

A clean slate?

Railing against men for the importance they place on beauty, youth, and fidelity is like railing against meat eaters because they prefer animal protein. Telling men not to become aroused by signs of youth and health is like telling them not to experience sugar as sweet.

David Buss, *The Evolution of Desire*

To its opponents, evolutionary psychology is not merely wrongheaded; it is downright dangerous: an attempt to give a quasi-scientific *justification* to the inequalities that have, to a greater or lesser degree, hitherto characterized all societies. These critics argue that even if its advocates are not racist or sexist, their work offers support to racism and sexism. Its implicit message, they claim, is that the male domination of professional and political life, their propensity for infidelity and rape, and the systematically disadvantaged place occupied by women are not facts to be deplored or altered. Rather, they are the products of our in-built preferences and desires. They are fixed. We must accommodate ourselves to them, not rail futilely against them. Not surprisingly, the practitioners of evolutionary psychology reject these accusations. They invoke two separate defenses against the charges: firstly, the repudiation of genetic determinism, and secondly, the invocation of the naturalistic fallacy.

Genetic determinism

The foes of evolutionary psychology and sociobiology often accuse their opponents of the sin of genetic determinism. What do they mean? In philosophy, determinism refers to the thesis that all events are necessitated by prior events, in such a manner that if we had sufficient knowledge of the initial conditions and the laws of nature, we could, in principle, predict precisely what would happen in the future. Events that are determined are *caused*.

Genetic determinism is therefore the thesis that the phenotype of an organism is entirely caused by its genotype, so that, if we had sufficient knowledge of the genotype and understood the mechanisms by which genotypes build phenotypes, we could predict every aspect of a phenotype, from its height to its intelligence to its personality (if it's the kind of organism that can have one). It is easy to see why genetic determinism might appear threatening. If it is true, then attempts to alter society by altering the behavior of people are doomed to failure. Opponents of evolutionary psychology accuse it of attempting to provide a justification of the *status quo*, and therefore of being politically conservative. They argue that if genetic determinism is true, then our fondest hopes – of improving society, and eliminating endemic racism, sexism, and inequality – must inevitably come to nothing.

But, although incautious advocates of evolutionary psychology occasionally write as if they believe that genetic determinism is true, none of them really hold this view. A little thought reveals that it must be false. Many things beside our genome affect our morphology. If we are malnourished during childhood, we will be shorter and probably less intelligent than we might otherwise have been. If we are abused, then we can expect it to have some effect on our personality. No respectable evolutionary psychologist denies these obvious points. They are not, in this crude sense, genetic determinists.

Instead, evolutionary psychology is committed to a view we might describe as *interactionism*. Phenotypes, it holds, are always the product of interaction between a given genotype and its environment. Once we recognize that interactionism is correct, we see that evolutionary psychology cannot be guilty of the grievous charges laid at its door. If evolutionary psychology was committed to genetic determinism, then,

for example, its evolutionary explanation of rape would indeed provide an excuse for rapists. But an interactionist perspective provides neither excuses nor justifications for behavior.⁹¹

Ought we to find evolutionary psychology not guilty of the charge of genetic determinism? If we construe the charge narrowly, then clearly we must acquit. But perhaps we should construe it more broadly. It might be useful to cast the question in the terms of the “nature – nurture” debate: the debate over the extent to which important human traits are the product either of our innate biological inheritance or of our environment and upbringing. “Nature” and “nurture” are most usefully seen as endpoints of a continuum. At one extreme is the view that human traits are entirely in-built, the absurd position we have allocated to genetic determinism. At the other is the equally absurd view that biology does not shape human traits at all. No rational person holds either of these two positions. The real debate does not concern whether it is nature or nurture that shapes our traits, but rather the extent to which each is responsible.⁹²

Seen in this light, the charge that evolutionary psychology is committed to genetic determinism recovers much of its force. There is a real debate to be had. Evolutionary psychologists are making the substantive (and controversial) claim that the influence of biology on our phenotypic traits is much greater than is usually believed, and they explicitly cast this claim as a rejection of the views of what they contemptuously refer to as the “standard social science model” (SSSM). Genes certainly don't shape human behavior all by themselves, but evolutionary psychologists claim that, in a very wide range of environments, they produce very predictable effects, and that we understand human behavior better by focusing on genes, mental modules, and evolved desires, than by looking at cultures and social norms.

Consider the evidence, as discussed in chapter 3, that men have evolved to have strong preferences with regard to the waist-to-hip ratio of prospective partners. If, as suggested, WHR is a good indicator of fertility, then men with a preference for a WHR in a certain range would tend to have, on average, more offspring than those who did not have this preference. The genetic basis for the preference is therefore passed on, and will eventually become very common in the population. This preference is certainly not genetically determined: no one claims that,

no matter what environment they are raised in, boys will inevitably grow up with this preference. Indeed, there is empirical evidence that this is not so. One group of men, belonging to the Yomybato tribe, who live in the Peruvian rain forest, has a markedly different preference.⁹³ There, men presented with Singh's original sketches preferred women with the highest possible WHR. Evolutionary psychologists do not regard this finding as a refutation of their claims about WHR, but argue that precisely the same evolutionary perspective that generated Singh's original prediction will explain the preferences of the Yomybato. In the harsh environment in which their ancestors lived, obesity was all but impossible. As a consequence, the preference for women with a higher WHR was itself adaptive: "A male preference for the largest available women would in the past have encouraged males to have sexual liaisons with women with relatively large fat reserves and relatively high fertility in the ancestral Yomybato environment."⁹⁴ Thus, male preferences are not in-built, in any simple sense. It is perfectly possible for the mechanisms that lead most of us, in normal environments, to have a certain preference, to lead us to quite different preferences in a different environment.

If this view is right, and the explanation Alcock offers for the deviant preference of the Yomybato is correct, then male WHR preferences are facultative. They are not determined by the genome, but are the result of interaction between it and the environment in which it finds itself. Nevertheless, it should be clear from this example that, if evolutionary psychology is right, the extent to which we can alter our preferences is severely constrained. Thanks to our new knowledge of the mechanisms that underlie male preferences, we know that we could alter the normal preference for a WHR of 0.7, but only in one direction, and only by taking steps which would be disastrous and immoral: that is, by causing widespread famine.

Thus, it is not true that the preferences identified by evolutionary psychologists are literally inevitable. They can be altered; in this sense, evolutionary psychology is not genetic determinism. But they are altered only through great effort, and at great cost.⁹⁵ This is a view evolutionary psychology inherits from sociobiology, and which is made explicit by its doyen, in a warning against moves designed to change the position of women in society: "There is a cost, which no one yet can measure, awaiting the society that moves either from juridical equality

of opportunity between the sexes to a statistical equality of their performance in the professions, or back toward deliberate sexual discrimination."⁹⁶

These costs could take many forms. Most obviously, they would include limits to our freedom. We can alter our in-built preferences, but if not by altering the environment very much for the worse by starving people, then only by an intensive program of indoctrination or other interferences in people's lives. Human nature – our repertoire of innate preferences, emotions, and desires – stands in the way of Utopian plans for the transformation of human society into a harmonious and peaceful commonwealth. Our human nature ensures that implementing Utopian plans would impose costs greater than the supposed benefits of the program:

Inborn human desires are a nuisance to those with utopian and totalitarian visions, which often amount to the same thing. What stands in the way of most utopias is not pestilence and drought but human behavior. So utopians have to think of ways to control behavior, and when propaganda doesn't do the trick, more emphatic techniques are tried.⁹⁷

The charge of genetic determinism, construed narrowly, is false. Nevertheless, it is disingenuous of evolutionary psychologists and their supporters to dismiss it, as though they did not make claims about the robustness of human preferences, about the difficulty of altering them, and about the costs such attempts inevitably impose. We cannot dismiss the debate, as they are wont to do, as though it were based on a crass misunderstanding of their scientific claims. There is a great deal at stake, for morality and for human social life, in the assertions of evolutionary psychologists. If they are right, they are identifying significant and perhaps (for all practical purposes) immovable obstacles that stand in the way of some of our most cherished hopes for peace, equality, harmony, and happiness.

The naturalistic fallacy

However, evolutionary psychology has a second line of defense against the claim that it has dubious political implications. Its advocates often deny that it has political implications at all, on the grounds that it is a

purely factual enterprise. They claim it is a mistake to believe that factual findings have moral implications. To attempt to draw moral conclusions from such findings is to commit the naturalistic fallacy. Thus, for instance, Thornhill and Palmer deny that their claim that rape might be adaptive does anything either to justify rape or excuse rapists. Though we often make the mistake of thinking that if something is natural, it must be good, this is a fallacy. Nature contains many things, some of which are, by our standards, wonderful, and others that are deplorable. As scientists, evolutionary psychologists are in the business of understanding human phenomena, not of justifying them.

As we saw in the first chapter, there is no naturalistic fallacy. However, we also saw that no one has, as yet, proposed a plausible analysis of goodness that would allow us to reduce it to purely natural properties. In so far as evolutionary psychology is concerned with the natural, its advocates seem to be right in claiming that it is a mistake to see them as engaged in an enterprise with moral overtones. The demonstration that rape is, in some sense, natural, does not justify it, any more than the naturalness of death and disease shows that they are good things. However, evolutionary psychology does not entirely escape the charges leveled against it. In their zeal to defend their work against political accusations, its practitioners make something of a fetish of the gap between "is" and "ought" and thereby absurdly overextend its reach. Consider Steven Pinker's recent defense of the biologists of human nature against the charge of dangerous political consequences, by reference to the naturalistic fallacy:

We should not concede that *any* foreseeable discovery about humans could have such horrible implications. The problem is not with the possibility that people might differ from one another, which is a factual question that could turn out one way or the other. The problem is with the line of reasoning that says that if people do turn out to be different, then discrimination, oppression, or genocide would be OK after all. Fundamental values (such as equality and human rights) should not be held hostage to some factual conjecture about blank slates that might be refuted tomorrow.⁹⁸

In this view, moral values are totally cut off from scientific discoveries. No matter what evolutionary psychology – or biology, or physics – tell

us about the world, our morality will be unaffected. This is an absurd position. Certain kinds of discoveries about our fellow human beings, were they to be made, ought rationally to have significant impacts upon our treatment of each other. For example, the demand that we accord one another equal respect and equal treatment in central domains of social and political life does not float free of our factual beliefs about ourselves. Rather, equal treatment is predicated on the belief that those who deserve it have certain characteristics. They must be, really, equal, or nearly so, in some important respects. The right to vote is given to sane adult human beings, and not to children or chimpanzees, because adults are believed to possess greater cognitive resources, knowledge, and ability to judge than children or chimpanzees. If we discovered that this was *not* the case for an identifiable group of adult humans, then we would probably withdraw their right to vote. Or consider how we would go about finding out if a group of Martians had moral rights: we would inquire into their cognitive and emotional capacities; that is, we would gather facts about them. So facts cannot be morally irrelevant, as Pinker claims.

Indeed, Pinker himself must realize that his position is absurd, for he soon backs away from it. He continues to insist that biological discoveries could not justify discrimination, but gives a different rationale: "The case against bigotry is not a factual claim that humans are biologically indistinguishable. It is a moral stance that condemns judging an individual according to the average traits of certain groups to which the individual belongs."⁹⁹ Thus, Pinker claims, discoveries about the average properties of groups ought not to influence our treatment of individuals who belong to these groups, because such discoveries will not mean that every individual has that property. The discovery that Martians are, on average, too stupid to make sensible judgments concerning the policies of political candidates would not imply that a particular Martian might not be a brilliant political analyst. We ought not to denigrate all Martians, just because most of them are dull.

The first thing we should note about Pinker's view is that it certainly does not establish that morality is independent of factual claims. It is a factual matter whether any Martian possesses the cognitive resources to be given the right to vote. Perhaps none do. And the right

to vote is not the only one predicated on the possession of certain characteristics. Philosophers often claim that though it is wrong to inflict unnecessary pain on any sentient being, only those with a conception of themselves as existing over time are entitled to the respect due to people. That is why killing a cow is, at minimum, less wrong than killing a person. We do not distinguish between the two kinds of killing on moral grounds alone, without references to the actual properties of cows and people, and we would be irrational if we did.

Pinker's radical individualism is untenable, because we cannot, as he presupposes, hope to isolate the cognitive capacities of individuals from the characteristics of the groups they belong to. Intelligence and knowledge is not something that we develop on our own. Instead (as the interactionist perspective emphasizes) to develop the requisite abilities, we must be treated in certain ways. Chimpanzees, for example, do not normally develop a signed language, but when they are exposed to one, some become quite adept at it (though they never achieve anything like the fluency of even young human children). Similarly, human infants acquire a language only if they are exposed to it at the critical age; if this window of opportunity is missed, they will never attain fluency, and their entire cognitive development will be retarded. It is for this reason that deafness has been described as a preventable form of mental retardation.¹⁰⁰ Since the development of the cognitive capacities that underlie the possession of certain moral rights requires that individuals be treated in certain ways, we cannot wait until development is well advanced before we identify potential candidates for rights possession. Instead, we shall have to make a decision as to how we are to treat them, and we must do so *before* they develop the relevant abilities. So, we make that decision on the basis of the kinds of characteristics they are likely to develop, that is, on the basis of group membership.

Moreover, if there is any substance at all to the claims, often made by feminists and members of minorities, that aspirations play a powerful role in shaping what people can achieve, and that the achievements of women and minority members have therefore been limited by what they believe themselves capable of, then we shall have another important reason to treat people, at least partly, on the basis of group membership. What we aspire to is often limited by what those around us, who are relevantly similar to us, have been able to achieve. Thus, girls

often believe themselves incapable of filling certain roles, because few women have occupied these positions. This provides one of the most important rationales for affirmative action policies, which treat people on the basis of their group membership. If instead we treat people exclusively as individuals, as Pinker suggests, then we shall inevitably and inadvertently favor members of certain groups over others: those which have already done well.

None of this is meant to settle these difficult and important questions. It may be, for instance, that affirmative action is wrong, in spite of these considerations. All we need learn from this discussion is that, though it is certainly a mistake to identify what is natural – in one or another sense of that multiply ambiguous word – with what is good, it is equally a mistake to think that the (supposed) naturalistic fallacy insulates morality from factual discoveries, and that evolutionary psychology can therefore proceed as if its claims had no moral implications whatsoever.

Clearly, many factual claims are morally irrelevant. If we were to discover a group of human beings who usually had six toes, instead of five, we should draw no moral conclusions from the finding at all. Let's turn to some of the actual claims of evolutionary psychology, to find out whether its (alleged) findings are insulated from morality by the gap between "is" and "ought." As we have seen, many of its most controversial claims concern sex differences. Setting aside the more obvious biological differences between men and women, one of the most strikingly gendered features of most societies is the division of labor. In almost all societies, past and present, men have been far more prominent in those activities and occupations that are public, and highly valued. Feminists typically regard this as the outcome of a history of injustice, and aim to change this state of affairs. Evolutionary psychology has a rather different explanation for the disparity.

Evolutionary psychologists claim that the gendered nature of social life is a consequence of sexual selection. Given that men are highly motivated to seek sexual partners, and that women reserve their sexual favors for men who possess certain characteristics, men strive to acquire these characteristics. Women want men who can channel resources to them and to their offspring, and who can protect them when they are vulnerable. As a consequence, men are highly motivated

Not true...

to seek power and wealth, and so are much more strongly driven to succeed in professional life.¹⁰¹ It has even been suggested that the theory of sexual selection explains the origins of human intelligence, because, for whatever reason, women evolved a preference for brainy men, which resulted in a process of runaway sexual selection and the evolution of much higher intelligence than would be required merely to solve the problems that confronted our ancestors in the EEA.¹⁰²

This does not imply that men are more intelligent than women. Males might have high intelligence because women preferred brainy men, but to be able to assess the intelligence of potential partners, women needed to keep up.¹⁰³ Where men and women will tend to differ, according to the theory of sexual selection for intelligence, is not with regard to their levels of intelligence, but with regard to their penchant to use that intelligence in creative display. Knowing that women prefer intelligent, dominant, males, men will take every opportunity to parade their verbal brilliance in front of women:

DESH Men write more books. Men give more lectures. Men ask more questions after lectures. Men dominate mixed-sex committee discussions. Men post more email to Internet discussion groups. To say that this is due to patriarchy is to beg the question of the behavior's origin [...] The ocean of male language that confronts modern women in bookstores, television, newspapers, classrooms, parliaments, and businesses does not necessarily come from a male conspiracy to deny women their voice. It may come from an evolutionary history of sexual selection in which the male motivation to talk was vital to their reproduction.¹⁰⁴

Men talk more than women because men who talked in the EEA had more descendants. As a result, men dominate the professions in which talking is an essential skill.

As Pinker and Baron-Cohen insist, if this hypothesis is true, it does not follow that particular women should be excluded from the professions. However, a great deal of moral significance does follow. Feminists see injustice in the current distribution of positions of power and prestige. But evolutionary psychologists typically insist that though the bias in distribution might be exaggerated by cultural factors that are unjust, a marked bias is not itself unjust but is to be expected,

from the differing motivations of men and women to succeed in the public sphere. This is precisely what Pinker concludes.¹⁰⁵ And if mainstream feminism and evolutionary psychology differ in the extent to which they see current arrangements as unjust, they will differ correspondingly in their policy recommendations. Evolutionary psychologists will see affirmative action neither as required (since there is no systematic injustice to correct) nor as likely to succeed (since people's aspirations and abilities are likely to be robust across a range of environments, and therefore unlikely to alter in the face of changing cultural expectations and norms). In contrast, feminists generally think that affirmative action is both necessary and effective. Moreover, feminists typically aim for states of affairs that evolutionary psychologists dismiss as impossible or unjust. The latter hope to achieve equal representation of men and women in all important positions, but evolutionary psychologists like Pinker follow Wilson in thinking that statistical equality could be achieved only at the price of systematic injustice, in the form of severe limitations of the freedoms and legitimate aspirations of men (and perhaps women too).¹⁰⁶

Similarly, if rape is a facultative adaptation, this will have implications for what policies could play a role in reducing it. If rape is adaptive, then, under the right conditions, men will have the desire to rape. We can reduce it either by avoiding those conditions, or by ensuring that men do not act on their desires. We could accomplish these goals by avoiding anything that might arouse men sexually, or by removing the opportunities for them to act upon their desires. Thus, Thornhill and Palmer have a series of prescriptions to prevent rape – aimed at *women*, not men: don't wear revealing clothes, or excessive makeup (you risk arousing male desire); don't date unchaperoned (you provide opportunities for rape). If the adaptation hypothesis is true, then maybe this is the best we can do. But we must not pretend that the theory has no implications for what we can hope to achieve, and what means we have to employ to these ends. Feminists hope to transform society, in such a manner that women do not have to be eternally vigilant, so that women can have as few restrictions on their movements and their actions as men. If rape is an adaptation, that goal is likely forever out of reach.

Finally, though it is a fallacy to equate "natural" with "good," it is not far-fetched to equate "natural" with "conducive to happiness,

other things being equal". It is quite likely that forcing people to attempt to do things that do not come naturally will make them miserable. George Will, the conservative American columnist, makes this connection explicit in his review of Danielle Crittenden's book advising women to marry and begin families early: "Crittenden sides with the anthropologist, Lionel Tiger, who says, dryly, that if biology is not destiny, it certainly is 'good statistical probability.' Ignoring probability brings punishment. Feminism, having established that women are human, forgot they are women, with distinctive desires, the ignoring of which causes unhappiness."¹⁰⁷

Women who ignore the facts about their gendered nature, who aspire to lifestyles for which they are not suited, pay the price in unhappiness. This is only a statistical prediction: some women will turn out to be very well fitted to the life of power and politics. But if we hold this out as an aspiration for all, if we suggest to our daughters that these are the kinds of lives that women ought to lead, we risk rearing generations of unhappy women. Feminism, conservatives often allege, is responsible for just such misery. It tells women that they can have it all, thereby encouraging them to delay childbearing, often until it is too late. But for most of them, nothing will be more satisfying than childbearing, since this is the task for which they are best adapted, physically and emotionally. Evolutionary psychology thus seems to have policy implications: we should encourage people to pursue the lives for which they are evolved.

It is, therefore, false to claim that evolutionary psychology has no political implications. Only a very simplistic, not to say self-deceptive, view of morality could lead anyone to think otherwise. The naturalistic fallacy cannot insulate scientific claims from moral consequences, not when those claims concern the capacities of human beings. Some evolutionary psychologists have countered their critics by charging them with a fallacy of their own devising, the "moralistic fallacy." Someone commits the moralistic fallacy when they infer from the (supposed) fact that something is good that it is therefore found in nature.¹⁰⁸ I am not committing the so-called moralistic fallacy. I am not claiming that, because some of the claims of evolutionary psychology have consequences that I regard as pernicious, they must be false. We shall discover how much truth they have in them, not by assessing their

Is maximal happiness a goal?

consequences for morality, but by examining them as sets of empirical claims; that is, by assessing the degree to which they are coherent, supported by evidence, have considered and eliminated alternative explanations, and so on. The fact that, as I claim, they have undesirable implications does not make them false. It simply makes examining them all the more important.

Assessing the claims of evolutionary psychology

The sworn enemy of evolutionary psychology is the standard social science model, which claims that human behavior is very largely the product of culture and socialization. According to the SSSM, behavior is learned, and therefore can be changed by environmental intervention. Evolutionary psychologists have nothing but contempt for this view, and devote many pages to refuting it. Only if they succeed in this enterprise will their alternative explanations be credible.

Unfortunately, they spend much of their time tilting at a straw man. The version of the SSSM they attack is actually a parody of the view advocated by mainstream social scientists. Pinker dubs this straw man "the blank slate." Someone who believes in the blank slate believes that *nothing* is innate in the human mind: that human beings do not have evolved preferences or dispositions, or modules which make learning some tasks more difficult. No one who has reflected deeply upon human behavior believes in the blank slate, not even behaviorists like Skinner. Even he believed that animals have an innate desire for food, a desire that he put to work in his schedule of reinforcements for the behaviors he wished to condition. The debate between evolutionary psychology and the SSSM is not between people who believe that there are some evolved dispositions and propensities and those who deny that there are any. Instead, it concerns the *relative* malleability of human behavior, the *extent* to which it is open to alteration by environmental interventions that are practically and morally accessible to us. If social scientists do not mention our evolved propensities in their explanations, it is not because they deny that they exist, but because they deny that calling attention to them is illuminating.

Really?

The view that Pinker spends so much time excoriating, that there is no reality and that everything is "socially constructed," is indeed confused but it does not follow that *nothing* is socially constructed (indeed, few evolutionary psychologists would claim this). Thus, devoting page after page to attacks on the blank slate is irrelevant to the real debate. The real dispute concerns the explanation of particular behaviors, and must be conducted at this level. We shall therefore re-examine each of the central claims of evolutionary psychology, and test them against alternative explanations which are more in the tradition of the SSSM. We shall then adduce some general considerations, which suggest that evolutionary psychology can never hope to replace the more traditional social sciences (though it might prove to be a useful addition to the repertoire of social scientific skills and approaches).

Evolutionary psychology and human sexuality

Evolutionary psychology claims that men and women are disposed by nature to have different desires and preferences, as a consequence of differences in the extent of their parental investment. Because women are destined to invest far more heavily in their offspring – since eggs are more costly to manufacture than sperm, and since women must provide children with nutrition, both before and after birth – we can expect women to be far more choosy about their sexual partners than men. Women will be motivated to seek men with good genes (so as to maximize the quality of their offspring), with plentiful resources and with the willingness to commit them to a partner and offspring. Men, on the other hand, will be motivated to seek variety in their sexual partners, since they are able to maximize the number of their offspring by having sex with as many women as possible.

Buss claims that the preferences of men and women today, across all cultures, support this prediction. Men and women really do have the preferences that the theory predicts. This might seem a stunning vindication, except for one thing: we all knew, beforehand, that this was so. It is common knowledge that, on average, men seek greater variety in sexual partners than do women. For all its supposed scientific methodology, we are better off treating the claims of evolutionary psychology

→ so does evolution generally.

as inferences to the best explanation than as deductive arguments. Given a set of data, evolutionary psychology fabricates an evolutionary story that apparently explains it. It receives relatively little support from the careful testing of hypotheses.

The appropriate way to contest its claims, then, is to offer alternative explanations of the same data. The most common alternative explanation, the one which evolutionary psychology needs to refute if its own hypotheses are to be vindicated, is the *patriarchy explanation*. According to this view, women are motivated to seek men with higher status and more resources because there are systematic barriers to their acquiring these resources in other ways – barriers that are a result of a history of discrimination, not importantly due to differences in the brains of men and women. From this, all the other observed differences in the behavior of men and women follow. Since women have fewer resources with which to attract mates, they are forced to treat sex as a resource, and to limit its availability. Since men have less to gain from long-term relationships, they are less strongly motivated to pursue them.¹⁰⁹

I believe that the patriarchy explanation makes better sense of the data than does the evolutionary psychological explanation. For a start, it does a much better job of explaining apparent exceptions to the predictions of evolutionary psychology. Buss predicted that men would prefer younger women as long-term mates, since such women would be just beginning their reproductive life. Conversely, women would prefer older men, because age is correlated with control of resources. Indeed, just as we should expect *on either theory*, women tend to marry older men. But there are exceptions:

Not all women, however, select older men [...] A study of a small Chinese village found that women who were seventeen or eighteen sometimes married "men" who were only fourteen or fifteen. The contexts in which this occurred, however, were highly circumscribed in that all the "men" were already wealthy, came from a high-status family, and had secure expectations through inheritance.

Other exceptions occur "among women who already have high status and plentiful resources of their own."¹¹⁰

Origin of
discrimination?

How so?

Buss explains the exceptions by invoking that old evolutionary psychological stand-by, the facultative adaptation. That is, women are not simply motivated to prefer older men, but have a conditional preference, which responds to the circumstances in which they find themselves. We know that there really are such things as facultative adaptations, so we cannot criticize the psychologists for invoking them. However, we can legitimately demand high standards of evidence when they resort to such claims. Philosophers of science have often pointed out that it is possible to hang on to any theory even in the face of apparently refuting evidence, if we are willing to adjust our background assumptions and invoke *ad hoc* hypotheses. What we require from evolutionary psychology is evidence that it is not engaged in adjusting its theory to fit the facts in an *ad hoc* manner. The danger here is that the invocation of facultative adaptations could be used to make the theory invulnerable to criticism, and render its hypotheses untestable. Without this constraint on acceptable hypotheses, no theory could be falsified. I might claim, for instance, that people are adapted to wear their underpants on their head, yet, when it is pointed out to me that people rarely wear their underpants there, simply shrug and say "it's a facultative adaptation."

Remember the form of explanation that is at issue here. Evolutionary psychology claims that we have modules or preferences that dispose us to act in ways that, in the EEA, would have been adaptive. In this case we are concerned with explanation by way of preferences: women are claimed to have a preference for older males. We need to be careful here concerning the *content* of that preference. Women are not hypothesized to have a preference for resources, but for older men; that is the content of their proximate preference, though its ultimate explanation will invoke resources (just as we have a proximate preference for sweet-tasting foods, not for calories, though it is because sweet-tasting foods are high in calories that we have this preference). Indeed, Buss claims that the preference for age is robust, even when access to resources is controlled for statistically. That is why he needs to claim that the adaptation is facultative when he is confronted with apparent exceptions. Under the right conditions, women must lose their preference for older men.

Our preferences come to be facultative only under certain conditions: if our ancestors in the EEA had to deal with situations which varied in systematic ways, so that different types of behaviors were rewarded in different conditions, and these different kinds of conditions recurred. If our ancestors had regularly encountered situations in which eating high-calorie foods was maladaptive, as well as situations in which eating such foods was adaptive, we might have evolved facultative food preferences; preferences which were sensitive to our environment, so that in some circumstances the sweetness preference would not be expressed (so we might today have a preference for broccoli over chocolate). We do not have such a facultative preference, because it is only very recently that the desire for high-calorie foods has become maladaptive.

Similarly, women could have evolved a facultative proximate preference, which is sensitive to the possession of resources, only if was the case that in the EEA resources were sometimes correlated with youth rather than age, or sometimes controlled by women, or that the link between the age of men and control of resources was broken in some other way, and that this situation recurred fairly frequently. Only under these conditions would such a preference have been adaptive. Buss adduces no evidence that the EEA was ever like that, nor, to my knowledge, has anyone else. Without such evidence, it is completely mysterious why women usually prefer older men, but sometimes prefer younger.

Let's consider the alternative explanation of this preference, offered by the patriarchy explanation. We might sum it up as: women are rational (this is a shocking hypothesis, I know, but bear with me for a moment and let's see how far it will take us). Women will be motivated to employ whatever mating strategy is in their, and their offspring's interest. Thus, when they know that, economically, boys are better prospects than men, they will choose to marry boys (other things being equal). Notice that this rival explanation does not invoke the blank slate. There is no claim that women will have whatever preferences they are socialized to have. On the contrary, if it were spelt out fully it would definitely mention innate desires: to provide for their offspring, to live comfortable lives, and so on. The claim is not that culture is everything and biology nothing, but that the constraints of biology are fewer and looser than evolutionary psychology suggests.

Buss himself has considered and dismissed the patriarchy explanation, which he calls "the structural powerlessness hypothesis," for patterns of human sexuality. We must consider his arguments against the view, if we are to vindicate the suggestion that it is more promising than its rival. The evidence he considers most telling comes from a study of American women that showed that:

Successful women place an even greater value than less successful women on mates who have professional degrees, high social status, and greater intelligence [...] Perhaps most tellingly, these women express an even stronger preference for high-earning men than do women who are less financially successful [...] Taken together, these results not only fail to support the structural powerlessness hypothesis, but directly contradict it.¹¹

Buss's claim is that if women simply had a rational preference for resources, then women who already possessed sufficient resources would not care about the wealth of potential mates and would make their mating decisions on other grounds. However, women who are wealthy have an even stronger preference for successful mates. Therefore, the patriarchy explanation is false.

There are several reasons to be skeptical of Buss's claim that this result invalidates the patriarchy explanation. Firstly, we ought to expect *some* degree of robustness in the preference of women. If culture has a role to play in explaining our preferences – and, to repeat, no one denies that it has *some* role – we ought to expect those preferences to be difficult to shed. Just as our taste for sugar stays with us today, in the modern West, long after it has ceased to be adaptive, so women's culturally derived preference for wealthy males may linger long after it is rational, especially if this preference tends to be taught, explicitly or implicitly, to children. It is a commonplace that feelings can remain with us long after we reject the beliefs that made our acquiring them rational. The child who is brought up in a religious family can feel guilty about her failure to attend church many years after she becomes an atheist. Similarly, the woman who, as a child, was surrounded by a culture that impressed on her the importance of landing a good "catch" may find the preference for a wealthy partner hard to shake off.

Secondly, when we examine the actual content of the reported preference, the claim that it is an innate disposition, rather than a response to the conditions in which women find themselves, becomes less plausible. Suppose that the preference is innate, so that, like our taste for sweet things, it is not responsive to changes in the environment which would make pursuing it irrational. Then, we would expect all women to have much the same preference, regardless of their own access to resources. But they don't: wealthier women have a *stronger* preference for resources in a mate. This is a puzzle for the evolutionary explanation, not a confirmation of it.

How do we explain the fact that wealthier women have a stronger preference for resources than the less wealthy? There are several factors that go toward explaining it. For one thing, possession of resources is strongly correlated with social status: it comes as no surprise that women with high social status want to marry men of a similar status. We all want our spouses to feel at ease and to fit into the circles we move in. Moreover, wealthier women are accustomed to a higher standard of living, and, rationally, may seek a mate that will enhance that standard (remember our working hypothesis: *women are rational*). There is no mystery here.

The patriarchy explanation, which is a specific hypothesis in the tradition of the SSSM, seems to do just as good a job as evolutionary psychology in explaining the usual patterns of female preferences, and a better job of explaining at least some deviations. Does this give us a decisive reason to prefer the SSSM to evolutionary psychology? Better, I think, to say that it gives us good reason to integrate the two. The SSSM does a very good at explaining cultural variation, but it has no explanation for our most basic desires, those preferences which all cultures express in one form or another, however varied. For these basic preferences – our taste for sugar, our desire for comfort, companionship, and for sex, and our aversion to pain, isolation, humiliation, and many other things beside – evolutionary explanations seem to be the only credible contenders. But when it comes to explaining the fine details of behavior – the ways in which we pursue our basic desires and goals, how we balance them against each other, and the specific content of these general preferences – the SSSM does better. So, the major goals of psychology are better pursued in the traditional way: against a taken-for-granted background of human nature, broadly conceived.

I suggest that this view becomes even more convincing when we examine other aspects of human sexual behavior. Let's briefly consider two other, allegedly innate, sexual preferences. Men, Buss tells us, value attractiveness in women much more than women value attractiveness in men, and men value virginity in women much more than vice versa. Both of these have evolutionary explanations: female attractiveness is held to be a good indicator of fertility, while a virgin cannot be carrying another man's child, and her lack of sexual adventure might indicate that she is more likely to be faithful. Hence, men are likely to have a strong preference for both of these qualities. Women, however, have less reason to prefer virginity: since the resources women invest in children are (largely) biological, they don't run the risk of diverting their resources to an illegitimate child. They value fidelity, not because extramarital sex is a threat to them, but because they fear that their mate might begin to channel resources to another woman. So, they value emotional loyalty and possession of resources, not sexual inexperience or attractiveness.

What do we find when we test the preferences of men and women? This is one area in which, for the United States, historical as well as contemporary data exists: data which, for Buss, confirms his hypothesis. Subjects were asked to rate the importance of attractiveness in a marriage partner on a scale from 0.0 to 3.0. In 1939, men gave attractiveness an average rating of 1.50, while women rated it at 0.94. In 1989, men rated attractiveness at 2.11, while women rated it 1.67. Buss takes this as confirming his hypothesis, since "the sex difference remains invariant," with men placing more emphasis upon attractiveness, just as he predicted.¹¹²

But it is simply not true that the sex difference has remained invariant. In fact, the gap between men and women's ratings has narrowed, from 0.56 in 1939 to 0.44 in 1989. More strikingly, the emphasis that women placed upon attractiveness in 1989 was *greater* than that placed by men in 1939! Buss takes these expressed preferences as evidence that our desires are innate and relatively inflexible, but they seem to indicate instead the degree to which they are malleable. Once again, something akin to the SSSM does a better job of explaining the observed facts than does evolutionary psychology.¹¹³

Consider the evidence on male preferences for female virginity. Do we find that this preference is fixed, like our preference for sugar, or

facultative, so that, depending on the environment, it switches from one state to another? The evidence does not support either hypothesis. In traditional societies, a high premium is still placed on virginity, but in the United States its importance has declined markedly. In much of western Europe, "virginity is largely irrelevant" in a mate.¹¹⁴ What explains this alteration in male preferences? Buss himself notes that it may be "traceable in part to variability in the economic independence of women."¹¹⁵ Since women are less economically dependent upon men in Europe and America, they are in a better bargaining position than elsewhere. Consequently, men are less able to make demands of them. The availability of effective contraception is certainly also part of the explanation. Men's preference for virgins is simply rational, in a society in which every act of sexual intercourse can lead to pregnancy (*men are rational too*). The fact that this preference has largely disappeared when it no longer serves a function suggests that it was a social norm, based upon a reasoned response to prevailing circumstances, not an innate disposition.

From what we have seen so far, we have little reason to abandon the SSSM, though we may indeed have reason to integrate evolutionary considerations into it. However, I don't expect to have convinced anyone yet. Perhaps some of the other evolutionary explanations I sketched in the previous chapter will prove more convincing than Buss's story of the evolution of desire. Let's turn now, from male and female desires, to male and female brains.

Baron-Cohen's male brain

According to Baron-Cohen, the relative success of men and women in the sciences and engineering can be explained in terms of their – innate – differences in systemizing and empathizing ability. But there are very good reasons to doubt that he succeeds in demonstrating his conclusion. There are a great many things wrong with Baron-Cohen's claims, ranging from flaws in the design of his studies to serious mistakes in his conceptions of intelligence. I will briefly sketch both kinds of problems.

Let's begin with Baron-Cohen's studies and the ways in which they are flawed. His claim that a higher degree of empathy is innate in

women is supposed to be demonstrated by a study which shows a correlation between sex (and sex hormones independently of sex) and the degree to which neonates are interested in human faces, rather than in mechanical objects. But there are at least two things wrong with the facile assumption that a greater degree of interest in faces demonstrated by female infants equates with a higher degree of empathy in women (quite apart from the fact that the design of this study was flawed, as the researchers were frequently aware of the baby's sex).

Firstly, it is far from obvious that an interest in faces is a sign of, or a marker for, empathy. It might be an entirely unrelated trait. It is surely possible that a person might find faces fascinating without caring in the least what the person whose face it is thinks and feels. Secondly, it might be that there is a link between neonate interest in faces and adult empathy, but that this link is merely causal. Female babies might find faces more interesting, and therefore be better placed to learn about the emotions that faces express. On the latter hypothesis, it is the interest in faces, and not empathy itself, that would be innate. Finally, it could be the case that Baron-Cohen is correct in his surmise that empathy is innately stronger in female neonates, and yet still be true that, if women have more empathy (on average) than men, this is more importantly a product of culture rather than biology. It just doesn't follow that because infant A has a higher degree of trait *x* than infant B, infant A is more likely to develop into an adult with better developed *x*-ing ability. We cannot conclude that because one child learns to walk, or talk, earlier than another that it will be a better walker or talker later in life, not even on average. For some traits this might be true, for others, false. Only detailed empirical work will establish if there is a link between neonate empathy and adult empathy, independent of the culturally entrenched ways in which we treat girls and boys. Baron-Cohen has not carried out that work; indeed, he doesn't even seem to realize that it is needed.

More importantly, however, Baron-Cohen's implicit equation of "systematizing" ability with the kind of intelligence needed by scientists reflects a view of intelligence that looks increasingly implausible today. The idea that the essence of intelligence is the ability to formulate the rules that govern the behavior of systems is the central

hypothesis of the research program that has come to be known as GOFAI (Good Old-Fashioned Artificial Intelligence) among computer scientists. Researchers in this tradition hold that building an intelligent machine is merely a matter of designing a computer that will manipulate sensory inputs by following rules of sufficient complexity. After forty years of GOFAI, the results have been far from impressive, and most researchers now look elsewhere in the search for thinking machines. The fundamental problem seems to be that the very definition of intelligence with which GOFAI worked was fatally flawed. Intelligence, including the intelligence of the scientist, consists of far more than the ability to systematize.

The primary obstacle to progress in GOFAI comes from what has come to be called the frame problem: the problem of specifying what rules and what information are relevant in a particular situation. When a human being is confronted with a changing situation, she usually grasps which changes are important and which trivial without needing to reflect upon the matter. If we are trying to understand a physical system, for example, we (typically) ignore the movements of shadows across it. But defining how we distinguish relevant from irrelevant information has so far eluded scientists. Attempts to formulate rules that tell us what to ignore and what to regard as salient run into two problems. Firstly, there seem to be so many exceptions to any useful rules that they soon become too unwieldy to apply (it is not just understanding social interactions, as Baron-Cohen thinks, but also understanding the physical world, which proves too complex for rules). Secondly, we need to know when to apply the rules, and for this we require higher-order rules: rules about rules. But then we need to know when to apply the higher-order rules, which requires yet higher-order rules. And so on. Hence, it seems impossible to capture the essence of intelligence in a rule-based system.

Given our inability to describe, in a rule-based way, what we do when we think intelligently, it seems unlikely that our intelligence is merely a systematizing ability. Scientists, it seems, need an analog of empathy: an intuitive ability to grasp what matters, as well as a highly developed systematizing ability.¹⁶ But if this is so, then even if it is true that men and women have opposite cognitive profiles, in that males are better systemizers and females better empathizers, we have no reason

to think this would give men an advantage in the sciences. Balanced brains, not “male” or “female” brains, would be best here. What explains the statistics on the domination of the sciences by males that Baron-Cohen quotes? Once again, I suggest that the patriarchy explanation is likely to prove true here. These statistics have their roots in a history of oppression of women. We explain these differences in terms of prejudices and culture, not genes and evolution.

Rape as an adaptation

Let's turn now to the suggestion that rape is either itself an adaptation, or a by-product of adaptations. If rape is adaptive, then it must be true that, in the EEA, the benefits of rape (measured in the currency of inclusive fitness) were greater than the costs. But all the evidence we have (from the study of hunter-gatherer societies, which are presumed closely to resemble the earliest human groups) is that the costs are high. Rapists risk injury or death, from their victims, from their victim's kin, and from the wider group. What benefits might outweigh these costs? Thornhill and Palmer suggest that males who have no other chance of reproducing might be willing to run these risks, since rape might be their only chance of passing on their genes. Thus, if rape is an adaptation, it is likely to be facultative, triggered by lack of access to willing partners and the knowledge that this state of affairs may be permanent.

On this hypothesis, we ought to expect that rapists will be single men who lack the resources to attract willing partners. And indeed, Thornhill and Palmer claim, “rape is disproportionately committed by males with lower socioeconomic status.”¹¹⁷ However, as they themselves point out, such males are disproportionately responsible for a wide range of crimes, not just rape. Moreover, economically disadvantaged men are not necessarily men without access to consenting women. Indeed, as they themselves point out, “self-report studies of men have found a positive correlation in normal unincarcerated men between sexually coercive tendencies and high level of sexual access to females.”¹¹⁸ Rapists do not seem to be the lonely strangers the theory predicts.

Thornhill and Palmer therefore need to find some way of accommodating this data, in order to rescue the rape-as-adaptation hypothesis. Their effort to reconcile the facts with their theory would be truly heroic, if it weren't so appalling. Their reasoning runs thus: men with multiple partners will tend, on average, to be more attractive to women, which explains why they have been so successful sexually. But though women desire to mate with physically attractive men, they know that the likelihood that such men will display fidelity toward them is low, given that they will receive frequent offers from other women. Thus, women who wish to retain such prize catches will have to make themselves especially attractive. They know that men value chastity in their long-term mates, so they can attempt to raise their value in the man's eyes by displaying an unwillingness to mate. Now, “if a woman's display of reluctance is truly effective, a man who achieves copulation with her will perceive that he achieved it by force.”¹¹⁹ Attractive men will therefore often think that they have coerced a woman into having sex with them. But they will be wrong: the woman desired the sex all the time. When women say “no,” they frequently mean “yes.” They thus predict (though they provide no evidence whatsoever) that women who are, apparently, raped by attractive men will experience “significant [...] sexual arousal, including orgasm.”¹²⁰ Thornhill and Palmer frequently insist that they are dedicated to reducing rape. One way they hope to achieve this, it seems, is by redefining it out of existence: in their theory, some acts of coerced sex will not count as rape.

Unless we accept this bizarre and repugnant hypothesis, the evidence that rapists belong primarily to the group to which Thornhill and Palmer assign them is weak. Worse is to come for their theory: there is little or no evidence that the reproductive benefits of rape would, in the EEA, have outweighed its costs. On Thornhill and Palmer's own evidence, the reproductive benefits of rape are small — only about two percent of rapes result in pregnancy.¹²¹ As they point out, however, natural selection can work effectively with very small margins: “Even traits that confer a seemingly trivial net reproductive benefit (say, one percent) relative to alternative traits increase in frequency very rapidly as a result of evolution by selection.”¹²² This is perfectly true. In evolutionary terms, a one percent advantage is

significant, other things being equal. But this is only the case if the advantage is *net*: if it is not outweighed by costs – and a one percent advantage is easily outweighed by costs. Moreover, Thornhill and Palmer probably overestimate the reproductive benefits of rape, since they forget to factor in infanticide and neglect, which were common in the EEA, and which, probably, were directed at the children of rape victims more frequently than at other children. Given the fact that the benefits of rape are, on average, probably non-existent in the EEA, when weighed against the costs of punishment to the rapist, it is extremely unlikely that rape can be an adaptation.

Thornhill and Palmer reject this line of reasoning. Though they apparently admit that the reproductive benefits of rape are probably outweighed by its costs, they will not accept that this shows that rape is not an adaptation. They point out that “the coevolutionary battle of the sexes is ongoing, and which sex is ahead at any time is largely unpredictable.”¹²³ If men had evolved an adaptation that benefitted them at the expense of women, this adaptation would exert selection pressure on women, who might well evolve counter-adaptations. Thus, they argue, we cannot infer from the fact that rape has no net reproductive benefits that it is not an adaptation.

However, this line of argument is illegitimate. It is *possible* that rape might once have been adaptive, but conceding that it was probably not adaptive in the EEA is conceding that there is no evidence that rape has ever been adaptive for human beings. Daniel Dennett argues that “reverse engineering” is central to evolutionary methodology, in all its forms. To reverse engineer a trait, we postulate a function for it, and then try to discover how it works and perhaps imagine a selection history for it on that basis. If the trait fulfilled a particular adaptive function in the EEA, it is a safe bet that it was selected for that function. But if it turns out *not* to fulfill that function, we ought to abandon the hypothesis that that was its original purpose (unless we have some other evidence for the claim).¹²⁴ Certainly it is possible to imagine that rape once served a function that, so far as we can tell, it has not served in the recent evolutionary past. But it is equally possible to dream up functions for any other trait. This is idle speculation, and when the topic is one as inflammatory – and important – as rape, it is both pernicious and reprehensible. It is not bad science *because* it has

objectionable implications (the objection to it that Pinker and other defenders of Thornhill and Palmer attribute to advocates of something more like the SSSM). It is objectionable, in part, because it is bad science.

So we must abandon the claim that rape is an adaptation. But of course Thornhill and Palmer do not claim that rape is an adaptation. They claim that *either* rape is an adaptation, *or* it is a by-product of adaptations. Might we yet be forced to concede that rape is a by-product of adaptations? I think we ought. Of course rape is either an adaptation or a by-product of adaptations: that exhausts the possibilities, so far as behavioral traits and characteristics are concerned. Whatever we are able to do, we can do either because in doing so we exercise physical and psychological traits which were selected in the EEA (at least in part) because they allowed our ancestors to act similarly, or because we are able to put to some new use characteristics which were selected for some other purpose. To say that a behavior is an adaptation or a by-product of an adaptation is simply to say that we are products of natural selection.

This is not to say, however, that all by-product explanations are necessarily uninformative. Daly and Wilson’s hypothesis, that patterns of child-abuse are (in part) a by-product of other adaptations, is informative, if it is true. However, the burden of providing a content for the explanation must be shouldered, and the only way to make a by-product explanation substantive is by providing good evidence for the adaptations, of which the behavior is alleged to be a by-product, and tracing the path whereby the behavior is a by-product of that adaptation. This Thornhill and Palmer do not do. They simply mention alleged features of male sexuality (greater sex drive, greater visual sexual arousal, desire for numerous partners) that they claim are adaptations, and which might facilitate rape. But without detailed work showing that these features are innate and adaptive, and demonstrating how they come into play in rape, this is completely empty speculation. We knew before Thornhill and Palmer began their research that rape was either adaptive or a by-product of adaptations. Nothing in their work adds to our knowledge, neither of the cause of rape, nor of the means whereby its incidence could be reduced.

Evolutionary psychology and social norms

I have provided relatively detailed, alleged adaptation specific, rebuttals of particular evolutionary psychological claims. But the weaknesses I have identified are specific to those explanations, not general features of evolutionary psychology. Some evolutionary hypotheses are more carefully formulated and tested: Daly and Wilson's work is a case in point. In this section, I want to step back from the details of particular hypotheses and look at the broader picture. If I am to vindicate the suggestion that evolutionary psychology cannot replace the SSSM, but ought instead to be integrated with it, we must defend the continuing usefulness of a social scientific approach against charges that it is unable to explain the very social norms it regards as its home territory.

The problem, according to evolutionary psychologists, is that the social norms that are thought of as the special subject of anthropologists and sociologists do not vary greatly from time to time, or across geographical regions. Instead, they are universal, and universality is good evidence of innateness. It is surely no accident that (almost) all of us are born with two arms and two legs. The explanation for the universality of this trait, of course, is that it has gone to fixation: it is inscribed in the human genome.¹²⁵

Certainly, evolutionary psychologists argue, the universality of a trait is decisive evidence against the SSSM view: against the view that that trait is "socially constructed," merely the result of arbitrary norms and conventions. It is precisely by invoking the (alleged) universality of sex differences in psychology that Pinker, for instance, argues against such views:

Things are not looking good for the theory that boys and girls are born identical except for their genitalia, with all other differences coming from the way society treats them. If that were true, it would be an amazing coincidence that in every society the coin flip that assigns each sex to one set of roles would land the same way (or that one fateful flip at the dawn of the species should have been maintained without interruption across all the upheavals of the past hundred thousand years).¹²⁶

The SSSM has to meet this challenge: explain the existence of cultural universals, or cede its place as the best available theory of social behavior.

The SSSM could simply *deny* the existence of such universals. Evolutionary psychologists do tend to exaggerate their number and significance. Moreover, some universals are probably what Dennett calls "good ideas": obvious, or optimal, solutions to recurrent problems, which we can expect to be "routinely rediscovered by every culture"¹²⁷ and which therefore do not require any special explanation. However, some important behaviors and practices, which are not good ideas in this sense, do seem to be universal. Indeed, I have invoked one myself, in arguing against Buss. I claimed that the (near) universal existence of patriarchy was sufficient to explain the data he collected. But in so doing, I was inviting the following response:

Grant that patriarchy explains the mate-preferences of men and women. But you still need to explain the existence of patriarchy. If it is universal, mustn't we explain its existence by invoking the evolved and gendered nature of human beings? So while your explanation might be an alternative to that offered by Buss and other evolutionary psychologists, it isn't an alternative to evolutionary psychology *per se*. Instead, it is a rival explanation offered from within the same general framework – could you but see it.

Given that the kind of move I have made against Buss's theory and other evolutionary explanations itself seems to require the invocation of cultural universals, if we are to hang on to the SSSM, simply denying the existence of such universals isn't possible. We need to explain them.

Of course, many universals *do* have evolutionary explanations, direct or indirect. We ought to concede that our preferences and desires are, at some level, shaped by evolution. Our quarrel with evolutionary psychology is not on this ground, but concerns the *details* of our desires. Of course we have an aversion to pain because those of our ancestors who ignored traumatic injuries tended to have shorter lives and fewer offspring. The SSSM concedes (or, at any rate, ought to concede) that we are not blank slates, but instead that at the most general level, our emotions and preferences are the products of evolution. It is at the level of the specific content of our behavior that it diverges from

evolutionary psychology, not at the level of our basic desires. It holds that this content is provided, for the most part, by culture (though there may be exceptions, like our preference for certain foods, which can be given fairly detailed evolutionary explanations). How, on this basis, might cultural universals have come to exist? These universals, SSSM claims, are *conventions*. To understand conventions, we need to recall a little game theory, the theory we turned in order to understand how morality might have evolved by natural selection.

According to the influential analysis of David Lewis, conventions are solutions to *coordination problems*. Two (or more) people have a coordination problem when they interact regularly in circumstances in which the best course of action for each depends upon the action of the other. For example, in the absence of road laws, two drivers approaching each other from different directions on the same road have a coordination problem. If each drives on the left side of the road, or each drives on the right, then they will pass each other without incident. A convention – “always drive on the left” or “always drive on the right” – will solve their problem.

It is essential to this analysis of conventions that the solution is arbitrary, in the sense that there is at least one other option that would have solved the problem just as well. If there is one solution that works much better than the others, then we ought to expect it to be selected, and that solution would not be purely conventional. If different groups of human beings are faced with the same coordination problem at different times, we ought to expect them to hit upon each available solution in equal proportions. If, instead, they repeatedly come up with the same solution, we can be sure that it is not entirely a convention. Human beings faced the particular coordination problem of needing to communicate with one another. The solutions they came up with are conventional, at the level of vocabulary: the sheer diversity of spoken languages testifies to this fact. If, instead, they all spontaneously developed the same vocabulary, we would have very good evidence that for some reason this vocabulary is superior to alternatives – or that it is innate.

According to the SSSM, social norms are (at least largely) sets of conventions. Thus, we ought to expect them to vary from society to society. But, as Pinker points out, gender roles do not vary greatly:

All cultures divide their labor by sex, with more responsibility for childrearing by women and more control of the public and political realms by men [...] In all cultures, men are more aggressive, more prone to stealing, more prone to lethal violence (including war), and more likely to woo, seduce, and trade favors for sex.¹²⁸

Indeed, we could easily add to this list of universal, or near-universal, sex differences. I myself have invoked such differences, under the category of patriarchy, in explaining the data Buss collects. But if these differences are near-universal, must we not admit that they are not merely conventional? If male dominance was conventional, then we ought to expect to find it no more widely distributed than female dominance, or equality of the sexes. Since it is near-universal, it cannot be conventional.

This seems to be right, so far as it goes. The near-universality of many social norms suggests that they are not merely conventional. But it does not follow from this that patriarchy (for instance) is not importantly conventional. The tools developed by John Maynard Smith, the evolutionary biologist who, more than anyone else, is responsible for introducing game theory into biology, will allow us to see how patriarchy might become universal, despite the fact that it is neither innate in the human mind, nor a better solution to the coordination problems faced by our ancestors than others available (such as equality).

Maynard Smith was concerned with explaining a phenomenon which had intrigued biologists for many years: the fact that members of the same species appear to take care to avoid inflicting serious injuries upon one another, even when they are engaged in high-stakes conflict. Earlier biologists had invoked group selection to explain this phenomenon – groups of animals that engaged in ritualized combat, for example, would be likely to out-perform groups whose conflicts took a deadlier form. But the application of game theory to the problem soon showed that this solution would not work. If that was all there was to restraint, then groups that refrained from violence would be vulnerable to invasion by mutants playing the more deadly strategy. In game theory terms, mutual restraint was not an *evolutionarily stable strategy* (ESS) on the group selectionist hypothesis.

Maynard Smith suspected that if game theory revealed the limits of the group selectionist explanation, it was also capable of providing a better theory of the evolution of restraint.¹²⁹ Imagine two animals involved in a conflict over some resource that cannot be shared. Each animal has two options: it can escalate the conflict, or it can retreat, leaving the other animal in possession of the resource. Obviously, if it retreats it does not receive any benefit from the resource, but escalation carries risks, both for itself and for its opponent. Either or both may be wounded or killed in a violent confrontation. Maynard Smith represented this conflict as a game between two players. Each player can engage in one of two strategies: it can be a "hawk," and continue to escalate the conflict either until its opponent retreats, or it itself is injured and forced to retreat, or be a "dove," who makes a show of defiance but retreats if its opponent escalates. To calculate the pay-off matrix, Maynard Smith introduced the following variables: the resource is worth V (for value) to each player, a wound reduces the fitness of each by $-W$, and a long contest imposes costs in terms of wasted time, represented by $-T$. We can represent the conflict thus:

	Hawk	Dove
Hawk	$1/2(V-W)$	V
Dove	0	$1/2(V-T)$

When a hawk meets a hawk, each receives (on average) half the value of the resource minus half the value of a wound (on the assumption that each hawk will win the contests half the time, and be wounded half the time); when a hawk meets a dove, the hawk receives the entire value of the resource, and the dove receives nothing (captured in the top right and the bottom left boxes); and when two doves meet, they receive, on average, half the value of the resource, minus the waste of time each expends on the contest.

What happens, of course, depends on the values of these variables, and the proportion of hawks and doves in the population. Here is one possibility, in which $W = 6$, $V = 4$ and $T = 1$:

	Hawk	Dove
Hawk	-1	4
Dove	0	1

Hawks win against doves, but do badly against other hawks. Doves lose against hawks, but, on average, benefit from competing with other doves. Selection here will be *frequency dependent*. If there are mainly doves in the population, hawks will do well – since they meet each other infrequently – and will increase in numbers. But as their numbers increase, their average pay-off will fall, and the number of doves will therefore rise. We should expect a constant oscillation in numbers. To put it another way, there is no ESS here: a population of hawks is vulnerable to invasion by doves, and a population of doves to invasion by hawks.

But, as Maynard Smith noticed, if there is an appropriate asymmetry between the players, an ESS will evolve. One possible asymmetry is first possession – ownership – of the contested resource. To illustrate how this might lead to an ESS, Maynard Smith introduces a third strategy, "bourgeois," to the hawk/dove game. The bourgeois strategy is a conditional strategy: someone who plays bourgeois plays hawk if they are the "owner" of the resources, and dove if they are the interloper. Adding bourgeois to the game gives us the following pay-off matrix:

	Hawk	Dove	Bourgeois
Hawk	-1	4	1.5
Dove	0	1	0.5
Bourgeois	-0.5	2.5	2

A population of organisms playing bourgeois (bourgeoisie?) will do better playing against each other than either hawks or doves do against

them. Thus, it is an ESS. In other words, a population in which confrontations between competing animals are purely ritualistic, one in which conflicts typically end before either combatant is seriously hurt, can evolve entirely by individual natural selection. If each organism plays the bourgeois strategy, then interlopers will usually back down after a short display, leaving the established owner in possession of the resource.

Does the bourgeois strategy accurately describe the interactions that actually take place in ritualized combat? At least in some cases, it does. Maynard Smith describes one elegant experiment that illustrates the way that the strategy is used by animals to settle disputes. The swallowtail butterfly is one organism that apparently plays the bourgeois strategy. Male swallowtail butterflies occupy the tops of hills, where they wait for females. But there are more male butterflies than hilltops, so some males miss out on resource possession. When a male flies up to an already occupied hillside, the two males display at each other, until the interloper retreats.

What researchers couldn't know, simply from observing this behavior, is that it was the mere fact of ownership that was doing the work here. Perhaps the occupants of hilltops were invariably stronger than newcomers (maybe because they did not need to expend energy flying from hill to hill), and this fact was perceptible to the interlopers. In that case, it would be strength, and not ownership, that was the proximate cause of the behavior. To discover whether the animals were playing bourgeois or whether some other factor explained their behavior, L. Gilbert allowed each of two male butterflies to occupy the same hilltop on alternate days, for two weeks. He then released them both at the same time on the hilltop. Now both butterflies regarded themselves as the "owner," and neither was willing to back down. A lengthy and mutually damaging contest ensued.¹³⁰

In species in which disputes over the possession of resources are common, we can expect some kind of tie-breaking asymmetry to come to be recognized (since organisms which play by these rules will tend to do better than those that don't). As Maynard Smith points out, this asymmetry can be purely conventional.¹³¹ There is good reason, however, to think that ownership is not a *purely* conventional asymmetry, since if it were we ought to expect the opposite tie-breaking

"ownership"

strategy – "paradoxical" – to be just as common as bourgeois. Organisms play "paradoxical" in cases where, as the usual means of settling conflicts, owners relinquish resources to interlopers. It is easy to see why bourgeois has the advantage over paradoxical, since a resource will tend to be more valuable to its owner than to an intruder. Owners will already have gone to the trouble of exploring their territory, and this might give them the advantage when it comes to defending it.

However, the advantage that defenders of territories have over interlopers is likely to be slight. Intuitively, we would think that "bourgeois" would be a tie-breaking strategy, only be slightly more common than 'paradoxical'. In fact, though "paradoxical" has been observed in nature (in a species of spider), it is extremely rare.¹³² If the advantage owners have over interlopers is small, what explains the great predominance of "bourgeois" over "paradoxical?"

Brian Skyrms, a philosopher and game theorist, set out to answer this question. Why do the small advantages that accrue to "owners" make bourgeois so much more common than paradoxical? Skyrms argues that the solution lies in what he calls "broken symmetries."¹³³ He asks us to think of a vertical plank, which is supporting an ever-increasing load. As the pressure upon the plank increases, we would expect it to buckle, either to the left or to the right. But which way will it buckle? If the plank were perfectly symmetrical and perfectly vertical, then there would be no reason for it to buckle to one side rather than the other. If it has no reason to buckle left, rather than right, or vice versa, then we might conclude that it will not buckle at all, no matter how much pressure is exerted upon it! But of course it will. How does this happen? No plank is perfectly symmetrical, though we may not be able to detect the imperfections that make it asymmetrical. As the pressure increases, the asymmetries in the plank will be sufficient to ensure that it buckles upon one side rather than the other. A tiny imperfection will be sufficient to produce the effect.

In the same way, Skyrms argues, a very small advantage accruing to a resource holder will be sufficient to ensure that bourgeois has a decisive advantage over paradoxical.¹³⁴ When we model this on a computer, we find that what Skyrms calls the "basin of attraction" – the probability that one ESS rather than another will eventually stabilize – is very much larger for bourgeois than for paradoxical, even if we assign a very small

increased weight to resource ownership. Hence, almost all organisms that have a norm for settling conflicts over resources in terms of possession play bourgeois, and paradoxical is almost unknown.

I believe this finding has important lessons for anyone who wishes to understand how and why social norms and conventions arise among human beings. A very small symmetry-breaking ingredient among players who face a coordination problem can be expected to have a decisive effect upon the convention that arises. Coordination problems are pervasive in human life. People are constantly faced with problems to which there are multiple solutions, and which are such that if a solution is in place, no one can do better by unilaterally defecting from it (the technical definition of a coordination problem). For example, relations between the sexes, who need each other for reproduction, can be conceptualized as a set of coordination problems. Responsibility for child-rearing, and for other tasks, has to be allocated. There are, obviously, many solutions to these labor allocation tasks. But if there are natural symmetry-breaking features differentiating the sexes, we ought to expect one set of solutions to these problems to be far more common than others. Are there such symmetry-breaking features? Of course there are, and in the EEA they were far from insignificant. The costs of bearing children and breast-feeding them fall exclusively upon women. Moreover, there are differences in the average strength of men and women, which were probably important in the EEA. These symmetry-breaking features are so conspicuous, and so significant, that it is likely that the basin of attraction for a single set of social norms was very large indeed. We do not need to postulate (even weak) *psychological* differences between men and women to explain the near-universality of traditional roles; the solution is already before us in their physiologies.

Thus, the SSSM can explain social norms without invoking evolutionary considerations. The division of labor which we see in all hunter-gatherer societies, where women stay near the campsite while men roam, is exactly what we would expect, given the different roles men and women play in child-rearing. The exclusion of women from political power and from public forums is most likely to be the consequence of nothing deeper than the fact that males are able, given the relative strengths of the sexes, to impose their will upon women. "Femininity," the norms and behaviors expected of women, is probably

no more than the cultural elaboration of these fundamental divisions. Contrary to what the evolutionary psychologists claim, we do not need their theories to explain the near-universality of many social norms.

Let us apply these observations to the work of Daly and Wilson. If their data are to be believed, being a stepchild is the single most important risk factor for abuse, across all cultures.¹³⁵ It is a (near) universal norm that one should love one's own children, and exercise patient forbearance in the face of their provocations. But the norm does not extend protection to stepchildren. Can mere convention explain the ubiquity of this norm? Or, as Daly and Wilson argue, are we forced to postulate adaptations for parental solicitude, a by-product of which is the observed pattern of abuse?

If conventions are to do the work, then we need to locate a feature which would break the symmetry between three possibilities: (1) care for all children equally, (2) care for children other than your own more than your own, and (3) care for your own children more than others. It is easy to see that (1) and (2) are highly unstable, if for no other reason than that they frequently would require individuals to care for too many children. In very many social groups, no one person will have the time or the resources to feed, clothe, and house all the children in the group, or even all of those apart from their biological children. Moreover, infants need to be breast-fed, and their mothers will frequently be the only women in the neighborhood who are lactating. Add to this a modest degree of pair-bonding; that is a tendency of males to stay near the women with whom they have fathered children, and also the fact that males will tend to channel resources to their own children, if for no other reason than that they associate with them more and more closely.

Thus, it is easy to see that parental solicitude could become established as a social norm, without needing to postulate any innate tendency to prefer one's own children to the children of others. Of course, that explains only our propensity to care for our own children, not the cross-cultural pattern of child *abuse*. But we can explain the latter in exactly the same way that Daly and Wilson do: as a by-product of this propensity. When the norm is not in place, when a new, unrelated, adult takes over the care of children, abuse is more likely, because there is no internalized norm requiring solicitude for unrelated children.

However, it is unlikely that *all* the work here is done by social norms. As I have been arguing throughout this chapter, evolutionary psychology has a contribution to make to our understanding of human behavior and social life, and this is true here as well. When mammals give birth, a powerful hormone, oxytocin, is released into their brains. This hormone promotes bonding with their new offspring. Oxytocin is unlikely to be wholly responsible for parental solicitude, given that the feelings to which it gives rise are easily transferred to other children, and that oxytocin levels are unlikely to remain high for long (as the phenomenon of post-natal depression shows). However, the release of oxytocin might itself contribute to the establishment of the social norm favoring parental solicitude, since it is itself a symmetry-breaking factor. So, though biological and evolutionary considerations matter, social norms remain an essential part of the explanation for the pattern of child abuse observed by Daly and Wilson.

To say that social norms matter is to say that history and culture matter. This is the true point of contention between evolutionary psychologists and proponents of the SSSM. Evolutionary psychology holds that the differences we observe, between us and our society and those far removed from us in time and space, are relatively superficial. All people share the same human nature, which places significant constraints upon the ways of life available to human beings. Societies that do not respect these constraints, which ignore them in their zeal to establish a Utopia, don't survive for very long, and during their short lives they inflict high costs on their members. Proponents of the SSSM do not (or ought not) deny that we all share a common nature, and that this nature sets limits on the social relations we can hope to achieve. But they believe that these limits are much less constraining than the evolutionary psychologists suggest. The SSSM holds that while our basic desires are the product of our evolved human nature, the specific shape they take varies from society to society and time to time, as a consequence of the way these desires are interpreted. In general, and for many of the most significant aspects of human life, nature only sets boundaries: social norms and history settle what the way of life will be within them.

Which view best captures human life, in all its diversity? I have suggested that, at least in areas surrounding gender relations,

something like the SSSM remains the best explanation. The selection of these issues was not arbitrary. Evolutionary psychology has chosen this territory, by devoting a significant proportion of its attention to it. Moreover, it is this work that has, rightly, attracted the most attention, because the conclusions of the evolutionary psychologists with regard to male and female brains and preferences have immediate implications for our morality and for our social policies. If the evolutionary explanations of our social life were true, then we would very likely be stuck with certain forms of inequality. But they are (at best) only partly true, and our future remains open. Existing social norms are not a direct expression of human nature, and we retain the power to transform them for the better.

None of this is meant to imply that evolutionary considerations do not help us understand ourselves. The basic desires that the SSSM presupposes are the products of evolution, and cannot be wished away. They are not "social constructions." Moreover, there are other aspects of human life that are illuminated by evolutionary hypotheses. It may be, for instance, that our "disgust" reactions are triggered by the extent to which an object has characteristics which would, in the EEA, be reliably associated with sources of infection.¹³⁶ If this is right, it would be an instance in which our evolved nature can not only explain the constraints on our social lives, but also fill in some of the details.

Evolutionary psychology may yet prove an important and fruitful research program. It goes wrong, not in offering evolutionary explanations of human behavior, but in thinking that its explanations must be exclusive of the more traditional approaches of the social sciences. Every new research program has the tendency to overextend itself: to think that almost everything can best be understood from its viewpoint alone. This is a relatively harmless phenomenon, which, I have no doubt, will soon pass; soon evolutionary approaches will become just one more possible approach to human behavior, often illuminating, but almost never the *whole* story. We ought to welcome the addition of the evolutionary approach. But when its imperialistic urge takes it blundering into politically sensitive territory, and it gets things badly – dangerously – wrong, we ought to combat it.