Prospects for Evolutionary Policy

TIM LEWENS

I. Evolutionary Policy

Two well known and widely accepted arguments seem to show that evolutionary psychology is unlikely to tell us much of relevance to public policy. First, there is no good inference from the claim that X is an adaptation to the claim that X cannot be altered. So evolutionary psychology, even if it can establish that male philandering is adaptive, will not thereby tell us that male philandering is a trait that policy makers must work around rather than seek in vain to stamp out.[1] Second, the heuristic value of attempting to shed light on the makeup of the mind by reflection on the demands of ancestral environments is likely to be quite weak. Traits cannot be predicted from rough-grained facts about ancestral environments alone. So evolutionary psychology is also unlikely to give policy makers much of a leg-up in understanding how our minds work, even if it can explain why we have the kinds of minds we do.[2]

In spite of all this, a small number of biologists and philosophers continue to link the results of evolutionary psychology to matters of political concern. A few years ago, the UK policy think-tank *Demos* devoted its quarterly review to a series of short articles by journalists, philosophers and scientists on the input that evolutionary psychology might make to policy and economics.[3] Peter Singer has urged a move towards a 'Darwinian Left' that refashions itself in response to our increasing understanding of human nature.[4] Helena Cronin has written a number of pieces in collaboration with Oliver Curry arguing that the UK government's policy on the family would benefit from incorporating evolutionary psychologists Daly

[1] P. Kitcher, *Vaulting Ambition* (Cambridge, MA.: MIT Press, 1985).

[2] See, among others, K. Sterelny and Paul Griffiths, *Sex and Death: An Introduction to the Philosophy of Biology* (Chicago: University of Chicago Press, 1999).

[3] O. Curry, Helena Cronin, and John Ashworth (eds.) *Matters of Life and Death: The Worldview from Evolutionary Psychology. Demos Quarterly 10* (London: Demos, 1996).

[4] P. Singer, *A Darwinian Left: Politics, Evolution and Cooperation* (London: Weidenfeld and Nicholson, 1999).

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and Wilson's work on homicide.[5,6,7,8] Thornhill and Palmer believe that an evolutionary understanding of rape will overturn, or at least greatly enrich, conventional wisdom on how to reduce the incidence of rape.[9] Occupational psychology has jumped on board, with the publication of a book arguing that managers must understand the ape within if they are to get the most out of their staff.[10]

Might evolutionary psychology have relevance to matters political after all? I suggest in this paper that the two old arguments still suffice to rebut even these more recent attempts to link evolution and policy. In section two I briefly consider (and reject) the claim that even though showing some trait to be an adaptation does not entail that it *cannot* be altered, it nevertheless constitutes strong evidence that the trait will be very *difficult* to alter through social and cultural means. Section three considers Singer's 'Darwinian Left', and shows this position also to fall foul of some misunderstandings of adaptation.

Section four runs quickly through a series of fairly well-known arguments that show why reflection on ancestral demands on organisms is unlikely to constitute any very strong heuristic for predicting what traits will have evolved in response to these demands. Sections five and six look at two case studies—one from Daly and Wilson's work on homicide, another from Thornhill and Palmer's work on rape—that seem to show that, philosophical arguments notwithstanding, evolutionary psychology has been of value in illuminating features of human thought and behaviour that would otherwise have gone unnoticed. While I do not try to argue against these authors' evolutionary explanations for why we behave as we do, I do suggest that evolutionary thinking has played only a minor role in establishing the existence of the behaviours in question and

[5] H. Cronin and Oliver Curry, 'The Evolved Family' [Response to UK Government Consultation Document *Supporting Families*, available at *www.homeoffice.gov.uk/vcu/suppfam.htm*] reprinted in *Family Business, Demos Collection 15* H. Wilkinson (ed.) (London: Demos). Also available at *www.lse.ac.uk/Depts/cpnss/darwin/family.htm*.

[6] H. Cronin and Oliver Curry, 'Pity Poor Men', *Guardian* (London: Saturday 5th February 2000).

[7] M. Daly and M. Wilson, *Homicide* (New York: De Gruter, 1988).

[8] M. Daly and M. Wilson, *The Truth About Cinderella* (London: Weidenfeld and Nicholson, 1998).

[9] R. Thornhill and C. Palmer, *A Natural History of Rape: Biological Bases of Sexual Coercion* (Cambridge, MA: MIT Press, 2000).

[10] N. Nicholson, *Managing the Human Animal* (Texere Publishing, 2000).

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the mechanisms that underlie them. The cases also point to further worries in deriving policy recommendations from evolutionary psychology.

II. Limiting Ambition

Biologists, psychologists and philosophers of biology almost never assert that adaptations cannot be altered. They certainly do not do so in the technical literature. The only explicit statement I have found of the view that human nature is fixed is in a popular piece by Cronin and Curry who ask, '...if human nature is the result of evolution, aren't we stuck with it? Surely there is little that policy makers can achieve? Not at all. Human nature is fixed; but the behaviour that it generates is richly varied, the result of our evolved minds reacting to different circumstances.'[11]

Even here the proper interpretation of Cronin and Curry's statement is not straightforward. It is possible that in saying human nature is 'fixed' they use this word in the more technical sense of population genetics to mean 'is represented at a frequency close to 100% in the population'. The context of contrast with the possibility of flexibility in behaviour goes against this interpretation, so I will assume that by 'fixed' they mean something like 'inevitable'. Cronin and Curry agree that the behaviours generated by human adaptations can vary according to environmental cues; however they assert that the underlying mechanisms that respond to these cues are fixed in this sense.

It is quite easy to see why this claim about the fixity of adaptations is fallacious. The claim (for example) that male promiscuity is an adaptation tells us that males who were promiscuous outreproduced males who were not. It also tells us that there has been some strong resemblance in terms of promiscuity between males and their male offspring. Finally, it tells us that this correlation between parents and offspring in terms of promiscuity was reliable across the majority of environments in which males have, in their evolutionary past, developed. This claim does not entail that there are no novel circumstances, or circumstances that have been rare but could become common, in which males do not develop to be promiscuous, or in which women will develop to be more promiscuous than men. A trait can be an adaptation, hence part of 'human nature', and also be subject to alteration by environmental manipulation. Of course

[11] Op. cit., note 5.

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Cronin and Curry may also believe that there are circumstances under which males will be less promiscuous than women; however, they seem to assert that the underlying evolved mechanisms in males and females that produce varied sexual behaviours in response to environmental cues cannot themselves be altered. Hence they also appear committed to the view that policy needs to work in accordance with this nature that is 'fixed'.

One might respond to this rebuttal with an inductive argument: adaptations must have been developmentally resilient to commonly encountered perturbations in past environments. It is therefore highly unlikely that they will be alterable by perturbations in current and future developmental environments. This argument is also weak. It is true that we should expect adaptations to be buffered against commonly encountered variation in the environments in which they emerged. That is to say, we should expect adaptations to be well 'canalized', for otherwise a beneficial trait would be almost certain to fail to develop because of its sensitivity to the inescapable perturbations of developmental environments.[12] Yet natural selection cannot build traits to be impervious to novel developmental circumstances. Since we have the power to design novel educational, cultural and even nutritional developmental environments we might succeed in disrupting the normal adaptive outcome and producing the traits we desire.

Most evolutionary psychologists would accept, and have defended, arguments of the sort laid out in the previous paragraph. Tooby and Cosmides, for example, see clearly that the evolutionary view of the mind leaves open the possibility of the alteration of adaptive traits: 'Developmental processes have been selected to defend themselves against the ordinary kinds of environmental and genetic variability that were characteristic of the environment of evolutionary adaptedness, although not, of course, against evolutionarily novel or unusual manipulations.'[13]

The last two words of this quotation are relevant to the policy agenda. Just as selection cannot build traits to be impervious to novel environments, it need not build traits to be impervious to developmental perturbations that exist rarely in the environments in which the trait evolved. This means that we need not look only to

[12] For an account of canalization see C. H.Waddington, *The Strategy of the Genes: A Discussion of some Aspects of Theoretical Biology* (London: Ruskin House/George Allen and Unwin Ltd, 1957).

[13] J. Tooby and Leda Cosmides, 'The Psychological Foundations of Culture', *The Adapted Mind*, J. Barkow, L. Cosmides and J. Tooby (eds.) (Oxford: Oxford University Press, 1992), 81.

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very new environmental modifications if we wish to avoid traits that we think are adaptations. Modifications that have been rare in the past might also do the job. What for the evolutionist is merely developmental noise that results in a small fraction of women developing traits like excellence in spatial reasoning, desires for multiple sexual partners, lack of interest in raising a family or the drive to dominate and acquire power in a competitive workplace might, for some feminists, be the developmental key to empowering women. There is, then, nothing wrong even on evolutionary grounds with feminists, say, looking to the educational or cultural environments of those women whom the evolutionist might view as wholly atypical of their sex for clues as to how more women in the future might develop traits these feminists view as admirable.[14]

So far I have been assuming that selection will ensure the reliable development of adaptations by creating developmental pathways that are insensitive to variations in local environments. It is worth noting that theoretically, at least, this is not the only way that reliable development can be assured. Another possibility lies in the organism minimizing the kinds of perturbations that can occur in local environments by constructing and maintaining those environments itself. This phenomenon of *niche-construction* is well documented throughout nature, and it offers organisms the possibility of assuring inheritance of traits across generations by engineering developmental environments that are conducive to the development of those traits.[15] Sterelny gives a number of examples of niche construction outside of human society.[16] To take just one illustration, beavers make lodges, and these lodges provide shelter against

[14] Radcliffe-Richards' position on this question is not entirely clear. She notes that unfamiliar forms of culture or education might alter adaptive traits. However, she also suggests that 'Gould is at least close to the truth in saying that if sociobiologists are right in saying that certain characteristics are of an evolutionarily useful type, we shall not be able to alter them "either by will, education or culture"'. J. Radcliffe-Richards, *Human Nature After Darwin* (London: Routledge, 2000) p. 117.

[15] For the best work on niche construction see F. Odling-Smee, K. Laland and M. Feldman, 'Niche Construction', *American Naturalist* 147 (1996), 641–8; and K. Laland, F. Odling-Smee and M. Feldman, 'Niche Construction, Biological Evolution, and Cultural Change' *Behavioral and Brain Sciences* 23 (2000), 131–75.

[16] K. Sterelny, 'Niche Construction, Developmental Systems, and the Extended Replicator' *Cycles of Contingency: Developmental Systems and Evolution*, S. Oyama, P. Griffiths and R. Gray (eds.) (Cambridge, MA: MIT Press), 333–49.

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extremes of climate and protect against predators, thereby facilitating the development of future generations of beavers.

Humans are masters of niche construction. Our buildings, customs and libraries can all be thought of as environmental features that are built and maintained by us, yet which also ensure the continued development of future generations able to sustain these very features. On a view of inheritance that stresses the role of niche construction, the generation of social institutions becomes a method for ensuring that developmental environments are constant, hence that various adaptive traits will continue to be produced. In other words, if we take human niche construction seriously we also have to take seriously the view that the stability of various social and cultural institutions is an important means by which adaptive traits are preserved. If we grant a fairly strong role to niche construction we are returned, on biological grounds, to a traditional view that explains the stability of many human traits by reference to culture and society, and that leaves open the thought that revolutionary changes to culture and society can disrupt this stability and redirect human development.[17]

III: The Darwinian Left

In his short book *A Darwinian Left*, Peter Singer suggests that the left needs to revise some of its views to take into account the results of evolutionary psychology. Singer understands that adaptation does not entail fixity. Even so, I'm not sure that Singer takes this lesson to heart. In this section I try to show how the left emerges more or less unaltered by the results of evolutionary psychology.

According to Singer a Darwinian left would not, among other things:

[17] Segerstråle cites a terrifying example of ignoring the gap between demonstrating adaptation and demonstrating resistance to alteration due, apparently, to Senator J. William Fulbright at the *Man and Beast* conference in Washington, D.C. in 1969:

> If we assume that men generally are inherently aggressive in their tendency,…if this is inherent and man cannot be educated away from it, it certainly makes a great deal of difference in one's attitudes toward current problems…. If we are inherently committed by nature to this aggressive tendency to fight, well then, I certainly would not be bothering about all this business of arms limitations or talks with the Russians.

U. Segerstråle, *Defenders of the Truth: The Sociobiology Debate* (Oxford: Oxford University Press, 2000), 92.

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- Deny the existence of a human nature, nor insist that human nature is inherently good, nor that it is infinitely malleable;
- Expect to end all conflict and strife between human beings, whether by political revolution, social change, or better education;
- Assume that all inequalities are due to discrimination, prejudice, oppression or social conditioning. Some will be, but this cannot be assumed in every case.[18]

The first of the three claims is extremely vague. At the beginning of his book, Singer offers the following quotation from Marx, as an example of what he is arguing against: '…the human essence is no abstraction inherent in each single individual. In its reality it is the ensemble of the social relations.'

The claim that human nature is socially constructed, or that it is the 'ensemble of the social relations' is not equivalent to the claim that human nature does not exist. Yet it does suggest that by altering social relations, human nature may be altered. That is a position perfectly in tune with the evolutionary view of human nature as a series of malleable adaptations.

Singer's second claim either amounts to the truism that ending conflict and strife will be difficult, or it commits the fallacy of thinking that if violent and aggressive tendencies are evolved, then they cannot be removed by political revolution, social change or better education. It is important to note here that even views which see our nature as in some sense socially constructed, hence which are typically thought to be opposed to evolutionary psychological views, also leave open the possibility that some traits may be either hard or impossible to alter, given our current state of knowledge. Suppose we think that the failure of women to attain senior positions in large corporations is a result of socially conditioned prejudices among the men in charge of making appointments. This view does not entail that these prejudices are easy to alter, especially given our scant knowledge of the means by which patterns of social conditioning might be changed. Cultural practices can become entrenched in systems that are of purely social origin and this entrenchment can make them just as hard to shift as any biological adaptation.

Singer's third claim is also ambiguous. It is unclear what the remaining possibility for the existence of inequalities is supposed to be. Human nature? Innate abilities? The claim that a trait is an adaptation, and in this sense part of human nature, is compatible with the claim that the trait owes its reliable development to reliably

[18] Op. cit., note 4, 60–1.

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re-occuring forms of social conditioning. Hence inequalities that are, in this sense, the result of human nature might also be the result of social conditioning.

One important political point that does emerge from discussion of Singer is that if we are interested in modifying or altering those traits that we find undesirable, then it may turn out that this cannot always be done through educational programmes. We need to know how traits develop if we want to alter them, and some traits may not be sensitive to alterations in educational or social circumstances, but may instead demand pharmaceutical, nutritional, or other interventions. Perhaps this is what Singer means in his third comment above. If so, then I am wrong to attack him. Yet if this is what Singer means we should note that the faith of the left in the ability of education to modify all traits will not be eroded primarily by evolutionary work, but rather by work in developmental psychology.

As a final comment on Singer's third claim we should recognize (as Singer surely does, too) that even if some aspects of human nature turn out not to be caused by social conditioning, it will often be the case that the ills these aspects of human nature give rise to are in part the result of conditioning. Perhaps the fact that more chief executives are male than female is a result of the fact that women have an evolved tendency to want to care for their children that cannot be altered by educational manipulations. Still, one can say that the disparity also owes itself to social conditioning that tells us that crèche facilities should not be made available in the workplace, or that workers should not bring their children to work.

In brief, the contrast between a Darwinian and a non-Darwinian left is elusive. Since evolutionary explanations are typically silent about development, evolutionary views of human nature are compatible with views that say that most of the ills in human society are results of social conditioning. Of course this latter view may be wrong, but what will tell us that it is wrong for certain cases will be research into sociology, developmental psychology and developmental genetics, not evolutionary psychology itself.

IV. Finding Patterns and Mechanisms

Some think that evolutionary psychology is essential for understanding our cognitive dispositions, the patterns of behaviour that those dispositions yield, and the ways to control the expression of those dispositions. Barkow, Cosmides and Tooby outline one set of reasons for having such hopes: 'By understanding the selection

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processes that our hominid ancestors faced—by understanding what kind of adaptive problems they had to solve—one should be able to gain some insight into the design of the information-processing mechanisms that evolved to solve these problems.'[19]

It would be foolish to argue that this kind of thinking—usually called 'adaptive thinking'—never has and never could bear fruit. To argue for the first claim would demand an exhaustive survey of the evolutionary psychological literature, and to argue for the second would be rash. The evolutionary perspective encourages the generation of functional hypotheses where we would otherwise be inclined to ignore the possibility that a trait may provide some benefit to the organism. Darwinian medicine provides a good example here, where the investigator considers whether traits usually considered diseases, such as mild depression, might not be adaptive. Conversely, the evolutionary perspective also encourages us to consider hypotheses of conflict—between the sexes, between parents and offspring, between siblings—where other perspectives may too easily assume the relationships must somehow be harmonious. Perhaps sometimes reflection on past selection pressures (adaptive problems) will indeed lead us to formulate hypotheses about cognitive architecture that we would have been unlikely to have considered otherwise. And sometimes these hypotheses will be confirmed. What is more, it is clear that the kind of research that one needs to do to confirm the existence of such putative adaptations can sometimes yield results that are relevant to policy decisions. That will be so even when proposed adaptations are not observed. Daly and Wilson's work on the evolution of violence requires that they undertake research on patterns of violent activity in modern societies. And this research could, of course, lead to the identification of significant patterns even when their evolutionary hypotheses are put in doubt.

In spite of these caveats, adaptive thinking is likely to remain a fairly weak predictive tool for uncovering the workings of our minds. That is because structures likely to evolve in a population cannot be read off from rough-grained features of that population's environment.[20] We also need to know what range of traits is avail-

[19] L. Cosmides, J. Tooby and J. Barkow, 'Introduction: Evolutionary Psychology and Conceptual Integration', *The Adapted Mind*, J. Barkow, L. Cosmides and J. Tooby (eds.) (Oxford: Oxford University Press, 1992), 9.

[20] For arguments to this effect see T. Lewens, 'Adaptationism and Engineering' *Biology and Philosophy* 17 (2002), 1–31; Sterelny and Griffiths, op. cit., note 2; P. S. Davies, 'The Conflict of Evolutionary Psychology' *Where Biology Meets Philosophy: Philosophical Essays*, V. Hardcastle (ed.) (Cambridge, MA: MIT Press, 1999), 67–81.

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able for selection; mice will not evolve micro mouse machine guns to deal with the problem of predation by owls. We need to know how traits affect fitness in some detail; a mouse with ears so big that owls can be heard at a great distance will suffer if those large ears also make the mouse conspicuous in the grass. Finally, we need to know how traits interact with each other; if mouse development is set up so that big ears are always accompanied by tiny legs, then the advantages conferred by hearing will be outweighed by the disadvantages of slow running. Needless to say, we will rarely have access to this information for ancestral human populations. If we do—if, for example, we know how cognitive traits interacted with each other during development, what kinds of constraints operated on the development of traits, and how those traits affected fitness—then it is likely to be because we have already undertaken broad investigation and experimentation with related populations, perhaps even with current human populations. A fairly deep understanding of the development and workings of the ancestral human mind is a prerequisite to generating accurate predictions about what the long-term effects of evolution in ancestral environments might be.

This kind of objection tends to infuriate evolutionary psychologists. Cosmides and Tooby remind us that our knowledge of the way of life of our ancestors is really quite rich:

> Our ancestors nursed, had two sexes, hunted, gathered, chose mates, used tools, had colour vision, bled when wounded, were predated upon, were subject to viral infections, were incapacitated from injuries, had deleterious recessives and so were subject to inbreeding depression if they mated with siblings, fought with each other, lived in a biotic environment with felids, snakes and plant toxins, etc.[21]

All these things are true, but still a difficulty remains in deciding how to translate a description of a physical environment into a set of predictive adaptive problems. To take the case of plant toxins, should our ancestors have evolved a general horror for novel plant species, should they have evolved means of removing the toxins from plants by cooking them, or should they have evolved specific and quite different horrors of varying intensities for different types of toxic plant? If we are to give our catalogue of adaptive problems strong predictive power, then we need to know whether the problem faced by our ancestors is that of eliminating toxins from plants, of

[21] L. Cosmides and J. Tooby, Letter to the New York Review of Books (July 7th 1997). Available at http://cogweb.english.ucsb.edu/debate/CEP_gould.html.

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steering clear of nightshades, or of steering clear of all things strange. The only way to decide that will be to look at the range of responses that ancestral cognitive developmental structures made available, and the responses that would be optimal from the perspective of overall cognitive economy. This will be a practical impossibility unless we are already in possession of rich information about how our minds are organized and how they develop. Even if adaptive thinking has some value in the generation of hypotheses to test, it will not supplant traditional work in the natural and social sciences that is essential both for filling out the background assumptions that adaptive thinking requires, and for testing the hypotheses that it produces.

I am not arguing that functional approaches can have no value in illuminating mechanisms.[22] Some forms of functional reasoning, which are often mistaken for adaptive thinking, do not consist in predicting mechanical solutions from environmental problems. Instead they begin by noting that an organism does, in fact, achieve certain tasks and then proceed to posit mechanisms that might explain how this task might be achieved.[23] Obviously it is important to remember that at every stage of development some set of mechanisms must maintain an organism in a viable state.[24] Functional analysis—the explanation of some complex capacity in terms of the contributions of functional subunits—can then help to illuminate just how survival, and the component processes of survival, are accomplished throughout the organism's life. This kind of approach is already present in the cognitive sciences where functional analysis has a long tradition. Functional analysis and adaptive thinking are not the same thing.

V. Case Study: Child Abuse

In Daly and Wilson's work on violence (particularly homicide) within the family, the story of how evolutionary psychology has been used to make novel, well-confirmed, predictions seems strong. Daly and Wilson note that considerations of how our ancestors might be expected to have maximized their fitness could lead us to

[22] I am grateful to Patrick Bateson for persuading me to take into account the successes of the functional approach.

[23] This is what I have elsewhere called 'weak adaptive thinking' (op. cit., note 20).

[24] P. Bateson, 'Biological Approaches to the Study of Development' *International Journal of Behavioral Development* 10 (1987), 1–22.

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suspect that a parent that mates with an individual who already has infants will have little interest in making great investments in those infants, because they will not make any contribution to the parent's fitness. Hence we should expect, on evolutionary grounds, considerable conflict between stepparents and their stepchildren, in comparison to conflict between parents and their biological children. Daly and Wilson were surprised to see that no research had been undertaken to test the hypothesis that abuse is higher between stepparents and stepchildren than between biological parents and their biological children. Research they conducted into abuse in Canada and the United States yielded the conclusion that: 'stepparenthood *per se* remains the single most powerful risk factor for child abuse that has yet been identified.'[25]

So here we seem to have a straightforward case where evolutionary psychology has illuminated a previously unrecognized fact, and one that may well have important policy implications. On reflection, however, we can challenge both the importance of evolutionary thinking in uncovering the significance of stepparenthood, and the policy recommendations that flow from the recognition that stepparenthood is an important risk factor for child abuse.

First, is it true that evolutionary thinking leads directly to the prediction that male parents, for example, should harm stepchildren? In an intelligent species, where the female is able to refuse to mate, and where the female is also able to detect the behaviour of her mate, one might suppose that in order to maximize her own reproductive fitness she would withhold mating opportunities from any male whom she knew or suspected of abusing her own offspring. Hence, in such a species, one might expect, also on evolutionary grounds, that the maximization of female fitness would lead to a set of evolutionary problems in which males would be driven to care for stepchildren as their own. Daly and Wilson were aware at the time they formulated their predictions of a large body of work among social workers that suggested high rates of abuse among stepfamilies before they came to do their own empirical research, and one might suspect that but for this knowledge the question of what evolutionary thinking most naturally predicts is left open.

Second, one might also ask whether evolutionary thinking is required to generate the hypothesis that abuse will be greatest in stepfamilies. Folk psychology also gives us an engine for the generation of hypotheses, and, like evolutionary thinking, some of these hypotheses will turn out to be correct. Folk psychological reasoning

[25] Op. cit., note 7, 87–8.

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could certainly have generated Daly and Wilson's hypothesis that, in general, levels of antagonism will be greater between stepparents and their stepchildren than between parents and genetic children.[26] In stepfamilies one or both partners may have suffered divorce or bereavement, and increased levels of tension or conflict between stepparents and stepchildren might be anticipated. Stepparents may also experience problems fitting in to a family regime that has its own entrenched rules and customs, built up over a number of years, in comparison with those parents who are involved directly in the construction of such rules and customs. I do not mean to suggest that folk psychology guarantees the truth of this prediction—what folk psychology leads us to test may turn out to be false. But remember that the claim we are assessing here is that adaptive thinking gives us an especially strong procedure for the generation of hypotheses, and even evolutionary psychologists agree that such predictions on the basis of evolutionary expectations require demanding tests. Daly and Wilson themselves explain the apparently low rates of abuse between adopted children and their parents by a folk-psychological explanation of sorts. They conjecture that the screening methods employed by adoption agencies bias the sample of non-genetic parents towards a minority who are better placed than most to provide stable and loving homes for non-genetic children.

Daly and Wilson withhold judgment on the question of whether genetic relatedness directly determines likely levels of abuse, or whether a parent who spends time with a non-genetic child from some time around the birth of the child enjoys the same kind of low risk of subsequent abuse as a genetic parent. Adaptive thinking seems neutral between both hypotheses, yet from the perspective of policy rather a lot turns on it. Daly and Wilson claim that we have adaptations for directing love and other forms of parental investment to genetically related children. If, in the evolutionary past, children that remained near to the parent for a sustained period from birth or soon after birth were nearly always genetically related to the parent, then there would have been no need for the parent to have developed a mechanism that determines directly whether a child is genetically related. Under such circumstances, cues for the generation of love based on length of relationship and proximity will suffice to ensure that, as a matter of fact, only genetically related children are given large parental investments. For this reason,

[26] Kitcher (op. cit., note 1) does not discuss Daly and Wilson's work; however, the line of argument I pursue here owes a lot to the general form of some of Kitcher's arguments.

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Daly and Wilson's work is compatible with a traditional view that love for a child is built up over a sustained period and relies on a complex shared history, whether or not the child is genetically related. So the policy implications of Daly and Wilson's work are far from clear. They certainly do not show that we should discourage adoption or foster parenting—as we saw, Daly and Wilson suggest that many adoptive parents may be able to take perfectly good care of a child in spite of the lack of genetic relatedness. Their work does, however, suggest that newly-formed relationships between parents and children are likely to be less stable than longer-standing ones.

What Daly and Wilson object to most strongly is a particular view of parenthood and parenting behaviour which they call 'role theory'. It is in overturning role theory that they think their work has greatest value. Here is how they describe this view:

> Parenthood is typically considered a 'role.' This metaphor…is positively misleading…in its implication of arbitrary substitutability. A role is something that any competent actor who has studied the part can step into, whereas parent-offspring bonds are individualized, and cannot be established at will.[27]

Tensions surrounding stepparenting are then attributed, apparently, to the 'newness' of these roles. It is because the role of stepparent is new, that it is also not fully articulated, and tension arises because of the ambiguities in the role's expectations. However, Daly and Wilson complain:

> Stepparents do not find their roles less satisfying and more conflictual than natural parents because they don't know what they are supposed to do. Their problem is that they don't want to do what they feel obliged to do, namely, make a substantial investment of 'parental' effort without receiving the usual emotional rewards.[28]

There are problems in this chain of thinking. First, if 'role theory' really is as Daly and Wilson say, then they are right to think it is silly. Parenting is a skill, and it can no more be learned automatically by someone with the right intentions than bicycling or karate. What is more, one cannot simply decide to love another person, and one certainly cannot decide to love another person in a peaceful and mutually supporting way. I very much hope that 'role theory' asserts none of these things, but if it does, then evolutionary psychology is not needed to point out its failings.

[27] Op. cit., note 7, pp. 92–3.
[28] Ibid., 93.

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Second, we should remember that everything Daly and Wilson say about the adaptive basis for differences in abuse between stepparents and stepchildren, and biological parents and biological children, is compatible with the claim that love and commitment between a parent and child are best built over time and that when time is short this love may be weaker. When we imagine a stepparent in a difficult, new relationship with a child, we can describe the situation as one where the newness of the relationship is difficult for the stepparent to fit in to, and where lack of a shared past can result in difficulties between the two parties. Alternatively, we can describe this as a situation in which the parent does 'not want...to make a substantial investment of "parental" effort without receiving the usual emotional rewards.' The second way of phrasing the situation implies a lack of desire on the part of the stepparent to make the relationship work; however, nothing in Daly and Wilson's evolutionary hypothesis supports this implication.

Third, the plausible claim that there is an evolutionary explanation for why we have altruistic tendencies towards our children is elided with what (I assume) is a proximal explanation for why those tendencies sometimes fail. We are told that: '...without recourse to the concept of evolutionary adaptation, we could not hope to understand why parental love and altruism even exist, let alone why they sometimes go wrong.'[29]

Put together in this way, the second claim is simply a non-sequitur. Compare: 'Without recourse to the concept of evolutionary adaptation, we could not hope to understand why bird wings even exist, let alone why they sometimes fail.' The first part of this claim is most likely true; however, the failure of bird wings is perfectly easy to understand without the concept of adaptation.[30]

Finally, we must remember as always that the opposition of sociological and evolutionary psychological theories of the origins and maintenance of tension within families may be wrong-headed. Suppose, for example, that it is a deeply entrenched set of expectations and values about the 'ownership' of children, about the humiliation of cuckoldry, about jealousy and so forth, that, by permeating the developmental environments of boys and men, leads them to grow up to resent their stepchildren. Perhaps these attitudes themselves explain the transgenerational stability of increased violence

[29] Ibid., 93.

[30] Some might argue that the very notion of failure or malfunction requires an appeal to the concept of adaptation. My claim here is only that we can understand how a wing has failed without the concept of adaptation—not that we can understand what it is for a wing to fail.

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towards stepchildren. In this kind of scenario, sociologists would be right to say that the causes of increased abuse in stepfamilies are primarily social, and evolutionary psychologists might also be right in saying that it expresses some adaptation, albeit one whose reliable reproduction across generations is mediated by learning and social structures themselves, as well as by genes.

VI. Case Study: Rape

In their recent book *A Natural History of Rape*, Thornhill and Palmer explain why they think their approach will not only give us an historical explanation for the existence of rape, it will also tell us how we can best control it.[31] Again, their reasoning is that an understanding of the evolutionary origins of rape will help us identify the underlying mechanism that produces it. Once this mechanism is characterized and understood, then we will see how best to ensure that it does not fire. We will understand what inputs lead to rape, and what inputs bypass the system.

Let us note, first, that it is a mistake to think that ultimate explanations offer a deeper understanding, and hence are more valuable, than proximate explanations. Again, I don't mean to suggest that evolutionary psychologists aren't aware of this error—they are.[32] Ultimate explanations—roughly, explanations that cite the evolutionary history or current reasons for maintenance of some trait, rather than development and mechanism underlying that trait—need not, in spite of their name, offer us a deeper understanding. Sometimes mechanisms and development are of primary interest. This is particularly the case when alteration of the trait in question is what is at stake.

There is also a danger when discussing cognitive traits to slide from ultimate to proximate explanation. This is because of the ambiguity inherent in claims about the 'reasons' for certain behaviours. Such reasons can either refer to the cognitive mechanisms that motivate behaviour, or to the effects of behaviour that lead to the trait's proliferation. To take an example, it is perfectly consistent to claim that rape is an adaptation, and that its presence is to be explained in terms of how it has afforded reproductive opportunities to males who otherwise would not come by them, while at the same time arguing that the motivations that lie behind rape are non-

[31] Op. cit., note 9.

[32] It is a comment made repeatedly by John Alcock in his recent book. J. Alcock, *The Triumph of Sociobiology* (Oxford, OUP: 2001).

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sexual, and are instead associated with the desire, conscious or otherwise, to inflict violence on women. What might seem a deep conflict between the two explanations, in that the first claims that rape is primarily 'about' sex, while the second that rape is primarily 'about' violence, evaporates when we see that the two positions offer different kinds of explanation that do not conflict at all.[33]

Thornhill and Palmer are aware of the body of work in sociology that portrays rape as an expression of violence, rather than of sexual interest. What is more, they think this work is mistaken, even that it flies in the face of abundant evidence. I do not want to argue over who is right. Perhaps both views are right. That certainly seems a conceptual possibility if, for example, the choice *whether* to rape is motivated by violent urges, while the choice over *whom* to rape follows sexual preferences. I want to stress that even if we can substantiate the claim that rape is a male adaptation for securing reproductive opportunities for low-status males, this does not tell us anything about the truth of the sociologists' hypothesis about proximate mechanism.[34] Perhaps Thornhill and Palmer are right to claim that motivation is primarily sexual. Yet it is not adaptive thinking, but the analysis of cognitive and sociological data that tells them this.

In fact, Thornhill and Palmer do not think that there is sufficient evidence to show that rape is an adaptation, rather than a by-product of other adaptive traits.[35] What they mean by this is that we cannot be sure that rape is produced by a mental organ specifically shaped for the role of directing rape. Taken on its own, the hypothesis that rape is produced by mental modules that are themselves designed for other biological functions leaves almost all hypotheses about the proximate causes of rape open. Rape could be the result in part of the action of violent impulses that themselves are designed for their role in competition with other men. Alternatively, it could be produced by men's normal sexual desires interacting with additional modules that regulate the desire to harm, or some such. Rape might turn out to be of a similar status to that which the evolutionary psychologist may attribute to bestiality—not itself of any adaptive benefit, yet produced by some suite of mental traits, presumably including sexual desire, each of which is amenable to

[33] See D. Buller, 'DeFreuding Evolutionary Psychology: Adaptation and Human Motivation', *Where Biology Meets Psychology: Philosophical Essays*, V. Hardcastle (ed.) (Cambridge, MA: MIT Press, 1999), 99–114.

[34] Here I follow E. Sober, *Philosophy of Biology* (Boulder, CO: Westview, 1993).

[35] Op. cit. note 9, 84.

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some further functional explanation. Uncovering just what the proximate mechanisms are that produce rape, and how they will interact with each other under diverse circumstances, relies primarily on detailed analysis of developmental, sociological, and other forms of data.

Even when we consider some specific version of the view that rape is an adaptation, the policy recommendations that flow are hardly revolutionary. One hypothesis already mentioned is that rape is a facultative adaptation that enables men with low status, who otherwise would have few reproductive opportunities, to get access to females.[36] This evolutionary hypothesis suggests at most that we can reduce the incidence of rape by enacting measures to decrease differences in status between males. This is of course compatible with the commonly held idea that the alleviation of disparities in wealth may be important in the reduction of crime. Most of Thornhill and Palmer's additional policy recommendations come from the thesis that the primary proximal motivation for rape is sexual desire which, as we have seen, is independent of any adaptive hypothesis for the origin of rape.

It is also worth pointing out that even if there is some single mental module specialized, or simply co-opted, for rape, the further claim that regulating the inputs and outputs of this module provides the best way to control rape remains open to question. This is one of the primary motivators for the evolutionary approach: 'With respect to rape, the power of the evolutionary approach lies in its ability to identify environmental changes that may remove cues that activate the evolved mechanisms that underlie rape behavior.'[37]

The sexual behaviour of the Yanomanö provides a good example of the limitations in this thinking.[38] In the Yanomanö culture, sex for women is taboo during the period between the discovery of her pregnancy and the completion of weaning. Hence some couples will kill their own children so as to recommence having sex sooner. Nothing in this story contradicts the general evolutionary framework. We can imagine that members of the Yanomanö, like us, have a species-typical module that regulates parental love, and which promotes abusive behaviours when cues informing about genetic relatedness are not present, as well as a species-typical module that regulates sex drive. However, the case provides us with an example

[36] Ibid., 67.
[37] Ibid., 153.
[38] The example is borrowed from Buller (op. cit., note 33, 103–4), who turns it to a quite different purpose.

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where the killing of children is brought about not by altering the inputs to the module regulating parental love, but instead by placing a cultural barrier in front of a quite different drive—the drive to have sex—so that the drive to have sex itself results in infanticide. This reminds us that the easiest ways to control undesirable behaviours—rape, murder, theft—may not be to regulate the inputs to putative adaptations specifically responsible for rape, murder or theft, but instead to appeal to quite different drives, such as the desire for self-expression or wealth. In other words, if the Yanomanö can be induced to kill their children through a cultural taboo that makes this the only way they can have sex, we need not dismiss the thought that potential rapists can be dissuaded from rape by imposing quite standard penalties such as incarceration. If cognitive adaptations controlling sex drive can push someone to infanticide, then we have no reason to doubt that measures such as fines and imprisonment that appeal to putative cognitive adaptations controlling economic prudence, or fear of confinement, can dissuade someone from crime. Of course one may respond by claiming that these adaptations, too, should properly be included under the 'evolved mechanisms that underlie rape behavior', for all of them have effects on rape behaviour and they are, perhaps, all evolved. The problem with this response is that it removes evolutionary psychology's promise of giving a novel set of recommendations for policy, by conceding that behaviours may be influenced in complex ways by all kinds of mental modules acting in concert.

VII. A Last Word on the Darwin Wars

The debate surrounding evolutionary psychology is not a friendly one. Participants are quick to divide into those who are for or against the programme, and the two sides subject each other to the most bitter attacks. If the arguments of this paper are correct, then this should not be the case. This bitterness suggests strongly that participants on both sides see evolutionary psychology as having some deep political import that must be either supported or combated, or perhaps that evolutionary psychology threatens the livelihood of non-evolutionary scientists.

What we now see is that evolutionary psychology carries no serious threat so long as it is properly understood. It carries no serious threat to the livelihood and integrity of the social sciences for, even if it is true that our minds contain a set of evolved adaptations, these adaptations will nevertheless be best characterized by undertaking

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continued research in sociology, cognitive psychology, developmental biology and economics in much the way we have done. The predictive power of evolutionary thinking is weak enough that good evolutionary psychology must be deferential to the empirical output of these sciences. Nor does the provision of evolutionary explanations for such traits constitute a great political threat. If one could show that rape, for example, were an adaptation, then nothing of political import would follow. In sum, the prospects for evolutionary policy are slim.[39]

University of Cambridge

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