

2.4

Evolutionary Approaches to Human Nature

This chapter explores how sociobiologists and evolutionary psychologists approach the question of human nature. Sociobiology attempts to apply evolutionary theory to the social world, in order to better understand human behavioural traits. Evolutionary psychologists, on the other hand, focus on design features which affect human psychological adaptations. These approaches help us explain why unconscious motivations are so significant for understanding human nature and emphasise that a great deal of our behaviour is informed by emotions rather than by reason. They also attempt to address, from an evolutionary standpoint, the question of whether we are moral beings. Here, moral sensitivities, albeit fairly basic ones, are perceived to be innate. The intellectual roots of both these approaches are to be found in Darwin's theory of evolution by natural selection, which represented a radical departure from the belief that humankind is created in God's image.²⁰⁰

I begin by giving a brief overview of evolutionary theory. However, since Darwin's time, studies in genetics have advanced our understanding of how behavioural traits are transmitted across generations. It is in this context that I discuss Edward O. Wilson's sociobiology. I also consider Richard Dawkins' and George Williams' theories, which challenge the notion that altruism can be explained by group selection, favouring instead a gene- or individual-centred selection as a way of explaining the origins of our more noble inclinations. Finally, I focus on some seminal contributions to evolutionary psychology, including

those of Marc Hauser, Steven Pinker, Frans de Waal and Peter Singer, who argue that certain traits, such as empathy and even morality, have evolutionary roots.

2.4.1. Evolutionary Theory

Evolutionary theory is concerned with change in living things over time, be they animals, plants or human beings.²⁰¹ Variation is believed to occur as a result of the survival advantages which adaptations may give certain organisms. Individual members of a species which display such traits are more likely to exhibit reproductive success than those lacking them. Indeed, crucial to evolution is not simply survival, but the transmission of the genes which facilitated survival advantages.²⁰²

Physical adaptations include, for instance, the tongue of a certain type of bumblebee, which is perfectly designed to collect nectar from deep inside a flower. This makes the types of bumblebees with these tongues better suited to undertake this task.²⁰³ Yet, as Robert Winston points out, this does not imply that all adaptations resemble perfectly conceived solutions to nature's challenges:

Many adaptations appear to be the work of a talented and ingenious biological engineer, but there are also examples that seem rough and ready, badly thought out, or something of a botched job. Our own eyes are one quite good example. True, they have excellent clarity of vision and colour definition. If they are in prime working order, they have a fast autofocus and accurate autoexposure. Additionally, they are self-cleaning and cleverly built into a protective hollow. But we are, many of us, short-sighted, and cataracts are common. And there is a major 'design' flaw: the light-sensitive retina lies behind a layer of blood vessels and nerves, and these 'service pipes' limit the amount of light reaching the retina. This arrangement also necessitates a hole in the retina through which the vessels and nerves can pass to connect to the brain – this hole is our blind spot. And, more seriously, it means the retina can become detached rather easily. It would be much better to have the retina in front, and we find this superior 'design' in large cephalopods such as squid and octopus.²⁰⁴

Darwin's thesis of evolutionary development relies on the concept of natural selection under conditions of scarcity. Natural selection refers to a process of genetic replication, whereby species attempt to survive by adapting to their environment and in the process develop mutations which give some members of a species a survival advantage over others.²⁰⁵ Natural selection, thus, focusses on the biological factors which shape who we are and, in this way, sets boundaries to the extent to which we, as human beings, are capable of exercising free will.

Darwin also put forward his own thesis on emotions. In *The Expression of the Emotions in Man and Animals* (1872) he argued that the expression of emotions is the result of instinct rather than learnt behaviour.²⁰⁶ He identified six core emotions – happiness, sadness, anger, fear, disgust and surprise – to which others later added guilt, shame, embarrassment, jealousy and contempt and, more speculatively, pride, sympathy, admiration, frustration and nostalgia.²⁰⁷

Of course, in Darwin's day it was not yet known how characteristics were passed on from one generation to the next. Important progress in this regard was made in the 1930s, when Ronald Fisher, John B.S. Haldane and Sewall Wright started to fuse Darwinian theory and genetics. Theorists who attempted to outline a synthetic theory combining the two included Theodosius Dobzhansky, Ernst Mayr and, in more recent years, Stephen Jay Gould.²⁰⁸

In addition to challenging religious notions of human nature, Darwinian theory also called into question philosophical approaches which viewed reason as the source of morality and sociability. Darwin saw morality as a product of evolution, rather than something which humankind had invented at some specific point in history.²⁰⁹ Interestingly, Darwin argued that we have a duty not only to act altruistically towards our kin, but also to expand gradually our sphere of concern to all other human beings and, eventually, to the animal kingdom.²¹⁰

2.4.2. Sociobiology

A prominent current application of evolutionary theory to social behaviour is to be found in sociobiology, which is premised on the notion that biology shapes human behaviour. Morality, for example, is thought to be the result of our evolution and is, therefore, a product of biology.²¹¹ At the core of sociobiology is the concept of 'inclusive fitness', which holds that evolution has created behaviour which increases an

organism's chances of surviving and reproducing. The latter may take place by either of two means: first, through individual reproductive success; and, second, through adopting behaviour which is likely to increase the chances of genes similar to one's own being passed on to the next generation. Together, these two means constitute inclusive fitness.²¹²

George Williams is famous for his critique of group selection. In his view, selection is more likely to have been among genes or individuals than groups. He, therefore, favoured a gene-centred understanding of evolution,²¹³ which was later taken up by sociobiologists, such as Wilson, who pioneered the field in *Sociobiology: The New Synthesis* (1975) and *On Human Nature* (1978). In the first of these books, Wilson argues that natural selection, rather than free will, is the motivating force behind human behaviour. He, thus, argued that, when discussing morality, we must be cautious not to yield to the illusion of radical free will.²¹⁴

One of the most prominent present-day proponents of sociobiology is Richard Dawkins. In a series of works, the most well-known being *The Selfish Gene* (1976), Dawkins argues that it is the gene and not the organism or group which is the principal unit of natural selection. In this thesis, the individual organism operates as a vehicle for the transmission of the gene from generation to generation. This contrasts with traditional Darwinian natural selection in that it is not the survival of the individual which is emphasised, but that of the gene. In this vision of things, we act as transporters. While we as organisms are ephemeral, with a finite time on this earth, genes continue indefinitely.²¹⁵

Although mere vehicles for genes, human beings do, nevertheless, make life difficult for genes. According to Dawkins, our unusually large brains have led to our development of memes. Memes essentially refer to cultural practices, including language, beliefs, institutions, ideas and patterns of behaviour, which may be passed on from generation to generation (hence the popular term today referring to images shared on social media). Once established, these practices become part of what we might ordinarily think of as structure. Some memes may hinder the transmission of genes from one generation to the next, contraception being the most troublesome meme from a gene's point of view.²¹⁶

Some would agree that the evidence does suggest that our genes play a central role in shaping our behaviour. The Minnesota Twin Family Study was established in 1983 with the goal of identifying the genetic and environmental influences on the development of human psyche. It started off by creating a registry of all twins born in Minnesota from 1936 to 1955 but has more recently recorded twins born between 1961 and 1964. The Twin Study of Adult Development was begun in 1986 to

discern how genes and the environment, respectively, affect the aging process. The genetic dimension was found to be comparatively more important than the environment, as affected by lifestyle, for instance.²¹⁷

The study showed that identical twins demonstrated astonishing similarities in terms of behaviour. A set of male identical twins, who had been brought up separately, had both become police officers, other sets both had similar smoking and drinking habits, or had been married twice and, in both instances, the first wife had been called Linda and the second Betty. This, as the study pointed out, does not suggest, however, that the environment plays no role whatsoever in the development of the human psyche and behaviour.²¹⁸

In Dawkins' approach, the gene predominates over the environment. As such, genes and not culture are thought to be responsible for the evolution of altruism, violence, parenting skills, deception, sexual conflict and so on.²¹⁹ To answer the question, 'Where does the good Samaritan in us come from?', Dawkins argues that, while the gene itself may be selfish, the organism is not. Exactly how genes are selfish depends on the circumstances. In some instances, the gene may be selfish in terms of influencing the organism to behave altruistically. Human beings may behave altruistically towards kin, because this increases the survival chances of reproduction of genes similar to their own. They may also practice reciprocal altruism – the 'you scratch my back, I'll scratch your back' scenario – since this increases survival chances. The development of language by human society may also encourage people to act altruistically because of the importance of reputation. In addition, acts which carry a greater 'cost' for the performer may demonstrate authentic superiority. They represent 'rule of thumb' principles which we have now elaborated with deliberately conceived moral systems.²²⁰

Other sociobiologists argue that there is a common core of morality, based on reciprocity, which may be supplemented by rules of thumb, such as Kant's categorical imperative, which together may constitute a universal moral code.²²¹ This indicates that there may be a difference between basic-common-denominator morality and true or complete altruism.

2.4.3. Evolutionary Psychology

Evolutionary psychology focusses on the characteristics of the human brain which affect human psychological adaptations. This is central to explaining universal psychological traits, such as emotions, reciprocity,

altruism, in-group bias, communications and so on. Steven Pinker, for example, argues that language is a universal feature of all humankind. According to him, we are endowed with a common grammar, which is an innate and unique characteristic of our species. It provides a foundation on which diverse languages can be developed.²²²

In Pinker's 1994 book, *The Language Instinct*, drawing on Noam Chomsky's contention that human beings possess an innate universal grammar which is unique to our species, he argues that we are all equipped with an in-built capacity for language. Systems of grammar exist in all cultures, and they should not be thought of as a cultural invention – unlike writing, for instance. Pinker argues that, on the contrary, language ought to be considered an instinct, a creation of human evolution, which emerged to help solve problems of communication within what would have been highly social communities of hunters and gatherers.²²³

In *How the Mind Works* (1997), Pinker argues that our neuronal architecture is sufficiently complex to support not only rationality, but also the suppression of impulses. According to Pinker, we should understand science and morality as two different and separate realms. In other words, we ought to be able to accept a scientific explanation for our moral sense, its evolutionary history and its neurobiological foundations; at the same time, we ought to understand morality as an ideal worth striving towards.²²⁴

Drawing similarly on Chomsky's notion of an unconscious universal grammar with which we are born, and from which different languages develop, Marc Hauser argues that the human species possesses a universal *moral* grammar. In his fascinating book, *Moral Minds: How Nature Designed Our Universal Sense of Right and Wrong* (2006), Hauser maintains that human beings have developed a moral instinct through Darwinian selection. From this innate moral grammar, other, more specific moral systems, shaped by culture, may then develop.²²⁵

According to Hauser, this universal moral grammar is unconscious. He begins his book with a discussion of the major philosophical theses on morality. First, he takes issue with Hobbes, who held that our moral systems are devised through a process of reflection. For Hauser, this perspective on human nature and morality fails to explain why certain morals would be acceptable to our species.²²⁶ As mentioned above, the central thesis of *Moral Minds* is that we possess an innate moral faculty, which is the equivalent of a universal moral grammar. This innate moral sense exists in every culture. He argues, for example, that in all cultures parents are expected to care for their children. Yet this is not intended to suggest that moral systems do not differ among human cultures.

On the basis of this *common* moral grammar, *specific* moral systems may be erected. What varies from culture to culture is not the rule, but exceptions to the rule. From this perspective, morality is, thus, based on biology.²²⁷

The underlying question is: what is the source of this universal moral faculty? Hume would have argued that shared emotions are its source. Kant, by contrast, would have contended that common moral codes are the outcome of our unique capacity for reason. Indeed, while Kant recognised that our emotions may help to shape moral responses, he considered our moral judgements to be the result of deliberate reasoning, which implies conscious reflection on moral principles and rules.²²⁸

Behavioural psychology, as I related above, also tends to assume that morality is the child of reason. Skinner, for example, regarded human nature as infinitely malleable. Children, he claimed, can be taught to be moral. Yet evolutionists such as Hauser would challenge this line of argument. While the human brain may be malleable, what makes a moral principle valid? Or, more precisely, what makes a parent's judgement about what course of action a child should take valid in moral terms? Moreover, why does a child understand these apparently abstract ideals?²²⁹

According to Hauser, our emotions cannot be given a causal role in relation to our moral judgements, as moral dilemmas activate a vast network of brain regions linked not only to emotions but also to decision-making, conflict, social relations and memory. He adds a Rawlsian element to this observation. Rawls, he argues, would not reject the idea that emotions are implicated in the process through which we arrive at a moral judgement. Rawls would, however, question Hume's assumption about when these emotions come into play. In summary, there are, in Hauser's view, areas of the brain which may be thought of as Kantian (based on reason), Humean (based on emotions) or Rawlsian (based on a moral grammar).²³⁰

Hauser holds that one can identify a 'mirror neuron system' which plays a critical role in moral judgements. This means that the same parts of the brain are activated when a person does something him/herself as when they watch someone else do the same thing. Thus, emotional conductors are necessary for moral judgements to take place. Empathy, for example, represents a fundamental link in our behaviour.²³¹ A Rawlsian model would, therefore, provide the most accurate depiction of how we come to make moral judgements. In this conception, an event or action may prompt a moral judgement. If emotions play a role, they do so only after the judgement has been made. Emotions are, in fact, triggered by these exact judgements.²³²

In his book *Primates and Philosophers: How Morality Evolved* (2006), Frans de Waal also explores the biological origins of morality. Like Wilson and Hauser, de Waal argues that human values are the result of natural selection. However, de Waal draws on his work with primates to illustrate the evolutionary basis of moral behaviour.²³³

According to de Waal, evolution has created humans as beings who have cooperative tendencies, and morality is considered to be an offshoot of these inclinations.²³⁴ In contrast to Hobbes, de Waal argues that society did not emerge from a rational decision made at some particular moment in time: '[T]here never was a point at which we became social: descended from highly social ancestors – a long line of monkeys and apes – we have been group-living forever. ... Humans started out – if a starting point is discernible at all – as interdependent, bonded, and unequal.'²³⁵ In fact, living in groups undeniably offers considerable advantages. It may increase the chances of finding food, rearing offspring and escaping predators. As a result, sociability has been favoured by selection and is, therefore, embedded in primate psychology.²³⁶ For this reason, de Waal makes the interesting observation that solitary confinement is the second most severe punishment for a human being after the death penalty, since it goes against our inherently sociable nature.²³⁷

Unlike Hauser, however, de Waal considers moral judgements to be driven by emotions. 'I feel', he insists, 'that we are standing at the threshold of a much larger shift in theorizing that will end up positioning morality firmly within the emotional core of human nature.'²³⁸ Thus, the Humean interpretation of morality would be the most accurate.²³⁹ Indeed, de Waal rejects the notion that human beings developed moral schema by choice, that is, as a consequence of rationality and voluntary design. De Waal refers to this Hobbesian approach to human nature and morality as 'vener theory', which he traces back to Thomas Henry Huxley (1825–95), although he recognises that it goes back much further in Western philosophy and religion. Huxley had a rather dim view of human nature. He compared humanity to a gardener who is constantly busy trying to keep the weeds from growing in his garden. Morality, in this view, was a necessary invention required to keep human nature in check. It is a thin cultural layer, a thin veneer, under which lie immoral, egoistic passions.²⁴⁰

De Waal accepts that it may be legitimate to think of evolution as favouring self-interested behaviour but contends that one should not make the mistake of assuming that this is at the expense of altruistic behaviour. Kin selection and reciprocal altruism are thought to provide adequate explanations for altruistic tendencies. These, he

argues, seem more adequate than group selection, since inter-group migration among primates is extremely common, resulting in a considerable amount of genetic mixing between groups. According to de Waal, claims appealing to Darwinian theory as a justification for the rejection of morality in society are premised on a misunderstanding of natural selection.²⁴¹

According to de Waal, 'the old always remains present in the new'.²⁴² He illustrates this point in relation to empathy. In his view, more advanced forms of empathy have their origins in simpler forms. Social animals need to coordinate in order to respond collectively to danger and, for instance, to find food. An animal which fails to run away with others, in response to an approaching predator, is not likely to survive very long. Other, more sophisticated forms of attention towards others are evidenced in primate behaviour. A female ape is sensitive to whimpering from her baby and tries to reduce its distress, for example.²⁴³

Thus, evolutionary pressures may have favoured in-group moral instincts, with the first circle of loyalty being to oneself and one's kin, and then to the broader species:²⁴⁴ 'In the course of human evolution, out-group hostility enhanced in-group solidarity to the point that morality emerged.'²⁴⁵ Humans as we know them today have, of course, gone much further than their ancestors and have developed complex moral systems which can be explained. This concept, in particular, echoes Hauser's argument about the limits of moral instincts.

This idea is echoed by Peter Singer, who argues that, while humankind may be self-interested and competitive, it also has considerable capacity for cooperation.²⁴⁶ He claims that continuous moral progress is possible and, indeed, has taken place as we have gradually expanded our moral circle from the family and the village to the clan, the tribe, the nation and, with the 1948 Universal Declaration of Human Rights, to the species as a whole. Moreover, it has grown from including only men, to including women and children as well.²⁴⁷ This implies that a conscious effort can be made to place all of humanity inside our moral circle.

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To sum up, this chapter has looked at how evolutionary psychologists and sociobiologists view human nature. Sharing the same intellectual roots as Darwin, thinkers who draw on evolutionary theory, such as Dawkins and Hauser, challenge the religious view of humankind having been created in God's image. Likewise, they call into question philosophical approaches which depict human nature as driven solely either by egoistic passions or by rationality.

Both sociobiologists and evolutionary psychologists argue that many of our traits are the product of evolution. Even morality is deemed to have emerged from our evolutionary past. This latter insight is particularly interesting, since it suggests that we possess a type of innate, universal moral faculty, with divergences being exceptions to the rule. This implies that we ought to be able to agree on a minimum set of universal moral criteria. On a less positive note, however, evolutionists also suggest that, while there may be a moral core to our humanity, it may only be linked to our kin. This implies that any moral standards extended to the whole of humanity are ideal types requiring consistent reinforcement.

SAMPLE