

Science and the Humanities: Iain McGilchrist's reply to Steven Pinker

My reply (a version of this essay was published in the *LA Review of Books* on 25 September 2013):

'Steven Pinker is, of course, both clever and influential, and there is much that I would agree with him about. So when he makes what he calls an impassioned plea for an understanding between science and the humanities, something that I feel strongly about, too, and indeed believe to be of the greatest importance for our future, it seems churlish to find fault, especially as I am grateful to him for the opportunity to explore in more detail issues about which it is obvious we both care very much. But for all that he claims to be setting out to reassure his colleagues in the humanities, I doubt that his essay will have the desired effect. In fact I fear that it may appear to some to exemplify everything that those in the humanities fear to be the case about the contemporary science establishment.

The marriage, or at any rate the peaceful cohabitation, of science and the humanities is essential for the health of our civilisation. I speak as someone who has a foot in each camp, and an interest in their rapprochement. I agree wholly with Professor Pinker that each can learn from the other. And Professor Pinker is right to recognise that all is not as well as it might be in this relationship. Perhaps he feels he is offering therapy.

However in any relationship there are at least two points of view, and two stories to tell about where the trouble lies. And to engage successfully in therapy you need to see both.

Professor Pinker seems aggrieved at the lack of respect accorded to science among the humanities. They use terms such as 'scientism' that he does not like. They call the philosophy of some scientists naïve and simplistic. They do hurtful things like refer too often to the ills entailed on us by technology and science, instead of being grateful for their undoubted achievements. How could his partner treat him so bad, when he has done so much for her?

But his partner has her own story to tell. According to her, the humanities are in danger of submersion. She sees – something which Professor Pinker himself recognises – the number of students taking on courses in the humanities at all levels dwindling. At the same time she hears the call from government for more and more young people to go into technical subjects such as science and information technology. She sees budgets being cut and money being diverted from arts and humanities faculties to science. She sees the multimillion dollar research programmes, the empires that are founded on expensive, sexy machines. She finds herself having to defend the study of Mesopotamian civilisation in terms of its relevance to current needs – tourism, or the Middle East foreign affairs desk. Rightly or wrongly, she identifies the scientific and technological mindset as a potent cause of this uncivilised, utilitarian way of thinking which leaves almost everything in the humanities out of the picture. She sees on TV, hears on the radio, and reads in the papers scientists pronouncing on everything under the sun, as though being a good geneticist or a good astronomer gave you some privileged insight into what sort of thing a human being is, what sort of a place the world we live in might be, and whether or not there is a God. At the same time, in a mirror image of Professor Pinker, she sees among many of her

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scientific colleagues, in Professor Pinker's words, 'a philistine indifference to [the humanities] that shades into contempt'. She hears him refer to a belief in a spiritual dimension to life as 'superstition'. Professor Pinker, she hints, is not the only one round here who has a right to be miffed.

In all couple relations it is useful to attend to the boundaries. Boundaries need to be flexible and semi-permeable, and are hard to define – all the imprecise stuff that Professor Pinker deplores. But they are none the less important for that. They are not to be treated as barriers that keep things apart, but on the contrary as the mutually respected markers that make co-operation possible. They are what enable the relationship to function at all.

With this in mind, Professor Pinker's opening strategy is revealing. He starts by re-describing all the philosophers he admires – Descartes, Spinoza, Hobbes, Locke, Hume, Rousseau, Leibniz, Kant, Smith – as cognitive neuroscientists or evolutionary and social psychologists. If you are later going to claim that science can answer the big philosophical questions it is, of course, a smart move to have philosophers in your team. But for someone who wants to reassure that he is not engaged in 'an imperialistic drive to occupy the humanities', it is perhaps a little ill-judged. Anyway, was Kant – or Hume, who denied the reality of cause and effect – really a 'cognitive neuroscientist'? I think the only polite response is: 'Er, no'.

A distinction does not have to be of the hard and fast, exclusive kind, and it certainly should not imply that one cannot learn from the other – quite the opposite, as I have suggested. But the impression Professor Pinker creates is that philosophers are just neuroscientists *manqués*, and that if they had only known what Professor Pinker knows about the brain they could have wrapped things up in no time. At the other end of the therapy couch what is heard is: 'Darling, it's not that I'm better than you — and in your own sweet way I do recognise that you try to help me with my work – I suppose it's just that I am lucky enough to have had a better education'. Despite Professor Pinker's protestations, if I were a humanities professor I would be wondering quite where my partner thought I figured in this relationship.

Professor Pinker's next stratagem is to discredit the very terms his partner is using in her attempt to alert him to his bad behaviour. This is common in couple sessions. 'Overbearing? Complacent? What do you mean? Define your terms.' Instead of doing a bit of self-examination and admitting that at times he or she has said some pretty outrageous things, the instinct is to discredit the language one's partner is using. Professor Pinker is obviously irritated by the term 'scientism' and he wants to deprive us of its use. He remarks that it has no clear meaning and calls it just a 'boo word'. One might point out that there are many very useful terms that cannot easily be defined – and the more important they are, the harder it gets. Other words, such as realism, idealism, nominalism and essentialism, have not been abandoned despite being much more slippery. Be that as it may, I am surprised that a chap like Professor Pinker finds it so hard to understand what is meant by scientism. He himself refers to examples of the sort of thing that it covers, but then quickly disowns them, as though they have nothing to do with good science. Perfectly correct. They don't. They are not examples of good science, but of a

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naïve belief, that is unfortunately not at all uncommon, that science can offer a full account of the world, and grounds our knowledge of all that exists. This is what is meant by scientism. That wasn't so difficult, was it?

Some of the most public names in science frequently make such scientific pronouncements. Professor Pinker is quick to disassociate himself from such beliefs, as I say. But is he not saying something similar when he insists that science is 'indispensable in all areas of human concern, including politics, the arts, and the search for meaning, purpose, and morality'? Really indispensable? How, one wonders, did Burke, Bach and the Buddha do so very well without Professor Pinker's support?

I am sorry, too, if he doesn't like the words 'naïve' and 'simplistic'. I wouldn't be surprised if they were overused, and I certainly understand why a sophisticated thinker such as Professor Pinker would be unhappy about them being applied to himself. But the way to stop them being applied is not to lament the terms, but to make sure they lack a target. If ever there was a place for their proper use it is in the description of what passes for a philosophy among a very large number of contemporary scientists. Our educational system, at least in Britain, has become specialised in such a way that it is now quite possible to become a scientist with only the most rudimentary acquaintance with the history of cultures and ideas. This is regrettable, but it is a fact. One would think from reading Professor Pinker that it was just a lunatic fringe of scientists that believe, in an unproblematic way, that the world, the body and the brain are mechanisms, and that only matter exists. In my experience such people are common right in the core of the scientific establishment, and when challenged they seem sometimes genuinely baffled, and almost hurt, that any intelligent person could doubt the world picture they have so unreflectingly adopted. I have pointed out to scientific colleagues that, as Professor Pinker says, 'they themselves are immersed in the ethereal medium of information, including the truths of mathematics, the logic of their theories, and the values that guide their enterprise', but in my experience they are impervious to this logic, and rarely turn a hair. One might have thought Professor Pinker would welcome the term 'scientism', since it helps to divorce real science from its misappliance, a divorce he should surely be keen to encourage.

Professor Pinker is not averse to a boo word himself. 'Superstition' is one of his favourites, and it is made to do a lot of work – largely to cover everything that is not demonstrable in the lab. In his critique it is used to stigmatise religion, and he points to human sacrifice, witch trials, inquisitions, and other things that I have rather missed out on, having spent too little time recently in Cambridge, Mass. Many people continue to believe there is more to life than a purely material account would suggest. How scientific is it to imply that these people are the sort to kebab your liver as soon as look at you? Professor Pinker would I'm sure accept that religious people deplore these aspects of Western history as much as he does. As one who does not like references to Nazi medical experiments or the Tuskegee syphilis study, rather closer to our own era, I feel sure he would understand. None of us should ever forget that, having destroyed the churches as monuments to superstition, an atheist regime based on a philosophy of scientific materialism such as Stalin's was not impeded in carrying out atrocities on a scale that beggars the imagination; or that the aggressively anti-religious regime of Pol Pot had its own

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inquisitions, which were amongst the most brutal and appalling that the world has seen – neither of these in the Middle Ages, but in our own era of apparent enlightenment. It would be as absurd to blame these things on science, or atheism, as it is to blame them on belief in the divine. They can happen anywhere, anytime, not because religion or science is bad, but because some people are bad. And they happen more readily wherever blinkered people have grandiose ideas about how to improve humanity, something which ought to give us all cause for reflection, whatever our beliefs.

Perhaps, it is worth mentioning, while we are about it, that much of the scientific research of the 18th and 19th centuries was not only not decried, as seems to be widely believed, by clergy, but actually carried out by them. And perhaps Professor Pinker might acknowledge that science has repeatedly shown that religious people tend to be happier and healthier than those who are not, and that, unwelcome as the conclusion may be, atheism is positively correlated with being on the autistic spectrum. These things do not, of course, render atheism untrue; but to an open mind they should suggest that there might be more than one truthful way of looking at the cosmos.

Just as he dislikes being lumped with those who believe that ‘scientists should be entrusted to solve all problems’, I expect religious people are rather tired of being lumped with fundamentalists, and find religious fundamentalists every bit as distasteful as scientific ones. And, as he would not expect to be called superstitious because scientists used to believe that there was something called phlogiston, and thought the pineal was the seat of the soul, I would think religious people might not accept being called superstitious because some of them used to believe that the earth was literally created in seven days.

But there is an important point being glossed over here. There do, unbelievably, still exist people for whom the Genesis myth is literally true. There also still exist people, almost as unbelievably, for whom it is literal – one of them, judging by the look of things, being Professor Pinker. But, of course, there is another position altogether, which is to see both parties as making precisely the same mistake – namely, taking it literally. There is more truth about the human predicament in King Lear than in a thousand textbooks of genetics, irrespective of whether the play is a faithful account of the historical Lear or not, and indeed of whether there was ever a King Lear at all. And on whether there is a God or not, true science can have precisely nothing to say.

Scientists want to make a distinction between science and its application in the world. For this reason they often insist that science is value-free. I hope Professor Pinker will forgive me for calling such a view naïve. If, for the sake of argument, we were able through the application of science to create the means to destroy large stretches of the natural world, or to degrade, spy on, enslave or even destroy humanity itself, could such inventions be seen as morally neutral? Though, according to a certain kind of rationale, we are free to use the fruits of science or not, anyone who is a fully functioning human being, rather than a calculating machine, can see that if we can use it, it is just a matter of time before we do so. Scientific actions cannot escape moral judgment. But that is not the same at all as saying that they can ground morality. Mortgage-lending is a moral act, as we have recently had cause to note, but that does not imply that banking is a possible ground for, rather than an appropriate arena for the

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application of, morality. In fact Kant, who is one of the figures listed in Professor Pinker's 'scientific' pantheon at the outset of his essay, believed that morality could not be derived from any other form of knowledge, and its existence in itself represented for him an argument that there is a God. If you think that knowing more about the frontal cortex would have changed that, you are guilty of a category mistake. The frontal cortex is powerless to tell us what morality is, since it is merely the how, not the what, of morality.

I would be the first to admit that at times science may cast light on a moral issue, by, for example, demonstrating that someone's free agency was compromised by an illness or a brain lesion that is scientifically demonstrable. Having said that, the usefulness of this element in the picture is often exaggerated: does knowing that a psychopath's right ventromedial frontal cortex is malfunctioning lead us to exonerate him, or are we merely describing the workings of a bad person's brain? In either case it does nothing to tell us what goodness means or consists in. That is not its remit.

Nor can it tell us what our purpose might be. That is not the sort of thing science can do. For good reasons its method is set up in such a way as to exclude questions of teleology. Yet scientists have become so insistent on the purposelessness of life that it has now gone into the popular culture as a discovery of science. But this is not a scientific discovery at all. That, again, is a category mistake. Science understandably does not find a purpose because purpose is not something its way of thinking recognises. That is not a criticism of science. That is a criticism of those who want to take science into realms where it has no purchase on reality.

There are two beliefs that, according to Professor Pinker, 'scientism [sic] seeks to export to the rest of intellectual life': 'that the world is intelligible' and 'that the acquisition of knowledge is hard'. Well, fancy that! So ... let me get this straight – the humanities do not believe they are engaged in understanding the world? And philosophy is a short stroll in the park compared with the serious business of science? One begins to wonder if Professor Pinker is such a natural for couple therapy, after all.

It is particularly intriguing that Professor Pinker chooses understanding the world as the distinctive feature of science. In yet another mirror moment, the humanities have often been of the view that that was precisely what, *contra* Professor Pinker, distinguished their enterprise from that of science. Once again, of course, there is truth on both sides. It all depends on what you understand by understanding. Understanding – not the workings, but the meaning – of falling in love, the Thirty Year's War, *Pride & Prejudice*, quietism, Uluru, the *St John Passion*, the Lake District, *Las Meniñas*, a waterfall, the celebration of Mass, 'Gloomy Sunday', a skylark, a *Pietà* of Duccio, a harp, Buchenwald, or even a computer requires an understanding of things that can only be gleaned from experience, and by that I mean the experience of someone who is open to a kind of understanding that science can never bring. One thought experiment makes this obvious: it is possible to imagine, for the purposes of argument, a highly precocious 9 year-old having a grasp of any of the technical knowledge that science can bring to these areas. But one can't imagine a 9 year-old, however precocious, being able to understand them in

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the sense available to someone whose life has been informed by a study of the humanities.

This is not at all to say that science has no contribution to make – of course it does, and I don't know where Professor Pinker gets the idea that this is not accepted, and even welcomed. It seems to me obvious that there is an almost insatiable, if at times ill-judged, appetite for the kind of understanding that science can bring to the arts, as one can tell from the media, as well as from the invitations I receive, and I am sure other scientists receive, from arts and humanities faculties, to discuss whatever it may be – music, dance, architecture, theology or philosophy – in relation to the brain. The phenomenal success of Professor Pinker's books with a non-specialist public would alone make that obvious, I should have thought. The worry is more that we will lose sight of the fact that it is only a partial understanding, at best, that science can bring. Its contribution is of a different sort and comes with a different agenda.

It is hard for science to get beyond the Enlightenment tenets identified by Isaiah Berlin: 'that all genuine questions can be answered, that if a question cannot be answered it is not a question; that all these answers are knowable, that they can be discovered by means which can be learnt and taught to other persons; and that all the answers must be compatible with one another.' I imagine Professor Pinker won't like me calling such beliefs naïve, either, but Berlin clearly thought they were, and I should hope that most reflective individuals with experience of life, including Professor Pinker, would think so too.

Dewey called neglect of context the gravest mistake made by philosophers. It is also a mistake when it is made by science. Science tends not to be good at context: its main preoccupation is taking things apart, and taking them out of the whole in which they inhere, in order to know what they 'really are'. Though in many cases this will tell you how it works, it has no chance of answering the question of what it is, since it only is what it is in context. This applies as much in science as in the humanities. The same gene will act quite differently in a different context, just as the same words or notes mean something quite different in a different poem or quintet, and analysing them only gets you so far. Similarly, although we feign to be able to isolate entities, physics tells us that in fact one cannot understand any one particle fully without acknowledging that its behaviour can be influenced by particles at the other end of the universe. Scientific method prioritises clarity, efficiency, a direct linear approach to achieving its target and the belief that a thing and its opposite cannot be true. Not a bad place to start, I fully agree. But it is not a good place to end up. Many, if not most, systems in the real world exhibit complex and chaotic dynamics which leave linear cause and effect behind at the starting line. They are largely unpredictable, as the strategists behind the Wall Street crash discovered. Many things, such as love, gravity and time, are both very real and very important, but not at all clear. Some aspects of both the phenomenological world and the physical universe are not accidentally, but essentially, indeterminate. Many things, such as sleep, sex, wisdom and happiness cannot be pursued directly, because wilfully focussing on them makes them unachievable. Many things are utterly changed when they no longer remain implicit but are forced into explicitness. And there are many cases in which a thing and its opposite can be compatible. Light can be both a wave and a particle. There is a

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kind of rationality that is itself irrational. Pain and pleasure, adversity and fulfilment, arrogance and humility, can coincide and interdepend.

Professor Pinker claims that the humanities have largely themselves to blame for their predicament. I would agree. It is never a good policy to blame others for one's misfortunes. One of the failings of the humanities has been a lack of self-belief and a failure to stand up for what they represent. I also agree wholeheartedly that there was a lot of time lost in the wastelands of structuralism, in some (though by no means all) forms of post-modernism, and so forth. But in my view this was symptomatic, precisely, of this loss of nerve by the humanities in the face of science. They felt they needed their own mystique, guarded by technical language and involving arcane conceptual systems. They needed above all to be seen to be 'hard', something that Professor Pinker sees as a hallmark of scientific endeavour. Of course it all depends what you mean by difficult. Sometimes it is retaining honesty, lucidity and simplicity – seeing what is there – that is truly hard. And sometimes it is knowing when to abandon what seems like the obvious mode of approach – something that is harder for science than for the humanities, as I have suggested.

The problem in the humanities may also have to do with something else which Professor Pinker touches on and brings into relief: the need to be seen to be doing something new. They have 'failed to define a progressive agenda', as Professor Pinker puts it. By comparison with the excited scientist in the dean's office, the humanities professor sounds like a loser, because he wants respect for the way things have been done in the past. But it depends on how you look at education. Does it lie in discovering new pieces of information about the material world, or in transmitting a civilisation? I would like to think that it was both. That means examining the inexhaustibly rich experience and wisdom, the writings and the creations of others who came this way before us. That is not to be backward-looking, but to guide our journey forward. Though these figures may not have been privy to the knowledge flowing from the scanning machines today, they may have, for that very reason, been able to see things that we cannot. It also requires inculcating a critical cast of mind that would question every certainty, without exception, including the assumptions that some scientists seem to take for granted. Only that combination of historical knowledge with scepticism can give us the required context in which to understand our own lives, predicaments and purposes.

While we are on the topic, if Professor Pinker is so keen on the humanities keeping up to the minute, why is it that the philosophers he chooses to follow are exclusively those in a particular time-limited period between around 250 and 350 years ago? I have some welcome news for Professor Pinker. Contrary to rumour in the psychology department at Harvard, philosophy has 'defined a progressive agenda', or, as we say, moved on. I recommend Hegel at least, for starters – though a random reference to dialectic in amongst a whole list of Professor Pinker's boo words – 'mystical forces, quests, destinies, dialectics, struggles, or messianic ages' – doesn't bode well for the encounter. Perhaps also Schopenhauer, Nietzsche, Heidegger, Scheler, Merleau-Ponty, the later Wittgenstein, Gadamer, Levinas and Ricoeur. A nodding acquaintance with them would help to redress the air of certainty surrounding his faith in the unproblematic business of attending to, describing and understanding the world.

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On reflection, why rush into the nineteenth, or even the twentieth, century like this? If you want an example of a first-rate philosopher who was also truly a first-rate empirical scientist, my money's on Aristotle – surely the greatest such person who ever lived. Being the open-minded scientist he was, he realised that there are indeed different, 'non-overlapping magisteria', and that they require different epistemological approaches. According to Aristotle, different kinds of knowledge are appropriate to different contexts: the kind of knowledge that is exercised by an accountant is not the same as that exercised by a doctor, or a playwright, or a shipbuilder, and ills flow from confusing them. The truth of that perception is all around us in the universities. Science brings with it *techné*. These days it is increasingly short on *phronesis* (the subtle, embodied, practical wisdom that comes from combining learning with judgment born of experience, and that which used to be the goal of education in the Renaissance), and has little to contribute to *sophia* at all. That is where philosophy and the humanities come in.

There isn't, in reality, the slightest chance of science sinking without trace – on the contrary, its ascendancy is unstoppable. But for the humanities the writing is on the wall. One feels that Professor Pinker could be more magnanimous in what must feel like victory – though from my perspective the loss of either partner is a disastrous loss for the other. And here science can give us valuable information. A generation of children is growing up who are either reluctant to read a book through or have actually lost the ability to sustain attention sufficiently to do so, that are dependent on a level of stimulation incompatible with the practice of scholarship, and are less empathic than their equivalent age group a few decades ago. A worrying number of them now need to be taught how to read the human face, something only autistic children had to learn explicitly in the recent past. Many of them are ignorant of their own culture's history or of most of the great works of world literature. They are immersed in a version of the world that is for a large part mediated through technology. It is a world where they might no longer be aware of what it is that they are missing.

To say there are limits to the sort of thing science can tell us should not be problematic. And it's no good dismissing people who would say there are such limits as enemies of science. Sometimes it is worth listening to one's friends – or one's partner – when they sound a note of caution. One of the points that most differentiates the humanities and science in 2013 is the willingness to accept that there are likely to be things we cannot know. It is irrational, and purely an article of faith, to suppose that our brains and minds are so constructed as to understand everything in the universe. Evolution is a constant and continuing process. Fatally, we cannot know what it is that we don't know, and it is only wise to bear that in mind. The public voice of science can often come across as – well, since this is a couple session, let's be frank – overbearing and complacent. It exhibits what we used to call hubris. In Greek tragedy it was this that caused the hero's downfall.

Only a fool would deny the many achievements of science in making life safer and more comfortable for many of us. Ultimately, though, what vindicates a change in a civilisation is not man-years lived, or even the reach of education, good as these things intrinsically may be, but whether it makes us happier and wiser. It is hard to dismiss evidence that we are not happier, in fact somewhat less so, and more

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prone to mental illness, than we used to be. One has to be blind, too, not to see that technology has altered our relationship with the natural world, with one another and with the culture to which we belong, in a multitude of ways – some might, no doubt, argue at times for the better. Its continuing advance means putting power to do things that we could only dream of a few years ago into the hands of our children. This might, it is true, make mankind more able to do heretofore unimaginable good. Let us hope so. But indisputably it makes us capable of heretofore unimaginable harm. And unfortunately the playing field is not level. It requires only a handful of people that are up to no good to enslave or destroy a few million others who are up to plenty of it. It took years to carve the Buddhas of Bamiyan. It took the Taleban, who were convinced that these were idols of superstition, and were convinced that they were right in their belief, only minutes to destroy them for ever. Unfortunately, though it takes the struggles – sorry about that one, Professor, but the word does actually have a meaning – of hundreds of years and many devoted minds to create a civilisation, it would take only a few years, and in some cases literally seconds, for a fool to destroy one, once the means exist.

Let us hope we are not being complacent. And let's hope our children are wiser than we are. For such wisdom they will need science, no doubt; but they will need the humanities far more.'