

## ***Integral and Differential Analysis of Bioethics in Understanding Agroenvironmental Altruism***

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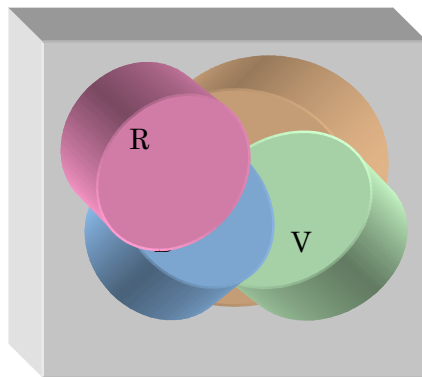
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Integral and differential domain of any decision theory affirm with the concept of “diverged convergence into divergence”. In this paper authors are trying to hypothesized an altruistic vision which might have its temporal and spatial constants specially in the case of agriculture and environment which is more explicitly focused and implicitly entwined and wherein the philosophical attributes might have been inherited with the hand of religion and practices of any and/or every kind.

Agroecological protection aims at conserving the environment in its broadest sense in order to ensure the sustainable utilization of its aesthetic, recreational, and product needs as well as the continuous yields of useful plants, animals, and materials by establishing a balanced cycle of harvest renewal. Even by maintaining the ethical aspects of the attitudes of common we can ensure the enactment of the concept of Prithivi Sukta of the ancient monk, Rishi Atharva. We can even rationalize Xenophon in the *Oeconomicus*, Socrates once said that "the best kind of work and the best kind of knowledge is farming, by which human beings supply themselves with necessary things." While some believe that the past ten thousand years of agriculture has led inevitably to irreversible catastrophic environmental degradation, many affirm the view of Xenophon's Socrates that there is no better work or knowledge than farming and they affirm with the United States statesman Daniel Webster that "when tillage begins, the other arts follow." Because the arts include philosophy, agriculture may be a precondition for the practice of philosophy and obviously becoming the stepping stone of bioethics for generating altruistic vision being the limiting factor for agro-environment resilience.

Agricultural ethics can be axiomatized as the study of moral issues raised by the work and knowledge of farming, a practice by which we supply ourselves with food, fiber, and self-knowledge. Moral issues in agriculture can be visualized as four points of a rectangle (Figure 1) as follows:

- a) Reasoning
- b) Holism
- c) Bioethics
- d) Virtue



**Figure 1: Hypothetical Altruistic Vision**

Not all thinkers are advocates of farming, and some anti-agriculturalists defend a return to the life of hunting and gathering. Few philosophers have explicitly defended such a view, but it is a logical consequence of some positions in environmental ethics. Researchers like Taylor, for example, holds the view that all living things including plants have a telos and that we have at least a corresponding prima facie duty not to interfere with them. Most humans could survive, and many could flourish, eating only nuts, berries and vegetable products taken from dead or dying plants. If all living things deserve respect then agriculture, the implements and practices of which inherently destroy many living things, would be unjustifiable. Other researchers like Callicott, believes that it is our duty genuinely to share the earth with other species, an impossibility when farmers plow up wildlife habitat. It is an uniquely entwined and socially inherited moral dilemma, we used to face.

In Edward Abbey's novel Desert Solitaire a character laments the oppressive presence of humans in the United States's Southwest, and opines 'I'd rather shoot a man than a snake.' In Daniel Quinn's novel, Ishmael, a gorilla explains that the majority of humans are 'Takers' who have deprived the world of its wildness and diversity. The preferred form of human life from the gorilla's perspective is that of hunting and gathering in which 'Leavers,' eschewing the arts of cultivation, insure the integrity of nonhuman planetary life. The earth is indeed being transformed, environmentally, technologically, politically and socially. However, the question that arises here is: How can one tell whether a proposed action or policy as a resultant mental molecule will lead towards or away from a condition of sustainable development? As has been noted by Pezzy several pathways may lead in the right direction: sustainability criteria are, are, therefore, to be regarded as pointers rather than measures of optimality. In this context, four questions may be asked as conceived by Munn,

Sustainable for whom?

Sustainable for what purpose?

Sustainable at what level – the subsistence or luxury level?

Sustainable under what condition?

The ability to select appropriate sustainability indicators are therefore exclusively depending upon the magnitude of altruistic vision and socio-biologists ought to face difficult task ahead to derive out with absolute topology of altruistic vision.

A more anti-humanistic philosophy can hardly be imagined when, as Callicott puts it, the measure of an ethic is the extent of its misanthropy. Misanthropy is the measure of anti-agricultural ecocentric ethics. But to the extent that we have any obligations at all to other humans, it would seem to be one of our basic duties, commensurate with others's basic moral rights, that we endeavor to feed the hungry. The justification of the practice of agriculture, then, is secured by whatever arguments justify the existence of individual moral rights and duties to others. To argue that agriculture itself is morally unjustifiable is to assume an onerous burden of proof.

Let us look into the aspects of gene technologies related to agriculture, which do not fit comfortably when we are thinking about man and nature as a whole. A gap appears between their focus on parts, mechanisms and products, and concerns for the whole, including ethical dimensions and for processes. The technological goal of controlling genes is not easily reconciled with a goal of living in harmony with and within - meaning as part of and caring for - the cosmos. Thus, it can be seen as a major and common task to stimulate an ongoing dialogue on the relationship between care and control and between spiritual and material aspects of care.

Agricultural gene technologies are frequently being portrayed as means to the worthy purpose of fighting poverty and human suffering. This claim however, is being met by counterclaims concerning economic and social obstacles which may prevent an equitable distribution of economic growth.

Most of the world's poor are small tenant farmers. In order to increase the standard of living of these farmers, the governments of many developing countries adopted in the 1970s the policy of 'industrializing' agriculture; making their farmers over in the image of large successful

farmers in more developed countries.

Questions were raised, however, about the equity of the strategy. Critics alleged that industrial farming unfairly benefitted larger farmers because they had easier access than small farmers to credit and expanded landholding. As crops were grown in greater abundance, the price farmers received for each bushel decreased and producers were forced to try to spread their costs over more acres. Were the poor and hungry actually disadvantaged by the industrialization of agriculture? Were small tenants unjustly dispossessed of land when larger farmers, beneficiaries of the new technologies, bought up their smallholdings? Some argue yes (Lappe and Collins), others no (Ruttan and Hayami). The debate turns on the resolution not only of important empirical questions (e.g., Did industrial agriculture reduce opportunities for labor employment and earnings?) but of significant philosophical questions as well (e.g., Is it obligatory, or only virtuous, for us to aid the unfortunate in other nations? [O'Neill]).

Some questions need to be addressed here include: Do family farmers practice better stewardship of the land than other farmers? Are rural communities better places to live if they are surrounded by many medium sized farms rather than a few large farms? Are farm animals treated more humanely on family farms? Can smaller farms take advantage of economies of scale and produce food as efficiently as larger farms?

Another issue concerns the role of governments in agriculture. Should public policy target benefits and subsidies at medium sized farms, and not at hobby or super farms? Or are such policies inherently unfair insofar as they do not benefit all farms equally?

Finally there are social justice questions related to pesticides and farmworker and consumer health. Gewirth, for example, has argued on deontological grounds that farmers are morally unjustified in using chemicals that are carcinogenic to consumers.

Not all environmental ethicists are opposed to agriculture and many religious ethicists formulate our duties to nature in terms of stewardship. Many Jewish and Christian theologians, for example, believe that the earth belongs to God, not humans, and from this fact it follows that humans must not abuse soil, water, air, and animals. Many secular philosophers hold similar positions, believing that we are justified in cultivating the earth and selectively breeding plants and animals if we do so in a sustainable way. Our entitlement to treat plants and animals as things of instrumental value only is an entitlement that is circumscribed, however, by our duties to future generations. Future human beings will need adequate natural resources by which to grow their own crops, and we must respect their basic needs and rights.

A controversial point in agricultural ethics revolves around the question of our obligations to nonhuman animals. Some argue that it is morally wrong to raise and slaughter animals for food because farm animals typically are "subjects of a life" with intrinsic value and basic moral rights of their own (Regan). Others argue that animals lack moral rights because they lack conscious experiences (Carruthers), or moral autonomy (Frey), or a sense of justice (Rawls), and therefore it is permissible to use them in humane ways. Utilitarians generally believe that animal pain counts morally, but they differ as to whether the benefits of using animals in agriculture outweigh the costs (Singer, Frey). The issue gains urgency as powerful new scientific techniques of manipulating the genome of animals develops. As subjects of genetic engineering, farm animals such as hogs have suffered from unintended deleterious pleiotropic effects, while research animals such as mice have suffered the consequences of being intentionally bred for propensity to develop debilitating diseases (Comstock, 1992).

We understand why Socrates would have hailed farming as a kind of work whereby we provide ourselves with necessary things, but we may puzzle over his claim that farming provides "the best kind of *knowledge*." Perhaps he meant what Wendell Berry means when Berry writes that it is 'a law' that 'land that is in human use must be lovingly used; it requires intimate knowledge, attention, and care. . . . A family that has farmed a farm through two or three generations will possess not just the land but a remembered history of its mistakes and of the remedies of those mistakes.'

Why should such knowledge be 'the best kind'? Perhaps because in it the intellect is

uniquely connected with the body, and spirituality to physicality. Perhaps Socrates had in mind an idea like Berry's: that those who farm "gain the means of life; . . . they gain the longevity and dependability of sources of food, both natural and cultural. [On a farm] the proper answer to the spiritual calling becomes, in turn, the proper fulfillment of physical need" (Berry, 1987).

To farm may be to practice a virtuous calling, an art with its own intrinsic rewards. For a people to become landless, or to become utterly dissociated from the means by which their most basic physical needs are met, may mean they are destined to become bereft not only of the best kind of work, but of the best kind of knowledge as well.

### **Integrative topology of altruism in bioethical agro-environment: a hypothesis**

Integral reciprocity of idea biosynthesis probably can postulate the theory of "diverged convergence into divergence" and can be hypothesized as two diverge –one converge phenomena. In case of agriculture and environment the idea convergence as bioethical vision driven by altruistic principle lies in its subjectivity with specific culture, tradition, values and vision which is being confronted with varied combinations of idea biosynthesis for survival. Empirically we may try to derive out by taking into consideration two ideas ( a, b) in one hand wherein 'a' is a combination of  $\Delta$  values in one point of exposure and 'b' is another combination of various values as another  $\Delta$  in another point of situational neural flux.

The hypothetical imperatives for example could be as follows to elucidate the integrative reciprocity of altruism and agro environment and its related idea biosynthesis.

$$\begin{aligned}
 I(\text{idea generated from 'n' number of idea 'a'}) &= \int a^{\Delta} \cdot \Delta^2 + 1 / (\Delta + 1)^2 d^{\Delta} \\
 &= \int a^{\Delta} \{ (\Delta + 1)^2 - 2\Delta / (\Delta + 1)^2 \} d^{\Delta} \\
 &= \int a^{\Delta} d^{\Delta} - 2 \int a^{\Delta} \cdot \Delta / (\Delta + 1)^2 d^{\Delta} \\
 &= \int a^{\Delta} d^{\Delta} - 2 \int a^{\Delta} \{ \Delta + 1 - 1 / (\Delta + 1)^2 \} d^{\Delta} \\
 &= \int a^{\Delta} d^{\Delta} - 2 \int a^{\Delta} \cdot 1 / \Delta + 1 d^{\Delta} + 2 \int a^{\Delta} \cdot 1 / (\Delta + 1)^2 d^{\Delta} \\
 &= \int a^{\Delta} d^{\Delta} - 2 \int a^{\Delta} / \Delta + 1 d^{\Delta} + 2 [ a^{\Delta} \int 1 / (\Delta + 1)^2 d^{\Delta} - \int \{ d / d^{\Delta} (a^{\Delta}) \int 1 / (\Delta + 1)^2 d^{\Delta} \} d^{\Delta} ] \\
 &= a^{\Delta} - 2 \int a^{\Delta} / \Delta - 1 d^{\Delta} + 2 [ -a^{\Delta} / \Delta + 1 + \int a^{\Delta} / \Delta + 1 d^{\Delta} ] + n \\
 &= a^{\Delta} - 2 \cdot a^{\Delta} / \Delta + 1 + n \\
 &= a^{\Delta} \cdot \Delta - 1 / \Delta + 1 + n
 \end{aligned}$$

Herein the ' $\Delta$ ' values are being contemplated with (+1) and (-1) in 'n' number of times in deriving out idea 'a' to have the integrative entwinement for generating the idea 'I' to reach at the 'decision', 'no decision' or state of mental dilemma in any decision theory for any agro environment situation for its usage, conservation and management. This hypothetical work is an attempt to understand the more complex and perplexed situation of agriculture, environment and bioethics for deriving out the analytical reasoning to reach out the topology of altruistic vision which is very much necessary for the life to understand the life process through mind towards society.

The use of science-based, technological solutions in society increases rather than decreases the need for politics, because such solutions inevitably carry incertitudes that science is unable to handle. Science can only provide answers to specific, factual questions. It cannot produce knowledge relating to consequences unknown and unthought-of. Thus, scientific methods will not suffice in matters of controlling unexpected consequences of the practical application of scientific results. Concerns about such long-term consequences are, however, central to public concerns about the use of gene technologies in agriculture and food production.

There are limits to science. The implication to the scientific community, when bringing science into action in society, is that ethical considerations cannot be regarded as irrelevant to science, says Brian Wynne: "Scientists use society as a laboratory. We are doing experiments. We practise intervention, but that is not what scientists have been trained for. They have been trained to think of science as passive observation of nature, and to regard ethical issues as separate from scientific ones. But there are ethical considerations as regards intervention, and scientists are not aware of that."

The French biologist Pierre-Henry Gouyon is another scientist engaged in clarifying the limitations of science. One of the limitations is, he thinks, embedded in the scientific definition of rationality. By excluding human experience from rationality while relying on scientific methods, science is not able to distinguish between tried and untried practices, and it ends up blaming Quite rational, public concerns - regarding unforeseen consequences from untried practices as being irrational.

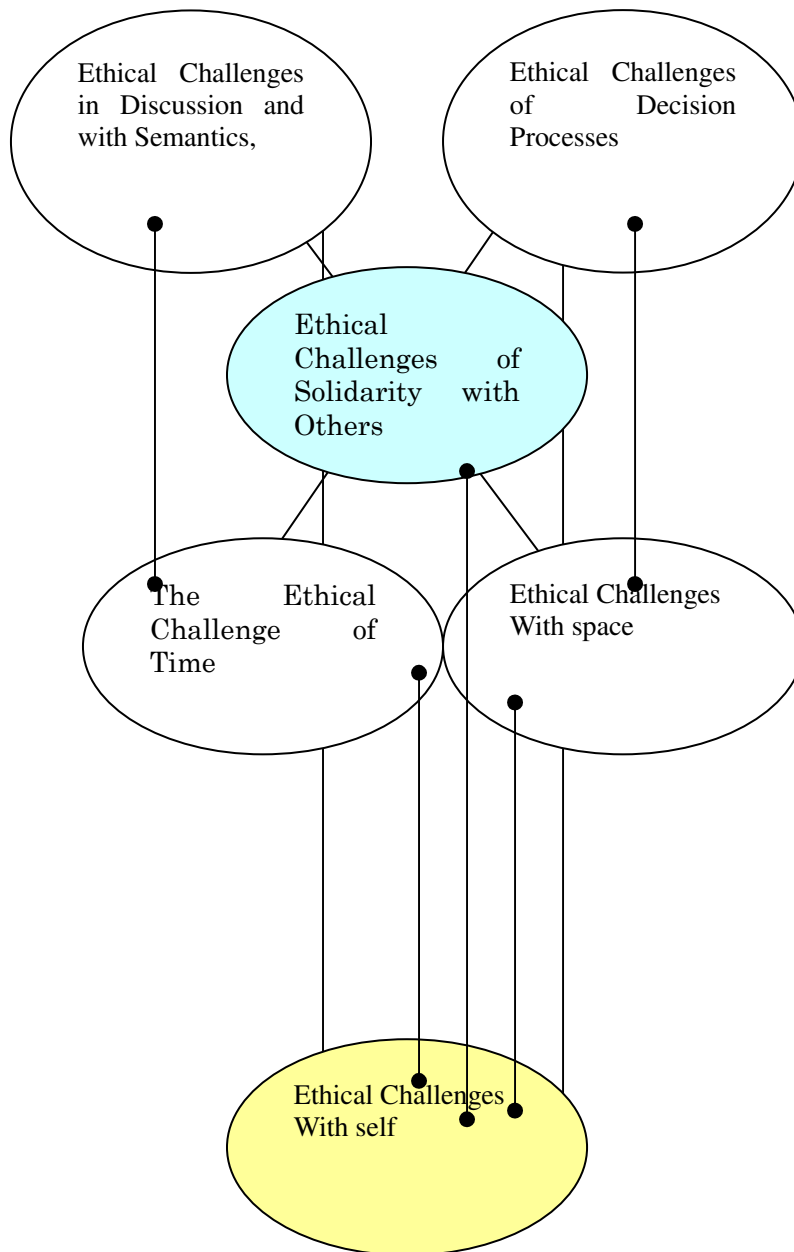
The dominating biological paradigm at present is, according to Pierre-Henry Gouyon, that the ultimate knowledge of biology is knowledge of DNA. This means that 90 percent of research resources are used to study at the level of DNA. Ecology is being ignored. And scientists are "not looking into the questions asked by the public." To understand the ecology of ecological insight complex social science models and empirical research materialize making more successfully allowance for the various and closely related dichotomies of the subject. Proceeding basically from structural assumptions, Keohane/Ostrom (1994) address in particular the 'design principles' and 'transaction cost' aspects of the organizational needs of the above cited local/global dichotomy (Groom, 1990). In contrast, Young (1994) focuses more on the processes of 'scaling down' and 'scaling up' in environmental analyses. This approach leads him to the formulation of primarily sociologically informed design and governance problems i.e.; a neo-institutional approach to the environment wherein probably the bioethics can have its new implicative resonance in understanding eco-philosophy in totality.

Reflecting philosophically on ethics is a fulfilling and spiritually demanding. But first, I am not a philosopher and hence cannot credibly undertake to write down a philosophical article, and second, ethics—including the ethics of biotechnology and genetic engineering the two important domain of modern agriculture—must be hauled down from the heaven of 'ideas' or 'values' and placed into the reality of everyday life. To deal responsibly means always and above all to *deal intelligently*—to weigh up the consequences of our actions or non-actions according to the benefits and the harm they can provoke. Analysis of altruistic vision through sociobiological researches with the help of mathematical interpretation, if possible can help us to locate a probable point of perception that is "bioethical optima" core of the altruism.

Using one of the many methodological approaches for reaching an ethical decision, or at least a "moral determination," we can ask the following questions:

- perception ----what ?
- situation analysis -----how ?
- practical options-----what ?
- usage of norms, qualities, and perspectives ----what ?
- bindings on judgement or norms-----verify ?
- evaluation result-----what ?

Intelligent action is acting in one's *enlightened self-interest* and is thus compatible with the selfish tendencies in our societies. To assume that altruism and a holistic world-view are predominant human characteristics would be unrealistic. We can think of a number of propositions as in Figure 2. These propositions may ensure the integration and reciprocation of bioethics and socio-biology to reach towards an altruistic vision!!! Human perceptions through its altruistic decisiveness towards the environment, and bioethical attitudes towards it have revolutionised through evolution as an integral part of the long history of human interactions i.e.; differential outcome with the rest of the nature. Without any altruistic perspectives of environmental stewardship for better agro ecological decision making, people will be unable to become active and constructive participants in the global process of sustainable development and trade-off.



**Figure 2: Propositions to consider**

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