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An Economic Critique of Birch and Cobb's The Liberation of Life

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ABSTRACT. The discussion concerning humans and the environment has intensified in recent years. Now, more than ever, we must ask how we as economists can engage in a conversation regarding environmentalism when the participants come from a myriad of disciplines. I posit that it is only through an understanding of the other disciplines' ethics and values that the economist can meaningfully engage in the conversation. This paper is an exercise in this interdisciplinary understanding. First, Charles Birch and John B. Cobb Jr.'s ecological viewpoint is presented. This is followed by the economic prescriptions arising from the ecological viewpoint. A subsequent critique and refutation of these economic prescriptions is made from an economic perspective.

There are implications to every view of reality. The brave knight who slays dragons and rescues damsels will see glory in a world of action and adventure; the timid church-mouse will encounter fear and trembling in a world fraught with peril; and the philosophical skeptic will find himself wholly unsure of even the basics of life. In short, a person's world view will significantly shape that person's ethics and values. In turn, these ethics and values help dictate one's responses to particular situations. The challenge thus lays in discovering what ethics and values are most appropriate in making responsible decisions. Their discovery, I posit, is the only way meaningful conversation among varying disciplines and worlds views may take place. I will show this by addressing the interplay of two paradigms, that of the radical environmentalist and the neo-classical economist as both address economic effects on the environment. In order to pare down environmentalism's entire discipline to a manageable size, I will focus on the viewpoints of Charles Birch, a population ecologist and emeritus professor of biology at the University of Sydney, and John B. Cobb Jr., professor of philosophy at the School of Theology in Claremont, California, as it is presented in *The Liberation of Life*.

I chose to work with Birch and Cobb's *Liberation of Life* because it is itself a significant example of the interdisciplinary nature of the environmental conversation. While this text is based in environmental ethics, Birch and Cobb are better known for their work in the fields of science and theology respectively. Birch has been recognized as a fellow

by multiple organizations including the Australian Academy of Science and the American Association for the Advancement of Science. Birch is also a 1990 recipient of the Templeton prize [Meta Library, 1]. Cobb is recognized as one of the most important Whiteheadian scholars, having founded both the Journal and Center for Process Studies [Kim, 9]. Process thought, which originates with Alfred North Whitehead, first found prominence in the theological circles in the 1960's and continues to be an influential movement in theology to this day [Bouma, 1]. We thus see that both Birch and Cobb are recognized and influential scholars within their respective areas of expertise. Birch and Cobb's influence in their fields thus provides sufficient reason to further examine *The Liberation of Life*.

Environmental ethics is a discipline far removed from economics; because of this, if meaningful discussion is to take place, the economist must have a clear understanding of the environmentalists' objectives and goals. For Birch and Cobb, the objective is to promote an ethic that gives utmost value to experiencing the richness of life [1990, 1]. Experience, for Birch and Cobb, is a series of successive moments or occasions wherein a being with subjectivity has the ability to reshape and reform the world [Griffin, 1976, 277]. Birch and Cobb see this experience of interacting with the world with utmost importance. They arrive at this objective by first assuming that living beings have a quality of life that is affected by experience: "To have richer experience is to be more alive" [1990, 146]. It is desirable for living things to be more alive. Therefore, one should seek to enhance a subject's experiences in order to enhance the subject's life "for life *is* experience" [1990, 146]. Presently, they believe the richness of life is far from full realization because the present systems objectify not only the natural world but also certain human beings:

> Although the dominant paradigm of life theoretically treats all human beings as subjects, and thus as standing outside of this objectified nature, in fact those who have accepted this paradigm tend to treat other human groups as part of the world of objects. Those without power, be they women or Blacks or other oppressed groups are too easily denied agency as subjects and are treated as mere means to the ends of those who have power [Birch, 1990, 2].

The failure to acknowledge all life as living subjects (as opposed to mere objects) is the impetus for their call for a liberation of life.

The liberation is conceived in two ways. First, Birch and Cobb seek a liberation of our concept of life. All life, from the single-celled organism to the human community must be freed of any objectifying characteristics or labels [1990, 2]. All life must be seen as beings with some degree of subjectivity (subjects of a life), and thus ought to be seen with the same preciousness with which human life is viewed: "The recognition that every animal is an end in itself and not merely a means to human ends explodes the assumptions of our tradition" [1990, 151]. Second, there is a call for a liberation from social structures that constrict the fullness of life. These structures or systems manipulate its living resources while disregarding the enhancement of the subject's quality of life [1990, 2].

At this point, it is important to note the fundamental economic concepts missing from these foundational principles. First is the idea of efficiency. In economics, one views the world as a place with scarcity and addresses this problem by asking what one should do to make the most of what is available. For Birch and Cobb, the concept of maximizing utility through efficiency is totally absent. Instead, there is the push to maximize richness and the depth of life [Birch, 1990, 2]. Second, this call to liberation rejects any consequentialist moral theory – the idea that the goodness of an act is evaluated only by its outcome or end. Instead, Birch and Cobb give precedence to the ethics focusing on the nature and motivation behind the actions which means there is an implicit rejection of the basic principle of Utilitarianism. Utilitarianism is concerned with maximizing pleasure and minimizing pain. The goodness of an action is determined only by the consequences of the act [MacKinnon, 2004, 48-9]. This, according to the call for liberation, would be a system inconsistent with fostering the richness of life. These differences allow us to begin to recognize and understand the fundamentally different points from which radical environmentalists and economists view the world.

Now that we understand Birch and Cobb's foundations for liberation, we can move on to discuss the ethic they believe will accomplish their goal. In order to meet the goals of liberation – acknowledging the subject of the life and developing a system that fosters a richness for this life – Birch and Cobb have developed the ecological model. The model begins by rejecting the dominant system of thought which they dub the

mechanistic model. They argue the mechanistic model's depiction of the biological world is both deficient and unreconciled in the sense that certain presumptions of the mechanistic model are implicitly contradictory. These implicit contradictions arise because of the model's necessarily strong claims for determinism. If organisms are like machines and machines may be broken down and examined as individual parts, then organisms may be broken down into their constituent parts as well. So if an organism is only its parts and it is conceivable that one can understand the purpose and function of these parts, then one may suppose that all actions taken by an organism, whether mental or physical, may be predictable and determined [Birch, 1990, 68-70].

Birch and Cobb argue this mechanistic view does not allow for human thought which is qualitatively different from mere biological functions: "To account for that… required the existence of a mind. A human being was a machine but with a difference. It had a mind attached" [1990, 71]. The model cannot account for any sort of free human thought: "If biologists assert absolute determinism with respect to animals, then they must either assert that they themselves are absolutely determined or else posit a radically unique and supernatural element in human beings" [1990, 74]. This view of strict determinism is unreconciled because:

> These self-same scientists who speak of people as evolved machines speak with another voice about the future of people. Human beings, we are told, are unlike their forebears in that they are now in control of their own evolution. Which way that evolution goes is for us to determine. People can choose the future. This is the meaning of cultural evolution. What people learn and pass on in the form of knowledge and invention shapes the future in a way which renders genetical evolution almost superfluous. They now change the environment instead of being changed by it. The human species is now in a position to destroy itself or to save itself. So it is popular for the modern biologist to speak of the human responsibility to be rational in choosing a future. But to talk about human beings as responsible and rational and moral and making choices about the future presupposes something very different from determinism [1990, 74]

Having discussed Birch and Cobb's rejection of the mechanistic model, we may proceed with developing their ecological model.

For our purposes, we will discuss two general features of the ecological model. First, the ecological model seeks to look at the interconnectedness of events within nature rather than its parts. Birch and Cobb call this event thinking. In event thinking, an object is not primarily seen as the object but rather a point for which "a multiplicity of events [are] interconnected with each other and with other events in a describable pattern" [1990, 86]. It is these events and patterns that are brought to the forefront in the ecological model because they constitute the richness of life that Birch and Cobb seek. The focus on events indicates a further departure from the mechanistic view of substance and towards a view of the processes of life [1990, 83-6].

The second feature is the an argument for a continuity in life where there is not an absolute qualitative rift between humans and nature. Instead, there is a spectrum of freedom for the natural world within which humans may be found [1990, 123]. We can find the same idea in economics. Alfred Marshall's motto of *Natura non facit saltum*, "nature makes no leaps," provides a perfect example [Groenewegen, 1995, 411]. For the continuity of life to stand, Birch and Cobb must show that there is in fact no fundamental barrier. They approach this continuity by appealing to that which is most important to the ecological model: experience. Birch and Cobb argue that observed patterns of experience and behavior give sufficient reason to believe that animals have subjective experiences. Basically, we believe other humans think, reason, and are subjects of a life because they appear to possess these abilities. An observer can never be absolutely certain that another person is in fact thinking and experiencing. But, if every indication and pattern of behavior suggests that the other is most likely conscious and rational, then in a practical sense we believe this to be true. In the same way, we cannot be absolutely certain of an animal's faculties, but if similar indications of thought and experience exist, then we ought to be able to make similar conclusions, even if their consciousness and rationality are more limited than in humans. For Birch and Cobb, there is more than sufficient evidence to support their conclusion through this argument: "The clever behaviour of a skilful Australian sheep-dog in rounding up the flock gives all the appearance of an animal that is weighing up the pros and cons of attacking from this flank or from that" [1990, 123]; the singing blackbird whose song not only grows and develops, but also changes in quality

depending on external forces; and even the writhing of a worm under the inspection of a child with a magnifying glass provide examples of similar patterns of behavior [1990,122-5].

> Our common-sense judgments based on behaviour are supported by the fact that animals are equipped physiologically with the necessary organs to have experiences much like the human. Their sometimes original responsiveness to their environment, their ability to solve problems, their apparent memory and anticipation, all make it easy for us to assume that basic features of human experience can be generalized to them [1990, 125].

If this conclusion is true, then "for us to say that something experiences is to say that it is not merely an object in our world of experience but also a subject of relations in its own right. It is acted upon and it acts" [1990, 123]. The implications of this statement are immense. The greatest of these implications is that anthropocentricism – viewing humans as preeminent – is no longer appropriate. Now it is not merely humans who have infinite intrinsic value. The value has been extended to those in the animal kingdom. If we carry this reasoning to its logical end, then we must say that the life of an animal is equally as valuable as the life of a human. If this is so, then the destruction of a chimpanzee's forest must be seen on par with the demolition of an occupied shantytown or suburban neighborhood and the happiness of the dolphin should be equated with the happiness of humans [1990, 148-153]: "Animals, especially those with highly developed nervous systems, cannot rightly be treated as mere means. They are entities which we must respect as ends as well. Their existence and enjoyment is important, regardless of the consequences for us or for other entities" [1990,153]. Of course, this does not mean that human beings cannot ever use other life as a means. It is impossible for the human species to live wholly apart from the rest of nature. In fact, this separation would go against Birch and Cobb's interconnectedness of life. What is implied in the recognition of animals as subjects of a life is that we cannot merely see these animals as means, they must be seen as ends in themselves. Likewise, a worker cannot merely be seen as units of labor. The worker must instead be primarily seen as an experiencing human being.

With the ecological model established, we may now turn our attention to Birch and Cobb's discussion of economics as it relates to the ecological

model. In the ecological model, the economic goal is not the most efficient allocation of scarce resources but rather the enhancement of experience. Three features that advance this end are justice, participation, and sustainability. This discussion will focus on sustainability as it is most suited to economic criticism. Birch and Cobb generally define sustainability as a capability for indefinite existence. They argue that neoclassical economic theory–which they term the 'dominant model' – fails to provide a sustainable world [1990, 239]. We will therefore begin by looking at Birch and Cobb's characterization of the dominant model before turning to their own prescriptions for economic sustainability.

Birch and Cobb present the dominant model as advocated by the 'cornucopians'–economists who believe that economic and technological growth will eventually lead to a materialistic utopia: "The cornucopians with their Promethean strategy hold that industrial society is very much on the right track and that more of the same–continued economic growth –is all that is needed to usher in the technological golden age" [1990, 253]. The suggestion is that cornucopians fail to address sustainability with proper due diligence because they presume that technology will overcome any resource limitations. This trust in infinite growth, argue Birch and Cobb, is shortsighted and flawed: "Even if it were possible, the goal of limitless economic growth is inherently absurd and few probably really believe in it. It would require either infinite increase of human population or infinite increase of individual consumption or some combination thereof. Both are ridiculous" [1990, 260-1]. Instead, appropriate attention must be given to the issue of sustainability:

> [This] sustainable society will respect the limits of the planet earth. The earth is finite in three aspects: it has a limited capacity to produce renewable resources such as timber, food and water, it has a limited amount of non-renewable resources such as fossil fuels and minerals, and thirdly it has a limited capacity for providing its free services for the maintenance of the life-systems such as its pollution absorption capacity [1990, 242].

In place of the dominant model, Birch and Cobb recommend a system with an artificial steady state equilibrium. An artificial level of economic activity is required because: "the sheer momentum of growth and the lag in social response to deterioration of the environment predispose the world system to overshoot the level that would be sustainable over a long

period. The inevitable consequence of overshoot is collapse" [1990, 243]. This steady state would have both zero population growth and zero growth in the production and consumption of goods [1990, 244]. Birch and Cobb use the structure of a rainforest to illustrate their ideal economic model:

> Every rain forest started with seeds that grew into seedlings that grew into shrubs and trees. There was an increase in biomass. While this was going on, more and more energy was being trapped from sunlight for growth. Eventually the forest reached a mature phase. Energy was then used primarily to maintain the mature community. Of course lots of seeds were still produced, but in the struggle for existence most of them never saw the light of day. A mature forest we see today has reached the limit of growth. Yet it survives perfectly well, perhaps for millions of years, as a dynamic sustainable society [1990, 241].

In order to reach a state of zero growth in population and consumption, the habits and motivations of the economic man must be radically reconceived. First, there must be a premium placed upon durability. A good that cost x units which lasts for y number of years would be significantly less desirable than a good that cost twice as much and lasted twice as long [1990, 244-5]. Next, there must be significant concern for economic disparities such that the affluent would desire "an equitable distribution of what is in scarce supply" [1990, 245] to the poor. Finally, "the emphasis will be on life not things, on growth in quality not quantity, on services not material goods" [1990, 245]. This, in sufficient depth, sums up the relevant aspects of Birch and Cobb's economic stance.

While Birch and Cobb accuse the cornucopians of believing in infinite growth in the long run, a more accurate portrayal would be a willingness to accept the possibility of nondeclining utility over time. Most economists would agree with Birch and Cobb that true infinite growth is ridiculous because infinite growth implies infinite resources which necessarily means there would be no scarcity. Instead, economics advocates a position of sustainable indefinite growth. One can define sustainability by using utility. A system is sustainable if the present actual utility is below the maximum sustainable utility. If actual utility ever exceeds maximum sustainable utility, then it is inevitable that there will be a future decline in utility in order to fall below maximum

sustainable utility. Thus one can say an economically sustainable system is one which is below the maximum sustainable utility and has nondeclining utility [Vezzy, 2005, 124-5]. Rather than accusing economists of not addressing scarcity, the real issue for Birch and Cobb ought to be the disagreement between the terms 'weak' and 'strong' sustainability:

> Weak sustainability assumes significant possibilities for substitution between natural capital and other inputs, so that natural capital is only one of a number of inputs that can be carried over by future generations to sustain their well-being (the sustainability constraint on natural capital is thus 'weak'). Strong sustainability sees certain kinds and quantities of natural capital as more inherently needed for sustaining economic activity, let alone growth [Vezzy, 2005, 128].

Even if Birch and Cobb advocated an extreme form of strong sustainability, their characterization of minerals as a non-renewable resource is inappropriate. Metals are not used only once before they are forever discarded; rather they are reprocessed and reused multiple times [Vezzy, 2005, 128-9]. This recycling of durable resources along with the presence of substitutes and renewable energy suggests that limitations to growth and sustainability may not be as restrictive as Birch and Cobb would argue.

The economic view of sustainability presented above also invalidates Birch and Cobb's insistence that a zero sum growth in both population and production/consumption is necessary [1990, 244]. In actuality, neither the rate of production nor the rate of consumption would necessarily need to be held constant. Birch and Cobb argue for zero growth in order to maintain a constant level of consumption and sustainability, but what really needs to be held constant in their argument is the rate of resource consumption rather than the rate of consumption or production of final goods. But even this does not necessarily need to be constant because both population and the rate of resource use are separate variables affecting sustainability. If this is so, then population can grow as long as the intensity of resource use decreases by an equal amount [Vezzy, 2005, 128-9].

Birch and Cobb's response to sustainability is an artificial steady state. There are, however, enough obstacles to render the artificial state

impractical for implementation. The first obstacle is that there is presently no reliable way to determine the earth's actual carrying capacity. Even if there was a way to calculate the present carrying capacity, there would still be the obstacle of calculating how human interactions with the environment would affect the carrying capacity. Birch and Cobb presume that the environmental impact of industrialization is always negative while this may not actually be the case [1990, 242]. The second obstacle is how to set the appropriate level of economic activity. First, one must ask which authority or organization is qualified to set this level. Assuming there is an appropriate entity, one must then ask if the level should be set at the equilibrium between diminishing carrying capacity and increasing environmental demand. If not, and a level below equilibrium is desirable, the question becomes how far below maximum sustainability should the level be set. If this level of economic activity is actually accomplished through some non-arbitrary method, a third obstacle will arise: enforcement. What organization is able to provide the resources needed to enforce this steady state? Is enforcement even possible? Can any organization appropriately prevent a third-world subsistence farmer from cutting down virgin forest for farm land? There will surely be those who wish to consume beyond the set level either for additional profit, simple survival, or any number of other reasons. Birch and Cobb have provided no solutions to the obstacles presented. It would appear that the implementation of an artificial steady state is presently unrealistic.

Furthermore, this artificial steady state goes against Birch and Cobb's own rain forest illustration. The maturation of a rain forest is not determined artificially by any resident within the rain forest. No seed, when it has room to grow, will decide not to sprout because the forest as a whole has reached a certain size. Instead, it will grow if it is able. The forest reaches maturity naturally when natural factors such as land and sunlight are fully employed. It may even be possible for a rain forest to be in multiple and differing stages of maturity. While the heart of the forest may be mature, the fringes may have just begun the process. This, in fact, would be an even more accurate depiction of the developed and less developed countries in the world. An artificial restriction and resource redistribution like the one advocated by Birch and Cobb could be thought of in the following way. The forest would first have to physically halt the maturation process. This is followed by a radical process of transplantation so that the entire rain forest appears to be

equally mature. This artificial rain forest and artificial state is clearly contrary to Birch and Cobb's desired process for reaching sustainability [1990, 241].

I now wish to argue that instead of being a detriment, growth may actually help in reducing pollution and fostering long term sustainability. To begin, Birch and Cobb would likely claim that an increase in output, all else being equal, would result in an equiproportionate increase in pollution. This, however, is the worst case scenario. There are two effects that may mitigate the increase in pollution. The first is a composition effect where aggregate emissions may decline if relatively cleaner activities become a larger part of total GDP. The second is a technique effect which allows for technical progress, market-induced substitution, or governmental regulations which result in less-polluting practices [Grossman, 1995, 20-1]. There is evidence to support these effects. Studies performed with air quality data gathered by the Global Environment Monitoring System (GEMS), a collaborative effort between the World Health Organization and the United Nations Environmental Program, suggest that there is a significant relationship between the scale of economic activity and pollution [Grossman, 1995, 23-5]. Graphing the concentration of certain pollutants against a national per capita GDP shows an inverted U-shaped relationship. At first, levels of the pollutant will increase until a particular level of per capita GDP is reached. Once per capita GDP exceeds this amount, the levels of the pollutants will begin to decrease. The cresting point in per capita GDP was found to be just below five-thousand 1985 dollars for suspended particulates and sulfur dioxide. Similar relationships can be seen with carbon monoxide and nitrogen dioxide at higher levels of per capita GDP [Grossman, 1995, 29-31]. There also appears to be a positive correlation between the locality of the pollution and the point at which the curve crests. Suspended particulates and sulfur dioxide have the most local effects and are the first to crest. Other compounds which have a more delayed effect or dispersed region of impact crest at higher levels of per capita GDP [Grossman 31-2]. Similar trends can be seen in river pollution with lead, mercury, and arsenic [Grossman, 1995, 39]. While these trends do not hold for all pollutants they do for a signifncant number of pollutants such that economic growth can have positive effects on the environment.

An even stronger statement may be made: "People make pollution and poverty makes people" [Baldwin, 1995, 52]. Thus economic growth is not only positive but necessary because it reduces poverty which reduces

population growth and therefore reduces pollution. A theory of demographic transition offers a model of population growth in three phases. Phase I, the premodern phase, resembles the Malthusian population thesis which has unchecked fertility and high birth and death rates. The population is mostly stable and responds directly to economic conditions. Phase II begins with a significant drop in the death rate due to increased productivity. This brings the society away from subsistence and towards technological advances. The birth rate, however, is still relatively high and the overall population quickly increases. The latter half of Phase II ushers in a period where fertility declines at a faster rate than mortality. This is the beginning of population stabilization. The decline in fertility is brought on "by socioeconomic factors such as rising levels of education, real income and life expectancy levels as well as higher female labour force participation rates" [Baldwin, 1995, 53]. The opportunity costs for children are increasing in this phase, and an emphasis is beginning to be placed on the quality of offspring rather than the quantity.

> The human capital – fertility link involves a simple economic trade off. Child bearing and rearing are time-consuming activities that provide parents with some vicarious utility. Since parents always have the alternative of boosting their utility via direct consumption of goods, higher wages induce a substitution effect away from fertility. This accounts for the negative correlation between per capita GDP and fertility… Parents vicariously value the consumption of their progeny; however, the discount rate applied by the present generation to the utility of future generation falls as fertility rises [Baldwin, 1995, 55].

Finally, "Phase III is marked by a stable population at a high living standard, which is supported by low birth and death rates, and a high life expectancy at birth. Fertility fluctuates more than mortality" [Baldwin, 1995, 53]. If this is the case, then we may arrive at two conclusions. First, we can conclude the statement "poverty causes people" [Baldwin, 1995, 52] is valid. Second, we can say economic growth will foster a stable population in the long run. If this is true, then Birch and Cobb's idea of "the sheer momentum of growth" [1990, 243] is unfounded. The economy is, in fact, not a freight train hurtling towards collapse. There are, in fact, measures built in which slows growth as appropriate levels

are reached.

A similar relationship can be found between per capita pollution and per capita GDP. This is determined by first defining the 'lowest-cost unit pollution coefficient' (LCUPC) which is a coefficient derived from the amount of pollution for producing a certain good or service. One can determine the incipient pollution, "the amount of pollution a particular activity would have produced using a technology that would have been optimal if the private cost of pollution were zero" [Baldwin, 1995, 59], using the LCUPC:

Incipient pollution = LCUPC X Output [Baldwin, 1995, 59]

Abatement in this case would be actual pollution minus incipient pollution. The LCUPC has a bell shaped relationship between pollution per capita and GDP per capita. At low levels of GDP, pollution is relatively low because the type of economic activity is largely agricultural and at the subsistence level. As GDP increases, industrialization occurs and the economy shifts towards industrial activities. This causes an increase in per capita pollution. But at relatively high levels of per capita GDP, the economy shifts away from production and towards services. Services pollute relatively less than industry, causing the LCUPC to decrease. At the same time, as incipient pollution increases before leveling off with abatement following suit. Abatement lags incipient pollution because:

> environmental concern has an income elasticity greater than unity. A more popular way of phrasing this is that only rich societies can afford to worry about the environment; poor societies must direct most of their expenditure to the basic necessities of life. Another explanation is that only rich countries have the advanced social, legal, and fiscal infrastructures that are essential to enforcing environmental regulation and promoting 'green awareness' [Baldwin, 1995, 61].

Because of these factors, the per capita pollution curve rises and peaks at an intermediate level of per capita GDP, at which point the increase in abatement and the shift to services causes the per capita pollution curve to fall as GDP continues to increase [Baldwin, 1995, 59-62]. This theory is supported by Holtz-Eakin and Selden's [1992] analysis of carbon

monoxide and Grossman-Krueger's study of pollutants [1991]. With this relationship in place, one may reasonably conclude that the statement "People make pollution and poverty makes people" [Baldwin, 1995, 52] is accurate. If it is accurate, then we may conclude that one method of reaching a society with relatively low pollution per capita and a stable population is through economic growth.

In conclusion, Birch and Cobb's goal of liberating life so that it may experience the full richness of life is admirable. The economic prescriptions Birch and Cobb derive from the ecological model, however, are too idealistic and generally impractical. As I have shown, there are methods of reaching sustainability short of Birch and Cobb's radical reconstruction of economic policy. While an economic approach to sustainability may not meet the goals of liberation as well as those of the ecological model, it is certainly more feasible. Birch and Cobb reference Alfred North Whitehead when they say "that all living things have a threefold urge '(i) to live, (ii) to live well, (iii) to live better" [Birch, 1990, 106]. Birch and Cobb's ecological model of life may very well allow us to meet the third criteria of living better, yet it falls short in meeting the first two. The economic perspective offers a practicality that allows both life and living well. It would perhaps be wise for radical environmentalists such as Birch and Cobb to use established economics to bring society to a level where ecological idealism may be popularized. There are implications to every view of society, perhaps the most beneficial choice is rejecting exclusivity and embracing a multitude of views so that the best of each perspective may be brought to the forefront to both increase utility and deepen the richness of life.

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