

DISENCHANTMENT

The tension between religion and intellectual knowledge definitely comes to the fore wherever rational, empirical knowledge has consistently worked through to the disenchantment of the world and its transformation into a causal mechanism. For then science encounters the claims of the ethical postulate that the world is a God-ordained, and hence somehow a *meaningfully* and ethically oriented cosmos. (Weber)¹

Weber speaks of a tension but for many science's disenchantment of the world is instead a liberation. Science empowers us, it gets us what we want. Two things stand in the way of our getting what we want: technical obstacles and superstitions. Science eliminates them both. It removes the technical obstacles by giving us a *technology*, a recipe for constructing machines which help us to get what we want. Beyond that science conquers superstitions, it gives us a picture of the world, a theory of how the world works, which *disenchants* that world. The scientific picture of the world leaves out much that used to prevent us from doing what we wanted. It excludes from reality all sorts of imaginary beings, forces and powers which used to constrain us. Once these mind-forged manacles are broken, we can take advantage of the technology which science provides.

This essay is not about whether science gives us the whole truth about our world. I shall not ask whether there is meaning in the cosmos or whether on the contrary all meaning, all purpose comes from ourselves. My worry is that the truth of science would not be liberating. To empower, science must extend our ability to act; yet by draining the cosmos of meaning or purpose, science threatens to undermine this very capacity. And that should make us wonder whether we can live in a disenchanted world. Religious world views may be untrue but we might not be able to do without them until we can find some other way of imbuing the cosmos with meaning.

I'll trace the process of disenchantment, starting with the natural world, moving onto the human body and finally arriving at the human mind. Science's claim to liberate is most plausible when confined to the natural world. But once we include ourselves in the scientific world view, the worries begin.

Disenchancing the Natural World

The disenchanting power of science is what interests me, its conquest of superstition. But first let us take a brief look at technology, science's other great gift to the human race. Technical obstacles prevent our actions having the effects we desire: the car doesn't start when we turn the ignition, taking the remedy doesn't cure the cold. Once we understand how cars and colds work, we can surmount these obstacles. Science

teaches us how these things work and, knowing how they work, we can build auto-ignitions and design cold cures which produce the right results. Science tells us how to manipulate the world around us, how to bend it to our will.

Technology is science's most tangible product. In the last four hundred years, a comprehensive theory of the physical world has been devised. During the late eighteenth and nineteenth century, this theory was applied to all aspects of human life in that great social transformation known as the Industrial Revolution. Prior to that revolution, people knew how to construct simple machines for specific purposes but they didn't have a systematic recipe for matching any given human need with a machine which could satisfy it. They didn't have a proper technology. Science has changed all that.

During the nineteenth and twentieth centuries, our scientific understanding was extended first to the biological and then into the psychological realm. We figured out how living things evolve and replicate; we discovered the biochemistry of the body. Biotechnology in all its forms swiftly followed. In the eighteenth century there was a smallpox vaccine but no one understood how it worked. Now we have conquered many of the major diseases which threaten mankind, we have a plethora of surgical procedures for repairing, or simply improving, the body and the techniques of genetic engineering offer us new ways of manipulating both ourselves and the rest of the living world.

True, the human mind has proved recalcitrant but even here there is some progress to report. Our understanding of the physiology of the brain is clearly in its infancy and this shows in the crudity of our technology of the mind. We are good at dealing with relatively uncomplicated phenomena like pain and sleep loss. We are less good at coping with mental illness. Still science has recently put new weapons into our hands. Prozac and Ritelin change the psychology of human beings in ways we think desirable. A comprehensive technology of the mind, a technology of our more complex beliefs, desires and emotions seems feasible in principle. One day we might be able to transform ourselves as we can now transform our bodies and the physical world around us.

Technology is no good to us unless we are prepared to use it. One thing which stops us using it are superstitious doubts about whether it will work. Our battle plan demands action but the horoscope looks bad; the plane is air worthy but we are heading into the Bermuda triangle; AIDS can't be cured until its victims repent of their sins. Science tells us that these doubts are unfounded: they rest on a belief in supernatural forces and magical influences which have no reality. A superstitious belief in these forces might affect what happens in the physical world by influencing the way *we* behave in it, but the forces themselves have no impact whatsoever.

These superstitions prevent us taking advantage of technology by making us doubt its efficacy or reliability. There are other non-scientific beliefs which stop us using technology without questioning its power. Say there is an ancient oak in my garden, in just the place I would like to build a little crazy golf course for the kids. I decide to cut the oak down with my chain saw. Many of us would have qualms about this but not because we have any doubts about the reliability of the chain saw. Wouldn't it be wrong to cut down such a magnificent tree just to build a crazy golf course? We might think this wrong because other people, my neighbours and future generations, would be deprived of the sight of this grand old tree. But, some say, it is wrong to destroy this tree for a quite different reason, a reason which has nothing to do with the interests of human beings, present or future.

On their view, living things like an oak have a certain place in the natural order. They grow leaves, produce acorns and become knarled. In so doing they discharge their natural function. We have no right to interfere with the natural functioning of the oak just because we want another crazy golf course. We have no right to frustrate the aims implicit in the oak's activities and terminate its existence. To cut the oak down and burn it in order to make way for a crazy golf course would be to misuse that bit of nature, to pervert its natural functioning. Here, the application of technology must be curbed.

There is nothing in the scientific picture of the world to support this line of thought. The scientist acknowledges that we human beings have purposes and we impose those purposes on the world: we fix our environment to suit ourselves. But the things we work on, our physical material, has no purpose of its own. I may make some sticks of wood into a chair and thus give them a function. But, apart from me, these sticks have no function. They could be used as a seat, as a door stop, or as a bludgeon. Anything these sticks can do I could use them to do and that thing would become their function. It is people who determine what parts of the natural world are for: in themselves they have no purpose.

Of course, science acknowledges that trees have evolved and it offers an explanation of their existence and characteristic activities. Oaks, like all other species of living thing, are not designed; rather they are a product of random mutation and natural selection. By observing oak trees, we can distinguish those processes which aid the survival and reproduction of this species - putting down roots, shedding acorns, even the occasional forest fire - from those which do not. But there is nothing here to support the idea that the tree's shedding its acorns is a more natural event than my applying a chain saw to its trunk. Our species has been destroying trees since the dawn of time: burning forests to make way for agriculture is one of humanity's most characteristic activities.² By doing such things, our species increased and multiplied.

If that is all it means for an activity to be natural, how can I be upsetting the natural order by cutting down a tree?

In recent years scientists have criticised the destruction of the Amazonian rain forests by logging companies. They point out that the destruction will have serious side effects - it will alter the composition of the earth's atmosphere for example - and the bad consequences of upsetting our ecosystem may outweigh the benefits of having more paper, fuel, agricultural land and so forth. Here the scientists are appealing to the needs and interests of human beings; they object to the logging on the grounds that it will be bad for *us*. They are not saying that the logging somehow perverts the natural order, that it is intrinsically wrong because it fails to respect the life of a forest. That thought would make no sense to them.

The Industrial Revolution could not have occurred without the technical know-how which science gave us. But, by itself, this technical know-how was useless; science also needed to disenchant the natural world, to strip it of any purpose which might conflict with our aims; once that had happened, we felt entitled to apply this technology everywhere. The Industrial Revolution required us to exploit the natural world, to interfere with its workings on a scale never before imagined: we had to dig up fossil fuels, create canals, divert rivers, build factories and cities on virgin land, and that was only the beginning. Those who did all this viewed nature as a resource, there to be used by humanity for its own ends and, with the aid of genetic technology, these people are now redesigning our crops and our livestock. For them, nature has no purposes of its own, it is dumb material waiting to be made into something useful.

When I speak of science's disenchantment of the world, I mean science's removal of natural purpose and meaning from the world. In many people's view, this disenchantment is liberating: it enables us to mould our natural environment to suit ourselves. How could we live without using modern technology? Who would seriously contemplate forgoing the benefits of industrialisation? And why should we deny these benefits to those who don't already have them? Perhaps the scientific attitude is the right attitude to take towards the natural world, or at least the only feasible attitude for us to adopt. But science's powers of disenchantment now affect our understanding of human beings themselves. It is our turn to be disenchanted.

Disenchanting the Human Body

It is impious, says the old Roman superstition, to divert rivers from their course, or invade the prerogatives of nature. 'Tis impious, says the French superstition, to inoculate for the small-pox, or usurp the business of providence, by volunarily producing distempers or maladies. 'Tis impious, says the modern European superstition, to put a period on our own life, and thereby rebel against our creator. And why impious, say I, to build houses, cultivate the ground, and

sail upon the ocean? In all these actions, we employ our powers of mind and body to produce some innovation in the course of nature; and in none of them do we any more. They are all of them, therefore, equally innocent or equally criminal. (Hume)³

Science treats human beings as a part of the natural world; it tells us how we work. Once we know how we work, we can devise technologies of self-transformation, ways of making body and mind more pleasing to ourselves. There have always been such ways: primitive forms of surgery (like circumcision) and primitive drugs (like opium). But, until recently, our knowledge was too slight to support any systematic technology of the self. Not understanding human physiology, we had to take disease, handicap and physical appearance as givens, as brute facts which we must somehow come to terms with. Not understanding human psychology, we were subject to mental illness and mental defects of all kinds.

But, at least with regard to the human body, it is no longer so. Once our ignorance of the human body was dispelled, it fell under our control: we can cure disease, overcome handicap and remove physical deformities. And now that we are in control of the body, why should we limit ourselves to curing illness? Why shouldn't we improve the body, mould it at will? Breast enlargements, pectoral implants, face lifts transform our appearance; hormone replacement therapy staves off the menopause; surgery can (arguably) change our gender. The body has become malleable; it is no longer a given.

Some of these technologies of self-transformation provoke anxiety but people find it very hard to articulate the grounds for their anxiety. Sometimes they appeal to bad side effects - breast implants might be carcinogenic - but that is an argument for better breast implants, not an objection to breast enlargement technology as such. Sometimes people call breast implants 'unnatural'. This takes us closer to the heart of the matter but it is hard to say why this should be an objection, or even what exactly it means. If I want to be muscular, I could go to the gym every day or else I could have some pectoral implants inserted. The latter is much more convenient and probably less costly in the long run. Is it really more unnatural and more objectionable than visiting a gym? Is losing weight by dieting more natural than losing weight by taking a drug that speeds up your metabolism?

Anyone who has absorbed the scientific picture of the world will conclude that there is no answer to such questions. We must drop this talk of 'natural' and 'unnatural' where the human body is concerned. The body is a machine which is there to serve our purposes. Once we know how this machine works, we can treat it just as we would our car or our house. There is a rough-and-ready distinction between merely repairing the body, removing some defect in it and changing our body, transforming it in accordance with our wishes. After all, we make such a distinction in

the case of cars and houses, why not for bodies also? But this distinction has no ethical significance: it is no worse to improve your house than it is to repair it. Why should it be any different with your body?

The image of the human body as an organic machine is meant to be liberating. By disenchanting the human body, science ensures that the body makes no demands on us, that it does not require to be treated in a certain way. Like the rain forests, the parts of the body have no purposes which we must respect, no modes of working and living which we must not interfere with. Of course we may encounter technical difficulties in dealing with our bodies - the body may fail to do what we want because of disease or physical limitation - but, in principle, all such technical obstacles can be overcome given the necessary knowledge and resources. There is nothing about the human body which must be taken as a given.

David Hume drew the logical conclusion: the very existence of the human body need not be treated as a given either. From the point of view of the universe a human life is no more (and no less) valuable than an oyster.⁴ The world puts no value on the life of a human being, only human beings do that. Once we cease to value a human life, once its continuance is no longer desired either by the person whose life it is or by other people, that life loses its value. Nature sees nothing wrong in 'turning a few ounces of blood from their natural channels'⁵. If that is what we want, nature will not stop us.

Hume's essay 'Of Suicide' remained unpublished in the eighteenth century because it attacked a firmly entrenched prohibition. Since then attitudes have gradually changed until the view that there need be nothing wrong with suicide became almost the conventional wisdom. But doubts remain. Lawmakers who are happy to decriminalise suicide hesitate to authorise euthanasia because, they say, one can't be sure that the choice is truly voluntary, that people are not persuading their elderly relatives to move on before their time etc. Yet such worries do not prevent us sending 'volunteers' to their deaths in war. I suspect there is a deeper concern here which our lawmakers are less ready to articulate.

Though many claim that there need be nothing wrong with suicide, far fewer endorse Hume's reason for thinking this. People still maintain that a human life is more valuable than the life of a cat or, indeed, an oyster. This can't mean that the continuance of a human life is wanted more than that of a cat or an oyster. Many cats want to stay alive quite as much as any human being and we humans may feel more concern about the fate of a beautiful oyster than we do about certain fellow humans. Nevertheless, we admit, human life is more important. And we treat what human beings want as more important than what cats want precisely because we think human beings are more important than cats. But if the value of a human life is not a function

of how much anybody wants it to continue, how can the simple fact that nobody wants a particular human life to continue make it right to end it?

The continued prevalence of notions of natural value and purpose helps to explain other aspects of our attitude to the human body. A few years ago, I saw a television programme about a man who fervently wished to be rid of his healthy left leg: this leg was a part of his body he simply did not want to have. His left leg felt like an imposition, an encumbrance, even a deformity. The man's misery was clearly genuine and we watched him search desperately for a surgeon who would be willing to amputate. Unsurprisingly all of the doctors he approached turned him down. In the meantime the man rendered the leg useless by strapping it in a brace, a measure which seemed to relieve his distress a little.

The makers of the television programme did everything they could to present things from this man's point of view. Nevertheless, despite all their efforts, I had no doubt that the doctors were right to refuse him: it was psychiatric help he needed, not surgery. But why shouldn't the man be allowed to have the body he wishes, a body which fits his self-image, especially if this need to be rid of his leg simply won't go away? Why should he be condemned to misery when the solution is so near at hand? Towards the end of the programme, our man was visited by another sufferer who had destroyed his leg with a shotgun in order to force doctors to amputate it. This man's life had been transformed: he was much more comfortable with the prosthetic leg which had replaced the amputated limb. He had no regrets. Why should we?

The fact is a healthy human body has two legs. A desire to be rid of a perfectly healthy leg is a perverse desire, one which has little claim to be satisfied however strongly felt. This desire should be eliminated, by pill or talking cure. The doctors refused this man because, they thought, a doctor's job is to make people healthy, not to give them whatever they want. It was not biochemistry, physiology or anatomy which taught them this. These sciences explain only how human bodies actually work and how they came to exist. Evolutionary biology no more prevents doctors from cutting off a man's leg to make him happy than it forbids me to cut down the ancient oak in my garden because it makes me happy. What we ought and ought not to do with the human body is beyond science's scope.

Yet we seem to have opinions about such matters, we seem to differentiate making a body healthy again, restoring its natural functioning, from simply bending it to our will. Is such thinking mere superstition, a harmful vestige of a pre-scientific age we should have outgrown long ago?

Disenchating the Human Mind

We can construct a railway across the Sahara, we can build the Eiffel Tower and talk directly with New York, but we surely cannot improve man. No, we can! To produce a new 'improved version' of man - that is the future task of Communism. And for that we have first to find out everything about man, his anatomy, his physiology and that part of his physiology which is called his psychology. Man must look at himself and see himself as a raw material, or at best as a semi-manufactured product, and say: 'At last, my dear *homo sapiens*, I will work on you'. (Trotsky)⁶

Science drains the natural world of purpose, it disenchant's our world. But science does leave some remnant of meaning and purpose behind: it acknowledges that human beings have purposes, that they have objectives which explain their behaviour. Human beings don't just want to understand the world, they want to change it and scientists respond to this by giving us a technology, not just a theory. There would be little point in doing so if human life were devoid of purpose. But how should a scientist describe what happens when a human being acts for a purpose? How can they find a place in their disenchanted world for the meaningful activities of human beings?

I'm getting out of my chair and walking towards the cupboard. Why? Because I want a drink and believe the drinks are in the cupboard. Here my action is purposive and it is purposive because it is motivated in a certain way. I have a *desire* for a drink and I have a *belief* about how to get that desire satisfied. That belief is based on further things I believe about the world: I think the drinks are in the cupboard, I think I can get to the cupboard by getting out of my chair and so forth. In general, purposive action is motivated by a combination of two different kinds of mental state: *desires* for various things and *beliefs* about how to get those desires satisfied. To have a purpose is to have a certain combination of beliefs and desires.

This picture of human action requires elaboration but it will do for now. Certainly there is nothing in it to which the scientist need take exception. In the scientist's view, beliefs and desires are both states of human organisms, states which causally explain the behaviour of those organisms. When we say that a person has a purpose, all we are saying is that they are in a state which will dispose them to behave in certain ways. There's nothing superstitious or mysterious about that.

Normally we act in an effort to satisfy our desires. But once we understand how behaviour is caused, once we understand the physical basis of desire, for instance, we can exercise control over our behaviour at an earlier stage, by manipulating its causes in the brain. Science tells us that we human beings are bags of chemicals. By discovering the chemistry of the brain, we will understand how desires and beliefs are produced and then we shall know the physical basis of behaviour. And

once we understand human behaviour, we can predict and manipulate human behaviour, our own included. A science of the mind yields a technology of the mind.

In fact, this is something we can do on a small scale without employing any science of the mind. If you feel a great desire for a mid-afternoon nap, you could take to your bed. But suppose you have to work and can't afford to sleep; then go to your kitchen and make yourself a coffee. That will not satisfy your desire to sleep, but it will remove it. By drinking the coffee you have engaged in a simple bit of self-manipulation. You have altered your psychology to ensure that you behave in the way you want to.

As our knowledge of the brain deepens, our technology of self-transformation becomes more powerful. For example, one of the chemicals in our brain is serotonin. Psychiatrists have discovered that by manipulating the levels of serotonin in our brain, they can change our desires. This discovery lay behind the development of the drug Prozac. Prozac affects all sorts of emotions, reactions and attitudes. For example, someone who finds themselves more inclined than they would wish to help deadbeat friends or remain with abusive partners (perhaps because of their low self-esteem) can change their behaviour by taking Prozac. They can deal with this oppressive desire to help deadbeats etc. not by satisfying it but by destroying it. Having rubbed it out, they are free of any compulsion to help others. Such desires need no longer be taken as a given: we can simply decide not to have them.⁷

What a beautiful illustration of the liberating potential of science. Prozac's popularity is huge: between its introduction in 1987 and the year 2000 some 35 million people made use of it. Yet Prozac has been causing concern. Why? Isn't it wonderful that Prozac is helping so many of us deal with the stresses of life? The public debate takes a familiar course. The opponents of Prozac, rather than making any direct objection to its use, point to regrettable side effects. But one of the main advantages of Prozac over previous generations of anti-depressants is precisely its lack of obviously harmful side effects. It has been claimed that Prozac causes violent or self-destructive behaviour but the evidence here is inconclusive. The opponents of this new technology of the self find themselves unable to articulate the real grounds for their concern.

To advance the debate, let's focus on the idea that drugs like Prozac are liberating. It is not hard to see why fans of Prozac think so. Before Prozac we were at the mercy of powerful psychic forces over which we had no control. Now Prozac gives us a way of controlling (at least some of) these forces, or else of extinguishing them altogether. Surely Prozac can liberate us from the misery of mental illness just as the discovery of penicillin freed us from the tyranny of tuberculosis? Without strong evidence of bad side effects, isn't anyone who objects to widespread use of

Prozac merely erecting superstitious obstacles to human happiness? In refusing to acknowledge that human beings are bags of chemicals whose mixture can sometimes be improved by psychiatric drugs, we may be cutting off our nose to spite our face.

What lies behind this gospel of liberation is a certain picture of what human freedom consists in.⁸ On this view, human beings are free when they can get what they want. I am in control when my desires determine what happens. I freely get the drinks out of the cupboard because that is what I want to be doing in order to quench my thirst. Now a psychiatric drug helps us to get what we want in a rather special way: by enabling us to change what we want. So we now have a whole new level of freedom: not only can we perform the actions that we want, we can also have the desires that we want. Isn't this new freedom to be welcomed?

Vertigo is more likely. Science invites us to exercise control over our lives by finding out what we want, working out how to get it and then acting accordingly. But now we are being told that we shouldn't take our desires as given, that we can act to change them as well. But if we can change what we want, what basis is left for choice or decision? If, when I want a holiday, I can either act to satisfy this desire or else, just as easily, act to remove it, how can that desire give me any reason to go on holiday rather than stay at home? Once the science of the mind is completed and we can alter our desires in any way we please, how shall we decide what to do? Far from expanding our powers of self-control, these drugs threaten to deprive us of any grounds for making a choice.

Is this all a fuss about nothing? Don't we decide every day how many cups of coffee we shall have and thus how sleepy we want to feel without experiencing metaphysical vertigo? Don't many of us drink alcohol of an evening when we want to feel relaxed and sociable and abstain when we don't, without fear of depriving ourselves of the ability to choose? Isn't such self-transformation a common and unproblematic feature of everyday life?

Yes it is but, as things currently stand, our powers of self-transformation are very limited. We must take many of our desires for granted. For example, I can easily remove the desire to sleep by ingesting some caffeine but there is no easy way to remove the desire to work. Most people feel a need for financial security and know they have to work regularly to get it: they have no way of making themselves want to live for the day, just like that. This fixed desire constrains their choices: their need to work gives them a strong motive for drinking a coffee. In the last paragraph, I was discussing the idea that such needs, needs we can't be rid of, are a limitation on our freedom, so that a drug which enabled us to decide whether we wanted to work or preferred to live for the day would be an important extension of our self-control. But this seems the opposite of the truth. Such drugs, by liberating us from desire, would

tend to remove any grounds for choice. Only someone who takes at least some of their desires as given has any basis for action at all.

The Pharmacy Of The Future

There is nothing regrettable about finding oneself, in the last analysis, left with something which one cannot choose to accept or reject. What one is left with is probably just oneself, a core without which there could be no choice belonging to the person at all. Some unchosen restrictions on choice are among the conditions of its possibility. (Nagel)⁹

Your relationship is in trouble. The two of you get along well and seem compatible in most things but nagging doubts about your partner's fidelity spoil your happiness. Sometimes you tell yourself these doubts are irrational and you try to put them out of your mind. And perhaps they are irrational: it's so hard to judge from the inside. That lingering glance at the party, a late return from work: are these genuine grounds for suspicion or events that any normal person would hardly notice? Whether reasonable or not, your doubts just won't go away, so what to do? Those who hire private investigators are beneath contempt and raising the matter with your partner would inflame their anger without quieting your suspicions.

Clearly your troubled psyche is badly in need of repair and so you visit *The Pharmacy Of The Future*. You walk through the door intending to purchase the new anti-doubt pill *Credon*. *Credon* will lull your suspicions, will make you credit your partner's stories and stop you scrutinising their every movement at parties. *Credon* isn't an all-round gullibility pill: it won't make you believe whatever a random second-hand car salesman tells you. It works only in the context of intimate relationships. True the manufacturers warn that, in trials, *Credon* has generated a level of trust between lovers which some might consider excessive. But who can say when it is reasonable to stop trusting your loved ones? That is for you to decide.

Having made up your mind about this, you ask for *Credon* but your conscientious pharmacist suspects that you have yet to consider all the options. Aren't you taking it for granted that you should *want* your partner to be faithful to you? Why take that for granted, the pharmacist asks? Why not resolve your psychic tensions by taking the anti-possessiveness pill *Libermine* instead? Those on *Libermine* don't care whether their partners have the occasional tryst, just so long as these flings don't come to anything. On *Libermine* you can speculate with tender curiosity about your partner's fidelity.

Seeing you hesitate between an anti-doubt and an anti-possessiveness pill, the pharmacist can't resist making a further suggestion. If you think the choice must be between *Credon* and *Libermine*, you obviously haven't reflected on the relationship itself. This relationship might be as fulfilling as any you could reasonably hope for.

But why must you be part of a couple at all? True, in the past you always felt miserable living alone and couldn't be happy without the knowledge that you were someone's top priority. *Solox*, the emotional independence pill, can change all that. Those taking *Solox* have a wide and satisfying circle of friends, can travel the world unconstrained by a partner's schedule, may leave their accommodation in just the state they like it. And they escape the costs of romantic intimacy, jealously included.

The choice between *Credon*, *Libermine* and *Solox* is bewildering. All resolve the psychic tension which oppresses you but in quite different ways. Nor will the pharmacist hand over one of these drugs until it is clear to him that you have made a properly informed decision on the matter. But how are you to decide? Suppose *Credon* is the same price as a Mars Bar, while *Libermine* and *Solox* both cost the equivalent of a good bottle of wine. Does that tilt the balance in favour of *Credon*? No self-respecting person would take *Credon* simply because it was cheaper. You are not short of money and the price of a good bottle of wine is not going to make the difference between choosing to live in a trusting and monogamous relationship and opting for a quite different life-style. So what is?

You might try telling the pharmacist that it is natural to want to be in a relationship and abnormal not to care about whether your partner is sleeping around. Isn't that a good reason to choose *Credon*? But, at this, the pharmacist grows stern. Such judgmental attitudes have no scientific basis and should not influence your decisions, let alone your view of others. Many people, he reminds you, are born with *Solox* in their brains: they have no interest in romance as traditionally conceived. What exactly is 'unnatural' about their psychology? Such people are just as much a product of nature as you or I. Why should the rest of us regard these loners as inadequate simply because they differ from us?

Chastened by the pharmacist's outburst, you retreat to safer ground and appeal to the desires you find yourself with, carefully avoiding any evaluation of them and simply reporting their relative strength. Perhaps *Solox* would make it easier to travel, or leave your place in a tip, you say, but in fact you have no desire to travel and put great weight on a tidy house. Of course, the pharmacist will be unimpressed by this. You are still failing to appreciate the huge power of modern psychopharmacology. You are forgetting about *Wanderlust* (even cheaper than *Credon*) which will have you fleeing the country whenever you can. On *Wanderlust*, everyone can benefit fully from the effects of *Solox*. And though, of course, one shouldn't be judgmental about the houseproud, some might regard strict tidiness as a symptom of what used to be called obsessive-compulsive disorder, a condition which is still treated (in those who experience it as a problem) with the penicillin of psychopharmacology *Prozac*.

In desperation, you change tack. ‘Perhaps I could live happily in an open relationship on *Libermine* but then it wouldn’t really be *me* any more; I would have destroyed myself by taking *Libermine*; I would have turned myself into someone else. And taking *Solox* would be even worse. I don’t look down on those who are happy without a monogamous relationship but *I* could never be such a person and I want a life which expresses who *I* am’. The pharmacist is unmoved. He reminds you that you were perfectly willing to take *Credon*: you didn’t think that destroying your suspicious nature, and replacing it with a trusting soul, would make you a different person. Why should it be more of a change to alter the strength of your desire for a monogamous relationship?

How do we draw a line here? Science won’t help us. In the 1960s, many people in the Western world who had sought monogamy abandoned that romantic ideal and opted for open relationships. Were they adopting new selves or finding their true selves at last? Who can say? The ‘true self’ looks like a piece of superstition.¹⁰

Bewilderment has now turned to frustration. You thought you had made a decision and that science would enable you to implement that decision. Instead, science seems to be putting obstacles in the way of your taking any decision at all. The pharmacist is giving you too much choice, more choice than you can think of any grounds for making. By insisting that you take nothing as given, that you regard every aspect of your character as mutable, as subject to your will, the pharmacist puts you in an irresolvable quandary. You can’t handle such total control.¹¹

Why not cut this knot by making an *arbitrary* choice? Tell the pharmacist that you just want *Credon* and that’s an end of it. After all, it is cheaper. In the absence of any other reason for choosing among the bewildering variety of equally coherent characters, personalities, needs and interests on offer, you may as well choose the cheapest. At any rate you know that, once *Credon* has taken effect, you won’t regret the choice, being willing to believe virtually anything your partner tells you. But then, you reflect, you’d be equally happy with having taken *Libermine*. To decide between *Credon* and *Libermine*, you need to discover something which strikes you as a good reason for preferring one to the other *before* you make the choice. In a grocery store, you can happily choose between two brands of biscuits on the basis of a slight difference in price because this choice does not really matter to you. In the pharmacy, the choices you make are fundamental. If anything at all really matters to you, these choices must seem to matter. And if nothing seems to matter, there is no point having the capacity to choose in the first place.

Conclusion

For Trotsky, the better we understand how human beings work, the freer we shall be. But *The Pharmacy Of The Future* suggests that the more we learn about ourselves, the less free we shall be. A scientific understanding of man is a threat to our freedom because it undermines our capacity to govern our own lives by taking decisions. If man is a just bag of chemicals, once we know what these chemicals are we can re-mix them at will. And by re-mixing them at will we can give ourselves whatever character we like. But if we can choose a character at random, our current needs and interests lose their authority as grounds for taking any decision. And what other grounds for taking decisions are there?

It is often said that science threatens human freedom when it insists that a person's actions are determined by factors outside that person's control: his character and environment. Several people wish to marry me and, it seems, I can choose one of them, or else choose not to marry at all. But science tells me that things over which I have no control (i.e. 'character' and 'circumstance') already determine which decision I shall take and what I shall do. People like me, people with my genes and upbringing, people with my education, in my economic position, at my age, choose to marry people like that. So really I have no option: choice is an illusion. I am no more in control than an autumn leaf, imagined by Wittgenstein, which floats to the ground while thinking 'Now I'll go this way ... Now I'll go that'.

My worry is rather different. My worry is not that a successful science of the human mind will deprive us of the ability to take decisions by subjecting us to the immutable facts of our nature and situation but rather that it threatens to remove the fixed points that are needed to make decision making possible at all. I feel not constrained but vertiginous. In a purely scientific picture of man, there is no obstacle to indefinite transformation of both self and environment. When learning the science of what we actually are, we also learn the science of what we might become. To be sure, man finds himself with certain needs in a certain situation. But science tells us that there is nothing normative about man's actual needs or his actual situation.

In Western Europe religious belief used to be the principal source of those fixed points which make decision making possible. In the rest of the world it still is. These beliefs may all be delusions but, as technology advances, the need for such fixed points becomes more, not less, pressing. Should science be the whole truth about human beings, that truth will not set us free.¹²

¹ ‘Religious Rejections of the World and their Directions’ in Ed. Gerth and Mills – *From Max Weber: Essays in Sociology* (Oxford: 1946) pp. 350-1.

² The Scientific World View would not have been offered as a justification for such activities when the need for a justification was first felt. Before the scientific revolution, man’s dominion over nature was often thought of as an authority delegated by God. What may be distinctive about the Scientific World View is that it has returned many of us to a state in which we feel no need for any such justification.

³D. Hume - 'Of Suicide' in his *Selected Essays Oxford World Classics* (Oxford 1993) p. 321.

⁴D. Hume *op. cit* p. 319.

⁵D. Hume *op. cit* p. 320.

⁶ L. Troskii - *Sochineniia XXI*; 110-12 (Moscow 1925-7). I take the reference and translation from O. Figes – *A People’s Tragedy* (Penguin 1996) p. 734.

⁷ For a thoughtful (and mildly enthusiastic) account of the history and impact of Prozac, see P. Kramer – *Listening to Prozac* (Fourth Estate: 1994).

⁸ For an early sketch of the picture, see T. Hobbes – *Leviathan* (Hackett: 1994) Chapter 21: 1-4.

⁹ T. Nagel – *The Possibility of Altruism* (Princeton: 1970).

¹⁰ In *Being and Nothingness* (Routledge 1969), Sartre approaches the same conclusion from a different direction. Much of that book bears on the present topic.

¹¹ For a recent, crisp statement of the problem, see H. Frankfurt – *The Importance of What We Care About* (Cambridge University Press: 1988) pp. 177-8. Could we solve the problem by appealing to Frankfurt’s ‘higher-order desires’ i.e. desires to have certain desires? Suppose I simply want to want monogamy: that is the desire I want to have. Wouldn’t that get me to take *Credon*? Yet the same sort question recurs. If there is a pill that will rid me of this higher-order desire, why shouldn’t I take it? This question can be repeated until we get to a point where the person is indifferent between satisfying the desire and taking the desire-destroying pill.

¹² I am grateful for the comments of Leif Wenar, Louise Anthony, Sam Ishii-Gonzales and Tim Crane on earlier drafts.