

Chapter 11

The Good, The True, The Beautiful

To preach morality is easy, but to provide a foundation for it is hard.
— Schopenhauer, *The World as Will and Representation*

The good, the true, the beautiful.
These are the things that pay.
— Anon, after Socrates

Philosophically speaking, Darwin solved two key problems. He not only naturalised functional explanation in biology but also naturalised *normativity*, i.e. he found a way of deriving normative properties from non-normative properties — oughts from is's. Darwin explained why hearts beat and also why hearts *ought* to beat. He found a way of determining what made a heart a *good* heart.

In the last chapter I argued that Marx discovered a mechanism underlying social evolution that is analogous to the mechanism that Darwin discovered underlying natural evolution; and showed how we can use this to naturalise functional explanations in sociology. In this chapter I explore whether it is also possible to use the same theory to naturalise social norms, such as our criteria of truth, goodness, and beauty. This is not intended to be a full treatment of the issue, but merely a pointer to where the theory may take us.

The norms that we use in everyday life, like other ideas, are a product of historical evolution. We have different criteria of what makes something true or beautiful or good than, say, a European peasant of the middle ages or a Japanese *samurai*. And the theory of social evolution outlined in the previous chapter implies that the dominant norms in society will tend to be those that maximise the social power of the dominant social vehicles. For example, the European peasant venerated the icons of the church as beautiful and holy because these ideas reinforced the feudal order, just as the Japanese *samurai* saw the swordsman's ritual as honourable and elegant compared to the ugly depravity of Western firearms. Our modern icons of beauty, on the other hand, are more likely to be those offered by Hollywood — indeed a great deal of money is invested in making sure that we do. And the Nazi's racist ideology served their interests well and as a result they were able to enforce it across much of Europe. Therefore might makes right (or good or beautiful) at least in a purely *de facto* sense. But this seems to imply that the ideas that we *ought* to have — including our

judgements of truth, beauty, and goodness — are those that would serve our own social interests. In other words the Nazi's were *right* to enforce their ideology because it was good *for them*.

In this chapter I counter, or rather *salve*, two objections to this evolutionary account of social norms. The first objection is based on the fact that there seems to be at least one concept of truth that is in some sense universal, eternal, and immune from the effects of social evolution; namely *science*. My response is that scientific norms are indeed fixed, but that this does not imply that they are independent of their social context. The second objection is that a Darwinian approach to social norms seems to advocate the most brutal kind of Nietzschean Social Darwinism based on the triumphant survival of the social fittest. My response uses the distinction between types of functional description outlined in chapter 7 and implies that social evolution may determine what the interests of social vehicles are — and so determine what their norms ought to be — but this still leaves it up to individual to decide whether they agree that those norms are good, and so whether they should ally themselves with those social vehicles.

11.1 Truth and Success

In chapters 5 and 6 I argued that words are deemed true if we can use them to successfully to interact with the world. But how do we judge success? If words are tools, as Wittgenstein put it, then what are they *for*? Millikan defines the success of a word in terms of its proper function which is derived, in turn, from the proper function of the system that produced it. But what is the proper function of our linguistic and cognitive abilities? What are *they* for? Presumably these faculties evolved because they increased the reproductive fitness of the vehicles that carried the germ-line genes for them, but how did they do this?

Millikan — along with most other philosophers of mind, from Popper onwards, who root meaning in evolution — argue that the evolutionary benefit of representations lies in their ability to accurately correspond to a state of the world. Papineau, for example, claims that ‘we can say that the biological purpose of a given concept is to allow us to have certain beliefs, and the purpose of such beliefs is to be present when certain states of affairs obtain’ (1984, p559). Millikan then rigorously demonstrates how this simple basic idea can be extended to cases in which the relationship between the word and the world is not one of simple correspondence, such as counterfactuals, universal quantifications, vacuous terms, negations, and so on.¹

Now it is certainly plausible that animals’ innate representational abilities evolved because of their ability to accurately correspond to the world. More accurate fly-detectors make for more successful frogs, for example. But the rules of the evolutionary game have now changed. Once the human brain evolved a particular set of linguistic abilities then a different sort of evolution started to happen, namely social evolution. And this new form of evolution defines new criteria of success. In chapter 10 I argued that, according to the new rules, the success of a social trait is judged by the way in which it contributes to the social power of the vehicles through which it is transmitted. Therefore we have no reason to assume that the proper function of language is accurate representation *per se*. The vocabulary of religion, for example, is well-adapted to its social environment. It fulfills its proper function of maintaining a particular social order, but

¹In fact Millikan starts with complete indicative sentences as the basic unit of mapping onto the world, and then derives the proper functions of object terms from the roles that they play within the invariant structures of sentences.

does this make it true? Social evolution is capable of producing *false consciousness* (in Marx's terminology) in a way that is not possible for animals ruled solely by the Darwinian imperative.²

However Millikan argues that the advent of cultural evolution has not changed the underlying proper functions of our cognitive abilities: the rules of the game have not changed, it is just being played in a new way.

It is reasonable to suppose that the brain structures we have recently been using in developing new space technology and elementary-particle physics have been operating in accordance with the very same general principles as when prehistoric man used them for more primitive ventures. They are no more performing new and different functions or operating in accordance with new and different principles nowadays than are the eyes when what they see is television screens and space shuttles. . . . It is reasonable that the cognitive structures with which man is endowed were originally nature's solution to some very simple demands made by man's evolutionary niche. But the solution nature stumbled on was a solution that cut to the very bone of the ontological structure of the world. (1989, p294)

Millikan also compares the human brain to a general purpose computer: it may be given a new program and inputs, but all its components will still be working according to their original design (as long as they are not broken). Thus its behaviour may change but not the function of its individual parts.

According to Millikan our cognitive faculties originally evolved to accurately represent the world and modern innovations have only extended the range of these abilities, not changed their essential function. Therefore when these modern brains produce memes, such as religion, which fail to map on to the world then they are failing to fulfill their ultimately biological function. However there are two problems with this argument.

The first is that Millikan is making a large assumption in claiming that the brain contains a fixed set of deep structures that follow the same rules in all environments. As I stressed in sections 4.1 and 5.3, changes in the environment of an agent may not just affect its behaviour, they may also change the way it works. Recall how the visual system of the horseshoe crab was affected by a change in its environment, such that it became effectively blind when removed from its natural conditions of nocturnal coastal water. The retina of the crab only works effectively in particular environments. Some modern social inputs can have similarly disastrous effects on the human brain. Think of the stress induced in an office worker by information overload, or the stupor of a couch potato. Modern environments do not just change the inputs to the brain's 'computer' but may also effectively break it, changing the rules by which it operates. In other cases we carefully control these novel inputs to produce responses that were not part of the original design, but are socially desirable in other ways. Think of the drug-induced reveries of the Romantic poets: evolution defines no function for such responses because hallucinogens were not part of our evolutionary environment. We can discover *new* functional properties by giving the brain new inputs.

The second problem is that entities can acquire novel functions 'from above' when they become part of larger systems that have their own proper functions. The function of bluebell flowers, for example, changed from attracting insects to attracting flowers when they were transplanted

²Though deception behaviour in primates is one possible exception.

into a greenhouse. In such cases the larger system can make use of properties that were previously epiphenomenal and adapt them to their own use. Similarly, our cognitive abilities may have evolved to accurately represent in the days, between 2.5 million and 100,000 years ago, when we had very little shared culture and acted as largely independent cognitive islands. Even then we may have possessed the ability to dream, lie, make up religions, program computers and so on, as an inevitable consequence of having a language faculty evolved for other reasons; but these by-products would have played little useful role in the context of hunter-gatherer bands with no social organisation or culture beyond the production of stone hand-axes. But once larger social organisations evolved and made culture possible around 50,000 years ago, then those previously non-functional abilities would have come into their own. Social structures that made use of these previously non-functional faculties would have succeeded at the expense of those that did not. These abilities became exaptations which were then selected as adaptations by *social* evolution, not biological. Thus the functional properties of the brain may change even whilst the biology remains ‘essentially’ the same.

There is an unfortunate tendency amongst the more enthusiastic evolutionary psychologists to tell a kind of extended Just So story. The usual adaptationist Just So story starts by noting a function that an inherited biological trait currently fulfills for an organism, and hypothesising that this explains its evolutionary origin. When done carefully this can be a powerful hypothesis generator, the starting point of useful empirical work in optimisation theory. However the extended Just So starts from an observed human behavioural trait — from homosexuality to soccer violence — and then assumes that this ability must have played a functional role during our ancient evolutionary history. However this conclusion is no more justified than supposing that bluebell flowers evolved to please us. The proper function of human cognitive abilities does not just depend on their own individual evolutionary histories, but also on the role that those abilities play within larger social structures. These structures have their own history of evolution, and hence their own proper functions, which are inherited by the psychological faculties of individuals that grow up within those structures. The argument that this socialisation cannot change the fundamental functional properties defined by biology is akin to arguing that if God (or Darwin) had intended to us to fly then He would have given us wings. The proper function of a pilot is to fly, but this is a function is defined by social evolution, not biology.

Millikan wants to define truth in terms of evolutionary success. But this is not sufficient, in itself, to ground truth in correspondence since social evolution (unlike, plausibly, biological evolution) does not necessarily favour accurate representation of the world. Some uses of language may succeed because they accurately correspond to a state of the world, but others may not. We therefore face two problems. The first is to differentiate those forms of language-use that depend on correspondence for their success, such as (hopefully) science, from those forms, such as religion, that do not. The second problem is that if science and religion are both, in an social-evolutionary sense, correct (i.e. capable of fulfilling proper functions for particular social vehicles) then why should be we use the former and not the latter? Rorty, and the other pragmatists, are happy to dismiss these problems as the remnants of a confused and naive realism. But many of us are not so sanguine, and think that these problems can be, and deserve to be, answered. I discussed the first problem in chapters 5 and 6, and the second is discussed in the next two sections.

11.2 Scientific Objectivism

The diarrhoea induced by cholera is bad for the patient but good for the cholera bacterium. Similarly, the Nazi's ideology was good for them but bad for their victims. In other words, if we use evolution to define norms for traits, then those norms will be only be defined relative to the vehicle through which that trait is transmitted. However there seems to be at least one example of a social trait which is not so relative, namely the norm of *scientific truth*. It does not seem possible that a society — be it English, Hindi, or Martian — could understand the claim that, say, a hydrogen atom has only one electron, and not agree that it were true. Properly scientific facts must be true in, and *for*, all cultures. And since the truth of the claim is the same in all social contexts, then surely its truth must be independent of them? There may not be an objective fact of the matter about whether, say, the Mona Lisa is a good painting, but surely there are facts of the matter about science? How can this scientific objectivism be squared with an evolutionary account of norms?

The solution to this problem goes back to the fact that lay at the heart of the discussion in chapter 3, namely that all descriptions presuppose a bias about what makes them correct, and descriptions of the world are only considered scientifically correct because they meet certain criteria. In chapter 3 I discussed what these criteria should be, but the important point here is that if a description does not meet those criteria then it is not a *wrong* scientific description, rather it is not a scientific description *at all*. For example, if a Chinese doctor describes the effects of kidney stones in terms of blocked *chi* then this is not an alternative scientific diagnosis, rather it is an alternative *to* a scientific diagnosis. The Chinese doctor may be as proficient as the Western physician at curing the patient, but this does not necessarily make their description of the symptoms any more scientific.

Now the biases that define science are not accidental whims, but are themselves products of social evolution. Why, for example, is there such emphasis on successful prediction as the hallmark of a correct scientific theory? The reason is that science is big business. It takes a lot of resources to train, pay, and motivate the staff, and build the physical infrastructure necessary to do scientific experiments. If a social vehicle, such as a nation or corporation, were to devote that many resources to science and not get an appreciable return, then it would soon be overtaken by others that were more successful. And the bottom line of an 'appreciable return' is the development of the productive forces: i.e. new ways for humans to interact and intervene in nature, and so control it for their benefit. The result is a constant pressure on science to develop memes that successfully predict the outcome of natural processes, and new technologies that exhibit useful and predictable behaviour.

Note that this argument does not require or imply that all individual scientists are driven by the desire for profit or social power. Indeed professional scientists tend to be amongst the *least* commercially-minded people I know. But the fact remains that unless the results of scientific enquiry somehow contribute to the development of the productive forces of a social vehicle then that social vehicle will, sooner or later, be unable to afford such unproductive luxuries and those scientists will be out of a job. Given this competitive context then it is hard to imagine a society that is prepared and able to make a substantial commitment to science, and yet ignore the results of its experiments. The result is that in all societies in which it is possible to form a scientific claim, such as 'hydrogen atoms have a single electron', then this claim will be considered true. But this does

not imply that the truth of the claim is *independent* of that social context, as the objectivists assume, but that the social relations of production necessary to formulate the claim will simultaneously be those that define a norm of success in which it is considered true. If a society refused to accept such claims then it would not be possible for them to develop the technology to formulate them. The scientific objectivists make the reductionist mistake, identified in chapter 2, that the fact that a property of an entity is constant in various contexts does *not* imply that it is *independent* of those contexts. Similarly, just because the truth of a scientific description is the same in all societies that are able to form it, this does not mean that that truth of that claim is independent of the norms that those societies define. Thus the norms of science can be simultaneously both products of society *and* in a sense universal.

However, strong ideological and social pressures can, in some cases, produce a situation in which institutions commit resources to a scientific infrastructure and yet deny its results. Consider the Nazi's racial science, which condemned quantum mechanics as 'Jewish science'; or Soviet Lysenkoism which defended extreme Lamarkianism as being more ideologically progressive than the reactionary laws of Mendel. But practical needs soon overcome social prejudices. The Nazi's eventually adopted 'Jewish' science for their own atom bomb project; and the Soviet Union imported wheat strains developed using American genetics. The Catholic Church persecuted Gallileo, but sanctioned the use of navigational charts based on a heliocentric astronomy when marine exploration was in their interests.

The history of the theory of natural selection is itself an object lesson in the effects of such social pressures on science. Darwin himself was driven by a spirit of pure enquiry, flavoured by the religion of the time. However the voyage of *The Beagle* that provided him with such rich empirical evidence was funded by the British Admiralty to survey and map the South American coastline with an eye to furthering British imperial interests in the region. Darwin also relied on the experience of plant breeders, whose practice had grown from a largely hit-and-miss affair to a much more rigorous and well-organised discipline following the growth of capitalist agriculture from the enclosures onwards. A further crucial element in the development of the theory of natural selection was the inspiration provided by Malthus' writings on the problems that urban population growth created for industrial capitalism.

After Darwin the next crucial advances in evolutionary theory came with the modern synthesis and the work of the early population geneticists. Much of this work, such as Fisher's statistical ANOVA technique, was the result of further progress in industrial agriculture. Two other developments from around this time should be noted. The first is the rise of Social Darwinism, which consciously used natural selection as an ideological justification of free-market capitalism. The second is the development of theories of human eugenics in both the US and Europe, which tried to use genetics as a crude form of social control. These attempts failed, partly because eugenics was discredited by the discovery of the concentration camps, but also because it didn't work: it was based on an incorrect theory of the basis of differences in human cognitive development.

Since 1953 the bulk of scientific funding in the field of evolution has been dedicated to molecular genetics, culminating in the multi-billion dollar Human Genome Project which has been promoted as holding out the promise of a 'blueprint for human biology'. Of course it will do nothing of the sort, though it will enable biotech companies to patent particular DNA sequences for their

own use, as well as allowing the health insurance industry to more accurately locate genetic markers for potentially expensive inherited conditions.

However this does not mean that natural selection is a ‘pro-capitalist’ theory. Rather it only implies that without this social and economic foundation it is unlikely that the theory would have developed as quickly, or been accepted as widely, as it has. This is because the norms that make a scientific theory true — i.e. its empirical accuracy and predictivity — are simultaneously those that make that theory useful in a competitive social market. But it is still possible to hold those norms to be valid while decrying the uses to which that science is put.

11.3 Ethical Relativism

Consider the *myc* gene in a cell of an MMTV-infected mouse. If the gene produces a virulent tumour then the mouse will die, and the cell with it, but the gene may live on through the replication of the virus. There is thus a choice of vehicle lineages through which the *myc* can replicate into the future, with the success of one possibly being antagonistic to the success of others. Of course this is a choice only in a metaphorical sense; the actual outcome is not an act of free will by the *myc* DNA, but depends on various random factors. Individual humans are faced with the same choice, but in our case it is not metaphorical. We too are potentially members of many different social vehicles, and so we can choose who to ally ourselves with. Are we just out for ourselves, or are we also concerned with the fate of our family? What about our friends, or the company we work for, our ethnic group, gender, nation, or class? Are you a good company man, a family man, a man’s man, a man of science, a union man, or your own man? The choice is yours. And unlike DNA we make such choices with at least some element of free will.

Marx, for example, was born into a comfortable German bourgeois family, but his life ended in poverty in London after a life spent furthering the interests, as he saw them, of the European working class. Sylvia Pankhurst could have become a dutiful Edwardian wife, but choose to devote her life to the working women of the East End of London. Martin Luther King could have remained an anonymous Southern preacher, but he saw his duty more widely. At each point in their lives these people were faced with the question ‘whose side are you on’, and they made their choice according to whose interests they thought were good. Ethical relativism at the level of social vehicles does not imply ethical determinism at the level of individuals. The nature of social evolution may determine what the interests of various social vehicles are, but it is up to us whether we agree that those interests constitute a good thing; i.e. whether those interests should also be our interests. Of course most of us are not Martin Luther Kings or Sylvia Pankhursts. We do not see our lives as part of some great social battle between opposing forces; rather we just try to get on and do the right thing in our own personal way. We rarely judge right and wrong on the basis of the interests of the social vehicle that our actions serve. But although we do not usually judge our actions in this way, history does. The ethics of our actions cannot be judged in isolation from the impact that they have on social evolution, any more than the behaviour of animals can be judged in isolation from the impact that they have on biological evolution.

This argument depends on the distinction, drawn in chapter 7, between two kinds of functional analysis. Teleological, or Proper, functions are determined by the history of an entity and its ancestors. Therefore it is held by an entity in virtue of the class of entities that it is part of: the Proper

function of a bluebell flower, *as* a member of the species, is to attract insects; the Proper function of the *myc* of the mouse, *as* a cellular proto-oncogene, is to aid growth; the Proper function of Marx, *as* a member of the German bourgeoisie, was to run the family business; the Proper function of Sylvia Pankhurst, *as* an Edwardian middle class woman was to marry well and have many children; the Proper function of Martin Luther King, *as* a relatively prosperous southern preacher, was to not stir up trouble. But *consequentialist* functions are a way of judging the actions of individuals according to the role that they play within a larger system: the consequentialist function of the transplanted bluebell, *as* a part of a commercial garden, is to attract customers; the consequentialist function of the *myc* in a tumour is to aid replication of the MMTV virus; the consequentialist function of Marx, *as* a part of the European socialist movement, was to provide a theoretical understanding of the strengths and weaknesses of capitalism; and so on. Teleology relativises functions to historically-defined classes (Preston, 1998, p236). Consequentialism relativises functions to systems.

Consider another example. What is the function — i.e. the meaning — of terms such as ‘Nigger’, ‘Queer’, or ‘Bitch’? These are traditionally terms of abuse, and so this is their Proper function, but more recently there have been attempts to ‘reclaim’ these terms, to turn them into positive affirmations of identity, just as the term ‘Black’ was transformed in the late 1960’s. At the moment these terms are Janus-like, with two distinct meanings. The first meaning is the traditional one, determined by their historical origins. But when these terms are used in specific social situations to challenge accepted stereotypes then they acquire a new function defined by their consequences rather than their origins.

The two notions of function serve different purposes. The first explains why things are like they are, and the second explains how they affect the future. Therefore if we want to use functions to judge our actions, rather than determine our historically-determined purpose, then we should use the consequentialist form.

If history judges our actions according to the effects that they have on social evolution, then it is not possible to justify an action on the basis that it is directed to some utopian ideal. The 18th Century socialist Charles Fourier, for example, dreamt of a future society, called Harmony, based on social units, or Phalansteries, each of exactly 1,620 people. Phalansteries would subsist primarily on agriculture with the members changing their occupations every few hours and, according to Fourier’s theory of ‘attractive labour’, co-operating fully to achieve their collective desires. Fourier also argued that in Harmony the seas would be made of lemonade. He even went so far as to advertise for investors in his project, making himself available at a particular Parisian cafe at a certain hour every day. Unsurprisingly, nobody came. Harmony is certainly a beautiful dream, but as an ethical philosophy and a guide to action it is strictly irrational. To believe in a good that cannot be achieved through the mechanism of social evolution is at best utopian. Utopias may be used as a powerful critique of existing society, but they cannot be used as the rational basis for ethical choices.

Similarly, if it were shown that the dictatorships of Stalin and Mao were the inevitable consequence of the libertarian socialist ideas of Marx, Lenin and Trotsky, then the only logical conclusion would be to reject those ideas — no matter how well-meant they might be. (But, for the record, I should state that no such necessary and inevitable link has been shown to my satisfaction.)

But this seems to ignore precisely the question that most exercises moral philosophers, namely how to make the choice between the conflicting interests of conflicting social vehicles. How do we decide which side we should be on? Are there any rational methods, such as Kant's categorical imperative or Mill's utilitarianism, that can decide the matter from first principles, and so tell us which Good is the True Good? The obvious retort to any such proposal is that if someone did not happen to agree with those principles then, although we may think that person morally wrong, they would not necessarily be *irrational*. Rorty argues that there are *no* purely rational ways of making ethical decisions; i.e. ways that do not themselves presuppose certain value-laden assumptions. His conclusion is that the only rational strategy for the ethical relativist is to *recognise* the relativism of their ethics, and so defend a liberal democracy in which everyone else has their ethical voice too (1991c)³. Without a 'free and open encounter' of opinions, in Milton's phrase, then the resulting ethical decisions will not be based on the exercise of informed free will, but on ignorance; and if informed free will is a logical pre-requisite of an ethical decision, then democracy is a pre-requisite of a rationally moral society — a position also held in various forms by Popper, Dewey, Habermas, and Pierce.

Democracy also plays an epistemological role. In section 6.4 I argued that it is not possible to transcend our own view of the world, but that it is possible to transcend the views of others by taking the third-person perspective towards them. Moreover they can transcend us. Therefore together we can transcend ourselves. This process starts from early childhood when we start to learn concepts and ways of seeing the world from others. This is not necessarily indoctrination, rather we may test the various alternatives against our own experience and go with those that seem to fit. And as we learn from others so they learn from us. Literacy further amplifies this process as it expands the pool of peers from our immediate personal contacts to those further removed in space and time. If learning always involves a process of generate and test then democratic interaction simultaneously expands the pool of generated possibilities, increases the rate of testing, and hastens the spread of those good ideas that pass the test.

It seems to me that Rorty's defence of democracy as a pre-requisite of rational morality is correct. But there is a problem. Rorty's ideal democracy is, roughly speaking, a point half-way between the New Deal-era US and modern Sweden. But he is more aware than most that the modern US is on a trajectory away from this modest utopia, not towards it. He describes contemporary US democratic politics (with both a small and a big 'D') as a choice between 'terrified silence and cynical lies', observes a growing gap between the rich and the poor, and foresees a time when the super-rich 25% are effectively democratically insulated from the rest of the population by a largely ineffectual intellectual class who are more concerned with cultural debates than the effects of harsh economic realities⁴:

It will be in the interest of the international super-rich to keep our class relatively prosperous and happy. For they need people who can pretend to be the political class of each of the individual nation-states. For the sake of keeping the proles quiet, the super-rich will have to keep up the pretense that national politics might someday make a difference. Since economic decisions are their prerogative, they will encourage

³Though it should be noted that Rorty would not describe his position as 'relativist' since, according to him, relativism is only an affliction of someone who assumes the possibility of realism.

⁴Putnam agrees with this picture (1998), but reckons the size of the minority is just 5%.

politicians of both the Left and the Right to specialise in cultural issues. The aim will be to keep the mind of the proles elsewhere — to keep the bottom 75 per cent of the world's population busy with ethnic and religious hostilities, and with debates about sexual mores. (1998)

The reason for this decline in democracy is not hard to find. Democracy itself is a social relation of production that is subject to evolution. And, like other social relations, it becomes adapted to the prevailing social forces. In a liberal, or 'bourgeois', democracy based on a free market economy (i.e. one in which all men are free to eat in the Ritz or sleep under bridges) there is no free market of ideas. We all have our ethical voice which we can express, once every four years, through the ballot box; but the rich and powerful have much louder voices than the rest of us and are quite capable of using them to further their own interests. This need not be done through Machiavellian guile, but through the dumb generate-and-test of a Darwinian process. If a powerful social vehicle is unable to use its ideological power to protect its own interests then it will be replaced by others that can. The dependence of successive US presidents on the funding of big business is not (just) due to a lack of moral fibre, but due to social evolution: either their policies become adapted to the prevailing social and economic forces, or they will be succeeded by others that are.

If a belief in a full and healthy democracy is rational, then what is the rational way of achieving that end? What principles could we use to form a strategy? Putnam recalls discussing this with Rorty, who 'looked quite shocked, and replied, "I don't think good politics need principles. What is needed is *stories*"'. But although stories are valuable, they are not enough on their own. It is worth recalling how democracy in the US got this far (a similar picture could be told for all the major democratic nations, but we will stick to Rorty's home ground). The growth of democracy in the US was the result of three major conflicts: the war of independence, the civil war, and the civil rights movement. Try to imagine what the US would be like today if a combination of the British Monarchy, the Confederacy, and Goldwater had won. Democracy won each of these battles, not because it had the best stories — though it did have some powerful dreams — but because there was a side in each of these conflicts that (1) was able to physically and/or politically defeat their opponents, and (2) had a material interest in democracy. The conclusion is simple. If Rorty's belief in democracy is to be the basis of a rational ethical philosophy, rather than a mild utopia, then the principle he must adopt is to identify a social vehicle that possesses those two properties today, and ally himself with it. Marx argued that the working class formed such a social group, and looked to them for the ethical future of humanity — though whether or not he was correct is, strictly speaking, another question.

11.4 Conclusion

I have covered a lot of ground in this thesis. In the first two chapters I discussed some very general points about how science understands the world. I then applied these general arguments to the particular case of the relationship between agents and their environment. This led, in chapters 7 to 9, to a discussion of how we understand evolution through natural selection. And in the last two chapters I applied these arguments to the evolution of human societies and culture — of which science is a product. The aim has been to produce a coherent whole, in which the later arguments

flow naturally from the initial ones. But I left one loose end, and it is now time to tie it up.

In chapter 2 I discussed the various biases that underlie scientific descriptions — simplicity, predictivity, explanation, and so on. I pointed out that the dominant bias, both in scientific practice and in scientific philosophy, is predictivity. And in section 11.2 above I suggested that this bias was the result of specific social pressures. In short, if you want to control nature for your own benefit then you will want your science to be predictive. Simplicity, elegance, and so on, may be all very nice but they are not *useful* in this sense. But in chapter 3 I defended an alternative bias, that of *naturalisation*. Why?

Predictivity, as a descriptive bias, rests on the assumption that there is a fundamental constancy — a lawful regularity — in the pattern that we are describing, that has existed up to now and will persist into the future. According to this bias the job of science is to find those constancies. If we are only interested in the natural world then this would not be much of a problem, but the same attitude also is often applied to the patterns we see in society. If we look around the world today — or, indeed, those societies recorded in history — we see gross inequality, endemic violence, and an awful lot of despair. And it is very tempting to assume that this pattern is fixed in the human condition, that it is somehow inevitable, and that all attempts to change it are doomed to fail. Popper dedicated *The Poverty of Historicism* to ‘the countless men and women of all creeds or nations or races who fell victims to the fascist and communist belief in Inexorable Laws of Historical Destiny’. This is a fine sentiment for a book that is ostensibly about the philosophy of science. But perhaps we should add to this list a dedication to the victims of the belief that poverty, inequality, and oppression are Natural and Inevitable parts of the human condition.

However all the great revolutions in science have involved realising that entities which were previously thought to be fixed and ‘God-given’ were in fact inconstant: species, planetary orbits, inertial mass, gravitational mass, space-time, atomic nuclei, continents, and aristocracies. However these revolutions did not replace an assumption of constancy with one of random change, but with a more precious ability to *explain* those changes through an understanding of the forces underlying the patterns that were previously thought to be constant. In other words, naturalising a phenomenon allows us to understand under what conditions it will persist, and under what conditions it will change. Darwin’s theory of natural selection succeeded in explaining both constancy and change in the natural world by uncovering the mechanism underlying the observed patterns and, as I tried to argue in the previous chapter, Marx’s theory of history can do the same for the social world. Only by doing this can we understand how even the most apparently universal and fixed social traits may, possibly, be changed.

Marx’s epitaph was that ‘the philosophers have only interpreted the world, the point however is to change it’. If this is true then surely the point of philosophy is to understand the world in such a way as to *enable* us to change it?