained by the structure of our brains (an uncontroversial claim), but also purports to tell us how (in what way) it does so

John Wakefield

For the purposes of the Social Brain Centre, purposes described by Jonathan as being (at least in part) ‘wanting to reach for tangible practical and policy implications’ in *The Master and his Emissary*, its author’s claims regarding the practical utility of his thesis could hardly be more unpromising. Iain comes close to denying that there are any.

Specifically, he insists that his book provides no ‘causal explanation’ of what may be going on in the world. He says that when asked what the book tells us about the world that could not be discovered by other forms of human inquiry his answer is: ‘Nothing’. He then goes on: ‘But that’s also true of a map’ – adding that whilst we could find out everything that’s on a map by trudging around the landscape in the rain, it seems more sensible not to throw the map away.

Two things may be noted here, though. Iain’s ‘But’ implies that he acknowledges that there may be a utility of some sort; and his analogy with the map seems to define that utility as being descriptive rather than explanatory.

Descriptions of things do, of course, have their uses but I rather imagine that the Social Brain Centre is looking to Iain’s book for something more than a description to get its teeth into. Yet it needn’t give up in disappointment because Iain does not eschew explanation altogether. During the discussion he said: ‘The structure of the brain constrains what we know’. Turn this around and we have a claim to an explanation: what we know is (in part) the effect of (caused by) the structure of the brain. Of course this is no more than an expression of the uncontroversial claim that because the phenomenological world is the world as it exists in consciousness and as consciousness is mediated by the brain, what the phenomenological world can be is constrained by the structure of the brain. Nonetheless, this takes us beyond description into explanation: the phenomenological world we inhabit takes the form it takes because it is constrained by the structure of the brain.

This takes us straight to the question: ‘How (in what way) does the structure of the brain constrain what we know?’ and thence into the meat of Iain’s book.

In this respect it is perhaps misleading of Iain to deny that his thesis tells us anything about the world that we could not discover through other forms of human inquiry. On the contrary, it not only tells us that what we know is constrained by the structure of our brains (an uncontroversial claim), but also purports to tell us how (in what way) it does so – namely, by the dynamic interaction within our unified consciousness of the two hemispheres each with its own discernible ‘take’ on the world. Furthermore, he claims that the nature of that interaction means that, currently, the effect of the constraint is manifest in our understanding the world increasingly according to the dominant left hemisphere’s ‘take’ on it. Put more colloquially, he is telling us that in inhabiting the world we

So is Iain trying to eat his cake and have it here – by constructing what appears to be an explanatory theory only to deny it is explanatory; and by attempting to defuse specific objections to the perceived explanatory theory by himself embracing those objections as though they were part of his argument?

John Wakefield

inhabit we are increasingly in thrall to the left hemisphere's 'take' and that this is radically affecting our behaviour and, as a consequence, the very substance of the actual world we are living in. And it is sending us to hell in a handcart.

This is surely explanation in spades. No wonder that the Social Brain Centre, with its concern to see how, more generally, what we are learning about the brain might have 'tangible practical and policy implications', pricks up its ears.

But no wonder too that a reading of Iain's book *as explanatory* raises objections. It seems to me that Ray Tallis's objections (I hope he will forgive me if I have misunderstood him) are rooted in a perfectly understandable reading of Iain's book as offering a causal explanation of our predicament. From memory, he seemed to give (at least) four reasons why he thinks it doesn't.

First, he objects that Iain's thesis explains nothing that cannot better be explained by treating the phenomenon to be explained closer to its own terms (ie not at brain level). Secondly, he argues that it is misleading to look at brain functioning solely in terms of the different 'takes' of the two hemispheres because both hemispheres are always in play in any activity and in any case there is far more to the functioning of the brain than can be understood simply by looking at any differences between the hemispheres. Thirdly, he claims Iain's argument is circular: that the structure of the brain is used to explain the phenomenological world, but what is seen in the phenomenological world is used to explain how the brain functions. And fourthly, he argues that the book is full of unsupported and tendentious generalisations; he believes this to be especially so in the historical account given in Part Two and in the final 'The Master Betrayed' section, a thinly disguised account of the contemporary world presented as an imaginary world in which the left hemisphere has finally been victorious in overcoming the right hemisphere. (Again, my apologies if I have misremembered and therefore misrepresented Ray's objections.)

What exasperates Iain is that Ray is saying nothing (Iain claims) that he has not himself said in the book. So how can what Ray says constitute a substantive critique? Iain points out that he himself endlessly bangs on making the point that he does not think that phenomena should be explained reductively at brain level and that explanations should be sought at levels appropriate to those phenomena. He constantly repeats the point that any adequate account of the relationship between brain activity and its perceived effects must acknowledge that both hemispheres are almost always in play and that hemisphere difference is far from being the only relevant factor. He makes no bones about the fact that he sees the world reflected in the structure of the brain and vice versa. And he protests that it is impossible to write history without generalising, impossible to generalise without simplifying and that exceptions can always be found to challenge any generalised historical account. Furthermore, he draws our attention to the fact that he prefaces Part Two by warning readers that the historical account they are about to read will be no different in this respect. (Apologies once more if I have not done justice to Iain's response to Ray.)

But Iain's exasperation is not only with the detail of Ray's critique of his book, detail derived from reading it as offering an explanatory

account of our world. Iain categorically denies that he is offering any causal explanations in the first place.

Explanation, description or something else?

So is Iain trying to eat his cake and have it here – by constructing what appears to be an explanatory theory only to deny it is explanatory; and by attempting to defuse specific objections to the perceived explanatory theory by himself embracing those objections as though they were part of his argument?

His insistent and surely incontrovertible point is that we should not think of the metaphoric as being opposed to the literal but rather as a stage in the evolution of our understanding of a phenomenon that may (or may not) lead to a later stage we refer to as literal understanding

John Wakefield

Perhaps (though I happen to think not). It seems to me the riddle may be unravelled by seeing Iain's argument not in terms of the dichotomy between description and explanation but in an entirely different way. So how might we otherwise regard it?

One way to do so would be through the lens of Iain's own thesis. (Palpably, this begs the question it is supposed to answer, but bear with me.)

Iain's thesis (in crude form) is that it is through the right hemisphere that we have access to the raw material that makes up the phenomenological world and that the left hemisphere then processes that material ('re-presents' it) to create a form that is more precise, certain and usable. It then persuades itself (and tries to persuade 'us') that its re-presentation is the true and certain reality. This misleads us. Iain's view is that the optimal procedure has the left hemisphere deliver its re-presentation back to the right hemisphere for re-interpretation (so to speak) in order that we should not be misled.

One of the beneficial aspects of this optimal procedure – perhaps the most beneficial and why it is optimal – is that the right hemisphere sheds the certainty with which the left hemisphere regards its re-presentation and instead sees it as more provisional, as being not the be-all-and-end-all explanation or even description of things, no matter how convincing such descriptions and explanations may seem.

One way, therefore, to see the argument about whether Iain is offering us explanation or description of how the phenomenological world comes about is to see it as an argument still being conducted solely in the left hemisphere. If only the left hemisphere would transfer its argument back to the right hemisphere, then it could be resolved by allowing the thesis to be seen in a different light – as neither an explanation of how the phenomenological world comes about (in the sense of a causal explanation, still less a reductive one) nor a mere description. Rather, his thesis might then be seen as providing 'an understanding' of how it comes about (in which, in the phrase 'an understanding', the indefinite article is quite as important as the noun).

That understanding depends fully on both the descriptive and explanatory work done by the left hemisphere but is imbued by the sense of the provisional, of the unembarrassed tentativeness about the precise status of what it conceives, characteristic of the right hemisphere. In ourselves being privy to this understanding we are persuaded we have learned something without being cocksure that we have fully solved our problems.

How might this point be made without begging the question (ie without having recourse to Iain's own thesis)? Perhaps by reflecting on what it is we would be demanding if we required his thesis to satisfy us in providing a watertight causal explanation of how the brain brings the

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phenomenological world into being. Such a causal explanation would surely have to include a watertight causal explanation of the relationship between the brain and consciousness. But we know that (as of now) such an explanation is simply unavailable. Equally, though, we believe that no explanation of consciousness (and thus of how the phenomenological world comes into being) would pass muster if it ignored the role of the brain.

In such circumstances, would we be sensible to dismiss a provisional account of how the brain, its structure and its functioning bring the phenomenological world into being simply because it failed to satisfy criteria for judging hypotheses concerning causal explanations of more amenable phenomena? And if such a provisional account strikes us as providing ‘an understanding’ that seems plausible and persuasive, would we not do better to give it attention while remaining mindful of its provisional status?

This is what it seems to me Iain is inviting us to do by discussing his own thesis in relation to metaphor. His insistent and surely incontrovertible point is that we should not think of the metaphoric as being opposed to the literal but rather as a stage in the evolution of our understanding of a phenomenon that may (or may not) lead to a later stage we refer to as literal understanding. It seems to me that Iain’s thesis provides us with ‘an understanding’ that is metaphoric and that may (or may not) one day come to be regarded as literal.

On such a view, the issue of whether Iain’s thesis is explanatory or ‘merely’ descriptive can perhaps be parked. Rather, the more appropriate questions to ask are whether the thesis, as offering ‘an understanding’ (or, as contemporary parlance would rather drearily put it, ‘a narrative’), resonates with what our other experience tells us about the world; and whether it offers anything new.

The answer to the first must surely be ‘Yes’. Iain himself has been inundated by unsolicited communications from people unknown to him testifying to the fact. Many of us, having read his book, now find ourselves inhabiting a world that seems continuously to echo it.

On the second, the answer seems also to be ‘Yes’. What he has brought together concerning what human beings now know about how the two hemispheres view the world differently surely suggests, at the very least, that there is something going on here that most of us were entirely unaware of before Iain wrote his book.

What about truth?

But resonance and novelty are not the only criteria by which such a proffered understanding should be judged. There is also the tricky issue of truth. The concept is always tricky, of course, and is perhaps the more so with regard to so loose a notion as ‘an understanding’, for which the criteria of truth may be different from the ones with which we are familiar when dealing with description or explanation.

Both in the document that Iain and Jonathan put together and in the subsequent discussion, the matter of falsifiability came up. The point was made that maybe this was not the sort of thesis for which there could be evidence that would falsify it. To many, this itself (if true) would make the thesis anathema; to others it would mean that we needed

The danger here is obvious: that the theory of left hemisphere-dominance becomes used as an explanation for everything

John Wakefield

to refine our concept of truth so that it retained meaning even when the falsifiability criterion seemed inappropriate.

For what it's worth (which may not be very much), I am not persuaded that the falsifiability criterion is wholly inappropriate here. I think (again, please correct me if I am wrong) that in our table discussion during the non-plenary session, Ray said in reply to a question from me, that while he accepted that 'at the extremes' (ie when each hemisphere is functioning wholly alone) the account Iain provides of how (in what way) each does so (ie what 'take' each has on the world) is accurate, he (Ray) was far from persuaded that this had much bearing on how the brain normally works (ie with both hemispheres operative). So I suppose if it could be demonstrated beyond doubt that the way the hemispheres function when 'alone' had no bearing whatsoever on the way they function in tandem, then I guess the thesis would be falsified. Iain, of course, goes into our current state of knowledge on this in his book; but my point is not whether or not our current state of knowledge disproves his thesis but whether, in theory, evidence could come along that would disprove it. I would suggest that, in theory, it could. But it could do so only if, in the first place, Iain's theory of brain functioning were presented as offering a sufficient causal explanation and he himself denies that that is what he is doing. Nonetheless, such evidence would clearly dent the plausibility of his account presented provisionally as offering 'an understanding'.

So with regard to truth, when we are dealing with an account, an understanding, in which explanations provide part of the content but do not presume to be comprehensive and sufficient, we are left with much less stringent criteria for deciding its truth or otherwise. The pertinent criterion may be as seemingly limp as something like whether the account is convincingly suggestive. This might seem to some wholly inadequate; hardly better than asking, for example, whether Tolstoy's fictional world 'rings true'. But if our demands on truth are no greater than this, then the convincingly suggestive may be good enough. Notwithstanding the extraordinary polymathic erudition of his book (or perhaps because of it), Iain seems to be saying that maybe we shouldn't be expecting much more, and certainly not something conclusively explanatory.

How to read the book (and how not to)

That may be all very well for minds subtle enough to recognise that there are many ways for the world to be understood and that they can't all be judged by the same criteria. But readers read books as they wish to read them and the risk is that, for all Iain's disclaimers, his book will be read as offering a causally explanatory account of our predicament, even a reductively explanatory one, because that is what our culture leads us to expect. Indeed if Iain's own thesis is to be believed, this is not so much a risk as a dead certainty.

It would not be unreasonable to suppose that Iain would see the left hemisphere as the culprit here, deliberately devaluing all other ways of understanding the world in order to create a monopoly for its own 'take'. Others might riposte that if Iain were indeed to blame the left hemisphere for this state of affairs, it might be because he himself was in thrall to his own left hemisphere-constructed theory about why we may have

How could an account that purports to offer no more than 'an understanding' be helpful here? I would suggest that it is through the force of the realisation (achieved by reading such an account), on the part of an agent already perceiving a problem in his own localised province, that that problem is reflective of a much bigger problem

John Wakefield

narrowed down the range of ways of understanding the world. But we don't need to get into an argument about whether our culture's predilection for reductive explanation over all other ways of accounting for the world is a function of left hemisphere-domination or not. We can surely agree as a matter of simple observation that that is, increasingly, the predilection. It would seem to follow, then, that no author could construct an account of, an understanding of, our world with the imaginative force and scientific rigour of Iain's book without making statements that would inevitably be read as explanatory, even reductively so.

The danger here is obvious: that the theory of left hemisphere-dominance becomes used as an explanation for everything. Eagerly misused (to quote Jonathan's fine phrase), Iain's thesis about the left hemisphere turns his 'second-favourite hemisphere' into the latest in a long line of evil agents thought to be responsible for our woes (yellow bile and the uncontrollable Id are two predecessors that come to mind).

It is hard to think how Iain himself could have warned against this danger more vigorously than he has already done. But he is perhaps the last person to be able to do so effectively. However anxious he has been to print his own health warning in bold type and capital letters it is likely to be disregarded by those swept along by the rhetorical power of his account and who have become habituated to converting such accounts into reductive explanation. In their different ways, Darwin and Keynes suffered similar problems.

It perhaps requires someone else to utter the health warnings, which is why Ray may be a necessary party-poopier. Even if he is saying only what Iain has already said (and he may dispute that), to say it from outside, as it were, may give it more force. The danger with such party-pooing, however, is that it might close down the party, something Ray insists he does not wish to do – there is much at the party he really enjoys, he says. The two disclaimers mirror each other – Iain's vehemently denying that his account is reductive and Ray's protesting that there is much that he finds of value and interest in Iain's account. Neither, perhaps, would be necessary if our culture were less predisposed to seek reductive explanation in all accounts of the world. Iain and Ray would not then seem so much at odds with each other.

Such are the inevitable consequences, I would suggest, of constructing an account of the world daring enough to transcend the categories of description versus causal explanation by being couched in the terms of what I have called 'an understanding' and then presenting it to a readership with a predilection for reducing all accounts to the form 'A causes B'.

How should the Social Brain Centre 'use' Iain's thesis?

Where does this leave the Social Brain Centre? Needing to tread with very great care, I would suggest. Palpably, Jonathan does not need to be told this. His own talk of the 'eager misuse of 'left brain thinking' and 'right brain thinking' in popular psychology and management literature', and his evident recognition of the risks he runs in succumbing to temptation ('it is so difficult, for me at least, not to want to reach for tangible practical and policy implications...') make this clear enough. Equally, though, he does not want to run away just because he might be about to enter a minefield: 'it would be a mistake to throw out the neural baby with the manic bathwater'. Put in terms of my reading of

In most cases the reaction has been that this perspective is a singularly profound contribution that reveals, in a way that is both compelling and credible, the form of the pattern underlying the most challenging issues of our time

John Wakefield

Iain's book as offering 'an understanding', one could say, simply: 'there is something very important going on here and it most certainly should not be ignored'.

My own view is that 'needing to tread carefully' means, perhaps, two things. The first is to be careful how one uses the terms. It was striking how quickly, in our discussion, the phrases 'left hemisphere' and 'right hemisphere' were being bandied about as though they were uncontentious agents in an explanatory theory. It is hard to see how this could have been avoided. Even if those using the phrases were using them as metaphors deployed in a way consistent with the provisional nature of Iain's account, the phrases would inevitably have been heard as something more solid and explanatory.

The second is for the Social Brain Centre to be extremely selective when considering which areas of practical and policy work might benefit from a reading of Iain's book.

I was perhaps a little extreme and unkind during the discussion when I said that the attempt (in the document) to relate Iain's thesis to the issue of climate change 'approached the outer margins of the barking'. On re-reading it I realised that the exchange between Jonathan and Iain on the subject was more measured than I had remembered it. Nonetheless, I think the underlying point stands. It is not that there is no relationship between Iain's thesis and climate change – what, after all, is immune to being seen through the lens of Iain's thesis? It is rather that the distance between the phenomenon to be explained (climate change) and the thing to explain it (left hemisphere dominance) is so vast as to make the explanation not only inutile but ludicrous. Iain, denying that his theory is explanatory, would be the first to say so.

But it is worth exploring why this is so. The problem of climate change, I would argue, is not that we lack adequate explanations for it, nor even ideas about how to solve it; it is that we lack an agent capable of implementing those solutions. Except in the most indirect sense, Iain's thesis provides no help in bringing into being an effective agent.

This itself is suggestive of the circumstances in which Iain's thesis might be helpful and thus of those cases of practical and policy work where the Social Brain Centre might fruitfully seek help from it: namely, in circumstances where a problem has not only already been identified but where there is an agent who wants to do something about it and is capable (in theory at least) of doing so.

How could an account that purports to offer no more than 'an understanding' be helpful here? I would suggest that it is through the force of the realisation (achieved by reading such an account), on the part of an agent already perceiving a problem in his own localised province, that that problem is reflective of a much bigger problem; that the potential consequences of that bigger problem persisting are graver than he had imagined to be the case when he saw only its local manifestation; and that to see the local problem in this bigger context throws up possibilities for overcoming the problem that might not have occurred to him unless he had seen it in this broader context. Such is the power of any account that helps us to see the familiar anew. Such, I believe, is the power of Iain's book and its capacity to be of use.

This is what I meant when I said that the value of the book to those of a practical and policy-making bent is perhaps best thought of as therapeutic.

In the simplest terms, Iain's book provides a new, bigger picture and ... an immensely suggestive one within which to understand our narrowly disaggregated problems

John Wakefield

It provides a new sort of understanding of a problem already perceived but seemingly without solution. Seen in this way, the practical value of Iain's book conforms with the old joke. 'How many psychotherapists does it take to change a light bulb? Only one, but the light bulb needs to want to be changed.' The agent needs to see a problem and to want to do something about it for Iain's broader thesis to be of potential use. This criterion, I would suggest, might steer the Social Brain Centre into selecting those cases of practical work and policy-making that might be susceptible to the beneficial influence of Iain's account of our predicament.

To give an example: governments (or at least quite a few politicians on all sides) seem aware of the deleterious effect on education of increasing government interference in what goes on in schools. But their solutions tend only to increase the bureaucratic interference, making the problem worse. (If anyone thinks the new Free School policy is an exception, they should talk to people trying to set up free schools.) Seeing the dangerously self-compounding nature of this approach in the larger context expounded in Iain's book might help politicians to realise they need a radically different approach. I am not asking anyone to hold their breath; I'm simply trying to indicate the sort of area of policy it might be productive for the Social Brain Centre to make use of Iain's book.

In the simplest terms, Iain's book provides a new, bigger picture and (in my view) an immensely suggestive one within which to understand our narrowly disaggregated problems. Understanding a problem is the first necessary stage in trying to deal with it; and for those already perceiving the need to do something about our problems, Iain's book seems to me to have the potential to be of great use. Even if what he says is still 'only a metaphor' – even, perhaps, if it only ever remains one – it is a metaphor with great power to stir the imagination. And without imagination we are sunk.

John Wakefield is an economist, writer, and former political journalist and campaigner who has worked with John Humphreys and David Owen and was previously the editor of Walden, the Sunday lunchtime political interview programme.

Afterword

We wait for evidence of the problem at the same time that the problem actually gets progressively harder to deal with. We are loading the dice against ourselves and don't even realise it

I have a friend with a background in espionage who tells me that the most important distinction for spies to keep in mind while looking for intelligence, and one that often keeps them alive, is the distinction between interesting and important. Nobody who has read this far will doubt that Iain's ideas are interesting, but the question we have been wrestling with remains more difficult: in what ways are they important?

During the course of reading Iain's work, the process of preparing and conducting the dialogue, organising the workshop, and compiling and writing this document, I have often felt somewhat overwhelmed by the effort, but never underwhelmed by the goal. The theory is big, difficult and audacious and most people don't quite know what to do with it. So, there have been times where it has felt like the drive to extract importance out of the interest has been in vain, but when I reflect on the initial motivation, and the potential prize, it feels more like we just have to try differently, or better.

Iain's work has struck a deep chord in a huge number of people from a wide variety of backgrounds all over the world. The nature of that appreciation has not simply been: 'that's a particularly good book, but one of many'. No, in most cases the reaction has been that this perspective is a singularly profound contribution that reveals, in a way that is both compelling and credible, the form of the pattern underlying the most challenging issues of our time.

The difficulty, however – and I think there is no good way of saying this in less academic language – is the ontological, conceptual, epistemological and methodological gaps between the depth and generality of the explanatory apparatus, and the personal, social and cultural phenomena that it potentially applies to. Those gaps *are* daunting and difficult, and do require a certain intellectual range and versatility, but can we not try harder to rise to the challenge? Part of me feels we are needlessly shy about trying to generate the necessary intellectual bandwidth that would allow us to place more trust in those connections, even though, granted, we have to hold so many perspectives in mind at one time to do so.

In this respect I am reminded of Bill Clinton's passing remark at the Davos Economic Forum in 2006, in which he argued that the challenge of integrating all our best ideas to solve planetary problems was that we needed a 'higher level of consciousness' to make sense of how they interrelate. At the time he made reference to the American Integral Philosopher Ken Wilber, but I feel a similar point could be made about the relevance of Iain's contribution.⁴³ I can't be sure that the work is 'true' in every detail and every sense, but for those who feel it speaks powerfully to the nature of the main challenges we are wrestling with, as I do, it is incumbent on us to do what we can to make the ideas as salient and relevant as possible.

There are two main ways that I feel we need to push harder. The first is to make more effort to think about the hemispheres working together but competing in certain ways, rather than one being ‘on’ or ‘off’ at a given time. Part of the communication challenge is that even though the argument is about both hemispheres being different phenomenologically ie having different ‘worldviews’, they are experienced together. And despite constant statements that both are valuable and necessary functionally, when it comes to the normative point about the *relatively* problematic left hemisphere ‘take’ becoming increasingly dominant, and the further point that this dominance may be self-perpetuating and self-reinforcing, even highly intelligent thinkers tend not to accommodate that point in the requisite way. For instance in the workshop, among people who had read the book or the discussion document, we still, for communicative convenience, ended up talking about ‘switching’ from ‘right brain thinking’ to ‘left brain thinking’, which is the kind of intuitive but misleading language that Iain’s work was trying to move beyond.

I sense that the subtlety of this part of the argument, which is in many ways the normative heart of the matter, and the place where the answer to the ‘so-what?’ question resides, is rarely attended to with due care. I feel most of us struggle not to think in terms of binary features (left vs right) even when what Iain is saying is something much more chilling and significant. In most cases it is always left *and* right hemispheres that are operating and need to operate, but Iain’s argument is that the predominant proclivity for most people is gradually veering towards the left – and here is the important political point – therefore influencing the future probability that we will continue to veer in that direction, with potentially disastrous consequences.

It occurs to me that this part of the theory may be best expressed through Bayesian logic, in which assumed probabilities, in this case of hemispheric balance, are adjusted in light of the evidence (in this case Iain’s arguments for cultural change, including medical evidence on the growth in certain psychiatric conditions). In this sense, curiously, I think we struggle to ‘get it’ in much the same way that we also struggle to ‘get’ the urgency for action on climate change, which is related to the fact that we wait for evidence of the problem at the same time that the problem actually gets progressively harder to deal with. We are loading the dice against ourselves and don’t even realise it.

But that’s all still rather abstract. The second, more concrete point is about our inability, despite – I hope – a fairly significant effort, to show the direct relevance of Iain’s work to major policy issues of our time. I find this frustrating because however many maps you have, they are all a part of the same world, and again there is part of me that feels we are just not trying hard enough to hold the complexity of the relationships in mind. In his book, while reflecting on a similar point, Iain quotes the American Pragmatist, John Dewey, who managed to foresee the growing relevance of neuroscientific explanations over a hundred years ago, without assuming they would have to be of a reductive or threatening nature:

I feel most of us struggle not to think in terms of binary features (left vs right) even when what Iain is saying is something much more chilling and significant

‘To see the organism in nature, the nervous system in the organism, the brain in the nervous system, the cortex in the brain is the answer to the problems which haunt philosophy. And when thus seen they will be seen to be in, not as marbles are in a box but as events are in history, growing, never finished process.’⁴⁴ (p.142)

*We cannot say:
Do X on climate
change because the
Brain is like Y, but
we can and should
say: when you are
thinking deeply and
systemically about
what to do about
climate change,
don't forget about
the constraints of
the brain*

We need to work harder to bring that kind of holistic and balanced perspective to bear. Here I think a stronger case needs to be made for – and I don’t even think we have good terms for such things – Narrative touchstones? Indirect relevance? Persuasive metaphors? In his feedback reflection John Wakefield calls it ‘an understanding’ and that might be enough. Whatever we call it, we need to find a way to give greater epistemic warrant to forms of evidence that are indirect, which brain-related evidence usually is, even though it tends to be misused to be evidence of a causal or reductive nature. Brain hemispheres constrain attention and action in certain ways, which are in turn manifest in cultural forms that serve to reinforce those forms of attention and action. We cannot say: Do X on climate change because the Brain is like Y, but we can and should say: when you are thinking deeply and systemically about what to do about climate change, don’t forget about the constraints of the brain.

The Social Brain Centre’s core focus will remain relatively practical, and our main contribution is to attempt to apply insight into human nature to the major challenges of our time. In this context, we now have a better sense of how to conceive of the role and relevance of Iain’s work, and perhaps more importantly, we have learned a great deal about the challenge of conveying the social relevance of the brain along the way.

Dr Jonathan Rowson

Director, RSA Social Brain Centre

Appendicies

Appendix 1

Some suggested questions for discussion at the RSA Workshop:

General

1. What kind of impression does the argument as a whole make on you? ie is your response broadly one of eg qualified intellectual agreement, general emotional revulsion, or renewed political commitment?
2. Does the thesis change how you view the challenges the world faces and how we might act on them? If so, why? If not, why not?

Scientific

3. Does the Science stack up? If you are not qualified to say, how much does the Scientific warrant matter to you? In what ways does the argument as a whole need ‘the brain’ to give it intellectual warrant and traction?

Philosophical

4. The shift from asking what the respective hemispheres do (functional) to asking what they are like (phenomenological) seems to be of fundamental importance to why the hemispheric perspective has social and cultural relevance. Given how much seems to follow from this shift of emphasis, how might we work to make it more intuitive?
5. How persuaded are you by the nature and strength of the links from hemispheres to individual phenomenology, to societal and cultural trends?

Behaviour change and value change

6. The link between brain and behaviour looks very different when you unpack this link through competing forms of phenomenal experience and the values inherent in them. Does this perspective support the claim that enduring behaviour change strategies depend upon promoting certain kinds of values, as argued, for instance, in the Common Cause Report. Does the hemispheric perspective add anything important here?

Practical implications

7. Meditation has been mentioned by Iain as one of the ways to ensure a greater balance between the hemispheres. In light of the argument, why doesn't it follow that more space, time

and resources should be invested in normalising meditation? If it does, how, and to whom, might that case be made most effectively?

8. If Climate Change is a problem of short-termism, denial and viewing nature as a resource to be used for profit, and these attributes fall out of tendencies of the left-hemisphere, does it follow that climate change is directly related to an imbalance of the hemispheres? If not, why not? If so, what follows?
9. From a hemispheric perspective, achieving and maintain mental health begins to look like a challenge of achieving a certain kind of balance in forms of attention. In addition to the so-called 'work-life balance', what does the hemispheric perspective tell us about the kinds of things we need to try to balance?

Education

10. It has been said that no matter what we learn about the brain, deciding what children should learn will always be a value judgment. If value judgments are at least partly a function of how the hemispheres interact, and deciding what children might benefit from learning relates to hemispheric imbalances that play out culturally, does this claim still stand up? Does it matter?

Appendix 2: RSA Workshop, 5th November 2012⁴⁵

We invited a range of interested parties from a variety of backgrounds to read the discussion document and further explore the strength and relevance of the thesis in a four and a half hour workshop, hosted on the afternoon of 5th November 2012.

In the first session, our main aim was to examine what participants thought and felt about the strength and significance of the thesis in general terms. We tried to focus on central assumptions and critical turns in the argument, and reflect on, for instance, how well they hold up, what has been left unsaid, and why. We also sought general reflections on the role of ‘root causes’ and ‘grand theory’ in the context of addressing contemporary challenges. And in so far as generalisations are made we wanted some sense of the ways in which they are helpful or unhelpful.

This session was opened by a short speech by Ray Tallis (reproduced as the first feedback piece in the previous section) who was largely very sceptical of the whole endeavour.⁴⁶ Iain McGilchrist responded to the points directly before the general discussion began. We broke into three groups after about 90 minutes for a more informal discussion that was captured by note-takers at each table.

In the second session, we tried to tease out what participants thought and felt about the nature and extent of the practical relevance of the thesis. We sought imaginative responses to the ‘so what?’ question that are to some degree tractable. This objective, of course, is ambitious, and not obviously wise, but it was clear to the group that the gap between the nature of the hemispheres and whatever social, economic, ecological or political issue was at hand would always have to be mediated in some way, for instance through phenomenology, values, bodies, relationships or institutions. We also sought reflections on the degree of practical ‘warrant’ afforded by the thesis, and whether this warrant, in so far as it exists, applies to specific issues, or is of a more general nature.

This session was opened by Matthew Taylor who was broadly impressed by Iain’s argument, but questioned how the work could be applied in practice without being operationalised and therefore instrumentalised in a way that didn’t reinforce the left hemispheric tendencies that the thesis suggests we should try to guard against.

Rather than give a blow-by-blow set of minutes, I have focussed below on what felt to me to be the critical questions and central outcomes of the discussion. I have tried to exclude material that was already addressed directly in the discussion between myself and Iain, and tried to minimise duplication of material that was addressed in the feedback pieces.⁴⁷

From 'The Book' to 'The Argument'

'Where is the edge of this knowledge? What are the known unknowns?'

There was some instructive equivocation about the most appropriate reference point for the discussion. The book is the most tangible and fully developed expression of the ideas as a whole, but the purpose of the discussion document and workshop was to go beyond reviewing the book, towards considering the strength and significance of the thesis or argument. If Iain's work is going to have enduring 'impact', it will be because the ideas live and breathe without depending on the book or its author. The aim was to move beyond the appreciation of a creative intellectual and literary contribution towards the assessment of the relevance and versatility of the author's major ideas, which have to become accessible outside of their textual moorings if they are going to be helpful to those who cannot refer to the intricacies of the book in perpetuity.

This emphasis on the ideas rather than the text creates two challenges. The first is that it leaves it open to Iain and those who value the depth and richness of the book to argue that the only fully adequate answer to a given question is always the book as a whole, and its references, which did happen a few times in the workshop. The other challenge is that, as psychiatrist Jeremy Holmes wrote in an extended review of Iain's work, it brings into sharper focus the question: 'What exactly is McGilchrist saying?'⁴⁸ In his opening remarks, Ray Tallis highlights:

'The indicative, as opposed to the subjunctive, mood in which *The Master* is written suggests that I.M. feels that he is dealing with certain facts (left hemisphere according to his own thesis) rather than uncertain possibilities (right hemisphere according to his thesis); for example, his assertion that 'the left hemisphere's purpose is to use the world. It sees everything – education, art, morality, the natural world – in terms of a utilitarian calculus only' sounds pretty certain to me.'

As part of a fuller response, Iain referred to his book, where his extensive references make the range and degree of his epistemic caution and confidence much clearer. He also expressed the bind he often finds himself in when presenting his work in public forums, in which he typically only has up to about 45 minutes to explain his framework, so he has to generalise and simplify the claims, but then he gets criticised for it being too generalised and simplified!

In this respect Ray Tallis's reference to 'gigantic generalisations (that overlook the teeming ocean of particulars)' is a striking expression, but Iain responded by simply stating that for almost any generalisation, one can find evidence that supports or contradicts the claim. In this respect, the question seems to be whether the balance of evidence supports the way the generalisation is used rhetorically, and on that point, the book as a whole is the appropriate reference point.

Iain added that one way of summing up what he was trying to do in a more general sense is 'to raise awareness that we are constructed to see things that we currently do not see'. He also referred to the gradual erosion of 'sources of intuitive life', an evocative expression that has stayed with me.

Iain also expressed sympathy for Guy Claxton's reaction to his work, which was a more qualified mixture of admiration and ambivalence. Guy said that he found the work beautiful and admirable, but it also left him a little uneasy. He likened the discussion document to 'a rabbit warren', and felt that through Iain's knowledge of the topic and fluency in so many areas, that he could often duck down into a different rabbit hole to get out of really answering some of the direct questions that were posed there. Guy also made an instructive comparison with Stephen Batchelor's description of his experience of 'escaping' from Tibetan Buddhism, which was related to the experience of being inside 'a highly elaborate and fully internally consistent bubble that, from the inside, offers vast explanation and comfort, but from the outside looks increasingly ad hoc and dubious.'^{49, 50}

In a later workshop discussion Guy added that the ambivalence was grounded in the feeling that the work explains too much in general, and therefore too little in particular. In this context he posed the pertinent question: 'Where is the edge of this knowledge? What are the known-unknowns?' In the breakout discussion he also highlighted the lack of empiricism and rigour applied to some of the anecdotal evidence eg examples about children not being able to read faces, which may not stand up in face of empirical educational research.

In a similar vein, Theresa Marteau referred to McGilchrist's work as 'a grand theory with a small g', highlighting its enormous scope, but she also felt the challenge in engaging with the work is that Iain is 'fluent in so many epistemologies' that it is hard to experience traction on the main points of contention. In another breakout session the whole group was unclear whether Iain's work was best approached as an argument with a conclusion, or a fleshed-out description of what many already implicitly feel. I don't see any way to resolve this tension between the book and the argument other than becoming clearer about what the most salient and relevant expression of the argument is.

Metaphors or facts (or both?)

'He may argue that he is talking only metaphorically but the metaphors are often presented as literal truth and they are necessary to carry his argument.'

In our discussion document, Iain was crystal clear (beginning of part one) that his argument is not merely a metaphor and yet many still feel that this is one of the best ways to characterise it. For instance, Simon Christmas suggested that it doesn't matter if it is 'all a metaphor' because it was an exciting journey Iain took through the book to get to that metaphor, and how Iain conducts the journey is liberating. Ray Tallis remarked that Iain '*... may argue that he is talking only metaphorically but the metaphors are often presented as literal truth and they are necessary to carry his argument.*' In this respect Simon Christmas's is right to point out that while a good metaphor is great for the people who already reach out for this type of explanation, for others, the 'truth' of the matter matters a lot.

I suspect Iain himself is one of those people! He is no different from anybody else in having to use metaphors while talking about mind, brain

and consciousness, and is suitably scientific in choosing to be tentative on matters where the evidence is equivocal. That said, to my mind he has always been clear that he intends his argument to be understood as a statement of probable fact rather than as a suggestive metaphor. The highly complex relationship between the brain hemispheres and the even more complex account of how this relationship plays out in cultural terms often has to be described in metaphorical language, most notably as *'The Master and his Emissary'*. However, the necessity to communicate through metaphors doesn't mean that the relevant phenomena underpinning these metaphors are themselves merely metaphorical!

For instance near the end of section 2.4 Iain reiterates that he is stopping short of certainty because he feels that is appropriate but adds: 'It would be quite extraordinary if the differences I refer to, the same distinctions that artists and philosophers have for centuries pointed to as irresolvable conflicts in the human mind or spirit, were not associated with the division between the hemispheres, given that the evidence from brain science, that that is precisely what they are, is so extensive, coherent and compelling.' So while the argument contains metaphors, it doesn't mean that it is a metaphor, which still begs the question of how best to characterise 'it'.

Description or explanation?

'So does the explanation lie in the constraints?'

Part of the challenge with establishing agreement on the argument is that it's difficult to know what we are referring to when we ask: 'Is *it* true?' In this respect John Wakefield's contribution was invaluable: Before thinking about 'practical implications' he said it would be helpful to agree 'Where between description and explanation does this argument stand?' On the one hand Iain said in the workshop that he is not saying the brain offers '*an* explanation, never mind *the* explanation' but for his argument more broadly he does try to use the framework to try to explain various phenomena in what Ray Tallis calls 'the extracranial world'.

We began to speak of the brain as a 'constraint' on how we perceive and act, with Iain's hemispheric perspective offering a particular account of the nature of those constraints in terms of competing patterns of attention and values. John Wakefield observed that perhaps it was these constraints that were the basis of the explanation for various phenomena. I took this to mean that while much of the argument is about *describing* hemispheric differences, the aspect of those differences that is used to *explain* worldly phenomena is the sense in which they constrain (rather than cause) our perception and action.

Iain responded by giving the example of air going through an oboe; the oboe doesn't make the sound as such, but rather constrains the air in such a way that a particular sound is expressed. Similarly, it is not that the brain directly causes particular forms of attention or values, but neural constraints can still in a manner of speaking cause things to happen. This nuanced perspective gives us a firmer basis on which to try to ground practical suggestions and recommendations.

In the context of these scholastic qualifications, it was good to hear Rita Carter say that Iain ‘doesn’t go far enough’. She went further and suggested that it felt like Iain doesn’t like what he’s saying enough, and needed to toughen up the argument and become less tentative about the practical relevance of his work.

In a similar vein, Nicholas Spice highlighted that he felt conversations about the ideas were more often about trying to ‘catch out’ Iain rather than appreciating the radiation of the theory.

Attention

‘The message of the book is really about attention, intention, and coping with uncertainty.’

Mark Vernon seemed to appreciate this wider radiation of the theory and stated that, for him, ‘the message of the book is really about attention, intention, and coping with uncertainty.’ He also felt that some of the concern about causation above was not necessarily pivotal. The book has an Anglo-American slant, but the ideas themselves move into a more continental view which is less about pinning down causation and more about accepting the fact that causation is mysterious.

This contribution tallied with my own claim that it was often more helpful to speak about two patterns of attention than two hemispheres, because patterns of attention were relatively tangible and experiential in a way that neural anatomy is not. There seemed to be broad agreement with this claim, but much of it felt pragmatic in nature, related to the relatively controversial nature of brain-based explanations. For instance, John Wakefield advised us not to underestimate the enormous rhetorical power of reductionist explanations, and the equally vehement reactions to such arguments. Speaking at the level of attention rather than hemispheres is one way around that, but you do then lose whatever prestige is attached to brain-based explanations, which feels appropriate to some and regrettable to others. Again it seems to come back to what you want to do with the ideas, and why.

Values

‘What are values if not neurally instantiated dispositions?’

Tom Crompton’s contribution was useful in respect of this question. He highlighted parallels to the WWF/Common Cause report, where they explore the importance of social values and the dynamic tension between self-enhancement values and self-transcendent values. Similarly, the left hemisphere dominance is in a perpetual cycle: market forces come into more areas of public life, which strengthen self-enhancing values, which then fuels market forces.

Iain seemed to broadly agree with the form of the parallel, even if it relied on different forms of evidence. He referred again to the ‘hall of mirrors’ expression, in which we are increasingly surrounded by things that reflect back on us the ‘take’ of the left hemisphere.

While it may be relatively straightforward to translate competing and complimentary hemispheric perspectives to patterns of attention, linking these patterns of attention to particular sets of values is somewhat more complex and contentious, because it is less directly related to the evidence or informed by our experience. However, again there may be some danger in becoming *too* tentative. Indeed, Guy Claxton raised the pertinent question: ‘What are values if not neutrally instantiated dispositions?’

Uncertainty

‘Whitehall is dominated by not being able or prepared to deal with uncertainty.’

One of the more tangible differences between hemispheres is the attitude to certainty, and the perception that there is a growing lack of tolerance for, and appreciation of, uncertainty was highlighted by several participants. Many felt the dislike of uncertainty was related to a misunderstanding of the nature of risk, which is often framed as something bad to be avoided, rather than something endemic and probabilistic that has to be intelligently understood and negotiated.

Simon Christmas, who has experience working as a researcher for government suggested that Whitehall is dominated by not being prepared to deal with uncertainty, adding that he spends a great deal of time trying to get civil servants to think more holistically about policy challenges, rather than focussing exclusively on measurable outcomes.

Theresa Marteau also highlighted that people often wrongly equated science with certainty, when in fact in most cases ‘evidence’ is deeply uncertain, so science is not in itself about being reductionist. There is a dominant narrative that we cannot be open to uncertainty, which perhaps means we need a change in narrative. However, Rita Carter and Nathalie Spencer both emphasised that for many, uncertainty is deeply uncomfortable and strategies to minimise or avoid it are always likely to be attractive.

Applications

‘Instrumental questions always lead to bureaucratic answers.’

This tension in using the hemispheric perspective to try to promote a more holistic view is that to make Iain’s ideas relevant, one may have to compromise in certain ways. Matthew Taylor mentioned that to give the ideas traction in the world of policy, it would be necessary to operationalise and therefore instrumentalise them, which, in this case, would run the risk of corrupting them.

To illustrate, Iain’s (not verbatim) response to Matthew’s question: ‘How do we actually change culture?’ was broadly that we don’t have to change it through effort, but rather through opening people’s eyes without pushing or driving change physically. Both acknowledged the relevance of their respective backgrounds in policy and psychiatry as relevant to this difference of emphasis. One key point of agreement was

that, as Matthew put it, while Iain is wary of the language of cause and effect, he does very much want to achieve effect, which begs the question of how, and where to start?

Matthew felt that it was a mistake to focus on policy, where there may be intractable institutional inertia, but that it might have relevance to politics more broadly conceived, where people were crying out for fresh forms of insight and inspiration about the nature of the political process. He argued that while politics should be about inspiration and connection, it has become merely adversarial and technocratic. All political neoliberalism works within the political process rather than challenging the nature of it. In this context the question becomes what Iain's ideas might mean for renewing democracy and motivating political activism, but it might have broader application to our understanding of what makes for inspiring political leadership, for instance in terms of the role of narrative in contextualising policy proposals.



Tom Crompton seemed to strongly disagree with this general emphasis on policy and politics. He suggested it would be peculiar if the best place to start was the policy field where there are vested interests and entrenched patterns of behaviour. He felt it was more promising to begin with several spheres where left hemisphere domination is less intensely felt and more easily resisted, for instance in the realms of nature, art and community. In his experience many charities are increasingly dominated by left hemisphere thinking, because they have to constantly justify their economic efficiency and effectiveness. In a further email communication, he developed this point:

'I'm tired of the hackneyed argument, often trotted out unreflectively within NGOs, that simply because we position ourselves closer to people in power (CEOs, MPs, etc) then our change strategies must be more effective.

I don't believe this is necessarily the case. There is a countervailing argument that people in power will be highly constrained in what they can ask for – for both institutional and personal reasons. The personal reasons arise both because positions of power are likely to attract people

with particular values (or, perhaps, relatively greater left hemisphere dominance) and because these people then go to work every day in contexts that re-affirm these values (or this dominance).

It seems to me that the profound challenges which Iain puts out require an engagement further removed from entrenched power: with social movements, for example.'

Iain said the key was always to work for a balance between right and left, not to eliminate one or the other. Good policies will result from not trying to control every possible outcome in society, but we will need to have some technocrats and some management. The key is not to lose sight of what such things are for, what they ultimately serve.

Matthew Taylor suggested that part of the challenge with thinking of how to 'use' the hemispheric perspective is that *'Instrumental questions always lead to bureaucratic answers'*. He contrasted this way of trying to use a particular set of ideas to achieve a particular objective with companies that genuinely care for what they do, stating that the latter are more successful, and emphasised the need to create a shared mission and goal to contextualise people's efforts.



Adam Cooper remarked that Iain's work resonated strongly with his lived experience of working in government, where a left-hemispheric technocratic tendency tends to dominate. To illustrate he mentioned a presentation on the investment in renewable energy that totally missed out all contextual/ moral/ emotional factors that might inform the issue, focussing purely on economic costs and benefits. He added that there was a more general risk of units of analysis being driven into boxes and that social sciences other than the relatively hegemonic discipline of economics needed to respond to this challenge.

Dangers

‘Why do we want to say something about the brain in order to make these points?’

Many participants argued that there was a need to prevent people taking Iain’s ideas, a very difficult nuanced framework, and simplifying it in a way that undermined its wider relevance and value. Theresa Marteau added that the simplification of the argument can lead to misguided authority, and potentially basing policy on profound misconceptions, including the general danger of thinking everything can be explained through biological science.

Joe Hallgarten was not convinced of the argument for the growth in left hemispheric domination, felt that ‘some generalisations strike you as more valid than others’ and said there was a danger that we reflexively attribute something we don’t like (ie consumerism) to left brain domination. More generally there is a danger of applying left brain problematic to everything we don’t like.

Ray Tallis posed the more fundamental question of why we want to say something about the brain in order to make any of these points. In most cases, there is a danger of thinking that the extra references to the brain appear to give extra warrant for a particular position, without actually doing so.

Balance

‘Does this thesis give us the confidence and liberation to start describing things honestly?’

Siva Thambisetty questioned the nature of the ‘balance’ between hemispheres that was presented as optimal, suggesting that this might require forms of spiritual or psychological progress that may not be available to the population at large. This comment arose in the context of a more general discussion about whether ‘balance’ meant integration of hemispheric perspectives or regular alternation between them. For instance David Archer commented: ‘Using either hemisphere is rather situational, so *could* we choose to bring both together? And how easy can we choose to switch the dominance of each on our work?’ Or as Nicholas Spice put it: ‘Is it AB or A+B?’

In this context, Mark Williamson remarked that in the boardroom, many actually make decisions based on broadly right-hemispheric perspectives, but they typically justify them with left-hemispheric rationalisations. ‘So does this thesis give us the confidence and liberation to start describing things honestly?’ A further example on the same point was the absurdity of scoring applicants at job interviews when it is almost an open secret that we typically choose the candidates that we ‘like’ and retrofit the scoring process to accommodate that preference.



Constraints

‘The last few centuries were about freedom from external constraints. Now, we are still seeking freedom, but from internal constraints. We need to understand these constraints before we can change them. So this may be uncomfortable, but necessary work.’

Matthew Taylor’s quote above was a fitting close to an RSA Workshop because it fits directly with RSA’s 21st Century Enlightenment mission,⁵¹ and echoed a previous publication on conceptions of liberty by RSA Director of Programme, Adam Lent.⁵² Most participants seemed to share the desire to become more aware of our own biases, in ways that will help us be more reflective and effective. It is not controversial to say that the brain constrains what we can know and how we can know, which in turn influences what we are capable of thinking and doing. Becoming aware of these types of constraint is at least therapeutic and deeply attuned to RSA Social Brain’s emphasis on the importance of reflexivity, but it may also be simply necessary if we are going to face up to the complexity of the major challenges of our time.

Endnotes

1. McGilchrist, I. (2009). *The Master and his Emissary: The Divided Brain and the Making of the Western World*. New Haven: Yale University Press. Page 237.
2. Tallis, R. (2011). *Aping Mankind: Neuromania, Darwinitis and the Misrepresentation of Humanity*. Durham: Acumen Publishing. See also Taylor, M. and Tallis, R. (2011). Neuromania: The Possibilities and Pitfalls of our Fascination with Brains [RSA event, online], available at: www.thersa.org/events/video/vision-videos/neuromania-the-possibilities-and-pitfalls-of-our-fascination-with-brains See also Rowson, J. (2011) Are we Neuromaniacs?, RSA blogs: www.rsablogs.org.uk/2011/socialbrain/neuromaniacs/
3. Abi-Rached, JM. and Rose, N. (2010). The Birth of the Neuromolecular Gaze. *History of Human Science*. 23 (1): 11–36.
4. See, for example, Poole, S. (2012). Your brain on pseudoscience: The rise of popular neurobollocks. *New Statesman* [online]. Available at: www.newstatesman.com/culture/books/2012/09/your-brain-pseudoscience-rise-popular-neurobollocks?quicktabs_most_read=1 To be fair to the author, Poole acknowledges the value of genuine neuroscientific research, and is concerned about its misuse rather than the science as such. However, the term ‘neurobollocks’, like its predecessor, ‘psychobabble’, gives rhetorical ammunition to those who reject the relevance of the whole body of evidence on principle, rather than through an understanding of the details on a case by case basis.
5. For further details, see Rowson, J. (2011). *Transforming behaviour change: Beyond nudge and neuromania*. RSA publication available at: www.thersa.org/__data/assets/pdf_file/0006/553542/RSA-Transforming-Behaviour-Change.pdf
6. McGilchrist, I. (2009). *The Master and his Emissary: The Divided Brain and the Making of the Western World*. New Haven: Yale University Press.
7. An extensive set of feedback responses are available on Iain McGilchrist’s website at: www.iainmcgilchrist.com/comments.asp
8. For video and audio of the event see: www.thersa.org/events/audio-and-past-events/2010/the-divided-brain-and-the-making-of-the-western-world. For RSAanimate see: www.youtube.com/watch?v=dFs9WO2B8uI. For my Blog response shortly after the talk see: www.rsablogs.org.uk/2010/socialbrain/master-emissary
9. Personal communication. Kate Raworth recently spoke at the RSA about social and planetary limits in ‘Doughnut Economics’; available at: www.thersa.org/events/audio-and-past-events/2012/doughnut-economics-creating-a-safe-and-just-space-for-humanity
10. For a fuller discussion of the relevance of reflexivity to the Social Brain’s work, please see: Rowson, J. (2011). *Transforming behaviour change: Beyond nudge and neuromania*, RSA publication. (Section 2.1)
11. Midgley, M. (2010). Mary Midgley enjoys an exploration of the left-brain/ right-brain divide [Review of the book *The Master and his Emissary: The Divided Brain and the Making of the Western World* by Iain McGilchrist]. *The Guardian* [online]. Available at: www.guardian.co.uk/books/2010/jan/02/191 McGilchrist, I. (2009). *The Master and his Emissary: The Divided Brain and the Making of the Western World*. New Haven: Yale University Press. Page 96.
12. McGilchrist, I. (2009). *The Master and his Emissary: The Divided Brain and the Making of the Western World*. New Haven: Yale University Press. Page 96.

13. Quiggin, J. (2010). *Zombie Economics: How dead ideas still walk among us*. Princeton: Princeton University Press.
14. (From Iain McGilchrist) Interestingly this also reflects the relationship between these two kinds of thinking, that of the left hemisphere and of the right: the left hemisphere cannot understand the value of what the right contributes, whereas the right does understand the value of what the left contributes. This is the basis of the story behind the title *The Master and his Emissary*. The story is as follows: There was once a wise spiritual master, who was the ruler of a small but prosperous domain, and who was known for his selfless devotion to his people. As his people flourished and grew in number, the bounds of this small domain spread; and with it the need to trust implicitly the emissaries he sent to ensure the safety of its ever more distant parts. It was not just that it was impossible for him personally to order all that needed to be dealt with: as he wisely saw, he needed to keep his distance from, and remain ignorant of, such concerns. And so he nurtured and trained carefully his emissaries, in order that they could be trusted. Eventually, however, his cleverest and most ambitious vizier, the one he most trusted to do his work, began to see himself as the master, and used his position to advance his own wealth and influence. He saw his master's temperance and forbearance as weakness, not wisdom, and on his missions on the master's behalf, adopted his mantle as his own – the emissary became contemptuous of his master. And so it came about that the master was usurped, the people were duped, the domain became a tyranny; and eventually it collapsed in ruins.
15. Pinker, S. (2011). The Better Angels of our Nature [RSA event, online]. Available at: www.thersa.org/events/audio-and-past-events/2011/the-better-angels-of-our-nature
16. Ridley, M., Taylor, M. (2011). Angus Millar Lecture 2011- Scientific Heresy [RSA event, online]. Available at: www.thersa.org/events/audio-and-past-events/2011/angus-millar-lecture-2011-scientific-heresy
17. Lent, A. (2012). *Generation Enterprise: The Hope for a Brighter Economic Future*. RSA publication available at: www.thersa.org/action-research-centre/enterprise-and-design/enterprise/generation-enterprise
18. Bennett, M, and Hacker, PMS. (2003). *Philosophical Foundations of Neuroscience*. Oxford: Blackwell Publishing.
19. Grayling, AC. (n.d.) In Two Minds. [Review of the book *The Master and his Emissary: The Divided Brain and the Making of the Western World* by Iain McGilchrist]. Literary Review [online]. Available at: www.literaryreview.co.uk/grayling_12_09.html
20. Available at: www.iainmcgilchrist.com/comments.asp
21. See The Human Brain: Right and Left, Nov 26th 2009. Available at www.economist.com/node/14959719
22. McGilchrist, I. (2012). *The Divided Brain and the Search for Meaning: Why We Are So Unhappy*. New Haven: Yale University Press.
23. See www.telegraph.co.uk/news/politics/ed-miliband/9544522/Ed-Miliband-interview- I-want-to-save-the-capitalism-my-father-hated.html
24. See Taylor, M. (2012) 'The Power to Act: A New Angle on our Toughest Problems'. Available at: www.thersa.org/events/audio-and-past-events/2012-the-power-to-act-a-new-angle-on-our-toughest-problems
25. It is worth mentioning here that in this discussion, for the sake of keeping this publication relatively short and focussed on practical implications we do not cover the historical analysis that forms the second part of *The Master and his Emissary* in any detail. The analysis of historical development from the Ancient World, to the Renaissance and Reformation, to the Enlightenment,

to Romanticism and the Industrial Revolution, to the Modern and Post Modern Worlds, is both too sweeping and too intricate to further summarise in any satisfying way, so while the features of left-hemisphere dominance in the present are discussed at length, the case that the left hemisphere has gradually become more dominant at a cultural level over historical time is taken as a given on the basis of the evidence unpacked in Iain's book. In the workshop Joe Hallgarten expressed doubt about this part of the argument, which was useful because it is entirely reasonable to have that doubt on the basis of the discussion document alone. In different parts of sections one and two, we do explore the theoretical case made for the nature of epigenetic evolution which is the subject of chapter seven of the book: *Imitation and the Evolution of Culture*. Moreover, although not evidence in itself, it is noteworthy that Iain's book has received positive reviews from several eminent historians, as mentioned in section 2.2. On reflection, for this particular part of the argument, I feel that to develop an informed opinion on this historical perspective, there is no good substitute for critically engaging with the historical analysis in the second half of the book.

26. Compton, T. (2010) *Common Cause: The Case for Working with our Cultural Values*. WWF publication. Available at: http://assets.wwf.org.uk/downloads/common_cause_report.pdf
27. Crawford, M. (2009). *The Case for Working with Your Hands: Or Why Office Work is Bad for Us and Fixing Things Feels Good*. London: Penguin.
28. www.neweconomics.org/publications/21-hours
29. Since the evidential basis of this point feels particularly important I asked Iain for a fuller set of references rather than just directing the reader to his book as a whole: "In relation to sees more, there are a huge number of possibilities, as this is one of the principal points of my book; but for the pure neurological breadth of attention point, see Mesulam, M.-M., 'Behavioral neuroanatomy: large-scale net-works, association cortex, frontal syndromes, the limbic system and hemispheric specialization', in Mesulam, M.-M. (ed.), *Principles of Behavioral and Cognitive Neurology*, Oxford University Press, Oxford, 2000, pp. 1-120; and Deouell, L. Y., Ivry, R. B. & Knight, R. T., 'Electrophysiologic methods and transcranial magnetic stimulation in behavioral neurology and neuropsychology', in Feinberg, T. E. & Farah, M. J. (eds.), *Behavioral Neurology and Neuropsychology*, 2nd edn., McGraw-Hill, New York, 2003, pp. 105-34
 In relation to more in touch with reality, again this is one of the great themes of my book, and is evidenced in many ways, but see Deglin, V. L. & Kinsbourne, M., 'Divergent thinking styles of the hemispheres: how syllogisms are solved during transitory hemisphere suppression', *Brain and Cognition*, 1996, 31(3), pp. 285-307.
 In relation specifically to higher intelligence: O'Boyle, M. W. & Benbow, C. P., 'Enhanced right hemisphere involvement during cognitive processing may relate to intellectual precocity', *Neuropsychologia*, 1990, 28(2), pp. 211-16; Gorynia, I. & Müller, J., 'Hand skill and hand-eye preference in relation to verbal ability in healthy adult male and female right-handers', *Laterality*, 2006, 11(5), pp. 415-35."
30. In 2013 The RSA Social Brain Centre will be working on a two year project provisionally titled: "*Spirituality, Tools of the Mind and the Social Brain*" designed to reconceive the idea of the spiritual on the basis of new understandings of human nature.
31. For further details see www.thersa.org/_data/assets/pdf_file/0008/563534/Cabbies,-Costs-and-Climate-Change.pdf
32. See Attenborough, D. (2011) RSA President's Lecture: People and Planet. Available at: www.thersa.org/events/audio-and-past-events/2011/rsa-presidents-lecture-2011

33. Sandel, M. (2012). *What Money Can't Buy*. London: Penguin.
See also: Sandel, M. , (2010). Justice: What's the Right Thing to Do? [RSA event, online]. Available at: www.thersa.org/events/video/archive/michael-sandel---justice-whats-the-right-thing-to-do
34. See for example: Are The Greeks the Hardest Workers in Europe? BBC website, 26 February 2012 Available at www.bbc.co.uk/news/magazine-17155304
35. Levels of generalised social trust in the UK are low and getting lower. The proportion of people who say that they generally trust other people dropped from 60% in 1959 to 30% in 2005 and has declined further since then. Green, A., Janmaat, J.G. and Cheng, H. (2011). 'Social Cohesion: Converging and Diverging Trends', *National Institute Economic Review*, No 215, pp 6–22. While this pattern is reflected globally, the most severe declines in trust are to be found in the UK and the US.
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37. Read, R. (2012) The Master and his Emissary Book Review. *Phenomenology and The Cognitive Sciences*, Springer Science, DOI 10.1007/s11097-011-9235-x
38. For details of the workshop, including a thematic analysis of the discussion, please see the appendices.
39. Pickett, K., and Wilkinson, R. (2010) *The Spirit Level: Why Equality is Better for Everyone*, Penguin. Also see my blog response to an RSA debate on the subject: www.rsablogs.org.uk/2010/social-economy/statistical-cat-fight/
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44. Quoted on page 142 of *The Master and his Emissary*, and sourced from review article by Arran Gare in *Cosmos and History: The Journal of Natural and Social Philosophy*, vol. 8, no. 1, 2012 Quote on p430.
45. Attendees: 1. Iain McGilchrist, author & psychiatrist 2. Professor Guy Claxton, research director, Centre for Real World Learning 3. Professor Theresa Marteau: director, Behaviour and Health Research Unit, University of Cambridge 4. Raymond Tallis, author of '*Aping Mankind: Neuromania, Darwinitis and the Misrepresentation of Humanity*' 5. Tom Crompton, change strategist, WWF, and author of *Common Cause: The case for working with our cultural values* 6. Mark Williamson, Director, Action for Happiness 7. Mark Vernon, journalist, Author 8. Rita Carter: science writer, lecturer and broadcaster 9. Nicholas Spice, publisher, London Review of Books 10. Adam Cooper, neuropsychologist and head of social science engagement, Department of Energy and Climate Change 11. David Archer, director of Socia, and RSA Trustee 12. John Wakefield, political journalist and broadcaster 13. Simon Christmas, independent social researcher 14. Siva Thambisetty, lecturer in intellectual property law, London

School of Economics 15. Matthew Taylor, CEO RSA 16. Jonathan Rowson, director, RSA Social Brain Centre 17. Joe Hallgarten, director of education, RSA 18. Emma Lindley, senior researcher, RSA Social Brain Centre 19. Nathalie Spencer, senior researcher, RSA Social Brain Centre 20. Plamena Pehlivanova, RSA International.

46. For the full reaction, see the first reflection in section two. For a wider discussion of related issues see: Tallis, R. (2011) *Neuromania? The possibilities and pitfalls of our fascination with brains* [RSA event, online]. Available at: www.thersa.org/events/audio-and-past-events/2011/neuromania-the-possibilities-and-pitfalls-of-our-fascination-with-brains See also a response to that RSA event: Rowson, J., (2011) *Are we Neuromaniacs?* [online blog post]. Available at: www.rsablogs.org.uk/2011/socialbrain/neuromaniacs
47. A full audio recording of the plenary discussions has been stored by the RSA for reference.
48. Holmes, J. (2012) Book Review [Review of the book *The Master and his Emissary: The Divided Brain and the Making of the Western World* by Iain McGilchrist]. *Psychoanalytic Psychotherapy*, Vol. 26, No. 2: 160–170
49. This exact wording came through a personal email communication.
50. Batchelor, S. (2010) *Confessions of a Buddhist Atheist*. New York: Random House.
51. See Taylor, M. (2010) *21st Century Enlightenment*, RSA, Available at: www.thersa.org/about-us/rsa-pamphlets/21st-century-enlightenment
52. Lent, A. (2011) *On Liberty*. RSA Journal, Spring 2012. Available at: www.thersa.org/fellowship/journal/archive/spring-2012/features/on-liberty

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