6-2014

# Evolution And Ethics

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by

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A dissertation submitted to the Graduate Faculty in Philosophy in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York.

2014

This manuscript has been read and accepted for the Graduate Faculty in Philosophy, in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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**Abstract**

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Does evolution inform the ancient debate about the roles that instinct (emotion/passion/sentiment/feeling) and reason do and/or should play in how we decide what to do? Evolutionary ethicists typically adopt Darwinism as a suitable explanation for evolution, and on that basis draw conclusions about moral epistemology. However, if Darwinism is to be offered as a premise from which conclusions about moral epistemology are drawn, in order to assess such arguments we must assess that premise. This reveals the highly speculative and metaphysical quality of our theoretical explanations for how evolution happens. Clarifying that helps to facilitate an assessment of the epistemological claims of evolutionary ethicists. There are four general ways that instinct and reason can function in moral deliberation: *descriptive instinctivism* asserts that moral deliberation is necessarily a matter of instincts because control of the instincts by our faculty of reason is regarded (descriptively) as impossible; *descriptive rationalism* asserts that moral deliberation is necessarily a matter of reasoning, which (descriptively) must control instinct; *prescriptive instinctivism* asserts that moral deliberation can involve both rationality and instinct but prescribes following our instincts; *prescriptive rationalism* also asserts that deliberation can be either instinctive or rational but

prescribes following reason. Micheal Ruse (2012), Peter Singer (2011), and Philip Kitcher (2011) each adopt  Darwinism and on that basis arrive at descriptive instinctivism, descriptive rationalism, and prescriptive instinctivism, respectively. Our current level of understanding about evolution implies that prescriptive rationalism is a more practical approach to ethical deliberation than the other three alternatives described. Evolution can inform moral epistemology, but only very generally by helping to inform us of what we can justifiably believe about ourselves and nature.

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## Introduction

The body of literature regarding evolution and ethics is mainly concerned with two issues. One is moral epistemology: generally, does evolution inform the ancient debate about the roles that instinct (emotion/passion/sentiment/feeling) and reason do and/or should play in how we decide what to do? The other issue is the good: does evolution imply non-epistemological normative considerations regarding what we ought to do? This thesis is concerned with the former issue. Evolutionary ethicists typically adopt Darwinism as a suitable explanation for evolution, and on that basis draw conclusions about moral epistemology. However, if Darwinism is to be offered as a premise from which conclusions about moral epistemology are drawn, in order to assess such arguments we must assess that premise. That requires investigating the cogency of the theoretical alternatives regarding evolution in light of the currently available empirical evidence **(Part I)**. This reveals the highly speculative and metaphysical quality of our theoretical explanations for how evolution happens, in contrast to the relative certainty of our knowledge that evolution does in fact exist. Clarifying that difference helps to facilitate an assessment of the epistemological claims of evolutionary ethicists. There are four general ways that instinct and reason can function in moral deliberation, from which many, if not all, moral epistemologists select, develop, and defend epistemological theories. Either it is all instinct, or all reason, or both but we ought obey instinct, or both but we ought obey reason: *descriptive instinctivism* **(Part II)** asserts that moral deliberation is necessarily a matter of instincts (emotions/passions/ sentiments/feelings), because control of the instincts by our faculty of reason is regarded (descriptively) as impossible, which amounts to claiming that 'morality' is essentially innate (which is a category mistake); *descriptive rationalism* **(Part III)** asserts that moral deliberation is necessarily a matter of reasoning, which (descriptively) must control instinct, and although reason is also an innate product of evolution it yields deliverances (including right action) that are not innate, which amounts to claiming that morality is essentially rational and that innately determined behavior cannot possibly be moral;

*prescriptive instinctivism* **(Part IV)** asserts that moral deliberation can involve both rationality and instinct but prescribes following our instincts; *prescriptive rationalism* **(Part V)** also asserts that deliberation can be either instinctive or rational but prescribes following reason.

Micheal Ruse (2012), Peter Singer (1981/2011), and Philip Kitcher (2011) are each leading evolutionary ethicists who adopt standard Darwinian positions in theoretical biology and on those bases arrive at descriptive instinctivism, descriptive rationalism, and prescriptive instinctivism, respectively. While the motive for turning to the biological sciences generally in ethics is surely to arrive at greater levels of certainty than would be otherwise, these theorists effectively add to the confusion regarding the implications of evolution and moral epistemology in general. Ruse, Singer, and Kitcher each depend on a quite speculative, metaphysical, and increasingly unempirical theory in Darwinism, and in so doing help to demonstrate why Darwinism is too speculative to ground moral theory. Clarifying our current level of understanding about evolution, by emphasizing demonstrable observation in analyzing the theoretical alternatives, and then critiquing the possible combinations of instinct and reason in moral epistemology in the context of our basic understanding of evolution rather than in the context of speculative meta-biology, implies that prescriptive rationalism is a more practical approach to ethical deliberation than the other three alternatives described. Evolution can inform moral epistemology, but only very generally by helping to inform us of what we can justifiably believe about ourselves and nature. We have evolved, and both our faculties of instinct and reason are in themselves products of evolution. That we can or should only employ one or the other faculty in discerning appropriate action contradicts experience and is simply impractical – we must employ both, in the right ways, at the right times, toward the right objects, which requires a principle of rational control in the application of instinct, which only an epistemology of prescriptive rationalism (virtue) allows.

## Part I: Evolution

### § 1 – Preliminaries

The occurrence of evolution is as certain as heliocentrism, but generalizations about how life evolves are speculative; evo-ethicists employ these metaphysical speculations as premises, regardless. We should at least agree that since biology relies on hypothetico-deductivism as its essential method, what we require of a scientific theory of evolution is a generalization of demonstrable evidence which yields testable predictions. Such a theory, if well established, like plate tectonics or general relativity, might make for compelling arguments in moral epistemology. Currently there is no coherent or consensus testable generalization amongst evolutionary biologists, but only metaphysical perspectives which are usually categorized into two explanatory camps. Externalists believe that evolution proceeds by the action of forces external to organisms, rely on the concepts of natural selection, mechanicism, and determinism, and represent a broader tradition that extends back to Democritus. Internalists believe that evolution proceeds by the action of forces internal to organisms, rely on the concepts of organic selection, vitalism, and teleology, and represent a tradition that can be associated with Aristotle. Furthermore, while everyone seems to agree that living matter appears to be different than non-living, monists assert that life can only manifest the properties of inorganic matter (either atoms-in-a-void or metaphysical teleology), while dualists allow that organic matter manifests unique properties that inorganic matter does not.

The literature can be confusing: biologists who produce empirical evidence are generally not trained philosophers; philosophers who theorize are generally not trained empiricists; and academic canalization prevents interdisciplinary research. Consequently, evolution theory is generally not metaphysically or epistemologically consistent or sophisticated. Darwin defends monist mechanicism, assigning evolutionary agency to inert inorganic matter while denying agency to purposive organic matter, letting his metaphysics override his observations. Lamarck argues that organisms are purposive

and drive evolution but not by means of a 'non-physical' *elan vital*; he seems to adhere to a material monism even while accepting organic purposiveness. Recent theorists are similar: the Darwinian 'Modern Synthesis' maintains strict 'materialism' even while observational evidence for organic evolutionary agency accumulates. Contemporary internalists (emergentists, mutationists, developmental biologists) usually do not clarify whether they believe in general teleology and organic purposiveness (a monism), or in a dualist general mechanicism and vitalism, or in something else, but often insist that their conclusions cohere with Darwinism. However, chance and purpose are mutually exclusive – externalists cannot be internalists, since the former deny purposiveness universally, as required for the concept of natural selection to be meaningful. Internalists cannot be externalists, since organic purposiveness negates evolutionary agency for natural selection, rendering it a merely obvious physical constraint. Darwinism contends that nothing happens contrary to physical laws, and some theorists argue that evolution is lawful, partly externalist, partly internalist, and therefore Darwinian. But if organic purposiveness is not somehow explained away, it must be the causal force of evolution compared to inert matter. Darwin realized this and denied purposiveness to organisms including ourselves, yielding a determinist and rather unempirical explanation of evolution.

While our current level of comprehension does not allow a decision on the basis of empirical evidence, and evolution theory might permanently be a problem of metaphysics, past and future theories of evolution can not claim to be empirical unless they attempt to generalize the observations rather than attempt to explain the observations away. Beliefs that deny reproducible observation in favor of concepts that contradict experience are by definition not scientific, but superstitious. Replacing religious superstition with scientific still leaves superstition, rather than testable, empirical hypotheses. We therefore have warrant for a concise but credible review of the current state of affairs in evolution theory; in order to judge evo-ethicists we must familiarize ourselves with the relevant biology. Hull (1974) states, "However, the danger in the case of teleological explanations seems to be greater than

that for causal explanations because teleological systems seem so incredibly apparent to us"(p.123). This is a half-hearted concession; nothing in biology is more observationally obvious than purposiveness, yet the dominant theory of evolution today allows it no function. Why is that? Darwin, although caught up in the spirited discussion of his time, can fairly be described as an axe-grinder extraordinaire: for example, in a (1862 letter, in 1903) he writes, "...no one else has perceived that my chief interest in my orchid book has been that it was a "flank movement" on the enemy"(p.202). That tone persists today throughout evolutionary biology. Darwin (1892/1958) writes, "There seems to be no more design in the variability of organic beings and in the action of natural selection, than in the course which the wind blows"(p.63). That is not an especially empirical point of view, for even the simplest cell manifests design so sophisticated that it is beyond our comprehension. Darwin and his followers are highly concerned with producing an explanation for evolution to replace the biblical theory of special creation. As Wallace (1868/1960) writes, "The question then is – whether the variety, the harmony, the contrivance, and the beauty we perceive in organic beings can have been produced by the action of these laws alone, or whether we are required to believe in the incessant interference and direct action of the mind and will of the Creator"(p.63). This is a false dichotomy, which also persists to this day. As empiricists, we are not obliged to believe in much at all besides the methodological primacy of demonstrable evidence, of which there is not enough to justify believing in 'scientific materialism' or 'special creation'. Such beliefs require further, non-empirical, arguments. Kleiner (2003) writes,

> "One may argue for transmutation by citing its explanation by natural selection, and natural selection's explanation by Malthus's thesis, etc., without providing any evidential connections to observation, particularly if one is just comparing Darwin's theory with creationism. The conclusion would be that Darwin's theory is superior because transmutation is explained by a deeper mechanism and creationism is not. What is missing is evidence that this explanatorily coherent mechanism actually caused species adaptation and diversity"(p.519).

Kleiner (1988) points out that Darwin was trying to emulate Newton: "Newton's achievement demonstrated the realizability of the hope of making the universe and its parts and aspects intelligible

by subsumption under a few nomological regularities whose terms are accessible to human cognition in empirically accessible domains"(p.310). But neither Darwin nor any evolutionist since has ever produced mathematical equations with which to make accurate predictions, like Newton. Instead, we get from Darwinism a Newtonian world-view regarding nature's lawfulness, minus the laws. Darwin's materialism is deeply-felt: he writes (1838-40 notes, in 1987a),

> "The general delusion about free will obvious. – because man has power of action, & he can seldom analyse his motives (originally mostly INSTINCTIVE, & therefore now great effort of reason to discover them: this is important explanation) he thinks they have none.–"(p.608); "This view should teach one profound humility, one deserves no credit for anything. (yet one takes it for beauty & good temper), nor ought one to blame others. – This view will not do harm, because no one can be really *fully* convinced of its truth, except man who has thought very much, & he will know his happiness lays in doing good & being perfect, & therefore will not be tempted, from knowing every thing he does is independent of himself to do harm.–"(p.608); "As in animals no prejudices about souls, we see particular trains of thoughts as fear of man, – crows fear gun, – pointers method of standing, – method of attacking peccari – – retriever – produced as soon as brain developed, and as I have said, no soul superadded, so thought, however unintelligible it may be, seems as much function of organ, as bile of liver. – is the attraction of carbon, hydrogen in certain proportions, (different from what takes place out of bodies) really less wonderful than thoughts – One organic body likes one kind more than another – What is matter? the whole a mystery.–"(p.613-614).

> Lamarck suffered for being too speculative: Burkhardt (1977) writes,

> "Lamarck, in other words, was too far ahead of his time to be appreciated. What seems to be more nearly the truth, at least with respect to the French scientific community, is that Lamarck's theory of evolution was rejected not because the idea of organic mutability was virtually unthinkable at the time, but because Lamarck's support of that idea was unconvincing and because, more generally, the kind of speculative venture Lamarck had embarked upon did not correspond with contemporary views of the kind of work a naturalist should be doing"(p.201).

In contrast, writes Kogan (1960), "But Darwin was also blessed with dedicated, articulate, and influential defenders"(p.3). Burkhardt (1977) writes,

> "Darwin amassed a great deal of evidence in support of his views, he had a mechanism that accounted for adaptive change more successfully than Lamarck's notion of use and disuse, and he was a shrewd strategist both in the presentation of his views and his cultivation of support within the scientific community"(p.213).

In the decades that passed between Lamarck's and Darwin's publications conditions changed; both a greater readiness and a greater push by the scientific community, along with a much more rigorous

theoretical presentation, were such that, "The vogue for Darwinism was quickly established despite the formidable opposition to it in high places"(Kogan, p.4). However, it is important to notice that both Lamarck and Darwin (along with many others) had two problems, not one: convincing people that evolution existed, and providing a causal mechanism for it, in opposition to creationism which denied both. Nowadays, denying that evolution happens is as intolerable as geocentrism, but the debate regarding the mechanism is flourishing anew. Volpe & Rosenbaum (2000) state,

> "The occurrence of biological evolution does not in itself reveal *how* evolution is brought about. An event or phenomenon may be known to us and accepted as true, even though we may not fully understand the forces that determine its existence. Scientists no longer debate that evolution, as a process, has occurred. It is in the *explanation* of biological evolution that differences of opinion have arisen. One may challenge an interpretation, but to contest the interpretation is not to deny the existence of the event itself. A widespread fallacy is to discredit the reality of evolution by seizing on points of disagreement concerning the mechanism of evolution"(p.xii).

The fact that there is a community eager even now to reject evolution as a phenomenon may explain why some biologists can be so testy regarding Darwinism, but those who wish to deny science altogether cannot be allowed to stifle scientific debate. Mayr (2001) writes,

> "That evolution has taken place is so well established that such a detailed presentation of the evidence is no longer needed"(p.xv); "Eventually it was widely appreciated that the occurrence of evolution was supported by such an overwhelming amount of evidence that it could no longer be considered a theory"(p.12); "Evolution as a whole, and the explanation of particular evolutionary events, must be inferred from observations"(p.13); "Yet these inferences have enormous certainty because (1) the answers can very often be predicted and the actual findings then confirm them, (2) the answers can be confirmed by several different lines of evidence, and (3) in most cases no rational alternative explanation can be found"(p.276).

Mayr refers to 'evolution as a whole'; obviously we cannot observe billions of years at once, but in a sense evolution can be directly observed, just not all at once. Our tailbones and embryonic gills, for examples, are observations of evolution; though we cannot observe alive our distant relatives who had gills and tails the fact that we still manifest such traits proves that they existed. Dobzhansky's (1973) title rings true: "Nothing in biology makes sense except in the light of evolution".

The problem is that zealous evolutionists do not always respect the difference between the fact

of evolution and the theories, and use imprecise and misleading language. For example, Volpe & Rosenbaum (2000) define evolution as, "This, then, is evolution – *changes in the genetic composition of a population with the passage of each generation*"(p.20) – a decidedly Darwinian definition. Mayr (2001) writes,

> "Hindsight suggests that enough facts were available soon after 1859 to have permitted the universal acceptance of Darwin's theories, but they were not universally adopted until about 80 years later"(p.73); "Darwin emphatically rejected such obscure forces. Instead, he fully accepted Newton's credo that everything in the world is controlled by purely mechanical (physico-chemical) forces"(p.76).

It is now over 150 years later, and it is not likely that Darwin's mechanicism will ever be universally accepted. Mayr (2001) argues that Darwin actually proposed five theories:

> "Two of them, evolution as such [the non-constancy of species] and the theory of common descent, were accepted by biologists within a few years of the publication of the *Origin* in 1859. This was the first Darwinian revolution. The other three theories, gradualism, speciation, and natural selection, were widely accepted only much later, during the time of the evolutionary synthesis in the 1940's"(p.275).

Actually, Lamarck (1809b/1977) proposes the non-constancy of species ("My particular conclusion: nature, in producing successively all the species of animals, beginning with the most imperfect or most simple in order to end her work with the most perfect, has gradually made their organization more complex..."(p.150)), and (1815-22b/1977) the common descent of animals ("Presumed order of formation of the animals, presenting two separate, branching series" [table] (p.163)). Matthew (1831/1971) first publishes the conceptual basis of what becomes Darwinian 'natural selection' or 'survival of the fittest' (though this latter phrase is first employed by Spencer (1864), and first appears in the 5th edition (1869) of Darwin's *Origin*):

> "As Nature, in all her modifications of life, has a power far beyond what is needed to supply the place of what falls by Time's decay, those individuals who possess not the requisite strength, swiftness, hardihood, or cunning, fall prematurely without reproducing – either as prey to their natural devourers, or sinking under disease, generally induced by want of nourishment, their place being occupied by the more perfect of their own kind, who are pressing on the means of subsistence"(p.29); "The self-regulating adaptive disposition of organized life may, in part, be traced to the extreme fecundity of Nature, who, as before stated, has, in all the varieties of her

> offspring, a prolific power much beyond (in many cases a thousandfold) what is necessary to fill up the vacancies caused by senile decay. As the field of existence is limited and pre-occupied, it is only the hardier, more robust, better suited to circumstance individuals, who are able to struggle forward to maturity, these inhabiting only the situations to which they have superior adaptation and greater power of occupancy than any other kind; the weaker, less circumstance-suited, being prematurely destroyed. This principle is in constant action, it regulates the colour, the figure, the capacities, and instincts; those individuals of each species, whose colour and covering are best suited to concealment or protection from enemies, or defence from vicissitude and inclemencies of climate, whose figure is best accommodated to health, strength, and support; whose capacities and instincts can best regulate the physical energies to self-advantage according to circumstances – in such immense waste of primary and youthful life, *those* only come forward to maturity from the strict ordeal by which Nature tests their adaptation to her standard of perfection and fitness to continue their kind by reproduction"(p.38).

The later 18th and early 19th century gave rise to a flourishing modern biology, and it should not be surprising that many of the ideas which have come to be associated with Darwinism were in published circulation even before Darwin famously set sail on HMS Beagle. Darwin (1892/1958) himself writes,

> "Early in 1856 Lyell advised me to write out my views pretty fully, and I began at once to do so on a scale three or four times as extensive as that which was afterwards followed in my *Origin of Species*; yet it was only an abstract of the materials which I had collected, and I got through about half the work on this scale. But my plans were overthrown, for early in 1858 Mr. Wallace, who was then in the Malay archipelago, sent me an essay *On the Tendency of Varieties to depart indefinitely from the Original Type*; and this essay contained exactly the same theory as mine"(p.43); "It has sometimes been said that the success of the *Origin* proved "that the subject was in the air," or "that men's minds were prepared for it." I do not think that this is strictly true, for I occasionally sounded not a few naturalists, and never happened to come across a single one who seemed to doubt the permanence of species"(p.45); "I gained much by my delay in publishing from about 1839, when the theory was clearly conceived, to 1859; and I lost nothing by it, for I cared very little whether men attributed most originality to me or Wallace; and his essay no doubt aided in the reception of the theory"(p.45).

However, since Matthew's 1831 publication clearly presents the main concepts, even Darwin's "clearly conceived" theory of 1839 is clearly not original to either him or to Wallace. McKinney (1971) writes,

> "While Wallace and Darwin ushered in the new era of evolutionary biology, they were by no means the first evolutionists, nor the first to describe the principle of natural selection. The crucial question is why did their precursors fail to convince the scientific community that species do, in fact, evolve? One possible answer is that some of these precursors – Wells, Matthew, and Blyth – had no such object in mind, although all of them to some degree touched on organic variation, evolution, and/or natural selection. Moreover, Matthew vociferously argued, after the appearance in 1859 of the *Origin of Species*, that the idea of natural selection was originally his. From America a claim was put forward for [William Charles, 1818] Wells, and recently Loren Eiseley has claimed that Darwin took the idea of natural selection from

> [Edward, 1835] Blyth. (The fact that Darwin annotated his own personal copy of Blyth's article adds fuel to the fire.)"(p.7).

Darwin (1872/1936) writes,

> "In 1831 Mr. Patrick Matthew published his work on 'Naval Timber and Arboriculture,' in which he gives precisely the same view on the origin of species as that (presently to be alluded to) propounded by Mr. Wallace and myself in the 'Linnean Journal,' and as that enlarged in the present volume. Unfortunately the view was given by Mr. Matthew very briefly in scattered passages in an Appendix to a work on a different subject, so that it remained unnoticed until Mr. Matthew himself drew attention to it in the 'Gardener's Chronicle,' on April 7th, 1860. The differences of Mr. Matthew's view from mine are not of much importance: he seems to consider that the world was nearly depopulated at successive periods, and then re-stocked; and he gives as an alternative, that new forms may be generated "without the presence of any mould or germ of former aggregates." I am not sure I understand some passages; but it seems that he attributes much influence to the direct action of the conditions of life. He clearly saw, however, the full force of the principle of natural selection"(p.5-6).

Regardless of how we might regard Darwin's self-promotion, for us assigning due credit or carefully constructing the sequences of the intellectual history are beside the point. What matters is that while the existence of evolution itself is believable, and while Darwin's theories of gradualism, speciation and natural selection are (as Mayr asserts) widely accepted, these and all other aspects of evolution *theory* have had both multiple proponents and critics, and that even the entrenched elements of Darwinism are becoming very difficult to reconcile with emerging evidence from developmental biology.

The point is to emphasize that evolution and Darwinism are not synonymous. One might not gather that from the Darwinian literature, and the obfuscation cannot possibly help in getting evolution properly taught in schools or generally understood at all. Quibbles over definitions can be endless, but one way or another we should be careful to consistently distinguish between evolution as a natural phenomenon and theories which propose causal mechanisms that allow evolution to happen. We can justifiably believe that evolution is true, but we cannot justifiably believe that current causal theories are true. Many Darwinians would disagree: Darwin (1860 letter, in 1887b); 1892/1958) writes,

> "I entirely agree with you, that the difficulties of my notions are terrific, yet having seen what all the Reviews have said against me, I have far more confidence in the *general* truth of the doctrine"(2:147); "What I believe was strictly true is that innumerable well-observed facts were

> stored in the minds of naturalists ready to take their proper places as soon as any theory which would receive them was sufficiently explained"(p.45).

However, theories are not truths and explanations are not knowledge. In empirical method, generalizations induced from observations are hypotheticals. It is reasonable and probably helpful for all concerned to keep in mind that while evolution-the-phenomenon can safely be regarded as true, causal theories of evolution can be regarded as empirical to the extent that they are inferred from observation, and metaphysical to the extent that they employ undemonstrable concepts.

Lamarck (1815-22b/1977) defends his as, "a truly general theory, linked everywhere in its parts, always consistent in its principles, and applicable to all the known data"(p.143). Kitcher (1985b) writes,

> "Again and again, in the Origin and in his letters, Darwin sounds the theme of unification and advertises the unifying power of his theory. His task in the Origin is to defend the unifying power of his problem-solving patterns, showing that it is in principle possible to instantiate them (the analogy with artificial selection), that they are broadly applicable (the lengthy rehearsal of the phenomena to which they can be applied), and that objections to the applicability of the patterns can be turned back (the responses to difficulties with "organs of extreme perfection," the fossil record, and so forth)"(p.78); "Once that approach had been adopted, it supplied a framework within which biologists could begin confirming hypotheses about the details of the history of life, according to the usual canons of inductive support"(p.79).

Lamarck and Darwin intentionally offered high-level generalizations, attempting explanatory catch-alls, that could put evolution studies firmly onto scientific, not religious, ground. There is no doubt that Darwin succeeded in that, and his overall effort, on that basis, is one of the great successes in the history of science. Our concern now, however, is not so much to deal with creationists, for although they are politically potent in some parts they are not worth taking seriously, scientifically. Now, we need an evolution theory of greater precision than either Lamarck or Darwin were able to offer, which can successfully unify the flood of new evidence coming from the world's thousands of working biologists. Both Darwin and Lamarck offered formidable theories, given the data that they had; it must be remembered that both pioneers largely produced their own data because there was not much in the

way of a body of accumulated biological evidence available to either of them. They were both instrumental figures in creating biology as an autonomous branch of science. So it is no knock on either of them if their theories are now found to be erroneous or too general, since biology has since become arguably the most dynamic and fruitful of the sciences and is yielding observational evidence that neither could have imagined. Nowadays, the evidence seems to have gotten out in front of the theories, not easily subsumable to established generalizations. There are lots of views on what scientific theories are supposed to do: for example, Huxley (1896) argues that, "In ultimate analysis everything is incomprehensible, and the whole object of science is simply to reduce the fundamental incomprehensibilities to the smallest possible number"(p.165). Perhaps, but it need be specified that even observations are not always comprehensible. Hull (1974) argues,

> "According to one currently popular view, the scientific enterprise is no more a matter of reason, argument, and evidence than are political revolutions. Perhaps so, but important differences exist between scientific and political controversies, on the one hand, and the vitalism-mechanicism dispute, on the other. On occasion at least one scientific theory prevails over another. The scientific community opts for the heliocentric system of the geocentric. Similarly, on occasion at least, political battles are settled decisively. One side wins; the other loses. But the controversy between organicism and reductionism goes on forever"(p.127).

This is a common notion in evolution literature, that somehow the purposiveness of organisms is a peripheral, non-scientific issue, even though it is the one quality that most distinguishes the living from the non-living. Lamarck, like Aristotle, pointedly incorporated organic purposiveness into empirical generalizations, whereas Darwin and mechanicists attempt to explain it away. The latter approach renders cognitive dissonance; the theory does not match what we see.

In what follows, the two main approaches to evolution theory are categorized as 'natural selection' and 'organic selection'. The former is the mechanicist interpretation; it was originally based by Darwin on a Newtonian view of lawfulness and determinism. If enough facts could be gathered, everything could be predicted, on this view. It tolerates no mysterious, non-physical/chemical forces, such as an *elan vital* or organic will. That makes it a kind of monism; whatever forces exist in

organisms also exist in the rest of the material world, and vice versa. It is externalist in the sense that 'nature' drives the evolutionary process, not organisms. Organisms are continuously foisted into the world by blind mechanical forces, and some by chance persist and reproduce, while others do not, depending on the accidental circumstances that they are exposed to in the natural environment. If it seems counter-intuitive and counter-evidential, that is because it is, but Newton's influence on science is without limit. The latter, 'organic selection', is the theoretical view that organisms do drive the course of evolution. It may or may not amount to dualism or mechanicism. Organic selection is often cast with dispersion by Darwinians for trying to inject 'mystical' or 'divine' forces into a 'natural' process, and some vitalists do that. Intelligent design or mysticism may be more easily (but not necessarily) reconciled with organic selection than with mechanicism, but organic selection includes emergence, which is the discovery that organisms manifest physical emergent properties unique to them, which are responsible for evolution. Self-organization, far-from-equilibrium thermodynamics, and consciousness are examples of properties that emerge from an otherwise apparently 'mechanical' world. Organic selection is an internalist perspective which casts 'nature' as a constraint, not a propagator, of biodiversity. We might categorize in terms of 'internalism' and 'externalism', but the forces in play are not technically divisible into 'inside' and 'outside'; whatever forces are in play they ultimately exist both internally and externally. Or the terms 'monism' and 'dualism' might be employed, but it is not crucial for natural selectionists to be monists or for vitalists to be dualists – either can be either. It is the causal account of biological creativity that divides; whereas natural selection invokes blind mechanicism, organic selection invokes living purposiveness as the driving force. There is creativity, there is organic purposiveness, there is mechanical lawfulness; in addition there is the deep physical stochasticity of quantum physics, which has yet to be accounted for in evolution theory. Empirically, these demonstrables need to be unified into a coherent generalization. If evolution somehow does not involve the fundamental characteristics of reality, that would require demonstration rather than mere bias.

## § 2 – Natural Selection

### i – Malthus

In addition to Newton, the theory of natural selection relies heavily on Malthus's (1798/1976) idea of exponential population growth running up against limited resources, which creates a struggle for existence: Weber & Depew (1996) write, "On our view, the original Darwinism was deeply informed by a metaphorical analogue of classical Newtonian dynamics, in which the inertial tendency of populations to increase their numbers is balanced by limited resources"(p.34); Volpe & Rosenbaum (2000) state that, "Wallace was also inspired by reading Malthus's essay, and the idea of natural selection came to him in a flash of insight during a sudden fit of malarial fever"(p.17); Matthew (1831/1971, p.38 above) also made the connection. Whereas Malthus (1798/1976) was describing humanity's potential for overpopulating the earth, these theorists are proposing that overpopulation is a general principle and contributing factor in all of evolution. That is, the populations of species are supposedly large enough, consistently enough, that resources required for sustenance are in short enough supply that they are always competed for intensely. On face value, that does not seem certain; starvation, for example, is unusual enough in natural ecosystems that it is conceivable that the avoidance of it might not play a dominant role in all of evolution, any more so than other factors like sexual selection, predation, or disease. Resources are limited of course, but not to the point that it can be assumed that this is a significant enough factor to incorporate it as the central concept in a general theory of evolution.

In any case evidence needs to be provided, and for every instance in which shortages are found to play a role in species' trajectories, it seems likely that another could be cited in which they do not. For example, North American buffalo eat grass all year round, drink water, and live on plains; the carrying capacity of that particular niche is such that resource shortages might not have had a decisive causal role in their natural history. Similarly, several whale populations that rely on krill are not

recovering quickly since whaling has been mostly banned; krill are abundant, so the limitations on their population growth might not be linked to limited resources. In the case of humanity, which was Malthus's concern, it would be difficult to demonstrate how competition for limited resources has had a decisive causal role in our evolution. And if 'resources' or 'limitations' are defined too broadly, so as to include all biological and physical pressures on a species, than it becomes difficult to discern a Malthusian factor in evolution from what is now known as ecology. It would not be reasonable to suggest that evolution is caused by ecology – the system of biotic and abiotic interactions in which organisms exist, anymore than it would be to say that evolution is caused by biology. So as a universal or necessary causal mechanism, 'exponential-population-growth-versus-limited-resources' is dubious, but as a materialistic explanatory platitude which can factor in an alternative explanatory scheme to creationism, it functions nicely.

**ii – 'Natural' Selection**

Undoubtedly there is a struggle for existence (which may or may not involve population pressure on resources), and differential survival, with successful competitors reproducing more offspring, thereby passing their traits into subsequent generations, causing competitively advantageous traits to develop and change the form of species over time. Darwinism claims much more than that, though. In addition, the role of organisms in the evolutionary process must be reduced to that of accidental trait or gene carriers, which by chance manifest whatever variations they have inherited, plus any non-inherited chance mutations, and which succeed biologically entirely on the basis of chance survival given the natural context in which they exist. The purposiveness, the will, the determination to survive, the choices and decisions that even simple organisms make, must be insignificant on the Darwinian view, although they are observationally obvious. Belief in natural selection, therefore, involves a prerequisite belief in materialist determinism, which casts purposiveness, will, and choice as

illusory and non-existent, entirely and universally, not just in ourselves. There are only blind mechanical forces, atoms or quants in a void, or else natural selection cannot be true and organic selection is. Obviously, that involves a fundamental metaphysical commitment that has nothing to do with empiricism, which is often aggressively defended by Darwinians with accusations of mysticism or creationism towards sceptics. But there is plenty of room for middle ground positions; purposiveness is simply what we observe and need not be associated with divine intervention. However, even if we were to grant the physicalism, the concept of natural selection is problematic. Darwin (1872/1936) writes,

> "In the literal sense of the word, no doubt, natural selection is a false term; but who ever objected to chemists speaking of the elective affinities of the various elements? – and yet an acid cannot strictly be said to elect the base with which it in preference combines. It has been said that I speak of natural selection as an active power or Deity; but who objects to an author speaking of the attraction of gravity as ruling the movements of the planets? Every one knows what is meant and is implied by such metaphorical expressions; and they are almost necessary for brevity. So again it is difficult to avoid personifying the word Nature; but I mean by Nature, only the aggregate actions and product of many natural laws, and by laws the sequence of events as ascertained by us. With a little familiarity such superficial objections will be forgotten" (p.64).

The difference between known, lawfully quantifiable, specific forces and the aggregate product of many natural laws is surely not superficial; on the contrary, it is the difference between a predictable scientific hypothesis and metaphysical faith in determinism. Darwin (1872/1936) writes,

> "It may metaphorically be said that natural selection is daily and hourly scrutinising, throughout the world, the slightest variations; rejecting those that are bad, preserving and adding up all that are good; silently and insensibly working, *whenever and wherever opportunity offers*, at the improvement of each organic being in relation to its organic and inorganic conditions of life"(p.66).

This, as an aggregate result of a determinist universe's many laws: the selecting is a metaphor for general lawfulness, but in the absence of specific, identifiable laws it is a rather hopeful metaphor for those wishing for determinism. Mayr (2001) states that,

> "The metaphor of selection pressure is frequently used by evolutionists to indicate the severity of selection. Even though it is a picturesque expression, this term, borrowed from the physical sciences, could be misunderstood, for there is no force of pressure connected with natural selection that corresponds to the use of the term in the physical sciences"(p.118);

but he also writes that Darwin, "...emphatically rejected...obscure forces"(p.76, full quote above). If selection is physical, not specifiable, but rather an aggregate force, is it not obscure? Mayr (2001) writes, "It must be remembered that the use of words such as force or pressure is strictly metaphorical, and that there is no such force or pressure connected with selection, as there in in discussions in the physical sciences"(p.281). If selection is a product of many natural laws but 'force' is metaphorical, what is 'force' a metaphor for, if not a wish for an actual, specifiable, force where none can be found? Volpe & Rosenbaum (2000) write of Darwin that, "His thesis of natural selection can be compared only with such revolutionary ideas as Newton's law of gravitation and Einstein's theory of relativity"(p.11); "In its negative role, natural selection serves as a conservative or stabilizing force, pruning out the aberrant forms from a population"(p.20). Yet Volpe & Rosenbaum (200) also state, "We may demonstrate the existence of selection, yet remain baffled as to the precise causative agent of selection"(p.75). Volpe & Rosenbaum (2000) go on to describe a common example involving the role of predatory birds in the differential success of colored moths, but this is no longer a vague force but a precise action by a biotic ecological factor in the moth's ecosystem – a factor that involves the observable purposiveness of both predator and prey. Natural selection cannot avoid the issue of determinist metaphysical bias overriding reproducible observation. It must always assert that there is no purposiveness, just aggregate physical forces.

**iii – Fitness**

> Darwin (1872/1936) writes,
>
> "I have called this principle, by which each slight variation, is useful, is preserved, by the term Natural Selection, in order to mark its relation to man's power of selection. But the expression often used by Mr. Spencer of the Survival of the Fittest is more accurate, and is sometimes equally convenient"(p.52).

Fitness basically refers to how well an organism flourishes in its ecological niche, and is ultimately

measured by reproductive success. As Volpe & Rosenbaum (2000) state, "In other words, the more reproductively fit individuals tend to be those who are better adapted to the environment"(p.20). However, such generalizations are not insightful on their own, for it is perfectly obvious that some individuals reproduce more than others, and that reproduction is a costly task requiring vigor; the terms 'fit' and 'adapt' could be replaced with other words and still get across the idea that some organisms flourish more than others. The point of an evolution theory is to tell us how; to provide some insight into the differentiation. Sober (1993) writes,

> "Natural selection occurs when there is variation in fitness. This variation may have the consequence that some traits increase in frequency while others decline. In addition, the variation in fitness that occurs within a population will have its source in the complex nexus of relationships that connects organisms to their environments and to each other"(p.68).

There is no insight in these sentences; they are merely Darwinian-speak for 'some organisms reproduce more than others', which is perfectly obvious. There is only something in the way of a theory being defended by Darwinians when the determinist materialism is kept in mind; otherwise the language of natural selection is often just a peculiar choice of words with which to describe nature, that are in themselves often devoid of theoretical content. 'Fitness' only takes on theoretical meaning when attached to an explanation of *how* which ever organism *has become* more or less fit, and the Darwinian theory amounts to chance matching between an organisms' inherited traits and the environmental scenario. On this view organisms have very little if anything to do with their own fitness, because on determinism either they get lucky by way of inheritance or circumstance or both, or they do not. All of their own reactiveness, will to survive, changeability, and choices are, on the materialist view, determined by physical traits and by greater but as yet undiscovered physical-chemical lawfulness.

Nature does not have to be interpreted that way, and when it is not it need not necessarily amount to mysticism rather than empirical suspension of judgment. Certainly, it is the determinist who is out on a theoretical limb, so to speak, more so than those who argue that evolution cannot currently

be scientifically explained. Sober (1993) continues,

> "Suppose we notice that two chromosome inversions change frequency in a population of *Drosophilia* in the course of a year. Investigation reveals that the changes are due to selection. We discover that one type has a higher viability than the other, so we explain the change in frequency by saying that the one type had a greater fitness value than the other. We then inquire as to the physical basis of this difference in fitness. We discover that the one chromosome inversion produces a thicker thorax, which insulates the fly better against low temperatures that prevail. Once this physical explanation is obtained, we no longer need to use the word "fitness" to explain why the traits changed frequency. The fitness concept provided our initial explanation, but the physical details provide a deeper one. This does not mean that the first account was entirely unexplanatory. Fitness is not the empty idea of a dormitive virtue. The point is that although fitness is explanatory, it seems to be a placeholder for a deeper account that dispenses with the concept of fitness"(p.74).

However, there is still not an explanation there: there are two chromosome inversions, responsible for thin or thick thoraxes, but 'selection' equals 'higher viability' equals 'change in frequency' equals 'greater fitness'. What causes the chromosome inversions? Are they programmed responses to temperature stimuli, driven by fruit fly food preferences (perhaps during certain seasons an especially delectable food source is only found in the cold, and this behavioral drive has led to genetic changes to lower the risk to the organism), or is there a predator avoidance element (in which case the behavior of the predator species may drive the genetics of the prey)? The selectionist theory generally assigns genetic changes to chance mutation, but the evidence for greater levels of genetic responsiveness is growing. Any significant behavioral elements in the causal chains must be cast as purely material, but this is not so easily or necessarily done. The point is that 'fitness' is not explanatory, anymore than 'selection', unless and until the materialist-determinist world-view is entered into the explanation. Both terms could serve just as well in a vitalist theory of evolution which cites purposiveness as the ultimate cause of variable reproductive success, rather than chance.

**iv – Tautology**

Sober (1993) provides the following definition as an example of a tautology:

"Perhaps the following is a serviceable definition of fitness: Trait X is fitter than trait Y if and

> only if X has a higher probability of survival and/or a greater expectation of reproductive success than Y. There is room to quibble with the adequacy of this statement, but fine points aside, it is a reasonably good definition of fitness. The fact that the theory of evolution *contains* this tautology does not show that the whole theory is a tautology. Don't confuse the part with the whole. Perhaps what is most preposterous about the "tautology problem" is that it has assumed that the status of the whole theory depends on the verdict one reaches about one little proposition. The two main propositions in Darwin's theory of evolution are both *historical hypotheses*. The ideas are that all life is related and that natural selection is the principal cause of life's diversity are claims about a particular object (terrestrial life) and how it came to exhibit its present characteristics. It is quite clear that neither of these hypotheses can be deduced from the definitions alone. Neither is analytic. Darwin's two part theory is no tautology"(p.70).

Sober's example, simply translated as 'Fit organisms are reproductive' seems analytic; like 'unmarried' and 'bachelor', 'fit' and 'reproductive' seem synonymous enough. That all life is related is no longer theoretical or Darwinian. But what about the overall theory that 'evolution is caused by natural selection'? Is that a tautology? Does the term 'evolution' essentially include 'natural selection', as 'bachelor' includes 'unmarried'? Only if natural selection is defined neutrally, without reference to determinism, as it sometimes is. That is, if 'selection' only refers to differential reproduction and inheritance, which are bare necessities for any change in the form of species, and which is basically what 'evolution' means, then the statement would seem to be analytical, or a tautology. But when the full meaning of Darwinism is included there is no tautology, since evolution is not necessarily caused by strictly mechanical/lawful forces as Darwinism contends. The risk for Darwinians, though, is that avoiding the tautology leaves them exposed as metaphysicians rather than empiricists. On a strictly empirical basis, since observations do not allow for decisions regarding determinism (that is, we see lawful regularity, we see purposiveness, whether either is/can be subsumed by the other is beyond us), natural selection seems like a tautology: organic change is caused by differential reproductive success is caused by organic change. Hull (1974) writes,

> "As it now stands, the principle of the survival of the fittest is officially a tautology in certain operationally oriented versions of evolutionary theory, and those versions suffer accordingly. It is not a tautology in those versions of evolutionary theory which recognize the key role played in evolution by the organism-environment relation"(p.69).

Hull is not clear what he means by 'operationally oriented', but he describes how when fitness is defined simply as leaving more offspring the tautology arises. Hull (1974) apparently thinks that when the empirical content of 'fitness' is spelled out, the tautology problem goes away: "In actual practice, fitness claims are made with respect to a particular trait or set of traits, not "all" the traits of the organism"(p.68). But then Hull (1974) says, "If only we had "complete knowledge" and an all-encompassing theory, the fate of every individual organism could be predicted with absolute certainty, and the survival of the fittest would become a tautology"(p.69). So, supposedly if we attach some empirical content, but not too much or too little, the principle of survival of the fittest is not a tautology. That does not seem correct; empirically we are confined to observations, which reveal organisms going about their reproductive business with variable success. Of course it is useful to descriptively gather information about which traits lead to success in which organisms and so on, but those traits are not strictly mechanical or accidental by observation, but purposive. The point of 'the survival of the fittest' is to cast the evolutionary process as mechanical, and only by interpreting observations deterministically is theoretical content added to observations of differential reproductive success. Observations can only inform us of what traits work for which organisms; a strictly empirical generalization might only amount to something like, "Some traits yield success, others do not", which is the full meaning of 'survival of the fittest' until the mechanicism is added in to avoid the tautology. That Darwinism is metaphysical does not render it unscientific (for metaphysics has a role in science), but that it is so needs be acknowledged in order to properly distinguish the facts of evolution from the theories.

**v – Difference**

Another conceptual difficulty with natural selection concerns the *process* of selecting. Darwin acknowledges that he regarded the idea as analogous to artificial selection, in which keepers select

individual organisms for preferred traits. Obviously nature is not a keeper, and obviously we are supposed to receive it as a metaphor, but for the suggestion to make any sense whatsoever there has to be something like actual selecting going. Darwin defines nature as an aggregate of natural laws and forces, but also denies anything other than that physicality to even organisms as sophisticated as ourselves. The problem is that this leaves no difference between that which is supposedly selecting, and that which is supposedly selected. Without some sort of difference between the two, the metaphor fails, and there is no theory. Certainly, we can agree that evolution occurs, and that it manifests great creativity and direction. On the Darwinian view, not only is there no meaningful difference between life and non-life, but all the creativity and directionality of evolution is assigned to the inorganic non-life and none to organisms. Why does the side that appears to have directionality denied it, while the side that does not appear to have directionality assigned it? If we are to try and play along with Darwinism, we have to somehow manage the notion that inert matter can somehow select itself; that somehow the same stuff can differentiate with one part manifesting a causality that the other part does not. That does not seem like a reasonable thing to believe, which only leaves the conceptual possibility that since the same stuff cannot select itself, there is no real selection after all, and no direction, and no creativity, and that in the final analysis evolution does not actually exist at all, but is merely another illusion like free will. Atomist, random mechanicism leaves no room for a difference between organic and inorganic matter sufficient enough to warrant the concept of selection, but just random motion. The purposiveness of life solves the problem, but mechanicists are committed to not allowing any supposedly obscure or spooky a-mechanical forces in their theory of evolution. Unfortunately, the notion that atoms/quants can lawfully select other atoms/quants is obscure and spooky. Darwin (above) refers to the affinities of chemical acids and bases, and to the governing force of gravity, but does he really expect anyone to believe that matter selects matter? Would we gain anything explanatorily by arguing that clouds are naturally selected? Or lightning bolts? If not, why should we think it reasonable

to believe that of organisms?

**vi – Teleology**

Aristotle offers compelling metaphysical arguments for teleology, and Kant epistemological, in no small part because empirically we observe purposiveness in organisms. Nevertheless, Mayr (2001) argues,

> "Does any process in evolution require a teleological explanation? The answer is an emphatic "No." In earlier periods many authors thought that a perfection-giving process was involved in evolution. Before the discovery of the principle of natural selection, one could not imagine any other principle than teleology that would lead to such seemingly perfect organs as the eye, annual migrations, certain kinds of disease resistance, and other properties of organisms. However, orthogenesis and other teleological explanations of evolution have now been thoroughly refuted, and it has been shown that indeed natural selection is capable of producing all the adaptations that were formerly attributed to orthogenesis"(p.275).

Some of Darwin's contemporaries saw it that way: Huxley (1864/1960) writes, "If we apprehend the spirit of "Origin of Species" rightly, then, nothing can be more entirely and absolutely opposed to Teleology, as it is commonly understood, than the Darwinian theory..."(p.49). Others did not: Wallace (1883/1960) argues,

> "But even if my particular view should not be the true one, the difficulties I have put forward remain, and, I think, prove that some more general and more fundamental law underlies that of natural selection. The law of "unconscious intelligence" pervading all organic nature...such a law; but to my mind it has the double disadvantage of being both unintelligible and incapable of any kind proof. It is more probable that the true law lies too deep for us to discover it; but there seem to me to be ample indications that such a law does exist, and is probably connected with the absolute origin of life and organisation"(p.68).

Recent arguments revolve around the use of teleological language and whether or not that is necessary, as if the actual existence of purpose is unimportant and only a linguistic problem remains. Hull (1974) writes,

> "Yet the biological phenomena that gave rise to the idea of teleology are still with us, and biologists still continue to talk teleologically. Are biological phenomena so different from those of physics and chemistry that they require a radically different explanatory vocabulary? Teleological modes of expression are often more convenient than ordinary causal talk when describing...living systems, but are they indispensable"(p.101)?

Hull (1974) concludes,

> "Of course, as science develops, all such situations [apparently teleological systems] may be successfully reanalyzed into closed systems governed exclusively by process laws on the model of the solar system. If so, both causal and teleological language will be eliminable from scientific discourse. But until then, both modes of description and explanation will remain part of the scientific enterprise and will have to be treated adequately, if not respectfully, by philosophers of science"(p.124).

So Darwinians disagree on this, but ultimately the problem we are interested in is whether or not purposiveness actually exists, not whether we are somehow linguistically conflicted or theoretically nonplussed. Darwinism is committed to the actual non-existence of organic purposiveness for the sake of theoretical coherence; if teleology is admitted, natural selection must be replaced with organic. Of course, that flatly contradicts our best evidence – reproducible observation, the compelling 'principles' of Darwinism notwithstanding. Curiously, one does not encounter arguments against our observations of purposiveness in Darwinian literature; we have them, but they supposedly amount to ignorance, either of a kind that scientific progress will eventually dispel, or of an illusory kind that Darwin refers to (above) in reference to free will and praise/blame. Kant (1790/1987) provides an interesting view, that organic purpose may be a law of human experience, but Darwinians generally do not indulge idealism. Sober (1993) writes,

> "This suspicion – that functional concepts should be purged from biology - is encouraged by the fact that the scientific revolution in the seventeenth century eliminated teleology from physics"(p.83); "Newtonian physics made it possible to think that a meteor may simply not have a function; it behaves as it does because of its conformity to scientific law. Talk of functions and goals is quite gratuitous. Perhaps progress in biology requires a similar emancipation from functional notions"(p.83).

Reductionists are rightly enamored with Newtonian physics, but why can they not admit that organisms are altogether unlike Newtonian point-mass objects? There is nothing in common there; to wish that biology will someday be reducible to mechanical laws is an act of faith. Until the directionality of organic matter is proven to be determined responses to physical and chemical stimuli, teleology is

simply the reporting of objective experience. It may not be reasonable to ever expect such a proof, for we and apparently some other species of animals manifest free will, which has had to emerge somewhere along the line, gradually from simpler life-forms. To argue mechanicism all the way up is no more empirical than to argue purpose all the way down; these are metaphysical perspectives.

**vii – Probability**

Hodge (1991) writes,

> "...natural selection unlike gravity is a cause without a law.... If it is a force then perhaps there ought to be a serious analogue of mass in any theoretical elaboration of the action of natural selection, and yet no such analogue seems to exist"(p.458); "....if natural selection is understood as a probabilistic causal process (rather than, say, a law or principle) then we can avoid many confusions about associated concepts, e.g., fitness, and about the empirical testability or otherwise of the theory of evolution by natural selection"(p.459).

On determinist, Newtonian terms, probability is a bad thing, but as Weber & Depew (1996) point out,

> "Thus the philosopher of science John Herschel, on whose view of natural philosophy Darwin had relied, and on whose good opinion of his own proposal he had counted, dismissed Darwin's theory as a "law of higgledy-piggledy" that did not conform to the behavior of genuine Newtonian systems"(p.35); "Herschel was simply declaring that Darwin had not succeeded in meeting criteria for good science on which they both agreed. The fact that Darwin was deeply disappointed by this rebuff shows how important the issue was to him"(p.35); "...population geneticists preserved and enhanced Darwinism's traditional gradualism. They did so by treating statistical "higgledy-piggledy" not as the vice that Herschel too it to be but as what a new scientific climate was revealing to be a considerable virtue"(p.35-36).

Supposedly, then, we might be able to attach more or some meaning to selection by reconsidering it in terms of statistics; this could be reconciled with determinism as a mere lack of total information. If we knew all the facts we could predict with certainty evolutionary outcomes, but with limited information we must be satisfied with mere probabilities. Mayr (2001) argues,

> "Natural selection is a process of elimination, and Darwin adopted Spencer's metaphor in his later work. However, his opponents claimed that it was a tautology, a circular statement, by defining "the fittest" as those who survive, but this is a misleading claim. Actually, survival is not a property of an organism but only an indication of the existence of certain survival-favoring attributes. To be fit means to possess certain properties that increase the probability of survival"(p.116).

It is difficult to see how any meaning is added, though, moving from defining 'fit' in terms of 'survival' to 'probability of survival'. We are still left to wonder what causes the increased probability, to which Darwinians respond – inherited traits received by chance which by chance match environmental conditions. Pure material luck, in other words, with no role for purpose. Behavior amounts to whatever is genetically hard-wired into individual organisms at conception. Organisms have no liberty to help determine their fates; all perceived choice or will or responsiveness is illusory: this, again, being a metaphysical not empirical world view that might seem plausible to some regarding the bacteria, protist, fungi, and plant phyla but surely not the animal. Are earth's organisms really no different than its salts? Do the sparkles in children's eyes seem to anyone the same as the sparkles of precious gems? Materialist scoffing and cynical accusations of mysticism and creationism, ignorance and superstition, cannot in the slightest way refute the epistemological and scientific significance of objective human experience. Life creates its own probabilities; bio-mechanicism may amount to a well-meaning perversion of empiricism.

Sober (1993) writes, "Natural selection involves *un*equal probabilities, and for this reason, it is not a random process"(p.36). But this supposed inequality is a product of accidental matching of genetic traits with ecological conditions; the chance matching is surely random unless the traits are not accidental, but they have to be on Darwinism because there are no acquired traits only inherited. Sober (1993) argues, ""Random mutation" does not mean that the different mutants are equiprobable"(p.37). But Darwinism does not tolerate mutationism, which Sober (1993) acknowledges, adding, "Variation is generated at random, but selection among variants is non-random"(p.38). Mayr (2001) states,

> "However, every attribute is ultimately the product of variation, and this variation is largely a product of chance. Many authors seem to have a problem in comprehending the virtually simultaneous actions of two seemingly opposing causations, chance and necessity. But this is precisely the power of the Darwinian process"(p.229).

Mayr (2001) explains,

> "Almost all those who oppose natural selection failed to realize that it is a two-step process. Not realizing this, some opponents have called selection a process of chance and accident, while others have called it deterministic. The truth is that natural selection is both. This becomes obvious as soon as one considers the two steps of the selection process separately. At the first step, consisting of all the processes leading to the production of a new zygote (including meiosis, gamete formation, and fertilization), new variation is produced. Chance rules supreme at this step, except that the nature of the changes at a given locus is strongly constrained. At the second step, that of selection (elimination), the "goodness" of the new individual is constantly tested, from the larval (or embryonic) stage until adulthood and its period of reproduction"(p.119); "This second step is a mixture of chance and determination. Clearly, those individuals with characteristics providing the greatest adaptedness to the current circumstances have the greatest probability of survival. However, there are also many chance elimination factors, so that there is no pure determination even at this step. Everything is somewhat probabilistic"(p.120).

There is nothing precise in equivocating between chance and determinism, but anyway in a fixed, closed experimental or observational set-up one might be able to usefully ascribe non-randomness to the differential success of various trait combinations. Of course, real ecosystems are not closed or fixed, and meaningful evolution generalizations must involve large time scales, so successful matching of accidentally generated traits to habitats must involve blind luck. That is only a consequence of the Darwinian characterizations of natural systems, however; if traits can be acquired, or organisms can react by means of non-determined faculties, or niches are constructed not merely inhabited, then selection can be non-random, but not 'natural' so much as 'organic'.

**viii – Variation**

Perhaps the issue most crucial for understanding evolution is variation. Natural selection is held to act on existing variants in populations; traits that wind up making it into subsequent generations by means of the successful reproduction of their carriers must have conferred some benefit or else they were neutral. Deleterious traits are selected against by failure to reproduce. The genetic variations that arise do so randomly, but the precise mechanism which causes variation to happen at all is unknown, pending further research. It might be protested that if the cause of variation is unknown, how can we be certain that it is random? Perhaps variations are non-random, creating mutation pressure or bias on the

evolutionary process. Darwinians reject the possibility of mutationism (the notion that mutation itself directs evolution) by both citing a lack of proof for it (though it is acknowledged as an area needing more research), and by arguing that ultimately the persistence of variations in populations is determined by external conditions. Even if there is non-random mutational bias it will be overridden by natural selection: Mayr (2001) writes, "Only rarely is such biased variation sufficiently strong to override the eliminating power of selection"(p.100). Organisms are not allowed any role in directing evolution, even a seemingly 'material' one; natural selection is the sole creative cause of evolutionary trajectories. Darwinians can not give an inch to mutationism, for fear of losing a mile to organic selection. Our level of understanding about genome dynamics is still low, and still a cause for much speculation. Darwin (1874/1936) writes, "With respect to the causes of variability, we are in all cases very ignorant; but we can see that in man as in the lower animals, they stand in some relation to the conditions to which each species has been exposed, during several generations"(p.415); but he nevertheless goes on:

> "In my work on the variation of domestic animals, I have attempted to arrange in a rude fashion the laws of variation under the following heads: ...Changed conditions.... Use and disuse.... Cohesion.... Multiple parts.... Compensation.... Mechanical pressure.... Arrests of development.... Reversion.... Correlated variation.... All of these so-called laws apply equally to man and the lower animals, and most of them even to plants"(p.416).

Darwin was not aware of Mendel and worked a century before the discovery of DNA. Volpe & Rosenbaum (2000) offer the current view:

> "Darwin's theory appeared to many scientists to be refreshingly simple: some chance variations better adjust individuals to their environments, and such variant individuals tend to survive and transmit their favorable characteristics to descendants. This is the essence of natural selection, and it seemed harmless enough until Darwin hinted that humans might have evolved from "lower" forms of life" (p.240); "The causes of naturally occurring, or *spontaneous*, mutations are largely unknown"(p.38); "We may say that spontaneous variations are random and unpredictable"(p.38).

Obviously there is an enormous amount of biodiversity on earth, so any theory of evolution must include a viable explanation of how so much variation occurs. If organic matter is itself denied a

creative role or force in evolution, that leaves an explanatory gap that Darwinians attempt to fill with the concept of the gene pool. Volpe & Rosenbaum (2000) state,

> "The process of mutation furnishes the genetic variants that are the raw materials of evolution"(p.51); "From what we have already learned, we should expect to find in natural populations a large number of deleterious recessive genes concealed in the heterozygous state"(p.69).

Supposedly, there is neither any sort of general pressure produced by mutation causing biodiversity to expand into or compete for ecological niches, nor do mutations arise directly in response to environmental stimuli. Rather, selection acts on existing variation in the gene pools: this constant supply of mutations is sufficient for natural selection to produce biodiversity by presenting ever-changing environmental conditions and an infinite variety of ecological niches, in the context of the Malthusian population pressure and competitive struggles to survive. Mayr (2001) explains,

> "According to this theory, an enormous amount of genetic variation is produced in every generation, but only a few individuals of the vast number of offspring will survive to produce the next generation"(p.85); "Mutations continually replenish the variability of the gene pool"(p.114); "Before the role of selection was fully understood, it was believed by many evolutionists that some evolutionary changes were due to "mutation pressure." This is a misconception. The frequency of a gene in a population is in the long run determined by natural selection and stochastic processes, and not by the frequency of mutation"(p.98); "There is no mutation pressure"(p.280).

It might be tempting to think that this may amount merely to abstract conceptual wrangling or a verbal dispute, but at issue is the fundamental question of what primarily causes evolution – blind mechanical laws of matter and motion, or some sort of emergent teleological property of organisms. Asserting the former requires supporting evidence, one line of which is Darwinism's gradualism. In light of Lyell and the profoundly new perspective of geological time (a contemporary analogue might be the new telescopic evidence of vastly more galaxies than had been imagined), Darwin recognized that the vastness of time plays a significant role in evolution which allows for the possibility of a mechanicism.

Gould (2002) writes,

> "Darwin reasoned that natural selection can only play a [creative or directional] role if evolution

> obeys two crucial conditions: (1) if nothing about the provision of raw materials – that is, the sources of variation – imparts direction to evolutionary change; and (2) if change occurs by a long and insensible series of intermediate steps, each superintended by natural selection – so that "creativity" or "direction" can arise by the summation of increments"(p.140); "Darwin understood that if any of these claims failed, natural selection could not be a creative force, and the theory of natural selection would collapse"(p.140).

Conceptually, if variation is random but not directed (which is mutationism), then evolution can only occur very slowly; Lyell's theory of plate tectonics allowed Darwin's theory of natural selection. Gould's theory of punctuated equilibrium does not challenge Darwinism fundamentally: on evolutionary time scales long periods of ecological stability and sudden disruptions create conditions in which vacated niches can reasonably be thought to be fillable still by the process of natural selection. Punctuations may be momentary or last tens of thousands of years; the refilling of niches by new species may also be immediate or drawn out over millions of years; but in the context of evolutionary time scales of hundreds of millions or billions of years, while the equilibriums appear punctuated in the fossil record, there is still enough time at all stages to allow conceptually for the possibility of gradual natural selection. Stoltzfus (2006) argues that natural selection can be regarded as,

> "...applying equally to "infinitesimally small" or "great and sudden" modifications; to "indefinite" or "definite" (directed) variations, and to rare or ever-present variations. By longstanding tradition, then, the principle of natural selection is bundled with Darwin's conjectures about variation, and invoked as an external force, a creative principle, or a "mechanism of evolution""(p.305).

But it is for more than traditional reasons that Darwinism insists on gradualism and non-directed random mutation, as explained by Gould. Internalists often mistakenly assert that internalism and externalism can cohere. Stoltzfus (2006) continues,

> "The architects of the Modern Synthesis, eager to resurrect Darwinian themes and antagonistic to mutationism, conceded only that mutation is "ultimately necessary," erected the "gene pool" as a buffer between mutation and "evolution," and denied any specific influence of mutation-and-altered-development on directionality and dynamics. This parochial view was formalized, and drummed into the heads of several generations of students, by *redefining* "evolution" as the sorting out of pre-existing variation, so that the causal "pressures" or "forces" of "evolution" may be defined as mass-action forces that shift frequencies. Ostensibly, these "forces" include "mutation," but they do not include a discrete process that introduces novelty, which is what the

mutationists meant by "mutation""(p.310).

Novelty happens, necessarily by way of mutation, but according to Darwinism the ultimate source of the novelty that appears in populations is not mutation but natural selection. Ayala (2005) writes,

> "Natural selection is a statistical bias in the relative rate of reproduction of alternative genetic units. Natural selection has been compared to a sieve which retains the rarely arising useful genes and lets go the more frequently arising harmful mutants. Natural selection acts in that way, but it is much more than a purely negative process, for it is able to generate novelty by increasing the probability of otherwise extremely improbable genetic combinations"(p.27).

That is, novel variations spontaneously arise but only persist if they happen to by chance match external conditions and confer reproductive advantage. It is this insistence on the domination by the external over the internal in the process of evolution that clarifies the meaning of Darwinism. The possibility that species may generate variation sufficient to impose themselves on ecosystems, either by sheer volume to create a general mutation pressure, by directed biases in mutation which may lead to niche construction, or by mutational leaps by which changes in populations occur relatively immediately, or by some combination, is rejected by Darwinism because it amounts to organic selection. Mayr (2001) writes,

> "Not all the individuals in a population can have the same mutation simultaneously.... A successful mutation...can be gradually incorporated into a population as long as it is able to pass through a period of polymorphisms in which it coexists with the previous phenotype, until it has completely displaced the original gene. Admittedly it is sometimes difficult to understand how a certain new phenotype was thus acquired..."(p.79); "A structure that is able to adopt a new function is said to be *preadapted* for such a shift. Preadaptation is a purely descriptive term and does not imply any teleological forces"(p.207); "Any change of function event simulates a saltation, yet it is actually a gradual populational change. It affects at first only one individual within a population and becomes evolutionarily significant only if it is favored by natural selection and spreads gradually to the other individuals of the population and then to the other populations of the species"(p.207).

Darwinians insist on this interpretation that the mutations or preadaptations are purely chance events that do not happen in response to the environment. Sober (1993) writes, "Mutations are said to be

"random" in that they do not occur because they would be beneficial to the organisms in which they occur"(p.37); Weber & Depew (1996) state, "...Variants having certain traits are not produced *because* they are needed for specific adaptations. It is just this claim that separates Darwinism from the Lamarckian tradition in evolutionary biology"(p.35).

That evolution cannot occur by what Darwin (1844 letter, in 1987c) describes: "Heaven forfend me from Lamarck nonsense of a "tendency to progression" "adaptations from the slow willing of animals" &c"(p.2), is in turn based on the notion of isotropic development: Mayr (2001) writes,

> "The pathway from nucleic acids to proteins is a one-way street. Proteins and information contained in them cannot be translated back into nucleic acids"(p.272); "The genetic material is constant and does not permit an inheritance of acquired characteristics. The genotype, interacting with the environment, produces the phenotype during development"(p.114).

This unidirectional influence of genotypes on phenotypes is required for natural selection, since if development is bidirectional, and/or acquired traits can be inherited, organisms would thereby possess the power to direct their own evolution and natural selection could amount to a mere constraint not a predominant directional force. Unfortunately for Darwinians, the evidence from development biology is starting to mount against them. Mayr (2001) writes,

> "Even though many of the causal phenomena of development are still insufficiently understood, what is understood is entirely compatible with a Darwinian explanation. It seems that some of those who raise these criticisms assume that only the adult phenotype, the last stage of a developing organism, is exposed to selection. In reality, every stage of a developing organism, from the fertilized egg (zygote) on to old age, is constantly subjected to selection" (p.270).

However, whether natural selection is omnipresent is not the issue, but whether natural selection is the directive, creative force of evolution. Organisms manifest what are known as reaction norms, which amount to ranges of responsiveness to stimuli which are supposedly coded for in genes. Darwinians argue that reaction norms suffice to explain any plasticity and reactivity in organisms, and that they cannot amount to organic influence on genomes by way of behavioral or other purposive behavior, or include bidirectional exchange of information between genomes and proteins (and by extension with

the rest of the organism including behavior and niche). Hull (1974) writes,

> "Mendelian genetics is that the genotype sets limits to the possible variation in the phenotype, limits termed reaction norms. The environment the organism happens to confront determines which of these many possible phenotypes is actually realized"(p.16).

Mayr (2001) states,

> "The phenotype is the result of the interaction of the genotype with the environment during development. The amplitude of variation of the phenotype produced by a given genotype under different environmental conditions is called its *norm of reaction*"(p.90).

The questions that developmental biologists are confronting are whether organisms are themselves influencing how their own phenotypes develop by way of their niche construction and behavior, and whether the phenotype can modify the genome, and whether such modifications are heritable. Mayr (2001) writes,

> "Some species have a very wide reaction norm; they can adjust their phenotype to wide variations of the environment and have a high phenotypic plasticity. The fact that it is the phenotype, rather than the genotype, that is the target of selection allows the existence of considerable genetic variation in a gene pool"(p.129).

If species can adjust phenotypes, then some such adjustments must be a result of behavior as organisms decide which conditions they are exposed to. If the organisms, through their choices, determine their own phenotypes, which are then selected, the directive force of 'nature' gives way to the organisms. Darwinians must maintain that organisms do not actually make choices, that their purposiveness is illusory all the way across the spectrum of organic life, in order to maintain their theory, which is the metaphysical interpretation not supported by observational evidence. Mayr (2001) states,

> "When we look at what happens to the genotype during evolutionary change, particularly relating to such extreme phenomena as highly rapid evolution and complete stasis, we must admit that we do not fully understand them"(p.272); "The structure of the genotype is perhaps the most challenging remaining problem of evolutionary biology"(p.273).

Since it is the genome that serves as the courier of information in evolution, if we are only beginning to understand it, how can strong theoretical assertions about evolution be justified? Given a lack of evidence, is not the appropriate stance to withhold judgment?

**viiii – Niches**

The process by which species come to inhabit the particular ecological niches that they do is of no small significance to understanding evolution. Here especially the intentionality, choices, behavior, and general purposiveness of organisms seems undeniable. Even if purpose is reduced to the will to survive, that alone is something that does not appear in the non-living, and that is what likely drives organisms to construct ever more ecological niches. The Darwinian view is that population pressure and competition force organisms into unfamiliar ecosystems, but it needs to be pointed out over and over that naturalists need not read nature that way. The finches of the Galapagos, for instance: why did they ever decide to leave mainland South America at all? Why did they decide to stay? Maybe they were forced out somehow, or maybe their is something about bird life in particular that motivates pioneering behavior. For example, Sol & Price (2008) report evidence that brain volume is positively correlated with rates of adaptive radiation in birds. Volpe & Rosenbaum (2000) write,

> "Organisms throughout the ages have seized new opportunities open to them by the absence of competitors and have diverged in the new environments"(p.136); "The factors that led these lobe-finned fishes to venture onto land are unknown. The impelling force might have been population pressure or simply the inherent tendency of individuals, particularly the young, to disperse"(p.136).

Darwin (1872/1936) argues,

> "How strange it is that a bird, under the form of a woodpecker, should prey on insects on the ground; that upland geese which rarely or never swim, should possess webbed feet.... But on the view of each species constantly trying to increase in number, with natural selection always ready to adapt the slowly varying descendents of each to any unoccupied or ill-occupied place in nature, these facts cease to be strange, or might even have been anticipated"(p.361).

Mayr (2001) writes, "Many other pieces of evidence show that the classic definition of the niche, as a property of the environment, is preferable to the one that considers it a property of the organism" (p.152). It suffices for our purposes here to notice the term 'preferable'; if organisms have a role in constructing their own niches or are not necessarily pressured into them by way of large populations or competition, then an element of organic selection may be as reasonable an explanation of the facts.

**x – Speciation**

Speciation is another problem that Darwinians prefer to explain in terms of chance, mechanical, and external pressures. Their are two types of speciation, allopatric and sympatric. In the former, geographic isolation of populations eventually results in sufficient genetic differentiation that the populations can no longer produce viable or reproductive offspring. In the latter, the populations are not geographically or otherwise separated but coexist, yet differentiation occurs anyway, sometimes due to sexual selection. In Cichlid species of tropical fish, coexisting species have differentiated due to females developing finicky preferences for particular color and courtship behaviors; birds species also demonstrate this phenomena. Mayr (2001) writes, "Sympatric speciation through the simultaneous acquisition of mate preference (sexual selection) and niche preference has now been demonstrated for several families of freshwater fishes"(p.181). If the organisms' mate and niche preferences are driving speciation, these preferences are in these cases driving evolution altogether, for the morphological changes associated with sexual and niche preferences are pervasive. Mayr (2001) describes,

> "...the theory of *speciational* evolution, according to which isolated founder populations, established beyond the contiguous species range, may undergo a more or less profound genetic restructuring. This and the subsequent inbreeding of the new population may lead to the production of some unusual new genotypes and new epistatic balances. Large populations are apparently more inert, less able to break the effects of multiple epistatic interactions than small, genetically impoverished populations. Such small populations are less constrained and able to make greater departures from the ancestral norm"(p.193).

Kleiner (2003) argues,

> "We have seen that Mayr's model for speciation supposes that the founder bottleneck produces increased homozygosity as a consequence of sampling, drift and inbreeding. Accordingly, there is little to draw from for the production of a significantly novel genome, and thus the initial conditions for the outcome of the genetic revolution are absent. Mayr's model thus lacks causal coherence. If it were realized in nature, it would fail to produce new species"(p.523); "Adding the premise that there is no alternative account of the happening – that the happening is 'surprising' – does not enhance the explanatory power of the account, nor does it justify credence in the account"(p.523).

**xi – Summary**

Kitcher (1985b) describes natural selection as better than creationism (p.54); but deplorably vague (p.77); as a confession and structuring of ignorance (p.60); which offers a ready-made schema for explaining observations (p.68). While there is no denying Darwinism's persuasive appeal, the notion that natural selection just makes sense somehow, that it explains everything, is due to the fact that it cannot be denied that organisms struggle to exist and variably reproduce. As a metaphorical platitude, natural selection cannot be refuted. When Huxley (1863/1960) argues that,

> "Now, Mr. Darwin's hypothesis is not, so far as I am aware, inconsistent with any known biological fact; on the contrary, if admitted, the facts of development, of Comparative Anatomy, of Geographical Distribution, and of Palaeontology, become connected together, and exhibit a meaning such as they never possessed before; and I, for one, am fully convinced that if not precisely true, that hypothesis is as near an approximation to the truth as, for example, the Copernican hypothesis was to the true theory of the planetary motions"(p.47);

there is a sense in which he is correct simply because not all organisms succeed: there *is* a sorting out process, there *are* significant degrees of luck and probability involved, and mechanical laws of nature *must* be influential. But, when Huxley (1863/1960) states, "At the present moment, but one such process of physical causation has any evidence in its favour; or, in other words, there is but one hypothesis regarding the origin of species of animals in general which has any scientific existence – that propounded by Mr. Darwin..."(p.47), he rules out teleology as a possible cause in biology as if it were necessarily illusory even though purposiveness *is* what we observe (non-living forms of matter do not struggle to persist). It is as if biology must be reconciled with Newton, or else it cannot amount to a proper scientific field; 'physical' necessarily means 'determinist' and science necessarily means physics. Fisher (1930/1960) argues,

> "For advocates of Natural Selection have not failed to point out, what was evidently the chief attraction of the theory to Darwin and Wallace, that it proposes to give an account of the means of modification in the organic world by reference only to 'known,' or independently demonstrable, causes. The alternative theories of modification rely, avowedly, on hypothetical properties of living matter which are inferred from the facts of evolution themselves"(p.132).

But this assessment inverts the empirical meaning of 'knowns' and 'hypotheticals'. That living matter manifests the property of purposiveness is more 'known' and less 'hypothetical' because independently demonstrable on the basis of reproducible observation, than is natural selection, which is more 'hypothetical' and less 'known' because it is not independently demonstrable. Natural selection is *literally false* (according to Darwin); gravity is not. When considered in depth as a metaphysical faith in a purely mechanical, atomist universe with no emergent elements of organic purposiveness or consciousness, natural selection may not even amount to an empirical hypothesis at all. Whereas Butler (1880/1960) argues, "Certainly "nature," – for this is what "natural selection" comes to, – is rather an important factor in the operation, but we do not gain much by being told so"(p.100), Spencer (1893/1960) writes,

> "On the other hand, if we regard Nature as that which it is, an assemblage of various forces, inorganic and organic, some favourable to the maintenance of life and many at variance with its maintenance – forces which act blindly – we see that there is no such selection of this or that trait, but that there is a selection only of individuals which are, by the aggregate of their traits, best fitted for living..."(p.103).

One, the idea of selective but blind forces is a contradiction; natural selection appears to be a metaphor for an impossibility. Two, there is a force at work in evolution that is not blind. Nothing else in nature struggles to persist other than living organic matter, so why call it blind, why pretend purposiveness does not exist, why construct an empirical theory that denies the object under observation? Biology owes a lot to Darwin and his theory, and as a place marker for further research the concept of natural selection has served well. Perhaps a contemporary analogue may be the concept of dark matter/energy – the term 'dark' playing the same role as 'natural'. We may learn about the 'dark' and the term may become obsolete; we may have arrived at that point with the term 'natural'.

## § 3 – Organic Selection

### i – Emergence

> Sober (1993) writes,
>
> "...*physicalism*, claims that all living things are physical objects"(p.22); "*Vitalism*, at least in some of its formulations, rejects this physicalistic picture. It says that living things are alive because they contain an immaterial ingredient – an *elan vital* (Henri Bergson's term) or an *entelechy* (the Aristotelian term used by Hans Driesch). Vitalism therefore maintains that some objects in the world are not purely physical"(p.22); "The point to recognize is that vitalism does not become plausible just because we currently lack a physical explanation"(p.22); "Vitalism is held in low repute by biologists today because no strong positive argument on its behalf has ever been constructed"(p.24); "How might current physics be applied to problems in biology? Clearly, there are many areas of biology for which we have no clue how to do this"(p.25); "Perhaps a completed science would be able to unite biology and physics, but this claim about some hypothetical future says nothing about how we should conduct our investigations in the present"(p.25).

In order to avoid a verbal dispute, we need to clarify some things about Sober's point of view, which is fairly typical amongst biologists today. Current physics cannot describe very well even what a physical object is, since matter itself is more mysterious now than ever. Apparently, we can only perceive 4% of it and the rest is 'dark'; the 'baryonic' 4% appears as somewhat divisible, fundamentally unpredictable, electromagnetism. So to say that all living things are physical is not very informative, especially considering that living organic matter behaves very differently than inorganic. Vitalism, on all formulations, recognizes organic purposiveness and takes it seriously as a phenomena that cannot be explained by anything that physics has so far taught us about matter in general. While some vitalists are ontological dualists, some are not; an *elan vital* might be conceived as a force outside or beyond current mechanical physics but not beyond matter altogether, or as something more mystical in a dualist conception. Knocking down dualist vitalism alone is a straw man argument – since current physics cannot explain biology there is no strong argument against monist vitalism, while empirical observation provides a strong argument against any simple physicalism that holds out hope that eventually biology will be reduced to anything that resembles current physics. Whereas 'vitalists' at least attach a term to

the obviously fundamental property of life – 'purpose' or 'teleology' or 'vitalism' – and recognize that this property is what needs to be understood, 'physicalists' tend to wish/hope/explain that property away, ridicule those who disagree, and canalize research according to their biases. At least, we ought to agree to conduct investigations empirically, and be guided by observations as much as by metaphysics.

At this most fundamental level, there is a growing body of research focused on explaining the physics of organic matter. Bailly & Longo (2008) argue,

> "In our view, biological causality needs to integrate some notion of finalism, in a theoretically autonomous approach to living systems. When and if reduction to physical theories will be fully accomplished, then (a suitable) physical causality, possible-time oriented, will surely "explain" in more appropriate terms, the various circularities of life, including the causal ones. But this may require a change or an enrichment of current physical theories as much as quantum mechanics and relativity are ongoing deep revisions toward unification (of space and time – non-commutative geometry – or of the very objects – string theories)"(p.327).

Similarly, Shubert-Soldern (1962) argues, "All the foregoing considerations have led to the the phenomena of life are unique. The laws governing animate processes are not just special instances of the laws that govern inanimate nature"(p.209). Hull (1974) writes,

> "One of the contentions of mechanistic reductionism is that in the course of time, scientists will produce theories that can be synthesized into a single unified theory. Many scientists, especially biologists and social scientists, argue against both the possibility and desirability of such a program, fearing that the unity of science really means the unity of physics. But presuming that such a super theory is possible, it surely will look no more like contemporary physical theories than contemporary biological theories. Well then, what shall we call it? Call it mah-jongg for all that it matters"(p.132).

Yet it is crucial that we recognize that biology will eventually, and perhaps is now, forcing on physics a completely new theory, and with it a completely new scientific perspective on reality. In biology, and in general, we are still living with a fairly deterministic/mechanical world view coming from science; leading 20th century and current physicists still insist that a determinist unified theory is coming. Perhaps it is, but there is no sign of it at the moment. Contemporary researchers trying to make progress in reconciling our understanding of animate and inanimate matter likely face the same intolerance that Lamarck did. Huxley (1942/1960) writes,

> "We have elaborate mathematical theories demonstrating how selection will operate in different circumstances. And we have proved that Lamarckian inheritance or inherent vital urges to change do not exist..."(p.136);

Huxley (1859/1960) states,

> "The Lamarckian hypothesis has long since been justly condemned, and it is the established practice for every tyro to raise his heel against the carcase of the dead lion. But it is rarely either wise or instructive to treat even the errors of a really great man with mere ridicule..."(p.45);

Darwin (on p.157 of his 2nd edition (1835) copy of Lamarck (1815-22)) notes, "Because use improves an organ, wishing for it, or its use, produces it!!! Oh – "(Burkhardt (1977) p.178/253); Weissmann (1909/1960) states,

> "But if it be asked why we are unwilling to admit the cooperation of the Darwinian factor of selection and the Lamarckian factor, since this would afford us an easy and satisfactory explanation of the phenomena, I answer: *Because the Lamarckian principle is fallacious, and because by accepting it we close the way towards deeper insight*"(p.115).

Lamarck was by training neither a physicist nor a philosopher but a zoologist, and while his biophysics ideas are not systematic they are still very interesting in light of current developments. Although he (1794/1977) argues that organisms manifest, "...a particular principle...the origin and essence of which can no doubt not be assigned physically"(p.59), Burkhardt (1977) argues,

> "Despite the vitalistic ring of the phrase "the power of life," Lamarck was no vitalist. To the contrary, the whole of his biological thought was decidedly materialistic"(p.151); "Lamarck was unwilling to attribute vital properties to matter itself. Instead he claimed that vital properties were a function of organization and organic movement"(p.157); "But Lamarck did provide an explanation of the power of life – a very mechanical explanation based on hydraulic action and involving the solid parts of organic beings, the ponderable fluids contained within these parts, and the subtle fluids that abounded everywhere and penetrated living bodies more or less easily"(p.151); "He felt confident in identifying two subtle fluids in particular, *caloric* and *electricity*, as playing the essential roles in the excitatory cause of life: caloric being responsible for the property of all living bodies that he called "orgasm," and electricity being responsible for the excitation of the movements and activities of the more complex animals"(p.153).

Lamarck (1815-22b/1977) writes that it is, "...a genuine error to attribute to nature a purpose or any intention whatsoever in her operations" (p.160, Burkhardt); but also (1817/1977) that,

> "Is not what we observe simply with the class of *insects* a thousand times greater than what is necessary to make us perceive that the limits of nature's powers in no way allow her to produce

> so many marvels herself! And to force the obstinate philosopher to recognize that here the will of the supreme author of all things has been necessary and has alone been sufficient to bring into existence so many admirable things"(p.184, Burkhardt)?

The remarkable thing about Lamarck's biophysics is not whether he was a monist or a dualist, a vitalist or a mechanicist, but that he made an attempt to describe the physics of organic life in a way that does not amount to a promise of some future reduction of purposiveness to known mechanical causes. Two centuries passed with very little follow-up until lately; for those who take organic purposiveness seriously there is no contradiction in attempts by biophysicists to formulate whatever regularities there are about it – they must be there after all. The significance lies in the potential novelty of whatever physical theories arise; whereas Darwinians attempt to reconcile evolution with existing theories of physics, statistics, and genetics but sacrifice our observation of organic purposiveness, any new physics that accounts for purpose may force a reassessment not just of evolution but of reality altogether.

Research appears to be coalescing around what is being called 'new' or 'far-from-equilibrium' thermodynamics. The 2nd law of thermodynamics states that matter and the universe generally move in the direction of greater entropy, or less order, as measured by heat or pressure or chemical potential. In the case of the entire universe, the moment of the supposed big bang at its beginning was a point of low entropy or high order, and the universe has been moving towards high entropy or low order ever since. Eventually the universe should simply fly apart and dissipate altogether, although some theorists have believed in an eventual 'big crunch' which will reverse the process as gravity overrides the momentum caused by the explosive 'big bang', although lately it has been discovered that the universe is expanding at an accelerating rate. This would seem to have the potential for being interpreted as a very large scale violation of the 2nd law, since some sort of pressure emanating from the dark energy is apparently causing an increase in order, or lower entropy, and thereby the accelerating expansion. Organisms are orderly systems thermodynamically; they move in the opposite direction of inanimate matter by generating higher temperature, pressure, and chemical gradients that are far from equilibrium –

equilibrium being the normal dissipation of order/increase in entropy. Researchers attempting to understand how the non-equilibrium thermodynamics of organisms are generated and maintained are offering insights into the challenges posed by biophysics. Bailly & Longo (2008) write,

> "In this paper, we propose to consider living systems as "coherent critical structures," though extended in space and time, their unity being ensured through global causal relations between levels of organization.... Our main physical paradigm is provided by the analysis of "phase transitions".... The "coherent critical structures" which are the main focus of our work cannot be reduced to existing physical approaches, since phase transitions, in physics, are treated as "singular events".... In the case of living systems, these coherent critical structures are "extended" and organized in such a way that they persist in space and time" (p.309); "Autopoiesis is a way of describing the maintaining and/or improvement of metabolism, which is the (minimal and) contingent finality of life"(p.327); "In our view, the relevant property of autopoiesis is that not only it produces networks that produce components that produce those networks, but also that it contrasts the inevitable growth of entropy related to the intended and irreversible flow of matter and energy. As a matter of fact, there are two kinds of entropies that participate to the process. On one side, the thermodynamic production of entropy related to irreversible energy consumption, an entropy which, by this, continually grows. On the other, autopoiesis decreases entropy by increasing or maintaining organization. Organization, thus negative entropy, increases during embryogenesis; later, it is maintained, though ageing may slow the (re-)organization process. Death supervenes when the (re-)organization process cannot oppose anymore or not sufficiently, by decreasing entropy, the increase of the other kinds of entropy"(p.328).

Kurakin (2010) writes,

> "Studies of relatively simple inorganic nonequilibrium systems...show that creating a gradient (e.g., temperature, concentration, chemical) within a molecular system of interacting components normally causes a flux of energy/matter in the system and, as a consequence, the emergence of a countervailing gradient, which, in turn, may cause the emergence of another flux and another gradient, and so on. The resulting complex system of conjugated fluxes and coupled gradients is manifested as a spatiotemporal macroscopic order spontaneously emerging in an initially featureless, disordered system, provided the system is driven far enough away from equilibrium"(p.5); "The macrostructures emerging in far-from-equilibrium systems are of a steady-state nature in the sense that what is actually preserved and evolves over relevant timescales is an *organization* of relationships between interacting components, a form, but not physical components comprising a given macrostructure. Members come and go, but the organization persists"(p.5); "It should be pointed out that, since the organizational dynamics of individual proteins, cells, organs, organisms, and economies display long-range correlations in time, the structure and dynamics of any living system – be it a protein, a cell, an organism, an organization, or an economy – carry within them the memories of previous experience accumulated at multiple scales. Continuous reproduction of such memories in the form of the specific structures and dynamics...is what makes the self-organization and performance of any living non-equilibrium system...increasingly fast, reliable, and reproducible as its experience accumulates"(p.6); "To summarize, the self-organization of living systems is driven by

> economic competition, obeys empirical laws of nonequilibrium thermodynamics, and is facilitated and, thus, accelerated by memories of living experience embodied in the adaptive structures and dynamics of interacting constituents. Because the structures and dynamics of individual constituents at all levels of organizational hierarchy always remain ambiguous and unspecified, albeit shaped by evolution and experience, the *individual choice* as a force of both innovation and conservation becomes a decisive factor in organizational dynamics, either promoting or inhibiting the survival and success of the developing and adapting whole"(p.8); "Life/intelligence is an open-ended, evolving structure-process of energy/matter flow, a stream of consciousness"(p.9).

Any evidence for irreducible elements of memory and decision at the fundamental level of the physical emergence of order is relevant in deciding whether evolution is driven by natural or organic selection. Karsenti (2008) states,

> "Something incredibly important for the understanding of the origin of life and evolution is emerging here: self-organization principles tell us that if there is an ensemble of products that can interact dynamically to reach a functional steady state, they will do so robustly at least under certain conditions"(p.260); "The principles that are associated with self-organization processes tend to indicate that the driving force behind the diversity of life and its evolution is not mainly selection. Instead, it may derive largely from the intrinsic properties of living matter and the combination of various self-organized functional modules"(p.261).

Perhaps Darwinians might argue that the pockets of order that organisms manifest are up against the generally increasing entropy/disorder of the world in general, and that rather than challenging Darwinism the 'new dynamics' is just an updated expression of natural selection: organisms which persist and reproduce are those that successfully defy the 2nd law of thermodynamics and pass on the memory of their successful forms to their offspring; the 2nd law – representing 'nature' – is the dominant force in play, and all the forces are mechanical. However, the notions presented of memory and choice indicate a non-randomness inherent in the physics of bio-emergence, or perhaps the presence of something like a life-force that once up and running simply defies the 2nd law to an ever-increasing degree. Biophysicists seem undecided regarding how to characterize organic matter's relation to the 2nd law of thermodynamics. Weber & Depew (1996) write,

> "...dissipation and organization are conceived as opposites. That is why in the late nineteenth century, a cultural moment obsessed with the depressing implications of classical thermodynamics, learned folks concluded that evolution was contradictory to thermodynamics.

> (That view, as well as other anachronisms of nineteenth century science, has been preserved, even embalmed, in the rhetoric of scientific creationism.) Later, in the context of the deepening probability revolution, it was recognized that in the great current that sweeps the universe toward dissipative heat death eddies of order and complexity are statistically permissible. On this account, the Second Law is after all consistent with evolution"(p.43).

Weber & Depew (1996) consider seven possible formulations for relating emergence and natural selection, and conclude that, "In spite of...epistemological and methodological problems, however, a growing consensus has now shifted in favor of the widespread occurrence of constraints on selection..."(p.46), but add that,

> "There does not seem any inherent reason, however, why the roles assigned to self-organization and natural selection by advocates of the view just reviewed might not conceivably be reversed. Rather than being considered auxiliary to natural selection, self-organization may be turned into evolution's major cause, and selection treated as an auxiliary force"(p.49).

But there is an inherent reason to favor this latter view: natural selection is a metaphor, a cause without a force, whereas bio-emergence research is indicating the existence and presence of self-organizing biological forces. Surely, identifiable forces ought to take theoretical precedence over metaphors. Morowitz (1986) states,

> "Nowhere do the laws of thermodynamics generate structures. Structures come from mechanics, kinetics, quantum mechanics, hydrodynamics, etc.; thermodynamics provides limitations on structures which arise due to the forces of nature"(p.474).

It would seem that whatever forces are at work in the emergence of biological order, they are by definition violations of the 2nd law of thermodynamics, which necessarily works in the opposite direction as organic life. Weber *et al* (1989) write, "It is universally conceded that biological systems conform to the constraints of the Second Law of Thermodynamics"(p.374); but this is like saying that 'hot' and 'cold', or 'up' and 'down', are synonymous. Besides, in an accelerating universe, might not the 2nd law itself be an exception, rather than rule?

**ii – Organization**

Moving from biophysics to biochemistry, researchers are here also reporting interesting and

relevant findings and ideas. Kirschner *et al* (2000) write,

> "The basis of our understanding of supramolecular structure has been the doctrine of self-assembly. Self-assembly is an extension of the central dogma of molecular biology.... It is exemplified by a virus particle, which generates a single highly ordered (to atomic dimensions) structure.... Today a post-genomic view of self-assembly would extend this concept to a description of how each gene product functionally interacts with other gene products.... Self-organization is an extension of self-assembly, but employing several new chemical principles..... Self-organizing systems are characterized by reaching a steady state, where there is a continuous energy consumption and gain and loss of material"(p.80); "At the turn of twenty-first century, we take one last wistful look at vitalism, only to underscore our need ultimately to move beyond the genomic analysis of protein and RNA components of the cell (which will soon become a thing of the past) and to turn to an investigation of the "vitalistic" properties of molecular, cellular, and organismal function. Such an opportunity is now possible because of the great advances in genetics and in molecular and cell biology during.... The genotype, however deeply we analyze it, cannot be predictive of the actual phenotype, but can only provide knowledge of the universe of possible phenotypes. Biological systems have evolved to restrict these phenotypes, and in self-organizing systems the phenotype might depend as much on external conditions and random events as the genome-encoded structure of the molecular components. Yet out of such a potentially nondeterminist world, the organism has fashioned a very stable physiology and embryology. It is this robustness that suggested "vital forces", and it is this robustness that we wish ultimately to understand in terms of chemistry. We will have such an opportunity in this new century"(p.87).

We might be much further along than we are if only more scientists were willing to actually study what they observe; as Kauffman & Clayton (2006) state,

> "Notice that what is needed for comprehending minimal autonomous agents is a theory of the organism-level organization of biochemical and other processes. Unfortunately, no adequate theory of the organization of such processes currently exists in the scientific or philosophical literature, even in outline. And yet a reproducing cell does it. Had we an adequate theory of how organismic processes self-organize, we would be able to conclude something more interesting about the ontological emergence of minimal autonomous agents than the bald fact that it occurs"(p.511).

Over two centuries ago, Lamarck (1802/1977) had a theory:

> "That the characteristic of the movement of fluids in the supple parts of the living bodies that contain them is to trace out routes and places for deposits and outlets; to create canals and various organs, vary those canals and organs according to the diversity of either the movements or nature of the fluids causing them; finally, to enlarge, elongate, divide, and gradually solidify these canals and organs.... That the state of organization in each living body has been formed little by little by the increasing influence of the movement of fluids and by the changes continually undergone there in the nature and state of these fluids through the usual succession of losses and renewals"(p.156, Burkhardt).

We have since learned that cell membranes do in fact form canals and cell organelles throughout the interior of cells in addition to creating an external barrier, and that these canals do function in helping to create the various gradients that allow nonequilibrium dynamics to develop; as Kauffman *et al* (2008) state, "The working of a cell is, in part, a complex web of constraints, or boundary conditions, which partially direct or cause the events which happen"(p.37). Weber *et al* (1989) write,

> "Biological systems are stabilized far from equilibrium by way of self-organizing, autocatalytic structures that serve as pathways for the dissipation of unusable energy and material. Because biological systems are "dissipative structures" in this sense, entropy production and organization are positively correlated"(p.375); "Now it is quite possible to imagine systems that are in every way the opposite of Newtonian systems, whether deterministically or statistically considered. The systems that Prigogine calls dissipative structures embody this possibility. Such systems are open, non-deterministic, irreversible and non-decomposable"(p.395); "Finally, because they are composed of complex modules that arise historically and irreversibly across the micro-macro divide, such systems are only partially decomposible. They incorporate their historical trajectories into their very nature"(p.395-6).

Electricity was one of Lamarck's proposed 'fluids': Vandenberg *et al* (2011) report that bioelectrical signaling in embryos is necessary for mapping developing structures, not DNA and protein production.

> At a higher level of organization, Newman (2010) describes an emergence of multi-cellularity:
>
> "The intracellular genetic mechanisms that arose and were refined over several billion years in the single-celled ancestors of the modern animals are not obvious bases for developmental processes, particularly ones involving pattern formation and morphogenesis"(p.281); "The relevant physical determinants (as will become clear) were not new to the physical world, but rather became newly relevant to living systems in conjunction with with a change in their spatial scale and cell-cell proximity. I suggest that the ancient and continuing role of certain physical mechanisms in the molding and patterning of multicellular aggregates has provided a fount of complex forms that could be selected and refined over the course of evolution. The all but inevitable emergence, in this view, of organismal motifs that were not products of natural selection, but rather served as its raw material, raises questions concerning both the necessity and sufficiency of the mechanisms of the neo-Darwinian Modern Synthesis for the origination of ancient multicellular forms"(p.282); "The scenarios described above, whereby novel forms emerged relatively abruptly by the mobilization of previously irrelevant physical processes in the multicellular state (itself brought into existence by the newly employed force of cell-cell adhesion), raise the perennial specter of the "hopeful monster"(p.293); "Since the resulting pattern or form would potentially self-organize in a significant portion of the founding population, there would no question of a single, isolated individual needing to become established on its own"(p.293); "Since adaptive selection is not the engine of morphological innovation in this new view, the problem of enhanced fitness of incrementally different

> intermediate forms (a difficulty of strict Darwinian accounts) is no longer an issue. But since potential saltational change is an element of this scenario, the relation of novel forms to their originating niches raises new issues of its own. Here the concept of niche construction enters the picture, providing a means for novel forms to establish new ways of life, with isolation eventually leading to genetic divergence from the originating population and loss of the capacity to revert to the initial phenotype"(p.299).

Similarly, Muller (2010) states,

> "Although the pre-metazoan organisms from which complex forms arose already possessed genomes, the anatomical assemblies that constituted the first metazoan body plans were not built directly from genes, but from cells that combined as a consequence of their physical properties, which were, in part, mediated by gene products. Hence these structures were not immediate results of genetic evolution, but represented an emergent consequence of cell and tissue organization"(p.309).

Muller (2010) categorizes the emergence of multicellular animal life (metazoans) as 'type I novelty'; 'type II' happens when a, "Discrete new element [is] added to an existing body plan"(p.310) (turtle shells for example) and involves, "...a systems reaction that does not belong within the incremental variation paradigm"(p.313). These findings indicate that organic life can and has organized along developmental paths that have little if anything to do with natural selection. The external environment poses a mere constraint or limitation on the viable possibilities; it does not act as a creative or directive force in the evolutionary process. Still, natural selection is a well-hatched and coherent theory even if evidentially challenged, and for many some/any theory may be more appealing than living with no theory at all. A comprehensive theory of organic selection has yet to be elucidated, though perhaps there is now a sufficient amount of empirical evidence in place. Central to any such theory will be a plausible and compelling definition of organic life: whereas Di Bernardo (2010) offers a chemical definition: "...life is not in the individual properties of every single molecule (in details) but it is a collective property of systems of molecules interacting with each other"(p.97); Kauffman *et al* (2008) write, "A random soup of organic chemicals has no meaning and no organization. We may therefore conclude that central feature of life is organization – organization that propagates"(p.39). Kauffman is known as an advocate of chaos theory, and offers a rather Platonic definition of life: Kauffman &

Clayton (2006) write, "The first step for conceiving this form of agency is the existence of an open, far from equilibrium, thermodynamic system"(p.505), but they also state:

> "Note that self-propagating organization in this sense does not involve matter alone, energy alone, information alone, or entropy alone. It is a process that involves all these – and something more as well. It appears that this self-propagating organization...is a new form energy-matter organization in the world; it is living matter, and it is ontologically emergent"(p.510); "Furthermore, and importantly, the *laws that govern the whole are not to be found in any specific physical realization of such a system*, but rather in the mathematics of this broad class of dynamical systems, *whatever* their material realization"(p.518).

However, Prigogine & Stengers (1999) argue, "Nature's inventiveness goes beyond mathematical classifications"(p.156). That such a conversation is currently flourishing is promising; Lamarck was dismissed by his contemporaries for being too speculative but at least he was trying to generalize and characterize our observation of organic purposiveness in terms of empirical biology, rather than concoct a metaphysical world-view. Hopefully the newer work reviewed here will continue on in that spirit, rather than wind up being stunted or canalized into still dominant determinist lines of research.

**iii – Mutationism**

The basic idea of mutationism is that genetic mutations are a creative force of evolutionary changes, but there is more than one way that this can potentially occur according to its advocates. One way is that, as opposed to population pressure, there is a general mutation pressure caused by the sheer volume of mutants foisted into ecosystems which leads to organic expansion into empty or weakly occupied niches. Another is that significant leaps are accomplished via mutants, referred to as 'sports' or 'hopeful monsters', resulting in saltational (non-gradual) shifts that natural selection has little to do with. Another way is that persistent biases in mutational direction lead to particular evolutionary trajectories; a related idea is that mutations can take on a kind of directional momentum due to ecological factors which biases shifts in populations towards one or another trajectory. Mutationism probably includes what is known as neutral or random mutation/drift/evolution; Nei *et al* (2010) write

that in comparing the genetic base sequences which code for the same protein's production,

> "...the extent of sequence divergence between species increases as the divergence time increases, but the proteins in different species often have essentially the same function.... Amino acid substitutions outside the active sites are mostly neutral or nearly neutral. We believe this is a "biologically meaningful"definition of neutrality"(p.266); "Identified functionally important amino acid substitutions for rhodopsin genes by experimental methods showed that ~95% of amino acid substitutions are more or less neutral"(p.289).

Proulx & Adler (2010) argue, "Our analysis suggest that eu-neutrality is rare, perhaps vanishingly rare"(p.1348), but Nei *et al* (2010) write, "However, many recently published papers claim the detection of positive Darwinian selection via the use of new statistical methods. Examination of these methods has shown that their theoretical bases are not well established and often result in high rates of false-positive and false-negative results"(p.265). The issue is of interest because it suggests either that genes may not determine evolutionary outcomes; if the odds of different species arriving by chance at similar solutions (traits) with different genetics is very low, then perhaps some other evolutionary processes are guiding besides natural selection. Or, if genes are regarded as determining outcomes, then since they may be selectively neutral the traits that do exist may be purely products of random drift (calling to mind Darwin's quip about organisms being no more designed than the wind). While natural selection is ultimately a random process, the idea is that external conditions dictate evolutionary trajectories. Random drift suggest the denial of even that; species may really blow around like breezes through physical habitats. Nei *et al* (2010) also refer to molecular clocks – "...the approximate constancy of the rate of amino acid substitutions..." – which suggest the possibility that traits evolve, "...at a constant rate over a long period of time"(p.269). That is suggestive of mutation pressure; Nei *et al* (2010) write,

> "It is often assumed that many characteristics that distinguish humans from apes have evolved by natural selection, and therefore the study of natural selection is essential to understand human evolution. However, because there was no "purpose" for making humans when the human lineage first separated from the ape lineage, the human lineage must have evolved by fixation of mutations that happened to be advantageous or neutral in the niche to which humans moved. There is no reason to believe that the human lineage has been subjected to more natural

selection than the chimpanzee lineage"(p.281-282).

This passage nicely demonstrates the kind of ill-defined conceptual angst that is commonly evident in recent literature; there is a suggestion that mutation and/or behavior has driven the trajectory, not natural selection, but which and to what degree is not elaborated. Here, as always, Darwinians can ask for more specificity knowing that it will not immediately be forthcoming, and safely refer to the omnipresence of external constraints and limitations on organic existence as the deciding factor.

Mutationism has a history: de Vries (1906/1960) writes,

> "The current belief assumes that species are slowly changed into new types. In contradiction to this conception the the theory of mutation assumes that new species and varieties are produced from existing forms by sudden leaps"(p.120); "...One means of change lies in the sudden and spontaneous production of new forms from the old stock"(p.121); "This assumption requires only a limited number of mutative periods, which might well occur within the time allowed by physicists and geologists for the existence of animal and vegetable life on earth"(p.121).

Bateson (1909/1960) writes that the,

> "All this indicates a definiteness and specific order in heredity, and therefore in variation. This order cannot by the nature of the case be dependent on Natural Selection for its existence, but must be a consequence of the fundamental chemical and physical nature of living things"(p.125).

Morgan (1916/1960) argues,

> "It does not seem probable that we shall ever again have to renew the old contest between evolution and special creation. But that is not enough. We can never remain satisfied with a negative conclusion of this kind. We must find out what natural causes bring about variations in animals and plants; and we must also find out what kinds of variation are inherited, and how they are inherited"(p.127).

Some current researchers are reporting progress: Stoltzfus (1999) writes,

> "Mutation is often said to be "random," but such statements refer not to a proposed uniformity in the spontaneous production of variation, but to a logical restriction on causal models of microevolution, to the effect that selection acts subsequent to the origin of variation and cannot influence it directly"(p.178); "A distinction between two entirely different sources of bias is useful. The more immediately obvious type is a "mutational" bias, an inequality in the rates of mutational change between specific genetic states that arise from specific aspects of the machinery for replication, repair, and transmission of genetic material. Detailed molecular studies invariably reveal such nonuniformities.... However, even if all rates of mutation between specific genetic states were equal, a second source of bias would exist, because some categories

> of possible variants will be populated by more genetic states than others..."(p.178); "Outside of studies of neutral evolution, biases in the production of variants are only rarely viewed explicitly or implicitly as biases on the course of evolution. More commonly, biases in the production of variations are denied any such influence, or when they are identified as evolutionary factors, they are invoked as "developmental constraints"..."(p.178); "Thus, in Mayr's defense of the "adaptationist program", nonselective factors (e.g., mutation, development, environment) are recognized, yet assigned to "chance," not because this is the way that the world works...but because nonselective factors are (in this view) so poorly understood or so rarely important that it is impossible to erect testable hypotheses of their influence on the the course of evolution. This pragmatic position, to the extent that it is not a self-fulfilling prophecy, must ultimately succumb to the advance of knowledge"(p.179).

Stoltzfus (2006) states that,

> "Owing to the manner in which evolutionary theory has passed through the narrow conceptual bottleneck of the Modern Synthesis, we lack a recognized, general causal linkage between the introduction of variants by mutation-and-altered-development and the course of evolution, that is, a linkage that – as implied by certain theoretical models, and suggested by empirical results reviewed above – goes beyond "constraints," and allows that propensities of variation *cause* propensities of evolution"(p.311); "What is most important to understand about these results is that they demand a new way of understanding evolutionary causation, including ideas that, due to the rhetorical excesses of the Modern Synthesis, are likely to be seen as heresies or conceptual errors"(p.316); None of this should be taken as a call to return to the mutationism of the 1920s or to abandon the adaptationist research program. The recollection of mutationism here serves mainly as a timely reminder that the Modern Synthesis is not *the* theory of evolution, but *a* theory of evolution"(p.316).

The difference between the earlier mutationists and the recent is the empirical evidence; although it is subject to interpretation bias is biased not random and therefore seems to represent another element of organic causation in evolutionary change. Biased mutation could translate into biased trajectories, but another source of bias is order of arrival into ecosystems, a kind of evolutionary momentum. Morgan (1916/1960) writes,

> "First, if it were true that selection of an individual of a certain kind determines that new variations in the same direction occur as a consequence, then selection would certainly be creative. How this could occur might be quite unintelligible, but of course it might be claimed that the point is not whether we can explain how creation takes place, but whether we can get verifiable evidence that such a kind of thing happens. This possibility is disposed of by the fact that there is no evidence that selection determines the direction in which variation occurs"(p.130).

On the other hand, Beatty (2010) states, "It is also a matter of conceptualizing or reconceptualizing. At

the very least, it involves acknowledging that, in the case of evolution by natural selection of chance variation, the direction of evolutionary change may not be due to selection alone, but also to the order in which the variation arises"(p.42). If order-of-variation considerations are connected with evidence of mutational bias, a decidedly non-random introduction of variants might translate into substantial directional changes in the absence of any other demonstrable creative force.

Finally, developmental biologists are describing a phenomena being called evolvability, otherwise known as facilitated variation. Kirschner & Gerhart (2010) write,

> "Recent molecular insights to be discussed here indicate that the organism itself plays a large role in creating the conditions for, and facilitates strongly, the generation of nonlethal and selectable phenotypic variation.. The assumption of the Modern Synthesis shared by many evolutionary biologists today is that variation is nonlimiting, small in extent of change around the mean, copious in amount, and isotropic [= genotypes determine phenotypes]. This assumption has not been borne out by modern biological observations"(p.256); "With facilitated variation, genetic change is still required, and mutations leading to regulatory change are the most important kind, but the entire burden of creativity in evolution does not have to rest on selection alone, nor on mutation alone. The complex existing phenotype determines the kind and amount of phenotypic variation. This variation will be based on new combinations, times, and places of use of the unchanging core processes. The biological system has modes of responding physiologically, developmentally, and genetically, and these responses are elicited in many ways by mutation, acting through regulatory modification"(p.276).

Such considerations perhaps justify a reconsideration of what the term 'mutation' ought to refer to, for if changes in both genotypes and phenotypes can both direct evolution why not include both in the concept? It is heritable variation that matters regardless of its specific source. Regardless, it does not seem as if mutation can any longer be regarded as it has been by Darwinism, as a passive and accidental pool of variation that is selected from by external environmental conditions. Mutants appear to be actively generated, in biased directions, and to some degree in response to evolutionary stimuli. Kirschner & Gerhart (2010) argue, "These views are not at all Lamarckian, nor are they arguments of selection for future good"(p.277), but there could hardly be views that are more Lamarckian.

**iv – Behavioral Drive**

Whether considering instinctive or rational behavior, and whether or not the actions of organisms are ultimately determined, if organic behavior causes evolutionary outcomes then it is the organisms doing the selecting not external nature. To suggest that 'nature' includes behavior is to render any difference between 'nature' and organisms meaningless, and with it the theory of natural selection. In his *Origin* (1872/1936) Darwin states,

> "This leads me to say a few words on what I have called Sexual Selection. This form of selection depends, not on a struggle for existence in relation to other organic beings or to external conditions, but on a struggle between the individuals of one sex, generally the males, for the possession of the other. The result is not death to the unsuccessful individual, but few or no offspring. Sexual selection is, therefore, less rigorous than natural selection"(p.69).

But in his *Descent* (1874/1936) Darwin writes, "Nevertheless if those naturalists who already believe in the mutability of species, will read the following chapters, they will, I think, agree with me, that sexual selection has played an important part in the history of the organic world"(p.571). The rather fantastic sexual dimorphisms manifested by the animal kingdom probably amount to a strong argument against metaphysical determinism generally, unless finicky females (for example) with very peculiar preferences can somehow be interpreted as necessary. Even in unicellular organisms there would seem to be irreducible elements of choice and decision, for 'nature' cannot force species into niches, it can only present opportunities. Even if the inherent tendency of organic life to disperse and diversify is entirely attributable to Malthusian population pressure, that surely cannot explain every particular trajectory that all species have ever taken. As Nei *et al* (2010) mention (above), for some reason human ancestors chose to begin occupying a new ecological niche (a tendency we still manifest). Still, whether or not the behavior of organisms is causally significant is another problem requiring a lot more research, but if traits are fixed in populations non-randomly on the basis of behavioral tendencies or preferences then organic selection re-casts natural as a mere constraint.

Mayr (2001) writes,

> "For Lamarck, behavior was an important cause for evolutionary change. He thought that changes in organisms caused by any kind of activity would be transmitted to future generations by the inheritance of acquired characters. For example, when giraffes stretched their neck to reach higher leaves, the resulting elongation of the neck would be inherited by the next generation. Even though this theory of inheritance is now refuted, evolutionists still believe, but for very different reasons, that behavior is important. A change in behavior, for instance, adoption of a new food item or increased dispersal, is apt to set up new selection pressures, and these may then lead to evolutionary changes. There are reasons to believe that behavioral shifts may have been involved in most evolutionary innovations; hence the saying "behavior is the pacemaker of evolution." Any behavior that turns out to be of evolutionary significance is likely to be reinforced by the selection of genetic determinants for such behavior (known as the *Baldwin effect*)"(p.136); "Also, when a populations shifts to a new specialized environment, genes will be selected during the ensuing generations that reinforce and eventually largely replace the capacity for nongenetic adaptation (the *Baldwin effect*)"(p.142).

This certainly seems like an incongruency in the neo-Darwinian Modern Synthesis. Either evolution happens by way of external causation, or by internal, but for natural selection to be meaningful or plausible internalism must be denied. An identifiable, demonstrable behavioral causality, if it exists, must be generally more efficacious than a metaphor for environmental constraints: non-random, non-deterministic, non-mechanical in terms of any known laws of physics and chemistry; in other words, non-Darwinian. Mayr argues that genes eventually replace the capacity for nongenetic adaptation; are we supposed to believe that behavior can drive evolution and then rest while genes take over? And that this occurs in some sort of way that preserves the meaning of natural selection?

> Wallace (1858/1960) states,
>
> "The hypothesis of Lamarck – that progressive changes in species have been produced by the attempts of animals to increase the development of their own organs, and thus modify their structure and habits – has been repeatedly and easily refuted by all writers on the subject...; but the view here developed renders such an hypothesis quite unnecessary, by showing that similar results must be produced by the action of principles constantly at work in nature. The powerful retractile talons of the falcon- and cat-tribes have not been produced or increased by the volition of those animals; but among the different varieties which occurred in the earlier and less highly organized forms of these groups, *those always survived longest which had the greatest facilities for seizing their prey*..."(p.20).

Spencer (1893/1960) writes,

> "And it is true that Lamarck...assigned for the facts reasons some of which are absurd. But...his defensible belief was forgotten and only his indefensible ones remembered. This one-sided

> estimate has become traditional; so that there is now often shown a subdued contempt for those who suppose that there can be any truth in the conclusions of a man whose general conception was partly sense, at a time when the general conceptions of his contemporaries were wholly nonsense"(p.106).

Lamarck's ideas on the precise mechanisms for acquiring traits and passing them down are primitive, but they were the first of their kind. His general notion that modified habits can direct evolutionary trajectories is simply the idea of behavioral drive, and it has never been refuted but only despised. While it is true that longer talons are likely to yield reproductive success, a lust for hunting and killing, the relevant teachings and traditions, the creating of ecological niches by the sheer determination of ancestral populations, surely played non-random creative roles. Anyone who has ever observed a cat playfully torment a mouse or bird to death, or seen footage of killer whales playing football (tailball) with live baby seals, might wonder if there is not a little more going on there than mere instinct. Lamarck (1801/1977) writes,

> "I could prove that it is not at all the form either of the body or its parts that give rise to habits, to the way of life of the animals, but that to the contrary it is the habits, the way of life and all the influential circumstances that have with time established the form of the bodies and parts of animals"(p.165, Burkhardt).

Perhaps the key point there is 'with time'; as a long-term general force behavioral drive is a compelling idea. Pigliucci (2010) argues, "This is, of course, what Baldwin was interested in to begin with. The point can be further broadened to all life forms if we consider phenotypic plasticity as a generalized equivalent of behavior (as is in fact done by several authors...)"(p.372). Pigliucci (2010) writes,

> "Baldwin's idea was that behavior can affect the action of natural selection, in some instances facilitating it. The result would be something that would look like acquired inheritance, but that in fact was due to this additional "factor" that simply interacted with, but did not invalidate, the role of selection (Baldwin was no Lamarckian). It is actually difficult to read Baldwin unambiguously, because he was writing in a pre-Mendelian world (Mendel's work had been published, but was yet to be broadly acknowledged). Nonetheless, the Baldwin effect has been explored more recently in works dealing with the interaction between learning and evolution. The most sensible modern interpretation of Baldwin is that phenotypic plasticity can facilitate evolution by natural selection, depending on the particular combination of shape of the reaction norms and of the selection pressures of organisms: in particular, if some of the reaction norms happen to produce a viable (if suboptimal) phenotype in a novel environment, then those

> genotypes will have a chance to survive, and the population, to establish itself. After that, as discussed above, natural selection will fine-tune the reaction norm by its standard filtering of existing and novel genetic variation"(p.366).

However, as Muller (2010) writes,

> "It was intuitively clear, though, that natural selection could not act on characters that were not yet in existence and, hence, could not by itself account for the appearance of novelties. Without naming them as such, additional factors were taken into account, always intended, however, to remain in keeping with the Modern Synthesis paradigm"(p.314); "More recent evaluations of functional shift and functional decoupling reemphasize such modes of novelty initiation, and the "behavioral change comes first" position also gained new support from developmental psychology"(p.314).

Although both Pigliucci and Muller are addressing specific issues in their articles, the now traditional Darwinian interpretation of 'behavior first' appears to be an unempirical attempt to deny 'behavioral drive'. If behavioral change happens first, followed by genetic change, then behavior is driving evolution, not natural selection. If this applies to all organic life, then it is not a mere exception to a greater generality – it is the greater generality. Natural selection amounts to a background condition, a limiting factor, not a causal driving creative force, if behavioral drive is true.

**v – Acquired Traits**

> Mayr (2001) writes,
>
> "According to...the Lamarckian theory – evolution is caused by the gradual change of organisms owing either to "use and disuse" of a structure or other trait or to the direct influence of the environment on the genetic material. This theory assumes that the genetic material is "soft" and that it can be molded by environmental influences, and that these changes can then be transmitted to future generations by an "inheritance of acquired characters." This theory is based on a belief in soft inheritance"(p.81); "Even though natural selection was for Darwin the principal factor in evolution, he also accepted the idea of soft inheritance, perhaps as a source of variation. In the presynthesis period, most naturalists, following Darwin, also accepted both natural selection and soft inheritance"(p.81); "Mendelian genetics, by proving the constancy of genes, completely contradicted soft inheritance. Finally, it was shown by molecular biology that no information can be transmitted from the proteins of the body to the nucleic acids of the germ cells, in other words, that an inheritance of acquired characters does not take place. This is the so-called "central dogma" of molecular biology"(p.81); "...the belief in an inheritance of acquired characters is by now totally obsolete"(p.87); "The genetic material is constant ("hard"); it cannot be changed by the environment or by use and disuse of the phenotype"(p.91); "An understanding of the nature of genetic variation greatly strengthened Darwinism, for it

> confirmed the finding that an inheritance of acquired characters is impossible" (p.112).

Similarly, Volpe & Rosenbaum (2000) write,

> "The concept of Lamarckism has no foundation of factual evidence. We know, for example, that a woman who has altered her body by injections of silicone does not automatically pass the alterations on to her daughter. Circumcision is still a requisite in the newborn male, despite a rite that has been practiced for well over 4000 years"(p.5).

Recent evidence demands that Lamarckism be taken more seriously. Lamarck did not think in terms of populations, and could not identify a mechanism by which acquired traits are transferred into germ cells. The notion of gemmules, which Darwin subscribed to, did not include any sort of segregation between soma (bodily) cells and the germ cells, so it was conceivable at the time that whatever was going on with the body could be manifested in the germ cells also. Even without acquired inheritance of physical traits, Lamarck's emphasis on the habits and needs imposed by environmental milieuxs combined with organisms' behaviorally inhabiting new niches is enough to switch the emphasis to organic selection, provided evidence of course. That is, if a population has shifted behavior in order to occupy or construct a new niche, that behavior or plasticity may be the driving force of whatever changes occur to the species over time, not natural selection. Lamarck (1809/1971) writes,

> "1. Every fairly considerable and continuing change in the circumstances of any race of animals brings about a real change in their needs [*besoins*]. 2. Every change in these needs necessitates different actions to satisfy the needs and, consequently, different habits. 3. Every new need, necessitating new actions to satisfy it, requires of the animal that it either [a] use certain parts more frequently than it did before, thereby considerably developing and enlarging them, or [b] use new parts which their [new] needs have imperceptibly developed in them, by virtue of the operations of their own inner sense [*par des efforts de son sentiment interieur*]"(p.14).

Nothing about these notions is currently wrong, at least in terms of populations; Lamarck (1815-22/1971) runs into trouble into greater difficulties in arguing that,

> "Everything that has been acquired, delineated, or altered in the organization of individuals during their life is preserved by generation and transmitted to new individuals proceeding from those which have undergone these changes"(p.19);

and in his (1815-22b/1977) examples:

> "I conceive...that a gastropod mollusk, which in creeping along experiences the need to touch the bodies lying in front of it, makes efforts to touch these bodies with some of the anterior points of its head, continually sending there masses of nervous fluid as well as other liquids. I conceive, I say, that as the result of these repeated flowings toward the points in question the nerves that terminate at these points will little by little be extended"(p.178, Burkhardt).

While organisms can change their tissues (exercise for example), the manifestation of new organs does not happen that way. If organic selection is true, then species play the role of selector on themselves through movement into niches; individuals best suited to the ecological momentum that a species has taken will best survive and so on.

As a behavioral drive hypothesis Lamarck's ideas are and have all along been compelling, and we might want to forgive him for his supposed errors. However, even Lamarck's ideas regarding the direct transmission of acquired traits is finding evidential support in the research of developmental biologists. Damiani (2007) writes,

> "The term "epigenetics" defines all processes changing gene expression that are not coded in the DNA sequence itself. Many types of epigenetic processes have been identified: they include methylation, acetylation, phosphorylation, glycosylation, ADP-ribosylation, ubiquitylation, and sumolyation" (p.370); "Therefore deaminase activity could provide a mechanism for the transformation of environmentally acquired epigenetic marks in stable hereditary changes of the DNA sequences"(p.371); "Many proteins can lead, under some circumstances, to diversification of specific DNA regions via point mutations (produced by micro-recombination and nucleic acids editing), recombination, and transposition"(p.374); The endogenous mutagenic systems are often triggered by environmental and epigenetic signals"(p.374); "Several researchers...found that foreign DNA sequences are able to insert into reproductive cells and are transmitted to the offspring.... Selected, adaptive mutations in somatic cells cells [may] be fed back to germ cells and transmitted to progeny.... Recent experimental evidences support a key role of reverse transcription for the transmission of genetic information from the somatic cells to the germline.... These processes are likely to constitute a form of Lamarckian evolution" (p.377).

Empirical evidence of acquired traits being transmitted systematically via mutations amounts to the holy grail for Lamarckism. Damiani (2007) argues, "These results demonstrate that the behavioural choice of an organism might serve as a source for evolutive transformations mediated by changes not only in environmental conditions but also directly in the epigenomic state"(p.396); his article presents several quotations from others who have reached similar conclusions. More recent evidence lends more

credence; Hackett *et al* (2012) report that epigenetic information can actually escape the erasing process that occurs in the formation of gametes, allowing for the transmission of acquired epigenetic characteristics from parent to offspring. That is, the supposed line between soma and germ cells is not as firm as we have been taught to believe, so that the experiences of individual organisms which lead to epigenetic changes in their cells may, to some extent, be heritable.

So, Mayr's (2001) conclusions (above) are being challenged: DNA may be 'soft' after all, and the central dogma may be just dogma. However, another line of evidence emerging from epigenetics and developmental biology is that much inheritance is not genetic, anyway. Damiani (2007) describes an example of selective implantation by women of early embryos:

> "Even without the possible transfer of genetic information between somatic and germline cells, the final result of these selective mechanisms is that, in stressing conditions, the maternal physiological adaptation might be transformed into Lamarckian adaptive changes of the newborns in only one generation"(p.385).

Purugganan (2010) states,

> "Epigenetic variants can have differing molecular underpinnings, but changes in the degree of nucleotide (particularly cytosine) methylation are a major component of epigenetic modification. Studies have shown that epialleles are stable across generations and can thus be inherited, and that methylation differences can translate into changes in gene expression levels that lead to phenotypic variants"(p.127); "If epialleles can directly contribute to variation within populations and be stably inherited across generations, then they should behave in a way similar to sequence-based allelic variation with respect to phenotypes and fitness effects"(p.128).

Fernando & Szathmary (2010) write,

> "In addition, Lamarckian evolution takes place in neuronal replicators because neuronal changes due, for example, to reinforcement learning can be copied directly"(p.216); "It is relevant to ask whether the neuronal structures underlying language are true replicators or not. Given what we wrote above about neuronal replicators, we believe the answer is affirmative. Memes are genotypic replicators inside brains and phenotypic replicators between brains"(p.239).

Muller (2010) states,

> "Genetic evolution, while facilitating innovation, serves a consolidating role rather than a generative one, capturing and routinizing morphogenetic templates"(p.323).

Jablonka & Lamb (2010) write,

> "The evidence presented in the previous sections shows that the transgenerational transmission of epigenetic variations through cellular inheritance and through routes that bypass the germ line is not a rarity. Therefore, if we are to understand heredity and evolution, we need to acknowledge these different types of information transfer between generations, and not focus exclusively on genetic transmission"(p.163); "Nevertheless, soft inheritance – the transmission of variations acquired during development – not only exists, it is found in every type of organism and seems to be common. It therefore has to be incorporated into evolutionary thinking"(p.163).

**vi – Niche Construction**

The concept of the ecological niche hinges on whether one has an organic or natural selection point of view. On natural selection, the niche is simply that particular slice or neighborhood of nature that has selected whatever species is in question. On the organic view, the niche is a manifestation of the species itself, an ecological construct purposively selected for by the species. The issue probably cannot be considered very well in isolation, but only in the context of the evidence reviewed here. Pigliucci (2010) states,

> "Phenotypic plasticity should also be considered as a major player in the process of niche construction, which, of course, is still a somewhat controversial concept"(p.372); "However...there is a built-in tendency by biologists who work within the framework of the Modern Synthesis to simply attribute phenotypic change to genes without further consideration of the developmental and epigenetic alternatives"(p.372).

This point about frameworks is significant, because on the view defended here evolution needs to be interpreted one way or the other; either evolution is a process of natural selection or of organic selection, and it cannot coherently be regarded as both. So to embrace a niche construction perspective raises issues of rational consistency unless one also drops Darwinism altogether, which raises the very real risk for anyone who does so of being branded a Lamarckian, or a creationist, or an intelligent designist, or a mystic, or worse by one's professional peers and associates, given the dominance of the Darwinian 'paradigm'. Fortunately there is another, much more rigorous paradigm in play – the empirical paradigm, and the demonstrable evidence is mounting. Odling-Smee (2010) writes,

> "However, all organisms, through their metabolisms, movements, behavior, and choices, partly create and partly destroy their environments. In doing so, they transform some of the selection pressures in the environments that subsequently select them. Therefore the adaptations of organisms cannot be exclusively consequences of organisms responding to autonomous selection pressures in the environments. Sometimes they must involve organisms responding to selection pressures previously transformed by their own, or by their ancestors', niche-constructing activities"(p.176).

This passage is similar to Mayr's (2001) characterization of behavioral drive, in which behavior leads genes but it is still natural selection after all, not organic. Perhaps those who take Kuhn's notions of paradigms seriously should include cognitive dissonance as a sign of a paradigm shift: if the organisms are creating selection pressures on their own kind by niche construction activity, then those pressures ultimately amount to organisms selecting themselves, which is not properly characterized by referring to 'transformed selection pressures in the environment', which alludes to natural selection.

We should recall that if there were no organisms before and around current populations, life as we know it would not exist. The entire earth has been transformed by organic life into an arena of organic selection – consider the modification of earth's atmosphere by photosynthesis. In that sense, we have been selected for by our organic ancestors, not by 'nature', unless you include all organic existence within nature, but then there is no difference between nature and organisms, and we wind up back to the problem of conceiving how some same inert thing selects itself. At least with organic selection we can point to the real causal activities of past and present life creating conditions that select for current variants in the population, to life plying the road for more life in various ecological directions. That represents elements on non-random creativity, non-deterministic organic directionality, imposed on the biosphere and natural history by organic matter itself, which is a fundamentally different perspective than natural selection. Natural selection only works as a logically coherent theory in the absence of any 'slow willing'; empirically it must somehow deny any reality to organic purpose just like determinists must deny free will. Odling-Smee (2010) describe examples:

> "If that happens – if the ecosystem engineering consequences of niche construction do persist in

> the environments of populations for multiple generations – there can be evolutionary consequences. For instance, beaver dams create wetlands that can persist for centuries, long enough, relative to the short generational turnover times of many species in riparian ecosystems, for them to evolve in response to beaver-modified selection pressures. Another example is the niche construction activities of earthworms. Earthworms cause major changes in soils, and have apparently modified their environments by niche construction to suit themselves, instead of evolving new physiological adaptations"(p.194).

**vii – Altruism**

One of the most puzzling discussions in evolutionary biology is about altruism. A theory of organic selection would not modify in the slightest the inherent necessary selfishness of all organisms, other than ourselves. Organisms have to fight to survive and spread their genes, and perhaps epigenes, or else they and their kind rapidly disappear from ecosystems. The term 'altruism' is normally meant to imply real selflessness, but in evolutionary biology it is morphed into a synonym for cooperativeness. There is nothing necessarily selfless about cooperation; on the contrary it facilitates individual success. Cooperation is all that can be found in biology, and evo-ethicists have attempted to reduce human ethics to cooperation, but in so doing render ethics as necessarily egoistic without always admitting it. The concept of group selection plays a role: Wilson (2010) writes,

> "...Darwin's original insight [was] that group-level adaptations require a process of group-level selection and tend to be undermined by lower-level selection"(p.84); "Natural selection can operate at more than one level of the biological hierarchy, each level favoring a different set of traits"(p.82); "Groups that function better as collective units for any reason will differentially contribute to the total gene pool, just as drought-resistant plants "outcompete" drought-susceptible plants in desert environments without any direct interactions"(p.82); "...traits that help other organisms or that cause whole groups to function adaptively are usually not locally advantageous. Examples include helping to raise the offspring of others, watching out for predators in a way that protects everyone in the vicinity, and conserving shared resources when they are scarce. These traits are clearly "for the good of the group," but they do not give individuals possessing the trait a fitness advantage, compared with other individuals in their immediate vicinity"(p.81).

However, there is no evidence that either group selection exists, or genetically unselfish behavior. All of the examples are manifestations of kin selection, in which individuals help to propagate the copies of their own genes that reside in their relatives. Darwin's "insight" was sheer speculation, which

contributed to arguably the most disastrous line of speculation ever conceived. Wilson (2010) writes,

> "Darwin did not comment on the irony that morality, by this account, is primarily a within-group phenomenon that can lead to the evolution of behaviors, such as between group conflict, that can qualify as immoral from a third-person perspective"(p.82).

Perhaps the most intensively cooperative organisms are the social insects – but they do not generally engage in inter-group conflict. Darwin (1872/1936) writes,

> "...it can be shown that some insects and other articulate animals become sterile; and if such insects had been social, and it had been profitable to the community that a number should have been annually born capable of work but incapable of procreation, I can see no very great difficulty in this being effected by natural selection"(p.204).

But Darwin should have seen a difficulty, which is that communities do not reproduce. On his or any evolution theory, there needs to be information transmission to future generations, which is accomplished with the germ-lines packaged in individuals. Groups form and dissipate, but nothing is preserved or inherited; the germ-lines are packaged in cells, which have to be physically preserved and shifted from one generation to the next. Biologists now ought to know better than to engage in pure speculation; Sober (1993) writes,

> "Within any particular group, altruists do worse than selfish individuals, but groups of altruists do better than groups of selfish individuals. Altruism can evolve by group selection"(p.92); "Sterility is disadvantageous to the organism, but groups that contain workers may do better than groups that do not"(p.92).

This is flatly mistaken: 'altruists' are cooperative not selfless; they do not do worse than 'selfish' individuals because they are engaging in a cooperative reproductive strategy which leads to greater success in their individual genes being propagated; groups of 'altruists' are groups of reproductively selfish cooperators and there are no groups of 'selfish' individuals to compare to other than species that do not engage in cooperative behavior; 'altruism' cannot evolve by group selection because cooperative behavior is ultimately selfish and therefore must have arisen by individual selection; sterility is not disadvantageous – workers are selfish cooperators within groups of selfish cooperators.

In order for group selection to be empirically viable, evidence of genuinely reproductively

selfless behavior is required. Volpe & Rosenbaum (2000) explain:

> "Kin selection provides an explanation for the baffling social behavior in ants, bees, and wasps. Curiously, whole castes of sterile females devote their entire existence to the welfare of the queen... Females are diploid individuals that develop from fertilized eggs with maternal and paternal sets of chromosomes. Males are the haploid products of unfertilized eggs and possess only the maternal set of chromosomes. The startling outcome is that the sibling daughters of a queen are more closely related to each other than they would be to any of their own daughters"(p.224); "If a daughter were to produce her own offspring, that daughter would share only one-half of its genes with any of her offspring. Accordingly, a female worker actually contributes more to her Darwinian fitness by assisting her mother in raising offspring (3/4 relationship) than by rearing her own offspring (1/2 relationship)"(p.224); "...drones share only 1/4 of their genes with their sisters"(p.224); "In turn, sisters invest more energy in raising sisters than brothers and characteristically drive their brothers from the hive in early summer"(p.224).

Sober (1993) writes,

> "An altruistic trait is one that is deleterious to the individual possessing it but advantageous for the group in which it occurs. If the organism is the exclusive unit of selection, then natural selection works *against* the evolution of altruism. If the group is sometimes a unit of selection, then natural selection sometimes *favors* altruistic traits"(p.90).

This misconception is common in the philosophy of biology: cooperation is not deleterious but advantageous to the individual reproductively; any other assessment of advantage than in terms of reproduction is a non-starter; since there are no deleterious individual traits there are no corresponding group-advantageous traits; since there is no evidence of group selection in the absence of reproductively disadvantageous traits, there is no evidence that natural selection (or organic) ever works against 'altruism' since 'altruism' is a strategy for individual reproductive success. Sober (1993), as do several other theorists, go to lengths to demonstrate the plausibility of evolved 'altruism' in contrast to non-cooperation, but these amount to arguments *for* selfishness, not against. Sober (1993) states, "Within each population, individual selection favors selfishness over altruism. But there is competition among populations, and this favors altruism over selfishness"(p.98). But in all non-human organisms observed, cooperation *is* selfishness, and so competition amongst populations is reducible to competition amongst individuals. Sometimes wolves switch packs, for example.

This all might make for no more than an interesting biology discussion if it were not for the

implications drawn for ethics by some Darwinians – including Darwin (1874/1936):

> "It must not be forgotten that although a high standard of morality gives but a slight or no advantage to each individual man and his children over the other over the other men of the same tribe, yet that an increase in the number of well-endowed men and an advancement in the standard of morality will certainly give an immense advantage to one tribe over another"(p.500).

Obviously, morality is here defined as cooperativeness, which is of no disadvantage individually anywhere in the organic world but is in all cases a selfish reproductive strategy. While tribal advantage seems to be certain to arise from internal cooperativeness, there is no empirical basis for suggesting that evolution favors tribalism, because there is no evidence for group selection, because there is no evidence of individually disadvantageous reproductive strategies, because evolution makes them impossible. As Mayr (2001) states,

> "Up to 1970 some geneticists thought that not only genes but also populations were the units of selection. It was not until 1980 that reasonable unanimity was reached that the individual is the principal target of selection"(p.126).

**viii – Extended Synthesis**

In light of the empirical evidence, it seems reasonable to suggest that life is as mysterious as ever, and that there is not, at the moment, a working empirical theory of evolution, one which can successfully generalize the available demonstrable observations and yield testable experimental predictions. While some may bemoan the possibility of this giving comfort to creationists or deniers of evolution altogether, anyone who takes the time to consider the evidence cannot reasonably believe that the biblical theory of special creation is literally true, or that evolution is not real. Evolution is certain; its workings have yet to be determined. Adherence to natural selection is a metaphysical preference that is not well supported by the empirical evidence, but there is not as yet a comprehensive theory of organic selection to replace it. Much more evidence needs to be gathered, perhaps especially at the levels of physical emergence, chemical organization, and mutationism. The effort here has been to

review evidence as it now stands, and to attempt clarificatory categorizations and characterizations, but not to defend a new theory of evolution (though, perhaps to some extent to demonstrate the reasonableness of an old theory – Lamarck's). Several authors describe the need for an 'extended synthesis', but it is not all apparent that natural selection and organic selection are compatible in a synthesis. Thesis-antithesis perhaps, but it seems as likely that one or the other or both are completely mistaken, so the suggestion that a new synthesis will somehow include the best elements of both sides may not be realistic. Light is analyzed as particles and waves; it cannot be both, nor apparently can it be one or the other, unless we are prepared to reconceptualize waves and particles altogether. Like 'dark' matter, 'natural' or 'organic' selection might best be regarded as placeholders for future discoveries. However, it does seem justifiable to suggest that research be allowed to follow the observations wherever they might lead, and not be canalized or ruined by dubious paradigm-think.

This goes for both sides; Muller (2010) writes,

> "The bulk of present-day EvoDevo is in the empirical study of the evolving molecular tool kit and its regulatory interactions"(p.326); "Whereas the explanation of adaptive change as a population dynamic event was the central goal of the Modern Synthesis, EvoDevo seeks to explain phenotypic change through the understanding of developmental mechanisms, the physical interactions among genes, cells, and tissue architecture in particular"(p.327); "...the Evo-Devo framework assigns more explanatory weight to the generative properties of developmental processes, with natural selection representing a boundary condition"(p.327); "As a tangible consequence, the limitations of the Modern Synthesis with regard to the explanation of higher levels of organization are overcome by an Extended Synthesis"(p.328).

These remarks seem as political as they do empirical; although following in Darwin's footsteps as an organizer may be quite tempting, there is the risk of converting talented empirical scientists into ideological proselytizers for what for now remains an alternative metaphysical perspective on evolution. On the other hand, Weber & Depew (1996) write,

> "Narrativism can be considered a development, perhaps a radicalization, of the "autonomist stance" in evolutionary biology on which Ernst Mayr, for one, has for so long laid great stress. When confronted with the objection that evolutionary biology cannot be a mature science because it does not have any powerful "covering laws," autonomists and narrativists, like St. Paul, are inclined to glory in their infirmity, and to proclaim that they do not need or want laws

> anyway. The particular facts of the evolved world cannot be derived from universal law-like premisses. Instead, narrative explanations of particular sequences can be achieved by using key concepts of evolutionary biology as heuristic guides. What advocates of this position appear sometimes not to realize is how much of this is an introjection into into the sphere of the natural sciences of a set of methodological views hitherto associated with the human or historical sciences"(p.57).

Make that the human and historical *arts*; for art is what evolution theory amounts to, for now, and there is nothing wrong with that. It seems safe to argue that we do need to keep that in mind (and that laws would be better). Mayr (2001) argues, "The Darwinian model of evolution, based on random variation and natural selection, explains satisfactorily all phenomena of evolutionary change at the species level, and in particular all adaptation"(p.157); this seems to be no longer an accurate statement. Brooks *et al* (1989) argue, "We are optimistic that a unified conceptual framework for evolutionary biology can be distilled from various attempts to "expand", "extend", or "finish" the job begun by Darwin"(p.429). Weber & Depew (1996) suggest,

> "For our part, in stressing that complex systems dynamics should provide the conceptual framework within which Darwinism continues to evolve, we are not seeking to reduce biology to physics.... Our effort is to show that complex systems dynamics provides the explanatory matrix in which we can comprehend the phenomena recognized by advocates of an expanded synthesis..."(p.59).

However, the new, far-from-equilibrium thermodynamics, along with the accumulated evidence of emergence, organization, mutationism, behavioral drive, acquired traits, niche construction, and altruism, suggest that Darwinism may be simply obsolete. Love (2010) argues,

> "If evolutionary theory is composed of multiple agendas that require contributions from diverse disciplinary perspectives, there is no "fundamental" viewpoint or level to which we can reduce our picture of the evolutionary process. This holds within each individual problem agenda as well. My account also meshes with the recognition that a fully unified view of evolutionary processes may be out of reach, even though we seek integrated explanations of phenomena in different domains"(p.433).

Callebaut (2010) argues,

> "...EvoDevo (broadly conceived so as to include epigenetics, innovation studies, and macroevolution) and niche construction theory will most likely be accommodated by the Synthesis as further extension, albeit ones that may require major conceptual

reshuffling"(p.472).

Di Bernardo (2010) states,

> "In light of all that has been said, it is clear how Darwin's theory, mostly centralized on the natural selection principle, does not take into account the deep self-organization processes, that is those processes characterized by a mysterious teleonomy"(p.107); "Today we know that the story of life is certainly that of accidental and random events, but also the story of order: a type of deep creativity weaved by nature itself"(p.108).

The idea of an extended synthesis seems as much a political nicety as an empirical assessment; in terms of their respective logic, the natural and organic selection interpretations of evolution are contradictory; given the mounting evidence for the latter, currently there is no working theory, we need a new theory.

## § 4 – Epistemological Considerations

Volpe & Rosenbaum (2000) write,

> "This mode of inquiry is the *hypothetico-deductive* style of reasoning that is the cornerstone of investigative sciences, particularly the natural sciences. This method of establishing explanations for observed phenomena has the goal of developing the habit of scientific thinking, characterized by objectivity, open-mindedness, skepticism, and the willingness to suspend judgment if there is insufficient evidence"(p.9);

but then Volpe & Rosenbaum (2000) add,

> "If we were able to formulate critical tests that continually substantiate our deductions, our confidence would grow that a particular thesis is the most probable explanation. This explanatory statement would then be regarded as "true" and would become part of the arsenal of scientific knowledge"(p.10).

We should not regard scientific hypotheses as actually true, ever, since they are only ever possibly true generalizations of reproducible observations. Rather, we should maintain suspension of judgment regarding truth until enough observational evidence has mounted that whatever it might be it can no longer reasonably be doubted. In the empirical sciences that amounts to being observable. That evolution exists is observable, and satisfies criteria for justified true belief. Our hypotheses for how evolution occurs are not like that. Hull (1974) states,

> "The goal of epistemological reduction is the elimination of any reference to theoretical entities in scientific theories. Instead, scientific theories are to be reformulated so that they refer only to the objects of our knowledge. There is some disagreement among epistemological reductionists over the nature of these objects. According to one version of epistemological reduction, all scientific statements are to be reformulated in terms of gross physical objects, usually measuring instruments like yardsticks and galvanometers. Another version specifies reformulation in terms of sense data like "red patch now". The appeal of epistemological reduction stems from the empiricist claim that all empirical knowledge comes from sense experience; hence, it should be reducible to it. In point of fact, neither of these versions of epistemological reduction has met with much success. Nor do the issues raised by epistemological reduction have much to do with biology or vice versa"(p.3).

These are imprecise remarks: empiricism is an observational, not linguistic, enterprise of great success especially in biology, but the theories are generalizations of experiences which therefore cannot be reducible to the observations. The whole point of an empirical generalization is to extrapolate beyond

the observations, and in empiricism hypotheses have the added burden of furnishing testable predictions. So naturally, a little metaphysics can play a positive role in empiricism, as has been argued by several philosophers of science. However, Haeckel (1909/1960) writes of natural selection, "It thus enables us to dispense with the teleology of the metaphysician and the dualist, and to set aside the old mythological and poetic legends of creation"(p.116). There are two suggestions there that remain popular: that Darwinism is not metaphysical, while anyone who disagrees with it is; and that teleology is metaphysical not empirical, while mechanicism is empirical not metaphysical. They can both be either, but certainly we do observe purposiveness in organic life, and we do observe mechanical regularities that may be lawful. Perhaps someday we might explain away teleology, but the researchers working on emergence and organization seem to be suggesting irreducible, non-deterministic purposiveness (albeit that concept may now require sophisticated re-conceptualizing), which may be quite compatible with quantum physics in the long term (since it implies an absence of necessary mathematical physical lawfulness and determinism). Darwin characterized natural selection as a metaphor, which presumably he intended as a replacement for purpose, which might also be regarded as a metaphor, but either way we are engaging in metaphysical speculation. That should involve acknowledged ignorance, which ought to restrict attempts to employ our metaphors as principles, or our guesses as truths. It seems justified to regard current theories of evolution as bases for further study, not as final products.

Our concern now is to turn to the implications of evolution for ethics. If there is at the moment not a comprehensive working empirical theory of evolution, we are left with the bare *facts*, as best as we can discern them. Sober (1993) writes,

> "It is quite true that biological evolution produced the brain and that the brain is what causes us to behave as we do. However, it does not follow from this that the brain plays the role of passive proximate mechanism, simply implementing whatever behaviors happen to confer a Darwinian advantage. Biological selection produced the brain, but the brain has set into motion a powerful process that can counteract the pressures of biological selection. The mind is more than a device

> for generating the behaviors that biological selection has favored. It is the basis of a selection process of its own, defined by its own measures of fitness and heritability. Natural selection has given birth to a selection process that has floated free"(p.215).

That seems like a fact: we humans at least do seem able to think freely, to behave rationally, to override or summon instincts with training and experience. Mayr (2001) writes,

> "Evidently genuine ethics can be developed only by adding such global altruism to the "selfish" altruism of the social group"(p.259); "Altruism toward strangers is a behavior not supported by natural selection"(p.259); "Genuine ethics is the result of the thought of cultural leaders. We are not born with a feeling of altruism toward outsiders, but acquire it through cultural learning"(p.259).

That also seems like a fact: we learn how to be moral, or not, but we are capable. Schubert-Soldern (1962) states,

> "If the human being were just another animal, his mode of behaving would be determined in just one way. But these factors, fixed or plastic, do not determine man's behaviour in any particular way. Man's relationship with his biotope is not prescribed by instinct or experience; it is fixed by man himself. Unlike animals, man is capable of living in all possible and by no means predictable relationships with his environment"(p.204).

It shall be supposed here that these are facts of the human condition; the notion that we are *necessarily* animalistic, mere instinctive weather-vanes blowing in biochemical breezes, determined in other words, really is a theory without an empirical basis. Our common experience is of freedom, so that must be the basis for moral epistemology. Dawson (1873/1960) writes,

> "But as applied to man, the theory of the struggle for existence and survival of the fittest, though the most popular phase of evolutionism at present, is nothing less than the basest and most horrible of superstitions. It makes man not merely carnal, but devilish. It takes his lowest appetites and propensities, and makes them his God and creator. His higher sentiments and aspirations, his self-denying philanthropy, his enthusiasm for the good and true, all the struggle and sufferings of heroes and martyrs, not to speak of that self-sacrifice which is the foundation of Christianity, are in the view of the evolutionist mere loss and waste, failure in the struggle for life. What does he give us in exchange? An endless pedigree of bestial ancestors, without one gleam of high or holy tradition to enliven the procession; and for the future, the prospect that the poor mass of protoplasm which constitutes the sum of our being, and which is the sole gain of an indefinite struggle in the past, must soon be resolved again into inferior animals or dead matter. That men of thought and culture should advocate such a philosophy, argues either a strange mental hallucination, or that the higher spiritual nature has been wholly quenched within them."(p.96).

Shaw (1921/1960) writes,

> "Neo-Darwinism in politics had produced a European catastrophe of a magnitude so appalling, and a scope so unpredictable, that as I write these lines in 1920, it is still far from certain whether our civilization will survive it..."(p.140); "What hope is there...of human improvement? According to the Neo-Darwinians, to the Mechanists, no hope whatever, because improvement can come only through some senseless accident which must, on the statistical average of accidents, be presently wiped out by some other equally senseless accident...(p.140)"; "...When a man tells you that you are a product of Circumstantial Selection solely, you cannot finally disprove it. You can only tell him out of the depths of your inner conviction that he is a fool and a liar. But as this...is uncivil, it is wiser to offer him the counter-assurance that you are the product of Lamarckian evolution, formerly called Functional Adaptation and now Creative Evolution, and challenge him to disprove *that*, which he can no more do than you can disprove Circumstantial Selection, both forces being conceivably able to produce anything if you only give them rope enough..."(p.144).

For us it is enough to acknowledge the metaphysical nature of evolution theory, so that we might try to assess and construct arguments in moral epistemology appropriately.

## Part II: Descriptive Instinctivism

### § 1 – Science

Ruse (1985) writes:

> "...something like emotivism seems almost tailor-made for the evolutionist"(p.205); "You cannot derive that which is morally good from the course of evolution. David Hume showed us the reason why that kind of argument will not work. But David Hume also showed us that even if we reject a God-guaranteed objective basis for ethics, we can still build a soundly constructed ethics from human feelings or sentiments. I think Hume was right when he rejected objective ethics, and right when he argued argued that ethics can be based on human feelings. The importance of human sociobiology is that it lets us bring Hume up to date"(p.236).

Sociobiology is the study of social behavior in animals generally, and ethicists of many different stripes believe that lessons for ethics can be drawn by extrapolating from animal behavior. Hume (1748/2000) writes, "...any theory, by which we explain the operations of the understanding, or the origin and connexion of the passions of man, will acquire additional authority, if we find, that the same theory is requisite to explain same phenomena in all other animals"(p.79). However, sociobiologists (of today) rely heavily on Darwinism particularly, not merely evolution or animal behavior, in defending their conclusions. Ruse (2012) states,

> "Clearly, taken as a whole, it would be ludicrous to deny that we have a functioning theory of human evolution. Both in fact and in theory there is successful and sophisticated understanding"(p.98); "Nor is anyone saying that a rival theory to (say) Darwinism is going to contradict Darwinism"; "The point is that any rival theory is going to look at things in a different way, perhaps not even in a way that we would recognize as evolutionary. If I could tell you in what way, I would, but because I am part of our society I cannot" (p.154).

Ruse (2012) suggests here that the Darwinian 'paradigm' is so dominant that we are culturally bound to go along with it, but even in this his most recent work he does not give full consideration to the emerging body of counter-evidence. The history of science is full of examples of theories that were regarded as successful and sophisticated but which turned out to be false, and hopefully our culture remains receptive to emerging scientific points of view. As noted, there is a growing body of scientific counter-evidence – for those willing to consider it. Ruse (2012) writes,

> "In short, therefore, both theoretically and empirically today's evolutionary biology is very much in the spirit of Darwin's work (as opposed to his contemporaries, who doubted his causal achievements) but equally goes very much beyond it – as one would expect in a fruitful and forward-looking science"(p.28); "...the structure of the *Origin*, including here the intention to explain through natural selection, is (notwithstanding the cries of critics) embraced fully by today's evolutionary biologists"(p.29).

There is no denying that Darwinism is a popular point of view, but these remarks seem at least somewhat overzealous. Amongst his (2012) fairly scant remarks bearing on counter-evidence, Ruse states:

> "We also know that it is possible for genetic material to be transferred laterally across lines, thanks to actions of viruses, which can take pieces of material (a nucleic acid molecule) and having incorporated these into themselves, then infect another organism and pass he material on"(p.28); "Of course, if "horizontal gene transfer" gets ever-more important, although increasingly this would wreck a simple picture of a tree of life, it would not challenge the importance of natural selection"(p.28-9); "Going back to earlier discussion, it is true that "evo-devo" shows that often you can get fantastic changes by altering what you have rather than starting anew – the stretch 747 – but selection is no less important – if the plane does not fly, then it is of no use"(p.36); "The concilience lives!"(p.36); "We have encountered already the notion of genetic drift and seen that although it clearly does occur, it is probably not a significant factor in the general physical and behavioral features of organisms. Selection will swamp its effects before they can be that lasting"(p.51); "The whole point about the new variations, what we call "mutations," is that they do not occur according to need"(p.103); "An organism may be able to use them, but it is a crap shoot all of the way"(p.103); "The essence of Darwinism is that the new variations, the mutations in today's language, are random, in the sense that they do not occur according to need"(p.135); "After all, our own very existence shows that a kind of cultural adaptive niche exists – a niche that prizes intelligence and social abilities. Nor is this niche something with existence only in the context of humankind. There is reason to think it existed independently of us"(p.118); "In the end, came humankind, less by chance and more by Darwinian destiny"(p.118).

Ruse (2012) writes, "What we also saw was that early evolutionism was more a matter of ideology than of hard, empirically based reasoning"(p.41), but this discounts the notion that we are still early evolutionists. Who knows what evolution theory will look like in one of five thousand years? We have only been at it for two centuries, so far. As for empiricism, Ruse (2012) writes,

> "There is not only empirical content, but also the ways in which one tries to conceptualize the empirical content. To do this, as many have noted, scientists turn to models and more particularly to metaphors. Think about Darwin's theory and its crucial dependence on metaphor – struggle for existence, natural selection, tree of life, and more recently adaptive landscape, genetic code, arms race. These are not just raw descriptions of reality, but ways of taking it up

> and conceptualizing it and giving it meaning and thus leading to understanding"(p.145); "You have still got the metaphors to reckon with, and if anything is deeply cultural it is the metaphors of science"(p.153); "No one is saying that anything goes or that any metaphor is as good as the next one. That is simply not true. We are confining our discussion to science – we know already that different societies have different (incompatible) creation stories. The point about science is that it does have standards, epistemic-value principles, and any science will be judged by them. Darwin's theory works on its merits, not because we all accept the joys and benefits of industrialism"(p.152-153).

However, in light of recent evidence Darwinism may no longer work (if it ever did as an empirical hypothesis), and it does go beyond conceptualizing empirical evidence with its metaphors. Ruse (2012) writes,

> "I suppose that most of us (those who take science seriously) think that ultimately there are laws of nature, without exceptions, that govern the universe"(p.68); "...evolution – the epitome of blind chance..."(p.2); "But other than for religious believers – and even for believers when they are doing science – we don't want to bring intentional purposes into the organic world. That is the whole point of Darwinian selection, to avoid having to do this"(p.77).

Needless to say, many serious scientists are not determinists, evolution certainly appears not to be a matter of chance, and denying rather than generalizing demonstrable observations is flatly unempirical. Ruse (2012) argues,

> "As is well known, Popper argued that scientists (that is to say, good scientists doing what good scientists should do) throw up hypotheses or conjectures and then they try to refute them, to falsify them"(p.132); "Somewhat ironically, Popper (correctly) saw that what he was offering was not a scientific theory but a philosophical or metaphysical proposal. Popper (incorrectly) also saw the analogy between what he was offering and what Darwinism offers as strengthened by the fact that the latter is no genuine scientific theory but a "metaphysical research programme." Perhaps overly influenced by the social uses to which Darwinism was put in the Austria of his youth (more on this in the next chapter), Popper was never truly comfortable with Darwinism as a science, and to the end yearned for something a bit more teleological – doubly ironical for a man who criticized Hegelian, directed theories of history"(p.132).

Perhaps Popper was merely and correctly yearning for an evolution theory that incorporated our observation of organic purposiveness, rather than trying to rule it out of existence by metaphysical fiat.

Ruse (1994) states, "The astronomer tries to explain why the sun rises above the horizon. He or she does not deny this is what we see"(p.500)"; "And this being so, my crucial intent is to do justice to the way that things are – how people feel about morality and how it has evolved – rather than some

how idealist would like them to be"(p.500). With regard to evolution generally as a Darwinian Ruse does deny what we see. Wilson (1978) writes, "But if our conception of human nature is to be altered, it must be by means of truths conforming to the canons of scientific evidence and not a new dogma however devoutly wished for"(p.35). However, just saying that does not suffice: sociobiology purports to be a scientifically informed theory of ethics, so in order to take sociobiology seriously its generalizations must be directly inferred from the observations in a way that anyone can find plausible. Whereas Ruse (1985) writes, "It would therefore be less than candid were one not to concede that that there are occasions when the sociobiologists let their enthusiasms outrun their evidence"(p.163); Ruse (1994) argues,

> "In the language of an evolutionist, therefore, morality is no more – although certainly no less – than an adaptation, and as such has the same status as such things as teeth and eyes and noses. And, as I come to the end of this part of my discussion, let me stress, as I stressed earlier, I mean this claim to be a literal matter of biological fact. I am pushing out from firmly established truth. But, although here I simply do not have room to go into empirical details – I must nevertheless mention that we now have knowledge of what, at the very least, can be described as quasi-morality from the ape world – if I am wrong, then I am afraid that you are wasting your time as you read on"(p.500); "...I intend what I have to say now to be taken a lot more literally than one usually takes discussions of fact in philosophical writings"(p.495); "What I have to say now is at the cutting edge of science and requires a certain amount of projection and faith. But if the science be not essentially true, then my philosophy fails"(p.495).

Sociobiology may not be at the cutting edge of science insofar as it adheres to orthodox Darwinism, but even if it were it would not be based on 'essentially true' science but at best on a widely believed quasi-empirical hypothesis. However, Ruse (1994) is by no means without company in his approach:

> "But most crucially, Hume is my mentor because he went before me in trying to provide a completely naturalist theory of ethics. He was no evolutionist, but he wanted to base his philosophy in tune with the best science of his day"(p.508); "The job of the moral philosopher is not to prescribe some new morality, but to explain and justify the nature of morality as we know it"(p.500).

Similarly, Hume (1751/1983) states,

> "If we consider the principles of the human make, such as they appear to daily experience and observation, we must, a priori, conclude it impossible for such a creature as man to be totally indifferent to the well or ill being of his fellow-creatures, and not readily, or himself, to

> pronounce, where nothing gives him any particular bypass, that what promotes their happiness is good, what tends to their misery is evil, without any farther regard or consideration. Here then are the faint rudiments, at least, or out-lines, of a *general* distinction between actions..."(p.49).

For Hume (1748/2000) the science of the day is Newtonian and determinist, which no less then than now is of dubious applicability beyond physics:

> "Til a philosopher, at last, arose, who seems, from the happiest reasoning, to have also determined the laws and forces, by which the revolutions of the planets are governed and directed. The like has been performed with regard to other parts of nature. And there is no reason to despair of equal success in our enquiries concerning mental powers and economy, if prosecuted with equal capacity and caution. It is probable, that one operation and principle of the mind depends on another; which, again, may be resolved into one or more general and universal"(p.11).

Hume (1751/1983) declares his hypothetico-deductive moral method:

> "The only object of reasoning is to discover the circumstances on both sides, which are common to these qualities; to observe that particular in which the estimable qualities agree on the one hand, and the blameable on the other; and thence to reach the foundation of ethics, and find those universal principles, from which all censure or approbation is ultimately derived. As this is a question of fact, not of abstract science, we can only expect success, by following the experimental method, and deducing general maxims from a comparison of particular instances"(p.16).

*This*, from the author who made famous the 'no ought from is' distinction. Ruse might also seem contradictory on this point; he (1999) writes, "...I would argue with the critics (in this essay, with C.D. Broad, but ultimately with David Hume) that there is a key difference between statements of fact and statements of morality and that Huxley and his tradition have failed to bridge it"(p.221).

**§ 2 – Normativity**

Sociobiologists are committed to either defining morality on the basis of recognizable patterns in human/animal behavior, or to denying that morality exists. Whereas Hume takes the former route, Ruse argues that normative ethics only exists as an adaptive illusion: there is no ought from is because there is no ought at all. Ruse (2012) writes, "If you think about it, on the face of things, morality is profoundly non-Darwinian and should never have appeared. To hell with being nice to others! There is a struggle for existence between organisms and victory is all important"(p.159); but he also says, "Morality on this biological scenario, therefore, is an aid to decision-making in social groups. Should I help? Should others help me? Should I expect help? And so forth"(p.175). The biological version of 'altruism' is in play here; organisms are ultimately selfish, driven to reproductive success, but enter into social and cooperative relationships in order to maximize their individual fitness. As Alcock (2001) states regarding female bees, "Whatever the proximate basis, male bee-eaters generally appear to make the "right" decisions, namely ones that on average result in the survival of more copies of *their* special alleles"(p.199). But this is where sociobiology (though not Ruse) can become confusing: some are keen to insist on the existence of group selection, despite the fact that there are no examples of reproductively self-sacrificial behavior patterns in existing organisms, and there cannot be because such organisms rapidly cease to exist either as individuals or as kinds. The motive for defending group selection would seem to (must) be to generate a naturalistic account for supposedly 'moral' social behaviors, which does not reduce to necessarily egoistic reproductive selfishness. Supposedly, if group selection exists, 'altruism' might not be necessarily selfish after all, and a genetic, determinist, Darwinian account for truly unselfish morality might be plausible. But in creating a phantom evolutionary force in group selection, in order to rescue sociobiology from condemnation (by some) insofar as it is applicable to human morality, sociobiology commits that characteristic Darwinian error of allowing metaphysics to obliterate their observations.

Wilson (2012) and Sober (1993) defend group selection on the basis of mathematical modeling, but since there is necessarily an absence of organisms which actually sacrifice themselves genetically for the sake of groups, why should mathematical modeling override the observational evidence and indeed the logical necessities of organic evolution? Unless organisms engage in reproductively selfless behavior in systematic, routine ways, which they cannot and persist, then the notion of group selection can only ever be asserted as a possible supplement to individual selection. But since groups do not reproduce, and cannot physically transfer information by means other than through successful individuals, the existence of group selection is implausible, even when the concept of natural selection is indulged. The primary method for the physical transfer of biological information via genes in cells renders evolution necessarily individualistic; unless and until group selectionists produce evidence of group information somehow being physically transferred and heritable between generations of groups there is no reason to take mere mathematical modeling more seriously than demonstrable evidence. However, even if group selection does exist, there is still no reason to regard groups as anything other than cooperating necessary egoists; certainly that is the case in the social insects. Only if group selection somehow implies genuinely selfless altruism, even if only within the groups, can a viable non-egoistic moral theory be proposed. But even the mathematical models of group selection cannot provide that possibility of genuine altruism; what they do provide is an argument for necessary tribalism, which only seems like making a bad idea (necessary egoism) even worse, not better.

Ruse, for one, rejects group selection: he (1985) writes,

> "First, we might invoke some sort of group selection hypothesis, arguing that since morality (almost by definition) works for the good of the group, its causes must be a function of selection working at the level of the group. But, as we also know, there are serious scientific objections to this kind of hypothesis, and so having already discussed these objections at length, we can drop this hypothesis at once without further argument"(p.196).

Ruse (2012) offers a standard argument: "Group selection is too open to cheating. If you have a collection of group altruists, then a variant cheater who does nothing for others is going to be at a

selective advantage, and its offspring will spread at the expense of the altruists"(p.162). Ruse (1994) admits that 'altruism' is synonymous with 'cooperation' in the context of evolution:

> "...cooperation is virtually the norm in the animal world rather than the exception"(p.496); Most often this is between mates and relatives, parents and children for instance, but it can even occur between strangers and possibly across species. Nonrelative co-operation is usually thought to be a form of enlightened self-interest, and is revealingly ascribed to "reciprocal altruism""(p.496); "Famously, notoriously, the theory about which I am talking, a theory which shows how even the most giving of actions can be related back to self-interest, has been labeled the "selfish gene" view of evolution"(p.496).

Genetically, any traits that promote self-sacrifice in any routine way will necessarily disappear from natural history – this is one of the few undeniable truths or laws about evolution that cannot be denied. So genetically, true altruism as an evolved innate behavioral predisposition is strictly impossible. Any truly selfless behavior in ourselves or anywhere in nature cannot therefore be something that is necessitated by genetic codes, since selfless behavior is by definition reproductively unsuccessful. However, Ruse (1994) argues that even genuine altruism is reducible to selfishness:

> "We think we ought to do certain things and that we ought not to do other things, because it is our biology's way of making us break from our usual selfish or self-interested attitudes and to get on with the job of cooperating with others. In short, what I am arguing is that in order to make us "altruists" in the metaphorical biological sense, biology has made us altruists in the literal, moral sense"(p.500).

Similarly, Ruse (2012) states, "Note that the point of Darwin's discussion was to show that biologically we are altruists, but the way in which we humans achieve our biological ends is through literal, ethical altruism. Doing good serves our reproductive goals. Not always, of course, but on average"(p.163). It is hard to discern what if any difference there could possibly be between Ruse's meanings for biological and ethical altruism, if they both serve selfish ends. Being selfless must mean somehow reducing your own reproductive success, or else it is not selflessness and only cooperative, and thereby equivalent with the biological meaning of altruism. Since genetically programmed reproductive selflessness is an impossible product of organic evolution, selflessness cannot possibly have anything to do with evolution, other than as some sort of accidental by-product of other behavioral traits, or as a

manifestation of evolved capabilities (reason) to transcend and override genetic predispositions. Ruse (2012) states, "...the "unit of selection" is the individual organism. In this case, although the altruist puts out, it must be with the expectation that there will be a payoff later. Overall, the gain is to the individual altruist. In other words, altruism is enlightened self-interest" (p.160); in which case there is no need to distinguish between biological and literal altruism, for they both serve selfish purposes.

Ruse (1994) writes,

> "One of the major weaknesses of any system of morality like Rawl's (or Kant before him) that tries to derive moral rules from rational principles of self-interest is that it cannot get at the true nature of morality. To pick up again on Hume's is/ought distinction, a defining mark of moral claims is that they really do seem to be different – there is a sense of obligation about them that is missing from a simple factual statement. Even if you think that the gap can be bridged, then it is surely up to you to show how this can be done. And simply translating morality in terms of self-interest is not enough"(p.502); "Here is a point of real strength in the evolutionist's approach. He or she argues that there is indeed something logically distinct about the nature of moral claims. The is/ought barrier is not to be jumped or ignored. The key point, never to be forgotten, is that we are in many respects self-centered"(p.502); "But because we have taken the route of sociality, we need a mechanism to make us break through that self-centered nature on many, many occasions. Evolution has given us this logically odd sense of oughtness to do precisely that"(p.502).

This 'odd sense' is the moral sense: Ruse (1994) argues,

> "I would argue that humans are much like the new breed of chess machines: we have certain built-in strategies, hard-wired into our brains if you like, which we bring into play and which guide our actions when we are faced with certain social situations. Sometimes things do not work out...but generally these strategies provide just the kind of quick and dirty solution that we super-"altruists" require"(p.499)" "How do these strategies present themselves to us in our consciousness? In a word, they are rules of moral conduct!"(p.500).

This seems in keeping with Hume (1751/1983), who writes,

> "The final sentence, it is probable, which pronounces characters and actions amiable or odious, praise-worthy or blameable; that which stamps on them the mark of honour or infamy, approbation or censure; that which renders morality an active principle, and constitutes virtue our happiness, and vice our misery: It is probable, I say, that this final sentence depends on some internal sense of feeling, which nature has made universal in the whole species"(p.15).

This point about commonality is a point of repetition for Hume (for example, "The notion of morals, implies some sentiment common to all mankind..."(1751/1983, p.74), that Ruse (1999) agrees with:

"With a shared evolution, we humans have a shared insight (or, rather, sense of insight) into the norms of right and wrong"(p.218). However, this contention of universality in moral sentiment is offered as if it were an empirical claim, even though it surely cannot be an empirical claim, as any moral relativist would be happy to remind us. Hume (1748/2000) argues,

> "Mankind are so much the same, in all times and places, that history informs us of nothing new or strange in this particular. Its chief use is only to discover the constant and universal principles of human nature, by showing men in all varieties of circumstances and situations, and furnishing us with materials, from which we may form our observations, and become acquainted with the regular springs of human action and behaviour. These records or wars, intrigues, factions, and revolutions, are so many collections of experiments, by which the politician or moral philosopher fixes the principles of his science; in the same manner as the physician or natural philosopher becomes acquainted with the nature of plants, minerals, and other external objects, by the experiments, which he forms concerning them"(p.64).

Hobbes (1651/1965) similarly argues,

> "But there is another saying not of late understood, if they would take the pains; and that is, *Nosce teipsum, Read thyself*: which was not meant, as it is now used, to countenance, either the barbarous state of men in power, towards their inferiors; or to encourage men of low degree, to a sawcie behaviour towards their betters; But to teach us, that for the similitude of the thoughts, and Passions of one man, to the thoughts, and Passions of another, whosoever looketh into himself, and considereth what he doth, when he does *think, opine, reason, hope, feare, &c*, and upon what grounds; he shall thereby read and know, what are the thoughts, and Passions of all other men, upon the like occasions"(p.9).

Perhaps we might want to try and find a way to excuse these authors, but as empirical claims there simply does not seem a way to take them seriously with regard to the moral sentiments. Moral relativists routinely demonstrate that there simply *is* tremendous diversity at the emotional level; hasn't it always been that way? Wilson (1978) writes, "Human behavior – like the deepest capacity for emotional response which drive and guide it – is the circuitous technique by which human genetic material has been and will be kept intact. Morality has no other demonstrable ultimate purpose"(p.167). That emotional moral objectivity causes human genetic solidarity is surely not demonstrable and seems quite far-fetched.

So, at the normative level what we have from sociobiology is innate emotional cooperativeness,

according to some a product of group selection, but even if that could be proved our cooperativeness as an inherited trait must necessarily be reproductively selfish at bottom. Our innate emotiveness is purportedly of sufficient consistency across our species that it serves as the foundation of morality; whereas Ruse claims that we experience our instincts in consciousness as rules, Hume's earlier argument is that we identify the rules by surveying human behavior to identify the patterns and regularities in the manifestation of human emotional reactions. By what route has this arisen through evolution? In addition to Hume, Ruse of course also claims Darwin as a mentor; he (2012) argues,

> "Although I am not sure of the extent to which there was a direct input from Hume to Darwin on the topic of morality – I am much more sure about the origins of religion, where there is convincing documentary evidence – we can certainly say that Darwin stood firmly in the British empiricist tradition when it came to morality. The key notion (used by Adam Smith and Edmund Burke as well as Hume) was always that of "sympathy" – a kind of moral feeling that one has for others – and this was central to Darwin's thinking also"(p.159).
>
> Regarding how 'morality' has arisen in organisms generally, Darwin (1874/1936) writes,
>
> "For, *firstly*, the social instincts lead an animal to take pleasure in the society of its fellows, to feel a certain amount of sympathy with them, and to perform various services for them"(p.472); "*Secondly*, as soon as the mental faculties had become highly developed, images of all past actions and motives would be incessantly passing through the brain of each individual: and that feeling of dissatisfaction, or even misery, which invariably results, as we shall hereafter see, from any unsatisfied instinct, would arise...."(p.472); "*Thirdly*, after the power of language had been acquired, and the wishes of the community could be expressed, the common opinion how each member ought to act for the public good, would naturally become in a paramount degree the guide to action"(p.472); "*Lastly*, habit in the individual would ultimately play a very important part in guiding the conduct of each member..." (p.472); "It is, however, impossible to decide in many cases whether social instincts have been acquired through natural selection, or are the indirect result of other instincts and faculties, such as sympathy, reason, experience, and a tendency to imitation; or again, whether they are simply the result of long-contained habit"(p.479); "The social animals which stand at the bottom of the scale are guided almost exclusively, and those which stand higher in the scale are largely guided, by special instincts in the aid which they give to the members of the same community; but they are likewise in part impelled by mutual love and sympathy, assisted apparently by some amount of reason"(p.481).

Although sociobiologists claim Darwinism, Darwin is not so easily reconciled with sociobiology. These remarks reveal an indecisive view with regard to the roles of instinct, sympathy and reason in the natural history of social behavior; Darwin (1874/1936) does offer decidedly un-Humean remarks

regarding human morality:

> "Ultimately man does not accept the praise or blame of his fellows as his sole guide, though few escape this influence, but his habitual convictions, controlled by reason, afford him the safest rule"(p.914); "The highest possible stage in moral culture is when we recognise that we ought to control our thoughts, and "not even in inmost thought to think the sins that make the past so unpleasant to us."(p.492); "But as love, sympathy and self-command become strengthened by habit, and as the power of reasoning becomes clearer, so that man can value justly the judgments of his fellows, he will feel himself impelled, apart from any transitory pleasure or pain, to certain lines of conduct. He might then declare – not that any barbarian or uncultivated man could thus think – I am the supreme judge of my own conduct, and in the words of Kant, I will not in my own person violate the dignity of humanity"(p.481).

Darwin's views are amenable to interpretation, seemingly by design, but Darwin is by no means obviously consistent with descriptive instinctivism.

As inherited traits, all instinctive or innate behavioral predispositions must be reproductively self-serving; if they were not they would not persist in populations. Instinctivism generally, therefore, in the context of evolution, is necessarily egoist at least to a quite significant degree. The only way that instinctivism can allow literal altruism as Ruse suggests and avoid necessary egoism is if somehow the emotions can be developed and refined over the course of individual lives so as to become somehow unselfish in their purpose and functioning. But how that can be accomplished without an assignment for what we would normally think of as reason, facilitating 'control' as Darwin puts it, and thereby abandoning instinctivism, is not so easily imagined. And, even if human reason does gain control of emotions/passions/sympathies/desires/instincts, it also can be regarded as a manifestation of evolved traits which might also therefore be necessarily self-serving. Darwin (1874/1936) argues,

> "In the first place, as the reasoning powers and foresight of the members became improved, each man would soon learn that if he aided his fellow-men, he would commonly receive aid in return. From this low motive he might acquire the habit of aiding his fellows; and the habit of performing benevolent actions certainly strengthens the feeling of sympathy which gives the first impulse to benevolent actions. Habits, moreover, followed during many generations probably tend to be inherited"(p.499).

Pre-evolution, Hume (1751/1983) argues,

> "Usefulness is agreeable, and engages our approbation. This is a matter of fact, confirmed by

> daily observation. But, *useful?* For what? For some body's interest, surely. Whose interest then? Not our own only: For our approbation frequently extends further"(p.42); "Compelled by these instances, we must renounce the theory, which accounts for every moral sentiment by the principle of self-love. We must adopt a more public affection, and allow, that the interests of society are not, even on their own account, entirely indifferent to us" (p.42-3).

So, we observe people finding that utility feels right, often enough that we can regard this as a moral principle, which extends to society. If we are to update Hume (as Ruse suggests) then kin selection accounts for feelings of community utility. Hume (1748/2000) writes,

> "...experimental reasoning itself, which we possess in common with beasts, and on which the whole conduct of life depends, is nothing but a species of instinct or mechanical power, that acts in us unknown to ourselves; and in its chief operations, is not directed by any such relations or comparisons of ideas, as are the proper objects of our intellectual faculties"(p.81).

Does updating *that* require believing that scientific method, and perhaps by extension all possible human thought, is self-serving? A different approach to avoiding the necessary egoism of evolutionary instinctivism is offered by Sahlins (1976): "It is reasonable to suppose that the dispositions we observe in modern man...are effects of a prolonged cultural selection"(p.13-4). On the other hand, Wilson (1978) argues, "Can culture alter human behavior to approach altruistic perfection? ...The answer is no"(p.165). The problem (for sociobiology) with a non-reductionism like Sahlin's is that human emotional responsiveness is clearly based in inherited dispositions, and is therefore instinctive and selfish at bottom, at least in the young and/or unencultured. If emotions are to break with their instinctive foundation and be utilized unselfishly, whatever culture is involved with that process would seemingly require roles for training and education and a Platonic principle of rational control, after all (or else lead to a kind of random cultural-emotional drift, which seems unlikely given the rigor of instincts). Regardless, descriptive instinctivism is the typical sociobiology perspective.

As for how that manifests itself in moral codes, sociobiologists characterize what might be described as Darwinian law. Ruse (1985; 2012) writes,

> "Of course, most people really couldn't care less whether evolutionary ethics is formally fallacious. Their real and proper objection to such an ethic is that it seems to "justify" vile moral

> practices, like Social Darwinism and Nazism. It is associated with such slogans as: "Nature red in tooth and claw." "The weakest to the wall." "The survival of the fittest." Obviously, a neo-Humean sociobiological ethics has no place for any of this. Kin selection and reciprocal altruism drive such views back to the nineteenth century, from whence they came. Nevertheless, it has to be admitted that a sociobiological ethics does deny the kind of idealized view of morality to which many pay lip-service. I have in mind a kind of sanitized combination of the first book of Plato's *Republic* and the Sermon on the Mount, where you are supposed to be indifferently nice to everybody, no matter what the cost. Sociobiological ethics suggests that you simply will not feel this way about moral obligations, not will you feel that you ought to feel this way. You will certainly feel stronger obligations to your children than to strangers, and probably you will feel stronger obligations to the unfortunates in your own society over those of other societies" (1985, p.238); "Hume, even if not an evolutionist, put his finger on the issue. Morality follows relationships"(2012, p.180); "Charity begins at home and Darwinian evolutionary theory explains why we think this is so"(2012, p.180).

Dennett (1995), like Sahlins (1976), argues that much human behavior is not necessarily genetic, describing the advent of spear usage as an example (p.486), but he also argues that niceness might have been selected for in humans, as in domesticated dogs (p.477). That would suit the sociobiological view that our genetic predispositions are overriding of cultural, yielding necessary gene-based egoism (niceness amounting to kin selection and reciprocal cooperation). Wilson (1978) writes,

> "Primitive men are ecological analogs of lions, wolves, and hyenas. Alone among the primates...they, with the marginal exception of the chimpanzees, they have adopted pack hunting in the pursuit of big game.... This way of life persisted for a million years of longer and was abandoned in most societies only during the last few thousand years. Thus the selection pressures of hunter-gatherer existence have persisted for over 99 percent of human genetic evolution"(p.84).

Wilson (1978) argues that this pack behavior eventually gave rise to,

> "Precepts chosen by intuition based on emotion [that] are primarily biological in origin and are likely to do no more than reinforce the primitive social arrangements. Such a morality is unconsciously shaped to give new rationalization for the consecration of the group, the proselytizing role of altruism, and the defense of territory"(p.167); "As band changed to tribe, true male leaders appeared and gained dominance, alliances between neighboring groups were strengthened and formalized, and rituals marking the changes of season became general"(p.88); "As chiefdoms gave rise to cities and states, these basic qualities were intensified. The heredity status of the elite was sanctified by religious beliefs.... Religion and law were codified, armies assembled, and bureaucracies expanded"(p.88-89).

Ruse (2012) writes,

> "Turn now to the philosophical questions. First, what about normative morality. Note that the

> Darwinian is going to be asking about what we think we should do as opposed to asking what we really should do. These are not obviously one and the same, so keep this point in mind. The answer is going to be couched in something along the lines of common-sense morality"(p.176); "Agree that perhaps (possibly, certainly?) an evolutionary approach to normative morality can yield a fairly conventional set of rules. Is there anything in the approach that might speak to its virtues, convince us that it is worth taking seriously?"(p.178).

Ruse (1985) argues,

> "Indeed, what we find is that although people have different evolutionary strategies, even different desires, they tend to share the same moral code"(p.208); "Thus, for example, at one point, Wilson argues for "an evolutionary approach to ethics", claiming at one point that sociobiology show that "no single set of moral standards can be applied to all human populations, let alone all sex-age classes within each population". But, simply speaking, Wilson is wrong: sociobiology shows nothing of the sort"(p.85); "Note that neither Hume nor the sociobiologist is plunged into moral relativism. Because we are all members of the same species, with a common evolutionary heritage, we have shared moral standards"(p.237).

Ruse (1994) writes,

> "What I want to say, therefore, is that the kind of being on whose evolution I was speculating in the last section, that is to say ourselves, is one whose prescriptive morality is going to be fairly commonplace – "commonplace" in the sense of familiar, and not at all in the sense of trivial or unimportant"(p.500); "Incidentally, I am not insensitive to the fact that there is little surprise that modern-day Social Contract theories and modern-day versions of Darwinism coincide, because they have shared roots in eighteenth-century political thought"(p.502).

Ruse (2012):

> "The popular mid-Victorian ethical theory was utilitarianism in some form or another"(p.156); "Charles Darwin accepted this philosophy, why would he not, but he gave it a bit of a biological twist"(p.156).

Ruse (1994):

> "You may be wondering if I am not a little bit too ecumenical in my attitude to other moral systems, religious and secular, Christianity, Kantianism, probably utilitarianism, and more. Should one not plump for one system and have done with it?"(p.502); "Again, I would claim a strength not a weakness for the evolutionist. The simple fact of the matter is that it is the philosopher's stock in trade to look for counter-examples to established moral systems. But most of the time, the well-known and tried systems agree on what one should do"(p.502).

Hume (1748/2000) also asserts the existence of an objective moral code, on the basis of common particular sentiments:

> "Should a traveller, returning from a far country, bring us an account of men, wholly different

> from any, with which we were ever acquainted; men, who were entirely divested of avarice, ambition, or revenge; who know no pleasure but friendship, generosity, and public spirit; we should immediately, from these circumstances, detect the falsehood, and prove him a liar, with the same certainty as if he had stuffed his narration with stories of centaurs and dragons, miracles and prodigies"(p.64-5); "So readily and universally do we acknowledge a uniformity in human motives and actions as well as in the operations of the body"(p.65); "We must not, however, expect, that this uniformity of human actions should be carried to such a length, as that all men, in the same circumstances, will always act precisely in the same manner, without making any allowance for the diversity of characters, prejudices, and opinions. Such a uniformity in every particular, is found in no part of nature. On the contrary, from observing the variety of conduct in different men, we are enabled to form a greater variety of maxims, which still suppose a degree of uniformity and regularity"(p.64-65).

This seems like a significant methodological difference between Hume and Hobbes (1651/1965), for although the latter argues, "But whatsoever is the object of any mans Appetite or Desire; that is it, which he for his part calleth *Good*: And the object of his Hate, and Aversion, *Evill*; And of his Contempt, *Vile* and *Inconsiderable*"(p.41), he continues,

> "For these words of Good, Evill, and Contemptible, are ever used with relation to the person that useth them: There being nothing simply and absolutely so; nor any common Rule of Good and Evill, to be taken from the nature of the objects themselves; but from the Person of the man (where there is no Common-wealth;) or, (in a Commonwealth,) from the Person that representeth it; or from an Arbitrator or Judge, whom men disagreeing shall by consent set up, and make his sentence the Rule thereof"(p.41).

Hobbes (1651/1965), although relying on sentiment, does not recognize *principles* simply by enumeration, for he apparently does not observe that much commonality (hence the need for the Leviathan to suppress human emotions under rule of law). Whether Hobbes (1651/1965) thinks we should act on reason or appetite is unclear:

> "A law of nature (*Lex Naturalis*,) is a Precept, or general Rule, found out by Reason, by which a man is forbidden to do, that, which is destructive of his life, or taketh away the means of preserving the same; and to omit, that, by which he thinketh it may be best preserved"(p.99); "The Lawes of Nature oblige in Conscience alwayes, but in Effect then onely when there is Security"(p.121, margin); "And the Science of them, is the true and onely Moral Philosophy. For Moral Philosophy is nothing else but the Science of what is *Good*, and *Evill*, in the conversation, and Society of man-kind. *Good*, and *Evill*, are names that signifie our Appetites, and Aversions; which in different tempers, customes, and doctrines of men, are different: And diverse men, differ not onely in their Judgement, on the senses of what is pleasant, and unpleasant to the taste, smell, hearing, touch, and sight; but also of what is conformable, or disagreeable to Reason, in the actions of common life. Nay, the same man, in divers times,

> differs from himself; and one time praiseth, that is, calleth Good, what another time he dispraiseth, and calleth Evil: From whence arise Disputes, Controversies, and at last War. And therefore so long a man is in the condition of mere Nature, (which is a condition of War,) as private Appetite is the measure of Good, and Evill: And consequently all men agree on this, that Peace is Good, and therefore also the way, or means of Peace, which (as I have shewed before) are *Justice, Gratitude, Modesty, Equity, Mercy*, & the rest of the Laws of Nature, are good; that is to say, *Morall Vertues*; and their contrarie *Vices*, Evill"(p.122); "These dictates of Reason, men use to call by the name of Lawes; but improperly: for they are but Conclusions, or Theoremes concerning what conduceth to the conservation and defence of themselves; wheras Law, properly is the word of him, that by the right hath command over others. But yet if we consider the same Theoremes, as delivered in the word of God, that by right commandeth all things; then are they properly called Lawes"(p.122-123).

What does seem clear is a different method than the generalizing of our observations of actual human conduct, which is what Hume (and to some extent apparently Ruse) defends. Even on this (latter) method, though, if it does not seem especially plausible that particular human passions are sufficiently uniform to identify regularities across all of humanity, neither does it seem plausible that codes could be concocted by empirically surveying for patterns in the observations. There is a significant degree of uniformity in human nature, attributable to our common natural history, but that kind of uniformity appears too general or fundamental to be morally relevant. People get angry, or sad, and so on, but in different ways, for various reasons, in irregular situations. Regarding principles of right action, such uniformity simply does not seem to be there; rather, as Hobbes suggests, people need to be obliged one way or another. As a method, identifying right action with herd behavior cannot work: if what we ought to do is the same as what we do do than there is nothing for 'ought' to do, and epistemically morality ceases to exist (which Ruse more or less will admit to).

Worse, this method is practically disastrous, for it sanctions rather than censures the worst possible human behaviors. Darwin (1874/1936) writes,

> "In the case of the lower animals it seems much more appropriate to speak of their social instincts, as having been developed for the general good rather than for the general happiness of the species. The term, general good, may be defined as the rearing of the greatest number of individuals in full rigour and health, with all their faculties perfect, under the conditions to which they are subjected. As the social instincts both of man and the lower animals have no doubt been developed by nearly the same steps, it would be advisable, if found practicable, to

> use the same definition in both cases, and to take as the standard of morality, the general good or welfare of the community, rather than the general happiness"(p.490); "No doubt the welfare and the happiness of the individual usually coincide; and a contented, happy tribe will flourish better than one that is discontented and unhappy. We have seen that even at an early period in the history of man, the expressed wishes of the community will have naturally influenced to a large extent the conduct of each member, and as all wish for happiness, the "greatest happiness principle" will have become a most important secondary guide and object; the social instinct, however, together with sympathy (which leads to our regarding the approbation and disapprobation of others), having served as the primary impulse and guide. Thus the reproach is removed of laying the foundation of the noblest part of our nature in the base principle of selfishness; unless, indeed, the satisfaction which every animal feels, when it follows its proper instincts, and the dissatisfaction felt when prevented, be called selfish"(p.490).

So Darwin offers a less hedonist utilitarianism than Bentham, associating 'good' with rigour and egoism, but the good is still here apparently a felt social instinct, clearly contradicting his reference to Kant, so we need not take the supposed unselfishness seriously, for nowhere does Darwin clearly argue or even imply that we are capable of truly selfless instinctive behavior. The reproach stands: feelings of satisfaction are produced by kin selection which Darwin admits in shifting his terminology from 'species' to 'community' to 'tribe'. Darwin (1874/1936) writes,

> "To do good unto others – to do unto others as ye would they should do unto you – is the foundation-stone of morality"(p.500); "A tribe including many members who, from possessing in a high degree the spirit of patriotism, fidelity, obedience, courage, and sympathy, were always ready to aid one another, and to sacrifice themselves for the common good, would be victorious over most other tribes; and this would be natural selection. At all times throughout the world tribes have supplanted other tribes; and as morality is one important element in their success, the standard of morality and the number of well-endowed men will thus everywhere tend to rise and increase"(p.500).

However, on Darwin's theory, so-called morality defined as cooperativeness must yield an advantage even to individuals even within social groups or else social behavior would not have arisen nor exist in any species. Perhaps within parts of insect colonies there is no relative individual advantage, but humans are not insects. For Darwin, relevant 'others' is restricted to the tribe, in group selection, which has never been demonstrated to exist.

Ruse (2012) asserts,

> "In fact, at the normative level, Darwin was reasonably informative, though we need to take

> note that his discussion does not focus on the offering prescriptions for good behavior so much as assume these, trying to explain them in the light of evolutionary biology"(p.156); "To be honest, however, Darwin was not really tremendously reflective on what all of this might mean in practical terms, although it is fairly easy to infer that his values were those of an upper-middle-class Englishman, of liberal persuasion. He was violently against slavery.... In favor of capitalism.... What Darwin did see was that, at the biological level, morality demands an element of sociability. We have got to have a feeling that we can and want to get on with our fellows"(p.156-157).

However, consider: Darwin (1874/1936) writes,

> "Let it be borne in mind how all-important in the never-ceasing wars of savages, fidelity and courage must be"(p.498); "Selfish and contentious people will not cohere, and without coherence nothing can be affected. A tribe rich in the above qualities would spread and be victorious over other tribes: but in the course of time it would, judging from all past history, be in its turn overcome by some other tribe still more highly endowed. Thus the social and moral qualities would tend to slowly advance and be diffused throughout the world"(p.498).

It is difficult to imagine a more severe perversion of the concept of morality than to define it as a necessity for, and a product of, successful tribal warfare. Do these remarks not amount to asserting that genocide is good? "Win or die!", Ruse (2012) states: "This was certainly the conclusion of others, not the least of whom (in historical significance) was Adolf Hitler"(p.159); whom Ruse goes on to quote. Ruse (1994) states,

> "The connection between Social Darwinism and the dreadful social philosophies of this century has been a topic much discussed by historians and students of political philosophy. Something had to cause the worst of them all, National Socialism, and I would not hold Haeckel entirely blameless. There was both fervent nationalism and a strong streak of anti-Semitism, for instance. But historically, the Nazis did not much like Haeckel or his ideas, and one can see why: at the heart of his philosophy is the belief that we are all interrelated, including the Jews, and that our ancestors were monkeys"(p.492)!

But knowledge of our interrelatedness does not prevent Darwin from defining war as good, and it is not reasonable to suggest that Haeckel was an evolutionist of influence compared to Darwin. Sahlins (1976) writes, "For if totemism is...the explication of differences between human groups by reference to the distinctions between natural species, such that clan A is related to and distinct from clan B as the eagle hawk is to the crow, then sociobiology merits classification as the highest form of the totemic philosophy"(p.106). That seems like an insightful remark, for traditional moral sentimentalism in the

context of evolution becomes necessarily egoistic instinctivism at the normative individual level. Add kin selection, especially combined with a belief in empirically indemonstrable group selection, and evolutionary sentimentalism yields a normative prescription for tribal conflict.

**§ 3 – Epistemology**

Ruse (2012) writes,

> "Note that the Darwinian is going to be asking about what we think we should do as opposed to asking what we really should do"(p.176); "Let us agree that evolutionary biology can tell us much about what we think we should do. But this is not to tell us what we really should do, and for this we need foundations. What is the metaethical justification that the evolutionary biologist is offering? It cannot be progress, because that simply will not work. But what else could it be, if you are offering a naturalistic foundation? There is one possibility, namely that there is no foundation at all! Perhaps what we believe to be the case is all that there is to it. There us no reality, no objective truth, beneath what we think is the truth"(p.180).

This is Ruse's solution to the 'no ought from is' problem – that there is no justification for our apparent oughts, because morality is merely an adaptive psychological illusion which ultimately serves genetic selfishness. No ought from is, because no ought at all. However, the context of evolution does not alter how, given any particular situation, there must be some actions that are more appropriate than others, however 'appropriate' might be defined. For a Darwinian, reproductively advantageous, staying alive, keeping relatives alive, all must be considered appropriate. If Darwinians do not think that the theory is believable enough to act on, then why would anyone including themselves take it seriously at all? Ruse asserts that Darwinism can tell us what we *think* we should do, but there will always be a truly proper course of action that is ideally correct given any situation. It is up to the individual to figure out what that proper action is. Whatever we might think we should do, the further it varies from the right action, the wronger we are. As Darwinians, sociobiologists cannot believe that anything goes, and it would be unreasonable for anyone to believe that everyone always gets it right, so there must normally be a difference between what we think we should do and what we really should do. If Ruse is trying to say that there are no deontological rules to follow, like the ten commandments, that would not work either, since Darwinism offers the rules just mentioned as a code of conduct, or else the theory is not worth taking seriously.

Ruse (2012) argues,

> "The point is that, however you regard the nature of material objects and the truth status of scientific claims (coherence or correspondence), the claims of ethics are weaker in a sense. Not in the sense that we take them less seriously or more relativistically – you can still be as hard-line on rape as on gravity – but that whereas claims about the physical world refer (if only in an internal realist sense), claims about the moral world do not"(p.181).

But *claims* about the material world may *not* refer, if we are thinking about hypotheticals; demonstrable observations do refer, at least to whatever it is out there that is causing the reproducible experiences. So the scientific claim has a *possible* referent: the moral claim refers to an action, that will be taken, and to whether it is the right action given a scenario, so it too has a possible referent, which is whatever action is most appropriate. The moral and scientific claims both refer to possibles, inferred from observables. What we think we should morally do, like what we think is the empirical case, are both what we think, which may or may not be what is right, or real, or true. Ruse (2012) writes, "What would it mean to be a moral realist? You are referring to moral facts, whatever they are. And what they are is certainly, as Moore (1903) pointed out, non-natural. They have to be something existing in their own right or the Will of God or some such thing"(p.181). Right actions must be possible, in the simple sense that, all things considered, scenarios call for certain actions and not for others; whatever the right action is it might just as well be referred to with the term 'fact', although we may not easily discern it. Ruse (2012) continues,

> "So if someone insists that, even though morality as we know it at the normative level can be explained absolutely and completely in terms of evolutionary biology, nevertheless they believe that God stands behind the whole system making it work, qua naturalist I don't think you can put a finger on them. However, I am not sure that this is quite the end of the discussion. For a start, if the evolutionary account works, then the objective reference is not needed. Normative morality is as it is because of the biology, and if you don't want to go beyond the natural you do not have to"(p.181-182).

Ruse declares that he agrees with Hume about the is/ought distinction; for Darwinians, the theory is the objective reference, for it serves an exactly analogous role in sociobiology as the Ten Commandments (and Darwin as the prophet). Since we must act (for there is no not acting), in asserting that evolution explains morality "absolutely and completely" Ruse is asserting that evolution fully provides the basis

of right action – that it is all that we need to know. Is this not an ought *from* an is, just like Hume's identifying all possible moral principles with observed human behavior patterns? If we were to more reservedly just take evolution into consideration, as an element to be included in deliberation, we might think of how our oughts could best be *about* the ises and possibles of evolution. But to argue that our oughts are totally determined by empirical generalizations is to define morality not even with an is, actually, but with a possible. That seems like a risky moral method, since what we think we should do will not very often be what we really should do if all we take into consideration is one or a few empirical theories. Besides, that would also amount to going beyond the 'natural', since metaphysical research programmes are no more natural a referent for right action than religious texts.

Ruse (1985) states, "In short, the sociobiologist would deny that he/she is him/herself morally callous. Rather, he/she claims moral realism. Seeing ethics in an evolutionary perspective allows us to stay true to how we really feel about morality. There is no more to be said"(p.237-238); but Ruse (2012) asks,

> "Suppose the moral non-realist is right. Suppose there is no objective reality. Why do most people, including most philosophers, find this hard to accept? To the Darwinian, the answer is obvious. If we did not believe that morality was objective, that it refers to real facts, then we would soon quit obeying it. Why should I be good when there is no reason? At least, no reason in my self-interest as against simply looking after Number One? So, to use an ugly word introduced by the late John Mackie, we "objectify" normative morality, thinking it does have a foundation, even though it does not. This is a case where biology is deceiving us for our own good, because Kant was right: if we stop being moral society breaks down and then we all lose"(p.183).

In (1985) Ruse associates 'real' with existence, in the sense that since we do really have moral feelings and we can describe that as a kind of moral realism. In (2012) Ruse associates 'real' with objectivity, in the sense that although we have moral feelings, since they are not objective, or do not refer to anything objective, they are not 'real' but just thoughts in our heads. Like a natural fact, which supposedly refers to something that exists beyond the thoughts in our heads, a 'real' moral fact must refer to some sort of objective fact that exists beyond the thoughts in our heads. But, sociobiology does present the 'facts' of

evolution as morally relevant, as actionable. Why cannot, Reproduce!, be considered an objective moral maxim, or fact, if, as sociobiology argues, it is true for everyone? Hume (1751/1983), Ruse's inspiration, offers the regularities of human behavior as facts:

> "As this is a question of fact, not of abstract science, we can only expect success, by following the experimental method, and deducing general maxims from a comparison of particular instances"(p.16)"; "Men are now cured of their passion for hypotheses and systems in natural philosophy, and will hearken to no arguments but those which are derived from experience. It is full time they should attempt a like reformation in all moral disquisitions; and reject every system of ethics, however subtle or ingenious, which is not founded on fact and observation"(p.16).

Whatever moral facts are, they must include a human element, since they are about human actions. They cannot be perfectly independent of human cognition, and the likening of ethics with math is generally taken as metaphorical not literal. The possibility of objectivity in ethics concerns what all moral agents should do in given situations; if there are no moral agents there are no moral situations, and the only moral agents we know of are human, so moral objectivity cannot possible transcend humanity altogether in the way that some believe mathematics might. Ruse (1985) writes,

> "We are what we are, namely possessors of a psychology which feels there is an objective morality external to us and which we must obey. There may not be such objectivity, but evolution has us thinking otherwise. (Hume's position is sometimes called "moral scepticism". For obvious reasons, I do not much care for this label. No one is denying morality. What is being denied is the usual foundation)"(p.237).

What is offered by sociobiology is a different foundation – evolution, which Ruse (2012) defends as explaining morality "absolutely and completely". Why does that not amount to objectively, in the sense of being external to us (as individuals; external to our species being meaningless)? And, given Ruse's agreement with Hume about the similarities and commonalities of human sentiments, given the common evolutionary history of our species, do those regularities not also amount to an objectivity, external to us?

So, although Ruse asserts no foundation for ethics, no objectivity, no justification, apparently in order to avoid the naturalistic fallacy, this seems inconsistent with defending evolution as an

explanatory basis (foundation) for ethics. To argue that there is no foundation for ethics demands arguing that there is no foundation; to suggest that there is no foundation on the basis of a new or different foundation is contradictory. Sociobiology is essentially committed to a Darwinian foundation for ethics; the main point of the theory is to apply animal behavior to human and draw normative lessons thereby. Drawing non-ethical descriptive comparisons between animals and humanity is mainly the work of psychologists. Although Ruse (2012) argues against the earlier attempts by evo-ethicists to draw normative lessons from the process of evolution generally ("They saw the evolution process as one that had direction, leading up to humans"(p.170); "Better therefore to channel and direct it if one is able, and if not then at least not to stand in its way and prevent the better from succeeding and continuing"(p.171); "Philosophers have a standard reply against all of this.... It comes from David Hume"(p.171)), methodologically there does not seem to be much of a difference: natural processes are taken as rules for conduct, whether it be competition or reproduction. If one wants to consistently assert that ethics has no objective foundation, then one cannot be in the business of defending an objective foundation.

Ruse (1994; 1999) describes morality as an adaptation:

> "I have argued that normative ethics is a biological adaptation, and I would argue that as such it can be seen to have no being or reality beyond this"(1994, p.504); "According to the "ethical skeptic," therefore, ethics – normative ethics –has evolved to make us good cooperators, because given the kinds of beings we humans are, cooperation is a good adaptive strategy in the struggle for existence. We have a moral sense because it is adaptively advantageous to have it, but ultimately (as in the case of the secondary qualities that appear so vividly to us) there is nothing that it is sensing"(1999, p.218)!

But how can adaptively advantageous cooperation ultimately amount to nothing? Either moral sense is adaptive, and therefore quite objective and real, or it senses nothing (unlike secondary qualities which are causally linked somehow to external stimuli), but moral sense cannot be both adaptive and illusory. Darwinians often like to offer arguments to counter religious influences, so these arguments can be interpreted as a rejection of religious deontology, but they do not seem to work as a rejection of

deontological ethics altogether. Ruse (1994) writes, "...rather than an individual illusion – here we have a collective illusion of the genes, bringing us all in. We need to believe in morality, and so, thanks to our biology, we do believe in morality. There is no foundation "out there," beyond human nature"(p.505). If we are all necessarily in on the same illusion, does that not make the illusion objective, at least for us humans (or intersubjective, perhaps), and therefore not illusory? That is the only sort of objectivity that Hume was after, and which Ruse endorses. And, even if morality is an adaptation, and so a product of evolution generally, since evolution extends beyond human nature why is that not a foundation "out there"? Ruse is fairly repetitive on this point, but the suggestion that morality is an illusion does not seem to be able to do the work that Ruse wants it to: he (1994) writes, "A major attraction to my position in my eyes is that one simply cannot be guilty of committing the naturalistic fallacy or violating the is/ought barrier, because one is simply not in the justification business at all"(p.504). But in calling morality an adaptation, conducive to cooperation, and ultimately reproduction, Ruse is necessarily in the justification business. Ruse (1994) continues, "There are very good reasons why we would believe in normative ethics whether it has independent existence or not. We need it for "altruism"(p.505); "I can see nothing in the argument I have given for the existence of normative ethics which supposes that it exists "out there", whatever that might mean"(p.505). Again, if we need ethics to be altruists, and we need evolution to have ethics, then ethics is being justified on the objective foundation of evolution.

Wilson (1978) also recommends this point of view: "...innate censors and motivators exist in the brain that deeply and unconsciously affect our ethical premises; from these roots, morality evolved as instinct"(p.5). If morality is instinctive it is necessarily selfish and reproductively oriented; any tendencies to cooperation and 'altruism' serve these ends and so might manifest in consciousness as illusory inclinations towards genuinely selfless behavior, as Ruse suggests. Ruse does a better job of taking sociobiology through to its logical conclusions, but the problem is that he himself does not seem

prepared to accept them. Moral epistemology cannot simply amount to picking and choosing the positions that one prefers and hoping that they stick together; it must all amount to a coherent epistemological argument. Given the obvious problems some ask, Why bother with sociobiology? Dennett (1995) argues,

> "Any such uniformity might be misread by biologists as signs of a special "instinct," when in fact it was just their general intelligence that led them again and again to hit upon the same bright idea"(p.486-487); "It is hard to believe that sociobiologists can make the mistake of ignoring this omnipresent possibility, but the evidence is striking that they have done so, again and again"(p.487); "We need to look at each remarkable similarity in turn, to see if any of them *needs* a genetic explanation..."(p.488); "It does not follow from the fact that our reproductive ends were the ultimate historical *source* of our present values, that they are the ultimate (and still principal) *beneficiary* of our ethical actions. If Ruse and Wilson think otherwise, they are committing the "genetic" fallacy that Nietzsche (and Darwin) warned us about"(p.470).

Ruse (1985) argues,

> "And, in any case, we have already seen reason to believe that human culture in some overall sense must be biologically adaptive, and because moral behaviour is such a large part of culture, it too despite any appearances to the contrary must surely be adaptive. Otherwise, we have to admit that even in the most primitive peoples, a large portion of their behaviour is probably seriously dysfunctional" (p.197).

Here is truly committed Darwinism; in casting culture as either adaptive (and therefore reproductive) or dysfunctional, Ruse is offering a false dichotomy and a peculiar world view. Ruse (1989) writes, "Furthermore...commitment to adaptation at this point is not mere "reductionist dogma." Rather, it is a proper inference from one of the most powerful of scientific theories"(p.203). Ruse is here discussing human reasoning and science as also adaptive; we can just as well apply the notion of 'adaptationism' to his arguments about morality. Adaptationism is an issue of much discussion in the philosophy of biology literature; it asserts that all organic traits and products can be interpreted as somehow reproductively advantageous. Needless to say, with regard to human cognition it is controversial, for many believe that we have cognitively transcended selection pressures and have attained a degree of intellectual freedom. Free will is not part of the Darwinian program, which is also an adaptationist argument at bottom. Ruse (1989) continues, "If you reject evolutionary epistemology, it is surely

incumbent upon you to suppose some alternative of your own"(p.203); this too reveals Ruse's ideological commitment, for adaptationism cast even onto the inner specific workings of the human intellect does not seem to be the most obvious interpretation.

Although Ruse (1985) writes, "Hume's position is sometimes called "moral scepticism". For obvious reasons, I do not...care for this label"(p.237); Ruse (1994) states, "Hence I feel confident in arguing that ethical skepticism is not only the answer to the evolutionist's needs, but the way pointed by evolution"(p.506); "The position I am endorsing is known technically as "ethical scepticism," and I must stress that the skepticism is about metaethical foundations, not the prescriptions of ethics"(p.504). Sociobiology might more accurately be described as moral adaptationism, for it offers a foundation of Darwinism upon which is placed traditional common sense sentimentalism. Ruse (1994) continues,

> "Alternatively, it is known as "non-cognitivism," although I shall be at pains shortly to explain where I differ from other non-cognitivist positions like "emotivism"(p.504); "I believe that, if emotivism be the complete answer, genes for cheating would soon make a spectacular appearance in the human species – or rather, those genes already existing would make an immediate gain. The way in which biology avoids this happening is by making moral claims seem *as if they were objective*"(p.507)!

Rather than the non-cognitive suggestion that we declare actions – Bad! and Good! – strictly on the basis of personal feelings, Ruse contends that we necessarily and adaptively believe that everyone else feels the same way. This is still instinct or emotion, though, as Ruse (1994) writes,

> "I may not offer justification for normative ethics; but surely, I must offer justification for the claim that normative ethics has no justification! In fact, this I think I can do, for I believe that sometimes when one has given analysis of why someone believes something, one has shown that the call for reasoned justification is inappropriate – there is none"(p.504).

Instinctivism would seem like a relativist position, but Ruse's adoption of Hume's belief that we are all quite similar, although on evolutionary not statistical grounds, combined with this necessary belief in objectivity, allows Ruse (1994) to say, "In other words, what I want to suggest is that – *contra* the emotivists – the *meaning* of morality is that it is objective. Because it is not, it is in this sense that it is an illusion; although, because it is, this is a reason why it is not relative – not to mention why you are

finding my arguments so implausible"(p.507)! Ruse's position does seem to be non-relativist, and does seem implausible. Hume's surveying method for arriving at sentimental non-relativism is not empirically credible, while Ruse's assertion that we all necessarily believe that we all have the same moral feelings is also not empirically credible. At least, Ruse like Hume would have to support these arguments with empirical evidence since they are empirical claims. Ruse (1994) takes a different route, continuing: "This is also a reason why I do not fear that my telling you all this will let you go away and sin with impunity. Your genes are a lot stronger than my words. The truth does not always set you free"(p.507). Similarly (2012):

> "As the Freudian argues that you are denying the truth of the Freudian analysis because of your own problems, so the Darwinian argues that you assert the objective truth of morality because or your own nature, one that Darwinism has brought about"(p.184)!

Committed Darwinism – here in the form of determinism. As Dennett (1995) notices, "The typical inability of Wilson and other sociobiologists to see their critics as anything but religious fanatics or scientifically illiterate mysterians is yet one more sad overswing of the pendulum"(p.471). Ruse (1994) writes,

> "It is true that my newfound enthusiasm is connected with exciting developments in modern evolutionary biology, especially that part that deals with social behavior ("sociobiology"), and it is true also that much that has been written in the past does not bear full critical philosophical scrutiny; but evolutionary ethics has rarely if ever had the awful nature of legend. The simple fact of the matter is that, like everyone else, philosophers have been only too happy to have had a convenient Aunt Sally, against which they can hurl their critical coconuts and demonstrate their own intellectual purity, before they go on to develop an alternative position of their own"(p.489).

That may be true, however, as an empirical theory about ethics, sociobiologists must surely be amenable to queries about demonstrable evidence, which seems to be lacking. As it stands, sociobiology is speculative and simply contradicts normal human experience.

The most obvious contradiction with experience is sociobiology's characterization of moral deliberation as instinctive, and therefore *necessarily* selfish. It seems more reasonable to believe that a

common human trait is an ability to deliberate, and to consider the appropriateness of unselfish actions, than to believe that we do not have that ability. Sociobiologists are committed to either this notion of instinctive deliberation, or else that unselfish deliberation is illusory and self-deceptive, which are both unempirical points of view. Consider Darwin (1874/1936):

> "I am aware that some persons maintain that actions performed impulsively, as in the above cases, do not come under the dominion of the moral sense, and cannot be called moral. They confine this term to actions done deliberately, after a victory over opposing desires, or when prompted by some exalted motive. But it appears scarcely possible to draw any clear line of distinction of this kind"(p.482); "On the contrary, we all feel that an act cannot be considered as perfect, or as performed in the most noble manner, unless it be done impulsively, without deliberation or effort, in the same manner as by a man in whom the requisite qualities are innate"(p.482); But in the case of man, who alone can with certainty be ranked as a moral being, actions of a certain class are called moral, whether performed deliberately, after a struggle with opposing motives, or impulsively through instinct, or from the effects of slowly-gained habit. But to return to our more immediate subject. Although some instincts are more powerful than others, and thus lead to corresponding actions, yet it is untenable, that in man the social instincts (including the love of praise and fear of blame) possess greater strength, or have, through long habit, acquired greater strength than the instincts of self-preservation, hunger, lust, vengeance, &c"(p.483); "How so many absurd rules of conduct, as well as so many absurd religious beliefs, have originated, we do not know; nor how it is that they have become, in all quarters of the world, so deeply impressed on the minds of men; but it worthy of remark that a belief constantly inculcated during the early years of life, whilst the brain is impressible, appears to acquire almost the nature of an instinct; and the very essence of an instinct is that it is followed independently of reason"(p.491); "Notwithstanding many sources of doubt, man can generally and readily distinguish between the higher and lower moral rules. The higher are founded on the social instincts, and relate to the welfare of others. They are supported by the approbation of our fellow-men and by reason. The lower rules, though some of them when implying self-sacrifice hardly deserve to be called lower, relate chiefly to self, and arise from public opinion, matured by experience and cultivation; for they are not practised by rude tribes"(p.491).

Again, Darwin is not as easily reconciled with sociobiology as sociobiologists suggest; while he does declare a role for rational control of instincts in ethics (below), as Humeans sociobiologists do not. Without an element of rational control, morality is reduced to necessary selfishness, since even the social instincts are ultimately selfish (kin selection) and cannot be considered of "greater strength" than the perfectly selfish instincts like lust and self-preservation. Darwin includes actions performed "impulsively through instinct" as moral, but it is hard to see how necessarily selfish actions can warrant that term. For sociobiologists, those are the only kind of actions that exist.

Ruse (1989) writes,

> "Without wanting to draw unwarranted connections, it seems to me that Hume's "dispositions," which he supposed to govern our thinking, are very much in line with the rules of thinking that the evolutionary epistemologist believes were yielded by epigenetic rules"(p.215); "There are strong causal connections between Darwin's science and the philosophy of Hume, whereas the connections between Darwin science and Kant's philosophy, although not entirely absent, are much less sturdy"(p.215).

Epigenetic rules amount to heritable, but non-genetically, innate necessities of human cognitive function; it is not at all clear that they exist but Ruse includes scientific reasoning along with moral dispositions in this category. Wilson (1978) also asserts a Humean characterization of moral deliberation (with the sociobiological twist):

> "Compassion is selective and often ultimately self-serving"(p.154); "We would expect hard-core altruism to serve the altruist's closest relatives and to decline steeply in frequency and intensity as relationship becomes more distant. "Soft-core" altruism, in contrast, is ultimately selfish. The "altruist" expects reciprocation from society for himself or his closest relatives"(p.155-156).

In other words, reason is the slave of passion, and passions are instinctive so necessarily selfish. Of course, as Darwinians sociobiologists need to convince us that Darwin can be easily brought along; Ruse (2012) writes,

> "It hardly takes a daring inference to conclude that Darwin's metaethics, his justification for normative prescriptions, was thoroughly naturalistic. Any foundations have to be in terms of human nature and this is our biological human nature. What these foundations might be, however, or if indeed there are any foundations at all, is not a question raised by Darwin"(p.159).

Darwin's moral epistemology is amenable to interpretation, perhaps because contradictory, but he certainly did offer one that reveals differences with Hume. As quoted above, Darwin offers an evolutionary history for morality beginning with the social behavior in animals, but his description of human morality details a more distinctive break with the lower animals than that recognized by Hume and the sociobiologists. The passage quoted above regarding moral lines of conduct that are not motivated by pain and pleasure is not an exception: Darwin (1874/1936) writes,

> "As far as deliberation, and the victory over opposing motives are concerned, animals may be

> seen doubting between opposed instincts, in rescuing their offspring or comrades from danger; yet their actions, though done for the good of others, are not called moral"(p.482); "Why then does man regret, even though trying to banish such regret, that he has followed the one natural impulse rather than the other; and why does he further feel that he ought to regret his conduct? Man in this respect differs profoundly from the lower animals"(p.483); "Man prompted by his conscience, will through long habit acquire such perfect self-command, that his desires and passions will at last yield instantly and without a struggle to his social sympathies and instincts, including his feeling for the judgment of his fellows"(p.486); "The imperious word *ought* seems merely to imply consciousness of the existence of a rule of conduct, however it may have originated"(p.486).

These passages might still be construed as Humean, for in describing how "passions and desires" yield to "social instincts" we might take that to mean that the more selfish feelings can be overruled by the more social (although above we quoted Darwin asserting that the selfish instincts are always stronger than the social); it is still all feelings so far.

Darwin (1874/1936) continues,

> "The above view of the origin and nature of the moral sense, which tells us what we ought to do, and of the conscience which reproves us if we disobey it, accords well with what we see of the early and undeveloped condition of this faculty in mankind. The virtues which must be practised, at least generally, by rude men, so that they may associate in a body, are those which are still recognised as the most important"(p.487); "The chief causes of the low morality of savages, as judged by our standard, are, firstly, the confinement of sympathy to the same tribe. Secondly, powers of reasoning insufficient to recognise the bearing of many virtues, especially of the self-regarding virtues, on the general welfare of the tribe"(p.489).

So far, this might still be construed as Humean moral epistemology, since Hume did not rule out a role for reason altogether. But in the following remark Darwin (1874/1936) offers a description of moral diversity that would appear to contradict Hume:

> "Neither can we say why certain admirable virtues, such as the love of truth, are much more highly appreciated by some savage tribes than others; nor, again, why similar differences prevail amongst highly civilised nations. Knowing how firmly fixed many strange customs and superstitions have become, we need feel no surprise that the self-regarding virtues, supported as they are by reason, should now appear to us so natural as be thought innate, although they were not valued by man in his early condition"(p.491).

Darwin (1874/1936) goes on to include a few remarks about how human faculties are more developed than animal partly for possessing an ability to reason, and then writes:

> "Ultimately our moral sense of conscience becomes a highly complex sentiment – originating in the social instincts, largely guided by the approbation of our fellow-men, ruled by reason, self-interest, and in later times by deep religious feelings, and confirmed by instruction and habit"(p.500).

So for Darwin conscience is complex indeed: a sentiment *ruled* by reason *and* self-interest *and* religious feelings, *and* guided *and* confirmed by approbation, instruction, and habit. And, Darwin may be right – but this also does not seem Humean. In his summary, Darwin (1874/1936) states,

> "The moral nature of man has reached its present standard, partly through the advancement of his reasoning powers and consequently of a just public opinion, but especially from his sympathies having been rendered more tender and widely diffused through the effects of habit, example, instruction, and reflection"(p.914).

In the context of evolution and selfish/social instincts, it is crucial that we decide whether we are capable of controlling our sympathies or not, whether sentiment really is "ruled by reason", and whether even if so, if it is "ruled by self-interest" (and the other factors also). We might wish for more in the way of explicit remarks on this from Darwin, but he does say enough to make himself clear that we cannot easily interpret him as Humean. Darwin (1874/1936) writes,

> "Ultimately man does not accept the praise or blame of his fellows as his sole guide, though few escape this influence, but his habitual convictions, controlled by reason, afford him the safest guide. His conscience then becomes the supreme judge and monitor. Nevertheless, the first foundation or origin of the moral sense lies in the social instincts, including sympathy; and these instincts no doubt were primarily gained, as in the case of the lower animals, through natural selection" (p.914).

This is perhaps the most explicit remark on moral epistemology that Darwin offers: *when* convictions become controlled by reason, *then* conscience becomes the judge, *that* is the foundation of morality now in us. Historically, the first foundation *was* the instincts; *those* are products of natural selection. If that is a proper interpretation, then Darwin is decidedly not Humean, and he decidedly does offer a moral foundation. Darwin (1874/1936) writes,

> "As the reasoning powers advance and experience is gained, the remoter effects of certain lines of conduct on the character of the individual, and on the general good, are perceived; and then the self-regarding virtues come within the scope of public opinion, and receive praise, and their opposites blame. But with the less civilised nations reason often errs, and many bad customs

> and base superstitions come within the same scope, and are then esteemed as high virtues, and their breach as heavy crimes"(p.913).

So perhaps we might find a way to interpret Darwin's aforementioned remarks on tribalism more favorably: since tribalism is on Darwin's view a product of group selection and social instincts, if fully moral humanity is capable of controlling or ruling instincts with reason, virtue and conscience, then tribalism can be regarded as primitive, unruly, out of control; in a word, immoral. However, given Darwin's (1872/1936) choice of "The Preservation of Favored Races in the Struggle for Life" (an empirically empty but ideologically loaded phrase) as the alternate title for the *Origin*, that might be generous.

> Ruse (2012) writes,
>
> "Confirming our suspicions, we find that before writing the *Descent*, Darwin did actually read Kant's *Metaphysics of Morals* and in *Descent* actually quotes one of the more purple passages in that work"(p.158); "In truth, however, Darwin was never really on that track. For Kant, morality had a kind of necessity, stemming from the conditions required for rational beings living together. If there are rational beings on Andromeda, they will think and behave like late eighteenth-century Germans living on the far reaches of the Baltic, revealing their Pietist childhoods. Darwin to the contrary bluntly asserted that if things had gone otherwise, we might think that killing each other is the highest moral duty"(p.158).

Ruse (2012) goes on to quote the following from Darwin (1874/1936):

> "It may be well first to premise that I do not wish to maintain that any strictly social animal, if its intellectual faculties were to become as active and as highly developed as in man, would acquire exactly the same moral sense as ours. In the same manner as various animals have some sense of beauty, though they admire different objects, so they might have a sense of right and wrong, though led by it to follow widely different lines of conduct. If, for instance, to take an extreme case, men were reared under precisely the same conditions as hive-bees, there can hardly be a doubt that our unmarried females would, like the worker-bees, think it a sacred duty to kill their brothers, and mothers would strive to kill their fertile daughters; and no one would think of interfering"(p.473).

Comparing moral sense with beauty is certainly an idea that Hume defends, and genetic determinism in morality also contradicts Darwin's notions of rational control, but Darwin's epistemology is inconsistent. Our point here is only that Darwin is not obviously Humean, and so not obviously consistent with sociobiology, despite assertions to the contrary. Darwin apparently saw the potential for

evolved moral rationalism; why do sociobiologists typically reject this possibility? Ruse's (2012) 'Andromeda' remark is a point of repetition: elsewhere he writes,

> "At least, we are stuck with the paradox that we do that which is right because it is biologically advantageous, rather than because it is right! This conclusion goes completely against the spirit of an objective ethics. As Immanuel Kant, one ardent supporter of an objective ethics, pointed out, such an ethics is nothing if it is not categorical, demanding right behaviour because it is right. Regretfully, given evolution, it is at least possible that we could find ourselves doing the objectively wrong thing because it is biologically advantageous"(1985, p.237); "But Kant himself wants to do far more than the evolutionary epistemologist can possibly allow. And one place where the two philosophies come apart is over this very question of necessity. Think back for a moment about what we have already learned of the evolutionary process. One thing is absolutely fundamental. There is no progress. It is simply not the case that evolution led unidirectionally – or indirectly with any inevitably – toward the human species"(1989, p.213); "Yet, although I am quite sympathetic to the Kantian perspective – after all, I have spoken in a positive way of Rawl's system of moral philosophy – I believe that, in one crucial way, my system of evolutionary ethics can never be that of the Kantian. For Kant, the ethics we have is uniquely that possessed by rational beings, here on earth and anywhere else. This, to the Darwinian evolutionist, smacks altogether too much of a kind of progressionist upward drive to the one unique way of doing things. As I have argued, why should not the John Foster Dulles way of doing things have become the biologically fixed norm. The Kantian wants to bar intergalactic relativism, and this I am not prepared to do"(1994, p.508).

Kant (problematically) invokes 'all rational beings' as a necessary metaphysical *idea* for the derivation of his practical philosophy, while also repeatedly clarifying that his epistemology of 'Transcendental Idealism' generally is of necessity for us humans but that whether that necessity extends beyond us is impossible to decide. Regardless, the potential of rational objectivity amongst ourselves (which is the only extension we can or need concern ourselves with) does not imply evolutionary progress towards a predetermined goal, just the potential for objectivity for us. Perhaps there are other cognitive niches out there, different, but necessary for those who manifest them. Perhaps our mode of reasoning is a contingent product of evolution here on earth. Ruse's (1985) notion that there are actions which are biologically right for us, but 'objectively' wrong, is a confusing attempt to dismiss moral rationalism by suggesting that 'reason' must necessarily extend to all possible cognitive beings, and so cannot be contingent, and so cannot be a product of evolution, and so cannot be (morally) relevant for us, who are necessarily wholly and fully products of Darwinian natural selection. Sociobiology casts morality as

just another adaptation, accidental; but there is nothing in Darwinism to justify rejecting the possibility that human reason in general is an adaptation. Ruse (1989) himself admits this:

> "I should say, nevertheless, that even if it were not at all obvious how our innate dispositions might lead to modern science, I would be still be uncomfortable about supposing that so fundamental an aspect of human nature as our reasoning abilities was entirely a nonadaptive byproduct of the evolutionary process. This is simply not how evolution works. When you have major features which seem to have adaptive virtues – and if reasoning does not have such virtues, I do not know what would – then you expect to find natural selection has been at work"(p.202-203).

Again, epistemology cannot be a matter of picking and choosing whatever particular points of view one prefers and hoping that it all sticks. If general reasoning is an adaptation, then why reject moral rationalism? If reasoning in general does not raise concerns about evolutionary progress and absolute necessity, then why should moral reasoning?

Hume (1751/1983) also presents this false dichotomy:

> "There has been a controversy started of late, much better worth examination, concerning the general foundation of MORALS; whether they be derived from REASON, or from SENTIMENT; whether we attain the knowledge of them by a chain of argument and induction, or by an immediate feeling and finer internal sense; whether, like all sound judgment of truth and falsehood, they should be the same to every rational intelligent being; or whether, like the perception of beauty and deformity, they be founded entirely on the particular constitution of the human species"(p.13-14); "The standard of the one, being founded on the nature of things, is eternal and inflexible, even by the will of the Supreme Being: The standard of the other, arising from the internal frame and constitution of animals, is ultimately derived from that Supreme Will, which bestowed on each being its peculiar nature, and arranged the several classes and orders of existence"(p.88).

But there is also the possibility of objective human reasoning, which may also be rooted in human nature and not extend beyond humanity, which Hume (1748/2000) acknowledges (full quote above): "...experimental reasoning...on which the whole conduct of life depends, is nothing but a species of instinct..."(p.81). So apparently for Hume there is the habitual/customary/instinctive connections of events that we refer to as causation, which counts as experimental reasoning, in contrast to pure or abstract reasoning. Hume defends sentiment as the foundation for morals, in order to arrive at an ethics restricted to human nature, even though he acknowledges an objectivity in human reason that is based

in human nature and need not be associated with absolute necessity. He might therefore also have attempted to derive a rational foundation for ethics, that was also rooted in human nature, based on his interpretation of human reason (rather than on evolution, which might also have been attempted by Ruse). The point is that there is nothing about evolution or human reasoning that rules out moral rationalism. In the absence of further explanation, these arguments at bottom seem to amount to some sort of non-cognitive emotivism applied to moral epistemology: Instinctivism Good! Rationalism Bad!

Sentimentalists generally acknowledge a significant role for reasoning in moral deliberation, but insist that the final arbiter is some sort of felt passion, emotion, desire, or instinct, rather than reason itself. Reason is thereby cast as a process, not a motive in itself, but if we are somehow able to sort through our various passions, and to choose to act on whichever one is appropriate, in the right way, for the right reasons, towards the right people, at the right times and so on, then this surely amounts to a faculty of rational control over our passions, which distinguishes moral agents from people and from animals that always act on whatever passion is most immediately felt. Even if reason is not in itself a motive, the ability to select, manifest, or direct sentiments as needed is sufficient for arguing that human morality has a rational foundation. Feelings cannot be the ultimate foundation of morality if they are only a tool of rational discipline; and instinctivists must also contend that such discipline is not only generally absent but generally impossible for human beings. Ethics concerns how we ought to act, not how we do act, so both sides of this debate would benefit from empirical evidence for their point of view about human potential. Instinctivists have a strong empirical case descriptively; like Hume, they can point to how people generally behave, but as Hume seemingly both admitted and denied, that is not what ethics is all about. So psychological studies demonstrating that rational control is not within the normal range of potential human behavior must be provided; such evidence has not yet been produced. In the meantime, we have rather confusing arguments from the instinctivists: Wilson (1978) writes,

"Human emotional responses and the more general ethical practices based on them have been

> programmed to a substantial degree by natural selection over thousands of generations.... We must consciously choose among the alternative emotional guides we have inherited. To chart our destiny means that we must shift from automatic control based on our biological properties to precise steering based on biological knowledge"(p.6).

If we can choose among the emotions, then how can ethics be "programmed" by them? Is conscious choosing also naturally selected? Is sociobiology already obsolete? Wilson (1978) writes, "Because the brain can be guided by rational calculation only to a limited degree, it must fall back on the nuances of pleasure and pain mediated by the limbic system and other lower centers of the brain"(p.68). Can the brain be guided by reason, or not? This kind of argumentation is traditional: Hobbes (1651/1965) defines, "Ethiques" as "Consequences from the *Passions* of Men" (p.65, Table); he also writes,

> "And because in Deliberation, the Appetites, and Aversions are raised by foresight of the good or evil, and sequels of the action whereof we Deliberate; the good or evill effect thereof dependeth on the foresight of a long chain of consequences, of which very seldome any man is able to see to the end"(p.48); "In *Deliberation*, the last Appetite, or Aversion, immediately adhering to the action, or to the omission thereof, is that wee call the WILL; the act, (not the faculty,) of *Willing*. And Beasts that have *Deliberation*, must necessarily also have *Will*. The Definition of the *Will*, given commonly by the Schooles, that it is a *Rationall Appetite*, is not good. For if it were, then could there be no Voluntary Act against Reason. For a *Voluntary Act* is that, which proceedeth from the *Will*, and not other"(p.46-47).

Why does will have to be defined as either rational, or appetitive, rather than potentially motivated by both, or either? Surely consequences must be calculated rationally; if consequences are the end of reasoning, upon which we act, surely we must attach appetites to the various consequential predictions; do we necessarily select that consequence most pleasurable? Is instinctivism necessarily, or a derivative, of determinism? Hume (1751/1983) writes,

> "One principal foundation of moral praise being supposed to lie in the usefulness of any quality or action; it is evident that *reason* must enter for a considerable share in all decisions of this kind; since nothing but this faculty can instruct us in the tendency of qualities and actions, and point out their beneficial consequences to society and to their possessor"(p.82); "It appears evident, that the ultimate ends of human action can never, in any case, be accounted for by *reason*, but recommend themselves entirely to the sentiments and affections of mankind, without any dependence on the intellectual faculties"(p.87); "If you demand *Why? It is the instrument of pleasure*, says he. And beyond this it is an absurdity to ask for a reason. It is impossible there can be a progress *in infinitum*; and that one thing can always be a reason, why another is desired. Something must be desirable on its own account, and because of its

immediate accord or agreement with human sentiment and affection"(p.87).

But this does not answer to why we must choose to pursue whatever it is that we find most pleasurable. If reason is a mere pleasure calculator, that is one thing, but *why* we necessarily pursue pleasure is another thing altogether, which despite Hume's assurances does not appear to be supported by observational evidence of human behavior. Perhaps the majority of humans are pleasure seekers, the majority of the time, but what has that got to do with ethics?

Descriptive instinctivism only appears to be a coherent epistemological argument if it asserts determinism, but that cleaves the perspective from its empirical aspirations. Since reason admittedly plays a role, but since we are not permitted to act on anything other than our sentiments, which we have no other way of controlling than by what we would normally refer to as a faculty of reason, descriptive instinctivism must boil down to determinism. Hume (1748/2000) writes, "Our authority over our sentiments and passions is much weaker than that over our ideas, and even the latter authority is circumscribed within very narrow boundaries"(p.54). For Hume's epistemology to make sense, we cannot have any control over our sentiments at all, for if we did we would not have to act on whatever sentiment presents itself most strongly in our consciousnesses and instinctivism would give way to rationalism. Ruse (1994) states,

> "There are other reasons why I think of my position as being essentially that of David Hume brought up to date by Charles Darwin. One is that Hume is the authority for the compatibilist approach that I have taken to the problem of free will and determinism"(p.508); "Much of what we do socially requires learning, and – a point to which I shall return – we seem to have a dimension of freedom, of flexibility, not possessed by the ants – which is just as well, biologically speaking"(p.498); "The most crucial presupposition of ethics, speaking now at the normative level, is that we have a dimension of freedom. You must be able to choose between right and wrong, otherwise there is no credit for good actions and equally no credit for bad ones"(p.506); "However, did any moral thinker, except perhaps the French existentialists at their most bizarre and unconvincing, ever truly think that we choose the rules of moral action? This is what makes traditional Social Contract thinking so implausible. Moral choice comes into whether or not we obey the rules of morality, not whether we choose the rules themselves. We are not free to decide whether or not murder is wrong"(p.506)"; "Although (and because) morality is an adaptation, I am not saying that we will always be moral – for biological and nonbiological reasons we may break from it. The point is that we can break from it"(p.506-507).

Similarly, Ruse (1985) writes,

> "In short, we do have some non-genetic power over our destiny, and what has evolved is not necessarily a good in itself"(p.85); "Perhaps the point I am trying to make can be brought out more clearly by noting that few today want to deny that there are some causes, conscious or unconscious, behind all human actions"(p.87).

Ruse (1999):

> "One is a firm evolutionary naturalist. At the same time, one avoids the naturalistic fallacy because one is not justifying anything, including ethics, in terms of anything else, including evolution! And although personal responsibility and choice are important (the whole point of this view of ethics is that one does have the freedom to choose and is not locked into one course of action), and although it certainly is agreed that norms will change as circumstances change, ethics is more than just personal feelings. There are standards that are society-wide, if not humanity wide"(p.219);

Ruse (2012):

> "We are determined by biology to have the dispositions that we have and by our culture in the ways that we have expressed"(p.176); "These are sentiments laid upon us. But no one, other than perhaps French existentialists at their most extreme (and unconvincing)), has ever argued otherwise. Where we do have choice is whether we are going to obey the moral dictates"(p.176).

These are some rather dubious claims: Ruse suggests that the innate dispositions are the moral dictates or rules, which we may or may not choose; does that not mean that when we disobey our instincts we are immoral? If we can disobey our sentiments, might not we be able to do that in an orderly and social way, as argued by social contract theorists? Mainly, if we can disobey or override our instincts, by what faculty would that be accomplished other than by what we might normally refer to as reason? If reason can override ethics, then why do we need to take sociobiology seriously? Wilson (1978) argues similarly:

> "I believe that the human mind is constructed in a way that locks it inside this fundamental constraint and forces it to make choices with a purely biological instrument"(p.2); "It would appear that our freedom is only a self-delusion"(p.71); "The mind is too complicated a structure...to be predicted in advance by the individuals affected or by other human beings. You and I are consequently free and responsible in this persons in this limited sense"(p.77).

Alcock (2001), also:

> "Thus, when critics tag sociobiologists as genetic determinists, they may, ironically enough, be tapping into an evolved enthusiasm for free will and freedom of action, attributes that make many receptive to the depreciation of sociobiology"(p.46); "Some readers of the "no data" criticism may have concluded that an *absence of evidence* on the genetic foundation of human social behavior constitutes *evidence for* the noninvolvement of genes in the development of our sociality"(p.52); "But if it is sometimes possible for humans to overcome our evolved predispositions, and no sociobiologist would disagree, then wouldn't it be wise to understand just what effects past natural selection has had on us"(p.195)?

It would seem that, if sociobiology is to be taken seriously as a topic of ethics and not just animal behavior and psychology, then sociobiologists need to sort out the question of determinism. We can all admit that we have genetic predispositions or instincts, and apparently most of us including the sociobiologists can admit that we are not behaviorally determined by our instincts. But in that case, sociobiology is only ethically relevant insofar as it can inform us about what our instincts are and how they manifest themselves, so that we might learn how to rationally employ them as we see fit.

The question of free will is a problem of metaphysics after all; there can be no necessary or obvious proof one way or another (unless one counts objective human experience as proof). Wilson (1975) argues, "In the first chapter of this book I argued that ethical philosophers intuit the deontological canons of morality by consulting the emotive centers of their own hypothalamic-limbic system"(p.563); Campbell (1966) writes, "The need for values can be seen to arise from his neurological situation – from the fact of man's possessing an "archaic neurological and endocrinological system partially but not completely under corticol control""(p.320). It seems unlikely that deciding what to do will, or can be, pinpointed to a particular region of the brain; even if it could it is not clear how that would relate to free will. Might not emotions be willfully summoned; could thespians not testify to that? Even if not, do they necessarily override rational deliberation and free choices? Sentimentalists argue, Yes! Ruse's (1985) point (above) about there ultimately being causes behind all actions is the line of argument that Hume follows, who (1748/2000) writes,

> "Where would be the foundation of *morals*, if particular characters had no certain determinate power to produce particular sentiments, and if these sentiments had no constant operation on

> actions? And with what pretence could we employ our *criticism* upon any poet or polite author, if we could not pronounce the conduct and sentiments of his actors, either natural or unnatural, to such characters; and in such circumstances? It seems impossible, therefore, to engage in science or action of any kind, without acknowledging the doctrine of necessity, and this *inference* from motives to voluntary actions; from characters to conduct"(p.68-69); "When again they turn their reflections towards the operations of their own minds, and *feel* no such connexion of the motive and the action; they are thence apt to suppose, that there is a difference between the effects, which result from a material force, and those which arise from thought and intelligence. But being once convinced, that we know nothing farther of causation of any kind, than merely *constant conjunction* of the objects, and the consequent *inference* of the mind from one to another, and finding that these two circumstances are universally allowed to have place in voluntary actions; we may be more easily led to own the same necessity to all causes"(p.70).

Of course, not all of us are convinced that all there is to causation is constant conjunction; we are justified in believing, and 'know', that there are fundamental forces at work when billiard balls make contact that have nothing to do with repetitive human experience. Furthermore, Hume associates causation calls generally with custom and sentiment; if there is no feeling of necessary causation in thought, there is no custom, and no belief; free will is held to a different set of rules by Hume (see also Hume's (1748/2000) footnote 18, p.71; "...liberty...a false sensation...).

Hume (1748/2000) argues, "The same experienced union has the same effect on the mind, whether the united objects be motives, volitions, and actions, or figure and motion"(p.69). Does Hume arrive at that generalization by surveying human behavioral patterns, as is his stated method? For it seems unlikely, as he admits, that many would report their moral experiences as including "felt necessity". Since apparently not, what method are we employing other than sheer speculation? Hume (1748/2000) writes,

> "Necessity, according to the sense, in which it is here taken, has never yet been rejected, nor can ever, I think, be rejected by any philosopher. It may only, perhaps, be pretended, that the mind can perceive, in the operation of matter, some farther connexion between the cause and effect; and a connexion that has not place in the voluntary actions of intelligent beings. Now whether it be so or not, can only appear upon examination; and it is incumbent on these philosophers to make good these assertion, by defining or describing that necessity, and pointing it out to us in the operations of material causes"(p.70).

Like Alcock (2001) (above), this method is that old favorite – I speculate, now you must prove me

wrong. Obviously this is not Hume's general approach: Hume (1748/2000) writes,

> "But as long as we will rashly suppose, that we have some farther idea of necessity and causation in the operations of external objects; at the same time, that we can find nothing farther, in the voluntary actions of the mind; there is no possibility of bringing the question to any determinate issue, while we proceed upon so erroneous a supposition. The only method of undeceiving us, is, to mount up higher; to examine the narrow extent of science when applied to material causes; and to convince ourselves, that all we know of them, is, the constant conjunction and inference above-mentioned. We may, perhaps, find, that it is with difficulty we are induced to fix such narrow limits to human understanding: But we can afterwards find no difficulty, when we come to apply this doctrine to the actions of the will. For as it is evident, that these have a regular conjunction with motives and circumstances and characters, and as we always draw inferences from the one to the other, we must be obliged to acknowledge in words, that necessity, which we have already avowed, in every deliberation of our lives, and in every step of our conduct and behaviour"(p.71); "For what is meant by liberty, when applied to voluntary actions? We cannot surely mean, that actions have so little connexion with motives, inclinations, and circumstances, that one does not follow with a degree of uniformity from the other, and that one affords no inference by which we can conclude the existence of the other. For these are plain and acknowledged matters of fact. By liberty, then, we can only mean a power of acting or not acting, according to the determinations of the will; that is, if we choose to remain at rest, we may; if we choose to move, we also may"(p.72); "And it seems certain, that, however we may imagine we feel a liberty within ourselves, a spectator can commonly infer our actions from the motives and character; and even where he cannot, he concludes in general, that he might, were he perfectly acquainted with every circumstance of our situation and temper, and the most secret springs of our complexion and disposition. Now this is the very essence of necessity, according to the foregoing doctrine"(p.72, footnote 18).

Perhaps taking the third person abstract perspective allows Hume to avoid the inconsistency regarding the absence of felt necessity within our own minds, but then Hume can be challenged empirically. If we were able to run the ideal experiment, in which a group of subjects were "perfectly acquainted" with another group of subjects and their "circumstances and dispositions", would the observers be able to predict the actions of the observees with perfect accuracy? It seems likely that probably not, but even if they could, would that imply determinism? Just because people behave predictably does not mean that they behave deterministically; most of us surprise ourselves and one another and often do. And if they did behave with perfect predictability, that still would not prove instinctivism, anyway, since reason seems more consistent than emotions generally. Sentimentalism is the main contention for Hume and most sociobiology; it requires determinism to make sense, but that in turn undermines the view's

empirical viability. The point here is that an instinctivist moral epistemology such as sociobiology must include an instinctive determinism, or else cede moral rationalism. If we do not obey the instincts necessarily, we are free to deliberate and override, and with what else besides rational self-discipline? Sociobiology as described appears incoherent in avoiding this point; perhaps because determinism renders morality either impossible (in negating choice) or illusory (both of which contradict the empirical inspiration for instinctivism).

Finally, if we were to consider the possibility of organic, rather than natural, selection, and the irreducible elements of choice, decision, and indeterminism that are implied at even the most basic levels of organic life, might that resolve problems for descriptive instinctivism? Natural selection is a determinist theory, so Darwinians are inviting difficulties in even attempting ethical theory, which generally presupposes free will. However, the indeterminacy of organic selection theory must still be confined within the problem of evolutionary persistence; organic actions must generally be self-preserving and reproductively advantageous in order for individuals and kinds to persist. Instincts, as evolved and heritable traits, are no less necessarily selfish on organic selection than natural. While instinctivism might not be absolutely determinist on organic selection, it would still be necessarily egoist, and determinist in that limited sense if instincts cannot be overridden. The only other possibility would be that, in cognitively advanced creatures, there might exist an emotional capacity to override selfishness and instinct, which somehow puts rationality to work, but which somehow amounts to some sort of ultimately arational emotive selflessness. This would seem unlikely given the evolutionary basis of instincts as survival mechanisms, since it would amount to an inversion of the historical purpose of emotion. Without a role for rational self-discipline it is difficult to conceive how we might be governed by emotion and yet choose to be truly selfless in any sort of behaviorally routine, or humanly objective ways, but perhaps there is a case for evolved selfless sentimentalism which manifests some sort of override of egoism analogous to that attributed to rational discipline. Such a position does not appear to

have adherents; if it were to draw any it would seem that a selfless arational emotive capacity, if it existed, would have to be proven necessary (descriptive) because it could likely not amount to a practical prescription for moral method if it were a matter of choice. Not when rational ability and self-discipline appear to be at hand, seemingly able to facilitate fully free choices, without the sort of self-contradiction that selfless emotions drawn from instinctive faculties would imply. In any case evolved arational emotive selflessness would be relevant only in humans, and if within our potential more likely a matter of our choice of which method is more practical. While sociobiology in the hands of Darwinians is generally determinist and egoist, since organic choice in general cannot be indulged on that view, in the context of organic selection moral epistemology is more a matter of human potential, chosen direction, and practical possibilities. If a descriptive instinctivism can be defended in the context of organic selection as more plausible than it seems, then perhaps we can expect such arguments to emerge, but if only a possible matter of choice, then the practicality of prescribed instinctivism (given the apparent inexistence of an arational potential for self-discipline) is described below (Part IV).

## Part III: Descriptive Rationalism

### § 1 – Science

Whereas descriptive instinctivism, in the context of evolution, amounts to necessary selfishness, given the natural history of emotions as self-serving instincts, and given the denial of any possibility of rational self-control, descriptive moral rationalism amounts to necessary selflessness, in abstracting from human nature altogether in favor of an egalitarian ideal of social and purely rational 'agents'. In contrast to descriptive instinctivism, which defines morality in terms of a willful description of human nature that does not include rational self-discipline, descriptive rationalism offers a willful denial of our natural human condition, both as instinctive animals and as an ecologically situated species. Whereas descriptive instinctivists deny that there is such a thing as a particularly human, rather than simply animal, nature (since instincts are common amongst us and the other animals), descriptive rationalists deny that human nature is morally relevant (insofar as rationality is presumed to transcend humanity, but is a kind of cognition in which we can partake, which defines and exhausts moral epistemology). Therefore, in respectively defining ethics as either necessarily instinctive or necessarily rational, we are offered a contrast between depravity and fantasy. Descriptive instinctivists are not prepared to acknowledge the evolution of human potential for rational discipline, but descriptive rationalists are not prepared to acknowledge that evolution has implications for what can be realistically regarded as *practical* reason. Singer (1981/2011) writes, "Animals act instinctively; humans are rational, self-conscious beings. We can reflect on the rightness and wrongness of our actions. We can follow moral rules. We can see what is good, and choose it. Animals cannot. Or so many people think"(p.27). Singer (1981/2011) refers to his perspective as sociobiology, but his version is atypical (and apparently unique): whereas Darwinism does generally imply an instinctivist and determinist sociobiology since Darwinism must fundamentally oppose the possibility of organic choice playing any significant role in evolution on pain of incoherence, Singer (1981/2011) argues,

> "Properly understood, sociobiology does not imply that behavior is actually motivated by the desire to further one's own interests or those of one's kin"(p.44); "...sociobiology, properly understood, provides a clear reason for rejecting psychological egoism"(p.128); "So sociobiology, properly understood, does not support the view that we are irredeemably selfish, at least not in any normal sense of the term"(p.129); "Nevertheless, sociobiology provides the basis for a new understanding of ethics. It enables us to see ethics as a mode of human reasoning which develops in a group context, building on more limited, biologically based forms of altruism"(p.149).

A key point for understanding Singer's point of view, and in particular why he insists that moral rationalism can be regarded as sociobiology (given the obvious inconsistency with Darwinian metaphysics), is that he asserts that moral reasoning can be regarded as distinctly a product of evolution. Practical reason is a trait, in other words, that as a species we have developed over the eons, and which we inherit as individuals; practical reason is not merely a by-product of general human reasoning ability. Such a perspective necessarily requires defending some quite mistaken ideas about how evolution works. Practical reason must be regarded as a trait on this view, or else there is no point in giving a sociobiological argument, but of course traits are generally adaptive and therefore selfish, and so it is contradictory to suggest sociobiology can yield an evolved distinct unselfish cognitive trait. Singer (1981/2011) casts practical reason as a refinement of instinct, rather than control, based on his arguments that group selection is real, and that truly unselfish behavioral traits can thereby evolve. But that is impossible; truly unselfish traits simply cannot persist in the process of evolution (by definition); they might manifest as by-products of other traits but that is not Singer's view regarding practical reason. In reviewing Singer's (1981/2011) position, while the biology errors are apparent, there emerges a popular theory of ethics – rationalist utilitarianism. Singer's overall view is peculiar: while his defense of consequentialist and collectivist moral rationalism as an outcome of evolution is unique and warrants fuller consideration, and while neither consequentialism nor collectivism generally are in themselves rendered impractical in the context of evolution, the focus here is Singer's descriptive rationalism: is it plausible or practical that humans can or should conduct moral deliberation purely on

a rational basis (that morality is by definition purely rational)? Singer argues that it is plausible and practical, in the sense that being moral depends on our deliberating as if we were pure rational agents. Of course, rationalism and utilitarianism and collectivism are not necessarily conjoined by moral epistemologists generally, but that is Singer's position, and since he is is unique among evo-ethicists in defending the descriptive rationalism category of moral epistemology, we shall attempt to critique the descriptive rationalism without rejecting broader utilitarianism and collectivism along the way. Neither of the latter meet with any objection on the basis of evolution; it is strictly the descriptive rationalism that is implausible and risky, but since Singer bases his utilitarianism and collectivism on his descriptive rationalism his formulations of those concepts are also flawed. While utilitarianism and collectivism are traditionally not positions that have relied on pure moral rationalism, in any case they are basically beside the point here. Our concern is – Does descriptive rationalism amount to a practical moral epistemology in the context of evolution? Our answer is – No. (Formulations of both utilitarianism and collectivism could be, and would have to be, theoretically associated with the moral epistemology recommended here – prescriptive rationalism – in order to be practical in the context of evolution, but that is beyond the scope of this dissertation, which is focused on the four epistemological categories.)

Social behavior is not ethical behavior; if it were the social insects would be moral geniuses. Moral behavior presupposes choice, free will, and deliberation, and in that context the theory of descriptive instinctivism should not be considered as a theory of ethics at all, but a theory of ethics denial. Nevertheless, Singer (1981/2011) regards animal social behavior as the precursor of ethics, which might appear to be common-sensical only so long as one denies or is unaware of the necessary selfishness of instinctive behavioral traits. When that biological fact is acknowledged, it is not plausible to regard social behavior as early ethics; only when instinctive animal behavior is regarded as somehow unselfish can it make sense to perceive it as very basic morality. Truly unselfish behavior cannot

possibly be instinctive; it can only ever happen in arational animals incidentally and not as a heritable trait of routine behavior, or in rational animals by means of an ability to override the instincts. This means that ethics is only possible in the rational, but not that ethics is necessarily wholly and fully rational by definition. The ability of the rational to override, but also to apply, employ, or summon instincts as appropriate, in order to successfully navigate *this* (not a metaphysical abstract) world, an ability which must surely be amenable to training and improve with experience and/or culture, renders rationality as a necessary but not sufficient element of moral cognition. Singer (1981/2011) writes,

> "It is now generally accepted that the roots of our ethics lie in patterns of behavior that evolved among our prehuman ancestors, the social mammals, and that we retain within our biological nature elements of these evolved responses"(p.xi); "Just when a pattern of restraint toward other members of the group becomes a social ethic is hard to say; but ethics probably began in these pre-human patterns of behavior rather than in the deliberate choices of fully fledged, rational human beings"(p.4); "Sociobiology bears on ethics indirectly, through what it says about the development of altruism, rather than by a direct study of ethics. Since it is difficult to decide when a chimpanzee or a gazelle is behaving ethically, this is a wise strategy"(p.5).

These are curious remarks; even if we were to believe that animal behavior can be genuinely unselfish, would we not still have to also believe that ethical behavior is a matter of deliberate choice? Even on a theory of organic selection, which indulges the possibility of irreducible, ineliminable organic choice, we would not want to ascribe morality to organism choices unless they included the possibility of conscious reflection. So chimps perhaps; gazelles, not likely.

Singer (1981/2011) argues, "Attempts to draw sharp lines between ourselves and other animals have always failed"(p.27); "Both human and non-human animals have innate tendencies toward behaving in particular ways"(p.27-8); Singer (2005) states, "But justice is not, at least in its origins, a human invention. We can find forms of it in our closer nonhuman relatives"(p.479). However, the relevant distinction is not between human and animal, but free or determined; how free and deliberated the choices of animals are is a matter of speculation. Many other mammals would seem to be capable, but that does not amount to evidence that ethics is an evolved trait, or has roots in animal behavior, but

only that many mammalian species are capable of conscious deliberation. This is a significant point, because unless ethical reasoning can be plausibly regarded as a distinct, heritable, evolved trait, then we really do not need to engage in a sociobiological analysis of ethics in particular (although perhaps of general reasoning). Singer (1981/2011) writes,

> "Yet while the diversity of ethics is indisputable, there are common elements underlying the diversity. Moreover, some of these common elements are so closely parallel to the forms of altruism observable in other social animals that they render implausible attempts to deny ethics has its origin in evolved patterns of behavior among social animals"(p.29);

but he (1981/2011) also states, "Now, however, the existence of ethics can be explained as the product of evolution among long-lived social animals with the capacity to reason"(p.106). This is confusing; is the origin of ethics social behavior patterns, or the capacity to reason? Of course, we know that it must be the latter, but Singer thinks we can have it both ways. Like the instinctivist sociobiologists, Singer is motivated against religion: he (2005) writes,

> "The single most important advantage we have over the great moral philosophers of the past is our understanding of evolution and its application to ethics. Although the philosophers I have mentioned were able to free themselves from the myth of the divine origin of morality and to explain morality in naturalistic terms, they lacked a proper understanding of how our norms may have arisen by natural selection with the gene as the basic unit for the transmission of inherited characteristics between generations. Without this knowledge, they could observe our feelings and attitudes but not explain them adequately"(p.477).

Natural selection cannot yield evolved norms, for the concept of norms implies morality, which implies free will, which natural selection forbids. Feelings and attitudes perhaps, but of the necessarily self-serving kind, otherwise known as instincts, not norms.

Apparently, Singer shares the determination to hatch a naturalist account of ethics with which to rail against religion, and desires a plausible evolutionary mechanism for the evolution of truly moral behavior as a trait unto itself. As a rationalist, however, he might settle for an account by which general reasoning ability gradually evolves to the point of being able to facilitate controlled animal and human behavior. That would be compatible with Darwinian natural selection up to the emergence of the

rationally coordinated behavior; the instinctivist sociobiologists maintain ideological purity in denying even that. As a somewhat conflicted Darwinian, Singer nevertheless opts to pursue an adaptationist account for practical reason in particular, which leads him to offer even more implausible and flatly mistaken assertions regarding altruism and group selection than the instinctivist Darwinians. Since he declares belief in free will and rational control, but does not offer an explanation for his motives, we can only point out the problems and wonder, Why? Referring to Hobbes, Singer (1981/2011) writes,

> "It is not the force of the state that persuades us to act ethically. The state, or some other form of social power, may reinforce our tendency to observe an ethical code, but that tendency exists before the social power is established. The primary role Hobbes gave to the state was always suspect on philosophical grounds, for it invites the question why, having agreed to set up a power to enforce the law, human beings would trust each other long enough to make the agreement work. Now we also have biological grounds for rejecting Hobbes's theory"(p.24).

Hobbes described ethical codes as rational rules for social coherence, which required an additional motive of fear of punishment from the state in order to foster compliance. There is nothing about evolution that warrants rejecting a mixed moral epistemology like Hobbes's, but Singer believes otherwise because he thinks instinctive behavior, including instinctive behavioral customs that amount to social codes, can be regarded as ethical, because he thinks unselfish instincts are possible. If truly altruistic conduct can be an evolved behavioral trait, then ethics supposedly predates rationality; but since truly altruistic instinct is impossible, ethics cannot be solely instinctive. We might have been moral before a state, but Hobbes seems correct in asserting that rational laws of society cannot consistently motivate compliance in the absence of state sponsored enforcement of law and order. Furthermore, while group selection does not occur as a natural process of evolution, it can occur within the context of state enforced social cohesion if legal constructs are implemented toward that aim. That is, group selection is a mixed construct of rational human civilization, not a natural outcome of evolution; the sociobiology arguments for the existence of group selection in nature despite a complete absence of observational evidence are fairly obvious attempts to justify and rationalize a distinctively

human behavior pattern that has demonstrably horrific potential. Singer's (1981/2011) characterization of group selection as a natural occurrence that has been rationally refined in humans amounts to an especially acute misunderstanding of evolutionary biology, for group selection can only exist as a chosen product of human reason employing and manipulating instincts towards extremely dangerous and potentially self-destructive ends.

Singer (1981/2011) writes,

> "We have now seen how – consistent with what we know of evolutionary theory – kin selection, reciprocal altruism, and a limited amount of group selection could have developed among the social animals from which we are descended; and could, quite naturally, have evolved into systems of ethics which in some respects resemble the ethical systems common among humans"(p.54); "If we define altruistic behavior as behavior which benefits others at some cost to oneself, altruism in non-human animals is well documented. Understanding the development of altruism in animals will improve our understanding of the development of ethics in human beings, for our present ethical systems have their roots in the altruistic behavior of our early human and pre-human ancestors. Altruism intrigues sociobiologists. Wilson calls it "the central theoretical problem of sociobiology." It is a problem because it has to be accounted for within the framework of Darwin's theory of evolution"(p.5).

Singer goes on to describe examples of 'altruism', including warning calls, food sharing, and restrained fighting, characterizes genes as the fundamental unit of evolutionary selection, and then adds,

> "Hence any genes that lead to altruism will normally lose out, in competition between members of the *same* species, to genes that lead to more selfish behavior, before the altruistic genes could spread through the species and so benefit the species as a whole in its competition with *other* species"(p.9); "That, at least, is the broad account of evolution now accepted by many scientists working in this area"(p.9).

This is not a plausible account; biological altruism does not cost individuals but benefits them genetically; our present ethics systems are not necessarily selfish, or instinctive, so cannot be rooted in biological altruism; on organic or natural selection altruism as a heritable trait must necessarily be genetically selfish; Singer's examples are not genetically unselfish in the slightest; and finally since biological altruism is a genetically successful behavioral strategy genes that manifest it will not lose out. Singer apparently does not understand the meaning of biological altruism, for only genuine altruism would lose out in competition; but it never occurs amongst the vast majority of animal life, is

not represented by his examples, and is only possible as a rational contradiction of necessary genetic selfishness. Singer (1981/2011) writes,

> "Sociobiologists have, however, developed Darwin's suggestion of the importance of the principle of reciprocity. They have suggested that two forms of altruism can be explained by natural selection: kin selection and reciprocal altruism"(p.11); "Thus strictly selfish behavior – behavior aimed at furthering my own survival without regard for anyone else – will not be favored by evolution"(p.12); "Yet the sacrifices that humans as well as many non-human animals constantly make for their children represent a tremendous effort for the benefit of beings other than themselves. Thus they must count as altruism, as we have defined the term so far"(p.12-13); "Reciprocal altruism is most common among, and perhaps limited to, birds and mammals; its clearest cases come from highly intelligent social animals like wolves, wild dogs, dolphins, baboons, chimpanzees, and human beings. In addition to grooming each other, members of these species often share food on a reciprocal basis and help each other when threatened by predators or other enemies"(p.17).

These remarks do not raise objections so long as we suppose that Singer has genetic selfishness in mind; the terms mutualism and commensalism also refer to evolutionary scenarios in which species co-evolve along mutually beneficial and often quite intricate trajectories. Flowers and pollinating insects develop specific species-species co-dependencies, as do clownfish and anemones, but altruism is a term that is taken to refer to complex animal behavior. Singer (1981/2011) states, "Reciprocal altruism seems not really altruism at all; it could more accurately be described as enlightened self-interest"(p.42); but he also claims, "We can now see that sociobiology itself can explain the existence of genuinely altruistic motivation" (p.45).

Singer (1981/2011) writes,

> "So it not quite true that cheats never prosper. Cheats prosper until there are enough who bear grudges against them to make sure they do not prosper"(p.18); "It may be that to explain how reciprocal altruism can get established, we need to allow a limited role for a form of group selection. Imagine that a species is divided into several isolated groups – perhaps they are monkeys whose terrain is divided by rivers which, except in rare droughts, are too swift to cross:(p.19)"; "Now suppose that in one of these isolated groups it just happens that a lot of monkeys have genes leading them to initiate grooming exchanges. Then, as we have seen, those who reciprocate could be better off than those who do not. They will groom and be groomed, remaining healthy while other members of the group succumb to parasites"(p.19); "The reciprocal group now has an advantage, as a group, over other groups who do not have any way of ridding themselves of parasites. If the parasites get really bad, the other groups may become extinct, and one dry summer the pressure of population growth in the reciprocal grooming

> group will push some of its members across the rivers into the territories formerly occupied by the other groups. In this way group selection could have a limited role – limited because the required conditions would not often occur – in the spread of reciprocal altruism"(p.19-20).

However, this example is reducible to individual selection; the grooming is selfishly cooperative, and a population of selfishly cooperative individuals will of course replace populations that are not selfishly cooperative. The group is not an evolutionary unit but just a local population, highly interrelated and therefore kin selective. Kin that do not groom one another are not likely to persist. Singer (1981/2011) continues,

> "If we are prepared to allow group selection a role in the inception of reciprocal altruism, we can hardly deny that the survival of some groups rather than others can provide an evolutionary explanation for a more general tendency for altruistic behavior toward other members of the group. This is still quite distinct from the popular view of traits evolving because they help the species survive – groups are far smaller units than species, and come in and out of existence much more frequently, so group selection is more likely to be an effective counterweight to individual selection than is species selection. Nevertheless, a group would have to keep itself distinct from other groups for group altruism to work – otherwise more egoistically inclined outsiders would work their way into the group, taking advantage of the altruism of members of the group without offering anything in return. They would then outbreed the more altruistic members of the same species and so begin to outnumber them, until the group would cease to be more altruistic than any other group of the same species. Although this would cost it its evolutionary advantage over other groups, there would be no mechanism for stopping this"(p.20).

We can deny group selection on this example, because there is not the slightest element of individually genetically unselfish behavior in play: kin selection explains the biological altruism; there is no counterweight; there is no reason to worry about outsiders so long as they engage in selfish cooperative behavior for they are not likely to flourish within the population otherwise, and to the contrary populations need constant influx of new members to balance the outflow and to maintain genetic diversity. Populations being cut off from others one way or another is a precursor of speciation, a phenomenon most contrary to genuine altruism and morality. Singer (1981/2011) writes, "This suggest that group altruism would work best when coupled with a degree of hostility to outsiders, which would protect the altruism within the group from the penetration and subversion from the outside"(p.20), but

there is no group altruism, just groups of cooperators, and any hostility to outsiders is warranted genetically by kin selection. Singer (1981/2011) adds,

> "It may be objected that in a small, isolated group of the kind I have described, there will be so much interbreeding that all members of the group will be related to each other, and so what we have is not group selection at all, but rather kin selection in the special case in which all the group are kin to each other. This may be so; certainly kin and non-kin selection will be hard to distinguish in this situation. Nevertheless, when members of the group behave in certain ways toward all other members of the group – irrespective of whether they are full siblings or very distant cousins – and when this behavior gives the entire group a selective advantage over other groups, it is reasonable to describe what is going on as "group selection" even if it may ultimately be possible to explain what is going on in terms of kin selection"(p.21).

Are we really supposed to employ unhelpful, confusing, and plainly mistaken terminology and concepts in evolution theory just in order to indulge whatever collectivist political ideals happen to be informing our ideologies? That would not seem permissible in respectable scientific or ethical discourse.

Singer (1981/2011) offers an argument for genuine altruism on the basis of the so-called 'Prisoner's Dilemma':

> "If, for instance, they are altruistic to the extent of caring as much for the interests of their fellow prisoner as they are for their own interests, they will reason thus: "If the other prisoner does not confess it will be better for us both if I do not confess, for then between us we will be in prison for a total of six months, whereas if I do confess the total will be eight years; and if the other prisoner does confess it will still be better if I do not confess, for then the total served will be eight years, instead of ten. So whatever happens, taking our interests together, it will be better if I don't confess." A pair of altruistic prisoners will therefore come out of this situation better than a pair of self-interested prisoners, *even from the point of view of self-interest*"(p.47).

In the context of evolution that premise is only possible in the case of kin selection. There could never be a species of organisms that cared about non-kin as much or more than themselves, for such a species could not possibly persist. As appealing as the concept of group selection apparently is for some theorists, it is simply up against an undeniable reality of organic evolution: organisms must promote the existence of their genes or else those genes unavoidably disappear. Since an organism's genes are carried only in their own bodies and in the bodies of their kin, organisms must defend their own and

their kin's bodies, and pursue reproduction. On Singer's explanation (even though he himself admits that it is not necessary), group selection depends on genuine altruism within the groups, which depends on tribal purity. He (1981/2011) writes,

> "The Prisoner's Dilemma explains why there could be an evolutionary advantage in being genuinely altruistic instead of making reciprocal exchanges on the basis of calculated self-interest"(p.47); "Evolution would therefore favor those who are genuinely altruistic to other genuine altruists, but are not altruistic to those who seek to take advantage of their altruism"(p.49); "As we saw in Chapter 2, the existence of real-life Prisoner's Dilemma situations puts egoists at a disadvantage in situations where cooperation is advantageous. In these situations two genuine altruists will do better than two egoists, and a single egoist will not do as well as an altruist if her egoism is apparent to others. So at least within the sphere of personal relationships, genuine altruism could have come about consistent with the theory of evolution"(p.128).

These statements are simply incompatible even with the basic concept of evolution by changes in populations of individuals: there are no genuinely altruistic traits, behavioral or otherwise; altruism can only ever be towards kin or reciprocally advantageous in instinctive organisms. Given kin relations, high levels of cooperativeness can develop to the point of completely cooperative strategies of genetic propagation, as in the social insects. In the absence of high levels of genetic relatedness incidental instinctive genuine altruism is evolutionary suicide, pure and simple, and genuinely altruistic heritable traits are impossible, pure and simple. Singer (2005) makes similar assertions:

> "In contrast to selection between species, which is rare and of little importance in evolution, selection within the species, between smaller, isolated breeding groups, happens much more often. These smaller groups do compete with each other and, in comparison with species, are relatively short-lived. The countervailing pressures of selection at the level of the individual or the gene would still apply, but less effectively. In some circumstances, there could be selective pressures that favor self-sacrifice for the benefit of the group"(p.478).

Singer (1981/2011) seems motivated by the ideals of collectivist politics, but like Ruse and Kitcher he seems rather careless regarding the rather sinister implication of his false perspective:

> "The persistence of group loyalty in modern times was only too clearly demonstrated by Hitler's success in arousing the nationalistic feelings of the German people, and Stalin's need to appeal to "Mother Russia" rather than the defense of Communism to rally the citizens of the Soviet Union to the war effort"(p.51); "The group bias of our ethics in respect to loyalty to the group as a whole shows itself in the high praise we give to patriotism"(p.51).

Since there is no reason to believe that group selection exists, there is no reason to believe that tribalism is anything other than a cultural exploitation of what must undoubtedly be very strong and generally healthy human instincts for kin selection. It should not be surprising that cultures which reach great heights also plumb terrible depths, but the suggestion that evolution is somehow a contributing cause by way of group selection is to mistakenly deny that the idea of group selection is also a cultural exploitation but of the biological sciences, and not an existent force of natural causation.

Singer's entire characterization of altruism as the 'root' of ethics is off-base and likely very misleading for non-biologists; he (1981/2011) writes, "..altruistic impulses once limited to one's kin and one's own group might be extended to a wider circle by reasoning creatures who can see that they and their kin are one group among others, and from an impartial point of view no more important than others"(p.134). Since the only kind of altruism that the evolution of instinctive behavior can possibly yield is genetically selfish, this seems to amount to claiming that rational human ethics is some sort of an extension of genetic selfishness to the entire species, or to what Singer refers to as "The Expanding Circle". In order to make sense of that we would have to take Singer as a defender of psychological egoism in moral epistemology, and in that sense similar to the instinctive sociobiologists, but that is not the theory that Singer claims to be defending. So Singer's assertions of group selection and evolved genuine altruism lead to a contradictory perspective. Although Singer's science is flawed, it might not seem like a major problem to many of his readers. The contradiction could be resolved if Singer were to suggest that human rationality amounts to an ability to override instincts, because genuine altruism contradicts biological altruism, but Singer's (1981/2011) view is that moral reasoning is a refinement, a natural extension, of instinct. It would help if Singer included precise language to the effect that somewhere along the line we learned how to be unselfish on the basis of reason, but Singer only offers his implausible view of how we learned how to be instinctively unselfish by means of group selection,

and of course if he were to argue that unselfishness is a product of reason that would remove the rationale for offering a sociobiological explanation of ethics in the first place. Singer (1981/2011) does describe the evolution of human practical cognition as moving all the way from basic instinct to pure reason; the problem with his attempt at a sociobiological explanation is only that it creates a false impression of how instinct and reason relate, compare, and function. Since it is an epistemological and scientific argument, we are surely justified in expecting both precision and empirical plausibility; after all the whole point of these discussions is to offer an accurate account of moral epistemology, and for us especially to discern the extent to which evolution explains or informs ethical theory. Neither Ruse nor Singer offer convincing reasons for taking sociobiology, as an explanation of ethics, seriously; Ruse because his position amounts to denying that ethics exists, and Singer because his position does not convince that ethics can be explained or produced directly by evolution rather than by human rationality.

Singer (1981/2011) characterizes the process by which our supposedly unselfish ethical instincts come to be applied to an ever-widening group via transformation into practical reasoning, as an escalator: "Beginning to reason is like stepping onto an escalator that leads upward and out of sight. Once we take the first step, the distance to be traveled is independent of our will and we cannot know in advance where we shall end"(p.88). This amounts to another kind of argument that appears in evolutionary epistemology literature, which contends that reason (and science and culture with it) itself evolves somewhat autonomously from organic evolution:

> "Nevertheless, if reasoning flourishes within the confines of customary morality, progress in the long run is not accidental"(p.99); "Reasoning is inherently expansionist. It seeks universal application. Unless crushed by countervailing forces, each new application will become part of the territory of reasoning bequeathed to future generations. Left to itself, reasoning will develop on a principle similar to biological evolution"(p.99); "Similarly, though generations may pass in which thinkers accept conventional limits unquestioningly, once the limits become subject of rational inquiry and are found wanting, custom has to retreat and reasoning can operate within broader bounds, which then in turn will eventually be questioned"(p.100); "Why should our capacity to reason require anything more than disinterestedness within one's own

> group?"(p.113); "This suggestion overlooks the autonomy of reasoning – the feature I have pictured as an escalator"(p.113); "The idea of a disinterested defense of one's conduct emerges because of the social nature of human beings and the requirements of group living, but in the thought of reasoning beings, it takes on a logic of its own which leads to its extension beyond the bounds of the group"(p.114).

These are rather speculative and metaphysical remarks; many of us would characterize 'reason' as not much more than 'inferring', an ability which is surely dependent on general intellectual capacities to absorb and understand and interpret the meaning and implications of ever greater amounts of information or data. To suggest that reason has some sort of ontological existence unto itself, and that it evolves, in some sort of way that relates or coincides with and even somehow causally contributes (according to Singer) to organic evolution, is interesting but far-fetched. More significantly here is the notion that practical reason can at a certain stage be limited to group altruism, since it is borne of and apparently not quite removed from kin selection. This is where the confusion of Singer's biology takes a rather heavy toll: even as rational beings we are forced to struggle to overcome our natural innate tendency toward group selection. Cast as purely a manifestation of instinct, innate tribalism is a dangerous enough idea, but when cast as a manifestation of innate practical reasoning patterns tribalism is rendered as a quite disturbing human characteristic which would seem that much more difficult to control.

Fortunately, Singer is mistaken: he (1981/2011) states,

> "We are dealing with a stage of human development for which there are no historical records, and ideas leave no fossils. Nevertheless, the account I shall give is internally coherent and fits the evidence available, which is more than can be said for purely biological accounts that ignore the inherent logic of ethical thinking"(p.90).

But Singer's account is neither coherent nor evidential. Biological altruism is kin selection, which exists; genuine altruism is human rationality, which also exists. Singer's 'group altruism' – instinctive-cum-rational genuine altruism restricted to tribe members, and only overcome by some sort of ontologically autonomous escalator of evolving 'reason' – does not exist. At least, that is what the

demonstrable empirical evidence from evolutionary biology and other sciences indicates. Which means that tribalism is best understood as a cultural exploitation and potentially a perversion of kin selection instincts that can potentially be well-managed to positive ends of friendly competition. Singer (1981/2011) writes,

> "No doubt the practice of reciprocal altruism can tolerate rough justice at his point, but we would expect that as human powers of reasoning and communication increased, decisions as to what is or is not an equitable exchange would become more precise"(p.38); "Gradually, as we evolved from our pre-human ancestors, our brains grew and we began to reason to a degree no other animal had achieved"(p.91); "The difference made by reason in this transformation is the difference between responding with a friendly lick or an intimidating growl when another member of the group does or does not repay favors, and responding with an approving or a condemnatory judgment"(p.92); "In a dispute between members of a cohesive of reasoning beings, the demand for a reason is a demand for a justification that can be accepted by the group as a whole. Thus the reason offered must be disinterested, at least to the extent of being equally acceptable to all"(p.93); "If I hope to gain the assent of the group as a whole, I must at least give my case an impartial guise"(p.93); "...the transformation of genetically based social behavior into social customs involved the first limited application of reason to what had hitherto been under the unchallenged control of our genes"(p.94); "The readiness with which we can bring particular events under a general rule may be the most important difference between human and animal ethics"(p.94-95); "Reason breaking beyond the boundary of customary morality is classically embodied in the life and death of Socrates"(p.96).

The objectionable points here are that there is no evidence that equality has ever played a significant role in the evolution of any pack-oriented species rather than quite rigid and brutally enforced hierarchy which eliminates any impetus for group justifications by individuals; that genetic behavior amounting to a set of rules need not involve reason as countless arational social species exemplify; and that if it requires the likes of Socrates in order for the escalator of evolving reason to insinuate itself into human natural history than humanity would not seem to have a very promising potential. It seems interesting to note that while Singer reveals an anti-religion bias in his work, here (like Mayr) he presents a kind of messianic element to his sociobiology: he (1981/2011) writes;

> "Though we may find it hard to shake ourselves free of the customs of our own time, as rational beings we are drawn to respect someone utterly committed to rational inquiry and a rational life"(p.97); "From time to time, outstanding thinkers will emerge who are troubled by the boundaries that custom places on their reasoning, for it is in the nature of reasoning that it dislikes notices saying "off limits""(p.99); "Once reason is admitted to have a role to play in

> ethics, however, there is nothing at all surprising in the fact that, despite immense cultural differences, outstanding thinkers in different periods should extrapolate beyond more limited forms of altruism to what is essentially the same fundamental principle of an impartial ethic"(p.137); "So the shift from a point of view that is disinterested between individuals within a group, but not between groups, to a point of view that is fully universal, is a tremendous change – so tremendous, in fact, that it is only just beginning to be accepted on the level of ethical reasoning and is still a long way from acceptance on the level of practice. Nevertheless, it is the direction in which moral thought has been going since ancient times. Is it an accident of history that this should be so, or is it the direction in which our capacity to reason leads us"(p.113)?

There does appear evident subtle strains of new, not merely anti-religion, running though sociobiology.

While Singer's biological derivation arguments are dubious, he does think that evolution eventually arrives at moral rationalism which is a much more formidable and well-traveled position in moral epistemology. We might put aside the group altruism, escalator of reason, and messianic change-agent ideas, but then Singer more compellingly offers his extension argument by which practical reason arrives at its final destination – pure ideal rational abstraction. He (1981/2011) cites changes in 18th-century European cross-cultural inheritance rights: "This step is a fine example of collective reasoning inspired by the thinkers of the Enlightenment, triumphing over the narrow tendencies of group selection"(p.114); Singer (1981/2011) adds,

> "Earlier in this century Westermarck noted the tendency of the circle of morality to expand, but he attributed it not to our capacity to reason, but to an expansion of the altruistic sentiments that he thought were the foundation of all morality"(p.135); "We do not have to choose one or the other; we can accept both explanations"(p.135); "For it is independently plausible that reasoning should lead us to a more and more universal view of ethics"(p.135).

As noted, Singer's derivation of practical reason from group selection requires of him the notion that genuine altruism is both an instinctive trait and rational, and he defines moral reasoning as group reasoning: "To reason ethically I have to see my own interests as one among the many interests of those that make up the group, an interest no more important than others"(p.118). Group reasoning derived from group altruism does not easily translate or convert into group transcending morality, or even into any biologically sensible notion that reason is not ultimately serving kin instincts even as it expands

outward (as would be argued by Westermarck and the instinctivist sociobiologists). However, if Singer (1981/2011) were an instinctivist sociobiologist, he would not argue that,

> "Genuine, non-reciprocal altruism directed toward strangers does occur"(p.134); "Hence while the persistence of genuine altruism would be inexplicable if it were based on feeling alone, it becomes much easier to understand if it is not feeling, but reason that is chiefly responsible for it"(p.140).

So while the evolutionary route by which Singer (1981/2011) arrives at moral rationalism is tortured and implausible (the main problem being the notion that unselfish reasoning is an evolved refinement of unselfish instinct, which though impossible requires great thinkers to bump it up to higher levels of inclusiveness), moral rationalism is where he arrives. He (1981/2011) writes,

> "Unless there is a rational component to ethics that we can use to defend at least one of our fundamental ethical principles, the free use of biological and cultural explanations would leave us in a state of deep moral subjectivism"(p.85); "...impartial consideration of the interests of all is the rational basis of ethics"(p.108); "Wherever there are rational, social beings, whether on earth or in some remote galaxy, we could expect their standards of conduct to tend toward impartiality, as ours have. (Though the constraints limiting this tendency could be much stronger or much weaker.) But this universal element of ethics is so abstract that although we may say that it "exists" whether or not there are humans or other creatures with preferences, without the existence of some beings with preferences, the universal element is meaningless. If there are no beings with interests, the requirement that we treat all interests equally is entirely empty. It exists only as a framework into which the deliberations of rational creatures with preferences fit, when there are such creatures. It does not exist as a moral law commanding particular actions"(p.106).

Abstract collective reasoning for the sake of behavioral impartiality is most definitely biologically and otherwise selfless, and therefore a contradiction of biological altruism fundamentally, and so could not possibly be an evolved trait but rather a product of our general human reasoning and abstraction capabilities. While Singer (1981/2011) would have us believe otherwise, moral rationalism is essentially not sociobiology, but normative, in the sense that moral rationalism amounts to an argument that in order to be moral, in order to behave appropriately, we must be rational, and purely so at that. It is not reasonable to argue that we have to engage in rational abstractions involving the collective reasoning of pure rational agents in order to behave at all; but Singer's moral rationalism is the position

that we must do so in order to behave morally. Ethics is thereby defined as pure practical reason; and this warrants consideration in the context of evolution even if practical reason cannot be successfully derived as a heritable product of evolution in itself (in implying necessary selflessness, as it does).

Abstract moral rationalism inherently relies on a very different foundation than evolution in being an application of general reasoning ability, even though the latter surely is a product of evolution with a natural history of selfishness and maybe even refinement of instincts. Searle (2001) writes,

> "Rationality is a biological phenomena. Rationality in action is that feature which enables organisms, with brains big and complex enough to have conscious selves, to coordinate their intentional actions, so as to produce better action than would be produced by random behavior, instinct, tropism, or acting on impulse"(p.141-142); "Because rationality is not a separate faculty or module, but rather a feature internal to other cognitive and volitional capacities, I believe that we will find that we have to put in most, though not all, of human mental faculties in order to have a "machine" capable of rationality"(p.143).

These remarks are not objectionable based on our current understanding; the point here is that rationality generally and practical reasoning in particular are undoubtedly self-serving if we want them to be, and are undoubtedly informed with all types of biological data including instinct, and in order to apply practical reason impartially in order to render a definition of morality as purely rational (which is the position defended by descriptive rationalists), that requires an act of will which contradicts our instinctive impulses of selfishness. Rather than an evolved cognitive trait, pure practical reason must be an ability manifested by human rationality generally to override our evolved cognitive and other traits. Rather than a refinement, it would be more precise to characterize pure practical reason as an ability to separate or lift-off from instinct, that apparently no other animal species on earth possesses. Singer, his sociobiology derivation notwithstanding, is squarely in rationalist territory with his prescription of abstract impartiality, and committed to its implications: Searle (2001) states,

> "Thirdly and finally, an effort has been made in the Kantian tradition...to derive altruism from autonomy. If, because of my autonomy or freedom, I have to will my own actions; and if the will is subject to constraints of generality such that I am rationally required that each thing I will, I should be able to will as a universal law; then I will be rationally required to treat other people as my equals in the moral realm, because the universal laws that I will apply equally to

me and to them"(p.151).

One of the main points of descriptive rationalism is to abstract from human nature, in order to facilitate total impartiality, from which are derived equality, consistency, and lawfulness. In considering Singer (1981/2011), we might be tempted to choose between the sociobiology or the rationalism, since it is inconsistent for him to defend both simultaneously, and take one or the other as his more plausible view, but here we go through the exercise of considering both sides of his argument since they need to be criticized on different but important bases. In committing to moral rationalism, Singer is committing ultimately to deriving morality not from human nature but from the concept of reason itself, and then to applying that derivation to human nature: Rescher (1997) writes, "Discerning our specifically *good* potentialities requires more than a knowledge of human nature as such; it requires taking a view of the good of man – a normative philosophical anthropology"(p.157); Kant (1797/1996; 1785/1996) writes,

> "That is to say, in effect, that a metaphysics of morals cannot be based upon anthropology but can still be applied to it"(1797/1996, p.372); "...to determine the entire faculty of pure practical reason...it is of the greatest practical importance not to make its principles dependent upon the special nature of human reason – as speculative philosophy permits and even at times finds necessary – but instead, just because moral laws are to hold for every rational being as such, to derive them from the universal concept of a rational being as such, and in this way to set forth completely the whole of morals, which needs anthropology for its *application* to human beings, at first independently of this as pure philosophy, that is, as metaphysics (as can well be done in this kind of quite separated cognitions); [for we are] well aware that, unless we are in possession of this, it would be – I will not say futile to determine precisely for speculative appraisal the moral element of duty in all that conforms with duty, but – impossible to base morals on their genuine principles even for common and practical use, especially that of moral instruction, and thereby to bring about pure moral dispositions and engraft them onto people's minds for the highest good in the world"(1785/1996, p.65-66).

At bottom moral rationalism is a normative argument for how we ought to behave (or think practically to be precise) and not a description of an evolved natural trait of human cognition (unless we are to believe that we cannot think a- or irrationally). Sociobiology can best serve ethics by informing us about our evolved human nature, to which evolutionarily transcendent practical reason must be applied. Sociobiology cannot serve ethics with futile attempts to reduce morality to an evolved trait.

**§ 2 – Normativity**

The line between normativity and epistemology is blurry in the case of moral rationalism, but this section will focus on what rationalists regard as the good, which amounts to defining morality as rational, while the following section will focus on the cognitive practicality of rationalism. Regarding the good and the method we ought to employ in its pursuit, Singer (1981/2011) writes,

> "In its simplest, classical form, utilitarianism is the theory that an act is right if and only if it does at least as much to increase happiness and reduce misery, for all those affected by it, as any possibly alternative act"(p.64); "New knowledge, however important, can only affect the utilitarian's estimate of what institutions, policies, or actions will maximize happiness. It cannot throw doubt on the principle itself"(p.64).

Utilitarianism has its origins in the work of Hume and Bentham, who defined happiness in terms of pleasure, which in the context of evolution reduces to instinctivist sociobiology unless somehow pleasure is defined as a function or product of rationality. That would typically involve running an Aristotelian argument for a life of intellectual endeavor and high-minded contemplation, but in the absence of that, in arguing that we must engage in impartial abstract collectivist reasoning, inherently egalitarian, in order to be moral, even if we were to play along with Singer and believe that this is some sort of natural outcome of human evolution, unless we are to believe that we all must necessarily think that way (which is not plausible), Singer appears to (must) be defining happiness as rational collectivism, and thereby characterizing reason itself as the practical end of morality. That would seem to amount to defending something at least somewhat akin to Kant's 'kingdom of ends' as the highest good (though Kant does not characterize that as having anything to do with happiness). Since Singer insists that collectivist reasoning is a refinement and expansion of naturally selected group-restricted biological altruism, it is difficult to avoid concluding that Singer, too, is committing the naturalistic fallacy: happiness is good, happiness is collectivism, collectivism is an evolved trait. Whereas the social Darwinians regard biological competition as the highest good, and the instinctivist sociobiologists regard Darwinian reproductive fitness as the highest good, Singer defends group

altruism as the highest good. Each version implies a straight-forward inference of the morally right from a speculatively significant element of evolution theory, rather than a deliberative, measured assessment and incorporation of demonstrable biological evidence into calculations of right action (in other words, strong evidence included as premises in complex ethical arguments and/or as elements of wise moral intuitions).

That is not what Singer (1981/2011; 2005) claims to be doing with his theory: he writes,

> "Is there really an unbridgeable gulf between facts and values?"(p.74); "Values must provide us with reasons for action"(p.74); "Facts, by themselves, do not provide us with reasons for action. I need facts to make a sensible decision, but no amount of facts can make up my mind for me. Hence no amount of facts can compel me to accept any value, or any conclusion about what I ought to do"(p.75); "No matter how often the fallacy of reading a moral direction into evolution has been pointed out, people still commit it..."(2005, p.482).

It seems reasonable to object that there must be some amount of facts that can compel action, since we must act on the basis of information from one source or another, of facts of one kind or another. If there was no information we would not be able to act at all, and in fact there would be nothing to do, so facts and information must amount to reasons for actions eventually. The point of the naturalistic fallacy seems to be that right action is not easily, obviously, directly, or simply inferred from one or a few simple facts about nature, not that no amount of information can even amount to a justification for right action. Furthermore, as Searle (2001) argues, "Thus, for example, to say that something is true is already to say that you ought to believe it, that other things being equal, you ought not to deny it"(p.148). So in considering whether someone has committed the fallacy, our task is simply to assess whether premises validly or necessarily infer conclusions; whether actions are actually justified by the set of reasons that motivate them. Singer employs his sociobiological derivation of ethics to warrant rational collectivism, which seems like a conclusion not necessarily inferred by his premises. However, Singer (1981/2011) states,

> "I have been speculating about the origins of human ethics. No ethical conclusions flow from these speculations"(p.53); "Even if we should uncritically accept the sociobiological view of

> human nature in its entirety, the new facts we would have learned would affect ethics only at a superficial level. The central question of ethics, the nature and justification of fundamental ethical values, would remain untouched"(p.68); "As the preceding chapters indicate, I think the sociobiological explanation of the origin and development of ethics may well be right, but that is not the issue. The issue is: What are the ethical implications of a scientific explanation of ethics?"(p.81); "Explanations of what ethics is, whether anthropological or sociobiological, cannot tell me what I ought to do, because I am not bound to follow the conventions of my society, or to foster the survival of my genes"(p.81); "Biological explanations of ethics can only perform the negative role of making us think again about moral intuitions which we take to be self-evident truths but can be explained in evolutionary terms. In keeping with the general viewpoint sketched in the preface to this book, we cannot look to religion for positive guidance either. We have to choose our ultimate ethical premises ourselves"(p.84).

But Singer goes to lengths to argue that we must choose rational collectivist utilitarianism, because that has been the evolutionary source of moral behavior all along due to the natural selection of groups which require group altruism to exist, and because 'reason' has also provided some sort of causal impetus towards expanding inclusiveness. Either evolution is the justification for rationalist utilitarian collectivism, or it is not; if the latter, then we need not indulge sociobiology, if the former, then we have a naturalistic fallacy. Singer echoes Ruse in denying that he is defending an evolutionary foundation for ethics while he defends an evolutionary foundation for ethics. However, we have already considered that the sociobiological derivation appears fallacious, and these remarks seem to amount only to Singer denying that he is offering an invalid naturalist foundation of ethics by denying that he is offering a naturalist foundation at all (?) His final product is rationalist utilitarian collectivism and we should assess whether that is a defensible normative epistemology merely in the context of evolution, regardless of whether such an epistemology has been produced by evolution.

Singer (1981/2011) writes,

> "We can make progress toward rational settlement of disputes over ethics by taking the element of disinterestedness inherent in the idea of justifying one's conduct to society as a whole, and extending this into the principle that to be ethical, a decision must give equal weight to the interests of all. This would require me, in making an ethical judgment, to take my decision from a totally impartial point of view, a point of view from which I disregard my knowledge of whether I gain or lose by the action I am contemplating"(p.100); "To decide impartially I must sum up the preferences.... Whatever action satisfies more preferences, adjusted according to the strength of the preferences, that is the action I ought to take"(p.101); "For *if* this is the only

> rational way of reaching ethical judgments, ethics has a rational basis"(p.102); "The principle of impartial consideration of interests thus withstands challenges from alternatives which would put ethics on a different basis. It alone remains a rational basis for ethics"(p.109); "Then we demand an account of these ethical truths inherent in the universe.... Until a plausible account has been given – and it has not been given yet – let us cling to the simpler idea that ethics evolved out of our social instincts and our capacity to reason. And let us cling to the principle of equal consideration of interests – which relies on nothing but the fact that we have interests, and the fact that we are rational enough to take a broader point of view from which our own interests are no more important than the interests of others – as a uniquely rational basis for ethical decision-making"(p.110-111).

The reference to clinging is clearly a normative claim; Singer wavers between suggesting that ethics is by definition necessarily utilitarian collectivism or merely ought to be; he clarifies himself in the 2011 *Afterword* to the original 1981 text of *The Expanding Circle*:

> "The judgment that "one's own interests are one among many sets of interests" can be accepted as a descriptive claim about our situation in the world, but to add that one's own interests are "no more important than the interests of others" is to make a normative claim. If I deny that normative claims can be true or false, then I cannot assert that this claim is true. It too could be treated as a preference"(p.199).

Singer (1981/2011) goes on to consider arguments regarding the existence of objective reasons to act, and concludes that they are possible, but that reasons to act do not necessarily translate into motive, or actual acts:

> "If we gain acceptance of the claim that there are objective reasons for action only by granting that even those who fully acknowledge the existence of a reason for doing something will not necessarily be motivated by it, have we won only a Pyrrhic victory?"(p.204); "Nevertheless, if we can accept the idea of objective normative truths, we do have an alternative to reliance on everyday moral intuitions that, according to the best current scientific understanding, are emotionally based responses that proved adaptive at some time in our evolutionary history"(p.204).

Although in the original 1981 text Singer may not have admitted so, as noted it cannot possibly be the case that we humans must necessarily think in terms of rationalist collectivist utilitarianism, despite Singer's assertions that somehow that mindset is implied by our natural history, so we have to interpret the collective utilitarianism, and even the rationalism, as a normative claim whether Singer admits it or not, which he does. So that leaves us with discerning whether rationalist collectivist utilitarianism is an

objective reason for action; the fact that objective reasons for action do not necessarily translate into action should not be surprising since that is what free will is all about – deciding whether to act. As Searle (2001) writes,

> "A...feature of reasons for acting is that if the reason is taken as a reason for the performance of a free action, it cannot be taken by the agent as causally sufficient. If he thinks of himself as truly compelled, then he cannot think of himself as freely acting on a reason"(p.140).

Ethics presupposes free will, which in turn presupposes that people do not have to act on their reasons for acting, or to not act on reasons for not acting. As ethicists all we can do is try to figure out which actions are justified by which reasons (or which non-actions, or which non-reasons). Searle (2001) presents many arguments regarding what he refers to as a gap between reasons for acting and actually acting, in which free will and rationality function, and which helps clarify the motivations to act that spring from rationality or emotion; either can amount to reasons for acting, but free actions are always rationally chosen. If emotional instincts close the gap between reasons for acting and acting, then acting is not free, Searle would say. Since we seem to have an ability to hold our instincts at bay, and act on them when and if we want to, there is no reason to believe that we are instinctively determined beings. Singer (1981/2011), in blurring the line between reason and instinct, also blurs the line between free will and determinism; are we utilitarians because that is how we are instinctively-cum-rationally determined to think? That is how Singer comes across in his 1981 text, but then in the 2011 Afterword he comes across as suggesting that utilitarianism is a preference, but then are we somehow innately biased in that preference? If not then is the sociobiology somehow suggestive of a normative anthropology, as suggested by Rescher and Kant? That is, does evolution prove that collectivist rational utilitarianism is what is best for humanity? That would suggest that we should be working on a kingdom of ends. Singer (1981/2011) writes,

> "For the capacity to reason is not something that evolution is likely to eliminate. In finding food, in avoiding danger, in every area of life, those who reason well have an immense advantage over similar beings less capable of reasoning. So we can expect evolution to select

> strongly for a high level of reasoning ability. (We know that the human brain did grow with remarkable speed.) Accordingly, if the capacity for reasoning brings with it an appreciation of the reasons for extending to strangers the concern we feel for our kin and our friends, evolution would not eliminate this rational appreciation of the basis of ethics. The price would be too high. The evolutionary advantages of the capacity to reason would outweigh the disadvantages of occasional actions which benefit strangers at some cost to oneself. Hence while the persistence of genuine altruism would be inexplicable if it were based on feeling alone, it becomes much easier to understand if it is not feeling, but reason that is chiefly responsible for it"(p.139-140).

This is a much more plausible perspective, that would better serve Singer's argument for utilitarianism; rather than genuine altruism somehow being an evolved transformation of biological altruism, which beside being impossible, when combined with preference totaling also suggests that reason serves passion, which is incompatible with Singer's arguments for rational abstraction and control, if ethics is a by-product of general reasoning, perhaps even an accident of evolution, which does seem possible, then utilitarianism can be defended on strictly rational grounds and avoid all the confusion that arises by associating it with instinct.

Singer's (1981/2011) defense of consequential reasoning meets no objection from evolution, even if we were to believe that it is somehow tainted with instinctive selfishness on the basis of a supposed transformation. Collectivist reasoning is not synonymous with consequential reasoning, however, and does involve a more direct contradiction of instinctive selfishness. Utilitarianism typically involves both collective and consequential reasoning, along with either emotivism or rationalism, but it too generally becomes tainted by tribalism if we are to believe that it is an evolutionary product of group selection. Whereas traditional sentimentalist utilitarianism need not contradict instinctive selfishness, by striving to achieve a balance between satisfying one's own and kin's desires and satisfying the community's, and would appear to reduce to enlightened instinctive egoism in the context of evolution, which is a defensible moral theory, rationalist collectivism involves the extra step of abstraction from human nature and individuality in order to consider ourselves as equal negotiable rational and reasonable agents. That is, we are required to become necessarily selfless

on Singer's theory, which again simply does not seem plausible as an evolutionary trait of human reasoning in itself, but furthermore also does not seem like a practical normative suggestion. While there are no easy inferences from evolution to ethics, one of the easiest is to keep in mind that evolution is ongoing and that we are no less vulnerable to extinction, die-offs, and ecological disruptions than ever. We must engage is measured selfishness or fail to persist either as individuals or families, and without individuals and families we cannot amount to a flourishing species. There are no collections of pure rational agents in nature, so we need to be very careful in considering whether or not that is a practical or a suicidal ideal. Singer (1981/2011) writes,

> "From Adam Smith, economists often claim that through the competition of the marketplace the individual pursuit of self-interest leads to the greatest good of all.... But if we come to an egoistic ethics on this basis, we are not really egoists at all. Our most basic value is the good of all, impartially considered, and we have adopted egoism only as a means of gaining this end"(p.103); "Taking the impartial element in ethical reasoning to its logical conclusion means, first, accepting that we ought to have equal concern for all human beings"(p.119); "On the collective level, once we have begun to justify our conduct publicly, reason leads us to develop and expand our moral concerns, drawing us on toward an objective point of view. On the individual level reason is less compelling; while it leads us to see inconsistencies between our beliefs and our actions, or between what we profess in public and what we do in private, the desire to avoid these inconsistencies is not always strong enough to overcome other desires. As a result, reason can get channeled into narrower pursuits than we can justify from an objective standpoint. The shape of human ethical systems is an outcome of the attempt of human societies to cope with this tension between collective reasoning and the biologically based desires of individual human beings"(p.147).

Utilitarianism was first concocted by Bentham as a recommendation to government and it works best when regarded as a political approach to serving the public. It is not clear that the good of all either is or should be our most basic value, since that kind of selflessness is extremely rigorous, risky, and probably suicidal in the context of evolution. If we were to truly have equal concern for all human beings, we would not likely persist as individuals or as families, which would eventually result in the worst possible thing for humanity – extinction. To define morality as collective and individuality as biological is plainly ideological, yet another attempt to exploit biology, and possibly the most dangerous normative suggestion that one could possibly make in the context of evolution. Like it or

not, ecology is brutal and *will* simply eliminate us entirely, eventually, one way or another. Rationalist collectivism is surely a useful strategy, but one among many. Furthermore, Singer (1981/2011) seems naively optimistic regarding the dangers of tribalism, the embers of which are so consistently stoked by the flawed interpretations of sociobiologists:

> "Romans looked on barbarians as beings who could be captured like animals for use as slaves or made to entertain the crowds by killing each other in the Colosseum. In modern times Europeans have stopped treating each other this way, but less than to hundred years ago some still regarded Africans as outside the bounds of ethics, and therefore a resource which should be harvested and put to useful work"(p.113); "So the shift from a point of view that is disinterested between individuals within a group, but not between groups, to a point of view that is fully universal, is a tremendous change – so tremendous, in fact, that it is only just beginning to be accepted on the level of ethical reasoning and is still a long way from acceptance on the level of practice"(p.113); "The circle of altruism has broadened from the family and tribe to the nation and race, and we are beginning to recognize that our obligations extend to all human beings. The process should not stop there"(p.120).

Singer's concept of an 'expanding circle of altruism' is a tortured insult to human rationality, of course: 'circles' only exist as kin, or as tribal exploitations of kin selection instincts, and moral progress should be a matter of their being rationally disciplined or eliminated, not expanded. While it is reasonable to suggest that an instinctively rooted interest in close genetic relatives *can* be exploited for the purposes of tribalism, given conditions such as geography and race, it does not seem realistic to suggest that such instincts can be exploited for the benefit of all humanity and all sensitive creatures. At that scale the notion becomes contradictory, and characterizing rationality as innately tribalistic surely cannot be of any help toward that goal.

So this is a matter of methodological normativity; regarding the appropriateness of abstraction, Singer (1981/2011) writes,

> "The idea of impartiality was originally introduced into this discussion because ethics involves justifying one's conduct to one's tribal group or society"(p.111); "Though .the viewpoint of an impartial spectator is the ultimate criterion of what is right, it is not wise to make this the sole practical criterion, sweeping away all other customs and biases"(p.156); "I have already said that the standard of impartial concern for all is unimpeachable, so far as the individual is concerned"(p.165).

As noted above such impartiality taken to its logical extreme leads Singer to the notion of intergalactically objective practical reason, as a necessary metaphysical construct. This is a common move for moral rationalists: Rescher (1997) writes,

> "Nevertheless, there is one maximally inclusive [perspective] that includes not only *homo sapiens* but also whichever high-powered extraterrestrial and even celestial intelligences there may be, embracing the totality of *rational* beings. Accordingly, the WE/US group in question consists of rational beings/agents in general: those who function at the cognitive level of having beliefs, the evaluative level of having needs and wants (and thus wishes-preferences-goals), and at the decisional stance of choosing courses of action"(p.15).

Kant (1785/1996) writes,

> "From what has been said it is clear that all moral concepts have their seat and origin completely a priori in reason, and indeed in the most common reason just as in reason that is speculative in the highest degree; thus they cannot be abstracted from any empirical and therefore merely contingent cognitions; that just in this purity of their origins lies their dignity, so that they can serve us as supreme practical actions; that in adding anything empirical to them one subtracts just that much from their genuine influence and from the unlimited worth of actions; that it is not only a requirement of the greatest necessity for theoretical purposes, when it is a matter merely of speculation, but also of the greatest practical importance to draw its concepts and laws from pure reason, to set them forth pure and unmixed, and indeed to determine the extent of this entire practical or pure rational cognition, that is, to determine the entire faculty of pure practical reason; and in so doing, it is of the greatest practical importance not to make its principles dependent on the special nature of human reason – as speculative philosophy permits and even at times finds necessary – but instead, just because moral laws are to hold for every rational being as such, to derive them from the universal concept of a rational being as such, and in this way to set forth completely the whole of morals, which needs anthropology for its *application* to human beings...."(p.65); "Practical good, however, is that which determines the will by means of representations of reason, hence not by subjective causes but objectively, that is, from grounds that are valid for every rational being as such"(p.67).

In the context of evolution, perhaps it is wise to reconsider which supposed goods qualify as practical, compared to what might have seemed practically good before we had a modern sense of evolution. Abstracting from human nature in favor of pure rational 'agents' does not seem like an especially practical idea, since it was not pure rational agents who were our ancestors, who successfully navigated this world well enough to bequeath it to us, but human beings. And it will not be pure rational agents who will either flourish far into the future or flail and disappear rather shortly, but human beings. Pure rational agents are not instinctive, and so by definition not of this world, so the odds of them

successfully navigating this world are low, since instincts are powerful and highly effective mechanisms for persisting here on earth, which is where we are, not in an imaginary kingdom of pure rational ends. Like utilitarianism (considered unto itself), pure rational collectivism in itself is most practical as a political ideal, not an ethical, since it seems to have more to do with how society must be constructed and function than with what we ought to do as individuals on a moment-to-moment, day-to-day basis. Rawls (2001) writes,

> "The aim of the idea of public justification is to specify the idea of justification in a way appropriate to a political conception of justice for a society characterized, as democracy is, by reasonable pluralism"(p.26); "...the idea of society as a fair system of social cooperation is quite naturally specified so as to include the ideas of equality (the equality of basic rights, liberties, and fair opportunities) and of reciprocity..."(p.96); "Justice as fairness adopts a form of the last answer: the fair terms of social cooperation are to be given by an agreement entered into by those engaged in it. One reason it does this is that, given the assumption of reasonable pluralism, citizens cannot agree on any moral authority, say a sacred text or a religious institution or tradition. Nor can they agree about a moral order of values or the dictates of what some view as natural law. So what better alternative is there than an agreement between citizens themselves reached under conditions that are fair for all? Now this agreement, like any other, must be entered into under certain conditions if it is to be a valid agreement from the point of view of political justice. In particular, these conditions must situate free and equal persons fairly and must not permit some to have unfair bargaining advantages over others"(p.15); "I emphasize that the conception of the person as free and equal is a normative conception: it is given by our moral and political thought and practice, and it is studied by moral and political philosophy and by the philosophy of law"(p.24); "This conception is not to be mistaken for the conception of a human being (a member of the species homo sapiens) as the latter might be specified in biology or psychology without the use of normative concepts of various kinds, including, for example, the concepts of the moral powers and of the moral and political virtues"(p.24);"...the significance of the original position lies in the fact that it is a device of representation or, alternatively, a thought-experiment for the purpose of public- and self-clarification"(p.17).

It seems reasonable to insist that ethics and politics are not the same subject, and therefore reasonable to suggest that Singer attempts to render a moral theory that is politically biased. We might agree with his political ideals, but we can justifiably wonder whether political ideals are suitable ethical ideals, since the two subjects involve different concerns and problems. Ethical problem number one, especially in the context of evolution, is staying alive, and it would seem right to suggest that there is nothing wrong about trying to protect one's kin, either, in preference to strangers. Even from a

collective standpoint, if nobody struggles for the sake of their own and their kin's well-being, we will *all* surely disappear. Engaging in political thought-experiments, or entertaining ideal communities of ideal rational agents, surely have useful functions, but do seem like questionable candidates for being fundamental principles of normative ethics. We do not all live in democracies (even when we live in a 'democracy'), and it must surely be impractical to act on the basis of rationalist thought experiments if everyone around you is behaving instinctively. Kant (1788/1996) writes, "For, since this method has never yet been widely practiced experience can say nothing of its result..."(p.262). This is *ethics* we are engaging in here – concerning methods for deciding what we ought to do. In the context of evolution, experience must be considered good, and cannot be dismissed by organisms who intend to ecologically persist. Excessively abstract thought experiments as a guide to conduct might actually be bad if not employed with the benefit of experience.

Singer (1981/2011) also argues against objective ethical rules while simultaneously defending rationalism, collectivism, and consequentialism, which are all rules:

> "For any other ethic based on consequences or goals a parallel line of argument would show that the ethic cannot be invalidated by new knowledge about the likely consequences of our actions and policies. What, though, of an ethical theory which emphasizes not goals or consequences, but moral rules or the preservation of absolute moral rights, irrespective of consequences? Kant's moral theory is often taken as an instance of this kind of view"(p.66); "A deeper understanding of biology and evolution might show that adherence to, say, Kant's ethic of inflexible moral rules will lead to some genetic or ecological disaster. In a sense, this is true. New information could show that following a specific set of moral rules will lead to a catastrophe; but it is precisely the nature of these absolutist moral theories that those who hold them remain unmoved by the consequences of following the moral rules"(p.66-67).

Does that mean that Singer is prepared to advise that we drop rationalism, collectivism, and consequentialism if ecological conditions warrant? Consequential reasoning may be impossible to drop and by itself cannot be regarded as a moral theory, for any and every action has consequences that must surely be taken into consideration. In a sense we are necessarily consequentialist; even Kant justifies his imperative of universalization, as noted above, by pursuit of the highest good, which according to

him is a kingdom of perfectly rational, consistently lawful pure rational agents, based on his now dated belief that nature itself is fundamentally lawful (alternatively, one might obey the Ten Commandments ultimately out of fear or hope of the consequences, not simply for the love of the rules). We can decide how much weight or priority to give consequences; for utilitarians it is a top priority, but for deontologists rules are the more immediate deliberative consideration. It is not clear where Singer falls, despite his remarks; do we follow his rules because of their consequences of ever-more inclusive collective rationalism, which is itself a rule, and what he appears to have in mind as the highest good of all (in which case rules are the means and the ends of his supposed consequentialism)? Singer (1981/2011) writes,

> "Perhaps the legacy of past belief in a divine legislator is responsible for our ready assumption that there is something "out there" which our ethical judgments reflect"(p.106); "So ethics loses its air of mystery. Its principle are not laws written up in heaven. Nor are they absolute truths about the universe, known by intuition. The principles of ethics come from our own nature as social, reasoning beings" (p.149).

Clearly sociobiologists have an axe to grind regarding religion, but the rules defended by Singer are on no surer footing than the rules of organized religion, are probably less rigorous not more, and actually come across as rather religious anyway. Singer (2005) states, "Morality is a natural phenomena. No myths are required to explain its existence"(p.479); but morality is natural insofar as human rationality is natural, and fabricating group altruism and intergalactic moral objectivity as the origin and aim of ethics is myth-making at its finest.

Another problem for even basic rules like utility and collectivism is that ethics is not math, and actions are not numbers; there is a limit to how much precision and consistency is possible concerning the actions of an animal species like us. Rescher (1997) writes,

> "Rational belief, action, and evaluation are possible only in situations where there are *cogent grounds* (not just compelling personal motives) for what one does. And the cogency of grounds is a matter of objective standards. The idea of rationality is in principle inapplicable where one is at liberty to make up one's rules as one goes along – effectively to have no predetermined rules at all"(p.9).

Moral rationalists believe that rational objectivity really is fully implementable, even while appealing to pure rational agents and galactic objectivity, rather than more realistically defend rationality as an ideal, or a virtue, of good conduct, that may not be translatable into specific instructions. Rescher (1997) continues,

> "Obviously, what is rational for someone to do or to think *hinges on the particular details of how this is circumstanced* – and the prevailing circumstances of course differ from person to person and group to group. The rulings of rationality are indeed universal, but conditionally universal, subject to a person-relativity geared to the prevailing circumstances"(p.11).

For Rescher (1997) this means,

> "Thus while moral objectives and basic principles – those top levels of the hierarchy of moral norms – are absolute and universal, "slack" arises as we move further down the ladder, leaving room for (quite appropriate) contextual variability and differentiation"(p.141); "It is eminently rational to form one's judgments on the basis of experience. Different people (eras, cultures) have different experiences"(p.11).

But now again we seem to be at risk of contradiction: supposedly we are not justified in making up rules as we go along, but we are justified in acting on the basis of personal experience applied to particular circumstances? Singer (1981/2011) writes,

> "Those who regard the rules of morality as eternal truths often try to rule out exceptions to them. Since no rule short enough to serve as a useful guide to action can cover all the cases which may face us, the attempt is fore-doomed, and the further it is pressed, the more ludicrous the result"(p.164); "The way to avoid this kind of dishonest nonsense is, of course, to abandon any pretense that moral rules are exceptionless truths. Once we understand that they are social creations, normally useful and normally to be obeyed but always ultimately subject to critical scrutiny from the standpoint of impartial concern for all, the need for jesuitical reasoning about moral rules vanishes"(p.165).

More contradictions: Singer is here referring to the rules of a social code but it makes no difference. His normative argument involves rules that may as well be 'eternal' given their supposed derivation from evolution, and which are also subject to exceptions like any and every rule. Singer argues that we ought to abandon the notion that moral rules are exceptionless, while necessarily subjecting them to the eternal moral rule of impartial collectivism? It would seem helpful to regard moral rules, or laws, as

generalizations extrapolated from the particulars of human experience and potential. There is apparently no inherent lawfulness to our minds or to nature, so moral rules can be regarded as useful guidelines, and moral rationalism as a moral ideal or virtue, the appropriate application of which depends on character and expertise.

Rather than rational rules, which require wisdom for application, and are therefore an unsuitable foundation for objectivity in themselves, rational values might be a better candidate, which in the context of evolution might be judged with reference to nature, thought not simply derived from nature. Oughts about ises, not simply from. Rescher (1997) writes,

> "And people do not choose what it is that is in their interests. Rather, this is something that is set for them by the physical, social, and situational circumstances of their lives. The issue of what advantages one (health, freedom of action, etc.) is something objective and not something that one makes up as one goes along"(p.129); "People are no doubt the definitive authorities regarding what *pleases* them, but certainly not regarding what *benefits* them. And this objectivity of people's interests carries in its wake also the objectivity of interest-promotion – and thus of morality"(p.129); "Objectivity is not a matter of value disconnection; it is a matter of evaluative appropriateness"(p.173); "Given the nature of the human situation, we are impelled (insofar as rational) to align our values and our needs"(p.173); "An evaluative rationality that informs us that certain preferences are absurd – preferences that wantonly violate our nature, impair our being, or diminish our opportunities – fortunately lies within the human repertoire"(p.173).

An attractive element, in the sense of practicality, of this perspective is that it does not seem to require invoking objectivity as a metaphysical construct (which is the point of invoking alien rationality/rational kingdoms/collective impartiality), but rather recognizing the inherent objectivity of the human condition, especially ecologically considered. We might try to learn to regard ourselves abstractly in the process of moral deliberation, in order to better assess our scenarios from an impartial, objective 'metaethical' stance. Or we might rely on the wisdom of experts and authorities, which is often manifested in practical rules, law, and religion, and even seek guidance in applying rules to particular situations when feasible. This might amount to a rather maternalistic normativity, but assessing objective needs is always difficult from the first-person perspective. Another morally

convenient element of the human condition, objectively considered, is that our own and the needs of others do not necessarily conflict: Rescher (1997) writes,

> "This issue of human flourishing will inevitably involve such things as: using one's intelligence, developing (some of) one's productive talents and abilities, making a constructive contribution to the world's work, fostering the good potential of others, achieving and diffusing happiness, and taking heed of the interests of others"(p.157); "We thus arrive at a socially oriented demand of individual morality, an injunction to act so as to realize a social order in which action for prudential self-advantage is – at least by and large – also coincidental with action for the common good"(p.169).

But it can be argued that human flourishing demands pursuing the interests of others, not merely taking heed, and that coordinating individual with common goods (cooperating) is a prerequisite for survival and evolutionary persistence. Of all the countless organisms that have ever flourished on earth, only a tiny proportion has concerned themselves with anything like 'ethics'.

Kant (1788/1996) writes, "The majesty of duty has nothing to do with the enjoyment of life..."(p.211); and generally dismisses happiness as the pursuit of personal pleasure. Singer, in defining the good of all (within the group) as our highest preference, is also thereby committed in his utilitarian (not Kantian) way to a sense of duty that is, if not totally lawful, collectivist and rational. These conceptions would seem to invert the practical role that rules must play; rather then rules first, then needs, we must first discern needs, then concoct practical rules. While too much pleasure must surely be unwise, can necessary lawfulness in personal action, or instinctively-rationally required pursuit of impartial collectivism, always best serve our objectively ascertained values? In defending not merely rational deliberation but rationality itself as the highest good (manifested as impartial collectives), descriptive moral rationalism presents an argument to the effect that the purpose of ethics wholly considered is to construct a world in which human relations are conducted on a purely rational basis. That is, ethics itself has a purpose, which involves social engineering, towards an ideal goal; that would seem to be the point of asserting that in order to be moral one must be rational. As Rescher (1997) states, "Morality, after all, is an end-oriented purposive enterprise.... For it is morality's object to equip

people with a body of norms (rules and values) that make for peaceful and collectively satisfying coexistence..."(p.128). We get a Hobbesian notion here, that 'morality' only exists in the context of a societal collective. But appropriate actions surely have a longer natural history than that; ecologically appropriate actions need not be rationally considered actions at all; and transforming humanity into a rational collective of equals would be to transform our species into something that it has clearly never been before at any scale, that clearly has never existed before during the entire evolution of life on earth, that probably is impossible for us to achieve, and that may or may not be ecologically viable. The closest thing to a rational collective in nature is the colonies of the social insects, which surely operate on the basis of rules, which though instinctive translate into behavioral orderliness just as would strict obedience to rational rules, but which are certainly not egalitarian and could not persist if they were. On the contrary, it is the inequalities of colonial organisms which allow their existence. The concept of a purely rational egalitarian human collective may be biologically impractical, and therefore wrong since impossible and/or high-risk, and attempts to commandeer ethics for the sake of ecologically impossible political ideals are dangerously ideological (no less so than Darwinian tribalism). In the context of evolution, we neither can nor should aim for necessary selflessness in all our actions; nature does not care if we commit suicide either individually or collectively. Selflessness is a choice that we can and sometimes must make, but very carefully because evolutionary persistence simply does not work that way.

Singer (1981/2011) writes,

> "Yet to rely on so broad and abstract a principle as equal consideration of interests would result in a morality unsuited to normal human beings, and unlikely to be obeyed by them"(p.158); "Following a moral rule either leads us to do what best promotes the interests of all – in which case the rule adds nothing to the basic principle – or the rule forces us to do something which does not best promote the interests of all – in which case, why should we follow the rule"(p.158)?

(While another contradiction) Singer blurs the line between ethics and law; he defends basic moral

rules (as necessary *and* impractical?) but also argues that social codes must be less demanding (which highlights why ethics and law should be handled as separate subjects of inquiry). Singer (1981/2011) continues,

> "Taking seriously the idea of impartial concern for all would be impossibly demanding; there is always something I can do to make someone else a little happier"(p.159); "This is an ethic for saints. Sinners, despairing of meeting so exacting an ethical standard, are more likely to dismiss all such ethical claims as idealistic verbiage, not to be taken seriously by practical people"(p.159); "So an ethic for normal human beings will do well to limit the demands it makes – not to the extent that it demands no more than people are inclined to do anyway, but so that the standards it sets can be recommended to people with a realistic hope that many will meet them. An ethic of rules can do this, because rules can be formulated so that obedience is not too difficult"(p.159-160).

So, Singer's (1981/2011) general normative argument is apparently not for the masses, at least not yet, but carefully constructed rules or codes of laws can supposedly move humanity in the right direction: "We may attempt to foster tendencies that are desirable from an impartial point of view and to curtail the effects of those that are not; but we cannot pretend that human nature is so fluid that moral educators can make it flow wherever they wish"(p.155). However, in addition to obedience and progressiveness issues, Singer also recognizes the biological practicality issue; he (1981/2011) writes, "The rules of ethics are not moral absolutes or unchallengeable intuitions. Some of them are no more than relics from our evolutionary and cultural history and can be discarded without cost"(p.167). But if rules have served well evolutionarily, then they should only be discarded most judiciously. Singer (1981/2011) states,

> "Hence when I ask myself what it would really be best for me to do – best not in terms of my own interests and desires, but best from an objective point of view – the answer must be that I ought to do what is in the interests of all, impartially considered"(p.153); "A demanding standard, certainly, but if we are prepared to take an objective point of view, we must be prepared for extreme demands" (p.153); "Human nature is not free-flowing, but its course is not eternally fixed. It cannot be made to flow uphill, but its direction can be altered, if we make use of its inherent features instead of fighting against them"(p.156); "An ethic that relied solely on an appeal to impartial rationality would, however, be followed only by the impartially rational. An ethic for human beings must take them as they are, or as they have some chance of becoming. If the manner of our evolution had made our feelings for our kin, and for those who have helped us, stronger than our feelings for our fellow humans in general, and ethic that asks

> each of us to work for the good of all will be cutting against the grain of human nature"(p.156-157).

Singer admits that he is offering an extreme ethic that contradicts human nature, but argues that delicate social codes can facilitate progress. That involves the fantastic presumption that moral rationalists know something that nature does not; that evolution is a mistake, which rational collectivism can correct. Kant, the father of the rational collective ideal, at least had contemporary physics on his side: he (1785/1996) writes,

> "Everything in nature works in accordance with laws. Only a rational being has the capacity to act *in accordance with the representation of laws*, that is, in accordance with principles, or has a *will*" (p.66); "Hence nothing other than the representation of the law itself, *which can of course occur only in a rational being*, insofar as it and not the hoped-for effect is the determining ground of the will, can constitute the preeminent good we call moral..."(p.56); "The ground of this principal is: *rational nature exists as an end in itself*"(p.79).

Although a utilitarian rationalist it is difficult not to interpret Singer as in agreement on this point at least, in his defense of impartial egalitarian rational collectivism as the highest good. Physics is no longer on the side of this ideal (since apparently not everything in nature works in accordance with laws, especially free-willed organisms). Kant (1788/1996) writes, "We are indeed lawgiving members of a kingdom of morals possible through freedom and represented to us by practical reason for our respect..."(p.206); but Kant also states that we are indeed not (in admitting that his method is not in practice, above); and hopefully we never will be (pure rational agents in an intergalactically objective kingdom of ends).

**§ 3 – Epistemology**

Regarding the possibility of descriptive rationalism, there are difficulties **(3)**, just as there are in the case of descriptive instinctivism. One **(1)** problem is a parallel: instinctivists define morality in terms of human instincts, descriptively, in denying the possibility of rational control. While the rationalist argument is prescriptive in the sense that they do not deny that we can behave instinctively, the descriptive rationalists *define* morality in terms of human reason. Both take an apparent human faculty, and equate morality with it. So while we can certainly question the biological practicality, and thereby the goodness, of descriptive rationalism, we can also question the identification of morality with reason, as if morality were an essential element of the term 'reason' or 'rationality' (or vice versa), and ethics is therefore an exercise of analyzing the definitions of those terms, and the concept of moral reasoning is a tautology. Ethics cannot be deduced from rationality, or produced with an analysis of reason alone, because the concept of reason does not entail morality; this is another ought from is oversimplification, because morality depends on empirical content. No oughts from ises (although Searle says ises necessarily infer beliefs, which can be regarded as actions, and therefore oughts), but generally oughts are about ises that include ises other than the ises of human reason. How can we take seriously the notion that an abstract ideal is the fundamental consideration of morality, to be applied to humanity in terms of a normative anthropology, when the abstract ideal is a metaphysical concept borne of and restricted to humanity, but which bears no relation to actual human conditions? It is like playing a mind trick on ourselves, and like an experiment with existence. Luckily, 'reason' does not yield very much metaphysics anyway; all that it need refer to is the human power of inference. Singer (1981/2011) writes, "Understanding how our genes influence us makes it possible for us to challenge that influence"(p.169); "The aim of a rational challenge to blind evolution should be that required by an impartial standpoint: advancing the interests of all, impartially considered"(p.169). That is not a 'rational' argument, in the sense that human reason itself somehow implies impartial collectivism, but a

value claim. Searle (2001) writes,

> "Just as a theory of truth will not give you an algorithm for discovering which propositions are true, so a theory of rationality will not give you an algorithm for making the most rational decisions"(p.xv); "Assume universally valid and accepted standards of rationality, assume perfectly rational agents operating with perfect information, and you will find that rational disagreement will still occur..."(p.xv).

One of those disagreements would surely be the value of impartial collectivism. Singer (1981/2011) argues, "On the collective level, once we have begun to justify our conduct publicly, reason leads us to develop and expand our moral concerns, drawing us on toward an objective point of view"(p.147); clearly the implication is that somehow reason itself necessarily implies collective rationalism. If we can just think rationally enough, and let reason reign, supposedly a kingdom of ends will appear. But the impartial objective stance is motivated by the value of equality, which is an ideal that has never actually existed in any evolutionarily meaningful sense. If one does not care about equality, then one need not justify on that basis, and one need not assume an objective stance. How many of our actual relations in life are on a truly equal footing, or should be? Parents and children, teachers/students, doctors/patients – equality is a political value primarily, and many relations require or deserve it, but equality considerations cannot encompass the whole of human interaction. Many actions are justifiable on subjective and particular grounds, and if you were to try and argue that all rational parents, for example, if just like yourself, in a situation just like yours, with a child just like yours, should do what you will do, it would seem rather pointless and distracting, since the action can be justified by arguing that this is what you will do, in your situation, with this child of yours, and you believe that some other people would agree, but not necessarily, and you cannot recommend that this is what everyone else should do because no such situation as yours has ever happened before or ever will. We would readily admit in most scenarios a range of tolerable actions, outside of which would be wrong, but within that tolerable range there does not seem much point in reflecting on the lawfulness of each and every action, for the sake of constructing an ideal rational kingdom. Simply put, we can be rational and do right

without being perfectly lawful, impartial, objective, or collectivist. All that moral rationalism requires is self-discipline of our emotions, and thereby free will, in order to properly infer, along with a defensible explanation of actions within tolerable limits. That is more compatible with the imprecision that ethics involves: we praise and blame for coming close to the mark and for trying to do right, but perfection is neither expected nor required, in keeping with the basic moral concept of tolerance.

Kant (1785/1996; 1797/1996) writes,

> "Since the concept of causality brings with it that of laws in accordance with which, by something that we call a cause, something else, namely an effect, must be posited, so freedom, although it is not a property of the will in accordance with natural laws, is not for that reason lawless but must instead be a causality in accordance with immutable laws but of a special kind; for otherwise a free will would be an absurdity"(1785, p.94); "...hence a free will and a will under moral laws are one and the same. If therefore, freedom of the will is presupposed, morality together with its principle follows from it by mere analysis of its concept"(1785, p.95); "But since the human being is still a *free* (moral) being, when the concept of duty concerns the internal determination of his will (the incentive) the constraint that the concept of duty contains can be only self-constraint (through the representation of the law alone); for only so can that *necessitation* (even if it is external) be united with the freedom of his choice"(1797, p.513).

Here again we see Newton's influence on Kant; defining causality as lawful, because nature is also by definition lawful, yields a conception of free will that must also be lawful, or else not free because subject to the laws of material nature. On that ontological perspective, Kant (1785/1996) is justified in arguing, "Thus whoever holds morality to be something and not a chimerical idea without any truth must also admit the principle of morality brought forward"(p.93). However, our notions regarding the lawfulness of material nature have changed, yielding on ontology of probabilities, quanta, and dark matter and energy. Since free will no longer has to overcome material determinism, free will might be conceived of as free and lawless (absolutely free). Natural laws are empirical generalizations, and moral laws are helpful guidelines and items of social contracts. Searle (2001) writes,

> "There is no self-contradiction in imagining causes that occur without instantiating any universal regularities"(p.154); "But acting on impulse can be as much free as acting on a universal law"(p.156); "Some very cautious persons restrain themselves from ever acting on impulse, whereas free spirits often allow their impulses to move them"(p.156); "Kant was wrong: free action does not require acting according to a self-created law"(p.156).

Certainly that corresponds with our experience of free will; it is doubtful that many even imagined that we had to be lawful in order to be free-willed before Kant presented his ideas. Though physics has changed, as is the case with evolution theory moral theory is also heavily influenced by science, and can also tend to let science get out ahead of it. Kant (1785/1996) writes, "Now, where determination by laws of nature ceases, there all explanation ceases as well..."(p.105). Kant's moral theory is an explanation of ethics very much historically located in the context of material determinism; he (1785/1996) writes,

> "....it is equally necessary that everything which takes place should be determined without exception in accordance with laws of nature"(p.102); "Hence freedom is only an idea of reason, the objective reality of which is in itself doubtful...."(p.102); "...yet for practical purposes the footpath of freedom is the only one on which it is possible to make use of our reason in our conduct; hence it is just as impossible for the most subtle philosophy as for the most common human reason to argue freedom away"(p.102); "But the rightful claim to freedom of will made even by common human reason is based on the consciousness and the granted presupposition of the independence of reason from merely subjectively determining causes, all of which together constitute what belongs only to feeling and hence come under the general name of sensibility"(p.103).

Nowadays, we do not need to concern ourselves so much with reconciling free will and science, which removes a motive for defending descriptive moral rationalism, since the idea that free will must be lawful unto itself in order to not be lawful according to nature is no longer compelling. Whereas Kant believed that descriptive rationalism was necessary in order for ethics to exist at all, even given our conscious experience of free will, now descriptive rationalism is apparently motivated by political ideals of egalitarian collectivism.

Singer argues that reason will inherently or necessarily lead us toward impartial collectivism, partly on the basis of his 'escalator' idea that reason manifests a progressiveness unto itself, and partly on the basis of egalitarian public justification. Both arguments seem like dubious attempts to attach essential traits, or define, human reason in new ways. Political ideals are inherently empirical ideals, since they can only be based on current and ideal political conditions. We cannot do politics without

knowing what we are like, and what is possible and practical for us, as human beings. The idea that reason will necessarily lead us in any particular direction is interesting but doubtful; we do not even know whether human rationality is a distinctly human or possibly mammalian or earthly cognitive mode (or trait), or a broader cognitive space (or niche) into which we have ascended. Is our mode of cognition fixed or static, or dynamic and in flux? Is it an ecological niche which we have only partly entered or discovered, or a created manifestation of our species which we might be able to modify or expand? Maybe there really are other creatures who share the cognitive niche with us, or have before us, or will after us; or maybe not. Just considered as a moral or political ideal, collective reasoning is not necessarily safe: Rawls (2001) distinguishes rationality and reasonableness (p.6), and writes, "Justice as fairness regards all our judgments, whatever their level of generality – whether a particular judgment or a high-level general conviction – as capable of having for us, as reasonable and rational, a certain intrinsic reasonableness" (p.30). Rescher (1997) states,

> "For in seeking to do what any reasonable person would do in my circumstances I will have to reckon with the fact that others will be operating in circumstances that differ substantially from mine. Differences in time and place loom large. The cognitive state of the art is one thing in the twentieth century and another in the Greece of Aristotle's day; it is one thing in an Oxford college and another in the Brazilian rainforest. The uniformity of rational process need not constrain a substantive uniformity of belief. It would be utterly contrary to reason for differently situated thinkers confronted with different bodied of evidence to think exactly alike"(p.68).

It seems reasonable to suggest that all thinkers not only do not, but should not think alike. Rescher (1997) writes, "...conformity is a requisite for objectivity, but the matter of how it comes about is pivotal"(p.17); but adds, "Only in ideal circumstances is consensus probatively decisive, and not amidst the messy complexities of the real world"(p.45). All in all, equating morality with, or defining it strictly in the terms of, human rationality does not seem any more reasonable or plausible than in the case of instinctiveness, especially considering that we can all achieve a rational consensus, and yet be collectively mistaken.

Another problem **(2)** with descriptive rationalist epistemology is that regardless of whether or

not an analysis of the concept of reason yields morality, human cognition does not seem equipped or constructed in the way that would apparently be required. Our minds are full of desires and instincts that have little if anything to do with reasoning, which can be managed but not ignored. At least, not if we wish to stay alive. So it does not seem possible for us to regard ourselves as purely rational beings, rather than as beings with a potential for rational self-discipline. We can define ourselves as purely rational as a thought experiment, but if we allow that human beings are beings with the capacity to persist as organisms for the duration of a normal human life-span, and successfully reproduce, then we cannot realistically define ourselves as purely rational agents, because survival and reproduction depend on instinct. If humans never felt hungry, would they eat? If humans were never attracted to the opposite sex, would they reproduce? Perhaps sometimes, but not enough to persist as a kind. We should not regard abstract concepts as real, and real entities as false: humans are instinctive by nature, necessarily so; instinct is an essential trait of all animal life-forms that cannot be defined away while still referring to an animal life-form. Searle (2001) writes,

> "The single most remarkable capacity of human rationality, and the way in which it differs most from ape rationality, is the capacity to create and to act on desire-independent reasons for action. The creation of such reasons is always a matter of an agent *committing* himself in various ways"(p.167); "I want to say that cases of actions for which the antecedent beliefs and desires really are causally sufficient, far from being models of rationality, are in fact bizarre and typically irrational cases"(p.12); "...rationality is possible only where irrationality is possible, and that requirement entails the possibility of choosing between various rational options as well as irrational options"(p.17)"; "In a situation in which you are in the grip of an overpowering rage, so that you are, as they say, totally out of control, you have no sense that you could be doing something else"(p.15-16).

Searle (2001) generally defends a perspective on rationality in which free will is characterized as a gap, between reasons and actions. The reasons do not compel actions but do manifest intentions, which may or may not be acted upon. This amounts to a model in which instinctive or emotional actions effectively eliminate the gap of free will by being causally sufficient in themselves, in contrast to rational actions:

> "If by "cause" we imply "causally sufficient conditions," then free actions are not caused by anything. That is what makes them free. To put this point more precisely: What makes an action free at the psychological level is that it does not have antecedently sufficient causal conditions. The self *performs* the act, but it does not *cause* the act. Nothing fills the gap"(p.157).

However, this seems to exclude the possibility that we might voluntarily allow the gap to be filled, by instinct; that the gap may be something that we can manipulate and employ in consciously applying, summoning, or employing instincts as we see fit. On this view, an overpowering rage might not necessarily be a matter of being absolutely out of control but a matter of temporarily permitting one's rage to express itself, or of voluntarily giving in to it in belief that rage suits a particular situation better than rational deliberation. Hunger, lust, fear, courage, and instinctive behaviors in general might, with experience and education, be successfully employed in this way. Searle demonstrates the tendency of epistemologists to cast will as necessarily either rational or instinctive, as one or the other but usually not some sort of combination. This generally results in eliminating the possibility of free instinct; of instincts willfully summoned and applied. And this is odd; if one were to go by the literature on the subject, one might conclude that freely summoning emotion is rare or impossible, even though people do it constantly, even young children. So while Searle contends that acting on desire-independent reasons is what sets humans apart, another distinctive capacity may be acting on free-willed rationally summoned desires.

Rescher (1997) writes,

> "Consider the question: can one be simply too rational in the management of one's life"(p.35); "Accordingly, one cannot be too rational for one's own good"(p.36); "...it is clear that the appropriate indulgence of our personal preferences and individual idiosyncrasies has its limits. Idiosyncratic aims and preferences certainly deserve to have a place in some departments of personal life, but science (rational inquiry) and human interaction at the social level (moral and ethical comportment) are not among them"(p.37).

Again, this amounts to necessary selflessness, not only in terms of pursuing that which we personally need to flourish, but also in terms of abandoning any meaningful sense of personal independence and identity. In addition to being biologically impractical, this is also cognitively impossible for us. To

suggest that personal preferences must be ignored in order to participate in ethical conduct amounts to banning humanity from morality. People must pursue preferences in order to do the basic things that organic life requires; those preferences are informed by instincts; and are extremely diverse depending on innumerable variables; so if moral rationalism demands entirely abandoning the pursuit of instinctive personal preferences then moral rationalism entirely abandons humanity. Impulses must be indulged, in order to navigate this world. There is no point in offering cognitive prescriptions that are self-destructive, because they will run up against people's survival instincts and be ignored. Singer (1981/2011) writes,

> "Just as any person who can reason adequately can, like Hobbes, follow Euclid's proofs of the theorems of geometry, so can anyone capable of reasoning understand the objective point of view from which his or her interests are no more important than the like interests of anyone else"(p.140); "Although our capacity to reason evolved for the same biological reasons as our other characteristics, reason brings with it the possibility – not often realized, admittedly, but always a possibility – of following objective standards of argument, independently of the effect this has on the increase of our genes in the next generation"(p.169).

Since the objective view, on Singer's account, involves group altruism, pure rational beings, utilitarianism, egalitarianism, and so on, as an empirical claim it seems unlikely that 'anyone' could understand it. More importantly, it seems unlikely that so many would agree with it (if many did, our species would have a problem). Even more importantly, it seems unlikely that many could possibly think and behave that way (at least while simultaneously flourishing as human beings). Even if they could, would they be thinking morally or politically? Rawls (2001) writes,

> "We select from our judgments of political justice those we refer to as considered judgments or considered convictions. These are judgments given under conditions in which our capacity for judgment is most likely to have been fully exercised and not affected by distorting influences"(p.29).

Do we really want to argue in moral epistemology that all right actions are by definition as well deliberated as all political convictions? Is that really a realistic suggestion for deciding what to do, on a constant basis, moment-to-moment, day-to-day? Can it really result in human flourishing, either

individually, familially, or collectively?

Singer (1981/2011; 2005) writes,

> "Even a radical theory like utilitarianism must rest on a fundamental intuition about what is good. So we appear to be left with our intuitions, and nothing more. If we reject them all, we must become ethical skeptics or nihilists. Haidt's behavioral research and Greene's brain imaging studies suggest another possibility: that we may be able to distinguish between our immediate emotionally based responses, and other judgments that have a rational basis"(1981/2011, p.196); "Kant thought that unless morality could be based on pure reason, it was a chimera. Perhaps he was right. In the light of the best scientific understanding of ethics, we face a choice. We can take the view that our moral intuitions and judgments are and always will be emotionally based intuitive responses, and reason can do no more than build the best possible case for a decision already made on nonrational grounds. That approach leads to a form of moral skepticism, although one still compatible with advocating our emotionally based moral values and encouraging clear thinking about them. Alternatively, we might attempt the ambitious task of separating those moral judgments that we owe to our evolutionary and cultural history, from those that have a rational basis. This is a large and difficult task. Even to specify in what sense a moral judgment can have a rational basis is not easy. Nevertheless, it seems to me worth attempting, for it is the only way to avoid moral skepticism"(2005, p.487).

Singer describes a variant of the 'trolley' dilemma, in which one is forced to choose between the deaths of one stranger or five, by having to push the one off of a bridge (rather than pull a trolley track switch); he (2005) writes,

> "The death of one person is a lesser tragedy than the death of five people. That reasoning leads us to throw the switch in the standard trolley case, and it should also lead us to push the stranger in the footbridge, for there are no morally relevant differences between the two situations"(p.486); "It might be said that the response that I have called "more reasoned" is still based on an intuition, for example the intuition that five deaths are worse than one, or more fundamentally, the intuition that it is a bad thing if a person is killed. But if this is an intuition.... It does not seem to be one that is the outcome of our evolutionary past"(p.486).

Similarly, Kant (1785/1996; 1788/1996) writes,

> "For, the pure thought of duty and and in general of the moral law, mixed with no foreign addition of empirical inducements, has by reason alone (which with this first becomes aware that it can of itself be practical) an influence on the human heart so much more powerful than all other incentives, which may be summoned from the empirical field, that reason, in the consciousness of its dignity, despises the latter and can gradually become their master; on the other hand a mixed doctrine of morals, put together from incentives of feeling and inclination and also of rational concepts, must make the mind waver between motives that cannot be brought under any principle, that can lead only contingently to what is good and can very often also lead to what is evil"(1785/1996, p.64-65); "...the incentive of the human will (and of the will of every created rational being) can never be anything other than the moral

law..."(1788/1996, p.198).

However, consider the 'trolley' scenario with a more evolution-relevant twist; one must choose between the saving of one life or five, but the one life is a close relative, while the group of five are total strangers, as unrelated as can be. The relative is also next to the decider, as in the typical set-up. If the decider decides to save the family member, could we possibly assign blame? Many would argue no. Could the decider have made that decision in the absence of instinct? Many would argue no (the epistemological argument here is only that deciders have the ability to, and sometimes should, consciously allow instinctive actions if they want to). So might it be that instinct has led to a right action? Many would argue yes. Consider also, that if all humanity routinely chose to save strangers over close relatives, the results would be catastrophic for our species, since there has never been and never could be a species of organisms that did not pursue the persistence and reproduction of genetic traits on an individual and kin basis. Since it would be catastrophic to routinely save strangers and sacrifice relatives, it could not be right as a matter of moral law or objective impartial utilitarianism (regardless of the epistemological basis for the decision). All in all, since the instinctive choice might be the right choice, the purely rational choice might be wrong, in which case pure moral rationalism might lead to evil, not instinct.

Finally, **(3)** a third problem with moral rationalism is that even considered solely as an ideal, it is impractical and even misanthropic in rejecting human nature as essentially bad or wrong. Not only is an epistemology of pure practical reason and all its trappings impractical and impossible, it is not even something that we should admire or look up to, as how we would think if only we were better than how we are. Collectivism and objectivity, utility and pure agents, impartial kingdoms of ends, are all useful moral concepts, but cannot be regarded as wholly comprising ethics. Making an abstraction the aim/end/definition of ethics, which is a mathematical analogy, while overriding/denying the realities of human nature and the natural world, is pie-in-the-sky, high-risk metaphysics. Moral rationalists refer to

the science of morals; while we allow a role for metaphysics in science we do not equate the two, so why would we do that in ethics? Descriptive moral rationalism does not seem wholly wrong, but it does not seem wholly practical – we need respect for biological realities also, many of which are empirical and instinctive. Lawfulness might be regarded as one virtue among many, and virtues generally as ideals not laws, but if instincts contribute to the well-being and flourishing of humanity, and if individual flourishing biologically translates into that of others, then why not regard the wise application of instinct also a virtue? We can employ rational principles without having to necessarily engage solely in pure rational abstraction in order to be right. Since the instincts cannot be turned off, and must be dealt with anyway, the necessity of incorporating them wisely, without abandoning objectivity, renders character and experience as the first principles of right action. Instincts under control are not necessarily selfish, but potentially redirected towards appropriate relations; under a rational principle of moral character, rational abstraction can serve as a tool and facilitator in the discernment of practical rules of engagement and society. And in the context of a theory of organic selection, in which evolution is fundamentally a matter of choice not chance, in which free will is real not illusory, our decisions are not up against a deterministic material world working in the opposite direction. We assume absolute responsibility for our decisions, our fate, for ourselves and for one another. Evo-ethics is not a matter of extreme competition and hoped for 'natural' selection, of justified conflicting purposes within a game that necessarily produces winners and losers at every instance. We are free to create whatever sort of relations and societies we want, within the restrictions of a viable ecological existence.

Singer (1981/2011) writes,

> "We can now see that ethics *is* a morass, but a morass with a definite and explicable shape. Conflict and confusion are built into ethics in several ways: in the division between our nature as biological organisms and our capacity to follow impartial reasoning: in the clash between individual and social points of view; and in the need to uphold ethical rules which on rare occasions should nevertheless be broken"(p.167-168).

However, these conflicts might only exist in the eye of the beholder, and as artifacts of eons of ethical theorizing. Rescher (1997) writes, "Moral agency is an essential requisite for the proper self-esteem of a rational being. To fail in this regard is to injure oneself where it does and should hurt the most – in one's own sight"(p.160). Of course, moral agency for Rescher is purely rational, which implies that instincts are self-injurious. Rescher (1997) writes,

> "...and indeed even human *feelings* – can be objective..."(p.6); "People's "feelings" unquestionably form an important part of what constitutes their interests, and thus deserve respect from the moral point of view"(p.132); "Emotions, illusions, and delusions are in a way *real* enough – we have real fears of ghosts and real experiences of mirages. But while such of-oriented experiences are real enough, those ghosts and mirages that they purport are not. They are figments of our imagination. And this fact of their inaccessibility to others precludes their qualifying as objective"(p.4); "...phobias, groundless anxieties, delusions, senseless antipathies, and irrationalities of all sorts. These must be erased, so to speak – and left blank"(p.9); "...the counsels of reason afford the most promising systematic prospect of realizing our objectives"(p.116); "Admittedly, reason offers us no categorical guarantees; yet, if we abandon reason there is no better place where we can (rationally) go"(p.120).

How anyone could honestly believe that pure moral rationalism is a safer method than even pure instinct is quite mysterious; have not the instincts served us and our ancestors well for literally hundreds of millions of years? Pure moral rationalism; how long has it been serving us well? Kant (1785/1996) writes,

> "Now in a being that has reason and a will, if the proper end of nature were its preservation, its welfare, in a word its happiness, then nature would have hit upon a very bad arrangement in selecting the reason of the creature to carry out this purpose. For all the actions that the creature has to perform for this purpose, and the whole run of its conduct, would be marked out for it far more accurately by instinct, and that end would have thereby been attained much more surely than it ever can be by reason; and if reason should have been given, over and above, to this favored creature, it must have served it only to contemplate the fortunate constitution of its nature, to admire this, to delight in it, and to be grateful for it to the beneficent cause, but not to submit its faculty of desire to that weak and deceptive guidance and meddle with nature's purpose. In a word, nature would have taken care that reason should not break forth into *practical use* and have the presumption, with its weak insight, to think out for itself a plan for happiness and for the means of attaining it. Nature would have taken upon itself the choice not only of ends but also of means and, with wise foresight, would have entrusted them both simply to instinct"(p.51); "In this case it is entirely consistent with the wisdom of nature if we perceive that the cultivation of reason, which is requisite to the first and unconditional purpose, limits in many ways – at least in this life – the attainment of the second, namely happiness, which is

> always conditional; indeed it may reduce it below zero without nature proceeding unpurposively in the matter, because reason, which cognizes its highest practical vocation in the establishment of a good will, in attaining this purpose is capable only if its own kind of satisfaction, namely from fulfilling an end which in turn only reason determines, even if this should be combined with many infringements upon the ends of inclination"(p.52).

In the context of evolution, the reduction of happiness, otherwise known as preservation/welfare, to "below zero", equals suicide. Kant counsels against suicide, of course, arguing that it would be a rational contradiction within a kingdom of pure rational agents. It is tempting to believe that Kant would overhaul his moral philosophy rather thoroughly in light of modern biology and physics. For us, it is enough to take note that there is at least one prominent moral rationalist who acknowledges, in a roundabout way, the risk of moral rationalism to our individual and collective existence. Kant (1785/1996) writes,

> "Here, then, we see philosophy put in fact in a precarious position, which is to be firm even though there is nothing in heaven or on earth from which it depends or on which it is based. Here philosophy is to manifest its purity as sustainer of its own laws, not as herald of laws that an implanted sense or who knows what tutelary nature whispers to it, all of which – though they may always be better than nothing at all – can still never yield basic principles that reason dictates and that must have their source entirely and completely a priori and, at the same time, must have their commanding authority from this: that they expect nothing from the inclination of human beings but everything from the supremacy of the law and the respect owed it or, failing this, condemn the human being to contempt for himself and inner abhorrence"(p.77).

Given the scientific context in which Kant worked we can appreciate his moral philosophy as historically situated, but unlike his work on theoretical reason (the 1st Critique), which seems to enjoy support from current science, his moral philosophy, and descriptive moral rationalism generally, appears to have been rendered quite problematic.

## Part IV: Prescriptive Instinctivism

### § 1 – Science

It does seem reasonable to conceive of both human instinct and human rationality as distinct 'faculties', even though they may not be so easily distinguished in terms of experience or physiology: we do have a capacity to gather complicated types and amounts of information, and to interpret and comprehend it in order to draw inferences, and this capacity must grow in power and be closely associated with increases in general intelligence, and we also have a capacity for manifesting innate reactions and unlearned appetites which can direct and motivate our behavior and decisions, that are inherited genetically as biologically successful adaptive traits. Descriptive instinctivists argue that our instincts, although amounting to information, are so cognitively dominant that they employ our rationality in order to satisfy the motives that they yield. We experience hunger, and so seek food, or sense food which triggers hunger, and various sensory and remembered information is corralled and put to work until the hunger is satiated, for example. Supposedly, there exist no other motives than instinctive, so right action is necessarily reduced to instinctive action; instincts are inherited and not learned or controlled; free will is an illusion and genuine choice does not exist. On the other hand, descriptive rationalists argue that 'reason' can generally incorporate our instincts as sources of information, but ought not to in discerning right action, as a rule, since as traits instincts are self-serving survival mechanisms, which are incompatible with and will necessarily confuse abstract deliberations of which actions pure rational agents must perform in order to construct an ideal society or collective of equals. Moral motives, on that view, are purely rational and necessarily selfless, in the sense that our personal preferences, identities, and individual well-being must be abrogated in the interests of the collective; free will is necessarily of purely rational motivation and completely unaffected by instinctive drives; moral choices are by definition thereby performed not by humans but by abstract metaphysical avatars – pure rational agents. The descriptive instinctivist position amounts

to asserting that *ethical* humans do not and can not actually exist, while the descriptive rationalist position amounts to asserting that ethical *humans* do not and can not actually exist. Both are therefore rather strange theories, for ethics is the subject of what it is that we humans ought to do, not the subject of what we humans are incapable of doing, or incapable of being. While we wish to avoid any false inferences from the facts of evolution to our theories of ethics, we must surely conclude that evolution renders humanity quite vulnerable and potentially miraculous, within the context of natural history, and therefore very much in need of a truly and biologically practical approach to discerning right action. Since we are in possession of two quite powerful faculties in instinct and reason, and since the harsh realities of evolution dictate that we need employ all of the abilities which have facilitated our persistence and ascendance, a mixed moral epistemology that characterizes positive roles for both faculties would seem appropriate. The few evo-ethicists who defend a mixed moral epistemology cast instinct in the lead role on normative grounds; they argue that while we are capable of acting on the basis of both reason and instinct, we ought to allow instinct to guide us.

Kitcher (2011) writes,

> "Recent work in neuropsychology suggests that the opposition of "cold" reason to ardent passion is highly problematic and that there is evidence for the role of emotion in what have often been viewed as cool deliberations. Beyond this point, there are grounds for attributing a major directive role to emotions in some instances of normative guidance"(p.78-79); "Abstract reflection and reasoning are hardly *more* reliable than the emotional responses deemed as capricious. Many of the most horrific deeds of the twentieth century were carried out in the name of abstract principles"(p.84); "Our decisions involve a hodgepodge of considerations and feelings, and it is foolish and unnecessary to limit the full range of psychological possibilities, taking some to be importantly free of emotion and others not, some to be constitutive of "the ethical point of view" and others not, some to accord with the anti-Machiavelli condition and others not"(p.82); "The ability to "revere the moral law" probably depends, in the evolution of culture and in the development of individuals, on prior emotions, simpler feelings of reverence now written off as ethically primitive"(p.81).

Kitcher (2011) by no means dismisses human rationality altogether in the way that descriptive instinctivists do; rather, his 'pragmatic naturalism' view is that rationality does play a role in moral deliberation but that instincts are ultimately responsible for our thinking ethically at all, and ought to

govern our deliberative process:

> "Part of the story of ethical progress must consist in understanding how *acquiring* new desires, not merely satisfying them, counts as progressive"(p.217); "We can now see why certain approaches to ethics, particularly the nonnaturalistic Kantian and contractarian varieties, seem appropriate replies to skeptical challenges. They provide reassurance by delineating an ideal of rational thought and behavior, more or less thoroughly articulated, so people who already feel the ethical tug can identify a mistake deviants would be making. These philosophical replies cannot (to repeat) silence deviants or bring sociopaths to heel. But they succeed at a more modest task. So too does pragmatic naturalism. To the extent people who wonder whether they should be glad to have ethical dispositions can be satisfied with explanations invoking practical rationality, they should be (at least) equally content with the pragmatic naturalist account. For that account places ethical practice at the center of our humanity, viewing ever-more refined attention to altruism failures, ever-increased recognition of the wants of others, as preconditions of the kinds of lives we live and the kinds of societies we have"(p.279).

Although Kitcher (2011) argues, "Yet the search for a single type of psychological causation, invariably reliable or at least always more reliable than its rivals, is foolishly utopian"(p.84), pragmatic naturalism, as an epistemological argument, boils down to the view that in the final analysis instinct is the more reliable faculty:

> "On the individual psychological front, it [normative guidance] consists in refinements of the emotional lives of these individuals"(p.93); "The expansion of human desires was surely coupled to the refinement of our emotional lives"(p.137); "Altruism failures can be remedied by harnessing a number of emotions: fear, dread of the unseen enforcer, awe and reverence, a positive desire to be in harmony with the deity's plans and wishes, even a sense of identity with the society blessed with divine favor"(p.131); "No special sort of psychological process is likely to be better at producing appropriate behavior across all circumstances; the mind of "the friend of humanity" may cloud over, but, equally, his or her reason may go astray. Reliability is an entirely appropriate measure, for, from the perspective of achieving cultural success, the goal is to arrive at strategies for eliciting preferred behavior on as many occasions as possible. Pluralism has evident advantages. The group that supplies a variety of psychological dispositions for altruistic response obtains greater relief from altruism failures"(p.131).

Kitcher (2011) describes his moral epistemology as pluralist and as a hodge-podge; while he allows rationality a servile role, he does not allow a significant role for pure practical reason featuring a total abstraction from human nature, and reason serves passion not necessarily (because that is all that it possibly can do) but because it is less reliable in terms of Darwinian natural/group selection. Kitcher's Darwinism is problematic, especially his commitments to flawed conceptualizations of altruism and

group selection, which are what lead him to assert that instinct is more reliable (as naturally selectable) than practical reason. On a less speculative interpretation of evolution, a mixed moral epistemology that grants rationality a controlling role (but not necessary pure abstraction) is more plausible on both empirical and practical grounds. Like Singer (1981/2011), Kitcher (2011) portrays morality as a function of 'group altruism' but without anything analogous to Singer's 'escalator of reason'; Kitcher's 'morality' is instinctive and evolutionarily advantageous on a group selection basis. Nietzsche also defends instinctive action as more evolutionarily reliable but on the basis of individual selection; although compared to Nietzsche, Kitcher's work is polished academic political correctness (in contrast to Nietzsche's studied affrontery), the practical implications of Kitcher's work are no less reckless. Whereas Nietzsche so brashly presents a vision of instinctively driven 'nobles' and racial eugenics (apparently absorbed in an attempt to offer a dialectical antithesis to Kant's rationalism and/or Christianity, so as to manifest a movement of Hegelian metaphysical 'spirit'), Kitcher (2011) offers a persuasively understated defense of instinctively driven tribal conflict (apparently absorbed in an attempt to offer a naturalist/atheist account of ethics, as a furtherance of the Darwinian 'paradigm').

While Singer (1981/2011) describes his work as sociobiology even though he arrives at very different conclusions than either the descriptive instinctivist sociobiologists or the descriptive rationalist sociobiologist, Kitcher is a critic of sociobiology. Kitcher is a Darwinist: he (2003) writes,

> "The point is that Darwin's evolutionary theory could have gone the way of phlogiston chemistry, the corpuscular theory of light, blending inheritance, the universal ether, stabilist theories of the continents, and many other discarded theories. It didn't, not because evolutionary theorists are stubborn ideologues but because the kinds of observations that would have discredited it (occasionally, but wrongly, hailed as "facts" in the Creationist literature) have not been made. Far from being "vacuous" or "unfalsifiable," evolutionary theory sticks its neck out again and again, denying the copresence of human and dinosaur footprints at Paluxy, predicting the morphology of ancestral, ruling out the possibility that the chicken genome is more similar to the human genome than the latter is to the chimpanzee genome, and in a host of further commitments"(p.372).

Kitcher here displays a common trait of Darwinians, of trying to take ownership of evolutionary

biology altogether by attempting to obscure the difference between Darwinism and evolution. Darwinians *are* stubborn ideologues, exactly because observational evidence has been before their eyes all along in the form of organic purposiveness, and because they will not stick their necks out far enough to even acknowledge in current literature the significant body of scientific counter-evidence. Kitcher (2003) writes,

> "Nevertheless, I believe that Wilson's discussion of ethics, those that he has ventured alone and those undertaken in collaboration with the philosopher Micheal Ruse, are deeply confused through failure to distinguish a number of quite different projects"(p.321); "Similarly, a critique of human sociobiology that simply uproots the current occupants of this part of the intellectual landscape will not suffice"(p.301); "Thus, part of the sociobiological enterprise as it has sometimes and most popularly been conceived should simply be abandoned. What remains should be thoroughly cleansed"(p.301); "In three previous articles, I have offered a blueprint for the transformation of human sociobiology, insisting on the disavowal, once and for all, of inferences about genetic determination of traits, on the need for precise models and detailed data, and on the importance of recognizing the role of cultural transmission in the history of human social practices"(p.301); "My goal is here is to elaborate this suggestion, which I (like Gould) regard as the most important step in the replacement of the "cardboard Darwinism" of traditional human sociobiology with a more adequate way of introducing biology into the social sciences"(p.302).

Much of the sociobiology literature is concerned with the influence of inherited genes on behavior, and Kitcher argues against any simple gene-behavior reductionism in favor of a more holistic analysis that includes roles for culture and the environment in behavioral development. Kitcher (2003) writes,

> "Once human behavioral ecology has rid itself of the errors of genetic determinism, and once it has vowed to emulate the genuine achievements of nonhuman behavioral ecology, the large obstacle that must be overcome is the identification of of those aspects of the behavioral phenotype that actually have functional significance"(p.314); "If developmental psychology, neurobiology, and evolutionary analyses are undertaken together, then the grain of truth in orthodox human sociobiology, the claim that we, like other species, are products of the evolutionary process, might flower into something significant"(p.314).

While those remarks focus on genetic behavioral determinism, Kitcher (1985) offers critical remarks regarding sociobiology and ethics in general:

> "My principal goal has been to explain as clearly as possible what sociobiology is, how it relates to evolutionary theory, and how the ambitious claims that have attracted so much public attention rest on shoddy analysis and flimsy argument"(p.viiii); "Pop sociobiologists claim that we must learn to reevaluate the stock examples. They claim to have followed a road that leads

> from Darwin's original problems to radical conclusions about human nature. It veers from evolutionary possibility to evolutionary actuality; and organisms that seemed to pose a threat to Darwin's theory of evolution, precisely because their actions could not be viewed as subordinating fitness to nonevolutionary ends, give way to the organism we identify as the being that chooses its own ends"(p.75); "Pop sociobiology is unsatisfactory when its practitioners rely on inadequate models and when they fail to relate their analyses to...observed...behavior"(p.180); "At its most extreme, pop sociobiology offers guesses about the ways people actually behave (and have actually behaved) based on "evolutionary expectations." The expectations are drawn from a truncated version of evolutionary theory in which the optimizing hand of selection is seen in every detail of human social life"(p.239).

Kitcher (1985) again contrasts 'pop' sociobiology with his approach:

> "The moral is that careful sociobiologists ought to resist labeling the examples they study with such terms as "kin selection," "reciprocal altruism," and so forth. The main task is to explore the relative fitness of various forms of behavior; in doing so, one should take into account all the relevant factors"(p.111); "Moreover, it is possible that we might some day achieve justified conclusions about the evolution of some aspects of human behavior. Although I shall try to expose the deficiencies of pop sociobiology by contrasting the claims of pop sociobiologists with with the work of those who study the behavior of nonhuman animals, the defects lie in the method, not the matter"(p.131-132); "As I argued at the beginning of my discussion, the true political problem with socially relevant science is that the grave consequences of error enforce the need for higher standards of evidence. In the case of pop sociobiology, commonly accepted standards are ignored"(p.435).

Unfortunately, Kitcher's (2011) theory of ethics commits the errors which he ascribes to 'pop' sociobiology: he relies on genetic determinism, adaptationism, selectionism, denies human freedom of action, relies on inadequate models, and does not provide observational evidence.

> Kitcher (2011) mainly relies heavily on the concept of biological altruism: he writes,
>
> "At some point in our evolutionary past, before the hominid line split off from the branch that leads to contemporary chimpanzees and bonobos (possibly quite a long time before), our ancestors acquired an ability to live together in small groups mixed in terms of sex and age. That achievement required a capacity for altruism. It also prepared the way for unprecedented forms of cooperation, and ultimately for the enunciation of socially shared norms and the beginning of ethical practice. Altruism is not the whole story about ethics, but it is an important part of it"(p.17).

Living in groups is no achievement for many animal types do it; living in groups does not necessarily require biological altruism (schooling fish, for example, are not considered altruists); but mainly, biological altruism has nothing to do with ethics because it amounts strictly to individually

advantageous behavior and is an inherited instinctive trait manifested by many animals including ourselves. Kitcher (2011) writes,

> "For our purposes, the significant notion is that of *psychological altruism*"(p.19); "Some of our desires are directed toward ourselves and our own well-being; other desires may be directed toward the welfare of other people. Desires of the former type are the hallmark of egoism, but those of the latter are altruistic. So altruists are intentional agents whose effective desires are other-directed"(p.20); "Before our human ancestors invented ethics, they had a capacity for psychological altruism"(p.35); "Psychological altruism is real, it is exemplified in maternal concern, and it originally evolved through the most fundamental type of kin selection"(p.42).

Kitcher distinguishes between 'psychological' and biological altruism, but this is every bit as much of an insult as Singer's expanding circle (or Ruse's imaginary-yet-acted-upon moral objectivity), arising from the same implausible claim for group selection. Kitcher's 'psychological altruism' is the equivalent of Singer's 'group altruism' – a supposed innate tendency to act in the interests of others solely within the group. Whereas Singer attributes tribalism to an innate tendency of human rationality as a refinement of tribal instinct, Kitcher attributes tribalism simply to tribal instincts, but which should be trusted and acted upon without interference from human rationality, since reason can only interfere with the process of Darwinian group selection. It is hard to decide which story is more disturbing, regardless of whether the exploitation of biology is intentional or naive, but Kitcher's emphasis on "achieving cultural success" (2011, p.131) distinguishes him from Singer (whose intention at least does not appear to be cultural Darwinism) and places Kitcher squarely in the Nietzschean (and Spencerean) territory of regarding the Darwinian evolutionary process as essentially right-in-itself and best left unimpeded.

Kitcher (2011) writes,

> "More than a century ago, Darwin outlined a novel way of thinking about the living world: his fundamental insight was to regard the organisms around us as products of natural history. We can liberate ourselves from mysteries about many of our current practices by emulating Darwin: think of them, too, as historical products"(p.2); "As the name suggests, pragmatic naturalism has affinities with both pragmatism and naturalism. In focusing on ethical practice and its history, it attempts to honor John Dewey's call for philosophy to be reconnected with human life. Further, it articulates a Deweyian picture of ethics growing out of the human social

> situation; its conception of ethical correctness is guided by William James's approach to truth. The naturalism consists in refusing to introduce mysterious entities – "spooks" – to explain the origin, evolution, and progress of ethical practice"(p.3).

Darwinism itself is 'spooky', with natural selection as the mysterious 'force' of organic creativity; but Kitcher's reliance on group selection (and innate tribal tendencies) as the foundation of ethics must be regarded as an appeal to a 'spook' because it simply does not exist (any more than does natural selection). Kitcher (2011), like Ruse and Singer, is thinking of religious deontology in referring to mysterious entities (but not only: "Appeals to a divine will, to a realm of values, to faculties of ethical perception and "pure practical reason," have to go"(2011, p.4)), but even his core concepts of 'psychological altruism' and group selection are absolutely spooky. Consider that even if group selection existed, group altruism would amount even then to selfish behavior, since in promoting the group's selective fitness individuals would be promoting their own, just as they actually do in kin selective and cooperative behavior generally. Kitcher's (above) definition of altruism in terms of serving the desires of others versus serving one's own desires, and suggesting that the latter is egoism and the former altruistic, as if there is a meaningful difference between the two in the context of either kin or group selection, comes across as intentionally misleading. Kitcher (2003) writes,

> "But, as I emphasized at the beginning, my aim is to understand ways in which *human* altruism might evolve. The next task is to develop a representation of the type of altruism that is of most interest to philosophy (and to ordinary moral reflection)"(p.181); "One way to develop this characterization is to think of an altruist as an individual with a psychological disposition that involves modification of desires that might otherwise lead to action so that the desires that ultimately cause action take into account the interests of others"(p.181).

But taking into account the desires of others is simply a prerequisite for acting towards another individual at all; surely we take into account other's desires even while we act selfishly. Mothering animals which satisfy the hunger of their offspring are of course satisfying the desires of their offspring while they serve their own genetic, evolutionary, and instinctive interests. That is not the morally interesting type of altruism, which we normally regard as essentially involving absolute selflessness.

Kitcher (2003) writes,

> "Some biologists [claim] that the evolutionary explanations I have mentioned account for *all* altruistic behavior, revealing the human actions we prize to be "ultimately selfish." It is not hard to rebut the debunking argument, showing that there are important differences between the biologists' conception of altruism and the everyday notion. But simply identifying argumentative flaws leaves a complex of problems: What is *human* altruism – that sort of altruism we take to have moral significance – and how might *it* evolve"(p.177)?

But then Kitcher (2003) adds, in endnotes:

> "As I have already hinted, I take human altruism to be that admirable behavior which is most readily identified in our own species but which may also be present in the actions of other organisms"(p.190, note 5); "It will also become clear that this account bears on attempts to understand the emergence of cooperative behavior among rational egoists, and thus connects with projects in economics and in moral philosophy"(p.190, note 6).

How can we possibly be expected to take seriously the notion that there are "important differences" between biological and "human" altruism, and at the same time suppose that human altruism amounts to "admirable behavior" by "rational egoists"? And why not include that essential clarification of meaning in the main text? There is nothing meaningfully different between rational egoist behavior and instinctive egoist behavior in the context of an evolutionary analysis: selfish is selfish, and the concept of biological altruism obviously includes the ability to take into consideration the desires and interests of others toward the end of furthering individual genetic success.

Kitcher (2003) writes,

> "I suggest that altruism involves analogous problems to those which arise in connection with *akrasia* and compulsion: for unless the altruist is genuinely moved to value what is given up in performing the selfish action and genuinely wants to help the other(s), there is no altruism of the inspiring – human – kind"(p.182).

But there is still no genuine altruism of the inspiring human kind, so long as the actions are to the genetic benefit of the individual (and on a par with insect behavior), which will nevertheless obviously often involve some sort of costs and help and can still be instinctive (as with parenting). Kitcher (2003) writes,

> "Suppose that a parent has acquired some item of food and that there are two options, to devour

> it whole or to share it with one of its young.... [Matrices] reflecting the inclusive fitness payoffs [render] it is easy to recognize that altruistic tendencies are favored by selection. But how can this be altruism, real altruism, if the organism ends up gaining by its action? The question is as natural as it is misconceived. The alleged "gains," in terms of spread of genes, are outcomes that all but a minute fragment of cognitively sophisticated organisms are unable to represent and, even for those organisms who can represent the outcomes, only the volitionally disordered would be moved to action by the representation. What is important is that the organism fights desires that in the absence of effects on others, would have led unproblematically to action, and that the desires that cause behavior are formed by recognizing the consequence for another's welfare. We are inclined to retract our admiration for an apparently altruistic act when we suspect that the agent might have seen forthcoming benefits. But there is no reason to take a similar stance when we are confident that the causal explanation of the action involves recognition and response to the needs of another"(p.183).

This is a quite confusing interpretation which cannot be correct: Kitcher is describing instinctive behavior in parenting that of all possible behavior is of the highest genetic benefit to the parenting individuals, the vast majority of whom obviously have no inkling of genetics and are behaving strictly on the basis of innate behavioral traits. Are we to believe that behavior becomes "real altruism" in every instance in which organisms experience conflicting desires but in which the kin selection instincts win them over and yield action? In that case, real altruism is as common as daylight, and is not morally significant (because instinctive, not choice). Are we to believe that actions which are genetically beneficial to individuals, although involving both some costs to themselves and some benefits to beneficiaries, somehow count as unselfish just because the organisms are not intelligent enough to understand the genetic implications of their conflicting desires? In that case almost any and every action performed by social organisms is real altruism. Referring to whether or not organisms comprehend modern genetics is a red herring; the evolution of biological altruism has nothing to do with that, or else it would never have arisen. On Kitcher's view, we do not admire human parents because they understand the genetic benefit of their behavior, but we do admire as "real altruism" every animal instance of cost-bearing, desire-conflicted, instinctive actions that benefit others besides the performing individuals. If real altruism is to be morally interesting altruism, it must refer to actions that are genuinely costly to the individuals performing them, including and especially genetic costliness,

and to behavior that is not instinctively driven and therefore necessarily selfish, or else we must admit that morality does not exist because genetically selfish behavior is simply a precondition for the existence of organic life and evolution altogether – to equate real altruism with genetically selfish behavior is to equate ethics with animal behavior. An additional problem: a morally relevant concept of human altruism, which would include true selflessness including genetic, has not been proven to occur in the actions of organisms besides humans (and if it does exist it must be rare and likely only in the advanced mammals – Kitcher (2003) claims otherwise in above endnote 5, and p.177). And another problem: Kitcher (2003) writes, "More exactly, conceiving altruistic behavior, as biologists do, as behavior that promotes the fitness of another organism at costs in fitness to the agent, how can propensities to engage in such behavior originate and be maintained under natural selection"(p.177)? Biological altruism does not lower the 'fitness' of individuals performing it, but increases it, since fitness must be defined in genetic terms or is meaningless, and only because biological altruism increases fitness could it possibly have evolved (and that is how biologists conceive biological altruism).

If we restricted ourselves to the evo-ethics literature, we would likely conclude that biological altruism is a confusing and complex concept of theoretical biology; but in fact it is elementary, simple, and taught in introductory biology courses without too much trouble. It simply refers to behavior that organisms engage in that yields benefits to beneficiaries while also yielding genetic advantage to the performers. It is common in the animal kingdom, instinctive, does not require high intelligence, and cannot be considered moral since as instinctive it is necessarily advantageous genetically and cannot involve choice or free will in typical organisms that are incapable of overriding their instincts (which for all we know implies that animals are incapable of morality). Much confusion arises when evo-ethicists attempt to derive a naturalist, Darwinian, atheist account of ethics from the evolution of necessarily selfish behavior – but confusion must be involved when we try to extract blood from a

stone. It is just as unacceptable for Kitcher to try and pass off biological altruism as genuine/moral/human/selfless altruism, and to try and explain human morality on that basis, even while acknowledging (in an endnote) that such an analysis amounts strictly to a derivation of egoist cooperation, as it is for Singer to try to pass off animal behavior that amounts to kin selection as evidence for, and as something that can be referred to as, group selection. Such arguments border on intellectual dishonesty, come across like rhetorical sleights of hand, and suggest an agenda that has nothing to do with evolutionary biology or ethics. In making his case for group selection, Kitcher (2011) also relies on the 'prisoner's dilemma' and other mathematical props: Kitcher (2011) writes,

> "Mathematical analyses reveal that high levels of cooperation are likely to develop, and be sustained, in populations whose members have have a sufficiently large number of opportunities for playing optional PD with one another"(p.55); "...for understanding cooperative interactions among unrelated animals, PD (whether optional or compulsive) is not fundamental; the framework for the games animals play is set by the problem of forming coalitions and alliances"(p.60); "To go further, it is necessary to ask how the variants envisaged, with their disposition to team up with others, might have been psychologically realized. Answer: this ability to form coalitions, and ultimately to constitute a stable social group, expresses a further expansion of those fundamental psychologically altruistic tendencies attributed in the case of maternal care"(p.64); "Psychological altruism is the kernel from which ethical practice grows – because it lies at the heart of the type of sociality our hominid ancestors experienced"(p.66).

Kitcher (2011) needs his version of biological altruism to extend beyond kin to non-relatives, and produces game-theory analyses to support his view but not any unambiguous observational evidence of organisms that engage in biologically altruistic behavior towards non-kin (because it does not exist).

Kitcher (2011) goes on to elaborate a series of stages by which 'ethics' has evolved:

> "Psychologically altruistic dispositions make it possible for these animals [chimpanzees and hominids] to live together, but the limitations of those dispositions subject their social lives to strain. Day after day, the social fabric is torn and has to be mended by hours of peacemaking. Once, that was the predicament of our ancestors, too. They overcame it through acquiring a mechanism for the reinforcement and reshaping of altruistic dispositions, and for the resolution of conflict. The evolution of that mechanism, the capacity for normative guidance, was an important step in the transition from hominids to human beings"(p.73-74); "The *actual* beginnings of the ethical project have been seen as a transition from a state of limited psychological altruism to one in which commands are followed out of fear"(p.87); "Although conscience begins in fear, it may later be dominated by shame or guilt, pride or hope, emotions available only in social environments where normative guidance, in some cruder form, has

> already taken hold"(p.94); "Social cohesion is vital, and no adult can be marginalized in normative discussion"(p.97); "Around the campfires, they reached agreement on precepts, on stories of model behavior, on ways of training the young, on practices of punishment, on sanctioned habits, perhaps occasionally on changes in the concepts hitherto employed"(p.97); "The codes thus devised and amended are *social* products: they represent a *joint* reaction to the altruism failures previously affecting the group and they aim to diminish the frequency of similar failures in the future"(p.98); "These bands engage in "experiments of living"(p.107); "So the success of an ethical code is gauged by the extent to which people living in groups adopting that code leave descendents in future generations"(p.107); "Cultural competition concerns the latter type of success and is measured by the number and size of the groups in which a code is adopted"(p.108); "Codes commanding obedience need not be those that further reproductive success. That important point notwithstanding, on occasion some Darwinian consequence of a particular ethical code, for example, the fact that the children of those who subscribe to it tend to survive and flourish, plays a role in the acceptance of that code by other groups"(p.109); "A rule (or a preliminary version) might originate in a single group and spread to others because it promises to satisfy widely shared desires. Alternatively, groups failing to acquire the rule might suffer some severe disadvantage, so that they had a tendency to die out or to be taken over by outsiders"(p.110).

So ethics is supposedly produced by instinctive traits, described by Kitcher as psychological altruism (a general tendency to consider the desires of others) and conscience (fear derived from self-directed internalization of tribal rule-following), and by Darwinian cultural competition in which the most reproductively conducive social codes yield a selective advantage for groups (compared to less reproductively conducive social codes). On both an individual and a group basis, ethics is instinctive and therefore necessarily selfish (because even group altruism would necessarily have to be genetically selfish if it were to exist as a heritable trait), and tribal. Kitcher (2011) writes, "Hence we should expect a loose correlation between cultures securing many adherents and cultural practices advancing biological reproduction. In a famous slogan, "genes hold culture on a leash"(p.108). As an instinctive and tribal moral theory, Kitcher (2011) is obviously in dangerous territory:

> "Consider groups of people you view as having done horrible things. Familiar examples: the Nazi attempt to purge Europe (and potentially the world) of "vermin" or the killing fields of the Khmer Rouge. Many people feel a powerful urge to protest the behavior and whatever ethical prescriptions are brought forward in its defense, to say there is something *objectively wrong* about what was done, to deny that condemnation only expresses a local perspective, to protest that those condemned cannot, with equal justice, criticize their critics. There must be some external standard to which ethics is answerable. Exploring ethical variation across time avoids some of the tangles figuring in cross-cultural debates about relativism"(p.139).

However, Kitcher is ill-equipped for mounting an argument against tribal extremism, even though he is well-equipped for an argument against relativism. His claim to objectivity is Darwinism, and in diminishing the significance of human rationality he is as committed as the "cardboard" sociobiologists he condemns. Kitcher (2011) writes,

> "Part I portrayed the evolution of ethics as driven by forces of selection. Darwinian considerations figured in the prehistory of ethics (the emergence of the preconditions for normative guidance and experiments of living), possibly retaining a role in subsequent stages of cultural competition (as when experiments lead groups who practice them to wither and go extinct); they were clearly present indirectly when ethical codes became attractive to other groups because of biological benefits they appeared to confer (greater survivorship of young members, for example)"(p.213);

but then Kitcher (2011) immediately continues,

> "Forces of cultural selection, dependent on the attractiveness of particular ethical ideas and thus answering to human desires, desires possibly independent of Darwinian advantages, have also shaped the evolution of the ethical project. Friends of ethical truth find no reason to think forces like these are likely to generate true ethical beliefs; by the same token, nobody should suppose them conducive to ethical progress. That means, however, only that progressive transitions are not to be identified with those promoting Darwinian or cultural success, a point simply recapitulating the unsteadiness of ethical progress – as well as the failure of crude evolutionary reductionism"(p.213); "We want an account of ethical progress isolating common features of the favored transitions, features revealing why we might be concerned to make ethical changes of this particular kind.... Historians and philosophers have singled out a particular kind of movement as constitutive of advances. They have talked of "the expanding circle""(p.214).

Singer at least argues for an escalator of reason in expanding group altruism; how can desires, originally and presumably still instinctive and heritable and therefore selfish, possibly be expanded outwards towards ever-less genetically related members of a species? Group altruism instincts must be selfish in order to persist; instinctive altruism beyond the group is implausible. Kitcher (2011) argues,

> "Part of the story of ethical progress must consist in understanding how *acquiring* new desires, not merely *satisfying* them, counts as progressive"(p.217); "Thus, the extension of some rules, already protecting group members, to cover trade with others, produces satisfaction of endorsable desires for group members, as well as diminishing conflict with neighbors; the extension can result from perception of likely advances in fulfilling these functions, so that processes bringing about the transition are well adapted to generate ethical progress"(p.260); "Pragmatic naturalism understands notions of ethical truth and justification in terms of fundamental notion of progress, conceived as functional fulfillment and refinement"(p.262).

In committing to instinctive morality, Kitcher has no basis for believing that those instincts can be extended even beyond kin, never mind to members of other tribes, in any sort of routine, heritable, genetically, or culturally 'selective'/adaptive manner. That would amount to instinctive and/or cultural selflessness, which is incompatible with Darwinism and an even quicker route to extinction than pure rational selflessness.

Kitcher can fairly be characterized as empirically unrealistic: he (2011) writes, "The [ethical] project began in small, egalitarian societies, in which people with limited tendencies to psychological altruism lived together"(p.229); but there is no evidence of fundamental egalitarianism in human societies, ever, which would be a requirement in order for ethics to have evolved as an egalitarian instinct. Kitcher (2011) writes, "At the dawn of the ethical project, however, dictatorship was not a realistic possibility. Dominance of a chimpanzee group is hard enough, but for language-using, tool-wielding animals with less sexual dimorphism, repressive rule would be much harder"(p.228). Does he really mean to suggest that hominid tribes were not hierarchical, with dominant males and females who more or less gave orders? Kitcher (2011) does acknowledge – in a footnote – that, "Despite these steps, there remained plenty of limitations of hominid altruism and and resultant tensions within hominid societies"(p.394, note 18); like his (2003) confession of egoism this point would seem to warrant more than a foot/end note. Kitcher (2003) defends,

> "...a biological model that might provide a more convincing account of the origin and maintenance of altruistic behavior toward nonrelatives in cognitively sophisticated organisms"(p.178); "The heart of my approach is to focus on organisms that have the cognitive capacities for recognizing others and reacting to their past behavior, and to base the nonrandom interactions on these capacities"(p.181); "But, as recent reviews of alleged cases of reciprocal altruism have made abundantly clear, there are few, if any, instances of reciprocal altruism among organisms lacking the abilities central to the account I have given (roughly a capacity to identify other individuals and to respond to actions that we would classify as defections)"(p.181).

But there are also few, if any, examples of reciprocal genetically unselfish/genuine/ethical 'altruism'

among even cognitively sophisticated (non-human) organisms, but rather just selfish cooperation among related organisms living in familial groups that is strictly genetically advantageous behavior (as also in the cases of mutualism and commensalism amongst members of different species). Also, since extremely complex cooperation has evolved amongst related but cognitively simple organisms (insects), if such advanced instinctive reciprocal cooperation amongst nonrelatives was genetically advantageous (possible) there is no reason for it not to appear amongst the cognitively simple – but it does not. Kitcher (2003) writes,

> "A discriminating altruist might mistakenly choose to play with someone who had already defected on it"(p.188); "A more adequate model would suppose that the organism acts as if it had an internal chart on which members of the population were divided into the good (those with whom it would be prepared to interact) and the not-so-good (those with whom it would refuse to interact)"(p.188); "To understand the evolution of mutual grooming under natural selection, we therefore need to consider the evolution of cooperative behavior in iterated optional Prisoner's Dilemmas"(p.197).

Organisms that are cognitively sophisticated enough to remember unrelated members of a population and all their past interactions are likely not behaviorally governed strictly by instinct; groups of unrelated members do not actually exist in primate populations (Kitcher's point of reference); the cooperative behavior that Kitcher is concerned with (grooming, for example) is not attributable to some sort of instinct for group altruism but just kin altruism and/or simply high intelligence; the evolution of cooperative behavior does not warrant consideration of prisoner's dilemmas since that kind of scenario (featuring unrelated willing cooperators) does not and can not exist in natural populations of instinctive organisms – if it could we would see it. Without a plausible empirical case for group altruism, Kitcher's argument for group selection fails, and his entire theory of ethics fails with it. There is no group altruism, no group selection, no instinctive desire to help nonrelatives, no instinctive desire for group competition, no natural selection of social codes, no natural selection in general, and no such thing as instinctive morality. Though presented as empirical arguments, Kitcher's claims amount to the rhetorical flourishes of a determined Darwinian atheist, who like his fellow travelers seems either

content or oblivious in defending a dangerous perversion of both ethics and biology. 'Instinctive morality' and 'group selection' are both oxymorons.

Some of Kitcher's (2011) ideas seem inspired by Huxley (1893/1947/1969), who writes,

> "I have termed this evolution of feelings out of which the primitive bonds of human society are so largely forged, into the organized and personified sympathy we call conscience, the ethical process"(p.51); "I have endeavoured to show that, when the ethical process has advanced so far as to secure every member of the society in the possession of the means of existence, the struggle for existence, as between man and man, within that society is, *ipso facto*, at an end"(p.54).

Part of the group selection myth is the notion that Darwinian competition stops within the groups; but that makes no sense at all since even in group selection organisms would act selfishly in helping kin and nonrelatives or else disappear. One difference between Kitcher and Huxley is in the notion of early egalitarianism: Huxley (1893/1947/1969) writes, "The most rudimentary polity is a pack of men living under the like tacit, or expressed, understanding; and having made the very important advance upon wolf society, that they agree to use the force of the whole body against individuals who violate it and in favour of those who observe it"(p.66-7). Obviously wolves are not egalitarian but hierarchical, and the comparison of hominids with the wolves and other pack-hunting species is more apt than egalitarianism. But that would undermine Kitcher's entire approach. Huxley (1943/1947/1969) writes,

> "With this, a new type of organization came into being – that of self-reproducing society. So long as man survives as a species (and there is no reason for thinking that he will not) there seems no possibility for any other form of life to push up to this new organizational level. Indeed there are grounds for suspecting that biological evolution has come to an end"(p.123); "In any case, it is only through social evolution that the world-stuff can now realize radically new possibilities. Mechanical interaction and natural selection still operate, but have become of secondary importance. For good or evil, the mechanism of evolution has in the main been transferred onto the social or conscious level"(p.123).

This is also quite similar to Kitcher's characterization of ethical progress, in which social codes become units of natural selection, perhaps even more so than the individuals or the groups. At least Huxley (1947/1969) explicitly admits "for good or evil"; that is a normative claim, and an ought from an is, in the sense that evolution has its means and ways and should not be interfered with. In denying a

controlling role for rationality, Kitcher's pragmatic naturalism and cultural selection are similar. Kitcher (2011) claims Dewey as a source: Dewey (1939) writes,

> "To assume the existence of final and unquestionable knowledge upon which we can fall back in order to settle automatically every moral problem involves commitment to a dogmatic theory of morals. The alternative method may be called experimental. It implies that reflective morality demands observation of particular situations, rather than fixed adherence to *a priori* principles; that free inquiry and freedom of publication and discussion must be encouraged and not merely grudgingly tolerated; that opportunity at different times and places must be given for trying different measures so that their effects may be capable of observation and of comparison to one another"(p.775).

That appears compatible with Kitcher's notions of cultural Darwinism, and reproductively successful social rules. However, Dewey (1939) also writes,

> "Hence, in spite of the opposition of the would-be practical man, the needs of practice, of economy, and of efficiency have themselves compelled a continual deepening of doubt and widening of the area of investigation. It is within this evolution that we have to find our stages of thinking"(p.838); "Hence, the fourth – covering what is popularly known as inductive and empirical science. Thought takes the form of inference instead of proof"(p.848); "It aims at pushing out the frontiers of knowledge, not at marking those already attained with signposts"(p.849); "That esthetic and moral experience reveal traits of real things as truly as does intellectual experience, that poetry must have a metaphysical import as well as science, is rarely affirmed, and when it is asserted, the statement is likely to be meant is some mystical or esoteric sense rather than in a straightforward everyday sense"(p.1042).

If, as Dewey argues, human thinking has evolved to a stage of empirical inference, and moral experience is of real, presumable empirically discovered, things, is that kind of pragmatism compatible with Kitcher's suggestion that moral progress occurs by means of new desires? If morality is experimental, with no fixed principles, does that mean that pragmatic naturalism would allow dropping notions of natural selection altogether, as morally irrelevant, if that is what the evidence implies?

Spencer (1892) also offers arguments that are similar to Kitcher (2011): he writes,

> "The true moral consciousness which we name conscience, does not refer to those extrinsic results of conduct which take the shape of praise or blame, reward or punishment, externally awarded; but it refers to the intrinsic results of conduct which, in part and by some intellectually perceived, and mainly and by most, intuitively felt"(p.337); "Though, while the moral nature is imperfectly developed, there may often arise conformity to the ethical sentiment under a sense of compulsion by it; and though, in other cases, non-conformity to it may cause subsequent self-reproach (as instance a remembered lack of gratitude, which may be a source of pain without

> there being any thought of extrinsic penalty); yet with a moral nature completely balanced, neither of these feelings will arise, because that which is done is done in satisfaction of the appropriate desire"(p.338); "In many places, and in various ways, I have argued that conformably with the laws of evolution in general, and conformably with the laws of organization in particular, there has been, and is, in progress, an adaptation of humanity to the social state, changing it in the direction of of such an ideal congruity. And the corollary before drawn and here repeated, is that the ultimate man is one in whom this process has gone so far as to produce a correspondence between all the promptings of his nature and all the requirements of his life as carried on in society"(p.275); "That which in the last chapter we found to be highly-evolved conduct, is that which, in this chapter, we find to be what is called good conduct, and the ideal goal to the natural evolution of conduct, we here recognize as the ideal standard of conduct ethically considered"(p.44).

Kitcher's (2011) characterization of conscience as an evolved instinct of inner fear in response to tribal rules, his characterization of ethics as a product of Darwinian evolution generally, and his cultural/legal Darwinism combined with instinctivism, are each very similar to Spencer's ideas. Nietzsche also arrives at some conclusions similar to some of Kitcher's; although not a Darwinist he appears to have been deeply influenced by Darwin and evolution in general. Gayon (1999) writes, "Nietzsche refused to reduce the problem of the origin of morals to the problem of the origin of "altruism"; nor did he accept the interpretation of the moral (and cultural) progress of mankind as a march toward universal altruism"(p.157); on that issue Nietzsche was correct (for biological altruism cannot yield morality). Gayon (1999) states,

> "Nietzsche [argued] that the very concept of natural selection was built as an unconscious transposition of some sort of altruistic and egalitarian moral into biological discourse"(p.188); "...He rejected the notion of species selection, but did not have the Darwinian notion of "individual selection"(p.188).

Anyone who interpreted the theory of natural selection as applying only to species, or groups, might naturally interpret the concept of altruism as something that is plugged into evolution theory for ulterior motives. Certainly, the attempt by some sociobiologists to render biological altruism as something that can be regarded as a precursor of human morality must be ideologically inspired, not empirically. Nietzsche does not offer his own theory of evolution, but only contradictory remarks: he (1881/1982; 1887/1956) writes,

> "*Purposes in nature*. – The impartial investigator who pursues the history of the eye and the forms it has assumed among the lowest creatures, who demonstrates the whole step-by-step evolution of the eye, must arrive at the great conclusion that vision was not the intention behind the creation of the eye, but that vision appeared, rather, after *chance* had put the apparatus together. A single instance of this kind – and 'purposes' fall away like scales from the eyes!"((1881/1982, p.125); "The "evolution" of a thing, a custom, an organ is not its *progressus* towards a goal, let alone the most logical and shortest *progressus*, requiring the least energy and expenditure. Rather, it is a sequence of more or less profound, more or less independent processes of appropriation, including the resistances used in each instance, the attempted transformations for purposes of defense or reaction, as well as the results of successful counterattacks. While forms are fluid, their "meaning" is even more so. The same process takes place in every individual organism. As the whole organism develops in essential ways, the meaning of the individual organs too is altered"(1887/1956, p.210); "The scope of any "progress' is measured by all that must be sacrificed for its sake. To sacrifice humanity as mass to the welfare of a single stronger human species would indeed constitute progress.... I have emphasized this point of historical method all the more strongly because it runs counter to our current instincts and fashions, which would rather come to terms with the absolute haphazardness or the mechanistic meaninglessness of events than with the theory of a will to power mirrored in all process. The democratic bias against anything that dominates or wishes to dominate, our modern *misarchism* (to coin a bad word for a bad thing) has gradually so sublimated and disguised itself that nowadays it can invade the strictest, most objective sciences without anyone raising a word of protest. In fact it seems to me that this prejudice now dominates all of physiology and the other life sciences, to their detriment, naturally, since it has conjured away one of their most fundamental concepts, that of *activity*, and put in its place the concept of *adaptation* – a kind of second-rate activity, mere reactivity. Quite in keeping with that bias, Herbert Spencer has defined life itself as an ever more purposeful inner adaptation to external circumstances. But such a view misjudges the very essence of life; it overlooks the intrinsic superiority of the spontaneous, aggressive, overreaching, reinterpreting and re-establishing forces, on whose action adaptation gradually supervenes. It denies, even in the organism itself, the dominant role of the higher functions in which the vital will appears active and shaping"(1887/1956, p.210-211).

Apparently between 1881 and 1887 Nietzsche changed his mind; certainly his later conceptualizations of evolution are more compatible with Lamarck than Darwin. Gayon (1999) writes,

> "...Nietzsche thought that the principle of the struggle for existence was not so much false as unimportant. Hence his final formulation: "struggle for power" rather than "struggle for life," "will to power" rather than "will to live," "power" rather than "survival," "augmentation" rather than "conservation" (or "preservation", "nutrition" rather than "competition," Lamarckism rather than Darwinism"(p.172).

Still, some of Nietzsche's (1881/1982; 1887/1956) conclusions about evolution and ethics sound familiar:

> "But *logical* evaluations are not the deepest or most fundamental to which our audacious

> mistrust can descend: faith in reason, with which the validity of these judgments must stand of fall, is, as faith, a moral phenomenon"(1881/1982, p.4); "...morality is nothing other (therefore *no more*!) than obedience to customs, of whatever kind they may be; customs, however, are the *traditional* way of behaving and evaluating"(1881/1982, p.10); "What distinguishes this feeling in the presence of tradition from the feeling of fear in general? It is fear in the presence of a higher intellect which here commands, of an incomprehensible, indefinite power, of something more than personal – there is superstition in this fear"(1881/1982, p.11); "What punishment is able to achieve both for man and beast, is increase of fear, circumspection, control over the instincts. Thus man is *tamed* by punishment, but by no means *improved*; rather the opposite"(1887/1956, p.216).

These are each notions that Kitcher (2011) offers variations of: faith in reason is normative and misguided (but that goes for instinct also so we should use both); morality is defined as custom (but might simply be right action); self-control is based on fear (which must be more unstable than rational self-discipline).

Kitcher (2001) writes,

> "Beyond requiring that researchers pursue their experiments in morally appropriate ways (treating their experimental subjects properly, dealing honestly with fellow scientists, and so forth) there are no further moral, social, and political standards to which the practice of science is accountable. Such standards arise only in the context of applied science or of technology. The myth of purity proposes that there is a distinction that fulfills these purposes"(p.90); "Once we have abandoned the idea of a context-independent conception of epistemic significance, we see that judgments about lines of inquiry inevitably weigh the rival merits of various practical goals and various ways of satisfying human curiosity"(p.91); "Nobody who defends the value of knowledge can overlook the fact that discovering the truth sometimes diminishes human happiness"(p.148); "I have attempted a systematic survey of all the possibilities for showing that "truth is better than much profit" and have come up empty"(p.166).

Kitcher defends his ethics not as science, but as scientifically informed speculation or hypotheses, and argues for research along the lines he suggests. Presumably Kitcher really believes that group selection is true, and that cultural Darwinism is good, but he does not adequately acknowledge that these are risky ideas (and neither do sociobiologists in general). Kitcher (2011) suggests that pure abstract principles are responsible for recent atrocities, and that tribal instinct is safer than pure reason, but that seems counter-intuitive to say the least. Pure practical reason may be dangerously selfless in the context of evolution, but the far more obvious candidate for explaining the ideology behind outbreaks

of mass tribal warfare is, quite simply, Darwinism, and especially cultural Darwinism based on the metaphysical myth of natural group selection. At least, that is what leading figures of WWII themselves claim in their ideology. Luckily, distinctly tribal instinct probably does not exist, but the cultural exploitation of kin instinct certainly does. Ruse, Singer, and Kitcher each explicitly acknowledge the obvious connection of their ideas with World War II, and offer no meaningful attempt to deny that their ideas can be used as scientific justification for the most destructive of all human behavior – war. Kitcher (2011) repeatedly reminds his readers that his is a possible explanation of ethics (p.11,12,90,91,100,106,128,130,137,239,389), but there is not enough empirical evidence to warrant believing that his theory actually is possible. Dennett (1995) (most unusually) notes that science is not just another verbal description (p.495). However, on Kitcher's (2001) own terms, the nature of his scientific speculations is questionable; Kitcher (2001) is apparently inspired by research into the human genome, which caused considerable concern at the time, but the dangers of genomics would seem slight compared to the dangers of tribalism. Nietzsche (1887/1956) writes,

> "Strictly speaking, there is no such thing as a science without assumptions: the very notion of such a science is unthinkable, absurd. A philosophy, a "faith" is always needed to give science a direction, a meaning, a limit, a *raison d'etre*"(p.288); "All science (and by no means astronomy alone, concerning whose humiliating and discrediting effect Kant has left us a remarkable confession – "It destroys my importance"), all science, natural as well as *unnatural* (by which I mean the self-scrutiny of the "knower") is now determined to talk man out of his former respect for himself, as though that respect had been nothing but a bizarre presumption"(p.292).

Kitcher (2001) appears to agree with the first point; Kitcher (2011) exemplifies the second. Dewey (1939) writes,

> "For the natural sciences not only draw their material from primary experience, but they refer it back again for test"(p.1045); "The charge that is brought against the non-empirical method of philosophizing is not that it depends on theorizing, but that it fails to use refined, secondary products as a path pointing and leading back to something in primary experience. The resulting failure is threefold. First, there is no verification, no effort even to test and check. What is even worse, secondly, is that the things of ordinary experience do get enlargement and enrichment of meaning as they do when approached through the medium of scientific principles and reasonings. This lack of function reacts, in the third place, back upon the philosophic subject-matter in itself. Not tested by being employed to see what it leads to in ordinary experience and

> what new meanings it contributes, this subject-matter becomes arbitrary and aloof – what is called "abstract" when that word is used in a bad sense to designate something which exclusively occupies a realm of its own without contact with the things of ordinary experience. A first-rate test of the value of any philosophy which is offered us is this: Does it end in conclusions which, when they are referred back to ordinary life-experience and their predicaments, render them more significant, more luminous to us, and make our dealings with them more fruitful? Or does it terminate in rendering the things of ordinary experience more opaque than they were before, and in depriving them of having in "reality" even the significance that they had previously seemed to have"(p.1045-1046)?

Kitcher (2011) labels his supposedly empirical and evolutionary theory of ethics 'pragmatic naturalism';

at least in terms of science it is neither pragmatic nor naturalist.

**§ 2 – Normativity**

Kitcher (2011) writes,

> "The history of the ethical project, from the acquisition of normative guidance to the present, is a history of experiments, carried out by social groups who sometimes may have faced difficulties precisely because they rubbed against the grain of human nature in ways of which neither they nor we are aware"(p.102-103); "The subsequent ethical project is a sequence of ventures in developing such codes, in which – as the next chapter will explain – the dominant mechanism is a cultural analogue of natural selection"(p.103).

Ethics must reduce to 'survival of the fittest' on Kitcher's (2011) arguments, since cultural (legal) Darwinism reduces to group Darwinism which reduces to individual Darwinism. There is no doubting that, in the context of evolution, survival is especially good. Unto itself claiming that survival is good can not be problematic, for it does not seem possible that any moral theory could possibly suggest otherwise and still be a theory concerning what humans ought to do. Death is not an action but an end to action, although the act of dying might be done rightly or wrongly. Evolutionary biology emphasizes our delicate and fleeting locale in natural history, our precarious ecological situation, and biology generally serves as a constant reminder of just how complex yet vulnerable human existence really is. So evolution must yield an added emphasis on human survival, simply because if we do not make survival our top priority our odds of persisting day-to-day as individuals, and as a species in the medium term, are low. But Darwinian survival is a different ball of wax than mere survival, what with all the metaphysical baggage, and a moral theory based on Darwinian 'survival of the fittest' must include all that baggage or else not be Darwinian. Mainly, and according to Kitcher, that means survival under the control of instinct, in direct competition with one another (cooperation notwithstanding), including within and between groups, as if we humans were not much more sophisticated than much simpler organisms. Whereas Ruse argues that survival is necessarily instinctive Darwinian individualism, and Singer argues that survival is purely rational and so a collective problem of Darwinian group selection, Kitcher argues that survival ought to be instinctive as

a matter of reliability, that our odds of survival are better if we follow our instincts, which amounts to arguing that survival is a matter of both Darwinian individualism and Darwinian group selection. Compared to Singer's strictly rational collectivism Kitcher's approach would seem more reliable; it is not clear that Kitcher's approach is actually different than Ruse's since group selection does not exist; but compared to survival on the basis of instinct under the control of human rationality (rather than fear) Kitcher's approach must be less reliable. It is the sort of problem that might be cleared up if we could somehow run comparative experiments, but we cannot. Kitcher (2011) does not explicitly compare his survival strategy to rational self-discipline but only briefly to pure rationalism. On the basis of common sense and normal human experience, it would seem a stretch of the imagination to believe that our survival does not benefit from our rationality, and of course rationality itself is also a major product of evolution which must therefore be biologically advantageous. Perhaps Kitcher might agree with Nietzsche (1881/1982; 1887/1956), who writes,

> "How did rationality arrive in the world? Irrationally, as might be expected: by a chance accident. If we want to know what that chance accident was we shall have to guess it, as one guesses the answer to a riddle"(1881/1982, p.77); "We need only recount some of our ancient forms of punishment: stoning (even in earliest legend millstones are dropped on the heads of culprits); breaking on the wheel (Germany's own contribution to the techniques of punishment); piercing with stakes, drawing and quartering, trampling to death with horses, boiling in oil or wine (these were still in use in the fourteenth and fifteenth centuries), the popular flaying alive, cutting our of the flesh from the chest, smearing the victims with honey and leaving hum in the sun, a prey to flies. By such methods the individual was finally taught to remember five or six "I wont's" which entitled him to participate in the benefits of society; and indeed, with the aid of this sort of memory, people eventually "came to their senses." What an enormous price man had to pay for reason, seriousness, control over his emotions – those grand human prerogatives and cultural showpieces! How much blood and horror lies behind all "good things"(1887/1956, p.193-194)!

Nietzsche's notions make for fine literature but we do not need here to take them literally; human rationality considered simply as the capacity to absorb information and correctly draw inferences, taking instinctive information into consideration but not necessarily acting on it, is much more ancient than medieval Europe, and much more beneficial than anything cognitive that could possibly be

produced through torture. Although Kitcher (2011) does not offer a full explanation for why he thinks a principle of rational discipline is unreliable, allowing reason a role in evolution is tantamount to allowing organic purposiveness a role, which is the antithesis of Darwinism.

Kitcher (2011) writes,

> "To obtain the level of social harmony enabling this limited society to emerge, classes of previously occurring altruism failures (in aggressive interactions among neighboring bands) had to be remedied. Expanding the circle does just that"(p.237).

But it is not empirically credible to argue that, one one hand, ethics is instinctive and tribal and progresses by acquiring new 'desires' through a process of natural cultural selection, while arguing on the other hand that tribal conflicts are resolved by remedying altruism failures; it is not plausible to suggest that tribal instincts are the foundation of human behavior, and that without allowing rational control they can somehow be transformed into collective instincts for expanding the circle. Singer's argument, that tribal instincts are transformed into tribal reasoning, while an insult to reason, at least allows for the possibility of an expanding circle (though his case would be much stronger if he were to argue that reason overwhelms kin, not group, altruism). Kitcher's view seems to amount to a contradiction; that tribal instincts can somehow yield non-tribal behavior. Kitcher (2011) writes,

> "Ethics must continue to promote social harmony through remedying altruism failure. Now it must do so on an expanded field of desires"(p.239); "Ethical principles are also required to respond to conflicts within the individual's expanded repertoire of desires, and in this sphere, prescriptions for character development emerge"(p.239).

Here again we see the group selection myth taking a heavy toll on a determined advocate: instincts, as heritable traits, must be selfish (or at least neutral) or else disappear; group selection supposedly yields biologically altruist desires but they must still be selfish even if group selection exists; even on the group selection myth it is not credible to suggest that biological altruism (which despite Kitcher's obfuscations is all that his 'real/human/moral' yet egoist altruism can amount to) can lower individual success (fitness) and persist as an evolved heritable genetic trait; hence an individual's "repertoire of

desires" (instincts in the absence of rational control) cannot yield morality unless ethics is necessarily defined as egoism. Kitcher's argument, however, is apparently not that ethics is necessarily egoist (which is the descriptive instinctivist position) but that ethics ought to be egoist; that instinctive egoism will better facilitate our natural selection. So we have a rather murky ethical theory in Kitcher (2011): instinctive tribal egoism can supposedly yield an expanding circle even though a truly expanding circle (beyond kin) would require selfless instincts which are impossible; we ought to be instinctively egoist in remedying altruism failures towards non-kin even though instincts as heritable cannot serve the interests of non-kin and to do so even up to that amount required by group altruism would pose an enormous (and therefore impossible) evolutionary risk; Kitcher's group instincts therefore cannot be considered highly reliable but rather self-destructive (which is why there is no non-kin altruism or group selection in nature but only in theories); the only plausible explanation for expanding circles (societal growth) is that human rationality can simply override instinctive-genetic paranoia regarding non-kin and enable us to recognize that entering society is in our best interests (as argued by Hobbes).

Kitcher (2011) writes,

> "Introducing ethical novelties, whether at the beginning of ethical practice or in subsequent modification, is justified when those who make the change do so by following processes likely to lead to better functional fulfillment"(p.262); "..."The authority is that of life". My approach to the objection that naturalism loses the authority of ethics will endeavor to articulate what I take Dewey to have had in mind"(p.264, footnote 13); "Pragmatic naturalism differs from previous attempts to link ethics to our evolutionary past. It does *not* propose to identify ethical properties in evolutionary terms, say, by equating what is good with what is adaptive"(p.9).

If life is the authority, and Darwinism governs life, and group altruism governs our actions, then how can the good be anything else besides the adaptive? Kitcher's (2011) argument is a case for the rightness of actions which can facilitate natural selection, either as individuals or as groups, in constructing codes and in expanding circles. If 'desires' can somehow become unmoored from natural selection and/or biological evolution, then just as with descriptive rationalism there is no need to engage in an evolutionary explanation of ethics. All that would be required is an analysis of when and

how we gained unselfish and nonadaptive (biologically/evolutionarily) desires, how they must be transmitted culturally not genetically, how they must not amount to suicidal self-destructiveness like pure rational collectivism, and how these desires can be regarded as plausibly existent without being under the control of human rationality. Since that is not Kitcher's approach, his view leads to equating evolution and the good, to an invalid ought-from-is inference. Kitcher would appear to need rationality to unmoor desires from instincts in order to make his argument work, but he rejects that as does Dewey (1939):

> "There is a contrast between the natural goods – those which appeal to immediate desire – and the moral good, that which is approved after reflection. But the difference is not absolute and inherent. The moral good is some natural good which is sustained and developed through consideration of it in its relations; the natural enjoyment which conflicts with the moral good is that which accompanies some desire which persists because it is allowed to sway action by itself, apart from the connections which reflection would bring to light"(p.770); "But *reflective* attachment to the ends which reason presents is enormously increased when these ends have themselves been, on earlier occasions, *natural* goods enjoyed in the normal course of life"(p.771); "In fact, the most significant change that would issue from carrying over experimental method from physics to man concerns the status and import of standards, principles, rules. With the transfer, these, and all tenets and creeds about good and goods, would be recognized as hypotheses"(p.791).

Dewey describes science as the final stage in the evolution of human thinking and as a matter of rational inference, recommends scientific reasoning for ethics, yet still resorts to passion after all. Is our devotion to desires hypothetical, or beyond question? Is ethics scientific or not? It almost seems like there is something of an intellectual tribalism amongst epistemologists, that divides the sentimentalists and rationalists, and which causes tribe members to contort themselves and ruin their work in order to demonstrate solidarity. Exemplary, perhaps, is Kitcher's appeal to the biological reliability of acquired desire and group instincts, in itself contradictory, but which also contradicts both common sense and the evolutionary significance of human rationality.

In the context of evolution, which does feature a struggle to survive, Kitcher's combination of an appeal to 'life' as the moral authority, an appeal to instinct/desire as the most reliable cognitive

method, and an appeal to Darwinian competition, lands him squarely in Nietzschean territory. Gayon (1999) writes, "For Nietzsche, perspectivism was not only a characteristic of human knowledge but also a characteristic of all life, or, even more, "the fundamental condition of all life""(p.191). Nietzsche (1887/1956) writes,

> "To speak of right and wrong *per se* makes no sense at all. No act of violence, rape, exploitation, destruction, is intrinsically "unjust," since life itself is violent, rapacious, exploitative, and destructive and cannot be conceived otherwise. Even more disturbingly, we have to admit that from the biological point of view legal conditions are necessarily exceptional conditions, since they limit the radical life-will bent on power and must finally subserve, as means, life's collective purpose, which is to create greater power constellations"(p.208).

Kitcher's pragmatic naturalism explicitly argues that social codes must serve Darwinian cultural competition; Darwinism dictates that individual conduct must serve reproductive competition. A satisfying element of Nietzsche's work is a sensitivity to nature's brutality, which makes him one of the most truly naturalist philosophers of significance. Whereas our sociobiologists come across like ivory tower dreamers, Nietzsche comes across very differently: he (1881/1982; 1887/2001) writes,

> "We have to *learn to think differently* – in order to last, perhaps very late on, to attain even more: *to feel differently*"(1881/1982, p.60); "With morality the individual is instructed to be a function of the herd and to ascribe value to himself only as a function. Since the conditions for preserving one community have been very different from those of another community, there have been very different moralities; and in view of essential changes in herds and communities, states and societies that are yet to come, one can prophesy that there will yet be very divergent moralities. Morality is herd-instinct in the individual"(1887/2001, p.115).

Kitcher (2011) is similar regarding new desires and morality, but is wholly lacking Nietzsche's respect for nature. A major difference is Nietzsche's individualism, but Nietzsche was correct about that, in terms of how evolution works. Nietzsche's 'herd instinct' is Singer's and Kitcher's group altruism; humans do not manifest herds, of course, so there is no such thing as herd instinct, or group selection, but obviously there are group moralities. Since moral culture cannot be instinctive, however, it cannot be modified or improved upon by instinct either, but only by reason. Instincts, and the desires that must be derived only from instincts if we are to reject rationality, are neither good nor bad in themselves but

simply traits, which may be used towards whatever we decide is good or bad, including our own survival (or our own demise), as we see fit. Survival is good, but instincts in the minds of rational creatures may or may not be employed to that end; this would appear to be a point of great confusion for us.

Nietzsche (1887/2001) writes,

> "There are enough people who could well entrust themselves to their inclinations with grace and without care, but who do not for fear of the imagined 'evil essence' of nature! *That* is why there is so little nobility among human beings; its distinguishing feature has always been to have no fear of oneself, to expect nothing contemptible from oneself, to fly without misgivings wherever we're inclined – we free-born birds! And wherever we arrive, there will always be freedom and sunlight around us"(p.167);

but note that Nietzsche is himself committing the very error that he protests – that instincts are noble is that instincts are good, versus that instincts are evil. Instincts are neither; they must be good in arational creatures since they survive entirely upon them, but in us they merely amount to information with which we must decide what to do. Nietzsche refers to entrusting ourselves – why then does he not allow rationality a role in such trust? He (1881/1982) writes,

> "Everywhere today the goal of morality is defined in approximately the following way: it is the preservation and advancement of mankind; but this definition is an expression of the desire for a formula, and nothing more. Preservation *of what?* is the question one immediately has to ask. Advancement *to what?* Is the essential thing – the answer to this *of what?* and *to what?* – not precisely what is left out of the formula? So what, then, can it contribute to any teaching of what our duty is that is not already, if tacitly and thoughtlessly, regarded in advance as fixed? Can one deduce from it with certainty whether what is to be kept in view is the longest possible existence of mankind? Or the greatest possible deanimalisation of mankind? How different the means, that is to say the practical morality, would have to be in these two cases? Suppose one wanted to bestow on mankind the highest degree of rationality possible to it: this would certainly not guarantee it the longest period of duration to it! Or suppose one conceived that attainment of mankind's 'highest happiness' as being the *to what* and *of what* of morality: would one mean the highest degree of happiness that individual men could gradually attain to? Or a – necessarily incalculable – average-happiness which could finally be attained by all? And why should the way to that have to be morality? Has morality not, broadly speaking, opened up such an abundance of sources of displeasure that one could say, rather, that with every refinement of morals mankind has hitherto become *more discontented* with himself, his neighbour and the lot of his existence? Did the hitherto most moral man not entertain the belief that the only justified condition of mankind in the face of morality was the *profoundest misery*"(p.61-62)?

Like so many evo-ethicists Nietzsche of course has an axe to grind with religion, but perhaps he may here be referring to Kant and may be recognizing the dangers of pure moral rationalism in the context of evolution. We might want to thank Nietzsche if only he were to not offer an even more evolutionarily self-destructive moral method than Kant. Human rationality is like a genie out of its bottle that simply cannot be put back into its original place. That really would seem like a recipe for mental disturbance, much more so than efforts to completely ignore or deny the instincts.

Huxley (1943/1947/1969) writes,

> "If desirable direction of evolution provides the most comprehensive (though also the least specific) external standard for our ethics, then one very important corollary at once follows: namely that social organization should be planned, not to prevent change, nor merely to permit it, but to encourage it"(p.126).

If 'life' is good, and Darwinian, and ethics is a matter of cultural competition, then pragmatic naturalism amounts to believing that evolution should be allowed to proceed unhindered, according to Darwinian metaphysical principles. Huxley (1943/1947/1969) writes,

> "It is clear that social ethics manifests evolution. Human codes of morality change, adapt, become diversified, exhibit long-term trends, whether of specialization, regression, or true progress. The function of social ethics is, in biological terminology, phylogenetic, helping society to persist, to reproduce itself, and in some cases to change and to advance"(p.199).

This is tribal scale survival of the fittest, or 'cultural success' as Kitcher (2011) puts it. The group selection myth not merely supports tribalism; it is tribalism, in the form of academic scholarship, and although it claims empiricism as its basis, that is mistaken. There is no empirical evidence of evolved tribal instinct, because there is no evidence for evolved group selection and group altruism. A biological basis for tribalism requires faith in the manner of believing in a myth or religion; and it does apparently have proselytizers at the height of academia. Spencer (1892) writes,

> "At the very outset, life is maintained by persistence in acts which conduce to it, and desistence from acts which impede it; and whenever sentiency makes its appearance as an accompaniment, its forms must be such that in the one case the produced feeling is of a kind that will be sought – pleasure, and in the other case is of a kind that will be shunned – pain"(p.79); "In two ways then, it is demonstrable that there exists a primordial connexion between pleasure-giving acts

> and continuance or increase of life, and, by implication, between pain-giving acts and decrease or loss of life"(p.82); "If we call the enjoyable state itself, as a good laugh – if we call good the proximate cause of an enjoyable state, as good music – if we call good any agent which conduces immediately or remotely to an enjoyable state, as a good shop, a good teacher – if we call good considered intrinsically, each act so adjusted to its end as to further self-preservation and that surplus of enjoyment which makes self-preservation desirable – if we call good every kind of conduct which aids the lives of others, and do this under the belief that life brings more happiness than misery; then it becomes undeniable that, taking into account immediate and remote effects on all persons, the good is universally the pleasurable"(p.30).

If the good is pleasure, and we ought follow our desires by disallowing the influence of rationality, then self-preservation follows but aiding non-kin cannot. Heritable traits are not possibly concerned with aiding the lives of others unless they are of close genetic relation. Kitcher (2011) writes,

> "The good is local, linked to circumstances and problems; it is constructed through group attempts to solve problems; and it evolves"(p.288); "We should seek a notion of mutual engagement as well suited to the renewed ethical project as the original version of mutual engagement – the deliberations of band members – was to the original venture"(p. 340); "To address all the factors generating conflict in the global society to which we now belong, egalitarianism must be combined with secularism, at least to the extent of undercutting the military enterprises of zealots who would impose their conception of the divine will by force. If we could achieve a world in which there were no economic causes to invade others, and in which any religious exhortation to conflict was viewed as illegitimate, if not absurd, two of the major sources of warfare would be dammed up"(p.395); "Pragmatic naturalism does not suppose that the pacifist project of working to eliminate war is unrealistic, and that we have to settle for articulating the precise conditions under which various kinds of lives should be traded"(p.395).

Like Spencer, Kitcher would leave us impotent against tribalism, despite his efforts to suggest otherwise: the good is local in helping the group in its attempts to be naturally selected; groups must compete; mutual engagement without reason must be instinctive and at best group restricted; there was never any equality in hominid tribes, so no habitual group justification by tribal leaders, so no internalization of rule giving, so no inward fear amounting to 'conscience'; human instinct is not the slightest bit concerned with or related to or based in egalitarianism but rather individual survival and reproductive success. These are the obvious implication of evolutionary biology.

Kitcher (2011) writes,

> "[Nietzsche] turns out to be an interesting and insightful *ally* of the pragmatic naturalist

> project"; "...Nietzsche wants to use history in the interests of reform – with the aim, one might say, of advancing the ethical project. That is entirely in accord with pragmatic naturalism, which is receptive to the thought that increased historical understanding might expose regressive transitions and open up new possibilities for us"(p.277, footnote 27); "....a Nietzschean persona, the "free spirit".... He asks why he should care about the specific recommendations emerging from those transitions pragmatic naturalism counts as progressive. His question is best met with another: what alternative does he have in mind? To conceive of the historical evolution of ethical practice, taken as a whole, as oppressive is vacuous, unless one can do more than wave vaguely in the direction of unarticulated possibilities"(p.277); "Until we are given some description of an alternative – or until the Übermensch arrives – our choices are confined to the human, the ethically guided, life and the social state of chimpanzees, a state first transcended by our ancestors"(p.278).

While we might regard Nietzsche as a poet, and not take his arguments literally, his appreciation of natural brutality warrants serious consideration. He does offer reform, and he does suggest an alternative, which is what Kitcher's arguments reduce to in contending that cultural Darwinism is good and that desire is right. Nietzsche (1887/1956) writes,

> "...the judgment *good* does not originate with those to whom the good has been done. Rather it was the "good" themselves, that is to say the noble, mighty, highly placed, and high-minded who decreed themselves and their actions to be good, i.e., belonging to the highest rank, in contradistinction to all that was base, low-minded and plebeian"(p.160); "Such an origin would suggest that there is no *a priori* necessity for associating the word *good* with altruistic deeds, as those psychologists are fond of claiming. In fact, it is only after aristocratic values have begun to decline that the egotism-altruism dichotomy takes possession of the human conscience; to use my own terms, it is the herd instinct that now asserts itself"(p.160).

Nietzsche's genealogy is simply more plausible than Kitcher's; the notion of early equality is fantastic, and the notion of group altruism is impossible. Without those, all that Kitcher leaves us with is something like natural virtue: Nietzsche (1881/1982; 1887/2001) writes,

> "The beginnings of justice, as of prudence, moderation, bravery – in short all we designate as the Socratic virtues, are animal: a consequence of that drive which teaches us to seek food and elude enemies. Now if we consider that even the highest human being has only become more elevated and subtle in the nature of his food and in his conception of what is inimical to him, it is not improper to describe the entire phenomenon of morality as animal"(1881/1982, p.21); "Our visible moral qualities, and especially those that we *believe* to be visible, take their course; and the invisible ones, which have the same names but are neither ornaments nor weapons with regard to others, *also take their course*: probably a totally different one, with lines and subtleties and sculptures that might amuse a god with a divine microscope. For example, we have our diligence, our ambition, our acuteness – all the world knows about them – and in addition, we probably have *our* industry, *our* ambition, *our* acuteness; but for these reptile scales, no

> microscope has yet been invented! At this point the friends of instinctive morality will say: 'Bravo! At least he considers unconscious virtues to be possible – and that's enough for us.' Oh, how little you are satisfied with!"(1887/2001, p.35); "If the preserving alliance of the instincts were not so much more powerful, if it did not serve on the whole as a regulator, humanity would have to perish with open eyes of its misjudging and its fantasizing, of its lack of thoroughness and its incredulity – in short, of its consciousness; or rather, without the instincts, humanity would long have ceased to exist"(1887/2001, p.37)!

It does not seem correct to regard morality as possibly unconscious, or instinctive, since what we typically regard as morality requires choice, and choice of the fully aware and conscious kind (or else the term 'choice' need not apply), so the concept of unconscious virtue would seem every bit as much an oxymoron as group selection.

> Lennox (1999) writes,
>
> > "Clearly, for us, *unqualified* virtue of character requires some connection to human reason. And yet Aristotle regularly characterizes the animals with natural virtues as practically intelligent and skilled thinkers, as we shall see. How, then, can he ascribe both natural virtue and practical intelligence to other animals and yet deny to them the unqualified virtue that comes to us when we have both? The answer, supported by Aristotle's account of animal character in *HA* VII-VIII, lies in the *independence* of the cognitive capacities and character traits in other animals, and this in the fact that animals act 'in character' without deliberative choice. The other animals do not need to integrate practical intelligence with natural virtues to achieve excellence of character – in humans, however, it is this very integration that is the essence of both practical intelligence and virtuous character"(p.12-13).

Still, we surely can act on instinct if we want to, and sometimes we should; where would it lead if we were to adopt acting always on instinct as a principle of conduct? Kitcher (2011) offers many reassuring words about ending war and expanding circles and increasing equality. Nietzsche (1887/1956; 1887/2001) has other ideas:

> "Whereas the noble lives before his own conscience with confidence and frankness (*gennaios* "nobly bred" emphasizes the nuances "truthful" and perhaps also "ingenuous"), the rancorous person is neither truthful nor ingenuous nor honest and forthright with himself. His soul squints; his mind loves hide-outs, secret paths, and back doors; everything that is hidden seems to him his own world, his security, his comfort; he is expert in silence, in long memory, in waiting, in provisional self-deprecation, and in self-humiliation. A race of such men will, in the end, inevitably be cleverer than a race of aristocrats, and it will honor sharp-wittedness to a much greater degree, i.e., as an absolutely vital condition for its existence. Among the noble, mental acuteness always tends slightly to suggest luxury and overrefinement. The fact is that with them it is much less important than is the perfect functioning of the ruling, unconscious instincts or

> even a certain temerity to follow sudden impulses, court danger, or indulge spurts of violent rage, love, worship, gratitude, or vengeance"(1887/1956, p.172-173); "Once abroad in the wilderness, they revel in the freedom from social constraint and compensate for their long confinement in the quietude of their own community. They revert to the innocence of wild animals: we can imagine them returning from an orgy of murder, arson, rape, and torture, jubilant and at peace with themselves as though they had committed a fraternity prank – convinced, moreover, that the poets for a long time to come will have something to sing about and to praise. Deep within these noble races there lurks the beast of prey, bent on spoil and conquest. This hidden urge has to be satisfied from time to time, the beast let loose in the wilderness"(1887/1956, p.174); "If it were true, as passes current nowadays, that the real meaning of culture resides in its power to domesticate man's savage instincts, then we might be justified in viewing all those rancorous machinations by which the noble tribes, and their ideals, have been laid low as the true instruments of culture. But this would still not amount to saying that the *organizers* themselves represent culture. Rather, the exact opposite would be true, as is vividly shown by the current state of affairs. These carriers of the leveling and retributive instincts, these descendants of every European and extra-European slave-dom, and especially of the pre-Aryan populations, represent human retrogression most flagrantly"(1887/1956, p.175-176); "*Where lie your greatest dangers?* – In compassion"(1887/2001, p.152).

These are more realistic implications of acting on instinct, on principle, than those offered by Kitcher. Human instincts are savage, or else we would not be here to reflect upon them. It is difficult to surmise what motivates Nietzsche to argue as he does; but he (1881/1982) offers a clue: "'Contradiction moves the world, all things contradict themselves'..."(p.4).

**§ 3 – Epistemology**

Kitcher (2011) writes,

> "The ethical project is not simply the unfolding of previously existent altruistic tendencies – it is more than just a population acquiring capacities for "nice behavior." Ethical practice involves conversation, with others and with yourself, juxtaposing desires you recognize as part of you and other desires you would prefer to move you to action. Neither does it posit a special evolutionary advance, in which our ancestors acquired a "moral instinct," conceived along the lines of our innate capacity for language"(p.10).

However, Kitcher does not offer an account for how exactly, or what exactly, these moral desires are if not instinctive: they arise as group altruism, morph into tribal conscience, are expressed in group codes, and must persist or perish in Darwinian group and cultural selection. If he has in mind some sort of ontologically distinct (from biological evolution) evolving 'desire' akin to Singer's evolving 'reason' he does not make that clear. On the contrary, he (2011) writes,

> "[Altruists] modify their desires and emotions to align them with the perceived desires and (perceived or actual) emotions of at least some others in at least some contexts"(p.31); "The acquisition of a capacity for normative guidance – understood, as above, as an ability to follow orders that issue in surrogates for altruism – does not mark the transition to the "ethical point of view." That is not because there is some further move that does the trick awaited by the critics, one that shows how a very special kind of normative guidance (a special way of internalizing the orders, say) constitutes the "ethical point of view," *but because the entire conception of the "ethical point of view" is a psychological myth devised by philosophers*"(p.80-81); "To insist on an "ethical point of view" liberated from such emotions is to reserve that point of view for a very small number of cool secularists"(p.80-81).

Kitcher here again restricts his comparison to pure moral rationalism and not also to a principle of rational character, and here again we encounter the toll of the group selection myth: Kitcher's (2011) entire argument depends on the existence of the implausibly unselfish instincts of group altruism/reciprocal cooperation amongst non-kin. Kitcher (2003), in an endnote, quotes an article on altruism and remarks:

> "...it is surprising that so few instances of reciprocity (human excluded) have been satisfactorily documented. The most likely cases seem to be food sharing in vampire bats and coalition formation in baboons, both of which involve organisms that could engage in the kinds of recognition and response tasks demanded by my analysis"(p.191, endnote 13).

However, it is not surprising because selfless heritable behavioral traits are impossible. Kitcher's (2003) evidence: "In order to investigate the properties of more heterogeneous populations, and of populations containing individuals following more complex strategies, we performed a number of computational simulations of populations of players who participate in the iterated Prisoner's Dilemma by following inherited strategies"(p.202). Biologists generally formulate hypotheses on the basis of observations of actual living things, not computer simulations; Dennett (1995) writes, "This is a branch of sociobiology or evolutionary ethics that no one should deride"(p.480), but he adds in a footnote, "...the results of such simulations can be misleading, and should often be taken with a grain of salt"(p.480, footnote 9). In order to construct a biologically credible theory of ethics that we can believe to be 'possible', as Kitcher claims, much more observational evidence is required, especially of actual organic species that unambiguously demonstrate the existence of group selection and non-kin altruism. Baboons and bats are highly intelligent mammals that live in genetically related groupings. In order to prove group selection we need to observe it occurring amongst unrelated populations, and in arational creatures such as insects (since if it is evolutionarily possible than instinctive behavior must suffice, since if it depends on reason there is no basis for thinking it is an inherited trait but rather a by-product of high intelligence). Kitcher does not offer such evidence, and therefore his moral theory is based on faith not science, as is sociobiology and Darwinism generally.

Kitcher (2011) allows for rational deliberation, strategizing, and reflection (p.136, 332), rule following (p.222, 247), diagnosing, deliberation, judgments, and principles (p.259, 332), maxims situationally applied (p.331), and even that his pragmatic naturalism is compatible with reflective equilibrium (p.257). Kitcher argues against ethical expertise in the form of theories (p.8) or a special point of view (p.207), yet acknowledges the practicality of "realms" of expertise (p.378, 410). Kitcher (2011) writes,

"If the ethical code is relatively well attuned to its functions, we should anticipate that a global

> exploration would yield improved functioning – and hence view the method of reflective equilibrium as reliable, unless our background situation is seriously problematic"(p.335); "Because the totality of what we know is so hard to survey, our task is daunting – and may well require cooperative interactions among scholars attuned to different realms of expertise"(p.410).

But Kitcher seems willing to pick out ideas that appeal regardless of whether they render his theory incoherent. If reason is less reliable than instinct in the natural selection game, does reflective equilibrium amount to instinctive equilibrium? Scholars; their expertise amounts to a manifestation of what, exactly? Emotional attunement? Kitcher (1985) writes,

> "On the contrary, the evolution of enhanced cognitive capacities would seem to call for an ability of the more perceptive mind to interfere with mechanisms of behavior already favored by selection and thus to use the increased cognitive abilities in helping us to cope better with our environments"(p.207); "Similarly, in the course of the evolution of the human brain, tasks once performed by other mechanisms may be taken over by the cognitive system, leaving the older mechanisms to wither and disappear"(p.207).

These remarks seem like arguments for both the possibility and selective advantage of rational control. Dewey (1939) writes, "As Plato and Aristotle said over two thousand years ago, the aim of moral education is to develop a character which finds pleasure in right objects and pain in wrong ends"(p.771). This too surely must be part of an argument for rational control? Dewey (1939) writes,

> "Habits as organized activities are secondary and acquired, not native and original. They are outgrowths of unlearned activities which are part of man's endowment at birth"(p.736); "Instinctive reactions are sometimes too intense to be woven into a smooth pattern of habits. Under ordinary circumstances they appear to be tamed to obey their master, custom. But extraordinary crises release them and they show by wild violent energy how superficial is the control of routine. The saying that civilization is only skin deep, that a savage beast persists beneath the clothes of a civilized man, is the common acknowledgment of this fact"(p.741); "Instead of constantly utilizing unused impulse to effect continuous reconstruction, we have waited till an accumulation of stresses suddenly breaks through the dikes of custom"(p.742); "Suppression is not annihilation. "Pyschic" energy is no more capable of being abolished than the forms we recognize as physical. If it is neither exploded nor converted it is turned inwards, to lead a surreptitious, subterranean life"(p.748); "The wholesome and saving force of intellectual freedom, open confrontation, publicity, now has the stamp of scientific sanction. The evil of checking impulses is not that they are checked. Without inhibition there is no instigation of imagination, no redirection into more discriminated and comprehensive activities. The evil resides in a refusal of direct attention which forces the impulse into disguise and concealment, until it enacts its own unavowed uneasy private life subject to no inspection and no control"(p.749-750).

These are all notions that might still seem compatible with Plato and Aristotle and a rational principle. However, Dewey (1939) also writes:

> "But reasonableness is in fact a quality of an effective relationship among desires rather than a thing opposed to desire. It signifies the order, perspective, proportion which is achieved, during deliberation, out of a diversity of earlier incompatible preferences. Choice is reasonable when it induces us to act reasonably; that is, with regard to the claims of each of the competing habits and impulses"(p.758); "More "passions," not fewer, is the answer"(p.759); ""Reason" as a noun signifies the happy cooperation of a multitude of dispositions, such as sympathy, curiosity, exploration, experimentation, frankness, pursuit (to follow things through), circumspection (to look about at the context)"(p.759); "Impulse is primary and intelligence is secondary and in some sense derivative. There should be no blinking of this fact. But recognition of it as a fact exalts intelligence. For thought is not the slave of impulse to do its bidding"(p.760); "What intelligence has to do in the service of impulse is to act not as its obedient servant but as its clarifier and liberator"(p.760).

Nietzsche aptly characterizes the full implications of principled instinctivism; Dewey's reference to Plato and Aristotle seems disingenuous given these remarks; like pure moral rationalism this is a simply impractical moral epistemology. Certainly we need our instincts, but of course we need to employ them rationally. While the contrast between sentimentalism and pure rationalism is of depravity versus fantasy, between a principle of instinct and a principle of reason the contrast is between debauchery and sobriety. Should any reflective thinker on these matters take unbridled instinct as a practical method seriously? Can anyone honestly believe that pure undisciplined instinct is more reliable than rational self-discipline (of instinct), anymore than that pure practical reason is more reliable than rational self-discipline? Can we even believe that it is possible for us to only employ our rationality as a mere 'liberator' of instinct? Is it not ridiculous to claim that humans are no better at survival, or at making decisions, than arational creatures? Is it not absurd to suggest that a regression to a state of nature could possibly be better for humanity?

> Spencer (1892) writes,
>
> "From the earliest times groups of men whose feelings and conceptions were congruous with the conditions they lived under, must, other things equal, have spread and replaced those whose feelings and conceptions were incongruous with their conditions. Recognizing a few exceptions, which special circumstances have made possible, it holds, both of rude tribes and of civilized

> societies, that they have had continually to carry on external self-defense and internal cooperation – external antagonism and internal friendship. Hence their members have required two different sets of sentiments and ideas, adjusted to these two kinds of activity"(p.322-323).

These notions seem perfectly consistent with Kitcher (2011); the tradition and regularity of these arguments, with such a determined effort to incorporate the biological sciences into an empirically empty ideology, is suggestive of a cult (perhaps a very ancient one – the cult of the tribe). Nietzsche (1886/1955) writes, "A keeping an eye on and reading between the lines of the philosophers for a long time, I find that I must tell myself the following: the largest part of conscious thinking must be considered an instinctual activity, even in the case of philosophical thinking"(p.3). Might we have encountered evidence for taking this notion seriously? Nietzsche (1887/2001):

> "Consciousness gives rise to countless mistakes that lead an animal or human being to perish sooner than necessary, 'beyond destiny', as Homer puts it"(p.37); "a person's virtues are called *good* with respect to their presumed effects not on him but on us and society – the praise of virtues has always been far from 'selfless', far from 'unegoistic'! For otherwise one would have had to recognize that the virtues (such as diligence, obedience, chastity, piety, justice) are mostly *harmful* to their possessors, being drives which dominate them all too violently and covetously and in no way let reason keep them in balance with the other drives. When you have a virtue – a real, complete virtue (and not just a small drive towards some virtue) – you are its *victim*!"(p.43); "Those moralists who command man first and above all to gain control of himself thereby afflict him with a peculiar disease, namely, a constant irritability at all natural stirrings and inclinations and as it were a kind of itch"(p.173); "And, as a question asked in confidence: even that philosopher's claim to *wisdom* which has been make here and there on earth; the maddest and most immodest of all claims – was it not always, in India as well as in Greece, *primarily a hiding place*? At time perhaps a hiding place chosen with pedagogical intent, which hallows so many lies; one has a tender regard for those who are still becoming, growing – for disciples who must often be defended against themselves through faith in a person (though an error)...In most cases, however, it is a hiding place in which the philosopher saves himself owing to weariness, age, growing cold, hardening – as a wisdom of that instinct which the animals have before death – they go off alone, become silent, choose solitude, crawl into caves, become *wise*...What? Wisdom as a hiding place in which the philosopher hides himself from – spirit"(p.224-225)?

This seems more like poetry – not ethics; artful – not practical. Nietzsche (1887/1956):

> "This fully emancipated man, master of his will, who dares make promises – how should he not be aware of his superiority over those who are unable to stand security for themselves?"(p.191); "What shall he call that dominant instinct, provided he ever feels impelled to give it a name? Surely he will call it his conscience"(p.191-192).

Human beings who allow themselves to be dominated by their instincts as a normative principle can generally call themselves *dead*. Nietzsche (1881/1982):

> "I find no more than six essentially different methods of combating the vehemence of a drive"(p.64); "While 'we' believe we are complaining about the vehemence of a drive, at bottom it is one drive which is complaining about another; that is to say: for us to become aware that we are suffering from the vehemence of a drive presupposes the existence of another equally vehement or even more vehement drive, and that a struggle is in prospect in which our intellect is going to have to take sides"(p.64-65).

In essence, prescriptive instinctivism reduces to descriptive, because the only way, and only excuse, we could have for not employing rational self-discipline in conducting our actions is if we were struck though with a debilitating fear, of nature.

## Part V: Prescriptive Rationalism

If the analysis offered in the preceding chapters stands to reason, then the following summarily expressed implications might also. While we need to avoid drawing inferences from the sciences to ethics that are not rationally warranted, we nevertheless must concern ourselves with the natural sciences in order to do ethics. We cannot act as if science does not matter at all; evolutionary biology especially has transformed our understanding of ourselves as organisms and as a species. We know that we have evolved; we know that both 'reason' and 'instinct' are evolved faculties which serve our survival interests; we do not know exactly how evolution works. In deciding both what to do generally and what our general method ought to be, we need to discern relevant scientific facts from theories and falsehoods. Although Aristotelian science based on first principles is supposedly a thing of the past, current thinking regarding scientific paradigms regards prevailing scientific hypotheses (which can amount to metaphysical world-views) are the functional equivalent of first principles. Hence, in evolutionary biology, Darwinism is regarded as the major premise of all 'scientific' arguments despite its incongruence with observational evidence, and the science thereby amounts as much to a cultural practice as an open investigation. At least we should agree that demonstrable evidence ultimately must prevail for science to function. Our observational evidence demonstrates not only that evolution exists but also demonstrates that humanity is of limited cognitive capacity, including and perhaps especially regarding deciding what to do. Without divine abilities to predict consequences of our actions, or perfect self-control or even understanding of our own cognitive mechanisms, or deep insight into the nature or behavior of our physical surroundings, all we can hope to accomplish in ethics is to gather the information as best as we can in order to try to comprehend it and make the best decisions possible. Since science is telling us that there is apparently no inherent fundamental lawfulness to nature, and since we are by all appearances free-willed, whatever actions we take, relations we construct, or rules we decide upon are better regarded as creations than discoveries.

In creating we are not at liberty to construct whatever we would like, because evolution demonstrates our vulnerability to extinction and mass die-offs, ecology demonstrates that we are absolutely dependent on an ecosystem, and our own bodily biology reminds us that our personal persistence is a day-to-day concern. The extent to which we or any species can manifest an ecosystem that amounts to a species product (as opposed to an occupied niche) is an area of current research, but even if we create our own ecosystem it too is constrained. As a relatively young branch of science, (modern) biology is only beginning to yield its secrets even as we face immediate and severe ecological/evolutionary challenges. In such a context, moral actions are in a state of flux, since as the facts come in we are hard pressed to appropriately incorporate them into our habits, cultures, and economies. At least, in the context of evolution, we should have to be nimble, flexible, and adaptive to new information and changing conditions, if we wish to persist as a kind. Accepting even that would amount to an ethically significant inference, but one that seems well warranted by the natural sciences. Since (barring determined self-destructiveness) the primary challenge to our ongoing existence as individuals and as a species are without, not within, our mode of cognition, that warrants adopting a common sense moral epistemology. That is, rather than try to define morality by equating it with one or another faculty, or to devise elaborate theories for why we either are or are not free-willed, why not simply accept the commonalities and necessities of human experience as they are as a source of objectivity? In that sense we might gain by incorporating an element of empirical method (as well as empirical findings) into ethics. That would mean accepting the instincts as powerful sources of information about our needs and scenarios as well as accepting reason as a powerful capacity for processing information (including from our own bodies). We might agree that being concerned with what is good for us at least is in itself fixed, in that being concerned with what is good for us would seem a necessary principle of ethics. But the specific ends which we pursue in our own best interests are not fixed, since the facts of our existence are in flux, so we must be prepared to incorporate

information as we gather it, modify our opinions, and adjust our behavior accordingly.

We are free to create within the confines of our ecological limitations as a species and within the confines of appropriate relations in our individual lives. Organic evolution demonstrates amazing biodiversity; it boggles the imagination to ponder what humanity might become if we should somehow manage to persist tens or hundreds of thousands of years into the future. Many of our mammalian cousins have existed in current forms for millions of years; is that possible for us? Are we capable of intentionally choosing our evolutionary trajectory, with as much creativity as we are capable of choosing how to construct our relations with one another and our surroundings? Organic purposiveness appears open-ended, in that there appear to be innumerable ways to ecologically flourish (and of course innumerable ways to ecologically perish). While we might find organic selection an appealing interpretation of evolution, the purposiveness that it entails is not as strict as that defended in Aristotle's ancient biology; he had Platonic Forms in mind for living types (species). That appears to be (scientifically) obsolete, but not purposiveness generally; offering a modern metaphysics of organic purposiveness is beyond our scope here but the only 'end' or 'form' that organic life seems intent on fulfilling is ecological flourishing in general. That is, the purpose of life appears to be simply to live.

Given an intent to flourish, and given what we know from biology, rational character is not the most practical but the only practical course. Moral virtues only make sense conceptually if regarded as character traits, developed through practice with exercising rational control of innate predispositions, to the point that appropriate actions are habitual and even intuitively arational or automatic. As such they are behavioral ideals for cognitively sophisticated moral creatures only, and cannot be even possible in creatures that are incapable of rationally referring to instinctive information as they would to sensory information in making decisions about what to do. As far as we know, on this planet only humans can do that. There are a few contemporary theorists who argue that a moral epistemology of virtue is implied by evolution, but in these formulations instinctive behavior is declared morally virtuous, and

Aristotle is claimed as a source while Humean sentimentalism is defended. This perspective can be characterized as Darwinian virtue epistemology, and it demonstrates all the incoherence that must necessarily be involved in any attempt to reconcile a materialist and determinist metaphysical theory of evolution with ethics. In contrast the view defended in these (and in other) pages should be regarded as merely a biologically informed virtue epistemology, which intends to restrict the information from the biological sciences to demonstrable observational evidence.

Boehm (2012) writes,

> "Having a conscience is all about *personally identifying with community values*, which means internalizing your group's rules. You must not only be able to learn rules and predict the reactions of those who enforce them, but you also must *connect* with these rules emotionally. You must do this in a positive way that makes you identify with them, feel ashamed when you break them, and feel self-satisfied and moralistically proud when you live up to them. This last can be considered a modern definition of virtue"(p.113-114).

The incoherence of this definition obviously presents itself: individuals are not in a position to choose group rules, or their emotions, so in becoming proud of adhering to group rules becoming virtuous or moral is reduced to a matter of assimilating and stripped of rational deliberation. Clearly, group rules can be evil rules, and we are quite capable of being in a state of disagreement with our own group's values, but on this definition moral virtue requires ignoring evil and reason in order to fit in and belong in spite of our own better judgment. In which case, being moral requires being evil; the right actions are the wrong actions in the interests of (mythological) group selection. Boehm (2012) writes,

> "After the passage of a century and a half, it's remarkable for any major theory not to be superseded, or at least vastly modified. However, in its basics this blind, mechanical theory of natural selection is still going strong in the world of science. If we add "genes" to what Darwin thought of rather intuitively as hereditary variation, the idea of natural environments favoring some variants and selecting against others works just as well in the early twenty-first century as it did in the mid-nineteenth. When we consider the complexities of life processes, the simplicity and explanatory power of the theory are awesome"(p.3).

The theory has never worked well empirically, and if awesome only for the passion and number of adherents. (As noted) Darwinism involves metaphysical commitments that are inherently incompatible

with the existence of ethics: simply adding into a characterization of innate morality the term 'virtue' cannot yield anything meaningfully virtuous, since materialist determinist natural selection disallows all organic selection including human morality. Boehm (2012) writes, "But he [Darwin] clearly thought that our conscience and moral sense were as "naturally selected" as our large brains, our upright posture, and our general capacity for culture"(p.6); but he makes no mention of Darwin's definition of morality as a product of rational control (above). Boehm (2012) writes,

> "In biological terms, then, when we speak of altruism, we're speaking of biological tendencies that dispose people to give more than they receive in terms of acts that reduce relative fitness. Even if all of the underlying genetic selection explanations are not yet fully developed, the tangible behaviors are obvious enough. People predictably open their veins to anonymously give blood or open their wallets to help starving children in developing countries, and generous assistance following a natural disaster anywhere on the planet can be quite impressive"(p.9-10).

More incoherence: biological altruism which refers to heritable behavioral traits does not reduce but increases fitness; genuine altruism which refers to human generosity cannot refer to genetically determined behavior because genetically sacrificial behavior cannot persist in the process of evolution. Therefore, real human altruism can only be a product of rational self-control, and innate morality is self-contradictory. Boehm (2012) writes,

> "George Williams's mathematical portrayal of free riders and altruists assumed that free riders were designed (by evolutionary processes) to exploit altruists and thereby disadvantage their genes. As a result, altruistic genes could never reach fixation in the gene pool concerned. And if new altruistic genes were to appear as mutants, free-rider mutants would soon appear to drive them out of business. When we bring in the conscience as a highly sophisticated means of channeling behavioral tendencies so that they are expressed efficiently in terms of fitness, this scenario changes radically"(p.310); "Genes that made for bullying free riding could have been useful because they were providing a useful competitive drive, whereas genes that made for altruism could have been useful because altruism was being compensated by reputational benefits and by other compensatory mechanisms we have discussed"(p.310); "From within the human psyche an evolutionary conscience provided the needed self-restraint, while externally it was group sanctioning that largely took care of the dominators and cheaters who couldn't or wouldn't control themselves"(p.311).

Apparently, Boehm means to suggest that truly selfless genes are impossible until an evolved conscience yields self-control within groups and group dynamics eliminate individuals without a

conscience. But now these are still not altruistic genes in the sense of being actually selfless but just in the sense of individually advantageous group behavior facilitators, or genes for selfish social behavior in other words, which are prevalent amongst organic species and which have nothing to do with morality and do not require a morally relevant conscience.

Boehm (2012) writes,

> "Socially, it was this charitable "inner voice" that kept us from getting in trouble with our fellows, Darwin told us, and he wanted badly to explain its evolutionary origin. But all he could tell his readers was that gaining a conscience and hence a sense of morality was, in effect, an inevitable outcome if a species became sufficiently smart and socially sympathetic to reach the human level. Unfortunately, this gave our uniquely human conscience the evolutionary appearance of being a mere byproduct, a side effect of intelligence and sympathy. This is a position I think we can vastly improve upon with present knowledge, and in the chapters to follow I will bring in some quite specific hypotheses to explain how the conscience evolved and why it did"(p.7).

However, Boehm's attempt to explain conscience as a product of group selection and as a heritable trait offers not an improvement but a contradiction in seeming to imply that a necessarily selfish (even in the context of group selection) heritable trait can possibly yield an ability to freely deliberate and choose our own actions. Genuine human generosity cannot possibly be a genetic trait unless a fleeting mutation; an evolved conscience cannot be moral; if Darwinism dictates how we necessarily behave then ethics does not exist. Boehm (2012) writes,

> "If we are to explain conscience evolution, I believe that we must look to natural selection processes that came to favor individuals who had the advantage over their fellows in the matter of controlling their own aggressions, for that is the one very basic job that an evolutionary conscience does"(p.130); "A too strong conscience would make such stressful adaptive moves unthinkable. However, a flexible conscience allowed people to adjust their adherence to moral rules to the situations they faced, and when altruistic empathy was trumped by egoism or nepotism, apparently they were able to do what was necessary"(p.277); "Our "parliament" of competing instincts was being mediated by an evolutionary conscience, which did permit a total cessation of sharing when *this* made sense"(p.291); "But over and over again in the capricious Pleistocene, a profound degree of flexibility was needed as culturally modern humans like ourselves scrambled to survive as they faced critical shortages of meat, plant foods, or water"(p.291); "We had both a sense of virtue and a sense of shameful culpitude, and we understood the importance of human generosity well enough to promulgate our predictable golden rules across the face of a then thinly populated planet. We were a people who in important ways had conquered our own abundant selfishness – even though that conquest

> required constant vigilance, and considerable active tweaking of the types we have spoken of"(p.314).

Self-control of aggression does not even remotely amount to a morally relevant conscience; flexibility amongst selfish instinctive options does not amount to morality; heritable altruism and egoism and nepotism are one and the same; an evolved conscience can only be itself instinctive and cannot yield a morally relevant flexibility; any sense of virtue or shame can only amount to mechanical not moral virtue if heritable and therefore necessarily self-serving; heritable and evolved behavioral traits of any sort cannot possibly be unselfish. Boehm (2012) writes, "If we consider the three fundamental (and competing) "interests" that our genetic nature is designed to serve, I've emphasized that basically they weigh in heavily in favor of egoism and then, after egoism, nepotism"(p.330); but he then adds,

> "An important theoretical point is that such culturally based purposeful inputs are both part of natural selection and a product thereof. Thus, their effects have gone beyond shaping everyday group life prosocially, *for they have helped to shape our gene pools in prosocial directions that are similar.* I believe that these powerful brains of ours have been making all of this possible for thousands of generations, and one major and totally unintentional side effect has been the conscience that originally made us a moral species"(p.333).

So does Boehm give up on genetic determinism after all, allowing for cultural control of the selection process, which might allow for a rise of rational and therefore genuine morality, and abandon his attempt to improve upon the 'side-effect' notion of conscience that he attributes to Darwin? No:

> "We've seen that in situations of serious scarcity tendencies to extrafamilial generosity will begin to lose out and that even nepotistic helpfulness can be set aside"(p.334); "Once a band's equalized sharing system was abandoned, and sharing declined to the level of nepotism, this might have permitted at least a few lucky or unusually adept families to survive by cooperatively subsisting on their own until better conditions arrived, or until migration to a different region with better possibilities could be accomplished. In still harsher situations, as we've seen, a similar argument can even be made with respect to individuals acting just on the basis of egoism"(p.334-335).

In other words, evolved conscience is an instinct, which serves individual survival necessarily, and is not ethically relevant. Boehm (2012) writes, "In Chapter 4 I will also be reconstructing the behavior of the first fully "modern" humans, as of 45,000 years ago, for they are basically the end point for moral

evolution in the biological sense. Today, even though we live in cities and write and read books about morality, our actual morals are little more than a continuation of theirs"(p.17). If that is true, and on the basis of Boehm's Darwinian reduction to genetics of all human behavior, his account of ethics is incoherent (in the sense that necessary selfishness cannot yield moral choice) and unempirical (in the sense that we plainly experience otherwise). Boehm's (2012) title is, "Moral Origins: The Evolution of Virtue, Altruism, and Shame", but since his characterization of virtue is instinctive, and thereby necessarily selfish, he does not describe the origins of morality or virtue but merely of human social behavior.

Ridley (1997) offers an effort similar to Boehm (2012) in his "The Origins of Virtue": he writes,

> "This is a book about human nature, and in particular the surprisingly social nature of the human animal"(p.5); "But our cultures are not random collections of arbitrary habits. They are canalized expressions of our instincts"(p.6); "Society was not invented by reasoning men. It evolved as part of our nature. It is as much a product of our genes as our bodies are. To understand it we must look inside our brains at the instincts for creating and exploiting social bonds that are there"(p.6).

Instincts alone cannot be morally virtuous, because we cannot choose them and we cannot control them with anything else other than what we typically refer to as rationality. Hence, Ridley (1997) is a work not on ethics, but on animal behavior masquerading as ethics. Keltner *et al* (2010) state in their "*The Compassionate Instinct*": "Empathy, gratitude, compassion, altruism, fairness, trust, and cooperation...are now being revealed as core features of primate evolution"(p.6). That may be, but only if we regard these virtues as necessarily selfish, and therefore not morally relevant. The idea of instinctive compassion can only amount to biological altruism, and in defending these ideas these authors reveal a fundamental unfamiliarity with the problems of ethics, and/or a determined effort to eliminate ethics as a subject of inquiry in favor of animal behavior. As an essential element of objective human experience, the category of problems associated with freely deciding what to do are on as solid an empirical foundation as any of the problems of the sciences. But that is not to say that ethics can be

reduced to a science, because deciding what to do will never be reducible to observational evidence. No matter how much information we gather, even if we include instinctive information along with sensory as observational evidence, we remain with the problem of inferring appropriate action, which must be an exercise of rationality if it is to be considered moral, free, and therefore subject to praise and blame. James (2011) writes,

> "The science of virtue and vice has barely moved beyond its infancy. What we *do* know about how humans come to have the moral beliefs and emotions they have is overshadowed by what we do *not* know"(p.112).

But there will never be an empirical science of vice and virtue, unless there can be an empirical science of rational decision making, and an empirical science of free will. Moral beliefs are not amenable to empirical science unless we wish to create a catalog, and moral emotions do not exist but just emotions, unless the emotions are summoned/allowed willfully as a result of a moral decision about what to do. The concept of an emotional judgment is incoherent; there can only be rational judgments about emotions, because innate emotional reactions are not freely chosen whereas summoned and/or allowed emotions are. Hence the idea of an emotional judgment only makes sense if we think of it as a decision to apply an emotion in our actions.

Krebs (2011) writes,

> "The categories of conduct that people consider moral and immoral are closely associated with their conceptions of virtues and vices, but when people conceptualize morality in terms of virtues and vices, the objects of their attributions tend to be people rather than forms of conduct. When we say that people are altruistic or fair or honest, we not only imply that they behave in altruistic, honest, and fair ways; we also imply that they possess internal qualities and character traits that dispose them to behave in certain ways"(p.18); "Even though there is a close correspondence between moral virtues and moral behaviors (you cannot *be* compassionate, honest, or fair without *behaving* in these ways), I think that virtues are more relevant than forms of conduct are to the question of how moral people are by nature because virtues are located inside people, where their natures reside, and because virtues constitute general, stable, person-defining, and species-defining traits"(p.248-249).

Krebs (2011) makes the same category mistake that appears so regularly in evo-ethics literature, of not merely deducing ought from is but equating ought with is. Whether the equivocation is between

emotions or instincts and the good, or between natural or mechanical virtues or heritable traits and the good, the error is categorical in the sense that in order for any disposition or trait or characteristic to be considered morally relevant it must be a product of choice and not merely a fixed attribute acquired without any intent and necessarily employed. We might say that an elephant has the virtue of having a trunk, or a good memory, or sociable dispositions, but these are qualities that all elephants necessarily possess simply because they are elephants. Elephants cannot be morally praised or blamed for these qualities and the elephant has no choice but to possess and employ these attributes. Likewise regarding whatever innate predispositions for social behavior and heritable behaviors generally possessed by human beings; they are instinctive not chosen, necessary not optional, natural not moral virtues. We can no more praise the human tendency for biological altruism towards kin as a moral virtue than we can our ability to walk on two legs, or comprehend arithmetic. Moral virtues must be pursued, engendered, developed, as a matter of conscious rational choice, in order to qualify for moral praise and blame. If the element of choice is removed, the concept of morality is rendered meaningless, and we are left with purely descriptive inquiry. Krebs (2011) writes, "When we ask how moral humans are by nature, we are asking about the kinds of stable, internal qualities that give rise to good intentions, not to the consequences of the acts they emit (although, of course, the two are usually related)"(p.249); but on his usages of the terms 'moral' and 'good' we can ask how moral beetles or tuna fish are, on the basis of their stable internal qualities to behave in the normal social ways that beetles and tuna fish do. Since beetles and tuna fish do not choose how they behave but run solely on instinct, attributing morality or goodness to their behavior is a mistake, just as it is to attribute morality or goodness to human instincts or any other heritable trait.

Krebs (2011) writes,

> "My answer to the the question, "What is morality?" is "a set of ideas about how people who live in groups should behave in order to meet their needs and advance their interests in cooperative ways.""(p.27); "Conceptions of morality prescribe that people should obey the rules

> that uphold their groups, respect legitimate authority, resist the temptation to satisfy their needs at the expense of others, help others, do their share, take their share, reciprocate, and behave in mutually beneficial ways. The function of conceptions of morality is to induce individuals to uphold the social orders of their groups by constraining their selfish urges and biases, upholding relationships, promoting group harmony, resolving conflicts of interest in effective ways, dealing effectively with those who violate the rules, and fostering their interests in ways that, if everyone adopted them, would produce a better life for all"(p.27).

Here Krebs reveals his dependency, like most of the Darwinian evo-ethicists, on the group selection myth in defining morality as group-oriented rather than simply as the problem of deciding what to do. Since we do not necessarily belong to groups or have to agree with whatever social customs our groups manifest, to define morality as defending group mores can only be a normative claim somehow derived from belief in Darwinian group selection. Krebs (2011) writes,

> "The function of morality is to induce people to strive to increase their inclusive fitness in certain (moral) ways, and not in other (immoral) ways, which implies pursuing certain proximate goals in certain ways, and not pursuing other proximate goals in other ways. I have argued that the mental mechanisms that endow people with a moral sense evolved to help them resist the temptation to foster their immediate adaptive interests at the expense of other people's adaptive interests and to induce them to foster their long-term interests in ways that foster the interests of other members of their groups, by doing their share and by taking their share, by maintaining mutually beneficial relations, by resolving conflicts of interest in adaptive ways, and by upholding (and improving) the systems of cooperation and social orders of their groups"(p.258); "Defined functionally, moral people possess the qualities that induce them to go about the long-term business of surviving, reproducing, propagating their genes in fair and altruistic ways. These qualities include all of the qualities I have been discussing – prosocial behavioral dispositions, self-control, a strong will, moral virtues, moral knowledge, moral principles, integrity, and so on. On this line of thought, the reason that people consider moral exemplars so moral is because moral exemplars are exceptional in the extent to which they achieve the functions that morality evolved to serve"(p.258).

These remarks amount not merely to equating ought with is but to equating ought with a possibly is, meaning that morality and the good is equated with Darwinian success, and Darwinism is at best an empirically challenged hypothesis. Even if we disregard the Darwinism, in any case the virtues here described cannot be moral because they are inherited traits which humans have no say in whether or not they inherit; the innate reproductive tools of humans can no more be regarded as morally virtuous than those of any other organisms. Are flowers the moral virtues of angiosperms? Krebs (2011) writes,

"First, in the end, people's "ought" judgments stem from the evolved mental mechanisms in their brains – their psychology"(p.257); this amounts to the view that we manifest belief in morality in order to improve our fitness, which reduces to morality being an illusion. Krebs (2011) writes,

> "In most of the situations people encounter in their lives, they can behave morally by behaving virtuously without really thinking much about it. When called upon to be altruistic, they can be altruistic; when called upon to be honest, they can be honest; when called upon to be fair, they can be fir, and so on. However, in some situations, such as when one virtue conflicts with another virtue, or when people must decide how to allocate their virtuous behaviors, more is needed. And this, I think, is where moral wisdom and overriding principles of morality enter the picture. If there is a cardinal virtue, I think it must lie in the knowledge necessary to resolve conflicts among moral prescriptions in principled ways, which brings us to the role of moral reasoning in defining a moral person"(p.251); "In conclusion, although humans undoubtedly are more morally wise than any other animal is, although people generally become increasingly wise as they develop, and although some people may well possess a great deal of moral wisdom, moral wisdom is neither necessary nor sufficient to render a person moral. In the end, people's morality is determined by what they do, and why – not by what they think, or what they know. To qualify as moral, a morally wise person must use his or her moral wisdom in moral ways to derive moral decisions that guide his or her behavior; and the evidence suggests that other, more emotional and heuristic mechanisms usually structure moral judgments and dispose people to behave in moral ways"(p.255).

These seem like incoherent remarks; since the emotions are innate, if they govern moral judgments than such judgments are not actually moral at all. The concept of moral wisdom is meaningless if innate emotions are the source of final resolution – Krebs (2011) does not adequately clarify if he means that we must act on emotion or if we should, but either way he does not offer a plausible moral epistemology. His notion of virtue has nothing to do with morality, since it has nothing to do with choice but only the necessary pursuit of Darwinian instincts.

Krebs (2011) repeatedly refers to and generally agrees with Miller (2007), who writes,

> "The hypothesis is that sexual selection shaped some of our distinctively human moral virtues as reliable fitness indicators. Precursors of many human virtues, such as empathy, fairness, and peacemaking, have been discovered in other great apes. My claim is not that sexual selection created our moral virtues from scratch in our species alone; rather, sexual selection amplified our standard social-primate virtues into uniquely elaborate human forms"(p.98).

Again, the category mistake, in suggesting that inherited innate behavioral dispositions can be thought of as moral, as if we had any choice in whether or not we can be human, or as if any species can decide

and (immediately) impact which heritable traits it can possibly manifest. Moral virtues cannot be products of sexual selection in an evolutionarily relevant sense; sexually selected traits are heritable traits that are not expressed upon the basis of decisions by their holders to manifest them (as are moral traits); natural or mechanical virtues are not moral virtues. To insist on calling natural virtues moral is to deny that morality exists, which apparently Darwinians are inclined to do, but which flatly contradicts experience and common sense (just like Darwin's theory itself). It amounts to metaphysical bluster from self-declared empiricists who do not have observational legs to stand on; hot air which pushes Darwinians away from being worthy of serious philosophical or scientific consideration. Miller (2007) writes,

> "I do not assume that the "virtues" historically identified by philosophers will equal the moral adaptations that can be identified in humans using standard adaptationist criteria of special design. Nor do I assume that the idealistic reasons for advocating certain virtues in normative ethics will have anything to do with the selection pressures that may have actually shaped those virtues phylogenetically. So why mention virtue ethics at all? First, virtue ethics offers a useful counterbalance to the traditional consequentialist (utilitarian, payoff-based) ethics that have influenced previous evolutionary theories of altruism. Also, as I will argue in a later section, virtue ethics shifts the level of analysis usefully from isolated altruistic acts to stable personality traits. Third, many virtue ethicists write carefully and insightfully about our emotional and cognitive responses to other people's virtues and vices, and their work can be construed as a useful first draft of the qualitative, descriptive moral moral psychology that may prove useful in understanding the "receiver psychology" of moral signalling. Finally, virtue ethics offers a new route whereby evolutionary theory can influence the the contemporary humanities and social sciences"(p.99).

Moral virtues are moral because of the process by which they are gained – willful character development, whereas adaptations cannot be moral also because of the process by which they are gained – genetic ancestry. Consequently moral virtues cannot possibly be analyzed or understood in terms of evolutionary selection pressures or adaptationism; whatever innate emotional or rational traits we are born into the world with as heritable traits they can not in themselves amount to moral virtues. The concept of a moral virtue depends on the state of character that allows them, which is a product of experience and education, yielding an ability to wield instinct and rationality appropriately in specific

scenarios. To suggest that moral virtues are genetic traits shaped by natural selection is the same as claiming that for knowing calculus or music composition. Our traits only provide the raw potential for moral virtues, or for math, or for music, and to argue otherwise is confused.

Miller (2007) writes,

> "Thus, my allusions to virtue ethics are intended in the spirit of maximizing the interdisciplinary relevance of adaptationist research"(p.99); "Thus, moral philosophers may balk at such flagrantly irrational conflations of moral goodness, social reputation, economic power, and sexual attractiveness. Indeed, they may be tempted to quote a cautionary verse from Ogden Nash: "It's always tempting to impute/Unlikely virtues to the cute." But moral philosophers did not drive the genetic evolution of human virtues; ordinary people did. If we are seeking a descriptive explanation for human morality, we should attend to the person-perception judgments that may have causally driven moral evolution in our species. Ultimately, it is an empirical question whether ordinary people judge these traits to have a moral or quasi-moral status when making social and sexual judgment about others"(p.109); "Normative ethics is supposed to help us distinguish right from wrong and good from evil. It tries to achieve a "reflective equilibrium" between (1) possible universal moral principles, (2) derived moral implications that would apply in particular situations, and (3) human moral intuitions that react to those principles, implications, and situations. However, if moral virtues arose through sexual selection, this reflective-equilibrium approach to normative ethics will probably continue to fail, as it has for 2,500 years..."(p.115-116).

It is no wonder that academia is so terribly canalized with remarks like these, appearing in a reputable journal, since simultaneously insulting those who are experts in the field one is trying to engage while demonstrating one's ignorance cannot be very conducive to interdisciplinary collaboration. Moral virtues cannot have evolved biologically any more than math or music; therefore ordinary people cannot have driven their evolution unless we are expanding the meaning of evolution to the non-biological; the aim of providing a descriptive explanation of human morality is itself incoherent since morality essentially includes prescriptive inquiry (in seeking to justify what ought to be done rather than what is done); Miller (2007) reveals his confusion in ridiculing an approach to normative ethics from a supposedly descriptive yet obviously metaphysical perspective. Miller (2007) writes,

> "In evolutionary terms, a moral person is simply one who pursues ultimate genetic self-interest through psychological adaptations that embody a genuine, proximate concern for others"(p.103); "...moral philosophers are trying to do ethical alchemy: trying to refine unconscious, domain-specific, person-perception adaptations (the base metal) into verbally

> articulated, domain-general, universal moral principles (the gold). That is likely to be an uphill battle. One problem is that we seem to have a dual-process system of moral judgment, as in so much of person perception and social attribution – our "hot" moral intuitions usually precede "cool" moral reasoning. These hot moral judgments are often driven by morally judgmental emotions that figure prominently in sexual relationships..."(p.116); "...if our person-perception system relies on social inference heuristics that are fast, frugal, and pragmatic, then our moral judgments will often violate procedural norms of rationality..."(p.116); "There in no reason to expect our moral intuitions to show consistent, logically defensible reactions to evolutionarily novel moral dilemmas..."(p.116); "Rational decision making depends upon subjective utility functions that must be supplied either by the genetic imitation of ancestral utilities (gut instinct), or the social imitation of peer utilities (learning, social norms)..."(p.116); "Basically, there is no compelling reason to think that our moral intuitions have any true normative credibility as guides to genuinely moral behavior"(p.117).

A moral person cannot be a necessarily selfish person, for if he/she is necessarily selfish the element of choice necessary for morality to exist is absent; unconscious adaptations cannot be the basis for moral principles unless we have decided to intentionally adopt Nietzsche's self-destructive moral epistemology; moral intuitions, which are a cognitive tool of the moral virtues, are not logical or defensible until one has developed moral virtue, for the whole point of moral virtue is to manifest states of character in which intuitions about right action are indeed appropriate; while some may believe that reason necessarily serves instinct there is no evidence to confirm that; finally, if our intuitions were at bottom instinctive, and moral agents were Darwinian agents, then to argue that our moral intuitions have no normative credibility is self-contradictory. If reproductive fitness is good, and instincts dominate our intuitions, then how can those intuitions ever lead to anything else besides "genuinely moral behavior"? Of course, on this perspective we can only ever act selfishly by necessity, and so morality is either an illusion or false, and Miller's entire discussion is futile.

Arnhart (1998) writes, "Darwinian explanations of the natural moral sense support an Aristotelian ethics of desire"(p.21). Of course, that Darwin was a moral sense theorist, or that Aristotle's is an ethics of desire, or that the two figures are intellectually compatible, are each quite dubious. Arnhart (1998) writes,

"The human ordering of natural desires over complete life identifies human morality as different

> from, even though rooted in, animal movement. What we desire is a life planned to achieve the fullest satisfaction of our desires and the fullest development of our capacities over a whole life, which is what Aristotle calls *eudaimonia*, "happiness or "flourishing"(p.24); "Looking at those animals closest to human beings in evolutionary history, we can see the desires and capacities from which morality emerged among our prehistoric human ancestors. Even apparently simple animals display the complex normative structure of animal movement in the interplay of knowing, desiring, and evaluating. Consider hermit crabs, for example"(p.24); "Despite the greater complexity of the human situation, hermit crabs are like human beings and other animals in that their behavior conforms to the same normative structure: they have natural desires, they have natural capacities for gathering information relevant to their desires, and they are naturally inclined to do whatever seems to satisfy their desires according to their evaluation of the information"(p.25).

Again, the categorical error in identifying instinctive behavioral traits with the good, as if hermit crabs or humans have any choice in the behavioral instincts that they enter into the world with. Natural desires are not moral desires since they have not been chosen but are inherited, and the term 'desire' in general must be employed carefully because while Arnhart here uses the term to refer to instincts many authors use the term to refer to ends which are decided upon as a result of conscious rational deliberation. In the context of Aristotelian moral theory especially, we need to clarify that there are no natural moral desires, if 'natural' is used to refer to instinctive while 'moral' is used to refer to chosen, with the meaning of 'desire' depending on those other usages. That is, natural desires are instinctive, while moral desires are rational; crabs have the former, we have both, but Arnhart is claiming that the former unto themselves amount to the latter, which is nonsensical if we are to take objective experience of free will seriously and employ the concept of morality responsibly. Arnhart (1998) writes,

> "Human beings generally desire to manage their appetites and passions by habituation. Parents and other adults form the character of the young by habituating them to resist momentary impulses to self-gratification for the sake of their long-range satisfaction. Even as adults, human beings must acquire and maintain those habits of good conduct that allow them to organize their often conflicting desires into some coherent pattern over a whole life"(p.35); "Human beings generally desire to manage their appetites and passions by deliberation. Unlike other animals, human adults have the rational capacity to deliberate about what a whole life well lived might be and then to organize their actions to conform to that deliberate conception of life. Such deliberation requires prudence or practical wisdom in judging what is best for particular people in particular circumstances"(p.35).

These remarks are offered under the headings "*Practical habituation*" and "*Practical reasoning*",

respectively, which are among Arnhart's "Twenty Natural Desires", about which he says, "I call these desires *natural* because they are so deeply rooted in human nature that they will manifest themselves in some manner across history in every human society"(p.29). They also include parental care, sex, war, friends, justice, beauty, speech, religion; a mix of what might typically be regarded as instinctive and rational desires. But Arnhart (1998) argues,

> "I will argue that these twenty natural desires are universally found in all human societies, that they have evolved by natural selection over four million years of human evolutionary history to become components of the species-specific nature of human beings, that they are based in the physiological mechanisms of the brain, and that they direct and limit the social variability of human beings as adapted to diverse ecological circumstances"(p.36).

Arnhart's (1998) intention to expand what we might normally regard as the instincts to include even practical reasoning (p.35) and intellectual understanding (p.36) seems implausible unless we can somehow believe that our rational products are somehow compelled or determined by instinctive predispositions. We might have instincts for reasoning or understanding, but it does not make sense to suggest that instinct can determine the outcomes of rational deliberation, because if it did it would not be truly rational deliberation but merely instinct-satisfaction calculating. Since it is not apparent that we are in any way incapable of freely deciding on our values and ends regardless of our instincts, there is no point in trying to characterize practical reason or intellectual exploration as instinctive, anymore than there would be to characterizing arithmetic and music as instinctive. There are general underlying innate tendencies, but they ultimately do not determine our math, or are musical compositions, or our moral choices. So from Arnhart (1998) we get a Humean survey of common desires, which supposedly are moral desires, but which are neither moral nor necessary and so are ultimately irrelevant. So what if humanity is innately predisposed to war, or sex, or families, or friendship, or even reasoning; none of us have to do these things if we do not want to, and to imply that our innate predispositions are good is either the naturalistic fallacy (it does not follow) or simply a false equivocation.

Arnhart (2008) writes,

> "Some biological traits are environmentally stable in that they are not much affected by environmental variations, but others are flexible in that they are much affected by environmental variations"(p.41); "Since the instinctive behavior of animals ranges from the extremely stable to the extremely flexible, it is a mistake to assume that all instinctive behavior is completely fixed, and all learned behavior is completely flexible"(p.41).

It might be tempting to think that we might somehow extract moral choice from environmentally flexible instincts, but even here we would be restricted to innately determined ends and at the whim of environmental conditions. Without a capacity to freely select our ends, regardless of innate dispositions and environmental conditions, and furthermore freedom to actually reject our innate traits and defy or change the environment, morality is meaningless and ethics is animal behavior. Arnhart (1998) writes, "To some extent, this satisfaction of natural desires is controlled by rigid instincts; but many animals, to varying degrees, satisfy their desires through social learning and flexible behavior. In the complexity of their learning and behavior, human beings differ in degree but not in kind from other animals"(p.66). But this flatly contradicts our observations and experience; our ability to act however we want, to control our emotions, override our instincts, freely decide upon ends and values, and even to modify our ecosystems, to be moral in a word, differentiates us from all other animals. Arnhart (1998) writes,

> "Aristotle agrees with Hume about the primacy of desire or passion in motivating human action. "Thought by itself moves nothing," Aristotle believes, although reason can guide the desires that do move us. Desire always moves us, but thought never moves us without a desire. Deliberate choice (*proairesis*), therefore, requires a conjunction of desire and reason into "desiring thought" or "thinking desire". Aristotle's insistence that only desire can motivate moral action was often cited with approval by moral-sense philosophers"(p.71-72).

Familiarity with Aristotle would strongly suggest that his and Hume's moral epistemologies are very different, that Aristotle defended virtue and character as products of rational self-discipline, and that sentiment/emotion/passion/appetite belong to a part of the soul which ought not govern our actions. By 'desire' Arnhart says that he has in mind naturally selected innate predispositions, which surely belong amongst the innate appetites that Hume believes in but which Aristotle argues against. Desires which are produced by rational deliberation, and which then motivate the will to act, represent the moral

epistemology that Arnhart argues against, but Aristotle for. Arnhart (1998) writes,

> "In defending this Aristotelian and Darwinian ethics as rooted in nature and prudence, I reject all forms of relativism and dogmatism"(p.17); "I also reject rationalist dogmatism, which asserts that ethics rests on the logical imperatives of pure reason, because while I recognize the importance of human reason in judging how best to satisfy human desires, I believe that the motivational foundation of ethics is not the logic of abstract reason but the satisfaction of natural desires"(p.17-18); "Yet desires are primary because satisfying them is the ultimate motivation to which reason is subordinated"(p.20).

This is Humean sentimentalism, not what most of us could regard as virtue ethics.

Arnhart (1998) writes, "Although human beings are the only moral beings in the strict sense, at least insofar as morality requires deliberation of the sort that is uniquely human, other animals do have many of the emotional dispositions and cognitive abilities that support human morality"(p.80); but the deliberation of the sort that Arnhart describes – reason as a pleasure calculator – is not uniquely human at all, for even simpler animals such as tropical fish can process information and draw inferences (Grosenick *et al*, 2007). The determined persistence of descriptive instinctivist 'moral' philosophers to deny the potential of human rationality for self-discipline is a wonder of modern literature; since it cannot be reconciled with objective experience or experimental evidence, what intellectually legitimate (non-aesthetic, apolitical) motivation might it possibly have? Arnhart (1998) writes,

> "Pure reason alone cannot create values because it cannot create feelings. Reason can, however, elicit, direct, and organize feelings to ensure their fullest satisfaction over a complete life. Indeed, what distinguishes human morality from the behavior of other animals is the cognitive capacity of human beings for reflecting on their present feelings in the light in the light of past and future expectations"(p.80-81); "The good for human beings is the satisfaction of their desires, doing what they feel like doing, doing what they want to do. This is difficult because to do what we want to do, we must know what we really want to do, and them we must know how to get what we want in particular circumstances. Since our natural desires are not reducible to one another, and since they often conflict, their satisfaction over a whole life requires good habits of choice and prudent judgment"(p.81).

But pure reason can create values, control and summon feelings, is likely impossible in animals, and can allow us to decide the good regardless of our natural desires. For any naturalist moral theorist to claim otherwise is to abandon naturalism as a moral method, for rational self-control is as common as

daylight. If it were impossible, monks and nuns would not exist, for example. Although the argument here is that Kantian ethics is too risky, given that the practicality of instinctive information may approach that of sensory, there is no basis in biology for rejecting the *possibility* of pure practical reason if we should decide that pure moral rationalism is most practical after all (perhaps in certain arenas like politics), and to pursue development in that direction. Arnhart (1998) writes,

> "In this view of morality, ethical naturalists make no mistake in moving from *is* to *ought*..."(p.81); "Moore's worry about the "naturalistic fallacy" presumes Kant's separation between factual judgments of what *is* the case and normative judgments of what *ought* to be the case. But this verbal distinction cannot be maintained in moral practice, because every normative judgment presupposes a factual judgment about the satisfaction of human desires as a *reason* for the normative judgment. If "we ought to be just" is an example of a normative judgment, then we could ask, "Why ought we to be just?" If the answer is "because it is right for us to be just," this would still beg the question of why this is right for us. Eventually we must answer that "we ought to be just because justice satisfies some of our deepest desires and thus contributes to our happiness." A Kantian separation between *is* and *ought* would render all normative judgments impotent, because we would have no factual reasons to obey them"(p.82-83).

This view can only be interpreted as a coherent statement if we keep in mind that Arnhart thinks reason alone cannot produce values or motivate action, which is a speculative idea that defies common sense. If their are only instinctive desires, then somehow normative actions must reduce to them, which is Arnhart's idea, but if we accept common sense and admit rational motivation and self-discipline then we are faced with our general problem here of inferring what ought to be done about the facts in a sophisticated way. We are helped by a decision to flourish, which may have both rational and instinctive justification; given that basic normative premise we can infer appropriate oughts about the ises but without it we are lost. Given a will to flourish, we ought to pursue rational character as our moral epistemology since it gives us our best chance of success at flourishing in whatever way we decide (above and beyond mere survival); but as these pages hopefully demonstrate that inference is no simple ought from is.

Given Arnhart's (1998) assertion that we necessarily pursue naturally selected desires or

instincts, rather than rationally determined desires or self-discipline, which restricts the notion of human flourishing to Darwinian ideals of reproductive fitness and contradicts common sense experience of human potential, his claims of compatibility with Aristotle are dubious at best. That only matters to us here because Aristotle's moral theory stands up well in the context of evolution. Arnhart (1998) writes, "Thus, for Aristotle, being morally responsible is not being free of one's natural desires. Rather, to be responsible one must organize and manage one's desires through habituation and reflection to conform to some conception of a whole life well lived"(p.84). Unto itself this statement is benign but when we recall that by "managing" Arnhart means serving, it amounts to claiming that Aristotle argues that human potential amounts to appetites dominating rationality, which is patently false both as an interpretation and as a naturalist claim. Arnhart (1998) writes,

> "By contrast, Aristotle believed that since the final end of ethics is happiness understood as the fullest satisfaction of natural human desires, living virtuously expresses one's natural self-love"(p.78); "Recent advances in evolutionary theories of human nature have given more support to the conclusion that natural ethics as founded on natural desires can be explained ultimately as a product of natural selection"(p.20-21).

Familiarity with the basics of Aristotle's ethics involves recognizing that Aristotle's theory of flourishing has nothing to do with the necessary pursuit of reproductive fitness, and anyone familiar with the basics of human potential can also notice that we are not all bound to Darwinian pursuits. Arnhart (1998) writes,

> "Thus, Aristotle recognizes, but does not elaborate, the psychological basis of ethics in the moral passions that is elaborated by David Hume and other philosophers like Adam Smith who argued for the existence of a moral sense"(p.72); "For human beings, Aristotle insisted, "although there is something that is just by nature, all is variable"(NE 1134b29-30). The natural desires of human beings constitute a universal norm for morality and politics, but there are no universal rules for what should be done in particular circumstances"(p.47); "This view of ethics as arising from reason and desire – ethics as rooted in natural human desires, as requiring habits of right desire, and as guided by prudential reasoning in judging the contingencies of action – was originally developed by Aristotle in his ethical and biological writings"(p.19); "Furthermore, what is desirable differs for each kind of animal, because each species has its own natural range of desires. Consequently, the good is not the same for all, because what is desirable varies according to the nature of each species. Like other animals, we human beings move to satisfy our desires in the light of our information about the world. We have a natural

> range of desires that we share as members of the human species and that distinguishes us from other animals"(p.18); "The good is the desirable. Consequently, the human good is both variable and universal. The human good is variable insofar as what is desirable for human beings varies according to individual temperament, individual history, social custom, and particular circumstances. The human good is universal insofar as there are universal human desires rooted in human nature. There are at least twenty human desires that are universal because they are part of the biological nature of human beings as manifested in all societies throughout human history"(p.17).

In terms of Aristotle scholarship these are not credible claims, nor are they in terms of a method of ethical naturalism, for they simply contradict Aristotle's arguments and common sense. The main point for us is that since we are not bound to any set of desires but are free to decide what to pursue, innate desires are relevant only in perhaps being worthy of investigating as part of our information gathering process, along with other instinctive and sensory data and the deliverances of reason and experience, all towards forming sound intuitive judgments about our moral scenarios as deliverances of the hopefully practical character traits that we have developed over our lives. That is the approach most obviously implied by the facts of evolution and human potential.

> Casebeer (2003) also offers a Darwinian virtue theory; he writes,
>
> "The resources I have in mind are an appropriately naturalized Aristotelian virtue theory and a contemporary biologically oriented notion of function. Drawing on this strand of the Greek tradition and upon modern philosophy of biology will not only enable us to argue against Mackie's contentions about relativity and queerness; it will also shed light on why a critic of moral realism might be convinced by these two arguments to begin with. In a nutshell: Reducing moral terms to functional terms, and treating the objects to which those terms refer as a contemporarily informed Aristotle would, we can establish a case for the objectivity of moral value *and* simultaneously understand why Mackie might find the case against objectivity initially persuasive"(p.37-38); "An evolutionary etiological account, on the other hand, can both explain why an item has the function that it does, and can, moreover, define what it means for an item to be functioning well in a manner that does not rely purely on capacity. It thus has broader explanatory ambitions, and because of this, it will be more useful when giving a naturalistic spin to Aristotelian moral functions"(p.51); "The emphasis on proper function is rooted in an Aristotelian account of the nature of humanity and requires the defense of at least a "soft essentialism," which I offer here by adverting to the findings of the neo-Darwinian synthesis"(p.7).

So like Arnhart (1998), Casebeer (2003) defines humanity in terms of Darwinian pursuits which are necessarily instinctive, so that they wind up offering very similar arguments. Whereas Arnhart (1998)

bases his account on the essential and naturally selected desires of humanity, and rejects the possibility of rational control and moral freedom of choice, yielding a characterization of human ethics as Darwinian survival of the fittest, Casebeer (2003) bases his account on functions, which are also naturally selected, and he also rejects the possibility of rational control, and so also equates ethics with the survival of the fittest. Both contend that their accounts cohere with Aristotle's ethical theory but it seems fair to suggest that most Aristotelian ethicists would reject a reduction of ethics to Darwinian survival of the fittest, simply because Aristotle delivers extensive argumentation regarding the human potential for rational self-discipline. To live a rational life, after all, is Aristotle's ideal human accomplishment, which is surely anathema to suggestions that we either must or should pursue the ends delivered by heritable instinctive traits. Casebeer (2003) writes,

> "...our story about function ought to be a scientific story, one that relies on substantive biological theories so as to fix functions. It should have explanatory power and do genuine explanatory work in our biological *cum* moral theories"(p.50); "The upshot is that moral facts are functional facts, and functional facts are not queer; we can understand them perfectly well within a materialist ontological framework"(p.53-54); "'Healthy' is a property cluster; so, presumably, are 'wealthy' and (crucially for Aristotle) 'wise'. This conception of properties is, again, thoroughly naturalistic...and involves no radical ontological maneuvers. It coheres well with the functional nature of virtues"(p.54); "Thus, we can argue that the homeostatic property cluster "healthy" consists in organisms that implement manifold functions successfully"(p.54); "The "fuzzy" multiple realizability of functional claims follows from the fact that the properties picked out by them are homeostatic property clusters – the standards for "health" may vary across organisms, but (contra Mackie) that does not mean that the standards are subjective or that talk about them is laden with error. Value properties are not queer in either the epistemological sense or the metaphysical sense. They are scientifically tractable in the same way that biological notions of function are, and to gain moral knowledge we need posit no "special sense" above and beyond the traditional tools and methods of scientific naturalism"(p.55).

Again like Arnhart (1998), if we are to survey human behavior and identify the things that we most regularly desire in order to achieve biological health (meaning Darwinian fitness), we would end up with a list of commonalities as argued by Hume, which we supposedly must adhere to if reason serves passion. While we might agree that biological health and Darwinian success are good things that we ought to pursue, these theorists give us no choice in the matter; natural virtues that all organisms have

to allow them a chance of biological success are equated with moral virtues even though we need not put any effort into developing our innate instinctive desires or into exercising rational self-discipline in forming ideals states of character. Given the automaticity of Darwinian virtue, it cannot amount to a moral theory at all, but just a description of the particular attributes which allow our or any other species to biologically succeed. Aristotle's rational sense of 'flourishing' might include reproductive success but only as a desire which has been deliberately chosen for pursuit, not as a necessary goal of instinct that we are incapable of overriding.

Casebeer (2003) writes,

> "Such a story has the compelling consequence of enabling us to classify moral agents on the basis of a more comprehensive schema; no longer is morality merely the domain of human beings"(p.75); "Creatures that are hard-wired in this sense, that possess some simple sort of cognitive system (broadly construed) but that nonetheless have an extremely limited developmental profile, can be called "minimal moral agents." These minimal moral agents do adapt to environments, but only over evolutionary time. They function more or less well depending on their species' particular history and can take no radically positive individual cognitive action to improve the fit between themselves and their environment. Creatures like this can flourish (or not); moral terms have extensions for them (Lo! A *flourishing* virus!); however, it does not matter, as they have no hope of coming to know this and it makes no difference for the way their lives go. Examples of minimal moral agents include plants, viruses, bacteria, and some insects. These creatures can be objectively evaluated according to their flourishing, but they do not engage in moral judgment – remember that the requirement for a creature to be able to judge is that it be able to learn within its lifetime"(p.92); "A learning system that is functioning well and is highly adapted makes good judgments.... One that is not makes poor judgments"(p.89).

The category mistake appears here again: morally relevant 'good' must be a product of free-willed choice or else the organism has no option but to pursue it and cannot be praised or blamed. We might believe that sunrises are good but not morally so; likewise for the innate traits of organisms. Organisms which do not even think because they have no nervous system at all cannot morally choose anything and cannot be regarded as moral agents; to use the term 'moral' in reference to them is either a sign of confusion regarding what ethics concerns, or a misguided attempt to deny that ethics exists by re-framing it as a matter of descriptive biology. But even abilities to think and learn will still not yield

morality unless genuine rational choice is possible; casting the necessary pursuit of instinctive ends as moral is an only slightly less obvious attempt to deny the existence of common sense experience of rational self-discipline. Only humans are moral until we prove that different animals can incorporate instinctive data like sensory in rationally deciding what to do. Any attempt to suggest otherwise is to contradict experience and deny that ethics exists. Casebeer (2003) writes,

> "Might it be the case that some of our actions have no direct impact on lower-level functional concerns such that they are free of moral opprobrium? In other words, what is the role of a "self-given" function in the scheme I have sketched so far? I think there is room for an existential ethic within this theory. Some things we do and projects we have do not directly impact low-level function concerns. Rather, they are orthogonal to those concerns, not assisting us directly in fulfilling them but not harming their achievement. In these cases, we have libertarian-style freedom to define functions for ourselves. In view of the relative prosperity of many "First World" countries, self-given "existential" functions abound. And, as E.O. Wilson points out in *Sociobiology*, we may succeed in many instances in producing a state of "ecological release" wherein there are only the weakest of selection pressures. Note that in a state of *total* ecological release, after an appropriate period of time, beings in such an environment would *cease* to have functions. All that would be left in that case, perhaps, is an existential ethic. But to be in a state of total ecological release would involve having every functional demand of every organism met indefinitely. Thus, this amounts to saying "In a utopia, you could do whatever you care." This seems like a truism, and, given the variability of our environments, I doubt that we could ever achieve such a total state of release in any case"(p.64); "Using the concept of homeostatic property clusters enables us to rebut Mackie's claims of relativity and queerness and yet still understand how someone might reach such a view. It has the advantage of leveraging our evolved social natures and the social character of the current selection environment so as to explain some of our deeply held moral beliefs"(p.71).

For a fleeting moment in his argument, Casebeer (2003) almost produces an Aristotelian argument, to the effect that if we can give to ourselves our functions (in the case that natural selection is not a factor), we might be able to really decide for ourselves what to do (which is actually our situation, after all). But Casebeer (2003) reveals his faith in Darwinian metaphysics by dismissing the possibility that natural selection might ever relent, or that our moral beliefs are anything other than adaptations unto themselves. Hence we left with characterizations of ethics, humanity, and evolution that are remote from experience or evidence, unrecognizable at all in reality, and which amount to metaphysical speculation. Casebeer (2003) writes,

> "Having briefly discussed and rebutted Kitcher's arguments, I still have to acknowledge the kernel of truth that lies at the heart of the critic's objections: If we accept population thinking, we have reason to think there might be some variation in proper functioning across humans. But in response, let me point out that such variability will not be so wide-spread as to preclude general law-like conclusions regarding what will enable functionality for human beings..."(p.153).

If there any laws about human functioning they are rationally given not empirically, because humans are free to do whatever they want and in employing their rationality they often recognize rational necessities for a happy existence. Why pretend that humanity is no different than the instinctive species of animals, when clearly we are? How can metaphysical commitments be maintained when they flatly contradict objective evidence?

Casebeer (2003) briefly discusses the essentialism that is associated with virtue ethics:

> "Even if a modern-history theory of function can help us naturalize morality, a biologically sophisticated critic might argue that any moral theory we get out of this picture will be so threadbare as to be useless. In part, the critic says, this is because the neo-Darwinian synthesis demonstrates that particular species simply have no essence. In addition to being contrary to outmoded Aristotelian assumptions about a species being characterized by a particular function, this also makes it difficult to formulate any useful general statements about moral functionality"(p.150).

Similarly, James (2011) writes,

> "What makes a good (human) life *good*?"(p.194); "The method Aristotle uses to identify our function involves searching for that capacity that distinguishes us from other creatures. In other words, our ability to reason and to follow reason"(p.195).

Kitcher (1999) writes,

> "But the main trouble is not that evolutionary biology might prove a rival in the business of uncovering essences, but rather that it undercuts the idea of seeking for essences at all"(p.76); "Hence the project becomes one of discovering how certain biological or psychological properties of human beings are specially privileged, and, as the foregoing sections attempt to show, this cannot be done without introducing just the kinds of value considerations that were supposed to be taboo"(p.80).

The argument presented here is not a functionalist argument for the specialness of human rationality as some sort of defining essential trait that we must employ in order to fulfill our potential (or complete the Form that we represent). Aristotle did not have evolution to worry about, and his methods need not

be ours; here the argument is practical – given an intention to flourish, rational character is the most practical means to that end, for that is what can allow us to make free-willed rational decisions on the basis of all the information we can gather, including instinctive. There is no need to here engage in an argument about essential human traits, or in a more exhaustive account of flourishing, since the mere will to flourish will suffice for the justification of a suitable moral epistemology. More specific decisions regarding what is good in life and what ought to be pursued are beyond our scope here, and a justification for flourishing is here taken for granted as being a prerequisite for morality. There can be no right and wrong without that fundamental desire as a premise; all action is end-oriented so there must be an end in mind.

In any case Casebeer (2003) is not a rationalist: he writes,

> "Base emotions such as pleasure and pain, and higher-order emotions such as satisfaction, serve to highlight value, where value is cashed out in terms of functionality; they also serve to motivate organisms to act on such identifications, either by filtering out certain options at the beginning or by otherwise weighting cognitive decision-making processes"(p.59).

That renders Casebeer's (2003) epistemology Humean rather than Aristotelian (which it must be in order to reconcile instinctive 'moral' function), and Casebeer (2003) also works in arguments from cognitive science: he writes,

> "A purely biological notion of judgment is possible; on this view, judgment is the cognitive capacity to skillfully cope with the the demands of the environment"(p.74); "Rather, the ability to engage in cognitive modeling is what separates standard and robust moral agents from minimal moral agents"(p.98); "Teaching a neural network involves adjusting the weight or strength of the connections between nodes such that collectively they come to embody the desired cognitive function – e.g., so that the inputs are transformed into the desired outputs. The appropriately trained network thus comes to instantiate know-how. In much the same way, a substantial portion of moral cognition is know-how: a morally competent actor has come to embody a set of traits and skills that allow that actor to navigate successfully in the community so as to function well"(p.104); "Therefore, moral concepts of the type detailed in figure 5.1 probably consist in the activation patterns of groups of neurons in prefrontal cortex and in associative cortex"(p.106); "When Golden Age neuroscience has arrived, we might be able to answer this question with more confidence and assess the modifications we might have to make to traditional canons of moral reasoning so as to naturalize moral cognition and make it consistent with the neurobiological facts on the ground"(p.118); "Morality, then, consists in large part not of mastery of a set propositions but of mastery of a set of skills"(p.130).

All of these statements, and indeed cognitive science and neurobiology in general, are of an equivalent conceptual relevance to ethics as Hume's assertions of common human desires. Of course we know that the brain must be active in making decisions and we will all be much better informed as the research advances regarding what exactly the brain does when we deliberate. But unless there is an implication that we are somehow restricted to emotional/instinctive motives, that we cannot freely decide what to do, that we are determined after all and that free will really is an illusion, such research will be of not much help in deciding what to do, any more than knowing how any of our other bodily organs function will be of much help. It is that most powerful product of the human mind – rationality – which we must employ, and in its workings the actions of synapses do not enter our consciousness and so are not relevant in our deliberations. Whatever synaptic networks and weighting we develop over time, other than those that we are born with, must be the product of top-down willful behavior, akin to the development of muscularity through weight training. Associating the right and the good in any way with the mechanisms of the human brain is like arguing that having developed muscles must cause one to work out, or that having a musically or mathematically trained brain causes those pursuits. It is the category mistake again, and the attempt to make ethics disappear, again. Churchland (1998) writes,

> "Being skills, such virtues are inevitably acquired rather slowly, as anyone who has raised children will be familiar. Nor need their continued development ever cease, at least in individuals with the continued opportunities and the intelligence necessary to refine them. The acquired structures within one's neuronal activation spaces – both perceptual and motor – can continue to be sculpted by ongoing experience and can thus pursue an ever deeper insight into, and an effectively controlling grasp of, one's enclosing social reality"(p.89); "This view of the assembled moral virtues as a slowly-acquired network of skills also contains an implicit critique of a popular piece of romantic nonsense, namely, the idea of the "sudden convert" to morality, as typified by the "tearful face of the repentant sinner" and the post-baptismal "born-again" charismatic Christian. Moral character is not something – is not *remotely* something – that can be acquired in a day by an Act of Will or by a single Major Insight"(p.89).

While cognitive science is interesting it can only be of derivative relevance, in helping to demonstrate the physical processes involved with developing habits of thought. Ultimately, the decision to form

moral habits or character has nothing to do with such science, anymore than decisions to become musicians or mathematicians could be. Casebeer (2003) commits the error in believing that; "...the teleological aspects of Aristotle are canalized and given limits by a biological analysis of function..."(p.33). Moral teleology has to do with rationally deciding what ends to pursue, and/or with fulfilling our human potential, whatever we decide that it ought to be, and cannot be meaningfully canalized by biological function unless we mean by that the limitations of human potential. As rational, humans have no set functions, not even to flourish or reproduce or persist one day to the next. There is nothing in biology to direct anyone towards a mastery of musical composition, or calculus, or morality. Only once such goals are freely decided upon do the biological limitations of our species amount to canals, but they so far appear to be broad and open-ended.

Lennox (1999) writes,

> "Natural capacities come to be prior to their active realization, whereas states come to be as a result of training. You can throw a rock up a thousand times, he reminds us, but you will never habituate an 'upward' power to it. And because virtues dispose us to feel appropriately (e.g., to be angry to the appropriate extent, at the appropriate times, toward the appropriate people, etc.), they must *underlie* our feelings, just as they do our actions, and so must not be identified with them"(p.13-14); "Virtues, then, are states rather than natural capacities"(p.14); "Virtue, or excellence, of character in the human realm is a state expressed in a *reasoned choice*, and Aristotle is as clear as he can be that other animals have no such state. Nor do they have, as children do, the natural capacity to *acquire* the ability to choose according to 'right reason'. And the intellectual virtues relevant to virtuous activity depend on a conception of the good life, which, again, Aristotle clearly thinks is lacking in these other animals"(p.24).

However, we need not rely on Aristotle's treatises or on Aristotle scholars to learn this, for elementary reflection on the concept of morality should reveal that it presumes rational choice, of actions and of ends. If we have to do the things that we do then there is no role for the concepts of right and wrong, praise and blame, or good and evil. Only when we have to decide for ourselves what must be done can our actions be morally assessed. Since that must be the case according to the mere concepts of ethics, and since according to experience there is no reason to believe that we are not capable of moral decision making, and since decision making itself is no more amenable to the methods of empiricism

than logic or mathematics or music, a thoroughly naturalist approach to ethics is misguided. Biology can inform us what our instincts are like, along with the rest of our bodies, and what our scenarios are like, including immediate particularities and the broader backdrop of the human condition, as can physics, chemistry, astronomy, anthropology, and so on, but none of that information can force us into deciding what to do about any of it. All we can do is take it all into consideration and try to figure out an appropriate course of action, through the exercise of reason, by drawing inferences. This seems perfectly obvious, and people who have never studied ethics or philosophy and have not been caught up with taking sides and producing an argument as a professional requirement would probably wonder what such contentious claims and discussions really amount to. Casebeer (2003) writes,

> "...we should hold our methodological naturalism close so as to see if normativity can be derived without postulating "spooky" non-natural entities (gods, a noumenal realm, and so on). Of course I will avail myself of the ontologies postulated by the natural sciences during the course of this inquiry, but this will be done with requisite sensitivity to moral experience, and with the fallibilistic view that the ontologies of our current sciences might be wrong, so, although the project will presuppose ontological naturalism to a certain extent, naturalist methodologies are still the primary constraint"(p.9).

Are these not contradictory remarks? The ontologies postulated by the sciences are speculative hypothetical generalizations, often no less spooky for being associated with science than the speculations of religion and philosophy. If naturalist ethics depends on metaphysical doctrines like Darwin's than naturalist ethics is spooky. Casebeer (2003) writes,

> "For example, we can't infer from the fact that there is inequality that inequality is good. The question is: Will the norm that we use to criticize inequality originate in nature, or will it originate and be justified supernaturally"(p.17)?

On Darwinian virtue theory, the norm is justified supernaturally, in its faith in materialist determinism and in its rejections of free will and common sense self-discipline, while on old-fashioned rational character virtue theory the norm is justified in nature, insofar as the commonalities of objective human rational experience are regarded as natural. A supposedly naturalist moral theory based on a supposedly scientific ontology turns out to be much more speculative and less empirical than a supposedly

supernatural moral theory based on a supposedly metaphysical ontology. Casebeer (2003) writes,

> "Nonetheless, anyone who would spend time thinking about the connections between ethics and the sciences would do well to read Spencer. He serves as a useful inoculation against several tendencies, including our unabashed eagerness to read back into evolution particular ethical views and our lack of humility with regard to the latest science of the day. Caution and fallibilism should be the evolutionary ethicist's watchwords"(p.67).

If Casebeer (2003) or evo-ethicists generally were to take that advice seriously, they might be highly enthused and most agreeable with the approach taken here in reassessing the demonstrable evidence regarding evolution, and restricting our ethical naturalism to a moral methodology of gathering information and employing our rationality as seems most practical.

Russell (1910/1966) writes,

> "Thus the fact that one man's desire may be another man's aversion proves that 'good', in the sense relevant to ethics, does not mean the same as 'desired', since everything is in itself either good or not good, and cannot be at once good for me and bad for you"(II, 6); "We cannot, then, infer any results as to what is good or bad from a study of the things that exist. This conclusion needs chiefly, at the present time, to be applied against evolutionary ethics. The phrase "survival of the fittest" seems to have given rise to the belief that those who survive are the fittest in some ethical sense, and that the course of evolution gives evidence that the later type is better than the earlier. On this basis, a worship of force is easily set up, and the mitigation of struggle by civilization comes to be worthless. Such a view is wholly destitute of logical foundation. The course of nature, as we have seen, is irrelevant in deciding as to what is good or bad"(II, 11); "It is doubtless foolish, in practice, to fret over the inevitable; but it is false, in theory, to let the actual world dictate our standard of good and evil"(II, 11).

These remarks are generally agreeable with the argument presented here, but not exactly. The desired might be the good, if we have deliberately discerned upon rational reflection that something indeed ought to be pursued, and that good might even be brought to our attention by our instinctive, unreflective desires, but we can not regard the instinctively desired as good until we have rationally assented to the instinctive information. And, the good might indeed be at least partly inferred from a study of what exists, so long as we do not mean to suggest that what we mean by 'inference' is anything less sophisticated than a complex philosophical argument and/or an experienced, wise moral intuition. At some point we have to allow that we act on the basis of information about the world, after all, and

that if there was no world to act in there would be no actions needing to be decided upon. Since there is a world, in which we must act, we have to infer what to do on the basis of factual information regarding what exists, assuming we intend to persist in this world. Existence need not and does not necessarily imply a will to flourish; the decision to not merely carry on but to make the most of our lives is a value call that we all must make, and that we will not flourish or even persist unless we carefully act accordingly is itself a natural fact that must inform our decisions. Without that fundamental decision in place ethics would seem a pointless affair, for without an embrace of life in this world how can acting well within it be of concern? However, given a will to flourish rather than self-destruct, a determination to direct ourselves rather than a fatalistic being directed, which is admittedly (for humans) a normative judgment that may not necessarily be implied by the facts of existence, then we can begin to carefully infer some oughts from both the ises and that fundamental ought. The argument here is that rational character is good, in being most practical compared to other moral epistemologies, largely on the basis of the facts of evolution and biology. Therefore a claim here is that the course of nature is not irrelevant as suggested by Russell; evolution reveals much about our precarious status in the world, and biology about our delicate physicality, and hence the necessity of employing the most practical moral method, and the natural history of our instincts informs of their potential practicality when acted upon wisely. In agreement with Russell (1910/1966), the arguments here do not amount to letting the actual world dictate any broader standards of good and evil; our focus is on discerning a practical method of moral epistemology.

## Summary

There are many moral theorists who conclude that evolution has implications for ethical theory; with regard to moral epistemology more specifically, evolution theory is a factor for several in deciding which of our faculties of passion/emotion/instinct/sentiment or reason/rationality is or ought to be most influential in discerning right action. Ruse (2012) claims that orthodox Darwinism implies descriptive instinctivism, Singer (1981/2011) that Darwinism along with group selection theory implies descriptive rationalism, while Kitcher (2011) claims that Darwinism along with group selection theory implies prescriptive instinctivism. Upon analysis, each of those three positions is found to be significantly flawed on both empirical and practical grounds. The remaining of the four general categories of moral epistemology is prescriptive rationalism, and it does not encounter or involve the empirical and practical difficulties of the other three general epistemological possibilities (at least, as those are described and defended by Ruse, Singer, and Kitcher). By elimination, a moral epistemology involving the development of self-discipline and character, in which both our capacity for reasoning and our inherited instinctive traits are allowed positive roles, is the moral epistemology that is most implied and most practical in the context of evolution. While the concern here is mainly with moral epistemology, there do also appear to be some normative implications for simply what we regard as good, although we must be careful and perhaps sceptical so as to avoid drawing unnecessary ethical inferences from the apparent facts of evolutionary and ecological biology. We know from evolution that our species is vulnerable and that our time is limited; we know that we must persist or perish as just one element within a broader ecosystem; we know that our instincts and rationality are evolved traits that have served us well in ascending to our current state as the dominant species on this planet. From these and other biological facts we can justifiably attempt to modify our behavior and adjust our priorities, in comparison to what we might decide to be good in the absence of such demonstrable scientific information. What we do not know is how exactly evolution happens; while Darwinism is a great

scientific theory which has helped to facilitate the growth of the biological sciences, it is metaphysically laden and contradicts a growing body of scientific evidence. An alternative theory of organic selection, while only an hypothesis, appears to be more validly inferred from the reproducible evidence currently available. As theories, rather than facts, either hypothesis about evolution ought not enter into our moral deliberations, unless we plan to act on the basis of speculation, and ought not influence our decisions about moral epistemology either. Restricting ourselves to the facts of biology yields an epistemology of character development as the most practical method for learning how to behave and flourish in this world. If we are to incorporate the metaphysics of evolutionary theory into our world-views, we might find reason for optimism and excitement in the apparently absolute freedom suggested by organic selection. On the other hand, that freedom can not be regarded as capable of broadening itself beyond the ecological limitations of our planet, or the individual limitations of our mode of cognition. The moral counterpart of freedom is responsibility; in our case evolution implies a responsibility to develop our potential for disciplined decision making in constructing appropriate relations amongst one another and with nature.

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