

DARWIN ON MORAL INTELLIGENCE

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There is grandeur in this view of life, with its several powers. Whilst this planet has gone cycling on according to the fixed laws of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being evolved.

Charles Darwin. *The Origin of Species* Washington Square Press, NYC 1970, 470

Moral concepts are embodied in and partially constitutive of forms of social life.

Alasdair MacIntyre. *A Short History of Ethics*. Collier, NY. 1966, p. 1.

Over 130 years ago Darwin published a masterful study of ethics, *The Descent of Man*.¹ Its core insight is reflected in Alasdair MacIntyre's view that ethics is embedded in our social life. In this essay I would like to explain. As a scientist Darwin felt compelled to apply evolutionary theory to ethics: "My sole excuse for touching on ...this great question is the impossibility of passing it over; and because, as far as I know, no one has approached it exclusively from the side of natural history" (DM, 70).

Philosophers, unfortunately, have only paid "scant attention" to Darwin's view of life; and much of it mediated by the ideological ruminations of Darwinians like Thomas Huxley and Herbert Spencer, and they still seem to overreact to Darwinian naturalism in ethics.² Perhaps this explains "astonishing circumstance" noted by the great entomologist, Edward O. Wilson, namely, "that the study of ethics has advanced so little since the nineteenth century."³

To help spur that desired advance I will try to unearth Darwin's original, but oft misinterpreted, view of moral theory in *The Descent of Man*. There he made two key, related claims: that "the moral sense" evolved from a combination of "the social instincts" in humans as in some animals, and that its emergence required a variety of intellectual or "mental powers." The integration of social instincts and intellectual powers imply an interesting concept of moral intelligence.

Darwin's evolutionary view of ethics "from the side of natural history" resonated MacIntyre's insight into its connections with social life. In *The Descent of Man*, this essay will show, Darwin argued that "the moral sense" evolved from a combination of "the social instincts" and well developed "mental powers." Philosophers need pay more attention to Darwin's views, and in response to "redesign morality" along naturalistic lines (Dennett, 494; Ruse, 1986: 275).⁴ The result, I will suggest, can be a rich concept of moral intelligence.

"No tribe" Darwin writes, "could hold together if murder, robbery, treachery, &c., were common; consequently such crimes within the limits of the same tribe are branded 'with everlasting infamy'; but excite no such sentiment beyond these limits." [DM 93]
 Man "is a social animal," DM84 in whom "the more enduring social instincts conquer other less persistent instincts."

The Social Instincts

Darwin clearly stated his central hypothesis: "The moral sense is aboriginally derived from the social instincts, for both relate exclusively to the community" (DM 96-7). "No organism exists alone", as John Dewey said⁵.

Darwin cited hard instinctual behaviour such as some birds' instinct to migrate and build nests, (*Origin*, 221f; *Descent*, 79, 83). But one often could not determine from which of several sources the social instincts originated: natural selection, other instincts like sympathy, reason, imitateness, or "long-continued habit" (82).

Indeed Darwin's "sole" intention in the *Descent of Man* was after all "to show that there is no fundamental difference between man and the higher animals in their mental faculties."⁶ Both the social instincts and human mental powers were shared, and evolved from, that of other animals, especially vertebrate primates like the chimpanzee and gorilla. Many animals, he observed, demonstrate social behaviours such as sympathy and mutual defence of the community (DM 83). It is only by observing overt behaviour that we know that any individual animal or humans is intelligent or thoughtful. Inferences from reflective behaviour to mental thought processes in animals are based on the same kind of evidence on which we base our inferences about thinking in humans. He cited the fact that many animals are unhappy if long separated from their fellows; and "so it is with ourselves" (DM ?). Migratory birds, for example, are miserable if not allowed to migrate. Their migratory drive conquers even the maternal instinct (DM 79, 83).

Animals "manifestly" feel pleasure and pain, show "most of the more complex emotions", mutual affection, foresight, and even "a sense of beauty." (DM 63). "We tend to underrate the mental power of the higher animals", he warned (DM 46?). All of our mental powers, he noted, "may be found" in incipient and significantly developed forms in the lower animals. Powers such as "self-consciousness, abstraction, language." They are seen to "pause, deliberate and resolve." (DM 46) All animals act intelligently, and many conduct themselves with apparent reflection, recall, imagination, deliberation, and foresight.⁷ Animals, for example, utter sounds that are "curiously the same" as human speech and language. They also share "homologous" vocal and neural structures (DM 56f). These abilities, he concluded, were the product of "highly advanced intellectual faculties" (DM 103).

Animals have been seen to perform various "services" for each other: warning others of danger, defending each other by fighting off predators, grooming, scratching itches, searching for parasites (DM 76f). "It is certain that associated animals have a feeling of love for each other"; for a variety of animals, he adds, demonstrate affection for each other: dogs, starlings, monkeys, horses, sheep (DM 76, 74f). Various animals have been seen to sympathize with other animal's distress: pelicans feeding an old blind pelican, giraffes protecting lame giraffes, domestic dogs licking the house cat when he was sick (DM 77f). And animals, like humans, he noted, abandon the aged, injured and feeble to their fates.

In defence of his social instincts hypothesis Darwin noted the deep human "dislike of solitude and his wish for society beyond that of his own family", noting that solitary confinement is "one of the severest punishments" possible for humans (DM ?, 84, 81f).

An interesting hypothetical corollary of this view is that all human actions are either overt or covert forms of social interaction; but there is not space to pursue this insight here. I think it underlies G. H. Mead's social psychology. See his *Mind, Self and Society*.

But an individual may seek solitude as a temporary escape from intense social pressures, in order to 'recharge' their psychological and social batteries. Our social tendency, he wrote, is "probably an extension of the parental or filial affection." (DM ?). Since for several years after birth humans cannot survive on their own, the tendency to association is not only learned early--this would leave too much to chance. Instead, it is, as Darwin held, likely an innate inherited behaviour pattern, characteristic of vertebrate animal species like humans and chimpanzees, and some insects. In addition the individuality of the genes, is expressed in the individuality of the individual animal bearing those genes; and the individual is the transmitter and reproducer of those genes. The survival of the individual member of the species, advances and reinforces the survival of the whole species.⁸

In addition, living in small communities is the norm at least for primates like our near relatives, the chimpanzees. Accordingly, primate sociability is innate rather than learned, a view that hearkens back to Aristotle's talk of humans as social animals.⁹ Humans have however immensely increased their population and the size and range of their social groups; but we still favour a much smaller community of kin, friends, and neighbours. The manifold increases in size and range of human societies can be seen as exemplifying the elaboration and amplification of the social instincts.

Darwin was making several claims here. In *Origin* Darwin stresses inherited instinctual (in contrast to learned) behaviours such as the cuckoo's instinct to migrate and build nests (*Origin of Species*, 221f).

Inasmuch as the moral sense evolves from our prior instinctual social competences, it does not metaphysically transcend them.¹⁰ Some contend that Darwin saw the moral sense as innate, like social instincts:¹¹ "We are moral because of our genes, as fashioned by natural selection", Ruse writes, arguing that our moral beliefs are rooted in biology as well as culture.¹² The moral sense then is objective, as part of our evolved nature as a primate species, but not in the sense that morality transcends or is independent of human and animal nature.

Darwin also compares instincts with unconscious, seemingly involuntary habits (OS 222). He adds that many mental powers are instinctually based, a claim confirmed by their neural underpinnings in the brain. Indeed he says that morality is learned "through habit, instruction, and example ...continued over several generations", viz., as part of one's socialization (DM 102, cf. 89f).¹³ Moral practices of good decisionmaking and behaving become habits by repeated practice and improvement, as Aristotle had maintained.¹⁴

In contrast to simplistic grounding of morality in reasoning, calculation, duty, utility, virtue, emotions, or intentions planning, foreseeing the future consequences of actions, acquiring knowledge, or learning, and using the knowledge gained to identify and criticize baneful customs and superstitious beliefs, and care for the wellbeing and happiness of others, expressing it, and learning to care by imitating examples and following instruction. This would seem to imply a factual empirical, natural basis for moral evaluation and decisionmaking (Putnam ; Janis & Mann; Taylor).

Some may only develop a partial, inadequate, or atrophied moral sense. Others may develop extremely high moral powers. And both possibilities seem to fit the picture of a bell curve like distribution of the moral sense in a society. On these grounds, Darwin's ethic implies moral intelligence.

First, Darwin is concerned not only with the original emergence of an instinct, etc., through chance (genetic) variations, but also its continuing evolution, which rested on its fitness to environmental conditions. instincts represent variations preserved and accumulated through such Natural selection, once they emerged, because they were profitable or useful to the organism. They enhance its environmental fitness and therefore its survival / reproduction.

This especially applies to the slow, gradual accumulation of slight variations in complex instincts, such as the social instincts (OS, 223).¹⁵ Living in a group improves one's chances of survival, wellbeing and reproduction. Organized communities improve their individual members' access to resources like food and shelter, e.g., through division of labour, enhance defences against predators, improves responsiveness to environmental signals.¹⁶

Thus Darwin is not saying that a specific social behaviour is innate; nor does he mean that the development of sociability follows an inherited, epigenetically determined path, as does, for instance, embryonic development, or, to a lesser extent, linguistic competence.¹⁷ Certainly the anatomy of the voice box, our ability to articulate sounds, on which linguistic competence rests, is innate and genetically transmitted.¹⁸

What Darwin does seem to be saying is that humans naturally, and of necessity, tend to live in groups, in essence a generic social behaviour patterns are favoured over solitary existence.¹⁹ Also, Darwin suggested that those mental powers required by the social instincts are instinctually inherited. The social instincts, in combination with our extensive mental powers, are moreover open and plastic, and enable humans to adapt to a wide variety of environments.

This complexity may help explain ambiguous comments about competing instincts. The social instincts, Darwin wrote, are "more enduring [than] other less persistent instincts"; and "Unsatisfied instincts [evoke] feelings of dissatisfaction" (DM 87f, 90). The best way to explain this difficulty is to acknowledge Darwin's ambiguous, concept of diverse generic, plastic instinctual behaviour patterns, and their complex interaction with extensive mental powers

An instinctual behaviour differentiates it from other species, or individuals (due to a mutation). Linguistic competence, is a stored generic, plastic depth grammar program that governs the surface grammar of any possible language, as an "instinctive tendency." Darwin might have been happy with the vaguer notion of an inherited, instinctual tendency or 'natural capacity' for association, or genetically transmitted behaviour pattern, e.g., one which made further social learning possible; but he was not clear about the specifics of that pattern or tendency.

Darwin terms some individuals unable to enjoy social relations, "unnatural monsters" (DM 90). Abusive socialization and hostile environmental conditions can degrade one's social competence, just as it affects linguistic competence. Brutish, harsh social conditions can and do produce sociopaths, individuals who have little emotional affect respecting social interactions, and sadists, people who enjoy torturing others. Also engrained social inadequacies may reflect brain damage, whether resulting from injuries or disease (including genetic mutations), pre-birth foetal damage, autism, etc.²⁰

The Moral Sense

The moral sense was for Darwin "fundamentally identical with the social instincts"; for its aim was "the general good of the community" (DM 98), and it was "first developed, in order that those animals which would profit by living in society, should be induced to live together" (DM 80). The idea ethics is primarily social goes back to Aristotle and Plato.²¹ But the social instincts are not the sole source of the moral sense, Darwin noted:

The following proposition seems to me highly probable--namely, that any animal whatever, endowed with well-marked social instincts, would inevitably acquire a moral sense or conscience, as soon as its intellectual powers become ...nearly as well developed, as in man." (DM 71-2). I will return to the case for moral intelligence implied in the need for well developed mental powers in the next section. Here it suffices to show that Darwin saw the emergence of the moral sense as a complex affair. Indeed, his comparison of animal and human sociability does not mean that the moral sense in animals and humans is identical. On the contrary, he cautioned, only humans "can with certainty be ranked as a moral being" (DM 89).

of all the differences between man and the lower animals, the moral sense or conscience is by far the most important ...of all the differences between man and the lower animals (DM 70-71?).

My question is not so much whether the moral sense reinforces the social instincts--it does; the real question is how, and to what effect? Its effectiveness in supporting the social instincts, Darwin suggests, explains the survival of humans as a social animals over time. This needs explaining.

First, morality is a social binder. By enjoining altruism and the common good the moral sense reinforces sociability,. The moral sense supports the social instincts because it directs our actions to "relate to the welfare of others", as well as our own (DM, 100). More, it regards "not only the welfare but the happiness of his fellow-men." (DM?).

The memory of mutually beneficial experiences lasts, due to "strong retentiveness of former states of pain or pleasure".

While morality was for Darwin inherited and evolutionarily transmitted. He favorably cited Spencer's view about "the consolidation of ..experiences of utility" over the generations (102). This does not entail hard determinism; for he also said that morality is learned "from habit, following on beneficial expression, instruction, and example" (102; cf. Aristotle: *Ethics*, II.6).

The social understanding of utility enables Darwin to show how morality supports the sustainability of sociability over the centuries and millenia.

Darwin's talk of Welfare and Happiness, with its connotations of wellbeing and interests suggests a John Stuart Mill's utilitarianism.²²

Morality regulates the social instincts, through social praise and blame. An individual, he wrote, would therefore gratify his desires unless they "interfere with his social instincts, that is, with the good of others" and thereby face social disapproval (DM 93). "Humans are "greatly influenced by the wishes approbation, and blame" of others (85f?).

Darwin even posited two kinds of virtue "strictly social", and "self-regarding" virtues."²³ The former evolved originally, while the latter virtues were derivative "acquired at a later stage of development" (DM 170?). Some of the "self-regarding" virtues he mentioned reflected Victorian notions of civilized temperance and "prudence" in contrast to "intemperance" licentiousness, [and] unnatural crimes" (DM 96). Darwin acknowledged the variation and relativity of social norms, citing "senseless" social customs, citing the Hindu taboo on unclean food. This diversity and complexity implies that the moral sense is innate only in a highly generic,sense, open to wide variation. Morality, like other social value systems, operates at both generic, relatively invariant depth and it diverse, changing surface articulations. The relativity of moral norms to diverse situations implicit in this conception, can be seen as a product of the complex interaction of the moral sense with diverse, changing environments.

But this raises the question, which community? The first answer is: one's own kin and neighbours, people they personally knew and could trust.

Altruism & Reciprocity

Altruism, a key form of moral behaviour on which evolutionary theory has focused, is defined as "behaviour which benefits another organism."²⁴ But it takes two forms (at least), strong and weak; only the latter is compatible with Darwin's evolutionary hypotheses about sociability and morality.²⁵ First to strong altruism: One should, Darwin maintained, "regard more and more not only the welfare but the happiness of his fellow-men" (DM 103). Utility is more than one's own pleasure. Rather it implies empathy, the social ability to "participate in the pleasures of others," and the impulse to relieve their suffering (81).

Individuals, Darwin claimed, will risk their lives and even endure torture for "the welfare of the tribe" (88); "Barbarians" sacrificed their lives for their comrades (DM 98f, 88); and courage was a direct product of natural selection (DM 83). But such strong self-costing altruism is not sustainable virtue, habit, or moral code; inasmuch as the agent is not benefited by his moral action. (Nor is strong egoism; for the other is not benefited).²⁶

Strong altruism is unsustainable because it penalizes the moral agent for acting ethically, instead of rewarding him. It is a weak, unreliable foundation for ordinary social interaction. It may have a place as an ideal norm, obligatory in rare, extreme situations where people feel they have to risk their health, lives, property, etc., in order to save others from what they perceive to be likely, and at least equal, harm. Only where the balance of benefit to others greatly outweighs the costs to the agent, strong altruism would seem to be an intelligent option. This would seem to be the core truth of the Kantian argument that altruistic duty is rational.²⁷

Darwin however had an even stronger, more reciprocal, argument for the morality of the social instincts. Inasmuch as social codes focus on sex, marriage, families and property and defence against attack, they support the reproduction of the kin group, and limit moral sense application to one's kin.²⁸ Inasmuch as moral recognition requires spatial proximity and is reinforced over time (assuming good, peaceful interactions and relationships), then the moral code is extended to non kin neighbours in relatively small communities.²⁹

In a key passage Darwin argued that the cohesion and survival of kin based societies require the reduction of threatening immoral and criminal behaviour:

No tribe could hold together if murder, robbery, treachery, &c., were common; consequently such crimes within the limits of the same tribe are branded 'with everlasting infamy; but excite no such sentiment beyond these limits. (DM 93)

Associating with others, Darwin is saying, is not possible unless an effective moral code proscribing threatening behaviour minimizes the risks of such association to acceptable level, and thereby increases the chances of individual survival and group reproduction. This is intelligent, for it reduces risks and harm and enables societies to survive and reproduce over time.

Our moral sense should therefore help us detect and punish cheaters, people who selfishly violate or evade the rules of peaceful coexistence, however subtly, contribute to reducing the risks of social interactions.³⁰ This is the basis of much of the legal codes and especially criminal laws, that every society develops.³¹ This is evidence that the moral sense is for the most part successful in reinforcing the social instincts.

Immoral, harmful or criminal conduct, is marginalized in most societies. 80% to 90% of the time social conduct is non-threatening and peaceful.³² High risk behaviour is extreme, highly infrequent circumstances, found at the highly negative tail of any social costs/benefit bell curve.³³ In regions beset by high criminality or wars, people usually avoid interacting. Social life withers. People huddle together in their homes, fearfully. The streets are emptied--except for gunfire.

Social Darwinist talk of a violent struggle for existence exaggerates the extent and of social conflict,³⁴ and misinterprets competition for resources, and ignores cooperation, within and between species.³⁵

A total Hobbesian civil war is not evolutionarily sustainable. Since social interaction would be so nasty, it would be very short. No society could have evolved, due to the risks. Without the minimal morality of the do no harm norm, in effect, societies--human and animal--could not exist for any significant period of time, and would never have evolved. Their survival would always be doubtful, and doubted.

Association between people(s) presupposes the reduction of threats to a very low level of likelihood, far lower than peaceful, non-threatening forms of association. In this way morality is necessary to social cohesion, for it reduces the risks of association with others. The moral sense embodies a social version of that most fundamental moral maxim: first, do no harm.

The bonds of kinship, Darwin felt, justify deception, he adds, for "to lie to your enemy has rarely been thought a sin," citing the example of diplomacy (DM 95, but 145?). This shows the defence of kin and community often limit the range of application of the moral sense; but the moral sense also enjoins care for others, and proscribes harm to others, including strangers. After all most moral theorists have agreed with Kant that moral recognition should be offered to any sufficiently rational or intelligent being.³⁶

Different groups and species, Darwin noted, also develop different moralities, or moral codes. Different animal species "follow widely different lines of conduct." Bees for example felt a "sacred duty" to kill other bees (DM 73).

The moral sense, Darwin added, also requires individuals to "extend their social instincts and sympathies" to diverse strangers, "and thence to all nations and races" (DM 101).³⁷

As man gradually advanced in intellectual power ... his sympathies became more tender and widely diffused, so as to extend to men of all races, to the imbecile, the maimed, and other useless members of society---and finally to the lower animals--so will the standard of morality rise higher and higher.

Civilization's advance represents, a move beyond the small communities based on kinship, tribal relationships, close immediate face to face contacts, to large cities and societies and increased mobility and communication among diverse populations (DM 71f 79ff, 96f, 103). And in the last century moral norms have been extended beyond the human community to the higher primate/ mammals, a trend already evident in Darwin's time. This is a form of moral progress.

But, How did the scaling up of moral recognition to thousands, and now billions of unknown strangers evolve? The less one knows other persons, the greater the uncertainty about their intentions, and the greater the risks of association with them. That is to my mind the truth about Darwin's stress on a tribal code. Since reducing the risks in social interactions increases trust, one can turn this Negative social morality into a rule for relating to strangers: namely trust them to be non-threatening, until and unless they behave in a threatening manner.³⁸ In this way the risk minimizing effects of morality enable the

generalization of moral recognition beyond people one knows, namely, one's kin and immediate community.

The diffusion of morality, one can further hypothesize, even further reduces risks of interaction than trade, for moral recognition implies that people will not harm or threaten each other. Reciprocity in exchange makes peace and prosperity partners. It implies this minimal benefit, of not putting the stranger at risk. In effect the great moral maxim, do no harm, is the ultimate social rule. It is the fundament of sociability. This is the basis, in my view, it better increases trust, because it is based on a track record of not being harmed from associating, or merely coexisting with, with unknown others. The absence of threat is a benefit, however minimal. To the extent it is reciprocated, it is a social benefit. It is also the beginning of trust, the soothing balm that greases the wheels of social life. Trust is a better social glue than fear, for it facilitates every social relations, and minimizes their costs of the countless transaction of social life.

Social interactions, between strangers as well as kin, are for the most part low risk, non-violent, non-threatening, and peaceful. This is a measurable hypothesis, too. It implies that social interactions will increase in frequency in inverse function of the risks involved. The greater the risks of interaction, the lower the frequency of social interactions. And this is indeed the case, as some naturalist theorists have noted.³⁹

Morality is socially intelligent, for it increases the size of the group that one can live with in peace, have a long life, etc.

Negative morality is socially powerful. It enables continuing association, at minimal risk; and the more low risk contact one has with others over time, the lower the risks. To the extent that others show they have accepted, and continue to accept, a code of peaceful, non-threatening coexistence, then mutual association can and will continue; and it will likely increase in number and intensity over time. So the do no harm maxim then is the moral basis of a sustainable society.

Reciprocity

The Negative morality of avoiding harm has been shown to lay the foundation for extending a moral code and moral recognition to strangers, humans beyond one's kin and community, and indeed to other animals.

But More is needed than the negative morality of avoiding harm, despite its power, an even more powerful mechanism for ensuring the social generality of the moral sense. In addition to reducing the risks of loss and threat, I contend, one should benefit from moral choices and behaviour; and so should others.⁴⁰

Darwin presented a primarily social and utilitarian view of morality in terms of what would now be termed "reciprocal altruism", or, simply put, reciprocity.⁴¹ Reciprocal altruism, Trivers claims, emerges from altruistic situations, defined by reciprocity or mutually beneficial to agents. In an argument redolent of Lonergan's conception of emergent probability, Trivers defines their emergence conditions, as a long time, spatial proximity, long parental care/ socialization, mutual dependence, mutual defence, a dominance hierarchy.⁴²

Trivers research on "reciprocal altruism"--even though I would prefer merely to speak of reciprocity, or mutually beneficial social interactions, and avoid altruism's morally slippery, and misleading association of morality with self-sacrifice)

Reciprocity contrasts with strong altruism, which opposes one's own welfare to that of others.⁴³

By reinforcing and rewarding reciprocity makes morality sustainable. Positive social interactions are repeated because they are mutually rewarding to the interacting parties.⁴⁴ They are sustained, increased and extended the extent that it is repeated, replicated, inherited and reproduced countless times, with both strangers and kin. Many forms of social behaviour involve reciprocity: economic, communication, cooperation, commerce, sex, friendship, kinship, neighbourliness, and even peacefully coexisting with others, e.g., on urban streets, in buses, trains, and countless other public and private spaces.⁴⁵

Thousands of years of peaceful contact and exchange among diverse cultures and religions along the great Silk Road trade route from China to the Mediterranean is a good example of both the extension of morality and the sustainability of reciprocity is.⁴⁶ It is precisely because it was a trade route, I would argue that the Silk Road was socially and morally successful. For trade, as Boulding held, requires reciprocity; both parties must gain from their exchange. Other social relations, from sexual, love, affection, friendship, and even relations based on equity or justice, embody similar forms of reciprocity involves [Much of this argument is indebted to the economic ethics of the great economic theorist, Kenneth Boulding. Working from his understanding of market relations and trade, Boulding cogently argued that relations based on mutually beneficial exchanges are preferable and more lasting than those based on threat. See Boulding,]

Ones' care for others should benefit oneself. There should be reciprocity. This is implicit in Darwin's argument for the positive social morality of the Golden Rule. It enjoins us to 'do unto others as you would have them do unto you.' It is explicitly reciprocal and behavioural. And it is interactively social and beneficial: act toward others the way you want them to act toward yourself. Namely, in their interest, to their benefit and wellbeing. And one would expect them to do the same in response: to act so as to benefit you in return. It exemplifies reciprocity.

Reciprocity is evident in much human behaviour where both parties benefit, such as sharing food, tools, knowledge/communication, sex, games, trading and commerce.⁴⁷ Reciprocity is evident in other species, too, e.g., between the cleaner fish and its host, bird warning calls.⁴⁸ Cooperation benefits the cooperating parties, it exemplifies rationality reciprocal altruism. Cooperation underlies the division of labour that is seen as fundamental to a rational / intelligence social system from hunting/gathering societies, to Plato's republic, and modern economics and social thought.⁴⁹

The Golden Rule lies at the heart of morality's transcendence of kinship and neighbourly relations and face to face relations with strangers. It enables the extension of social and moral recognition to millions of unknown, and unknowable, strangers. It makes the mathematical utility calculus of social happiness unnecessary.

When interpreted as, 'Act on the expectation of mutual benefit until events or conditions dictate otherwise,' the Golden Rule is also the solution to the Prisoner's Dilemma.⁵⁰ Assume reciprocity. If and when your good intentioned behaviour, of "I mean no harm" isn't reciprocated, react accordingly, e.g., by inquiring as to the others intent, defensiveness, warnings, etc. By Reciprocating their non beneficial behaviour you signal that you got a negative message, and now seek confirmation, or return to the original non-threatening reciprocity of the golden rule.

To the extent that social interactions benefits oneself as well as others, then the risks of harm approach zero, and the case that opting for social interaction is morally intelligent approaches certainty.

The emergence and spread of reciprocal altruism or mutually beneficial cooperative social interactions is a matter of the probability of an altruist's behaviour being reciprocated by another altruist, as versus a non altruist or cheater.⁵¹

Reciprocity or mutually beneficial forms of social interaction, exemplifies soft or reciprocal altruism (and therefore soft egoism as well).⁵² The kernel of truth in talk of soft egoism is that we should, and usually do, act in our own interests; while the truth of soft altruism is that we should also act in the interests of others, too. Connecting the moral sense and the social instincts requires a positively interactive concept of "reciprocal altruism", one that blends soft altruism and soft egoism.⁵³

Being inherently social and behavioural, the likelihood that the moral sense evolved from the social instincts increases. Accordingly I would reject Ruse's claim that evolution works by "filling us with moral thoughts."⁵⁴

The drive to association, and the related practice of reciprocal altruism, are on this reading hypothesized to be inherent to our nature and part of our genes, albeit generic, flexible, and plastically open to wide variation due to environmental conditions and individual socialization, etc.⁵⁵

Morality and Intelligence

Darwin argued that an animal with social instincts would only acquire a moral sense, once "its intellectual powers become ...nearly as well developed, as in man." (DM 71-2). Morality then is a product of the evolutionary combination of both sociability and intelligence, he wrote:

As man advanced in intellectual power [he] was enabled to trace the more remote consequences of his actions; as he acquired sufficient knowledge to reject baneful customs and superstitions; [and] he regarded more and more not only the welfare but the happiness of his fellow-men; as from habit, following on beneficial expression, instruction, and example (DM 103).

The moral evaluation of a possible action requires comparison of past and future actions: "A moral being is one who is capable of comparing his past and future actions or motives and of approving or disapproving of them." It not only "looks backwards and judges past actions", it requires us to "move forward too" (DM 91, 93, 88). For once we start a course of action we still need to intelligently adapt to changing conditions, unexpected opportunities and threats, if we are to achieve our original goals (DM 88f).

Moral intelligence also involves linguistic and calculative competences, for Darwin continues, language use facilitates working through "a long and complex train of thought", just as figures and algebra enable "long calculation" (DM 57). The communicative powers of language also enable communities to state guides for conduct and communicate to / instruct others about how they "should act for the common good." (DM ??).

Deliberation is also required, Darwin adds, for we "cannot avoid reflection on our past actions," for "the images of all past actions and motives would be incessantly passing through the brain of each individual."⁵⁶ Indeed moral agents, he added, need to develop the "inward monitor" of conscience, which he termed an "inner sense" that involved emotions like honour, shame, sympathy, self interest, beauty, and other "natural feelings."⁵⁷ He connected "the short but imperious word *ought*" to awareness of an "innate or acquired" instinct (92); and he sees conscience mostly as remorse for doing wrong (91).

At one point Darwin strayed into idealism, namely, when he claimed that "the *highest* stage of ...moral culture [comes] when we recognize that we ought to control our thoughts", (DM 101). Here he

strayed from his social and naturalistic ethic into Cartesian idealism.⁵⁸ But how controlling one's thoughts is morally more worthy than action that are direct to the welfare of others, is far from clear.

Intentionality moreover has at least two distinct meanings: intending to achieve a goal by one's actions, and reference to, or consciousness of an object.⁵⁹ Regarding the first, goal directed activity is however no objection to evolutionary naturalism, since it is found in most living organisms, and, with the help of steering and guidance mechanisms, environmental sensors, and responsive feedback loops and other cybernetic mechanisms, can be technologically simulated. Motivation has long been an object of scientific study in psychology.⁶⁰

Nothing human, I suggest, can or should transcend nature (Naess: ?). To believe we can dominate or transcend nature is to delude ourselves and to rationalize forms of action that put regional and planetary ecology, and our own collective survival, at risk.

Good motives and intentions do not suffice to make an action moral. That is the point of the cliché that the road to the wrong place is paved with good intentions. Altruistic actions for instance are concerned not just with motives or intents, but outcomes, namely the effect of one's behaviour on others.⁶¹ What does suffice to make an action moral is a complex of factors. One needs to follow through on one's good intentions and make the right choice, perform the chosen action, and the outcome of the action should be good, as expected. The cliché about good intentions reminds us that outcomes notoriously fall short of intended goals, for many reasons: the limits of human mental powers, the complex dynamics of social interactions, shifting environmental conditions, etc. So one commonly needs to act to reduce the outcome / intent gap. One must learn from one's mistakes and limitations and do better next time.

In contrast to simplistic grounding of morality in reasoning, calculation, duty, utility, virtue, emotions, or intentions Darwin argued that a variety of cognitive skills at work in the operations of the moral sense: foreseeing the future consequences of actions, acquiring knowledge, or learning, and using the knowledge gained to identify and criticize baneful customs and superstitious beliefs, and care for the wellbeing and happiness of others, expressing it, and learning to care by imitating examples and following instruction. This diverse cognitive skill set suggests that the performance of the moral sense requires extensive intelligence and a powerful brain.⁶² A strong case for close interaction between the brain and conscious awareness has been made by numerous others.⁶³ It goes far beyond the usual few of intention, motive, rational verbal/logical reasoning, or quantitative reckoning / calculation.

Practical decisionmaking involves complex practices of scenario planning, namely, figuring out one's role in various scenarios, It involves discerning, imagining, and appraising how a variety of worst, best, routine and unlikely case scenarios will likely play out.⁶⁴

To support and clarify Darwin's claim that the moral sense involves diverse, extensive mental powers are encompassed under this capacious notion of intelligence, I would have recourse to Howard Gardner's theory of multiple intelligences. Gardner envisaged each intelligence as a genetically transmitted problem solving, cognitive mental power. His theory extends intelligence beyond logical, quantitative or verbal rationality, into social, psychological, emotional, bodily kinaesthetic and spatial / temporal problem solving intelligences.⁶⁵ Different intelligences focus on different aspects of situations: considerations of social interactions, internal reflection, time (memory and foresight), space (proximity and dispersal), and states and appropriate bodily movements (emotions, body language, etc). Hypothesizing that Gardner is right, and that our intelligence are gifted with diverse problem solving and cognitive skills. Given space limitations I will restrict myself merely to the comment that it is not clear that moral intelligence is a separate, evaluative form of intelligence, or a sort of varying integration of select intelligences, as need requires. Both hypotheses seem cogent in my view.⁶⁶

The abilities involved in ordinary social life, of interpreting and recognizing and following the largely unspoken conventions involved in the delicate etiquette of social relationships in all manner of groups up to and including one's social culture, detecting other's body language of subtle signals and responding appropriately, following social routines and cultural rituals, the informal conventions of small groups, and, in adjusting to diverse cultural conventions in dealing with people of different cultures than one's own. That this requires significant and sophisticated social intelligence is evident, and suffices for our purposes. The need for moral intelligence implied by its connections to the social instincts is indisputable. The real problem is not the need for social and moral intelligence, it is that of identifying and listing the skills involved and understanding how they work together. But this is not the place for that extensive exercise.⁶⁷

Social knowledge / intelligence is the perhaps the weakest link in the Darwin's moral psychology. The skills required by the ability to recognize others as moral agents, and interpret the moral significance of their behaviour, or in effect read their minds through their body language, are, as many philosophers have argued, extremely complex and subtle.⁶⁸ Despite its richness Darwin's cognitive psychology shows little grasp of the complex social hermeneutics involved.

in effect to read what body language says about others' motives, intents, etc., to and interactions with others, in changing situations and diverse environments (See: Habermas Gadamer, Schutz, Charles Taylor, Dorothy Emmett, Peter Winch, and G. H. Mead; A. Ryan??). Conducting social relations and performing moral actions demand extremely complex and subtle intelligence.

Inferences from reflective behaviour to mental thought processes in animals are based on the same kind of evidence on which we base our inferences about thinking in humans. It is only by observing overt behaviour that we know that any individual animal or humans is intelligent or thoughtful.

Conclusions

Darwin's theory of the moral sense, its close connection with the social instincts, and the extensive mental powers it demands, is well argued, and based on extensive study and observation. The moral sense, one is led to conclude, is not only a product of evolution it also implies an objective normative ethic. These two conclusions may be connected. If the moral sense, like sociability, is deemed to be innate, it would perhaps be as a predisposition to a depth moral code. That depth code would only contain a few general norms, such as care for the survival, reproduction and wellbeing of others, one's community, oneself and one's habitat, and reciprocity. They constitute a minimal, objective normative ethic.

The evolutionarily based depth moral code does not imply the claim that evolutionary adaptations or advantages either determine or justify specific moral choices. On the contrary, individual decisions reflect complex, intelligent interactions between individuals, others, their cultures, and the changing environments or situations in which they operate. Relation between the depth code and surface morality might be like that between depth linguistic competence, specific utterances and surface grammars (see Ridley, 2000: 93f, 104; Ruse, 1986: 182f). Those myriad events contribute to the species future evolution more than they are determined by our evolutionary past. Humanity's social evolution seems after all "more cultural than genetic"—if indeed the history of human cultures traces an evolutionary path at all (Wilson, 1978: 160f; cf. Wilson, 2000: ch. 7).

A weak link in Darwin's moral theory is that the extensive mental powers or intelligence he correctly indicates as essential to the moral sense's operations are inadequate to the complex social tasks required by the moral sense's intimate connections with the social instincts. Interpreting and assessing the moral significance of others' behaviour, and negotiating mutually beneficial relations require specifically social powers of cognition, and semiotic interpretation, not identified in Darwin's survey of mental powers. Recognizing others as intelligent moral agents (whether humans, animals or inhabitants of other planets), requires but goes beyond psychological, or internally directed, essentially reflective mental powers. It requires operations such as interpreting an other's expressive body language, verbal communications, empathetic projection, and understanding the other's social mores, customs, norms, etc. These socially cognitive competences go beyond private mental powers, and require socially oriented developmental plasticity. Reciprocal altruism, a central component in human morality according to most naturalistic theorists—and this writer, for instance requires significantly complex

cognitive and social powers, for example: observing and imitating others, moral learning in socialization, negotiating altruistic relations, detecting and emotions like affection, empathy, sympathy, trust, guilt. Dealing with violations of reciprocity like violence, theft, and cheating by, for example, imposing sanctions or negotiating reconciliation, represents a complex challenge. It requires the above social powers and a sense of "moralistic aggression", involving emotions and actions directed to correcting injustices (Trivers, 37-47; Wilson, 2000: 243).

There can be no doubt that these requirements of Darwin's moral theory then demand a powerful and sophisticated, social and practical moral intelligence. To clarify how this conclusion goes beyond traditional, logical and linguistically driven notions of moral reasoning, recourse to Howard Gardner's well-known theory about multiple intelligences is helpful. Gardner argued for several problem solving, practical intelligences, each with biological and neural underpinnings (Gardner, 1983; Le Doux, 2002; Damasio, 1993, 1999): social (interpersonal), psychological (intrapersonal), bodily kinaesthetic, spatial, musical, logical-mathematical, and linguistic intelligences. To these I would add temporal and emotional intelligences; the first demanded by Darwin's own stress on memory (viz., comparing past and present experiences), and on foreseeing outcomes, and the second on more recent research (de Sousa). The distinction of each intelligence is its ability to solve a different kind of problem: social, spatial, linguistic, etc. Gardner is clear that each intelligence accesses other intelligences as needed. Moral intelligence, on this reading, is presented as a moral problem solving kind of intelligence, one which definitely accesses all other intelligences, since they are usually needed to understand, speak less of solve, socially, practically and normatively complex and situationally varied moral problems. Because of its evaluative and normative capabilities do not

seem to be part of the other intelligences, moral intelligence seems to require its own specific set of powers.

Finally, Darwin has presented an elegant naturalistic ethic, whose lineage goes back to Aristotle, Hume, and Spinoza. Darwin's evolutionary understanding of human morality does not entail its reduction to simpler forms, living or inorganic. On the contrary, its social and mental complexity implies an unpredictable emergence from earlier primate morality and intelligence (see Jones, 2001; Lonergan, 1958: 121f, 132f). Darwin's naturalism went further. He also claimed, presciently, that the moral sense should extend beyond humans to care for "the lower animals" and "all sentient beings" (101). It has taken over a century for us to learn how profoundly right this naturalistic moral insight of Darwin's actually is. Morality, we now understand, should support and reinforce the ecological interdependencies of humans and other species on this planetary habitat. Our moral intelligence, as Darwin's moral theory showed, is part of humankind's evolving social nature as an animal species on this planet.

The time has come then for philosophy to fully recognize the depth and grandeur of Darwin's naturalistic view of morality, society, intelligence and evolution (Midgley, 95f; Churchland, 2002: pp 2f; Dennett, 1995: 401f). For it can help us understand our obligations as moral beings not only to each other but also to the "endless forms most beautiful and most wonderful" that evolve around and within us.

A convincing scientific case that significant level of moral intelligence, and related mental powers are found in other animals has been made. On all grounds in Darwin's view, morality presupposes the development of even more extensive mental powers than he identified, notably in the area of social understanding.

It is generally conceded that Darwin provided a fairly satisfactory scientific explanation of the evolutionary origins and sustainability of the moral sense, or of a core, general, substantive normative ethic.

Indeed John Rawls suggested "that the capacity for a sense of justice and the moral feelings is an adaptation of mankind to its place in nature noted that our sense of justice has evolutionary roots."⁶⁹

Darwin has argued that the moral sense originates from the social instincts, and seems to involve norms conducive to the long term behaviour patterns conducive to the survival, wellbeing and reproduction of humans as individuals and groups, reinforced by norms prescribing reciprocity. , This would seem an evolutionary sustainable and robust code, in contrast to forms of interaction in which one or both parties do not benefit. Reciprocity therefore explains the long term robustness of the moral sense.

His concept of social instinct is ambiguously presented as innate in higher primates (cf. Wilson, 2000: 124f). ?

This approach suggests an interesting hypothesis, namely, that the moral sense involves a genetically inherited moral code. The result is to make an objectively normative case for the few, general moral norms in the depth code.⁷⁰ Morality is not a mere social projection or subjective individual preference.⁷¹ Those norms would have to be adaptable to an extraordinarily wide set of possible environments / situations, they must be broadly general and flexibly interpretable, not unlike the depth subject phrase / verb phrase linguistic grammar. I suspect they would promote care for the survival, wellbeing and reproduction not only of oneself and other humans, but also of many other living species with whom we are ecologically interdependent.⁷²

Darwin himself talked of an implicit ecological ethics when he claimed that the moral sense should extend beyond care for the wellbeing of humans to that of "the lower animals" and "all sentient beings" (DM 101)? For Darwin as for Aristotle and Spinoza, the moral sense is part of our nature, as an evolving species on this planet. Natural selection explains the emergence of the moral sense in the human species, is indicated by its evolution from other primate species.⁷³ Confirmation would involve extensive further neurological, psychological, and socio-cultural research.

Surface level moral norms would be expected, like natural languages, to widely vary in their specific articulations, but to be compatible with the depth moral sense. On this general foundation one can admit that specific moral norms vary and evolve, such as Kantian stress on duty and obligation, or modern notions of individual, group, and animal rights, and ecological values.

The extent to which the depth moral sense involves an evolution of an objective moral code, or set of depth moral norms, it would seem to imply a factual empirical, natural basis for moral evaluation and decisionmaking.⁷⁴

Inasmuch as evolution requires an emergentist logic in which the regularities governing new species are not predictively inferable, but can retrodictively be seen to reflect the specific evolutionary path leading to its origin. And the life sciences are far more complex and emergentist in their epistemology, as a variety of thinkers would contend.⁷⁵ It is not only uneven in its pace, but the original emergence of a species, as both scientists like E. O. Wilson, G. G. Simpson, Theodosius Dobzhansky, and the Jesuit philosopher Bernard Lonergan all argue, is a matter of path dependent "emergent probabilities". A species' origin is a complex result of the interaction of gene pools and environmental conditions.⁷⁶ Genetics represent chance variations that determine a species' probability of emergence, a Lonergan contends, while natural selection and the environmental fitness of the new species determines the probabilities of its survival and reproduction once emerged. In contrast to Spencer and others, the concept of emergent probability offers no support for progress in nature. Human social (and moral) evolution, as Wilson has said, is "obviously more cultural than genetic." (Wilson, 1978: 160f)⁷⁷

The lawlike behaviour of a newly emergent species from the interaction of is at best retrodictively explicable, not predictable beforehand. Emergentist logic might also clarify the complex relations of consciousness, sentience, and intelligence to their evolutionary, neural and biological underpinnings, and of informed, voluntary choice, or freedom, with the complex of interacting cultural, social, psychological and biological factors which our choices reflect (Aristotle, 114b? 1106b-57a; Lennox; Dennett, *Freedom Evolving*; Churchland, *Brainwise*, ?? Wilson, 2000: 120f.).

Emergentist logic might also help clarify the complex relations of mental powers, sentience, awareness, and intelligence to their neural underpinnings, and the compatibility of informed, voluntary choice, or freedom, with the numerous, complex factors contributory to making complexly interacting cultural, social, psychological and biological factors.⁷⁸

Darwin's evolutionary approach to moral intelligence implies the intellectual bankruptcy traditional, quasi religious pre-modern metaphysical dualism and epistemological idealism.⁷⁹ In contrast an empirical, broadly scientific naturalism now seems to me the most fruitful general direction for moral theory to take. The time has come for philosophy to fully acknowledge the revolutionary implications of Darwin's dangerous new idea. For it is 130 years old, and has been widely confirmed. It is no longer new or dangerous. It is the intelligent consensus about nature and our place in it, as moral beings, and as philosophers.

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ENDNOTES

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- ¹ Charles Darwin. *The Descent of Man and Selection in Relation To Sex*. Princeton university Press, 1981 [originally published in 1871]. See especially chapters 5, 6 and 7. All references to citations of this work will be given in the text, as for instance, (DM 70).
- ² See Michael Ruse TDS, 275 and chapter 3, on philosophical critiques of social Darwinism; and Daniel Dennett in FE, and DDI. . Instead "Know-nothing philosophy" has treated naturalism as fallacious and given the essentially theological, intellectually embarrassing, faith in idealism and the split between mind and body respect far beyond its humble deserts. But "The hey-day of unfettered and heavy-handed philosophical speculation on the mind has gone the way of the divine right of kings...", Pat Churchland in *Brainwise*, ", As Patricia Churchland has contended, It is now "losing ground to empirically constrained theorizing and inventive experimentation... Instead it is time to revitalize philosophy's traditional penchant "for synthesizing results and integrating theories across disciplinary domains. In *Brainwise - Studies in Neurophilosophy*. MIT 2002; pp. 2, 3..
- ³ In Wilson, *Consilience*. ?? pp. 277, 290 because he was the originator of socio-biology. The reductionist tendency of his early work are eschewed in this study, but they remain full of interesting insights, e.g., into social ethics, to this day. Note also that this study is about Darwin's own views, and not social Darwinist ideology.
- ⁴ In chapters 5, 6 and 7; all unidentified page references in the text are to *The Descent of Man*.
- ⁵ Dewey, in Nitecki, ...
- ⁶ DM, 35; see Frans De Waal. *Good Nature: The Origins of Right And Wrong in Humans and Other Animals*. Harvard UP, 1996; Also see Mary Midgley, *The Ethical Primate*, Routledge, London, 1994, and E. O. Wilson, *Sociobiology The New Synthesis*. Harvard, 1975. See Rovinelli & Godfrey, in Nitecki?
- ⁷ See Wilson, *Sociobiology*, chs ; de Waal, chs. . Midgely ?
- ⁸ cf debate about individualism and selfish genes; Wilson, Nitecki, 12f, Ruse, Dawkins...
- ⁹ cf Aristotle, NE 1141b; Metaphy 980b; Lennox, cf Elzanowski, in Nitecki, that morality is inherited, and objective. and competences, and dispositions?? Tinnbergen? Trivers? Ruse, in N, 149? Learning and innate competence see Ridley, 102f; Not all animals are equally sociable. Tigers and eagles for instance are relatively independent solitary creatures.

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- 10 Vs P Williams, Nitecki, 15.
- 11 Gewirth, Ntcki 21.
- 12 Ruse, In Nitecki, 148, 151. Aristotle , ethics 1253a, 1252b; cf Lennox in JM & MR, = animal living in a city or *polis*, in the ethics, .
- 13 See Piaget for more on moral learning. It is not possible in this paper to explore the implications of Darwin's views for moral psychology. I am working on another essay on moral intelligence and moral learning or development, as discussed by, for example, Jean Piaget, Lawrence Kohlberg, Howard Gardner, and Carol Gilligan paper
- 14 See the *Nicomachean Ethics*. ; 1106b, 1157a, 1111b Lennox, ??
- 15 See the Canadian Jesuit, Bernard Lonergan's, brilliant mathematical and statistical notion of evolution as "emergent probability" in *Insight A Study of Human Understanding*, pp.121f, 132f. On enhancing reproduction as effect of individual survival and natural selection - Wilson, Ruse... Nitecki, 12f
- 16 See Wilson, SB, ; Ruse,
- 17 Chromosome 7 is said to be the genetic basis of language; see Ridley, 93f; on depth grammar, see Noam Chomsky, *Syntactic Structures, also Biology ? Li*
- 18 see Ruse, ; Ridley, 102
- 19 Animals like tigers for instance favour going it alone. On psychological preconditions, see Trivers, 37f, 46ff; On instinct, see E. O. Wilson, *Sociobiology*, 26f and Matt Ridley, *Genome*, ch. 7, especially 102f .
- 20 See Antonio Damasio, Descartes' Error. Chs 1 and 2; also, Gardner, ch. ; and ? Some of which, like schizophrenia and sociopathy, are morally significant; and some of which are less so, such as autism. Also see Damasio, DE, ch. 1,2, on neural damage and social and emotional disorders. See Laing? Freud?
- 21 See Plato, Republic, ; and Aristotle Ethics, Confucius, and others.
- 22 See Mill, Utilitarianism; Darwin's views were closer to Mill's rich understanding of utilitarianism than to Bentham's simplistic reductionist calculus.
- 23 In contrast to Plato for whom the same principal moral virtues had both social and psychological application: *Republic*, .
- 24 Trivers, 18.
- 25 See Wilson, OHN, ; Sociobio, ch. 5; Ruse, TDS, 219ff; in Nitecki, 144f.
- 26 see Wilson, HN,
- 27 On duty vs inclination see Critique of ... ?
- 28 see Ntcki, 10.
- 29 See Trivers, ; Ntcki 11f

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- 30 See On gross and subtle cheating and its detection, see Trivers, 25f, 35f; Alxedr, in Nitecki, 189f.
- 31 Law in cultures -- cf Anthropology anthology...
- 32 most social interactions is peaceful, non violent, low risk/high benefit -- sources?? See cf Trivers? Ruse? Alexander?
- 33 Given the probabilistic nature of genetic mechanisms, ecological interactions, and evolutionary processes, statistical reasoning is quite appropriate to evolutionary argumentation, far more than the logical inferences preferred by analytic philosophy. REF? .
- 34 See Huxley, in Nitecki. On competition for resources
- 35 On cooperation see Ridley, ?? Wilson? Ruse? Kropotkin, ..
- 36 See his *Critique of Practical Reason / metaphysics of Morals*. The present argument of course eschews Kant's idealism and anti-naturalism.
- 37 DM 85f;? Also see Wright *The Moral Animal*? Singer, *Practical Ethics*.
- 38 Adapting the classic solution to to the Prisoner's Dilemma. See Trivers, Wilson, Ridley, . If well intentioned isn't reciprocated, react defensively to ward off the threat or to negotiate peace. Seek to understand the other's intent. Reciprocate the threat if necessary, but wherever possible in a warning rather than an attack. As soon as possible revert to non-threatening, mutually beneficial interactions. Etc..
- 39 Ruse, Trivers,
- 40 Much of this argument is indebted to the economic ethics of the great economic theorist, Kenneth Boulding. Working from his understanding of market relations and trade, Boulding cogently argued that relations based on mutually beneficial exchanges are preferable and more lasting than those based on threat. See Boulding, .
- 41 See Robert Trivers *Reciprocal Altruism* ; also, Ruse, TDS, 219-47; Wison, SB, 120f.
- 42 Trivers, 23f.
- 43 So I do not use Trivers confusing phrase, reciprocal altruism, even though I agree with his core argument that reciprocity explains the evolution of morality. ??
- 44 An interesting hypothetical corollary of this view is that all human actions are either overt or covert forms of social interaction; but there is not space to pursue this insight here. I think it underlies G. H. Mead's social psychology. See his *Mind, Self and Society*. For discussions of the complexities of social intelligence can be found in the works of G. H. Mead social psychology, A. Schutz's social phenomenology, Dorothy Emmet on roles, rules and relations, John Seely Brown on the social life of information, J. Habermas on critical social theory, among others.
- 45 See DM 100, 98; Trivers research on "reciprocal altruism"--even though I would prefer merely to speak of reciprocity, or mutually beneficial social interactions, and avoid altruism's morally slippery, and misleading association of morality with self-sacrifice.
- 46 See R. C. Foltz. *Religions of the Silk Road*. St. Martin's Griffin, NYC: 1999. On Trade, see Ridley, too.

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- 47 See Trivers, 33ff; Ridley, .
- 48 see Trivers, 8f, 31ff; Wilson SB, 553f ; Ruse, in N&N, 135f; 145f, 147-coop; and modern, see Ridley, OoV,
- 49 See Plato, Republic,; Weber, Adam Smith, Ridley
- 50 Not unlike the matter of developing cooperation over time, eg., as shown in the tit for tat game research; see Ridley.
- 51 See Trivers, 17ff; Wilson , SB 120;
- 52 E. O. Wilson, *On Human Nature*, 163f; Ridley, ?.
- 53 On strong altruism and egoism see E O Wilson Human Nature...
- 54 Vs. Ruse, in N, 156f TDS, 233f;
- 55 See Trivers, ; 1971; Wilson, SB, 3f, 120f
- 56 (89; a view reinforced by neurology; see AD ?? below in ch. 4)
- 57 DM 90-99, 150. As for confirmation in recent psychological and philosophical research see Antonio Damasio, LFP, DE; and Ronald De Sousa, Rationality and Emotion.
- 58 See the third maxim of Descartes' *Morale* in Part Three of the *Discourse on Method*; and to Kant's *Metaphysics Of Morals? Critique of Pure? Practical Reason*.
- 59 Both are cited by Gewirth in Nitecki ; also see ??
- 60 on Motivation see....
- 61 See Trivers, 6f
- 62 See Trivers, 37f; Kant, *The Critique of Practical Reason, The Critique of Pure Reason*.
- 63 See Pat Churchland, Brainwise; Antonio Damasio Descartes' Error; J. Ledoux, the Synaptic Self, and D. Dennett, *Consciousness Explained*. That the case is but not fully definitive, does not imply that a dualistic view of the mental powers or the moral sense.
- 64 See Pierre Wack....
- 65 Howard Gardner, *Frames of Mind The Theory Of Multiple Intelligences*. Basic, NYC, 1983
- 66 But much more work on cognitive implications of moral intelligence is needed, including further study of a moral social psychology, and See Janis and Mann, decisionmaking; Antonio Damasio, Descartes Error, ch. 7; I Assume diverse intelligences and knowledges, ways of reasoning and deciding, just as there are a wide variety of moral codes in human history and cultures. See Nitecki 11f,
- 67 For discussions of the complexities of social intelligence can be found in the works of G. H. Mead social psychology, A. Schutz's social phenomenology, Dorothy Emmet on roles, rules and relations, John Seely Brown on the social life of information, J. Habermas on critical social theory, among others.

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- 68 As diverse a group as Habermas, Gadamer, Schutz, Charles Taylor, Dorothy Emmett, Peter Winch, and G. H. Mead, not to forget the extensive discussions about social understanding in the philosophy of the social sciences and history.
- 69 1971: 502f; cited by Ruse, N, 149; Trivers, 17 on justice
- 70 See Elzanowski, Nitecki...
- 71 In contrast to Urbanek, in Nitecki.
- 72 Reinforcing Arne Naess' argument for depth level ecological values.
- 73 And add to the criticisms of the shopworn, obsolescent facts and values dichotomy, which naturalism rejects. It at best represents a distinction in formal modal logic, not a valid reconstruction of good or 'vigilant' decisionmaking (see Putnam; Janis and Mann,). It also represents a rejection of all forms of dualism, cognitive as well as ontological; see Gewirth, on rights, Ruse, TDS, 208f;
- 74 See Charles Taylor, *Explanation of behaviour*; Putnam, the facts and values dichotomous ; Others?? If that, some would reject even the formal prohibitions against such inferences (see Taylor? Putnam?), a position I find credible, but this is not the time to make that argument.
- 75 See E O Wilson *Consilience*, 271. Antonio Damasio. *Descartes Error*, and *Looking for Spinoza*. A contemporary conception of natural science is intended. It is genetic, biological, and neural, and post-Einsteinian in its physics. The notion of human science assumed accepts the concerns about reflective and critical interpretation posed for instance by Jurgen Habermas in *Knowledge And Human Interests*. Beacon, 1971. Also see Midgley, 95f. See, Lonergan, de Chardin, Dennett? EJones?, Churchland? Wilson, in *consilience?* On emergence, see Steve Jones, *Emergence*. In Lonergan's hands it is an overtly mathematical concept, and allows only of retrodictive rather than predictive explanation of the origin of new species and new levels of systems, such as for instance the emergence of consciousness from its neural underpinnings in the brain. Emergence is also more complex, less 'predictive' process logic than the preprogrammed stages implied by Ruse's epigenetic rules. But there is no space for further comment here. See my PhD dissertation, *Inquiry and development in Lonergan's insight*. Ch. 3? University of Toronto , 1969.
- 76 See Simpson, Dobzhansky, Wilson, *Sociobiology*, Lonergan, *Insight*, 121ff--this is part of Lonergan's highly mathematical exploration of the complementarity of classical, Einsteinian, and biological / statistical systems in Chapter IV of *Insight*.
- 77 Wilson, OHN 160f
- 78 cf Aristotle , 114b? 1106b-57a; Lennox, in M&R; Dennett, *Freedom Evolving*; Churchland, *Brainwise*, ?? Wilson, SB 120f. evolution implies acceptance of causality; but causality is not inconsistent with voluntary, informed decisions or free choices; only with metaphysical, dualistic notions of acausal free will. In contrast to moral dualism of idealist talk about nature's amorality, nature as a cosmic system is the system in and through which animal and human values and morality evolved. See Williams, in Nitecki, etc. not , Nature is certainly not a 'wicked witch.'
- 79 On the rejection of idealist moral theory because of its neo-Platonic, Cartesian, or Kantian, essentially theological dualism, see the work of Patricia and Paul Churchland, Daniel Dennett, among others. I am also thinking of the naturalistic and pragmatist orientation of the work of many recent philosophers: Willam Casebeer, Antonio Damasio, George Lakoff, Hilary Putnam, Gerard Edelman, W. V. O. Quine, Nicholas Rescher.