Iain McGilchrist – The Divided Brain Interview by Iain McNay

https://youtu.be/U2mSl7ee8DI Published April, 17, 2014

Iain McN: Hello, and welcome once more to conscious.tv. My name is Iain McNay, and my guest today is Iain McGilchrist. Hi, Iain.

Iain McG: Hello, Iain.

Iain McN: And Iain has written what's turned out to be a classic book about the brain. The full title is The Master and His Emissary: The Divided Brain and the Making of the Western World. It came out in hardback, now in paperback, and I'm told there's a new paperback edition. There's also an e-book, which I also read, that I found very accessible because the e-book is quite a short book: The Divided Brain and the Search for Meaning, 'cause this [holding up Master paperback] is a weighty tome, about four hundred thousand words. So you need more than a wet Sunday afternoon for this one, to get through it.

So, Iain, you've had quite a chequered life. You live on the Isle of Skye, and I've been once to the Isle of Skye – I thought it a very beautiful place.

Iain McG: Yes.

Iain McN: I know you live quite remotely. And you were working as a psychiatrist in London...

Iain McG: That's right.

Iain McN: … for many years. But this book took you twenty years.

Iain McG: Yes.

Iain McN: And it's very much not only a labour of love, but it's something that's driven you, hasn't it, to put it all in writing?

Iain McG: I think it has. It was one of those things that I wanted to do before I died, and I didn't particularly mind about anything else [laughing]. It's a book the drive for which goes back a long way. I've never really bought, from my teenage years onwards, the reductionist account of the world. In particular, I remember doubting that the sum of the parts was the same thing as the whole – before I had any way of articulating that. And I remember also thinking that nature, the world

around us, was not inanimate or inert but responsive to us and that our attitude to it made a difference. Also, I remember at school that Plato was very important, being told that Plato held that all the things that we have in this world are just sort of pale shadows – really, imperfect copies – of abstract ideas. And I equally heard that Aristotle thought almost the reverse: that our ideas are drawn from our experience. And it always seemed to me that I was an Aristotelian. And because of these interests, I went up to Oxford with the intention of studying theology and philosophy.

But in fact, I ended up, for various reasons, studying literature. Then I was lucky enough to get a fellowship at All Souls College, which gave me seven years in which to pursue other interests. And I went back to philosophy and psychology, this time with an emphasis on the mind-brain problem – if you like to call it that. That was partly because, in my study of literature, it had occurred to me that people had taken great pains to create a work of art, a poem, a novel, a piece of music, a painting, whatever it might be, that was something concrete; it wasn't just an idea or a concept. It was individual, it was instantiated exactly as it was, in the way that it was, and it couldn't be better understood as a paraphrase. So it was individual, it was embodied, and it was unique. And we were turning it into things that were general and abstract and actually very banal – because when you take the ideas out of a poem, or you start taking apart its form, you're left with a handful of bits and pieces that really don't account for why you love it. And this seemed to me to have something to do with the way we were thinking about it, if you like, in the sort of way a computer might approach it. We weren't approaching it in an embodied way.

I felt it was to do with things like the effects that a work of art had on our pulse, and our respiration, and all the rest. So I thought, "I'll explore the mind-body problem", and I had lots of time to read the philosophers. And, in a nutshell, I found them just too disembodied in their approach [laughing], and it was the sort of stuff you do in a seminar room. But really the way to get a handle on this was to have, as near as possible, direct experience of what happens when something changes in the body or the brain, and it affects the mind, or something goes on in somebody's mental, psychic life, and it affects their body. And that, of course, meant studying medicine, so I did that. And then, afterwards, I was obviously interested in the overlap between neurology and psychiatry, so I did a bit of neurology, then went to the Maudsley Hospital in London to become a psychiatrist. And that was where I met somebody who set me very much thinking about this topic.

Iain McN: Yeah. So, you mentioned the mind and the brain. Briefly, what's the distinction, as you see it, between the mind and the brain?

Iain McG: Well, that's as you know, an extraordinarily difficult question to answer.

Iain McN: [laughing] That's why I said 'briefly'.

Iain McG: I think they are different modes of being, of the same thing. That is not to imply all sorts of things about the mind – that it can somehow be reduced to matter. If you bring two things together, one of which you think of as exalted, and the other you think of as lowly, the union of the two as much exalts the lowly term as it threatens to demystify the elevated term. So, in bringing mind and matter together, to me, the excitement is about matter. What is matter? People say "The consciousness problem." Well, what problem? I mean there can be no problem because it is – and in this, Descartes was right – because the single thing that we know for certain [is that] we inhabit consciousness.

But what is matter? I mean that's another matter. This chair [tapping it] resists my consciousness in some way, and that is very intriguing. So I think of matter as, if you like, as a phase of consciousness. Now, I don't mean 'phase' in terms of time; I mean it in the way that physicists use it. You know, water, for example, has three phases: it has the gaseous phase, in which it's vapour; it has the liquid phase, in which it's water as we recognise it; and it has a solid phase, in which it's ice. And it seems to me that in a way, matter is a congelate of consciousness. And, in that, it's not too far from some Oriental traditions. So, mind and matter: there must be the potential for mind in matter, if you are a materialist. If you take view there is nothing but matter, you've then got to say, "OK, matter is pretty extraordinary stuff, because after a couple of million years, it gives rise to the B-Minor Mass. How did that happen?" So I don't think we get 'round it. We just kick the can down the road.

So I'm not going to – I'm going to disappoint you – I'm not going to give you the answer to the question, because I don't actually have it. But I think I can go some way toward saying what the relationship between mind and matter is like...

Iain McN: OK.

Iain McG: …and what it's not like.

Iain McN: OK. So, your book is essentially about the brain. The brain is a pretty complex mechanism.

Iain McG: Yes.

Iain McN: It's an intriguing invention, if you like.

Iain McG: Yes.

Iain McN: And the key, [according] to the book, seems to me to be the prefrontal cortex, where we have that, and most animals don't have that. And the left- and the right-hand side of the brain is very much based on that, isn't it, the prefrontal cortex?

Iain McG: Well, animals and birds going a very long way down the phylogenetic tree, to really what we would think of as quite lowly creatures, have lateralisation, they have asymmetries – even some sea snakes, for example, and fish and so on. It's not just humans that have lateralized brains and benefit from them. There's an adage in biology: asymmetry pays. And this goes a long way down the line, as I say, to reptiles, mammals, and birds. On the other hand, the advent of the prefrontal cortex – which is not an all-or-nothing affair, I mean there are vestiges of this in animals we think of as much less highly evolved – but there is a dramatic change, you are absolutely right, when one comes to the great apes. For example, a dog: seven percent of its brain is frontal cortex; a monkey, seventeen percent. But when you get to the great apes, the gorillas, chimpanzees, bonobos, and humans, it's thirty-five percent.

Why is this so very important? Well, the answer is [that] it gives distance to life. If you imagine a level of life at which one is almost a set of reflexes, so that certain stimuli give rise to certain responses, pretty much willy-nilly, then there isn't very much room for the creature to have developed an individual way of interacting with the world, or ability to think about it. They just respond. But what we need in order to understand what's going on is a little bit of distance. We need to stand back. And it's the frontal cortex, and in particular the prefrontal cortex – which just means the most forward part of the frontal cortex – that delivers this for us.

Iain McN: From what I understand, it gives us the potential to stop reacting automatically, like an animal might react. So it gives us, as you say, a distance, and a potential to be different.

Iain McG: That's right, and to stand back from the world in order to understand how to interact with it. A famous neuroscientist, LeDoux, said it's not what the cortex – indeed, never mind the frontal cortex – what it does that matters; it's what it achieves the capacity not to do that matters. So we don't have to respond in certain ways. We can stop ourselves and think "Now, I'd be better off actually not to do that, but to think about future consequences, patterns I learnt in the past, perhaps even empathizing enough to understand what's going on in the mind of this other creature, and form an alliance rather than just bite."

Iain McN: Yeah. And we have this tool, this ability – and we'll come onto it later in the program – but, sadly, as a human race, we don't seem to be really maximizing at all this tool that that we have. So let's go a little bit more in detail then on what the left-hand side does and what the right-hand side... or the capacity of the right-hand side and the left-hand side.

Iain McG: Yes, well, it's going to be tricky doing this very quickly. But I'll do my best. The first thing really to say is that a lot of people come to this book with the idea that they've already heard about differences between the hemispheres. And they've got this idea that probably the left brain is the rational one, and the right brain is sort of somewhat impulsive and emotional, and that the left brain or left hemisphere is the linguistic one – the one that deals with language, and the right hemisphere deals only with images. And this sort of stuff emerged in the sixties and seventies and was really the beginnings of an attempt to understand the difference. But then as time went on, people decided that none of these things were true. There came out evidence that every one of those generalizations is false.

To cut a long story short, it is now clear that absolutely everything that we think of as functions of the mind – thinking about it like a machine, that it does language, or does reason, or does image, or does visuo-spatial, or anything else you'd like to say - they are all represented in both sides of the brain. So that distinction is wrong. And that has given the whole topic a bad name. A lot of neuroscientists have just thought there can't be any difference. But that's actually a non-starter because, as I say, even in animals there is this well-known adage: laterality pays. And animals whose brains are not asymmetrical, and who use the two halves of the brain therefore relatively identically, tend not to thrive. So there's something important there, and it's there of course in humans. And, because of the prefrontal cortex, it gets to have very much more meaning, that difference. And I should perhaps comment a little bit about the structure of the brain. I apologize if this is rather simple for those who know a lot about the brain.

Iain McN: No, keep it simple. I think that's important.

Iain McG: OK. So the brain is a very large mass of neurones that are infinitely complexly interconnected. And when I say infinitely, we think there are more potential connections – pathways – in the brain than there are particles in the universe. So it's the potential that's enormous.

Iain McN: OK. Repeat that again, because that's extraordinary.

Iain McG: It is. Yes. There are more possible pathways in the brain, through the possible neuronal connections, than there actually are particles in the known universe.

Iain McN: This is just an extraordinary figure, of trillions and trillions and trillions.

Iain McG: It is trillions and beyond what the human mind can conceivably imagine. I mean of course not all of them are going to be activated in any one human brain, or even could be. But none the less, that potential is there. Now, in this organ, which exists only to make these connections – that's what its power exists in – there is a whopping great divide down the middle of the brain, which is

evident to every medical student on their first day in medical school. But by the time they've graduated, nobody will have mentioned, or raised the question: why is there this divide?

Iain McN: So you see this divide physically.

Iain McG: Yes. It's like a walnut – a sort of clichéd image, but it does quite well. It's a bit like a walnut. If you take a walnut apart, there's two wrinkly masses and a divide down the middle, and you take it apart. So it's a bit like that. And one might say "Well, you know, it's just the way the brain evolved." But actually that doesn't hold water for a start because – well, a number of things. Lots of things start in parts, in the fetus, and then get joined up very nicely in the adult, or in the neonate, by the time you're born. So, for example, the skull starts off as I think sixteen different bones, and by the time you're born, it's got down to whatever it is – four – and then, by the time you're one-and-a-half or two, it's a single mass. So if it wanted to, if evolution had found it useful, it would've been a single mass. And actually what we find is, over the course of evolution, these two halves of the brain have become more distinct in the sense that the volume of the hemispheres has grown faster than the corpus callosum, which is a body of fibres at the base of the brain, which is the main – not the only – but the main source of communication between the two halves of the brain. So there's something going on there. And, as I say, I have literally never heard anybody, in medical school or out, ask the question: why? I mean, Nature doesn't do things for fun. It doesn't give away a potential for no reason. There must be something that is potentially very important about having this division.

And that becomes clear when you learn that transmission of nerve impulses across the corpus callosum, although initially excitatory in many cases, in probably the majority of cases end up acting as inhibitory. And you can actually see this sometimes when you image a brain. There is activity going on in a certain region, and you see, very, very shortly afterwards a brief excitation in the other hemisphere, and, if you like, in the same place, and then followed by a prolong inhibition, as though the message was "Please keep out of this. I'm better dealing with this on my own." And that set me thinking. That, and the fact that, as I say, asymmetry is so important. And indeed there are brains – I researched this at Johns Hopkins back in the nineties – for example, the brains of people with schizophrenia – that lose the normal asymmetry. Their brains are perhaps abnormally symmetrical.

Iain McN: So you can see this.

Iain McG: You can see it in motion. And in some cases, reversed. Now it may not be true of every single individual that I know who has schizophrenia. I'm saying, as a very significant statistical observation, that they either lose or reverse the asymmetry. And there are people such as Tim Crow in Oxford who think that probably many of the phenomena of schizophrenia are to do with this abnormal lateralization of the brain. And I wouldn't be surprised if he's right. So it's not good enough to say there isn't a difference. And indeed, if you measure the brain in all sorts of ways that are entirely reliable, you'll find the two hemispheres are reliably different in weight, different in

shape, have different patterns on the surface – the sulcal-gyral patterns, have different architecture of the cells in certain regions of the brain, respond differently to neuroendocrine hormones, have different gray-to-white-matter ratios, and even use preponderantly different neurotransmitters. So it's just psychiatrically, scientifically, a non-starter to say there isn't a difference. Added to it, everybody knows who is a clinician, if you have a stroke in one half of the brain, or you have the stroke in the other, there'll be very different consequences. So let's get rid of the cheap thing that is bandied around all over the place [that] there is no difference. There is a difference. It's just a question of what is that difference.

And getting at that, involved observation of birds and animals because, while human neuroscientists have been frightened off by [the idea] of the right brain – as in the Volvo advert, "Oh! It's too tacky. We can't go there" – animal and bird ethologists have been doing what scientists are supposed to do, which is just to observe. And they had noticed that birds and animals use their right and their left hemispheres for different purposes. What is the main difference that one can see? It's to do with attention. And I can't emphasize enough how important that is. In fact, when I first knew about this, the penny didn't entirely drop as to how profound that idea is.

Iain McN: When you say 'attention', what do you mean by that?

Iain McG: Well, there is a problem of survival, which depends on being able to do something that is very difficult. It's to be able to pay attention to the world in two different ways at the same time. And this is for, as I say, a very good reason that comes down to a matter of survival. If you imagine an animal needing to lock on to its prey, it's got to have its mind clearly set on one pursuit, one target. And when it finds it, his attention has got to be very precisely focused on that. Or you could think of a bird trying to pick up a seed against a background of grit or gravel. It's got to have very narrowly focused attention to that. And the same thing goes when it's trying to pick up a twig, to build a nest. So, in order to do the basics, which involve some manipulation of some part of the environment – get food, build shelter – you need very narrowly focused, but very sharply focused attention. The trouble with that is that, if that's all you're doing, while you're getting your lunch, you become somebody else's lunch...

Iain McN: [laughing] That's right.

Iain McG: …because you've got to have, at one and the same time, the complete opposite of this, an uncommitted attention as to what you may find. It might be an enemy. It might be your mate. And you need to have it global, and to be able to see the whole picture at the same time. So you have to have, on the one hand, fragmentary, piecemeal, very narrow-beam, very sharply focused attention, and very diffuse large attention to the whole. And the solution to how you do this is the bi-hemispheric brain. And, to cut a long story short, the left hemisphere is the one that offers this very detailed attention, that enables you to manipulate, and the right hemisphere is the one that offers the broad vigilant attention that gives you the context, the understanding of the whole, helps you to

understand what's going on around you and to relate to it. And this is just as true of humans as it is of any other creature.

Iain McN: So, just to make this as practical and accessible as I can in the interview, [in] some of the notes that I took from your book, about the left and the right, the left tends to be more fixed, the right more towards flow. The left takes thousands of points of information and tries to reach a conclusion about the whole picture that way. That's obviously a shortcoming of the left. The left only sees what it expects to see. This is more depth here: the left hemisphere is not in touch with reality, but with its representation of reality, which turns out to be remarkably self-enclosed.

Iain McG: Yes. OK.

Iain McN: I'm just trying to get a very down-to-earth feeling of this.

Iain McG: I know, but I'm also very keen not to be seen or said to be saying things that are simplistic. But there's some broad truth in all of those, as you stated them. And they flow from two things, really: from the left hemisphere's ability to focus narrow attention and from its preoccupation with utility and survival. I know I'm talking about the hemispheres as though they were people, and they're not people. People often say that. But then you have to find a way of talking about them, and the alternative is to talk about them as though they were machines. The trouble is, machines can't pay attention. Machines can solve problems and so on, but attention is an aspect of consciousness and so it's no good thinking about it that way. You've got to think really more of...

Iain McN: But we actually do react and respond like machines a lot of the time because we respond – unless we have this awareness, attention – then we're going to respond just like machines, aren't we?

Iain McG: You made a good point, which is that the whole essence of being human is actually departing from a purely mechanical way of responding. So it might be appropriate to think in terms of mechanism at a certain level of complexity. But when you get to looking at a whole human being, it isn't any more. And the metaphor that you use, whether it's machine or animate being, a person, depends on how you understand the hemispheres, really. But, to get back to what you were saying, if you contrast these two types of attention, they will give rise to two kinds of a world. And this is because how we attend to something changes what it is we find there. So, if I look at those tulips [on the table] as a painter, I will see one thing there. If I think of them as I would if I were a botanist, I see something else there. There isn't one right way of thinking. Every kind of person, every person with their different values and different preoccupations, will see something slightly different there.

Iain McN: And, in a way, that attention is affected through knowledge? Is that right?

Iain McG: Attention … there's a sort of cycle, which is a vicious one, if you like. It's called the hermeneutic circle. And it means that you narrow down through a process, where by expectation – suppose you expect to find a certain kind of thing there – then you will focus on those aspects. And that's what you will see. That will feed back. And next time you look at them, you'll see more solidly that kind of experience. It feeds itself, it reinforces itself. So you can get stuck in a certain way of looking at things.

But if you wanted some broad headlines, the right hemisphere tends to see the whole picture, where the left sees pieces. The right hemisphere tends to sustain an idea over time, and is therefore more able to understand flow, whereas the left hemisphere tends to see it as an infinite sum of points – in a digitalized way, if you like, which means it's not very good at understanding things that flow, like music and time and, indeed, human beings, because human experience, and the human body, even, are better thought of as things that flow. The nineteenth-century poet Novalis said we are embodied rivers: our bodies are rivers that flow. And he was referring to the fact that, although there's a form of me, there's nothing in my body now that was there, say, a couple of years ago. Everything has been replaced.

Iain McN: So would you say, generally, that a person tends to be more a right-brain person, a left-brain person? Is that a fair comment?

Iain McG: I don't particularly like that kind of remark. I think there is a sort of truth to it. I mean, obviously, at the very basic level, everybody's using all their brain all the time. So let's get that one clear. Whether you rely in your cognitive style, if you like to put it that way, on more the way the right hemisphere sees things, or more the way the left hemisphere sees things, I think it does differ from individual to individual. But gross generalizations like "He's a left-hemisphere person or a right-hemisphere person", I tend to distance myself from.

Iain McN: OK.

Iain McG: Because they are a little bit crude. I'm really talking here not about an individual person, but about what capacities a human being has, in order to understand the world. If you like, many philosophical problems can be seen. One way of thinking about them is that the debate about them depends on whether you tend to think of the world as having the properties of a whole - in which you can focus on individual areas, which you see as connected to the whole, but not as discrete and separate - or whether you think of the world as made up, from lots of little particles that have their existence outside the whole that they go to make up.

Iain McN: Yeah, but also, my own experience of that – what I feel my experience of that – is that, with that knowledge, I can actually change the way I see things… I know you're not a hundred percent keen on this, but I'm going to pursue it anyway. [laughing] When I was reading the book, I looked at what I think my own thinking pattern is, and there were times I could be quite rigid in my way, trying to solve a problem.

Iain McG: Yeah.

Iain McN: And I would read some of your explanation of the left-hand side of the brain, and I thought, "I'm definitely in the left-hand side of my brain. I'm trying to solve a problem with all the bits and I haven't got a whole picture."

Iain McG: Yeah.

Iain McN: And I might, three hours later, get nowhere with my problem, let's say, and I'm walking in the woods – I'm like you, I love to walk – walking in the woods, and I feel more expanded, I'm looking at Nature and something changes, and I feel then, well, I'm probably more in the right-hand side.

Iain McG: Hmm. Hmm.

Iain McN: What's your response to that? In a way, isn't it helpful for people to see in themselves when they're…

Iain McG: I think it can be. I think that's absolutely right. If you like, what I aim to do is not so much to give people answers to problems, but to awaken their consciousness of different ways of thinking. And a lot of people have written to me, saying things like, "In reading your book, I became aware that I always think about the world in what I now can see is very much the way the left hemisphere would dictate that I should. But I understand I've been missing a lot of things and indeed why I've misunderstood what a lot of other people mean by certain things." And they've even said to me, you know, "Reading your book has actually changed the way I relate to people, my relationships have improved, I now understand other people's point of view better, and I'm even better at my job." I didn't write the book in order to achieve these things. But it is true that an individual can benefit from just seeing rather clearly, as one can by looking at the brain, the alternative ways of thinking about ourselves.

And there are a lot of people who say there's nothing we can learn about ourselves from the brain that we couldn't know from introspection, from our minds. And in a way, that can be true. I'm

certainly not a fan of the sort of science of which I think there's far too much, where they think they've got to the bottom of it when they've described some brain circuit – you know, huge excitement, "We've found the brain circuits that light up when you fall in love." And the sort of implication is that somehow we know what love is: it's these circuits that light up. That reductionism is exactly the kind of thing that I would say only your left hemisphere would indulge in [laughing]. And it's the part of the brain that sees least. So, literally, the right hemisphere sees the broad picture, and the left is looking at little bits and trying to understand it from that. So I'm not saying that.

But there are things that it's very difficult to know, until you look at the brain. And, in our experience, as we live headlong, day to day, we're not aware that our experience of the world is put together from these two essentially incompatible models: one, lots of bits that are put together to make up a mechanically constructed whole, and the other in which one sees a primarily united whole, in which one can later roughly distinguish areas that are none the less interrelated. We're doing that all the time. But what the evidence from neuroscience enables us to see is that in fact we're synthesizing two kinds of thinking. And when we stop and think about the world, as philosophers do, we've got to buy one sort of way of thinking or the other. We can't easily – at least if we're going to be consistent – put the two together, because they're not entirely consistent. Our brains do a wonderful job of balancing them and alternating between them.

Iain McN: OK. Now, the title of the book is The Master and His Emissary: The Divided Brain and the Making of the Western World. So, explain about the emissary parts. You feel the left-hand side has got control of things, to the detriment of mankind, basically.

Iain McG: Yes, I mean we're rushing ahead there, but that is a conclusion that I draw, and I would need to unpack that a bit, for it not to sound very strange. What I'm suggesting is that there are these two ways of thinking about life – that we're not aware of in consciousness as being separate. They're ways of not just thinking about, but experiencing the world at the pre-reflective level. And they lead to different conclusions. In one, you lead to a sort of vision of the world as atomistic. In other words, lots of little bits that sort of interact with one another a bit like billiard balls, sort of a Newtonian mechanics view of what human society is and what our place in the world is, if you like. But in the other, there is something that is a bit more like the world that modern physics tells us: that it is, in principle, uncertain. It is, in principle, impossible to isolate one thing entirely from everything else, and so forth.

So, in one world, things change according to their context. They change according to the way they're observed. And they are not ultimately able to be taken out and isolated. You can temporarily do that, in order to get a bit of knowledge about them, but you've got to relocate them in that context, and so forth. So that is the right hemisphere's world, the one in which the context matters, but actually also uniqueness matters – because actually every experience is unique. You never have the same experience twice, and no two people are the same, no two 'anythings' are really the same. But in order to manipulate the world, we've got to think of it in categorical terms, in the abstract, and it's

the left hemisphere that does that. So it produces a very imperfect copy of the world, which enables us to get on with the business of daily life. It's rough and ready. It has the illusion of certainty because, you know, it's no good going out in the field and thinking "Well, it might be a rabbit, but on the other hand, it could not be. Let's see, is it…?" You've got to go "It is. I'm getting it."

So the left hemisphere's raison d'être, if you like, the reason that evolution has enabled us to have this is it enables us to do a quick and dirty, black and white, certainty about existence. But when you become a human being and you reflect on experience, you realize that actually it's not as straightforward as that. That's where the right hemisphere comes in. Ramachandran, a very well known neuroscientist, says the right hemisphere is the devil's advocate, and I rather like that. So the left hemisphere is going "It's that." The right hemisphere is going "Well, actually, it's a bit more complicated." The right hemisphere is interested in shades of meaning, it's interested in ambiguity, it's interested in the indirect, the implicit. And that may sound all very well, but we've got to get on with the business of life. Actually, our understanding of life depends ultimately on understanding implicit meaning, or understanding non-verbal meaning, reading faces and postures, understanding what's meant by metaphors, by tone of voice, and so forth. So if you become the literalist, you become autistic, essentially. You become like someone who suffers from autism. And one way of thinking about autism is much of the ways that we think that the right hemisphere's interaction with the world has ceased to function well.

Now, you've said I see the world as drifting that way. And what I mean is that, obviously not in our lifetime, or even in the last thousand years, the brain has hugely altered. I mean it will have altered, of course, because we're evolving all the time. But I'm not saying that if you put somebody two thousand years ago into a brain scanner, you'd find their brain looked substantially different from ours. It wouldn't. I'm talking more about the way we use what our brain can offer us.

Iain McN: Yes.

Iain McG: It can offer us these two takes, and we seem to have got into a position where all public discourse about the brain is governed by certain assumptions: that we should control things, which is the left-hand. If you're going to manipulate, it's the bit of the brain that controls the right hand, which is the bit that grasps things and uses things. So it needs to be able to control things, it's interested in sharpening things up and filing them down, in making them certain and fixed, as much as possible. And the right hemisphere is seeing something which is unique and is never going to happen again, but is also part of a complex whole, and is offering a different vision of the world.

And in public discourse, as I say, we have now come to see the world as rather like a bureaucrat's dream, made up of lots of little entities that fall neatly into categories that can be systematically manipulated for the good of all, and that is rather like a complicated machine. And you hear scientists talk about this all the time. You know, they say, "We're just very complicated machines", as though we were somehow one up from a computer, or a memory, as if our memories were

anything like a computer's memory. These images, or these words, are being used in a very, very imprecise way. And all of the differences that are so important are being left out. Our memory is nothing like a computer's memory, actually. Nor of course, is what we experience in consciousness anything like what a machine has.

A machine doesn't have a body, which might sound just like an add-on, but in fact embodiment is a very, very important part of being human – not just about physical things, but about things like our emotional life, our intellectual life, our values; all of these things are ultimately rooted in a whole person that is partly embodied, a physical person.

Iain McN: To make it clear, which I don't think we've done, is you see the master as the right-hand side. Is that correct?

Iain McG: In the image that I've adopted for the title, the right hemisphere is the master, and the left hemisphere is the master's emissary.

Iain McN: Yes.

Iain McG: And why I say this, it was taken from a hint in Nietzsche, which is taken from this little fable about a spiritual master who looked after a community so well that it flourished and grew. And, in time, he realized that he couldn't look after all the affairs of this community. But he realized something more important than that – not just that he couldn't do that, but that he mustn't do that. He mustn't even try to get involved with certain things, because certain ways of thinking and acting and being were actually incompatible with maintaining the overview and the degree of detachment that gave him the insight that made him the spiritual master. And so he appointed his brightest and best second-in-command to go about doing his business on his behalf. And that emissary, although very bright, wasn't quite bright enough. He thought, "I know it all", which is always a mistake, and he didn't know what it was he didn't know. And so he became resentful. He thought, "What does this master know, sitting there seraphically on his backside back at the palace? I'm the one that knows everything. I'm the one that's in touch with things. I'm the one that does all the hard work." And so he went about wearing the master's cloak, and saying he was the master in public. He didn't know what he didn't know, and he didn't therefore take what he knew back to the master for it to be incorporated into what the master was able to know and do. And they were both impoverished by this, and the community failed to flourish.

So that is really an image of the way the left hemisphere and the right hemisphere interact. They have a relationship, but the one that sees the whole picture and understands things and knows how to set things into context where they have real meaning, is the right hemisphere. The left hemisphere meanwhile does certain things that the right hemisphere mustn't get involved with because, if it does, it starts getting narrow-focused. So it sends that, if you like. I mean, I'm not

speaking literally. It's not that everything is sent over to the left hemisphere and back. But, in the communication between the hemispheres, what the right hemisphere first understands is unpacked with some detail by the left hemisphere, but that importantly needs to be reintegrated in the overall vision that the right hemisphere alone has.

A way of thinking about this is rather like learning a piece of music. Suppose you're a pianist. You pick up this music, and you play it through a bit, and you think, "This is beautiful. I want to know this better." And then you think, "Well, in order to play it better, I've got to take it apart a bit. And there's that passage at bar fifty-three." And you practice over and over again. You see lots of little passages, and you get those going. And then you look at the structure, and you say, "I see here we have a return to the dominant" and so forth. But when you come to play it, you must forget all of that. Otherwise, you'll give a very bad performance. So, all that knowledge is not lost. It's simply taken up into the whole, where it animates and enriches the whole. The whole purpose of analytic thinking – it has a very important role in life. I'm not knocking it. I think it's hugely important. It's just that it's of second importance to what the right hemisphere does, which is to ground that whole experience and to interpret it at the highest level.

Iain McN: OK. I'm afraid time is flying, as I knew it would. We've got about ten minutes left. And I'd like to spend a little time talking more about what's in your e-book, The Divided Brain and the Search for Meaning, because that, to me, really struck home in terms of how we were going as a society, as a human race.

Iain McG: Yes. OK.

Iain McN: You start off by saying that, in a way, we have more than we've ever had, yet we seem to be more unhappy than we've ever been. Maybe I'm oversimplifying what you said. Just talk us through that, how you see the effect of what we're in effect doing with the brain, in terms of the manifestation in our society.

Iain McG: Right. Well, I think many of the things that we would probably all agree we regret about modern life stem from having a utilitarian view, seeing the world as a heap of resource to be exploited, without thinking about the broader consequences or the long-term consequences – a sort of way of thinking in which we are keener on competition than on co-operation. But the reason I lit on this as to do with meaning, is that meaning comes from understanding the whole. Meaning doesn't come from pursuing the little bit of… you know, for an animal lunch or, for us, money, you know. Getting is an important part of life. I'm not saying we shouldn't be engaged in doing that. But it's got to be part of a broader picture, which alone gives meaning. And even pursuing happiness is not really an end. I mean, there's beautiful research which shows that just trying to make yourself happy, in a hedonistic way, will not make you happy. And it's only when you forget about that, and actually start involving yourself with greater aims and with society and others as a whole. The responsiveness, what I call the betweenness of things, is where the life lies. And that issue that

betweenness is important – the relations between things, not the things themselves – applies to everything.

Iain McN: Yes, because in one way, if we're not happy, it's intelligent to try and make ourselves more happy. But what you're saying is – and I think this is very, very true – that you can't just do that on an individual basis.

Iain McG: No.

Iain McN: By including the whole, and seeing that you really are part of the bigger picture, that in itself, if you can get that, you're on your way.

Iain McG: You are on your way. And it demonstrates also another fallacy, which is that if can you identify what it is you want and go for it, you'll get it. But actually some things are so constructed that the very business of focusing on them and going for them destroys the possibility of achieving them. And happiness is one of those things. The more you pursue it [pounding on chair arm] the less you have it.

Iain McN: Yeah.

Iain McG: And that's true of many things in life. Like going to sleep, or being modest, or being wise. They're all things that come as a byproduct of something else.

Iain McN: [laughing] Sleeping. I've been thinking about going to sleep. Anyway…

Iain McG: [laughing] How hard do you try?

Iain McN: It's true. The harder you try…

Iain McG: It's true of many things, of course, that follow this pattern. It's really more about the fact that you can't understand something at the outset by standing outside it in a detached way and analyzing it and going "I don't see the point of that." There are many things that you will only see the point of when you're actually engaged with them at all. And spiritual things are very much of this nature, and I know that that's one of the focuses of interest for yourself. There's a lovely story, which a Jewish friend of mine told me. There's this Rabbi who's praying, he says "You know, God, it's

all very well I'm committed to what I do, but I need money. I'm very poor. Really, I need money. Can't you help me? Could I win the lottery?" And he prays all the time, and he never wins the lottery. Anyway, one day, he's praying, and the Rabbi says, "God, why do you never let me win the lottery?" And this voice comes out of heaven, and says, "Mordecai, meet me halfway. Buy a ticket."

Iain McN: [laughing]

Iain McG: And there's a spiritual truth in that, that if we sit there waiting for spiritual truth to plop into our lap, it's not going to happen. It's only by putting yourself in the way of it happening – in other words, a disposition of openness to it happening, not a closed mind – that will allow you to experience something that, once you've experienced it, you'll understand fine. But ahead of time, you won't. So that's just a gloss on part of that.

But, to go back to something you mentioned earlier, and I think is important, I'd like to pick up. You said the right hemisphere's more in touch with reality than the left, and that might sound rather glib. But the point is this, going back to where we started: the point about the prefrontal cortex as being able to stand back a bit from life. And that can do two things. It can make you more engaged; so, if you have a bit of distance from life, you can see the picture and it enables you to build bond [gesturing at interpersonal interaction], actually. If you're right up against things, you just bite. But if you stand back and say "This is a suffering creature, with whom I can make common ground", then that is empathy. And that is really what the right frontal cortex enables us to do, to be what Aristotle called the social animal, to be in touch with and connected and empathic.

The left hemisphere enables us to make a map of the world in order to increase utility. But the trouble about a map is that its value depends on leaving most things out. A map that contains too much detail is no good. You want a quick and ready and somewhat sort of flavorless version of the world. And so we construct for ourselves a model of the world, which eventually we start to believe is reality. We mistake, in a famous phrase, the map for the territory, or I would say for the terrain, which is the thing we actually live in, rather than the territory, which is what we rule over. So, in order to be able to do that, we need to get back to things that don't coincide with the model we've told ourselves about the world. That is extremely important.

Iain McN: And how do we do that?

Iain McG: Well, one of the ways we do it is by being aware of what we're getting wrong. And the purpose of my book is to open people's eyes. And from the quite extraordinary, lovely and gratifying responses that I've had from readers in every walk of life all over the world, it has done that for a lot of people. It's opened their eyes. You see, I'm a psychiatrist and I know that if I tell you what to do, you won't do it. But if, instead, I lead you to the place where you can see "What I've been doing all

along has been unhelpful", there's a think, "If I did that, it would work better." I want to lead people to that point.

Iain McN: So we have to make our own decisions, have our own realizations, basically.

Iain McG: We do. But there are things we could do, which are to do with our own spiritual lives, but also to do with the way we educate people and the way indeed we think about the role of governments, and so forth. And I'm in the process of trying to unpack that for a book I'm writing called, The Porcupine Is a Monkey.

Iain McN: [laughing] OK. So why is a porcupine a monkey?

Iain McG: Have we got a few minutes?

Iain McN: We've got about three minutes.

Iain McG: Right. Lovely experiment, which I think would be a nice note to end on. The experiment goes like this. You ask people to say "Is this syllogism true?" Now, a syllogism is a set of propositions leading to a conclusion. The classic one is, All men are mortal; Socrates is a man; Socrates is mortal. It follows. Now, they gave that to a group of people in three conditions: the normal state, and once with the right hemisphere suppressed, and then with the left hemisphere suppressed. And in this example, one of these premises is wrong, it's false. So: All monkeys climb trees – true. The porcupine is a monkey – untrue, clearly. The porcupine climbs trees. Well, it follows from the logic, but we know it's wrong. So you just ask, "Is it true?" Now, in the intact state, the person replies, "It's not right. A porcupine is nothing like a monkey; it goes on the ground." In the left-hemisphere-only state, the same individual, on a different day – we're not aggregating data here; well, we are, but we're looking at the same individual, OK? Across time, in each case, that same person says it's true. And the examiner says "Why? Don't you know a porcupine is nothing like a monkey?" And she says "Well, yes, I know that, but none the less it's true". "Why?" "Because that's what it says on this sheet of paper." And when the right hemisphere is asked, it indignantly says "Of course it's wrong. A porcupine is nothing like a monkey."

Now, it seems to me that, in the right-hemisphere and normal state, we're aware that one meaning – a very important meaning of truth – is comparing the model I've been given with reality. In the other, what one means by truth – and it is a kind of meaning of truth – is internal consistency of the model, that's what it says on the sheet of paper, and therefore it follows. Now, my contention is we are moving into a world in which our models are more important than reality and no amount of information about reality sways us from what we believe. And the ticking of the box on the sheet of paper has become more important than the actual fact.

And I have a beautiful illustration of this sent me by a reader. She said, "A friend of mine heard her brother was dead. She went to the hospital and asked to see the body. She went into the morgue, and felt the body. It was warm-ish. And she thought 'This is unusual. This can't be right.' And she thought she felt a pulse. So she went to the nurse, who was standing by and said, 'I think my brother's alive.' And she said 'No, don't worry, dear. It's on this sheet of paper. He's dead.' She didn't wait. She ran out into the corridor where there was a passing doctor, who came in thought, 'My God, this person is alive', put adrenaline straight into his heart, and he's living today". It's a very vivid example of how the piece of paper becomes the reality.

And that is where the image of 'the porcupine is a monkey' comes from, because we're believing that kind of nonsense all the time. I should actually say, just for those people who are watching who know a lot about porcupines that, annoyingly, there are porcupines that climb trees. But the people who did this experiment, neither the experimenter, nor the subjects knew that.

Iain McN: Well, have you got faith that the human race is somehow going to find its way through, and find a more balanced way of living?

Iain McG: I call myself a hopeful pessimist, by which I mean I fear it's too late, but I am hopeful because we can't predict. I can't predict. One of the wonderful things about humans is we're not machines and we can't easily be predicted. And there've been many times in the past where one would've thought Gosh, it's getting to be all up for the human race now. And in fact one couldn't have predicted changes in the history of ideas that happened only a decade or two later. So I respect the resilience, and the capacity for flexibility and imagination, of the human race. And what I know from my own experience, everywhere I go, people say "We're tired of the old paradigm. We're tired of hearing this reductionist nonsense, which is actually stuck in the nineteenth century. We're not machines. It's not just genes propagating themselves. Most of the story of life is left out of there." And so I know that people are ready to understand differently. And that gives me hope for the future.

Iain McN: Iain, it's been fascinating. Thank you very much.

Iain McG: Thank you.

Iain McN: Thanks very much for watching conscious.tv. Iain has two books out, there's the e-book I talked about – The Divided Brain and the Search for Meaning – and of course his weighty tome here, four hundred thousand words, The Master and His Emissary: The Divided Brain and the Making of the Western World. Thank you, and goodbye.

To watch the original video interview click here. This programme has been transcribed on a voluntary basis. If you would like to offer to transcribe a video on the same basis, then please contact: info@conscious.tv