

6-1-2006

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### Recommended Citation

Rayner, Sam (2005) "Too Strong for Principle: An Examination of the Theory and Philosophical Implications of Evolutionary Ethics," *Macalester Journal of Philosophy*: Vol. 15: Iss. 1, Article 6.  
Available at: <http://digitalcommons.macalester.edu/phil/vol15/iss1/6>

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Too Strong for Principle:  
An Examination of the Theory and Philosophical  
Implications of Evolutionary Ethics

*Sam Rayner*

“... Nature is always too strong for principle. And though a Pyrrhonian may throw himself or others into a momentary amazement and confusion by his profound reasonings; the first and most trivial event in life will put to flight all his doubts and scruples, and leave him the same, in every point of action and speculation, with the philosophers of every other sect, or with those who never concerned themselves in any philosophical researches.”

David Hume, *An Enquiry Concerning Human Understanding*

Evolutionary ethics is a discipline that has formed around the belief that human-kind's conception of morality was developed through the evolutionary process of natural selection. Various mechanisms concerning the evolution of morality have been proposed within the theory of natural selection, and I believe that many authors in the field focus too narrowly on one or a few of them in their efforts to model the origins of morality. In this paper I hope to present a broader review of many potential evolutionary mechanisms and the evidence supporting them, in an effort to show that they are not mutually exclusive and may have all played a role in the formation of components of the complex moral system that exists today. Many writers in the field of evolutionary ethics tend to focus too narrowly on either the biological mechanisms through which morality is proposed to have evolved, or else on the philosophical ramifications that an acceptance of evolutionary ethics would have for our current conception of morality. As I feel that both aspects are equally important for the proper understanding and application of evolutionary ethics I hope to give equal and detailed attention to both the biological theory and the resultant philosophical implications.

Philosophically, evolutionary ethics provides support for an error theoretical view of morality.<sup>1</sup> If accepted, especially as support for error theory, the evolved nature of the institution of morality poses a serious problem for traditional views of morality. I argue that common moral practice involves an implicit appeal to categorical and objective standards and that if our moral feelings can be shown to arise from nothing more than our biologically constituted nature, our invocation of universally prescriptive moral imperatives is in error. If it is true that the practice of morality consists of such imperative statements, an examination of the philosophical implications of evolutionary ethics is in order. Interestingly, examining the theory of evolutionary ethics, one can see that the predictions it makes about the operation of morality are nearly identical to a Humean depiction of human morality. The relationship between Hume's writing and the predictions of evolutionary theory makes an examination of Hume's philosophical conclusions pertinent to our understanding of the subject. Drawing from Hume's conclusions I argue that if the institution of morality can be shown to be based in humankind's evolutionary past, this fact would seriously undermine the possibility of an ultimate *philosophical* justification of the foundations of morality, though it would not undermine the *practice* of morality. Evolutionary theory, as I interpret it, shows human society to be foundationally dependent on the validity of morality. I attempt to show that much of human social interaction is based on moral principles (such as altruism), and strategies that grew from the existence of moral interaction (gossip, reputation building, and "cheating," for example). It then follows that when acting or reasoning within a social or "everyday" context, it makes no sense to ask whether morality's foundational principles can be justified, because they are a non-negotiable component of social interaction. While philosophically morality may be founded in error, by distinguishing between societal and philosophical contexts it may be possible to retain moral discourse in its present form, and indeed it may be impossible to do otherwise.

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<sup>1</sup> The concept of an error theory is discussed in greater detail further on in this paper. Briefly, error theory is the notion that moral discourse is phrased in cognitive terms (consisting of true/false statements of fact), but that all moral claims are actually false as no such objective moral "facts" exist.

### Arguments for an Evolutionary Origin of Morality

Evolutionary ethics originated in the 1850's in the works of Herbert Spencer (1850).<sup>2</sup> The theory gained some support and was debated throughout the nineteenth century until the criticisms of many philosophers, notably Thomas Huxley (1893) and G. E. Moore (1903), all but completely defeated the popularity of biological interpretations of morality. The field of evolutionary ethics, until relatively recently, remained plagued by bad interpretation of scientific research and unfounded speculation (such as the faulty idea that altruism originated via the process of group selection). The emergence of new theories of altruistic evolution, however, caused evolutionary ethics to experience a resurgence. This resurgence was brought about largely by E. O. Wilson's seminal work: *Sociobiology* (1975), the development of Hamilton's theory of kin selection and the concept of inclusive fitness (1964), Trivers' hypothesis of the evolution of reciprocal altruism (1971), and the application of mathematical and game-theoretical models to evolutionary theory (e.g. Smith and Price, 1973). Today, evolutionary ethics is certainly a tenable position, with a breadth of empirical and theoretical evidence supporting it.

#### *The Claims of Evolutionary Ethics*

While ordinarily definitions of altruism take account of factors such as motivation, evolutionary ethicists often employ a functional conception of altruism which is concerned merely with behavior. Biologically altruistic acts, defined as acts performed that benefit another organism at a cost to the provider with no immediate benefit to the provider, include most of the actions and feelings we consider to be moral. Altruism and cooperation which require the abandonment of some individual drives provide the necessary foundation for basic human morality. Sociobiologists, therefore, try to show that cooperation and altruism are evolutionary products, in order to provide support for the idea that the resulting institution of morality which is built on them is evolutionarily derived.

Before going any further, however, one may very well ask what reasons exist to assume that our system of morality is a product of evolutionary factors. First of all, the cooperation and altruism which underlie human morality can be observed throughout nature and can be

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<sup>2</sup>Spencer's first ideas, although they predate Darwin's theory of natural selection, form the origins for evolutionary ethics.

shown to be evolutionarily selected for. Sociobiology gives a convincing explanation of the origin of altruism in human society by invoking the method of natural selection because in the sociobiological model morality can be shown to be biologically beneficial. Additionally, I believe that as human beings, presumably, are a result of evolutionary processes, the neural structures which provide moral sentiments such as guilt, shame, and moralistic aggression must have been subject to evolutionary pressure, as those biological structures must have been shaped to produce the emotions that humans associate with morality. As (in my Humean interpretation) emotional centers are critically important to morality, this is reason enough to examine morality in an evolutionary light. E.O. Wilson expresses this in a famous passage where he states that

The biologist, who is concerned with the questions of physiology and evolutionary history, realizes that self-knowledge is constrained and shaped by the emotional control centers in the hypothalamus and limbic system of the brain. These centers flood our consciousness with all the emotions - hate, love, guilt, fear and others - that are consulted by ethical philosophers who wish to intuit the standards of good and evil. What, we are then compelled to ask, made the hypothalamus and limbic system? They evolved by natural selection. That simple biological statement must be pursued to explain ethics. . . (Wilson, 1975, p. 1)

Beyond the observation of cooperation in nature and the neurological basis of moral emotions (evidence which may not satisfy those who hold morality to be an undertaking solely of the reason), rudiments of human morality are evident in non-human primates and are hypothesized to have existed in the direct ancestor of humans before the evolution of language and higher consciousness which suggests that an ability to view the world in moral terms is not a result of advanced human culture or reason. Finally, the picture of morality which is painted by relying on evolutionary models such as reciprocal altruism and kin selection (discussed below) is very similar to the moral practice that is observed today. These points will be discussed in more detail further on.

Another initial criticism of evolutionary ethics is that the extensive cross-cultural variation in substantive morality seems to contradict a theory proposing underlying biological similarities in human morality. Although it is true that what humans see as right and wrong certainly varies across cultures, I argue that all humans have evolved to *perceive* their culture's moral laws in a similar way. Moral utterances are used in a very different way from other societal discourse; moral statements are always felt to contain what Richard Joyce refers to as "imperative force" in that conclusive moral judgments are felt to override all other

reasoning. Joyce argues that moral laws are categorical and necessarily imperative, containing what Philippa Foot refers to as a “fugitive thought” which makes them appear binding independently of human society and applicable universally, properties that are not held by any social rules or laws (Joyce, 2001). This is something that will be discussed in greater detail in the second section of this paper, but it is crucial to note at this point that human beings distinguish moral laws from other rules of conduct and feel morality to be binding on them in a manner unique from other laws.

What evolutionary theory proposes is that we have evolved the category of morality as a biologically useful adaptation. Although there do appear to be examples of universal moral prohibitions, a socio-biological approach to morality goes beyond arguing that *what* we see as right or wrong is evolutionarily based, or that certain moral proclivities that we have were formed by evolution. What evolutionary ethics claims is that our entire *system* of morality is evolutionarily derived; that the ability to view actions and categorize the world in moral terms is a biological adaptation. While much of (if not the majority of) the content of human moral systems is culturally or socially derived, the fact that we even have such a thing as morality is argued to be an evolutionary instilled adaptation.

That morality could have evolved as a biologically useful adaptation, however, is counterintuitive. Cooperative acts among humans in general, not to mention altruistic actions, are at odds with the fact that natural selection leads individuals to attempt to maximize their own reproductive fitness. A maximization of individual fitness is the very definition of natural selection; Michael Ruse refers to evolution as “selfishness personified” (Ruse 1986) and many scientists such as Thomas Huxley have argued that the goal of morality was to *combat* the selfish processes of evolution that are at work in human beings (Huxley and Huxley 1947). This argument appears throughout contemporary criticism of sociobiology as well. (See, for example, Woolcock’s article “The Case Against Evolutionary Ethics Today” [Ruse and Maienschein, 1999].) How, then, could altruism, which requires the mitigation of selfish desires, arise from the inherently brutal and selfish process of natural selection? Much of the problem in establishing the mechanisms by which morality could have evolved lies in first showing that cooperation and altruistic behavior could hypothetically arise via the selfish mechanism of natural selection.

An early proposal of a mechanism by which altruism could have

evolved was group selection, the idea that natural selection can act upon groups as well as individuals. A cooperative group of organisms practicing altruism would survive better than a group of selfish and competitive individuals. David Sloan Wilson (1983) gives a good background on the history of group selection, writing that many biologists, such as “Fisher, Haldane, and Wright, however, all emphasized that evolution within single populations could not explain group-level adaptations.” For a long time group selection was a dominant paradigm and the sole explanation of how altruism could have arisen.

There are many problems surrounding the idea that group selection is the main force operating to select for altruism, however. Chief among these is the simple fact that one selfish individual migrating into or being born into an altruistic group could easily exploit it by accepting the benefits of altruism without reciprocating. A selfish individual that exploited the altruism of the group would easily flourish and pass his selfish traits on, something that Richard Dawkins refers to as “subversion from within” (1976). This argument against group selection (among other arguments against it) was proposed by George Williams (1966) and was sufficient to remove discussions of group selection from most mainstream scientific discussion for a long time.<sup>3</sup>

Fortunately for a sociobiological understanding of morality, around the time of Williams’ criticisms of group selection a wealth of new theory was introduced that revitalized the field of evolutionary ethics. Biological, mathematical, and economic models have been created that show how acting “altruistically” can actually be in the individual organism’s own genetic self interest, and therefore in accord with the “selfish” nature of natural selection and rendering an appeal to group selection unnecessary.

#### *Theoretical Support for the Evolution of Cooperative and Altruistic Behavior*

An important development in evolutionary theory in general after the theory of natural selection put forth in Darwin’s seminal work *The Origin of Species* was combined with Mendel’s theory of genetic inheritance was that scientists began to realize that selection must occur

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<sup>3</sup> Recently group selection has come under discussion again and has gained many new supporters. The “new” group selection theorists, however, not only have different conceptions of group selection, but they no longer see group selection as the only mechanism operating in the formation of behaviors such as altruism. Later on I discuss how group selection may possibly operate in addition to many other important mechanisms. Still, it is certainly not the only mechanism (nor likely the *main* mechanism) by which altruism came into existence as early theorists claimed.

on a genetic level as well as an organismal level. Genes that led to an increase in reproductive fitness for the organism were more likely to be passed on and it began to appear that the genes were the fundamental units of selection rather than individual organisms. As theories of genetic selection began to progress, it began to appear that essentially the organism may be no more than a way for genes to propagate themselves (see Dawkins, 1976).

Hamilton's development of the idea of inclusive fitness and kin selection was of key importance to an understanding of the mechanisms underlying the evolution of cooperative behavior in animals (Hamilton, 1964). Building on the increasing understanding of genetic inheritance Hamilton proposed that an individual (who has evolved, according to evolutionary theory, to attempt to pass on his or her genes) will benefit reproductively by helping related individuals under conditions where the condition  $r > c/b$  is met,  $r$  being the coefficient of genetic relatedness (e.g., .5 for an individual's offspring or siblings and .125 for first cousins),  $c$  being the cost to the organism helping his relative, and  $b$  being the benefit to the relative being helped. This notion was termed "inclusive fitness," and it helps explain the evolution of altruistic behavior among related individuals, which is one reason that Maynard Smith proposed the term "kin selection" for Hamilton's model (Smith, 1964).

Hamilton's model may be influential in showing why genetically related individuals would have evolved to cooperate, but morality obviously extends beyond the confines of kinship. What were now needed were theoretical models accounting for the evolution of altruism among unrelated individuals. Robert Trivers (1971) formulated a model to account for how reciprocal altruism could have evolved by natural selection alone. Trivers postulated that altruism could have evolved in animals such as humans because their long lives and close living proximity allow for many potentially altruistic interactions in day to day life. Using a simple example of a drowning man Trivers shows that cooperation between two individuals could be selected for. If a man is drowning and faces a 50% chance of dying and his potential rescuer is almost certain to save him, but faces a 1 in 20 chance of drowning himself if he attempts the rescue it is clear that if this is an isolated incident natural selection favors letting him drown. However, if the individual contemplating the rescue is likely to be drowning some day and the drowning individual is likely to reciprocate if saved, both individuals will benefit if they save each other.



Invoking the use of prisoner's dilemma to characterize the interaction between two organisms repeatedly exposed to situations where altruism is possible Trivers explains that if many such interactions occur, with each individual alternately in the position of being benefited or incurring a cost, both individuals will benefit if both cooperate and suffer if neither do. The greatest benefit would arise from "cheating," which is taken here to mean refusing to reciprocate an altruistic act in the future, but this would be detrimental to the individual being cheated. Due to the possibility of cheating, individuals would not benefit from dispersing altruism at random throughout the entire population as all other individuals would have an incentive to cheat. If, however, individuals distribute altruism non-randomly based on the altruistic tendencies of potential recipients, with systems to detect and discriminate against cheaters, altruistic genes would be able to thrive in the population as altruistic individuals would benefit from mutualistic relationships with other altruistic individuals.

Discussing the complexity of the system of reciprocal altruism among human beings, Trivers states that

[g]iven this unstable character of the system, where a degree of cheating is adaptive, natural selection will rapidly favor a complex psychological system in each individual regulating both his own altruistic and cheating tendencies. As selection favors subtler forms of cheating, it will favor more acute abilities to detect cheating. The system that results should simultaneously allow the individual to reap the benefits of altruistic exchanges, to protect himself from gross and subtle forms of cheating, and to practice those forms of cheating that local conditions make adaptive. Individuals will differ not in being altruists or cheaters but in the degree of altruism they show and in the conditions under which they will cheat (Trivers, 1971, p. 48).

This explains the existence of complex friendship relations in human societies, as well as the existence of moralistic aggression towards cheaters. Trivers also discusses how complex emotions such as guilt, sympathy, trust, suspicion, and the mimicry of such emotions by subtle cheaters could result from such a system.

Trivers' model, however, depends upon repeated interactions between the same two organisms within a population for systems of altruism to develop because firsthand knowledge of the reliability of a cooperative "partner" is necessary to avoid gross cheating. In addition to kin selection and reciprocal altruism, humans also can be shown to practice "indirect reciprocity." Indirect reciprocity refers to altruism based on the individual's reputation for behaving altruistically with third parties, with expectations of eventual reciprocal altruism from another random individual in the population, not necessarily the one being helped. Mathematical models of indirect reciprocity assume that

individuals will interact one or zero times with other members of the population. The evolution of indirect reciprocity was important for altruism to exist within society as a whole rather than just between kinship groups, or groups of individuals with repeated interactions and detailed firsthand knowledge of each other.

A review of the theory surrounding the emergence of indirect reciprocity was published recently by Martin Nowak and Karl Sigmund (2005). Focusing on systems of indirect reciprocity in humans they re-emphasize the immense complexity of human systems of altruism. Nowak and Sigmund discuss the pivotal importance of reputation for systems of indirect reciprocity, noting that humans feel strongly about interactions that don't even include them, citing the content and prevalence of gossip and the importance of the feedback left by prior buyers in internet auctions. An altruistic system based on, or including, indirect reciprocity would not work without an ability to refuse to help a "bad" player that has a reputation of cheating. Citing impressive and complex mathematical and economic models of cooperation, Nowak and Sigmund conclude that a detailed knowledge of others' reputations is necessary for indirect altruism to be maintained within a population. Discrimination against individuals with poor reputations as cooperators causes individuals to be motivated to cooperate with other individuals with good reputations in order to build a reputation for themselves and obtain future reciprocation from members of the society. Nowak and Sigmund argue that indirect reciprocity can thrive within a "...socially viscous population, in which people can know each other's reputation..." (Nowak and Sigmund, 2005, box 5, p. 1296). In the conclusion of their paper, Nowak and Sigmund state that "...indirect reciprocity based on reputation serves as a link between diverse forms of cooperative interaction. The moralistic assessment of the other members in the population, even if they are observed only at a distance, provides a powerful tool for channeling support towards those who collaborate and an incentive to join group efforts" (Nowak and Sigmund, 2005, p. 1296).

In order to propose that strategies of reciprocity and kin selection could have led to the widespread adoption of cooperation in the animal kingdom and the complex social systems of altruism and cooperation seen in the human species, it must be shown that such strategies can be maintained successfully in a population. In their introduction of the

game theoretical<sup>4</sup> concept of Evolutionary Stable Strategies (ESS), John Maynard Smith and George R. Price provided a formulized way to describe the establishment of stable strategies within a population (Smith and Price, 1973).<sup>5</sup> As Smith puts it, “An ESS or evolutionarily stable strategy is a strategy such that, if all the members of a population adopt it, no mutant strategy can invade” (Smith, 1982). Therefore, “there is no ‘mutant’ strategy that would give higher reproductive fitness” (Smith and Price, 1973). When Trivers (although he was writing before Smith and Price’s work) and Nowak and Sigmund discuss a system of cooperation which involves ways to detect and discriminate against cheaters they are essentially explaining how the establishment of cooperation based on discrimination could lead to ESS because within the proposed group of discriminatory cooperators no mutant “cheaters” could invade the group. An implication of Smith and Price’s work is that in order to be perpetuated, a strategy must be evolutionarily stable within a population and therefore any theory attempting to account for the evolution of altruism must also meet this criteria.

While the above models appear to accurately reflect the main forces that originally led to the evolution of cooperative and/or altruistic behavior within animal societies, it is almost certain that the complexity of the behavior being studied is the result of the interplay of these forces along with other factors. In a recent review article Tim Clutton-Brock discusses alternate mechanisms that could be operating in the formation of cooperative behavior (Clutton-Brock, 2002). Clutton Brock discusses how seemingly cooperative behaviors could, in reality, be a result of by-product mutualism where an individual performs a behavior to maximize his or her own fitness directly and as an unintended result benefits those in his or her group as well. In other cases, he suggests, actions may be mutualistic in that both animals *directly* benefit from their cooperative behaviors, rather than receiving only the indirect benefits that helping kin members or increasing

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<sup>4</sup> For those unfamiliar with the term, game theory is a branch of applied mathematics that has become influential in economic and biological modeling. Game theory examines interactions between individuals or groups for which costs and benefits are not fixed, but dependent on the choices made by other players. Game theory assumes that individuals are all attempting to maximize their individual gains, and examines the many potential strategies that they could adopt based on their knowledge of the other “players” motivations and past behavior. A well known example of game theory is the “prisoner’s dilemma.”

<sup>5</sup> Smith and Price’s 1973 article addresses restraint in intraspecies conflict, and they developed the concept of an ESS as part of their theory of animal conflict. The concept of an ESS is, however, readily applicable to other topics, such as the evolution of altruism.

reputation confer. The simple fact that being in a group is beneficial, “group augmentation,” may explain the evolution of some cooperative societies. In some specialized cases, Clutton-Brock explains, it is even possible that coercion from the rest of the group drives certain seemingly “cooperative” behaviors. Other recent work suggests that group selection may play a role in the evolution of cooperative societies (Sober and Wilson, 1999). Although I believe, as discussed above, that group selection is not likely to be the primary mechanism at work in the formation of cooperative societies, it may be one more factor adding to natural selection for cooperative or altruistic behavior.

Animal behavior, especially human behavior, is extremely complicated and given the nature of the evolutionary process the origination of altruism is likely to be the result of a multitude of factors. Richard Alexander points out that we by no means fully understand the underlying developmental and genetic mechanisms leading to human behaviors which evolution has influenced, but that we can ascertain beyond a reasonable doubt that such behaviors are evolutionary in nature:

Understanding the general nature of evolution – long-term directional changes, and even the components of the evolutionary process and how they interact – may not be particularly difficult. Understanding the interaction of heredity and development well enough to assume an appropriate attitude with regard to the proximate background of behavior, however, is extremely difficult, and here the biological understanding of nonbiologists tends to break down...Having established that humans, as with other organisms, have indeed evolved to maximize inclusive fitness, biologists are now concentrating increasingly on underlying mechanisms of inclusive fitness maximizing behavior – hence development, physiology, learning, the nature and consequences of evolved phenotypic plasticity, and particularly the mechanisms of kin recognition and nepotism...The existence of such mechanisms can be established in any particular case merely through convincing evidence of evolved adaptive function. Characterization of the mechanism(s) on the other hand, requires knowledge of ontogenies, necessary and sufficient stimulus sequences, differential eases of learning, sensitive periods...and ideally even geographic location and functional interdependence within the central nervous system and with respect to the minimal sensorimotor units (Alexander 1993, page 168).

I argue that it would be a serious error to assume that the origins of human morality can be *fully* explained by one or two major evolutionary mechanisms, or to assume that we have managed to fully characterize those mechanisms. (Alexander points out that our lack of an understanding of the exact interactions between genetics and behavior is one of the great gaps in biology.) That evolution as a whole is sufficient to explain the origin of cooperative and biologically altruistic behavior, however, seems to be a valid argument at this point.

*Empirical Support for the Evolution of Cooperative and Altruistic Behavior*

The above section of my paper hoped to show that theoretical models have been developed showing the possibility that cooperative and altruistic behavior could have evolved in humans and other organisms via natural selection processes. Briefly, I hope to now show that there is well documented *empirical* evidence as well that human moral systems may be founded on biological inclinations. Ruse cites three kinds of empirical evidence that are used to support evolutionary ethics: evidence found in “lower” social animals, evidence in primate society, and evidence in human society. I make use of Ruse’s categorization here and draw heavily from his work, adding to it where necessary.

To begin with, cooperative social behavior is found throughout the animal kingdom and Ruse notes that kin selection and reciprocal altruism are well documented among some social animals in the natural world. Kin selection is firmly established among the Hymenoptera (ants, bees, and wasps) who often have sterile “worker” females spending their lifetime raising their sisters without reproducing themselves.<sup>6</sup> Ruse moves on to show that reciprocal altruism is evident in members of fish which are cleaned by others and then discusses reciprocal altruism among white-fronted bee-eater’s, a bird species in Africa which help rebuild each others’ nests when they are destroyed by the common flash floods in the areas. Ruse concludes that although we certainly do not interact in the same way that the above species do, the existence of cooperative and altruistic behavior in the natural world that has been convincingly shown to result from evolutionary processes raises the possibility that such behavior in the human species could be evolutionary in origin:

Nevertheless, reference to social behavior in the animal world taken as a whole does show that such behavior – including co-operation and “altruism” – can be produced and promoted by natural selection, working at the level of the individual. It can be done, and is in fact done time and again through the animal world. If humans are part of this world, possibilities and expectations are obviously raised (Ruse 1986, page 227).

The empirical evidence found in primates is similar to that found in

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<sup>6</sup> Hamilton used such eusocial insects to help demonstrate the operation of kin selection. Because reproductive males are haploid while the reproductive female (the queen) is diploid, workers are 75% related to their mother’s other offspring whereas they would only be 50% related to their own offspring were they to reproduce. Their inclusive fitness, therefore, is maximized by caring for their “sisters” rather than reproducing themselves, and this likely led to the evolution of workers’ sterility.

“lower” social organisms although more applicable to humans not only because the higher primates are more genetically related to us, but also because their behavior is closer to what we consider “moral.” Ruse states that “[r]ecent, extended studies of the apes, particularly of chimpanzees must shake all but the most dogmatic defender of the uniqueness of the human moral capacity” (Ruse 1986, page 227) and believes that due to the gradual nature of evolution we should expect to find the rudiments of morality in our recent biological cousins if morality does indeed have a genetic basis. Christopher Boehm believes that by examining commonalities between humans and the two *Pan* species, *Pan troglodytes* and *Pan paniscus* (chimpanzees and bonobos, respectively), who are presumed to have originated from the same ancestor as humans, we can determine by triangulation what moral qualities, if any, would have been present in our direct genetic ancestor (Boehm, 1998). If we can determine by triangulation that the common ancestor of humans and the two *Pan* species showed the rudiments of human morality, we can safely assume that at least the basis of our morality is evolutionary in nature, and not a recent culturally derived phenomenon.

Boehm, who is examining conflict intervention and social control as driving forces in the evolution of social morality, concludes that bonobos and chimpanzees and humans all engage in similar methods of conflict resolution in the moral sense that he is examining.<sup>7</sup> Flack and De Waal, reviewing the growing body of primatological research into morality, conclude after detailed examination of their own and other’s original research that:

Many non-human primates, for example, seem to have similar methods to humans for resolving, managing, and preventing conflicts of interests within their groups. Such methods, which include reciprocity and food sharing, reconciliation, consolation, conflict intervention, and mediation, are the very building blocks of moral systems... (Flack and De Waal, 2000).

De Waal’s earlier conclusions which Ruse quotes may be even bolder than those of his 2000 collaboration with Flack. In a section cited by Ruse, De Waal concludes that “[i]n their *social* application of reason and thought, chimpanzees are truly remarkable. Technically their inventiveness is clearly inferior to that of human beings, but socially I would hesitate to make such a claim” (de Waal 1982, page 51). Ruse thinks

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<sup>7</sup> As an interesting side note, Boehm sees language as the driving force causing the proto-moral behavior seen in primates to become the full blown morality seen in humans, partially due to the to origination of gossip (something also discussed Nowak and Sigmund, 2005 as mentioned above) and an ability to express moral sanctioning.

that De Waal's 1982 study is important because it focuses on semi-wild chimpanzees at the Arnhem zoo instead of human raised captive chimpanzees that may have been "encultured" by their human caregivers to exhibit human-like characteristics that are not innate. Even more important then, perhaps, may be Goodall's ethological descriptions of wild chimpanzees' behavior at the Gombe preserve. (See, for example, Goodall, 1971.) Her depiction of wild chimpanzee society includes dyadic relationships, complex and shifting social structure, moralistic aggression, and many other features that involve or promote the development of, morality. Though the evidence is not conclusive that higher primates are indeed moral beings, there are numerous studies that support the conclusion that higher primates, chimpanzees in particular, exhibit those characteristics that form the foundation of morality.

Finally, there is growing evidence being collected on human society that supports the conception of morality as an evolved phenomenon. First of all, Ruse notes that:

[t]here is growing evidence that Darwinian factors are important in a full causal understanding of human society. The explicit goals sought by humans tend to be power and status and material riches and the like. Also actively pursued are peace and security, freedom from war and want... Virtually all these things translate readily into reproductive success, and their absence spells reproductive failure (Ruse 1986, page 231).

Ruse cites Napoleon Chagnon's well known studies on the Yanomamo Indians as evidence for Darwinian factors in society.<sup>8</sup> Ruse also cites Richard Alexander's work which shows kin selection at work in human societies. For example, in many tribal societies where paternity is uncertain, men will care for their sister's offspring. This makes sense because they are 25% genetically related to their sister's children while they are uncertain of their genetic relation to children which may or may not be their own. Reciprocal altruism seems to be in effect in human society as well; humans will interact equally with others and cooperate altruistically as long as the other partner in the exchange reciprocates when possible. If one side fails to reciprocate, the dyadic relationship will dissolve. People will also hesitate to be altruistic towards someone known in society (through gossip) to "cheat" in relationships and accept altruism without reciprocating. Ruse next discusses Marshall Salin's theory that related humans exhibit generalized reciprocity, non-relatives that are well-known engage in balanced

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<sup>8</sup> Simply put, in Yanomamo society, those factors which reflect societal success also reflect evolutionary/ reproductive success. For example, headmen generally have more wives which translates into more offspring.

reciprocity, and unknown or threatening individuals generally exhibit negative reciprocity. This is evidence for kin selection because it shows that reciprocal interactions decrease with decreasing relationship, as well as evidence for reciprocal altruism because frequency of interaction plays a role. These interactions are common throughout human societies, and reflect what would be expected were human moral interactions the result of Darwinian factors.

An important piece of evidence that can be gathered from examining human societies that Ruse does not mention in detail is that there are commonalities in what humans find moral throughout, as far as is known, all societies. This evidence comes mostly from anthropological sources. Anthropologist Donald E. Brown's book *Human Universals* comments on the universal aspects of human behavior (Brown, 1991). After extensive cross-cultural examination, Brown creates an imaginary race of people, the "Universal People (UP)," which reflects all of the traits held in common throughout all societies. In a brief discussion on morality he concludes that

[t]he UP distinguish right from wrong, and at least implicitly, as noted earlier, recognize responsibility and intentionality. They recognize and employ promises. Reciprocity, also mentioned earlier, is a key element in their morality. So, too, is their ability to empathize. Envy is ubiquitous among the UP, and they have symbolic means for coping with its unfortunate consequences (Brown 1991, page 139).

In an earlier list of universal societal traits George Murdock included such traits as cooperative labor, ethics, gift giving, hospitality, incest taboos, kin groups, sexual restrictions, food taboos, and residence rules among countless others, which reflect commonalities in moral, social, and cooperative practices (Murdock, 1945). Boehm adds "social bullying," restrictions on dominance, and the identification of deviance to the list of cultural universals (Boehm, 1998). Singer points out that Westermarck describes the "near universal prevalence among human societies of recognized obligations to kin, and notes that obligations weaken as the degree of kinship becomes less close," and goes on to quote Alvin Gouldner's conclusion that "contrary to some cultural relativists, it can be hypothesized that a norm of reciprocity is universal" (Singer 1982, page 49). The existence of universal commonalities in human moral behavior, especially the common existence of reciprocity and obligations to kin (which factor heavily in biological analysis of evolutionary origins) and ideas of intentionality and responsibility, is very telling evidence that morality may be biologically derived. Although content differs cross-culturally, it appears that the structure of morality is similar across cultures, further supporting the



idea that it may be evolutionarily derived; were morality merely a function of culture one would expect radical cross-cultural differences in perceptions of morality, and even whether or not morality was employed at all.

*From Biological Altruism to Human Morality: Filling in the Gaps*

At this point, anyone reading this essay may be beginning to feel as though a trick has been played on them. After all, cooperation and altruism in the biological sense may be necessary components of human morality, but they are certainly not sufficient. For an action to be termed moral people usually also discuss intentionality, an imperative force or sense of requirement, and the freedom to make one's own moral choices, elements which seem to be missing from the above sociobiological account of morality. As an example of typical arguments against the completeness of evolutionary ethics, Alan Gewirth writes that

[e]volutionary ethics takes its start from the important, and imaginatively gripping, biological phenomena that it calls altruistic behavior in lower animals. But in trying to move from such behavior to human morality, it provides at most necessary conditions, not sufficient conditions. Its explanations fail to accommodate the intentionality that is characteristic of moral "oughts" and the kinds of answers to the distributive and substantive question that figure centrally in human morality (Nitecki and Nitecki, 1993).

The distributive and substantive questions that Gewirth poses are both related to the issue of determinism. Evolutionary theory, however, does not end at the evolution of altruism. Nor, I argue, does a biological approach necessarily lead to determinism or ignore intentionality in ethics.

I will first address criticism against the possibility of an evolutionary basis of morality which holds that altruistic behavior in lower animals is a far cry from moral behavior in humans. That biological altruism is not on a par with complex ethical systems I certainly agree with. The simple and instinctual responses seen in lower organisms do not reflect the reasoning and decision-making processes which humans use to reach moral decisions. Evolutionary ethics, in my view, has little substantive import for ethical theory. Evolutionary theory makes few claims about how ethics should be carried out, what principles should guide our moral reasoning, and certainly does not associate human thought with instinctual animal behaviors. However, the very foundations of our ethical thinking, evolutionary ethicists argue, are evolutionarily instilled. The whole system of morality which humans have erected rests on a biological urge to partition the world as good and

bad, right and wrong, according to the cultural and individual experiences that an individual is exposed to interacting with innate biological tendencies. By showing that biological altruism, which anticipates human principles of selflessness, charity, and sympathy likely has evolved, it can be inferred that such characteristics are evolutionarily favored. “Lower” animals may have an instinctual drive to act in a selfless way whereas humans may have elaborate systems of complex thought built on foundational principles of altruism and may have more conscious control over their decisions and actions, but both biological altruism and human morality reflect urges to mitigate selfish interests and act in a “selfless” urges which are evolutionarily beneficial to have.

A comparison of human and animal sexual urges is a good parallel for morality. Humans have incredibly complex courtship systems and in some cases couples could wait years to reproduce. Humans also can have complex emotional issues surrounding reproduction and sexuality and there are volumes of theory written about human sexuality just as there is about human morality. Most animals have comparatively simple courtship systems, mating occurs only when a female is in heat, and usually courtship is not an extended process. Yet it would be fallacious to say that because humans have emotional and complex conscious issues surrounding reproduction and sex in general which are lacking in animals that act on instinct, human sexual desire is qualitatively different than that found in other organisms, and therefore not biological in nature. Most likely, the root causes of human sexual urges *are* biological in nature, influenced though they may be by culture and human consciousness. Similarly, I argue, moral feelings and the ability to partition the world morally are likely biological in nature although culture and human consciousness provide an influence that allows humans to construct complex ethical systems and make difficult moral decisions involving abstract thinking.

Secondly, when examining the issue of determinism, some critics of evolutionary ethics seem to misunderstand the arguments of contemporary evolutionary ethicists. Evolutionary biologists are not claiming that human beings are forced to see certain actions as wrong and others as right due only to their biologically constituted nature. E. O. Wilson uses the concept of “epigenetic rules” to describe the way in which biologically evolved tendencies influence human behavior. Rather than strict instinct or determined behavior, epigenetic rules, arising from underlying genetic factors, merely guide human development in certain

ways. Evolutionary ethicists generally argue that such “epigenetic rules” give us a propensity towards moral actions which (unbeknownst to us) are also furthering our evolutionary ends (or are residual from our long history as foragers when they would have benefited human beings evolutionarily). Culture acts upon the framework provided by epigenetic rules to give us the varied moral codes that we see throughout the world. This influence of culture on biological development occurs because, in most aspects of human development, there is a complex interaction between environment and genes. Genes are switched off and on by external factors and although epigenetic rules may shape moral and behavioral development, they are acted upon by external forces. Richard Alexander points out that “stages and events in the developing organism are inevitably epigenetic – not only influenced by the genome as a whole but controlled by feedback from the developing phenotype as a whole” (Alexander 1993, page 169). Morality is not, therefore, biologically determined, rather an individual’s moral beliefs are shaped and influenced by his own thoughts and desires as well as the norms of his family and the culture which he or she is exposed to. What most evolutionary ethicists would argue is that biology merely provides the ability to characterize the world in moral terms and in some cases may guide moral development in one direction or the other.

Another simple confusion to clear up is one regarding intentionality in ethics. Evolutionary ethicists, opposed to what some critics seem to think, do not argue that humans act consciously to maximize their inclusive fitness. This is certainly not something observed in the daily practice of morality. The argument I adhere to is that evolution has promoted a system of morality in which we feel obligated regardless, it seems, of our own desires, to act in certain ways. The universal restriction that most humans feel on unprovoked murder does not seem to have anything to do with the maximization of reproductive fitness. That moral imperative, however, is argued by sociobiologists to arise from a long evolutionary history in which those individuals who felt a prohibition against unprovoked murder survived better to pass on their genes (including the genes for an abhorrence of murder). It may even have been more effective, Ruse notes, to have a system of morality which holds moral actions as binding no matter what, rather than a system of conscious means-ends reasoning regarding biological fitness which would allow for more conscious deviation from reproductively beneficial moral “laws.” In other words, conscious human moral decision-making which does not involve considerations

of biological fitness as a desired goal, actually is guided by certain evolved propensities which generally lead, unbeknownst to the individual, to the maximization of reproductive fitness. The entire system of moral decision making, in fact, seems to have evolved to maximize reproductive fitness.

Most important for showing that the distinctively *human* characteristics of morality arose from evolutionary processes is showing that the objective and categorical feelings that humans associate with morality could have been selected for evolutionarily. A sense of an inescapable and objectively binding moral imperative such as that which appears to underlie human morality as it exists in the world today would be much more likely to regulate individuals' conduct, especially when it comes to altruistic acts that do not immediately benefit the organism (but do provide long-term benefits that may not be immediately ascertainable to the individual). Such a "moral sense" could therefore have been selected for, as would moral phenomena such as a sense of guilt. This will be discussed further below as evidence for moral error theory.

My final point regarding evolutionary theory is that human society as it exists today seems to have evolved based on moral principles. Part of the reason that I have focused in such a detailed way on the nuances of the biological theory surrounding the evolution of morality is that I hoped to show that the evolutionary mechanisms at work in the formation of morality likely were of key importance in the development of the incredibly complex social relationships existing among humans. The obvious complexity of systems of direct reciprocity (the sort of reciprocity discussed by Trivers and Hamilton) and especially systems of indirect reciprocity (reviewed above by Nowak and Sigmund), which promote selection for detailed social knowledge, complex social relationships, and advanced behavioral strategies, likely have led to an expansion of human consciousness and social awareness. The development of complex social knowledge and behavior that evolutionary theory indicates necessarily accompanied strategies of reciprocity based on reputation and perception of intent, may be responsible for the detailed and layered interactions between humans observed today as well as the complexity of human morality. The fact that existent human systems of social interaction are foundationally dependent on human morality will be of critical importance later in this essay.

## The Philosophical Implications of an Evolutionary Origin of Morality

### *Ethical Naturalism: A Fallacy*

When examining the philosophical implications of accepting that morality as a structure of thought is a result of evolutionary processes, it is important to make a distinction between explanation and justification. I am using evolutionary ethics in this paper in a descriptive, explanatory context. An explanatory description of *how* morality came to be via an examination of evolutionary processes does not necessarily have anything to say about what we now *ought* to do in a prescriptive sense. Perhaps the greatest damage done to the field of evolutionary ethics has been carried out by the slough of evolutionary “proponents” who attempt to erect a prescriptive system of morality based on the evolutionary nature of morality. Such “ethical naturalists” and social Darwinists commit a serious error when they attempt to equate the natural processes by which morality or other social traits form with moral goodness. Before expounding on what I see as the correct implications to derive from the evolved nature of morality I will briefly examine and hopefully refute the position of the ethical naturalist.

Hume showed in a famous passage of his treatise that a factual observation, an *is*, cannot lead to a prescriptive claim, an *ought* (Hume, 1967). All of the attempts to derive a system of prescriptive morality from evolutionary descriptions fall prey to the above fallacy noted by Hume, despite recent attempts to bypass “Hume’s law.” The problems inherent in Robert J. Richards’ arguments for deriving justification for morality from evolutionary processes provide a good example of the impossibility of deriving an ought from an is (Richards, 1993). Richards states bluntly that he believes he is justified in bypassing the is/ought barrier demarcated by Hume: “Thus, I also want to show, secondly, that there is no general fallacy in arguing from facts to values, from ‘is’s to ‘ought’s” (Richards 1993, page 116). Richards tries to use appeal to factual information from biblical passages amongst believers as an example of how an ought can be derived from an is in common daily practice. Richards proposes that a statement like “The Bible says fornication is wrong; but fornication is sex outside of marriage. Therefore, premarital sex ought not be engaged in” (Richards 1993, page 126) represents someone using an appeal to a definition of premarital sex (an is) to determine that it should be abstained from as a clear case of fornication (an ought). This is tricky, but just plain wrong. Biblical

language is in its very essence prescriptive because it relies implicitly on the background statement that “one ought to obey the Bible,” and using factual definitions to determine what is prescribed in the Bible and using that to justify how Christians should behave morally, is merely making use of an intermediary is to derive an ought from an ought. The information in the Bible (prescriptive “ought”s) are used to derive moral terms (also “ought”s), and the definition of fornication (an is) is merely used to clear up what is meant by prescriptive terms in the Bible.

Having attempted (and failed) to show that the is/ought barrier does not apply in moral doctrine, Richards next tries to show that it need not prevent the formation of a prescriptive evolutionary ethics either. Richards makes the following statement:

Or consider this likely scene: An elderly woman is attempting to cross Michigan Avenue at 5:00 p.m. Joe comes up next to her. I say to a companion: “Joe is extremely altruistic. He sees the lady in distress. Therefore he ought to act altruistically and help her across.” Here the ought-conclusion has been derived from facts by a rule (Richards 1993, page 128).

This may be a semantically sound sentence, but the way ought is used is not a moral one. Peter Woolcock, in examining such arguments, refers to such utterances as “descriptive oughts” which predict the outcome of a scenario rather than prescribing how someone should act as a moral or prescriptive ought does (Woolcock, 1999). Woolcock agrees that it is entirely possible to derive a descriptive ought from a descriptive is, as Richards has done in the above example, but still agrees with Hume that moving from a descriptive is to a prescriptive ought is a fallacy. Richards attempts to address this problem by saying:

The “ought” derived from the structured context of human evolutionary formation, then, will be a moral ought precisely because the activities of promoting the community good and of approving altruistic behavior constitute what we mean by being moral (Richards 1993, page 129)

This is, again, just plain wrong. What Richards is saying is circular in essence: that if we accept that what is moral is what evolution has put in place in human nature, i.e., “the activities of promoting the community good and of approving altruistic behavior...,” then we will see that what we ought to do is act to promote the community good and approve altruistic behavior. When what we are trying to do is justify why what evolution has made us see as moral is actually moral in a prescriptive sense, Richards’ circular argument becomes meaningless. Furthermore, as Richard Joyce points out, such arguments commit the genetic fallacy of assuming that where an idea originated has import for

whether that idea is valid or not (Joyce, 2001).

Commonplace arguments made by Social Darwinists run into the same problems that Richards and other ethical naturalists do. Claiming that aggressive, individualistic, or patriarchal policies are justified by aggressive, individualistic or patriarchal practices in nature is philosophically unsound. As seen in arguments against Richards above, there is no reason to equate “natural” with “morally right,” and his attempt to do so falls prey to Hume’s distinction between is and ought as well as the genetic fallacy. I believe that Richards’ claim is typical of most other arguments put forth by ethical naturalists and I think I have shown that the barrier of is/ought is impenetrable by such reasoning. Even if it were shown to be possible in some cases to derive an is from an ought, it does not seem so in this instance. Therefore, I hold that the arguments of the ethical naturalist and the Social Darwinist can safely be discarded at this point.

#### *Evolutionary Theory as Support for Error Theory*

Having shown that the descriptive analysis of the origins of morality provided by evolutionary theory is insufficient to provide justification for any prescriptive moral system, the question becomes, “what import does the evolved nature of human morality have for our system of ethics?” I believe that showing that evolutionary processes led to our current system of morality effectively shows moral discourse to be in error. It is as support for a moral error theory that I will examine the implications posed by accepting evolutionary ethics.

Error theory, in the well-known formulation given by J. L. Mackie, holds that our moral language contains an element of “objective prescriptivity” which can be shown to be false (Mackie, 1977). When we argue morally, Mackie states, we are implicitly invoking objective moral standards which are supposed to be universally binding on humans. When such invoked moral standards are searched for, however, they prove to be non-existent, rendering our entire moral system to be in error.<sup>9</sup> Because all moral utterances rest on chimerical realist principles Mackie holds that all moral utterances are false, and invokes the term moral error theory to describe human moral systems. Due to

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<sup>9</sup> Mackie uses two main arguments to show that such universally binding moral principles are nonexistent. First, in his “argument from queerness,” Mackie points out that if moral facts existed they would have to be strange facts indeed, unlike any other we are used to encountering. Secondly, Mackie uses an argument from relativity, stating that were such universal moral facts to exist we would expect to see much greater agreement across cultures about what constitutes right and wrong than currently exists.

confusion about what “objective prescriptivity” entails, Richard Joyce concludes that “[s]ketched in the above terms, Mackie’s notion of ‘objective prescriptivity’ is too blunt for a proper argument to be conducted...” (Joyce, 2001). Joyce goes on to provide his own interpretation of what “objective prescriptivity” is and what it means for morality, and in the end seems to develop a much stronger case for moral error theory.

In *The Myth of Morality*, Joyce shows that, conceptually, moral judgments are categorical and “inescapable” in nature as they are intended to apply to individuals universally and regardless of individuals’ desires. He believes this to be a non-negotiable property of morality, claiming that “[m]orality is not just a list of *Does and Don’ts* backed with punishment. We think that a person is bound by those rules whether he accepts them or not – that the rules are, in some sense, *his* rules whether he accepts them or not” (Joyce 2001, page 34). He shows, clearly, the difference between moral utterances and other prescriptive utterances by contrasting moral oughts with “institutional oughts” which are imposed by a society or institution and which are not inescapable or universally binding. At the same time, however, Joyce argues that “moral inescapability” is not defensible philosophically because if an individual morally ought to perform an action, he must therefore have a reason to perform that action regardless of his or her desires, and no such reasons can be found. Joyce argues that practical rationality alone could provide such inescapable reasons, yet he holds that practical rationality yields at best a system of hypothetical imperatives (imperatives depending on an end or a desire: “if Susie wants an A, she *ought* to study”). This is at odds with the categorical nature of the moral judgments that humans make, and therefore Joyce espouses a moral error theory claiming moral discourse to be in error.

Having shown, convincingly, that moral discourse is in error due to its dependence on non-existent, objective moral imperatives, Joyce asks:

The distinctive authoritativeness which characterizes our moral discourse turns out to be a well-entrenched bluff. But the question remains: why do we employ these mysterious imperatives? Perhaps the whole point of morally condemning someone is to do so with a particular inescapable force, but what is the point of wanting to do *that*? What has led us systematically to commit this error? (Joyce 2001, page 135).

Joyce’s answer is that evolution would most likely lead to the development of a feeling of requirement to perform certain actions (such as benefit one’s kin) because a feeling that one *ought* to do something in an inescapable moral sense is likely much more effective



in motivating individuals to behave in a seemingly altruistic way than a system based on strong preferences would be. Accordingly, evolution would favor the development of a conscience, guilt, and a “moral sense” of the sort that is found in human society.

That the entire category of human morality could be evolutionary in origin, Joyce sees as evidence for his philosophical program, he states that:

But if all that has been described thus far is a genealogy and not a justification, what relevance does it have to discussing our present moral discourse? One conclusion is that, contemplating the arguments for an error theory of the previous chapters, it accounts for the origin of a widespread and natural mistake, and thus discharges a burden that any error theorist owes her critics. But I will argue that we can draw a stronger conclusion: the very fact that morality is the product of natural selection provides evidence in favor of error theory” (Joyce 2001, pages 147-148).

In other words, not only does the evolutionary origin of morality justify an error theoretical view of morality by providing a plausible explanation of why an erroneous system of morality is seen to be in place in humankind, evolutionary theory itself also suggests on its own that morality may be in error. This makes intuitive sense: We seem to invoke moral standards as though they reflect eternal universal prescriptions beyond the confines of human practical reasoning, whereas evolutionary theory suggests that our moral code evolved merely due to its utility for our species’ survival, and therefore could not be reflexive of any eternal “laws” existent outside of the human condition. It is logical, therefore, to apply evolutionary ethics to error theoretical depictions of morality because error theory is what evolution itself suggests. Applied to Mackie and Joyce’s analyses of morality, evolutionary theory provides powerful support for error theory.

*What do we do now?*

Having established that morality likely arose from the evolutionary process of natural selection and having shown such an origin provides support for moral error theory, the next issue to address is what implications such a conclusion has for the common practice of human morality. Should we abandon the present form of moral discourse and employ merely pragmatic or emotive argumentation without the invocation of objective moral standards? Is this even an option? Is there a way to retain the societal usefulness of morality without the sacrifice of truth concomitant with an appeal to nonexistent moral standards? Joyce argues in favor of the last option, creating a discourse which he terms “moral fictionalism.” Since I accept the premises of

Joyce's argument, I will discuss his conclusion first before moving on.

Joyce argues that we *could*, if we were so motivated, abandon the use of moral discourse entirely. He argues against this, on pragmatic terms:

Arguing that moral judgments could be abolished is, obviously, a long way from arguing that they *should* be abolished. The question of whether we should abolish the discourse is a practical question, to be assessed according to a cost/benefit analysis of preference satisfactions (Joyce 2001, page 172).

Joyce believes that we can retain morality as a sort of "myth," noting the fact that human societies often employ myths that are in disagreement with their wider bodies of knowledge. Joyce argues that we can accept moral propositions due to their usefulness to human society without believing in them or uttering them with assertive force. He believes that the language of morality can remain the same though its proponents should accept it as noncognitive and "fictionalist." Joyce thinks that although his fictionalism may not provide all the benefits that "true" morality does, it would still have significant benefits for humankind. This is due to the fact that when we merely reason instrumentally we will be more likely to disobey certain conclusions than if we accept morality.

I believe that Joyce's "solution" to the problems that a moral error theory poses for traditional morality is inadequate. First of all, Joyce himself, in his discussion on evolution, proposes that current human morality including the fallacious appeal to objective, inescapably binding standards, evolved *because* practical rationality is not fully sufficient to regulate conduct (see Joyce 2001, pages 136-138). Moral fictionalism, however, is dependent on practical rationality in that it is dependent on all members realizing that it is in their best pragmatic interest to adopt morality's tenets and acting in rational accordance with their best interests:

But what is the strength of moral fictionalism if it does not apply to Gyges? . . . The strength of the advice that recommends moral fictionalism is no more and no less than this: it will be in the long-term best interests of ordinarily situated persons with normal human desires (Joyce 2001, page 222).

Joyce seems to be contradicting himself, therefore, by proposing a system of morality that is dependent on practical rationality, when he admits practical rationality to be insufficient to regulate conduct.

Second, Joyce admits that "...there can be no honest 'lone fictionalist' ... If it is to be viable it must be an attitude that a *group* may take towards a hitherto believed theory." Supposing that one could

rationally convince an entire group of people (unanimity would be necessary as one or a few defectors would quickly destroy any benefits gained by the fictionalists in the group) to accept fictionalism, something which seems unlikely to me in any practical sense, fictionalism is still far from a sound theory. Moral fictionalism, according to Joyce himself, requires the withdrawal of assertive force and he further acknowledges that the moral fictionalist has little to say to convince someone born without human sympathy, or someone in the situation of Gyges who can safely escape detection of any moral transgression that he commits.<sup>10</sup> Joyce has created a moral system that is fully dependent on the compliance of all members, with zero ability to regulate others' conduct within the moral community (no assertive force), and nothing to say to those who fall outside the moral community by not accepting the basic tenets of human morality. When two main goals of morality, both evolutionarily and culturally/socially, include social control and the regulation of selfish desires, Joyce's moral fictionalism seems ineffectual, if indeed it could ever be put into place at all.

A larger problem that I have with Joyce's moral project that has implications for my own conclusions regarding morality is that Joyce assumes that our moral outlook is something completely under our rational control. Joyce speaks casually of adopting moral fictionalism as though switching something as fundamental as human morality is on a par with deciding which coat to put on in the morning.<sup>11</sup> This is something that many moral philosophers throughout history seem to implicitly assume and I think that one of the broader implications of accepting the evolved nature of morality is the realization that categorizing the world in moral terms is a fundamental part of what it means to be human. We may be able to rationally control, to some degree, *what* we see as right and wrong, but that we divide actions into such categories seems to be biological and perhaps inviolable. Comparatively, it can be scientifically shown that the wavelength of light varies continuously, in opposition to the human perception of discrete colors, but I defy anyone to argue that I could change the way I perceive color to match my rational conclusions. In Joyce's own

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<sup>10</sup> In his *Republic* Plato tells the story of a Lydian shepherd, Gyges, who comes upon a ring of invisibility and uses it to commit moral transgressions undetectably, eventually gaining for himself the position of king. Joyce uses Gyges as an example of an individual who seemingly has no pragmatic reason to accept morality's dictates.

<sup>11</sup> This is especially troubling to me because Joyce himself sees morality as a fundamental biological part of human nature.

analysis the system of morality that humans employ today likely evolved for the very purpose of overriding our immediate rational conclusions about what we desire (that are often harmful in the long run, as discussed above) which seems to suggest that morality may be outside the realm of rational control. Thus I take issue with any theory that holds that we can choose to accept morality or not based on merely pragmatic concerns, or that we can choose to adopt a radically new system of morality according to the dictates of reason.

More interesting to me than Joyce's own philosophical conclusions regarding the adoption of moral fictionalism, is his mention of Hume's "philosophical distress" expressed in Hume's treatise when his skeptical thought has led him into deep angst and inaction. Hume claims himself saved by "nature herself" and as Joyce summarizes "he dines, he plays a game of backgammon, he is convivial with his friends, and in doing so his philosophical torments evaporate. When he returns to his skeptical thoughts they seem cold and unengaging, and it is only with intellectual effort that he is able to feel their force again" (Joyce 2001, 190). Joyce then distinguishes between the conclusions of someone in an "undistracted," "reflective," and generally philosophical frame of mind and someone engaged in daily life. Joyce holds, essentially, that in the philosopher's study or the classroom, the philosopher is engaged in critical examination of the principles and "presuppositions of ordinary thinking." The philosopher has therefore departed to a removed framework from which the questioning of ordinary thinking is possible. Engaged in daily life, such questioning is not possible, for to operate within the framework of ordinary thought one cannot simultaneously be involved in a critical examination of that framework. Thus, Joyce argues, it is not entirely inconsistent to accept one viewpoint in the context of philosophical examination and another in other contexts, such as daily life or scientific practice. This argument, based on contextual distinction, becomes critically important for the philosophical argument expressed that the end of this essay: I argue below that a contextual distinction is made by Hume himself regarding his skeptical examinations and I believe that not only is Hume's view of morality remarkably similar to what evolutionary theory predicts, but also that Hume's conclusions regarding skeptical thought can be readily applied to human morality as it exists today to yield satisfactory conclusions about what should be done in light of a moral error theory. I end my paper with an analysis of Humean thought as it applies to evolutionary ethics.

*Humean Philosophy and Evolutionary Ethics*

Hume's moral writing is empirical in nature; Hume is not setting forth a normative doctrine but is instead examining moral attitudes, sentiments, and beliefs from an empirical standpoint (see Hume, 1983). He makes no attempts at establishing a prescriptive moral philosophy and this, combined with the scientific nature of his examinations, is likely why his moral philosophy accords well with what is espoused by evolutionary theory. This comparison is certainly not new, Ruse notes as much in his aforementioned work, but I hope to show that Hume's conclusions regarding epistemology and morality are relevant to an examination of evolutionary ethics in light of a moral error theory.

Comparison of Hume's moral theory to evolutionary ethics has been done satisfactorily by others (see Ruse, 1986), but I will briefly state the evidence that is relevant to my further arguments. Firstly, and importantly, Hume did not see morality as a humanly created enterprise based on philosophical principles of reason. Instead, Hume argued that morality is an integral part of human nature that is emotion-based and arises in individual sentiments, communicated via "sympathy" among humans endowed with similar moral faculties. (See Rayner, 2005 for a detailed discussion of my interpretation of Hume's moral philosophy.) Similarly, evolutionary theory essentially believes morality to be based in innate human proclivities (epigenetic rules) rather than human reason. Hume also held that upon examination one could see that those actions which lead to moral "sentiments of approbation" often are synonymous with those actions which are useful to man, though Hume at no point seems to advocate a normative system based upon utility as a utilitarian might. Ruse notes that this is exactly what one would expect if morality were evolutionary in origin. We would have evolved to derive pleasure from actions that are biologically favorable: sex, parenting, and showing kindness/altruism to others are obvious examples. Finally, as Mackie points out, Hume is essentially an early proponent of error theory (Mackie refers to Hume's theory as advocating what he terms in this case "the Objectification theory," which is just another name for error theory) as Hume believes that we objectify phenomena as moral or unmoral while in reality there is no right or wrong to be found in the objects or actions themselves (Mackie, 1980).

There are certainly more comparisons between Humean thought and evolutionary ethics to be made, but most important for my argument are the ideas that morality is not a product of human reason nor operationally dependant on principles of reason, the notion that

humankind is instilled with commonalities in its moral sentiments, the error theoretical implications in Hume's moral theorizing, and Hume's relegation of reason to the supplementary role of determining the nature of an object desired by moral passions and deciding how to best achieve something desired by those passions. As Hume's thought is comparable to an error theoretical view of morality, at least in Mackie's interpretation, and because Hume's moral observations are in accordance with the predictions of evolutionary ethics, an examination of Hume's philosophical conclusions is beneficial when examining the conclusions of evolutionary ethics.

I think that Hume's epistemological thought can importantly be applied in some instances to his moral beliefs, since according to Ruse his epistemology possibly arose from ideas surrounding his moral theory. (See Kemp Smith, 1941, and Ruse, 1986.) In Hume's conclusion to *An Enquiry Concerning Human Understanding* he recognizes the impossibility of a true philosophical justification of many philosophical principles, such as induction, but holds that he cannot suspend the use of induction in everyday life as it is a necessary part of human perception of the world. He agrees that induction is *philosophically* unsupported but distinguishes this philosophical "sphere" from the "sphere" of daily life. I will quote at length from his *Enquiry* because this section forms the backbone of my argument:

The skeptic, therefore, had better keep within his proper sphere...while he justly insists that all our evidence for any matter of fact, which lies beyond the testimony of sense or memory, is derived entirely from the relation of cause and effect; that we have no other idea of this relation than that of two objects, which have been frequently *conjoined* together; that we have no argument to convince us, that objects, which have, in our experience, been frequently conjoined, will likewise, in other instances be conjoined in the same manner; and that nothing leads us to this inference but custom or a certain instinct in of our nature...But a Pyrrhonian cannot expect, that his philosophy will have any constant influence on the mind: Or that if it had, that its influence would be beneficial to society. On the contrary he must acknowledge, if he will acknowledge any thing, that all human life must perish were his principles universally and steadily to prevail...it is true; so fatal an event is very little to be dreaded. Nature is always too strong for principle. And though a Pyrrhonian may throw himself or others into a momentary amazement and confusion by his profound reasonings; the first and most trivial event in life will put to flight all his doubts and scruples, and leave him the same, in every point of action and speculation, with the philosophers of every other sect, or with those who never concerned themselves in any philosophical researches (Hume, 1977, page 110-111).

Hume is essentially in agreement here with what Joyce espouses above: namely that the context of daily life differs from the context (or "sphere") of philosophical enquiry. Furthermore, Hume considered induction something put in place by nature (something also argued by evolutionary epistemology, incidentally) and thus distinct from the

## context of rational thought:

...as the operation of the mind, by which we infer like effects from like causes, and *vice versa*, is so essential to the subsistence of human creatures, it is not probable, that it could be trusted to the fallacious deductions of our reason...it is more conformable to the ordinary wisdom of nature to secure so necessary an act of mind, by some instinct or mechanical tendency... (Hume, 1977, page 37).

Taken together, I believe that the two passages above are sufficient to derive a coherent philosophical outlook from Hume's writings which I argue is applicable to Hume's moral thought as well as his epistemology.

Had Hume had the opportunity to read Wittgenstein he perhaps would have explicitly invoked the concept of "language games" to explain what he saw as the disparate realms of philosophical examination and daily life. (See, for example, Wittgenstein, 1979.) Wittgenstein shows that there can be no knowledge (and therefore no doubt) without assuming certain principles to be fixed, similar to Hume's argument at the end of *An Enquiry Concerning Human Understanding* that holding induction to be beyond doubt is necessary for further inquiry. According to Wittgenstein, differing discourses (language games) arise in contexts where differing principles are accepted as undoubtedly true. Claims that make coherent sense within one language game will therefore be inconsistent in a different language game founded on differing principles. Accordingly, one could say that the language game of philosophical enquiry is based on an underlying framework of human logic and reason, and Hume suggests in the quote above that this is the proper sphere for the arguments of the extreme philosophical skeptic.<sup>12</sup> Hume holds that daily life and practice is not grounded in human logic, and indeed that the language game of daily life is founded on ideas that are verifiably *not* in strict accord with logical structures of thought such as cause and effect and morality, which Hume sees as emotion-based and not "conformable to reason" (Hume, 1967, page 458). Therefore, when one is operating in the language game of daily life it makes no sense to question such things as induction because the entire language game of daily life is founded on the presupposition that induction is true. In a philosophical context

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<sup>12</sup> I am not a Wittgensteinian in the sense that he seems to hold that the philosophical sphere of enquiry is meaningless given its attempt to take language out of its intended context. I am arguing here, along with what I see to be Hume's belief, that it is possible to depart to a philosophical frame of mind and examine everyday life from a removed (or skeptical) context, but that such examination often will have little or no impact on one's conduct and beliefs when one is engaged in everyday life.

that presupposes logic to be valid, morality can be shown (as it is by Mackie and Ruse) to be founded on erroneous assumptions of objective and binding moral standards. In discussions and actions within a human societal context that is *founded* on moral principles, however, the invocation of morality is acceptable because the validity of moral sentiments is a foundational assumption of society, and beyond internal doubt.

My argument concerning morality, then, is this: If morality can be shown to be a biological byproduct that is necessary for societal interactions, and not a product of philosophical reasoning or culture, then it could apply in daily life even if it is not philosophically justifiable. As I argued at the end of the first section of this paper, I believe that evolutionary theory shows convincingly that human society exists in the form that it does today largely as a result of the evolution of altruism (and eventually full-blown moral principles) and the resultant changes in human social interaction and consciousness. Evolutionary theory, therefore, shows all societal interaction to rest on the assumption that moral pronouncements are valid in the form in which they are currently made. Hume was able both to question the existence of other minds and induction in the context of philosophical enquiry, and to play backgammon against a friend unquestioningly engaging in induction and assuming his friend to be a rational being, while in the context of daily life. Taking the two passages quoted above in conjunction with one another, a reader can see Hume showing that induction, as an “instinct or mechanical tendency” instilled by nature, can be shown to be unsound in a philosophical “sphere,” while still being unavoidable and inescapable in daily life. The same, I argue, is true for morality. In a context of philosophical examination (Joyce uses the context of a classroom), morality can be shown to rest on principles that are chimerical in nature. Because morality can be shown by evolutionary theory to be an innately human quality that was created, and is primarily utilized, within a societal sphere separate from the sphere of philosophical enquiry, however, perhaps it can still be successfully employed in the sphere in which nature “intended” it to be employed. Human society and culture in general presuppose that the moral system in use by humans is valid (human society would possibly never have formed without moral principles) so in society the acceptance and employment of morality and moral argumentation isn’t inconsistent, just as the employment of induction and the assumption of other minds are not inconsistent in the context of daily life which



necessarily presupposes them to be valid. In order to interact in society as it exists today, a background acceptance of the validity of morality in the “language game” of society is requisite, just as, for example, a background acceptance of induction in the “language game” of science is requisite for further enquiry according to Hume. By showing morality to exist independently of human reason as an innate part of biological human nature and an essential part of human society, evolutionary ethics validates my above argument.

### **Conclusions and Further Implications**

Humean and evolutionary theory both argue that humans are somewhat similar in their moral and societal nature, but seem to recognize implicitly that it would be possible for an individual to exist outside of the common human societal context. Lycan believes morality to be unavoidable barring a severely alienating influence (Joyce, 2001), but even if he is right, such influences do exist. An individual that does not participate in the “language game” of society would not necessarily have any reason to adopt morality, and individuals operating within the language game of society could say little to convince him. Such individuals do exist in modern society, I would argue, though they are usually labeled as deviant and separated from society in some way. If evolutionary ethics has any substantive import, therefore, it is through the recognition that morality may depend on commonalities in humanity’s biological nature. If this were the case, those of us practicing ethical argument in a social context would have reason to attempt to regulate those “alienating” influences that Lycan speaks of. Such influences could include genetic engineering as well as hard drug use, which Lycan mentions.<sup>13</sup> Those influences could be seen as immoral due to the fact that they could remove moral proclivities from the individuals subjected to or participating in them.

Evolutionary theory has shown that morality is likely a non-negotiable component of what it means to be human and interact socially, and that society likely evolved based around the moral proclivities of human beings (as evidenced by the prevalence in human society of altruism, cooperation, reputation-building, gossip, a tendency to accumulate detailed social knowledge and apply it to moral decisions,

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<sup>13</sup> See, for example Annas, Andrews, and Isai (2002), who argue that human rights depend on common humanity. According to their argument, genetic engineering could change a human’s essential biological nature and place them beyond the scope of morality and thus should be regulated.

and other phenomena important to the practice of morality). Accordingly, I have attempted to show that all action and argument within a societal context must necessarily presuppose morality to be a valid system of thought, and therefore must necessarily accept the background assumptions of morality, such as an implicit invocation of “objective prescriptivity,” to be beyond doubt in societal practice. Therefore, the fact that in a scientific and philosophical context moral utterances can be shown to be in error does not render moral discourse within a societal context invalid, as they represent two separate spheres of discourse with two separate sets of necessary foundational assumptions. It is also certainly possible for an individual to switch between “language games” and argue morally within a societal context in certain instances, while holding morality to be invalid while operating within a philosophical context. Furthermore, substantive moral discussion is possible in a context that holds morality to be justified meta-ethically as a foundational assumption. I argue that without the complete upheaval of society, the implications reached by philosophers and biologists regarding the meta-ethical nature of morality can have little direct impact on the use of moral discourse in the societal context for which it was “intended” and in which it is typically practiced.

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