

The Is/Ought Argument: Evolutionary Origins of Human Behaviour

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Abstract

The is/ought argument will be briefly described. Then there will be a preamble covering a series of topics relevant to a consideration of the evolutionary origins of human behaviour. These will include survival and reproduction in the era of evolutionary adaptedness, shared genetic commonalities, and the origins of altruism. Then I will refer briefly to today's manifestations of the same behaviours. I will end with some comments on the special qualities of reciprocal altruism and suggest that up till now religion may have contributed a means by which it could be achieved, and may even be called upon to do so again.

The Is/Ought Problem and evolutionary psychology

In many parts of the world today evolutionary psychology is considered a dangerous and unwanted discipline. Some of you may have read a review in The Listener a month or so ago of a book called Sex at Dawn, by Christopher Ryan. A week later there was a letter from him, saying No, no, I'm not an evolutionary psychologist, when he clearly is. In some places neither he, nor anyone else can admit to it. If they do, they immediately become the target of angry colleagues hissing at them – “What about the is/ought problem?”

What do they mean? They're accusing him (and all the rest of us) of committing the naturalistic fallacy, or rather, what might be considered a contemporary version of it, in which people argue, fallaciously, that because something is “natural”, it must therefore be “good”. But this is a straw man argument, fuelled by fear. Evolutionary psychologists are *not* arguing that because a particular behaviour has evolved over time, it must therefore be morally “good”. Anything but! The point is that nature does not have a moral dimension, nor can one be derived from it.

“David Hume, himself a great naturalist, ... taught us that there is a problem about “oughts”, specifically that you cannot derive “oughts” from “is's”. .. This is because “oughts” are among the innumerable kinds of things that cannot be derived/ demonstrated/ deduced from propositions that do not also contain words like “ought” (Flanagan and Williams, 2009). For example, even if you can demonstrate that eating breakfast gives brings nutritional benefits, you cannot therefore argue that one ought to eat breakfast, except by further use of the word “ought” i.e. that one ought to want to be healthy, happy etc. It is, as philosophers have demonstrated, a simple matter of logic.

In considering the evolution of human behaviour we are looking at a set of facts. Which behaviours enabled our ancestors to survive and reproduce? Which behaviours resulted in transferring the carrier's genes into the next generation? This was (and is) a mechanical effect. Our ancestors had to find a way of keeping alive at least until they had reproduced and (usually) lived long enough after that to ensure the independence of the next generation.

One of the reasons we want to know more about these ancient behaviours is because they are so resilient, and the instincts we carry as a result, are a given - that is the “is” part of the situation. And, I would argue, it could be that when we recognise where we have come from and why, we might be able to tackle the questions concerning how we “ought” to behave with more understanding, a clearer focus, and even, let us hope, more success.



As Robert Wright wrote in his book [The Moral Animal](#), “If we want to pursue values that are at odds with natural selection’s, we need to know what we are up against” (p.31). That is the underlying rationale of evolutionary psychology.

The era of evolutionary adaptiveness (EEA) Or the environment of evolutionary adaptedness

i) The time line

It can be difficult to come to a real understanding of the time scales, when our personal experience is roughly 70 – 80 years. The printing press was invented 600 years ago. Jerusalem recently celebrated its 3,000th anniversary. The beginning of agriculture was about 12,000 years ago in the Pliocene. Cave paintings go back a lot further to 30,000 or 35,000 years ago. (In the English language we use words like “it happened a very long time ago” but this terminology does not allow us to discriminate between 100 years ago and a million years ago. We need more words to describe length of time.) Statistical examination of genetic links as far back as “mitochondrial Eve” leads to an estimated 200,000 years of “human” history. Each of these steps in time has increased by a factor of ten; and we’re not done yet. We need to go back by another factor of ten to 2,000,000 years to understand more about our ancient origins.

This is called the era of evolutionary adaptedness (EEA) or the “ancestral environment”. The origins of human behaviour, like the origins of our uniquely human body characteristics, go back two or three million years. This is the length of time that separates us from our ancestors in the evolutionary sense. Here the terminology is better defined. Anthropologists can place Australopithecines, homo erectus and homo sapiens along a specific timeline.

“Humans, comprising the genus [Homo](#), appeared between 1.5 and 2.5 million years ago, a time that roughly coincides with the start of the [Pleistocene](#) 1.8 million years ago. Because the Pleistocene ended a mere 12,000 years ago, most human adaptations either newly evolved during the Pleistocene, or were maintained by [stabilizing selection](#) during the Pleistocene. Evolutionary psychology therefore proposes that the majority of human psychological mechanisms are adapted to reproductive problems frequently encountered in Pleistocene” (Wikipedia: Evolutionary Psychology)

ii) The reliability of the evidence

As is so often the case in science, new information has come by way of advances in technology. In the case of paleo-archeology and anthropology, contemporary advances in dating have provided the means for a surge of new information, such as the extraordinary detail emerging from the study of the 5,300 year old body of Otzi the Iceman.

But the new dating techniques can take us much farther back in time. Carbon dating goes back 60,000 years with reasonable accuracy, but use of the mass spectrometer means dating has become a whole new discipline. Techniques have been found to date rocks and fossils back millions of years. Being able to assess more accurately how old a particular artefact or cave painting is has led to new insights about the ancestral environment and new understandings about the origins of human behaviour.

iii) Non-random selection

Darwin himself predicted that his theory of evolution would eventually lead to vastly more study of humans than could be envisaged at the time. The study of changes in our bodies – our anatomy and physiology – during the EEA is, however, nowhere near as controversial as the idea that our behaviour is also the product of evolutionary forces.

But the core of it is the same as in all other disciplines, namely natural selection. Sometimes this is taken to mean that developments are a matter of chance. It is true that randomness throws up the opportunities for change, but the opposite is true of what is eventually selected. “What is selected is selected because ultimately it confers better than average reproductive success on its possessors, and anything that departs from the average in a systematic way is by definition non –random.” (Badcock, 2000, p.5)



Successful reproduction is the only thing that enables a species to survive. Whatever random developments there may have been to body or behaviour throughout the ancestral environment, if they did not contribute to differential reproductive success they did not survive. In contrast, deeply embedded within us all, we carry the propensity to behave in ways that did allow our ancestors to survive and reproduce .

Survival in the EEA

Survival depends on food, and in the EEA, this meant hunting.

Fossilised animal bones in Ethiopia show clear evidence of butchery (findings published in Nature Aug 2010) 3.4 million years old by *Australopithecus afarensis* (to which Lucy belonged). The bones turned up at Dikika, Ethiopia, 200 metres from where “Selam” was discovered in 2000. Dubbed Lucy’s daughter she lived 3.3 million years ago. Salem may have carried stone flakes for butchering. The animal bones lay sandwiched between two layers of volcanic ash which were “securely dated” and the marks were made before the bones were fossilized.

Although academics had been studying the topic for some time, the importance of hunting in our evolutionary past was brought to the attention of the general public by Robert Ardrey in his book The Hunting Hypothesis in 1976. Here he argued that “Man is man, and not a chimpanzee, because for millions ... of evolving years we killed for a living.” (p.15). Ardrey in turn cites S. L. Washburn who ran an influential symposium in London (1956) on “The Social Life of Early Man” in which he enlarged on the hunting hypothesis. Prior to this, most of the work had consisted of describing the anatomical changes that both preceded and were concurrent with the emergence of our ancestors out of the forests and onto the plains – the size and shape of teeth, the change in foot shape to facilitate bipedal locomotion and hence freeing the hands to hold and use a weapon. But now Washburn was suggesting we should consider certain behavioural characteristics – characteristics already known to exist in cooperative hunters such as wolves, lions and African dogs.

Cooperation of this order was entirely new in primates. Much of Ardrey’s work has been revised in the 30-40 years since it was first published, but the basic hypotheses have been developed, not discarded. Those groups of early hominids that did not learn to hunt co-operatively, share the meat, and protect their young on the open savannah, did not survive.

Coalitions and co-operation

Ardrey thinks we would never have made it through the Pliocene if we had not developed some specifically human qualities, which had arisen out of the need to be successful hunters. In addition to co-operation, he wrote that “willingness to dare, to persevere, to respond to challenge by attack rather than escape” were amongst them. He enlarged on these ideas, coming to the conclusion that “courage” was the right word to sum them up. This, he said was one of the chief qualities of the “cooperating social predator”. (pps. 65-66).

A more contemporary take on this is the acknowledgement of the role of risk-taking in males. Testosterone-driven risk-taking might appear to be counter-intuitive for survival, and in some cases it is. But it has survived as a strategy because it is also a key component of male reproductive success. Successful risk-taking enhances a male’s status. Not only does he climb the male dominance hierarchy towards higher status, he also becomes more attractive to females, has greater reproductive success and ensures his genes are the ones that carry on down the generations.

Whatever the components of this particular male quality – courage, risk-taking or dominance – they are all part of the male’s drive for status, which in turn determines his place on the male dominance hierarchy. This cluster of attributes is underpinned by testosterone and is thus directly related to the male’s basic biological makeup.

And one further note - territoriality. Ardrey writes that “...exclusive hunting territories were of survival necessity to our hunting ancestors.” “Right down to the time of our earliest agricultural societies less than 10,000 years ago, there would have been [very little motivation for conquest]. “The acquisition of additional miles of range was meaningless if we could not reach it... the size was severely limited by the evolving capacities of the human foot. How far could we go and return between sunrise and sunset? To leave a kill on the

savannah - or to leave ourselves there for that matter – was an exercise in feeding our competitors, the nocturnal predators.” (p.113) As opposed to the hunting territory, defence of the breeding environment was mainly by females, which may account for the fact that sexual dimorphism is not so pronounced in modern day humans.

Before leaving the topic of survival in the EEA, I'd like to mention a recent book called Catching Fire. In it, Wrangham argues that the greatest transition in the fossil record occurs with homo erectus at 1.8 million years ago, and that this was due in large measure to our learning how to use fire for cooking. Wrangham's book is carefully researched and covers the scientific literature. He cites controlled trials, natural trials, evidence from present day hunter-gatherer societies and from people lost in the wilderness. One of his main points is that raw food simply gives insufficient energy in general, and insufficient energy for reproduction in particular. He concludes that if our ancestors had been dependent on raw food most women would have been incapable of pregnancy.

Cooked food offers several advantages. It's easy to digest. Even insects put on weight with cooked food. Processing raw food takes a huge amount of energy – as much as locomotion. Adapting to cooked food meant smaller digestive systems, including "...small mouths, weak jaws, small teeth, small stomachs, small colons, and small guts over all". (p 40) All of these are mainly explained not by shifting to meat as a food, but by cooking.

Like the skills involved in coalition and co-operation required for hunting, the change to cooking also had enduring effects on behaviour. Wrangham wrote that "The food quest is fundamental to evolutionary success and social strategies affect how well individuals eat." (p.129) This is a growing research field. Last month there was a report on evidence of feasting, an example of sharing food equally, said to be uniquely human. The evidence was found in a cave in the Galilee region of Northern Israel. The burial feast took place 11,500 years ago, before the Neolithic period – that is, before the transition to agriculture. About 35 or 40 people feasted on 71 tortoises and three wild cattle.

Reproduction in the EEA

Reproduction depends on sex but our ancestors did not know that sex is the antecedent of babies. So the behaviours that surrounded mating are the ones that had to succeed. As Darwin himself explained, there are two

fundamental processes associated with evolutionary adaptation, and these are natural selection, which works to ensure survival, and sexual selection which works to ensure successful mating.

Within sexual selection there are two phenomena. The first is intersexual selection, in which the female selects which male she would prefer to mate with on the basis of one or more of his attributes - classically referred to as "the peacock's tail" argument and described by Helena Cronin in The Ant and the Peacock. The other is intrasexual selection and refers to two males battling it out for access to the fertile females – and the usual example is of stags locking horns.

When it comes to the behaviours involved, one of the best descriptions is by Randy Thornhill in his book A Natural History of Rape. As he put it in an interview with Frans Roes in 1997, "Males produce lots of small gametes, specialise in finding females and tend not to discriminate". Females on the other hand are the investing sex, involved in greater parental care and more discriminating, because there is much more to lose if she's made the wrong choice.

Thus sexual selection is about competing with members of one's own sex for access to members of the other sex – i.e. mating competition. "What rape does is increase the mating success of some males at the expense of others" said Randy Thornhill. To demonstrate this, he did a series of experiments with scorpion flies, putting ten males in a cage with a smaller number of females and even fewer special pieces of food (meat). Female scorpion flies prefer to be courted with gifts of food. And males always try that first. But if there is not enough food around to provide a gift and the female is unwilling then he can utilise some special clamps and hold her down while he forcibly has sex with her.



In general, throughout the animal kingdom females select males for high status (compared with other males) and potential to provide. Linked to high status, selected males tend also to have persistence, energy and parasite resistance. These characteristics would then be passed down to their sons and in turn make them more selected by other females (Cronin, 1991). Males are not as choosy as females, and tend to go for quantity rather than quality. But when females are selected, for example for longer term partnerships, it is for symmetry (no developmental problems), waist:hip ratio (fertility) and gloss (absence of disease).

Most species have some form of courtship, an important step in the mating process, which most researchers agree, allows the female to weigh up the qualities of the male before she commits to him. In humans these characteristics include, in addition to the above, energy, intelligence, the ability to make music and art, and tell jokes. For further information see Dennis Dutton's The Art Instinct, and Geoffrey Miller's The Mating Mind.

A recent scientific study done by researchers at the University of Northumbria in the UK shows exactly which movements made by a male dancer, made him attractive in the eyes of women. The roots of all these behaviours go back a long, long way into our evolutionary past.

In an interesting combination of strategies for both survival and reproduction, Miller suggests that "Apathy is nature's norm" (p. 294) because all animals must conserve their resources. He says the real problem is how to explain either "costly behaviours that help others" or "costly behaviours that hurt others". He suggests that altruism took hold partly because ever since the ancestral era we have "favoured sexual partners who were kind, generous, helpful and fair". David Buss and his team have studied today's sexual preferences in 37 cultures. They found that "kindness" was the "single most important feature desired in a partner by both men and women." (Wright, p. 292)

All of this is simply a description of how we got to be the way we are. We are all here today because over a period of hundreds of thousands of years, the hunting and mating skills of our distant ancestors were slowly made more efficient by natural and sexual selection. Both bodies and behaviour were involved in these refining processes.

Altruism in the EEA

The qualities of co-operation, coalition building, food sharing and commitment to the group lead directly into altruism. Successful hunting and many of the other activities of daily living that contributed to survival depended on sharing and helping. In 1964 W. D. Hamilton offered his theory of inclusive fitness, in which he argued that being altruistic toward kin would have genetic consequences. In other words, those that hunted co-operatively survived. Those that left the women-folk back at the base to care for the children had more surviving offspring than those that did not. Those groups or tribes that did not co-operate on the hunt, or did not share the meat within the extended family groups or kin, had fewer surviving offspring. (There were probably about 50 people in a group, including women and children and at least ten adult males taking an active part in hunting.) In 1972 Robert Trivers described his theory of parental investment, again showing the inevitable evolutionary benefits of these parental behaviours on their offspring.

Over the last two decades there has been an increased interest in the role played by altruism. One of the first contributions to reach beyond academia was Matt Ridley's The Origins of Virtue (1996) in which he traced the evolution of co-operation and its benefits for human development. Since then there have been many different authors with somewhat differing perspectives. One of these is Australian Frank Salter in his book On Genetic Interests. Altruism, he says, is defined as "helping behaviour that carries a net cost for the helper but may increase inclusive fitness." Kin altruism (nepotism) is helping behaviour directed at kin. This is the most intense form of altruism, and is found in all social species. Reciprocal altruism, originally described by Trivers (1971), means helping behaviour predicated on return of the favour.

In the forty years since Trivers' original description, evolutionary psychologists have done a great deal of research on reciprocal altruism. Shortly after the publication of his paper Trivers devised the famous game called "prisoner's dilemma" which showed how working in co-operation could produce what he called a "non-zero-sum" game. That is, "Both players can win if they cooperate. If caveman A and caveman B combine to hunt game that one man alone can't kill, both cavemen's families get a big meal; if there's no such cooperation,



neither family does.” (Wright, p.194.) Wright describes in detail how reciprocal altruism can work for the benefit of all in the exchange of labour and, equally importantly, the exchange of information.

But no discussion of reciprocal altruism is complete without mentioning cheaters and free-loaders. If you live in a society of co-operators, but you yourself are a free-loader, you can do very well. But over time, if more people become free-loaders and cheaters – i.e. if more people accept generosity but never return it - the society cannot and does not flourish.

During the late 1970s Robert Axelrod devised a computer programme that simulated Trivers’ reciprocal altruism. He called it TIT FOR TAT. The programme could be set to run for hundreds of generations, and was programmed to try the effects of all imaginable strategies between selfless cooperation and gross exploitation. Neither “steadily nice” nor “steadily mean” were successful in the long run; only the “straightforwardly conditional” survived.

Wright believes that friendship, affection and trust were the foundations for spreading reciprocal altruism in its “kind but stern” form through the population (p.198). Thus genetic connectedness and reciprocal altruism worked in tandem. The groups of humans who generally tended to follow cooperative arrangements survived and flourished. In the absence of kin and friends, for example when unrelated tribal groups began to tussle over particularly desirable territory, then it was more likely the law of the jungle applied.

Survival and reproduction now

Today, for most of us, the basics of survival become an issue only in extreme situations – such as in natural disasters and war. When there are threats to survival, they immediately become the highest priority and the focus of everyone’s attention. Remnants of the survival instinct live on in the minimisation of risk – all risk, sometimes seemingly to an absurd degree. But in general, today, the only NZers for whom survival is a pressing issue are those out on high risk adventures and the seriously ill.

As to reproduction, even though we have figured out the connection between mating and babies, there appears no lessening of interest in mating – the magazines, newspapers, tv, novels, movies - all focus on striving for status in men, and maximising fertility signals in women.

Is there anyone here who did not hear that Tiger Woods had some problems in his so-called “private life”? Even now, when the furore has died down, journalists continue to write on the topic. Here is Allan Dick writing about Tiger in a recent issue of NZ Today. “The coverage of his infidelities was gutter journalism. The follow-ups about his treatment in various clinics for sex addicts was just plain, old-fashioned disgusting and I am now bored to tears by the ongoing drama about his return to the game and whether his wife will be at his side. The media is pandering to those of us who are prurient nosy parkers who wallow in gossip and sludge.”

I wondered exactly what point this journalist was making. Presumably, now that the furore has died down, he didn’t need to write about it at all. But I did not find it difficult to understand Tiger’s behaviour. Like any alpha male on the planet who had Tiger’s body, skills, status and opportunities, he behaved exactly as expected – as do many high profile sportsmen, entertainers, politicians, media people and others. The notion that the unfortunate Tiger needed to undergo treatment for his sex “addiction” seemed truly bizarre and I hope he survives it.

Altruism now

If the behaviours related to survival and reproduction are still highly visible and of universal interest, what has happened to altruism in the modern world? Only 2-3,000 years ago (as compared with say, 30,000 years ago, never mind 300,000 years ago) there were new developments in thinking about altruism.

As everyone at this conference knows, Jesus proposed extending altruism to encompass more people than just immediate kin. In answer to the question “Who is my neighbour?” we have the story of the good Samaritan, encouraging us to practice altruistic behaviour beyond the reciprocal altruism found in the EEA.

In our own time, philosophers and theologians have pushed this thinking even further. Peter Singer, widely regarded as one of today’s great humanitarian philosophers, writes of the need to extend altruism outwards in



an ever-widening circle. This starts with the self, and then goes non-controversially to family, kinsfolk and friends. But then Singer suggests we extend it further to other ethnic or religious groups, other nations, and then to humanity as a whole.

Note that in evolutionary terms one can view reciprocal altruism as an “is”. This “is” is what our forbears did. It was and “is” evolutionarily advantageous for us to behave altruistically towards kin and friends, provided the altruism is reciprocated. But now, suddenly we have moved to an “ought”.

From “is” to “ought”

The big question is, “ought” we to extend altruism to all humanity? Should we be trying to move beyond reciprocal altruism and go “unconditional”? As we’ve all been taught, “unconditional love” is our highest goal.

But putting this goal in the context of evolved human behaviour is proving trickier than first thought. After a life time working in evolutionary psychology, British scholar George Williams declared that natural selection is “evil” (see Robert Wright’s *The Moral Animal* p.151). Natural selection led not only to everything benign in human nature, but also to everything that is destructive. Robert Wright adds “If in this book I seem to stress the bad in human nature more than the good, it is because I think we are more in danger of underestimating the enemy than overestimating it.” (p.151).

It is unlikely we will ever completely escape this “evil” in our human nature - that is those intrinsic aspects of human behaviour which worked to ensure our survival and reproduction in the EEA. Indeed it is likely that if we did, we would not survive. So does our very survival depend on behaving badly?

At last, and perhaps ironically, because of the incentive provided by today’s rampant atheists, evolutionary psychologists and anthropologists have started to look at the evolutionary significance of religion.

While you could say there has been a hefty stand-off between religion and evolution, this seems to be changing, and the change is coming from the evolutionists. One of these is Jay Feierman. He has recently edited a book of essays by a number of different thinkers exploring this new question about religion. Why is it, they ask, that every surviving culture has a religion? Why is it that a culture without a religion fails? Why is it that a culture that has a religion flourishes, and when the same culture turns against religion, it then fails? “Fails” means ceases to exist (Sacks, 2000). Surely, they’re asking, *religion can’t be necessary, can it?* Well, it might be. But if religion is universal, there must be an adaptive advantage in having a religion – so what exactly is this adaptive advantage?

Several new and interesting answers to this question are beginning to emerge. Here is one of them. The behaviours associated with survival and reproduction under the extreme conditions of the EEA would certainly have led to murder, adultery, rape and theft. Reciprocal altruism is a very delicately balanced phenomenon and under conditions of life and death struggle, survivors behave in ways that violate it. So right at the very roots of our behaviour there is often a serious conflict between the strategies that would eventually produce a good life and the strategies required to stay alive and reproduce. And as societies grew larger the problems got more complex, especially those involving territoriality.

Did there come a time when rules for living became a necessary part of survival? The rules outlined in the Ten Commandments encapsulated this dilemma, and some would argue, the following of them in ancient times, ensured that those that did so flourished. Further, it is likely that the world’s other great religions evolved to solve the same problems. So although Christianity took the ideas to new heights, it was not the only religion to observe the gap between what one thinks would be a good thing to do and what one actually wants to do.

This thinking has given rise to a new take on what used to be known as “original sin”. Remember St Paul’s great cry of anguish, echoing down the centuries (Romans 7:13-21). “I do not understand my own actions... For I do not do the good I want, but the evil I do not want is what I do... I delight in the law of God, in my inmost self, but I see in my members another law of sin which dwells in my members. Wretched man that I am! Who will deliver me from this body of death?” (R. S.V.)



Of course St Paul was not referring to the evolutionary origins of human behaviour. And his answer to the question about how to modify his sinful desires was that God would deliver him from it if he concentrated on Jesus' teachings.

Is it possible that in the past, religion provided the necessary incentive to tilt reciprocal altruism just a little in the direction of pure altruism? We probably don't want this tilt to be excessive, as according to the computer models, we already know that over-tolerance of free-loaders and cheaters ends in failure; indeed we all have efficient cheater detection systems built in so there is less likelihood of cheaters getting away with it. But we also know, from these same models, that if people can be encouraged to be just a little more considerate of those less fortunate than themselves, the society as a whole is more likely to function well.

Putting it all together

Here at last is the point of my talk. Now that we are beginning to understand our situation better - why we have the impulses we do, how ancient and deep seated they are, and how, in the past they were critical to our very existence, let's acknowledge them. Instead of trying to ignore them, what I think we need to do is take on the "is" with acceptance, albeit ruefulness – a sort of realisation "so that's why we can't resist fatty foods, flirting, newspaper headlines about sex, murder and mayhem, celebrities, gossip, sports events, wars Basically these are all related to the building blocks that went to make up our fundamental drives to survive and reproduce. They are deeply embedded in us, both physiologically and psychologically, they are hugely resilient and very difficult, especially for some, to control or over-ride.

If, as I am arguing, these influences on our behaviour are a given, what can we do? In my opinion we should wholeheartedly, even urgently, set about re-defining the "ought". Now that evolutionary psychology has given us a greatly enhanced view of the forces ranged against us, we could build a much better understanding of the problems of individuals, and a much more robust way of dealing with them. What we need is that "kind but stern" form of altruism that Wright describes. On the one hand it avoids the perils of the contemporary "promiscuous altruism", and on the other a descent into anarchy. This is the kind of altruism that veers towards the generous, but avoids being exploited. I feel sure that by following this or a similar strategy, we would improve the quality of compassion at both the individual and societal levels.

One of the ways we can contribute to our community's and nation's wellbeing is by doing exactly what we are doing this weekend – thinking more about the origins of altruism and its relationship to compassion. Once we have a better understanding of both the benefits and the limitations of altruism we, like our ancestors, will need to find a way of motivating people to behave in the ways we "believe" will benefit both our local groups and humanity as a whole. What will help us here? Science, philosophy, spirituality, religion? All four, of course, but at present I think the one that needs some catch-up work is religion. Although NZ is everywhere claimed to be a secular society, our foundations are in fact, Christian. Since this is what we already have, it might make sense to have another look at these foundations, modify them where necessary and then, taking the scientific findings into account, begin working towards a new, more sustainable form of altruism.

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Some questions to ponder

1. Ardrey (p.5) proposed that the male's hunting/coalition skills were a major factor in our survival. Is there any equivalent today?
2. How would you apply the principles of reciprocal altruism to international affairs? Would you advocate doing so?
3. How could an understanding of the evolutionary origins of human behaviour help solve contemporary social problems in a more compassionate way than we do now?
4. If people were persuaded of the evolutionary origins and resilience of the anti-social behaviours that still disrupt society, would they change their attitude towards them? And if so, what sort of changes would take place?