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ALDO LEOPOLD'S "LAND ETHIC": AN ECOLOGICAL EXTENSION

OF

ALBERT SCHWEITZER'S "REVERENCE FOR LIFE"

by

John Lee Weaver

A senior honors thesis submitted in partial
fulfillment of the requirements for graduation

from the

HONORS PROGRAM

Approved:

UTAH STATE UNIVERSITY
Logan, Utah

1972

to DR. N.J. BELLEGIE

"Men work together," I told him from the heart

"Whether they work together or apart."

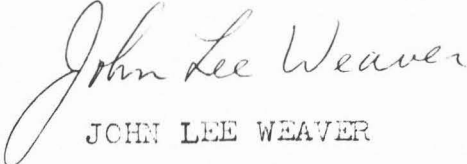
- Robert Frost

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JOHN LEE WEAVER

Logan, Utah
March, 1972

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INTRODUCTION

As a member of the world community, and in the process of becoming a professional ecologist, I have begun a search for a personal ecological ethic to guide my actions. Two of the paths I have taken in my search are Albert Schweitzer's Reverence for Life ethic and Aldo Leopold's Land Ethic. They are relevant because each has extended the scope of ethics beyond Homo sapiens. Their thoughts, with similarities and dissimilarities, form herein my travels.

ALBERT SCHWEITZER'S "REVERENCE FOR LIFE"

To understand Albert Schweitzer's thought, we must examine his categories. He distinguishes sharply between a "world-view" and a "life-view." By world-view, Schweitzer refers to a view of the world/universe as to its essential nature: is there within the world/universe process a purpose, an activity directed toward a goal? In other words, is a cosmic purpose being worked out? If so, what is man's role in this purposive order? Does he have some destiny within a cosmic purpose? This attempt at a world-view is usually called metaphysics.

By life-view, Schweitzer refers to an attitude toward life: what are man's obligations and duties? What standards should guide his conduct? Wherein does life obtain meaning, significance, value? What is right and good? This attempt at a life-view is usually called ethics.

Schweitzer denies the ability of any philosophy, past or present, to discover through discursive reasoning a world-view. Yet he has a strong belief in the necessity of arriving at this realization by thought and in the ability of thought to produce a life-view.

I acknowledge myself to be one who places all his confidence in rational thinking. Renunciation of thinking is a declaration of spiritual bankruptcy.¹

Thought is the strongest thing we have, Work is done by true and profound thought.²

All real progress in the world is in the last analysis produced by rationalism.³

Abdication of thought has been the decisive factor in the collapse of our civilization.⁴

I therefore stand and work in the world as one who aims at making men less shallow and morally better by making them think. With the spirit of the age I am in complete disagreement, because it is filled with disdain for thinking.⁵

Nonetheless, Schweitzer has complete skepticism of the ability of thought to discern and produce a Weltanschauung from objective knowledge of the world. Those who are still optimistic enough to imagine that objective knowledge can eventually produce a world-view have not traveled far enough down the road of rationality to see its dead-end.

1 Albert Schweitzer, Out Of My Life And Thought (New York: Holt, Rinehart and Winston, 1949), p. 222.

2 Erica Anderson quoting Schweitzer in The Schweitzer Album (New York: Harper & Row, 1965), p. 150.

3 Charles Joy quoting Schweitzer in An Anthology (Boston: The Beacon Press, 1947), p. 7.

4 Albert Schweitzer, The Philosophy of Civilization (New York: The MacMillan Company, 1955), p. 9.

5 Schweitzer, Out Of My Life And Thought, p. 219.

The rationalist thought of former times aimed at intellectual comprehension of the world, and thought that by means of such knowledge it would be able to interpret the highest impulses of our will-to-live as possessing meaning in connection with the world totality and the world process. But these hopes were doomed to failure.⁶

I ask knowledge what it can tell me of life. Knowledge replies that what it can tell me is little, yet immense. Whence this universe came, or whither it is bound, or how it happens at all, knowledge cannot tell me.⁷

The only advance in knowledge that we can make is to describe more and more minutely the phenomena which make up the world and their course.⁸

Furthermore, Schweitzer says that to understand the meaning (significance/value/purposiveness) of the whole - and that is what a world-view demands - is for us an impossibility.

What is full of meaning within the meaningless, the meaningless within what is full of meaning: that is the essential nature of the universe.⁹

What is glorious in it is united with what is full of horror. What is full of meaning is united to what is creative and destructive - it creates while it destroys and destroys while it creates, and therefore it remains to us a riddle. And we must inevitably resign ourselves to this.¹⁰

⁶ Schweitzer, An Anthology, p. 7.

⁷ Thomas Kiernan quoting Schweitzer in Reverence For Life (New York: Philosophical Library, 1965), p. 42.

⁸ George Seaver quoting Schweitzer in Albert Schweitzer Christian Revolutionary (London: Adam & Charles Black, 1955), p. 20.

⁹ Schweitzer, The Philosophy of Civilization, p. 274.

¹⁰ Schweitzer, Reverence For Life, p. 23.

Nor is it possible, if we take the world as it is, to attribute to it a meaning in which the aims and objects of mankind and of individual men have a meaning. In the world we can discover nothing of any purposive evolution in which man's activities can acquire a meaning. And, according to Schweitzer, the ethical cannot be discovered in any form, either, in the world process.¹¹

We are not destined to attain to an understanding of the objective world and ourselves as forming a mutual harmony.¹²

Again and again Schweitzer emphasizes that, in the last analysis, we must remain in the dark as to what the world (universe) is and means. Intellectual agnosticism is the only resort left open to an honest and inquiring mind. Here Schweitzer is fearlessly uncompromising in his cosmic pessimism.

What meaning can we give to human existence, if we must renounce all pretense of knowing the meaning of the world? Nevertheless there remains only one thing for thought to do, and that is to adapt itself to facts.¹³

Schweitzer's solution to the problem is to renounce completely the optimistic-ethical interpretation of the world. Neither world- and life-affirmation nor ethics, according to him, can be grounded on what objective knowledge of the world can tell us about the world.

11 Schweitzer, The Philosophy of Civilization, p. 76.

12 Schweitzer, An Anthology, p. 7.

13 Schweitzer, The Philosophy of Civilization, p. 273.

Thus Schweitzer breaks away to state that the meaning of life cannot be found in the world-process; a life-view cannot be founded on a world-view. Yet he emerges from this initial mire of skepticism. Schweitzer does not renounce a belief in life-affirmation and ethics. He says, in effect, that although we must remain in the dark as to what the world means (agnosticism), we can still possess a belief in the value of life and develop rules and standards to guide our actions.

Schweitzer now must search for a foundation upon which to lay a life-view, having rejected the notion that it is a product of a world-view. He looks everywhere, inside and outside, above and below, microscopically and macroscopically, to realize, from the most primal point of consciousness, that

I AM LIFE WHICH WILLS TO LIVE, IN THE MIDST OF
LIFE WHICH WILLS TO LIVE.¹⁴

This, according to Schweitzer, is the first, most immediate, and the continually given fact of thinking man's consciousness. Upon reflection, this fundamental postulate of existence penetrates the consciousness unceasingly.

¹⁴ Schweitzer, Out Of My Life And Thought, p. 157.

I am life which wills to live, in the midst of life which wills to live. This is knowledge born internally, directly of life which is conscious of this fact; it is experiential. It has solid, universal foundations; it goes back to the secret springs of life as life exists in itself. It is therefore all-sufficient as opposed to knowledge of the world which is external and must remain forever incomplete.

"The nature of the living Being without me," says Schweitzer, "I can understand only through the living Being which is within me." 15

Faced with the reality of existence, man now has to decide what his relation to his will-to-live shall be. If he denies it in lieu of will-not-to-live, he entangles himself in self-contradiction. He places himself in the position of being unnatural, untrue, and inconsistent.

On the other hand

if man affirms his will-to-live, he acts naturally and honestly. He confirms an act which has already been accomplished in his instinctive thought by repeating it in his conscious thought. 16

¹⁵ Ibid., p. 105. It is difficult for me to pinpoint, at least in his writings, what Schweitzer means by "Being." Perhaps it has a pantheistic ring to it.

¹⁶ Ibid., p. 158.

And Schweitzer believes that

an instinctive reverence for life is within us, for we are will-to-live and the will-to-live is stronger than the pessimistic facts of knowledge.¹⁷

With an acceptance of the will-to-live, Schweitzer defines what is good and what is evil.

Good is to preserve life, to promote life and spare suffering, to raise to its highest value life which is capable of development; evil is to destroy life, to injure life and cause it suffering, to repress life which is capable of development. This is the absolute, fundamental principle of the moral, and it is a necessity of thought.¹⁸

Schweitzer says that ethics is devotion to life resulting from reverence for life.¹⁹ This involves two integrated activities.

In the first of these activities -- I AM LIFE WHICH WILLS TO LIVE -- good is self-devotion; it makes selfishness a virtue. It heeds the latter half of the Biblical injunction: Love thy neighbor as thou would thyself.

Affirmation of life is the spiritual act by which man ceases to live unreflectively and begins to devote himself to his life with reverence in order to raise it to its true value. To affirm life is to deepen, to make more inward, and to exalt the will-to-live.²⁰

17 Schweitzer, The Philosophy of Civilization, p. 279.

18 Schweitzer, Out Of My Life And Thought, p. 158.

19 Schweitzer, An Anthology, p. 259.

20 Schweitzer, Out Of My Life And Thought, p. 158.

Reverence for life arising from the will-to-live that has become reflective therefore contains affirmation of life and ethics inseparably combined. It aims to create values, and to realize progress of different kinds which shall serve the material, spiritual, and ethical development of men and mankind.²¹

Schweitzer adds that to live your life in the direction of its course, to raise it to higher power, and to ennoble it, is natural. Consequently,

the highest knowledge, then, is to know that I must be true to the will-to-live. Every depreciation of the will-to-live is an act of insincerity towards myself. The impulse toward perfection of the highest material and spiritual value is innate in us. The will-to-live bears in itself the impulse to realize itself to the highest possible degree of perfection.²²

From this position Schweitzer next clarifies and extends his statement. It is a highly significant step, one which is central to his philosophy.

... in the flowering tree, in the blade of grass; everywhere it [the will-to-live] strives to reach the perfection with which it is endowed.²³

With this Schweitzer takes us down the road of teleology. He makes a stronger commitment to teleology than he did to vitalism, and it is important to the development of the rest of his philosophy. When Schweitzer remained honestly

²¹ Schweitzer, p. 159.

²² Schweitzer, The Philosophy of Civilization, p. 282.

²³ Ibid.

agnostic on vitalism, we were in agreement; however, with his commitment to teleology, Schweitzer goes against our grain. Nonetheless, of course, we follow his thought.

Boldly he says that

as in my will-to-live there is ardent desire for further life and for the mysterious exaltation of the will-to-live which we call pleasure, while there is fear of destruction and of that mysterious depreciation of the will-to-live which we call pain: so too are these in the will-to-live around me, whether it can express itself to me, or remains dumb.²⁴

This belief had a major impact on both Schweitzer's life and his thought. It was part of the reason for his medical missionary work in Africa, and it shaped the course of his morality.

We now turn to the second of the two integrated activities which make up Reverence for Life -- IN THE MIDST OF LIFE WHICH WILLS TO LIVE. Here Schweitzer is adamant.

What shall be my attitude toward other life? It can only be of a piece with my attitude towards my own life. If I am a thinking being, I must regard other life than my own with equal reverence.²⁵

Ethics are concerned with all living things that come within our sphere.²⁶

Ethics are complete, profound, and alive only when addressed to all living beings.²⁷

²⁴ Schweitzer, Out Of My Life And Thought, p. 157.

²⁵ Schweitzer, An Anthology, p. 262.

²⁶ Schweitzer, p. 272.

²⁷ Anderson, p. 174.

Schweitzer recognizes that objection is made to this significant part of his ethic in that it sets too high a value on natural life. But he in turn courageously criticizes previous philosophers for thinking that it was proper to consider only the relations of man to man.

In reality, however, the question is what is his attitude to the world and all life that comes within his reach. A man is ethical only when life, as such, is sacred to him, that of plants and animals as that of his fellow men, and when he devotes himself helpfully to all life that is in need of help. The ethic of the relation of man to man is not something apart by itself: it is only a particular relation which results from the universal one.²⁸

Humanity has concerned itself only with human beings and our relation with human beings. It has given only a passing nod to our relationship with other living creatures, looking upon it as a nice bit of sentimentality, quite innocuous but of no great significance. But it did have significance, for only if we have an ethical attitude in our thinking about all living creatures does our humanity have deep roots and a rich flowering that cannot wither.²⁹

Here we see Schweitzer's relevance to our search for an ecological ethic. He is perhaps the first philosopher to state that we must widen the circle of ethics to include all life; otherwise, ethics will remain too narrow in scope, unelemental, uncomprehending. It is a big jump in the realm of ethics, and it is remarkably ecological in its direction, for it speaks of the interdependence of all life.

²⁸ Schweitzer, Out Of My Life And Thought, p. 158-59.

²⁹ Anderson, p. 44.

Yet Schweitzer cannot be interpreted here as referring to physical relatedness of different manifestations of life. Rather he is talking about "ecology" in mystical/spiritual tones. All life is connected because all life contains within itself the will-to-live -- all life is a manifestation of the universal Will-to-Live. Again we can see, perhaps, traces of pantheism.

So when Schweitzer says that

formerly, people said: Who is your neighbor? Man. Today we must no longer say that. We have gone further and we know that all living beings on earth ... are our neighbors.³⁰

he is approaching not from the direction of physical ecological interdependence but from the direction of spiritual/pantheistic interdependence. Even with this interpretation of Schweitzer's thought, his is still a revolutionary step in ethics as he says that the morality we have lived by is fragmentary and must be abandoned.

I AM LIFE WHICH WILLS TO LIVE ... IN THE MIDST OF LIFE WHICH WILLS TO LIVE. Schweitzer has shown us that both a tension and a continuum exist between self-devotion and self-perfection, egoism and altruism, the will-to-live and the will-to-love, the temporal and the eternal.

³⁰ Ibid., p. 47.

The maintenance of one's own life at the highest possible level by becoming more and more perfect in spirit, and the maintenance at the highest level of other life by sympathetic, helpful self-devotion to it - this is ethics.³¹

Schweitzer thus closes the circle of life brilliantly by extending the love, devotion, and reverence for his own life to all other manifestations of life around him. If St. Francis of Assisi has been proposed as the patron saint for ecologists,³² then Schweitzer is surely a spiritual disciple.

All of this, however, does not mean, according to Schweitzer, that we know what life really is -- for life is a mystery. Our knowledge of the origin of life is incomplete, as to whether it was an expression of aggregate physico-chemical reactions or a vitalistic phenomenon. Nevertheless, the will-to-live exists --

The last fact which knowledge can discover is that the world is a manifestation of the universal will-to-live.³³

-- but it remains a mystery in its essence, forever inexplicable.

Profound and marvelous as chemistry is, for example, it is like all science in the fact that it can lead me only to the mystery of life, which is essentially in me, however near or far away it may be observed.³⁴

³¹ Schweitzer, An Anthology, p. 262.

³² Lynn White, Jr., "The Historical Roots of Our Ecological Crisis," Science, v. 155 (1967), p. 1207.

³³ Schweitzer, The Philosophy of Civilization, p. 76.

³⁴ Schweitzer, Reverence For Life, p. 23.

So, Schweitzer says, the highest, truest, knowledge is to know that we are surrounded by mystery.³⁵ Thus thought, which has traveled first the entire length of the road of rationality only to find it barricaded, now continues beyond into what is the nonrational. Reverence for Life has become undeniably what Schweitzer calls "ethical mysticism." It

admits how absolutely mysterious and unfathomable are the world and life. It is knowledge in so far as it does know the one thing which we can and must know in the sphere of this mystery, namely, that all Being is life.³⁶

Here it appears that Schweitzer has quite honestly and deliberately chosen mysticism when the damsel rationalism is in distress. It is strange action, indeed, for "one who places all his confidence in rational thinking." But Schweitzer says that, by such action, it is no longer reason that devotes itself to thought, but our whole being, that unity of emotion and reflection that constitute the individual.³⁷

With Reverence for Life Schweitzer believes he brings man into spiritual union with infinite Being, in harmony with the universe.³⁸

35 Seaver, p. 81.

36 Albert Schweitzer, Indian Thought and its Development (Boston: The Beacon Press, 1936), p. 263-64.

37 Anderson, p. 153.

38 Ibid., p. 165.

Schweitzer feels also that to share, to rise and fall in rhythm with life around us, is a spiritual necessity.³⁹

However, it is also a physical necessity for all life, excluding some autotrophs, to kill some other manifestation of life in order to survive themselves. This is the classic Selbstentzweiung or disunion.

The world offers us the horrible drama of Will-to-Live divided against itself. One existence holds its own at the cost of another; one destroys another. Only in the thinking man has the Will-to-Live become conscious of other will-to-live, and desirous of solidarity with it. This solidarity, however, he cannot completely bring about, because man is subject to the puzzling and horrible law of being obliged to live at the cost of other life, and to incur guilt of destroying and injuring life.⁴⁰

Schweitzer considers the Ahimsa commandment against all killing to be an ideal, its complete fulfillment impossible, and its Indian exponents living an illusion.

However seriously man undertakes to abstain from killing and damaging, he cannot entirely avoid it. He is under the law of necessity, which compels him to kill and damage both with and without his knowledge.⁴¹

This inevitable disunion is intensely distressing to Schweitzer. Not because it is a contradiction in his construct, for it is a conflict; but rather because pain and death are

³⁹ Ibid., p. 163.

⁴⁰ Schweitzer, Reverence For Life, pp. 72-73.

⁴¹ Schweitzer, An Anthology, p. 279.

very real evils. It remains for us as conscious beings to recognize this disharmony, this tension, and seek to reduce it as much as possible.

As an ethical being man strives to escape whenever possible from this necessity, and as one who has become enlightened and merciful to put a stop to this disunion of the Will-to-Live, so far as the influence of his own existence reaches.⁴²

Necessity forces us to sacrifice lives. But: we must try as much as possible to respect all life. That is our constant battle.⁴³

Although Schweitzer realizes the inherent conflict in his ethic and does not claim absolute inviolability for life of every kind under all circumstances, he still feels that Reverence for Life is absolute nonetheless. Perhaps it would be better to consider Reverence for Life as an attitude, for an absolute in practice cannot be offered as one simply does not exist.

The best solution to the difficulty that Schweitzer can come up with is a test of necessity: is it absolutely necessary that I take this life in this instance?

Whenever I injure life of any sort, I must be quite clear whether it is necessary. Beyond the unavoidable, I must never go, not even with what seems insignificant. The farmer who has mown down a thousand flowers in his meadow to feed his cows, must be careful on his way home not to strike off in thoughtless pastime the head of a single flower by the roadside, for he thereby commits a wrong against life without being under the pressure of necessity.⁴⁴

⁴² Schweitzer, Reverence For Life, pp. 72-73.

⁴³ Anderson, p. 143.

⁴⁴ Seaver, p. 89.

With this standard Schweitzer thus rejects the anthropocentric tendency to place different value on different levels of life.

In the past we have tried to make a distinction between animals which we acknowledge have some value and others, which, having none, can be liquidated when and as we wish. This standard must be abandoned. Everything that lives has value simply as a living thing, as one manifestation of the mystery that is life.⁴⁵

The ethic of Reverence for Life is found particularly strange because it establishes no dividing line between higher and lower, between more valuable and less valuable, life. To undertake to lay down universally valid distinctions of value between different kinds of life will end in judging them by the greater or lesser distance at which they seem to stand from us human beings - as we ourselves judge. But this is a purely subjective criterion. Who among us knows what significance any other kind of life has in itself, and as part of the universe?⁴⁶

It is for this reason that no vegetarianism was practiced at Lambarene. The limits of reverence for life are dictated not by arbitrary evaluations of lower and higher forms of life, plants and animals, but by purely practical considerations.⁴⁷

This is another way of renouncing the Judeo-Christian dictum in Genesis that man should have dominion over animals.

We reject the idea that man is 'master of other creatures,' 'lord' above all others. We bow to reality. We no longer can say that there are senseless existences with which we deal as we please. We recognize that all existence is a mystery, like our own existence. Has any man so far been able to create a fly? That is why our neighbor is not only man ...⁴⁸

⁴⁵ Anderson, p. 42.

⁴⁶ Schweitzer, Out Of My Life And Thought, p. 233.

⁴⁷ Frederick S. Franck, Days with Albert Schweitzer (New York: Henry Holt and Company, 1959), p. 105.

⁴⁸ Anderson, p. 174.

Man, then, has the power to extinguish life, but not the power to kindle its essence. This implies responsibility. It is true that in reality we have to choose arbitrarily which forms of life, and even which individuals, we shall save, and which we shall destroy. Reverence for Life, however,

marks off no skillfully defined circle of duties, but lays upon each individual the responsibility for all life within his reach.

No one can lay down for him at what point, on each occasion, lies the extreme limit of possibility for his persistence in the preservation and promotion of life. He alone has to decide, by letting himself be guided by a feeling of the highest possible responsibility towards other life.⁵⁰

Thus Schweitzer returns ethics to the land of their birth - the individual. He does not say that his ethic should be dogmatic in practice; he offers it as a guide for responsible, thinking human beings. Reverence for Life presents us with an imperfect obligation, yet, according to Schweitzer, this does not diminish its moral force. Moreover, the disunion in life, the necessity of destroying life, does not fuse what is ethical with what is necessary. To the man who is truly ethical all life is sacred.⁵¹

Schweitzer has given us a life-view. But what of a world-view? How can life-affirmation produce a world-view?

⁴⁹ Schweitzer, p. 234.

⁵⁰ Seaver, p. 89.

⁵¹ Schweitzer, p. 233.

When it relates to the entire world; when it forms and builds our spiritual relationship to the world. It does that only if it shows us how we are linked with all living things.⁵²

The idea of Reverence for Life offers itself as the realistic answer to the realistic question of how man and the world are related to each other. Of the world man knows only that everything which exists is, like himself, a manifestation of the Will-to-Live. On the one hand he is subordinate to the course of events which is given in the totality of life; on the other hand he is capable of affecting the life which comes within his reach by hampering or promoting it, by destroying or maintaining it.⁵³

As a being in an active relation to the world man comes into a spiritual relation with it by not living for himself alone, but feeling himself one with all life that comes within his reach.

Let a man once begin to think about the mystery of his life and the links which connect him with the life that fills the world, and he cannot but bring to bear upon his own life and all other life that comes within his reach the principle of Reverence for Life, and manifest this principle by ethical affirmation of life.⁵⁴

Then, Schweitzer believes, we will have an ethical code which is meaningful, one which can sustain a world-view. And he has ventured to express the thought that the basic concept on which goodness rests is reverence for all life.⁵⁵

52 Anderson, p. 40.

53 Schweitzer, p. 230-31.

54 Ibid.

55 Anderson, p. 40.

A principle not dependent on a theory of the cosmos, a principle which will not deny the value of the present world, a principle which will embrace all living things, a principle which will contain within itself an ethical urgency ... this was Schweitzer's quest.

He succeeded by forging a new ethic, one that he considered to be ethical pantheism, one which combines cosmic pessimism with life optimism, one which derives a world-view from a life-view, and one which is elemental yet profound, rationalistic yet ethically mystical, egoistic yet altruistic, inward and personal yet activistic and universal.

ALDO LEOPOLD'S "LAND ETHIC"

Aldo Leopold takes Albert Schweitzer's Reverence for Life ethic and extends it ecologically to embrace all elements of the biosphere. The reverence for one's own life, broadened by Schweitzer to include other forms of life, is extended now by Leopold to include the abiotic as well as the biotic, the non-living as well as the living, the community as such. In so doing, Leopold forms what he calls a "Land Ethic," and makes a quantum jump in the evolution of ethics, similar in magnitude to Schweitzer's.

Leopold says that all ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. His instincts prompt him to compete for his place in the community, but his ethics prompt him also to co-operate.⁵⁶

Whereas Schweitzer considers all life to be one, so does Leopold consider the land to be one organism ... an integral whole. By land Leopold means the things on, over, or in the earth⁵⁷ - in other words, the biosphere with its ecosystems.

⁵⁶ Aldo Leopold, A Sand County ALMANAC (New York: Oxford University Press, 1949), p. 203-04.

⁵⁷ Aldo Leopold, Round River - From the Journals of Aldo Leopold, ed. Luna B. Leopold (New York: Oxford University Press, 1953), p. 145-46.

The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land.⁵⁸

Leopold feels that many people associate the concept "land," land as a biotic mechanism, with the phrase "the balance of nature." But this figure of speech fails to describe adequately the complexity of the land mechanism.⁵⁹

To the ecological mind, balance of nature has merits and defects. Its merits are that it conceives of a collective total, that it imputes some utility to all species, and that it implies oscillations when balance is disturbed. Its defects are that there is only one point at which balance occurs, and that balance is normally static.⁶⁰

Leopold prefers a truer image: the biotic pyramid, used in ecology as a symbol of land. It's illustrated in Fig. 1.

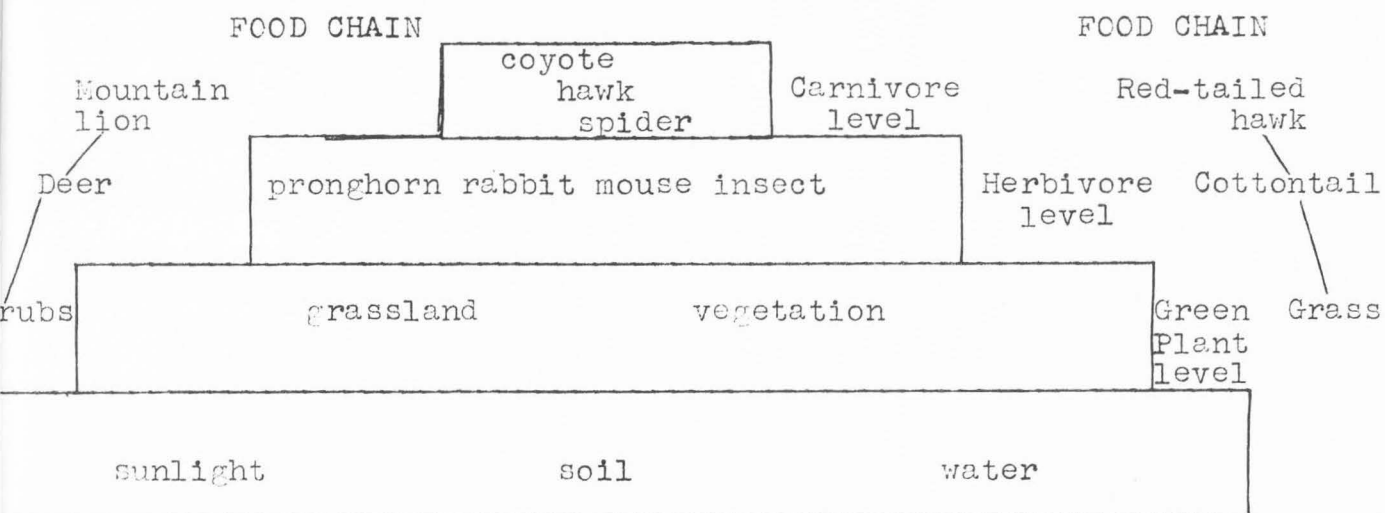


Fig. 1 - Biotic pyramid showing portion of a grassland food web from Dasmann (1968)

⁵⁸ Leopold, A Sand County ALMANAC, p. 204.

⁵⁹ Ibid., p. 214.

⁶⁰ Aldo Leopold, "A Biotic View of Land," Journal of Forestry, v. 37 (1939), p. 727.

In this diagram grasses at the producer level absorb energy from the sun, a herbivore such as a cottontail rabbit absorbs energy by eating the grass, and a carnivore such as a red-tailed hawk absorbs energy by eating the rabbit. At each step upward the transfer of energy is inefficient and much is lost. Partly because of this, the total numbers and mass also decrease upward, usually, giving the pyramid its characteristic form.

Leopold notes that

land, then, is not merely soil; it is a fountain of energy flowing through a circuit of soils, plants, and animals. Food chains are the living channels which conduct energy upward; death and decay return it to the soil. The circuit is not closed; some energy is dissipated in decay, some is added by absorption from the air, some is stored in soils, peats, and long-lived forests; but it is a sustained circuit, like a slowly augmented revolving fund of life. There is always a net loss by downhill wash, but this is normally small and offset by the decay of rocks. It is deposited in the ocean and, in the course of geological time, raised to form new lands and new pyramids.⁶¹

Leopold goes on to say that the interdependence between the complex structure of the land and its smooth functioning as an energy unit is one of its basic attributes. This energy cycle, the essence of the land organism, Leopold calls round river.

⁶¹ Leopold, A Sand County ALMANAC, p. 216. Perhaps Leopold is lax here in his interchange of energy and matter.

Wisconsin not only had a round river, Wisconsin is one. The current is the stream of energy which flows out of the soil into plants, thence into animals, thence back into soil in a never-ending circuit of life. 'Dust unto dust' is a dessicated version of the Round River concept.⁶²

We continue Leopold's Round River analogy because it is central to an understanding of his Land Ethic, and how Leopold differs from Schweitzer.

The biotic stream is capable of flowing in long or short circuits, rapidly or slowly, uniformly or in spurts, in declining or ascending volume. No one understands these variations, but they probably depend on the composition and arrangement of the soils, faunas, and floras which are conductors or channels of flow.

It is a fixed route or channel, established by evolution. The pipe line leaks at every joint. Owing to this spillage en route, only part of the energy in any local biota reaches its terminus. In addition to losses from spillage, energy is side-tracked into branches. Thus we see each animal and each plant is the 'intersection' of many pipe lines; the whole system is cross-connected.

Nor is food the only important thing transmitted from one species to another. The oak grows not only acorns; it grows fuel for the Indian, browse for deer, hollow dens for racoon, salad for June beetles, shade for ferns and bloodroots. It fashions domiciles for gall wasps; it cradles the tanager's nest; its fallen leaves screen the owl from the crow and the partridge from the fox; and all the while its roots are splitting rocks to make more soil to make more oaks.

We see, then, that chains of plants and animals are not merely 'food chains,' but chains of dependency for a maze of services and competitions, of piracies and cooperations. This maze is complex; no efficiency engineer could blueprint the biotic organization of a single acre.

It has grown more complex with time. Paleontology discloses aboriginal chains at first short and simple, growing longer and more complicated with each revolving century of evolution. Round River, then, in geological time, grows ever wider, deeper, and longer.⁶³

62 Leopold, Round River, p. 158.

63 Ibid., p. 159-62.

Leopold sums up his concept of the land organism in this beautiful passage.

The black prairie was built by the prairie plants, a hundred distinctive species of grasses, herbs, and shrubs; by the prairie fungi, insects, and bacteria; by the prairie mammals and birds, all interlocked in one humming community of cooperations and competitions, one biota. This biota, through ten thousand years of living and dying, burning and growing, preying and fleeing, freezing and thawing, built that dark and bloody ground we call prairie.⁶⁴

That land is a community is the basic concept of ecology, says Leopold, but that land is to be loved and respected is an extension of ethics.⁶⁵

Leopold now sets up his basic principle of morality: a thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.⁶⁶

This gives us the significance of Leopold's Land Ethic, the central point at which it differs with Schweitzer's Reverence for Life. It represents an entirely different thrust.

Schweitzer says it is good to maintain and promote life, living things. Leopold has extended the range of his ethic to the community, which includes the living and the non-living, life and death. Death does not carry the absolute connotation of evil, as with Schweitzer, for death is now recognized as indispensable for the continuation of life.

⁶⁴ Ibid., p. 148.

⁶⁵ Leopold, A Sand County ALMANAC, p. viii-ix.

⁶⁶ Ibid., p. 224-25.

On this point the ecologist Dr. Paul Shepard has made a relevant comment, one which is implied in Leopold's position. Shepard says that

the focus on individual death must be shifted to the web of life. Death is part of life transformation. The death of the individual is not insignificant, but the death of a population or species is far more serious, for it reduces the richness and stability of all surviving life and the biosphere itself.⁶⁷

This is an attitude not at all alien to ecologists. The community concept necessarily puts the emphasis at the population, rather than the individual, level. Death, furthermore, is an integral component that perpetuates the energy flow through an ecosystem.

So, in contrast to Schweitzer, Leopold, throughout much of his life, had no compunction against killing animals. Hunting was a favorite sport, and he attributed much value to it.

Who alone in our modern life so thrills to the sight of living beauty that he will endure hunger and thirst and cold to feed his eye upon it? The hunter. Poets sing and hunters scale the mountains primarily for one and the same reason - the thrill to beauty. Critics write and hunters outwit their game primarily for one and the same reason - to reduce that beauty to possession. The differences are largely matters of degree, consciousness, and ... language.⁶⁸

Leopold sees three kinds of values in sports, customs, and experiences that renew contacts with wildlife:

⁶⁷ Paul Shepard, Man In The Landscape (New York: Alfred A. Knopf, 1967), p. 201.

⁶⁸ Leopold, Round River, p. 170-71.

(1) First there is value in any experience that reminds us of our distinctive national origins and evolution, i.e., that stimulates awareness of history. I shall call this the 'split-rail value.'

(2) Second, there is value in any experience that reminds us of our dependency on the soil-plant-animal-man food chain, and of the fundamental organization of the biota.

(3) Third, there is value in any experience that exercises those ethical restraints collectively called 'sportsmanship.'⁶⁹

Leopold says that the point is that some six to eight millions [this figure is higher today] of Americans like to hunt and fish, that the hunting fever is endemic in the race, that the race is benefited by any incentive to get out in the open, and is being injured by the destruction of the incentive in this case.⁷⁰

Yet, we must argue with Leopold here. Of the values he has listed for hunting, and other values commonly attributed to hunting, none actually depend on the killing of the animal for their fulfillment. Destruction of life is not necessary to the attainment of these values.⁷¹

In similarity to Schweitzer, Leopold refuses, on ecological grounds, to set up a subjective standard of different values for different animals and plants.

In both pioneering times and the early phase of conservation, plants and animals had a positive, neutral, or negative value, with utility as the sole criterion for judgment. The science of ecology has destroyed this myth.

⁶⁹ Leopold, A Sand County ALMANAC, p. 177-78.

⁷⁰ Leopold, Round River, p. 172.

⁷¹ Not for the author, anyway ...

The emergence of ecology has placed the economic biologist in a peculiar dilemma: with one hand he points out the accumulated findings of his search for utility, or lack of utility, in this or that species; with the other he lifts the veil from a biota so complex, so conditioned by interwoven cooperations and competitions, that no one can say where utility begins or ends.⁷²

The basic issue transcends economics. Hawks and owls are a part of the land mechanism. Shall we discard them because they compete with game and poultry? Can we assume that these competitions which we perceive are more important than the co-operations which we do not perceive?⁷³

Leopold feels that the last word in ignorance is the man who says of an animal or plant: "What good is it?" If the land mechanism as a whole is good, then every part is good, whether we understand it or not.⁷⁴ The only sure conclusion, Leopold says, is that the biota as a whole is useful, and biota includes not only plants and animals, but soils and waters as well.⁷⁵

Leopold certainly seems to be taking an utilitarian approach here. It would be well to keep this in mind as we examine his thought further.

Because the land is one community, one organism ecologically, is it sound economics to regard any plant as a separate entity, to proscribe or encourage it on the grounds of its individual performance? What will be the effect on

⁷² Leopold, "A Biotic View of Land," p. 727.

⁷³ Leopold, Round River, p. 150.

⁷⁴ Ibid., p. 146.

⁷⁵ Leopold, "A Biotic View of Land," p. 727.

animal life, on the soil, and on the health of the forest as an organism?⁷⁶

Economic biology assumed that the biotic function and economic utility of a species was partly known and the rest could shortly be found out. That assumption no longer holds good -- the function of species is largely inscrutable, and may remain so.⁷⁷

Leopold says that the biotic mechanism is so complex that its workings may never be fully understood.⁷⁸ He feels the same wonder at the biotic enterprise that pervades Schweitzer's writings. He goes on to say that, because of the mystery, we should keep every "cog and wheel" as the first precaution to intelligent tinkering with the biotic mechanism.⁷⁹ This means we must recognize the importance of all plants and animals, the small as well as the large, the non-game as well as the game, as all contribute to the health and proper functioning of the land organism.

It is only in recent years that we hear the more honest argument that predators are members of the community, and that no interest has the right to exterminate them for the sake of a benefit ... to itself.⁸⁰

76 Leopold, Round River, p. 152.

77 Leopold, "A Biotic View of Land," p. 727.

78 Leopold, A Sand County ALMANAC, p. 205.

79 Leopold, Round River, p. 147-48.

80 Leopold, A Sand County ALMANAC, p. 211-12.

One basic weakness in a conservation system based wholly on economic motives is that most members of the land community have no economic value. Of the 22,000 higher plants and animals native to Wisconsin, it is doubtful whether more than 5 per cent can be sold, fed, eaten, or otherwise put to economic use. Yet these creatures are members of the biotic community, and if (as I believe) its stability depends on its integrity, they are entitled to continuance.⁸¹

We now seem to have an adequate basis for interpreting the Land Ethic as being basically utilitarian - utilitarian not to man, but rather to the biotic community. Even as such, it would still be utilitarian, differing from Schweitzer's Reverence for Life in this respect.

But then Leopold says

we have at least drawn nearer the point of admitting that birds should continue as a matter of biotic right, regardless of the presence or absence of economic advantage to us.⁸²

Obviously, Leopold is repudiating anthropocentric utilitarianism, but what about his term "biotic right"? Does he mean by this that life has an intrinsic right to existence regardless, or does the right derive from the life's membership in the biotic community? It would be significant to our discussion if we knew the answer, but it cannot be found in Leopold's writings.

Just as Leopold, like Schweitzer, refuses to make value judgments about different forms of life, so does he refuse to label as "good" or "bad" entire ecosystems. Who knows

⁸¹ Ibid., p. 210.

⁸² Ibid.

what role such ecosystems as marshes, bogs, dunes, or deserts, play in the functioning of the larger biosphere?

The fact that the land mechanism is so complex, so difficult to fully understand, leads us to another parallel between Leopold and Schweitzer, the idea that man is not "lord" above all creatures.

A land ethic changes the role of Homo sapiens from conquerer of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.⁸³

It is a century now since Darwin gave us the first glimpse of the origin of species. We now know what was unknown to all the preceding caravan of generations: that men are only fellow-voyagers with other creatures in the odyssey of evolution. This new knowledge should have given us, by this time, a sense of kinship with fellow-creatures; a wish to live and let live; a sense of wonder over the magnitude and duration of the biotic enterprise.⁸⁴

With these words Aldo Leopold joins hands with Albert Schweitzer in Reverence for Life.

We now have the basic thrust of the Land Ethic - an ecological extension of ethics. A land ethic, of course, cannot prevent the alteration, management, and use of resources, but it does affirm their right to continued existence, and, at least in spots, their continued existence in a natural state.⁸⁵

⁸³ Ibid., p. 204.

⁸⁴ Ibid., p. 109.

⁸⁵ Ibid., p. 204.

What the land ethic does seek to do, as all ethics should, is to harmonize conflicts that arise. It is in this sense that Leopold defines conservation as a state of harmony between men and land.⁸⁶

This harmony cannot be achieved without both ecological knowledge and ecological conscience.

Conservation is paved with good intentions which prove to be futile, or even dangerous, because they are devoid of critical understanding of the land ... one of the requisites for an ecological comprehension of land is an understanding of ecology.⁸⁷

This calls for a reversal of specialization in the natural sciences.

Instead of learning more and more about less and less, we must learn more and more about the whole biotic landscape. Ecology is destined to become the lore of Round River, a belated attempt to convert our collective knowledge of biotic materials into a collective wisdom of biotic navigation.⁸⁸

But ecological knowledge is insufficient by itself; a deep ethical affirmation of the whole biotic enterprise is equally vital and necessary.

It is inconceivable to me that an ethical relation to land can exist without love, respect, and admiration for land, and a high regard for its value.⁸⁹

How will this affirmation, this ecological conscience, this conviction of individual responsibility for the health of the land, spring forth? - we ask.

⁸⁶ Ibid., p. 207.

⁸⁷ Ibid., p. 224-25.

⁸⁸ Leopold, Round River, p. 159.

⁸⁹ Leopold, A Sand County ALMANAC, p. viii.

Only when we see land as a community to which we belong,
may we begin to use it with love and respect - replies
Aldo Leopold, in the spirit of reverence for life.

CONCLUSION

One of the penalties of an ecological education is that one lives alone in a world of wounds. An ecologist must either harden his shell and make believe that the consequences of science are none of his business, or he must be the doctor who sees the marks of death in a community that believes itself well and does not want to be told otherwise.⁹⁰

⁹⁰ Round River

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