

## **An Unfit Altruist: The Life and Work of Rachel Carson**

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Altruism might be defined as love with universal intent. If this is true, then as Holmes Rolston has argued, the environmental ethicist is the ultimate altruist, who extends concern to an expanding web of relationships, embracing all forms of life. With these characterizations of altruism in mind, this paper explores the life and work of a supreme altruist, Rachel Carson, author of the now 40 year old expose of indiscriminate pesticide use, Silent Spring. We will consider Carson's actions in light of some biological definitions of altruism, particularly those of E.O. Wilson, as well some ethical and theological contexts. Biology alone does not easily account for the type of altruism with universal intent that Carson embodied; she also drew much of her inspiration from childhood teachings as well as from the life and work of another supreme altruist—theologian and humanitarian Albert Schweitzer.

As a child, Carson was greatly influenced by the nature study movement, a program aimed at instilling virtue and good citizenship in children by reconnecting them to nature. Carson was an avid reader of nature study apostle Gene Stratton Porter who believed that “through nature a child was led to God, and that studying wildlife was a source of moral virtue” (Lear, 1997, p. 17). Nature study eschewed a diet of factual information in favor of teaching children to engage nature through their senses. In the words of a chief proponent, nature study puts children in “a sympathetic attitude toward nature” instilling both “knowledge and love of the common things and experiences in a child's life and environment” (Bailey, 1911, p. 4). The movement strongly discouraged the collecting and dissecting of organisms, preferring to let children experience lifeforms

in their natural settings rather than in a sterile laboratory. These lessons from nature study were deeply engrained in Carson who, in her relatively short life, would write five books dealing with human relationships to the natural world.

Carson published three books prior to Silent Spring, all on the sea (she pursued graduate work in marine biology). She never married or had children but in 1956, just short of her 50<sup>th</sup> birthday, Carson adopted a child. Within a few years she developed breast cancer, which she battled for four years, finally succumbing to it in 1964, less than two years after Silent Spring was published. Her last work, The Sense of Wonder was published posthumously.

Many people see Carson as a brave and heroic figure, and indeed she was. But from an evolutionary perspective, she was unfit, for as E.O. Wilson has said, “fallen heroes do not have children” (Wilson, 1978, p. 152). In fact there are many reasons Carson might be considered “unfit” from a neo-Darwinian standpoint: According to biological definitions, behaviors are *altruistic* when they increase the evolutionary fitness of others while decreasing the fitness of the actor. Altruism is generally considered maladaptive because altruists take on risks to themselves and tend to leave fewer (or zero) offspring, while selfish individuals tend to proliferate and spread their genes. If self-sacrifice means fewer descendants, then natural selection tends to edit out altruism. How, then, does it persist?

Many biological/genetic arguments—David Sloan Wilson is an exception—explain “apparent” altruism with reference to concepts of inclusive fitness (kin selection) *or* tit for tat strategies, also known as reciprocal altruism. Both inclusive fitness and reciprocal altruism are evolutionary strategies conferring hidden benefits to

the actor of what only *appears* to be altruism (Wilson and Sober, 1998). E. O. Wilson also uses the terms *hard core* and *soft core* altruism, labels that seem to suggest there is something slightly illicit about altruism (Wilson, 1978).

Hard core altruism occurs when I take on risks to myself on another's behalf, without expectation of reciprocity. Because hard core altruism is not reciprocal, Wilson believes it could only have evolved by means of kin selection. From the gene's perspective, my actions make sense because through my surviving relatives, a portion of my genome persists. What seems at first glance unilateral altruism turns out to be in the "interest" of my genes. Adoption, for example, is one practice observed in nature that falls under hard core altruism. Wilson notes that in chimpanzees adoption is generally practiced by the "closest possible relatives" such as brothers and sisters of the orphaned chimp, "rather than experienced females with children of their own" (1978, p.151). Soft core altruism involves reciprocity, tit for tat strategies, such as mutual grooming among animals. I do a good deed for you and you return the favor. Cooperative relationships are thus forged on a conditional basis.

Purists will say that none of these definitions counts as true altruism because all contain a core of self interest, even if only at the genetic level. But as D.S. Wilson and Elliot Sober note, biological definitions of altruism often sound peculiar to nonbiologists, and especially to ethicists, since they have nothing to do with the intentions or motives of the altruist, but only the evolutionary outcomes. When biologists talk, as they often do, of altruistic "strategies," many of us would find this expression odd, since it seems that where there is *strategy* there is no genuine altruism. For example, the movement known as environmental virtue—a movement that upholds Rachel Carson as an exemplary

figure—is in stark contrast to biological accounts of altruism because it focuses precisely on the motives and character of the actor, not merely the action. Put differently, it is agent centered rather than act centered. Biological definitions of altruism are concerned primarily with the act and its outcome.

In any case, these considerations lead to yet another distinction between *psychological* and *evolutionary* altruism. Again, evolutionary altruism is determined by genetic fitness, regardless of intention, whereas psychological altruism delves further into genuine motives. But even here, “genuine” does not necessarily mean singularity of motive, or purity of heart: I may do a good deed for you because I want to, but the reason I want to is that it makes *me* feel good. Some form of hedonism always lurks beneath the altruistic surface, according to this view. In fact, E.O. Wilson holds that humans are primarily driven by soft core, reciprocal altruism, which is at root calculating: Its “psychological vehicles are lying, pretense, and deceit, including self-deceit, because the actor is most convincing who believes that his performance is real” (1978, p.156). One of the reasons it is pointless to argue with such a position is that one can never prove that one is *not* self-deceived.

Now, back to Carson, again, from biological perspectives: It would seem that from the standpoint of many evolutionary definitions of altruism, Carson was biologically unfit, her behavior maladaptive. Carson devoted long years to protecting humans and other lifeforms—some quite distantly related to humans—and died leaving no genetic offspring. She not only adopted a child who did *not* share many of her genes, but undertook book projects intended to protect nonhumans (particularly Silent Spring) and even one designed to help *other parents* teach their children.

Biologists sometimes refer to these kinds of behaviors as “alloparenting,” the parenting of others’ offspring, and it is not deemed a good evolutionary strategy when it extends beyond close genetic kin. Carson, for instance, adopted her grand-nephew Roger. The evolutionary fitness of adoption here is questionable since a great nephew is worth relatively little, genetically. According to biologists’ formulation, approximately two siblings or four cousins are worth one of me, genetically, so we can assume that I would have to adopt numerous great-nephews in order to equal the genes found in just one brother or sister. A grand-nephew doesn’t count for much in inclusive fitness. Carson’s decision to adopt, like many of her decisions, seem maladaptive. This perspective is summed up in the words of one critic of Silent Spring who infamously remarked that he could not comprehend Carson’s concern for future generations in light of the fact that Carson was herself a *spinster*.<sup>1</sup>

Perhaps Carson was simply an evolutionary anomaly. However there is one biological theory that might explain her all-inclusive love of life, even if it cannot explain other decisions in her life. This theory, known as biophilia also comes from E.O. Wilson.

### **Biophilia and Biophobia**

Carson herself argued that “the affinity of the human spirit for the earth and its beauties is deeply and logically rooted... a deeply seated response to the natural universe” (Lear, 1999, p.160). This quote could easily have come from E.O. Wilson who describes biophilia as “an innate tendency to focus on life and lifelike processes” for which our

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<sup>1</sup> Paul Brooks recalls this remark in the *American Experience* documentary on Rachel Carson, “Rachel Carson’s Silent Spring” (Peace River Films, 1993).

“spirit” seems “explicitly designed.” (Wilson, 1984, p.1) Indeed, Wilson penned the Afterword for the recently released 40<sup>th</sup> Anniversary edition of Silent Spring.

However, as I will argue, it is ironic that Wilson should laud the “the valiant author of *Silent Spring*” (as he puts it in his afterword), since his theory fails to explain her all-inclusive sense of wonder and concern for life.

Wilson attempts to explain the evolutionary origins of human responses to animals and nature as a whole. Through evolution, humans acquired a set of learning rules that allowed us to survive in a variety of natural environments. These rules have been reinforced genetically and culturally through a process of gene-culture coevolution. Certain genotypes make a behavioral response more likely; the response enhances survival and fitness and is spread through the population, making the behavior more common. Genetically rooted behaviors are further perpetuated by cultural myths, narratives, even religious beliefs that reinforce the behaviors. For example, across many cultures, Wilson observes, people have aversive responses to snakes, and as we might expect, many cultures also have myths that vilify serpentine creatures and recount our ancient enmity with them. The Genesis story is one well-known example.

Of course it is the *positive* responses to nature that Wilson wants to emphasize because these might lead us to protect animals and the environment. Most people, for instance, respond positively to flowers. This makes sense when we consider that flowering plants are fruit bearing—flowers signal the presence of food which, of course, is crucial for survival. What at first appear to be subjective aesthetic preferences may turn out to have specieswide, functional origins in our evolution.

Regarding biophilic responses to other animals, Wilson's arguments here intersect with claims regarding altruism and kin selection: a sense of kinship is "stamped by a common genetic code" (Wilson and Kellert, 1993, p. 39). We share the strongest social bonds with animals that are our closest evolutionary kin. So biophilia—positive responses to certain animals—is like hard core altruism: it is a positive (though genetically selfish) inclination to protect others who also represent the genes of ultimate interest, namely, our own. And since we share some percentage of our genes with all living things, a biophilic response toward all life is biologically reinforced.

One problem that immediately surfaces with biophilia is that hard core altruism, by Wilson's own admission, is relatively uncommon in evolution, "declin[ing] steeply in frequency and intensity as relationships become more distant" (1978, p.155). In fact it is not really accurate to say that this is an *admission* because Wilson is relieved that hardcore altruism is so rare. This is because the hardest core altruists are highly aggressive toward outsiders. As Wilson writes, social insects such as bees, ants, and wasps "are ready to defend their nests with insane charges against intruders." (1978, p.151) Wilson refers to such behavior as altruistic suicide. These insects are so aggressive precisely because of their close genetic bonds to their colony-mates, on whose behalf they attack or sting intruders, dying shortly thereafter. In fact, the term *social insects* seems a misnomer since from a human perspective they seem rather antisocial!

Given the rarity of hard core altruism, soft core altruism remains the primary impetus for protecting other lifeforms, and Wilson does argue that soft altruism motivates most human actions. Since it is reciprocal, that means we get something out of biophilia

and, accordingly, Wilson claims that biophilia is in our own interest—our interest in surviving, because we cannot exist without nature.

But note that hardcore altruism and its link to aggression raises another problem for biophilia—and that is the flipside of biophilia: *biophobia*. Biophobic responses such as aversive reactions to snakes and spiders, are just as engrained in us genetically as the positive responses, if the theory is correct. Together, biophilia and biophobia generate a range of responses from “attraction to aversion, from awe to indifference, from peacefulness to fear-driven anxiety” (Wilson and Kellert, 1993, p. 31) It is difficult to translate a response of terror into one of protection, much less love.

In order to appreciate the limitations of the biophilia hypothesis, particularly with regard to altruists like Rachel Carson, consider the following. Carson defends the right to exist of *pest* species—that is, organisms toward whom many if not most people have aversive reactions (presumably the widespread use of DDT and other pesticides is in part a biophobic response). Now it is true that Carson was concerned with food-chain reactions wherein these poisoned pests went on to poison other animals, such as birds, which *are* generally well-liked. But she was also concerned about the “pests” themselves, the “insect that chews a leaf or sucks the sap of a plant” and is thereby unwittingly “doomed” (Carson, 1962, p. 33). This concern for all life is something she recognizes and praises in Schweitzer as well.

Both Wilson and Carson are far more interested in insects than the average person—Wilson is an entomologist. In fact, both are fascinated with one notorious pest species in particular: the fire ant. The fire ant occupies nearly an entire chapter in Silent Spring, as one of the most maligned and chemically assaulted of all insects. E.O. Wilson

too has close ties to the fire ant because, legend has it, at the tender age of 13, Wilson made a major contribution to science when he discovered the first known U.S. colonies of fire ants in a vacant parking lot in Mobile, Alabama—where, incidentally, they are affectionately known as "ants from hell." Fire ants have continued to be important to Wilson's career because his experiments demonstrate the way in which ants communicate via chemical signals. As Wilson gleefully recounts in a recent interview, what I did was to take fire ants which I cultured in the laboratory, and I dissected them from one end to the next, pulling out the glands that have all kinds of functions ... And I kept it up, gland by gland, until voila! Suddenly, one very, very small, inconspicuous gland down at the end of the body—when I spread that out in an artificial trail, it caused an explosive response, and I knew I'd nailed it (Wilson, 2002).

Reading this description of Wilson's work, one wonders whether his passion for dissection is an expression of biophilia or biophobia! Biophilic curiosity, it seems, can easily turn destructive.

Many southerners shared Wilson's readiness to chop up these insects. The fire ant is an introduced species (though not from hell) and gets its name from its painful, fiery sting which can occasionally cause severe reactions much as bee stings can. Aside from that hard-to-love quality, they also build large mounds that interfere with farm equipment. Thus when the opportunity presented itself to eradicate this insect entirely, no one could think of any good reason not to.

Except Carson, of course. She notes that the purported dangers of the fire ant to human health and farming were greatly exaggerated, adding that fire ants perform a number of services to humans, feeding on insects such as boll weevils that damage crops. Now Wilson might say this is exactly his point: we have a reciprocal arrangement with the fire ant and that's why we should protect it. And yet the aversive reaction to these insects was so strong that, despite observations in the laboratory and the field that fire

ants are useful, an almost hysterical battle cry was raised against them. “The fire ant,” Carson writes, “suddenly became the target of a barrage of government releases, motion pictures, and government-inspired stories portraying it as a despoiler of southern agriculture and a killer of birds, livestock, and man” (1962, p.162) Here we have a perfect example of gene-culture coevolution as Wilson defines it: an innate, aversive response is reinforced by cultural narratives and symbols that vilify the insect, including widespread propaganda campaigns that portrayed the fire ant as a kind of communist menace.

As we have seen, Wilson believes that soft, reciprocal altruism is sufficient to motivate environmental protection. But it seems unlikely that soft core altruism can overcome such cultural and genetic impediments. Organisms that are aggressive towards us are often hard core, self-sacrificing altruists in their own worlds. Actions stemming from their hard brand of altruism make it difficult for us to extend our soft altruism to them. And clearly this is the case even when we know that they also benefit us in some ways. The fact is, a hard core altruist is hard to love.

Again, Wilson might say this is precisely his point, and for this reason it is fortunate that hard core altruism remains the rarer sort. But it still begs the question of how our soft core altruism can ever be powerful enough to generate concern, much less love, for a vast array of lifeforms, not only those that are threatening to us but all those that are genetically distant (or both at once, as is the case with the fire ant). In short, it is not clear how the biophilia hypothesis can support a broad concern for nonhuman life. Certainly, it cannot explain Rachel Carson’s form of environmental altruism.

Despite these criticisms and others I will not pursue here, I actually think that there is a kernel of truth to the biophilia hypothesis, but I am not convinced that biophilic impulses can sufficiently motivate environmental altruism with universal intent. What then motivated Carson?

It's difficult to say what inspires any particular person to take up the welfare of others, but certainly it helps to have role models, and it is best if we find these models when we are young and impressionable. There may be a kind of imprinting that occurs with children, combined with an innate curiosity—perhaps a biophilic impulse—that unfortunately is often lost as we approach adulthood. In fact, this is what Carson argues in her final work, The Sense of Wonder. For her work in this area, Carson is popular not only in environmental virtue ethics but also in the burgeoning field of environmental education. Echoing the aim of nature study to put children in a sympathetic relationship with the natural world, Carson writes:

A child's world is fresh and new and beautiful, full of wonder and excitement. It is our misfortune that for most of us that clear-eyed vision, that *true instinct* for what is beautiful and awe-inspiring, is dimmed and even lost before we reach adulthood. If a child is to keep alive his *inborn* sense of wonder ... he needs the companionship of at least one adult who can share it ... for the child ... it is not half so important to know as to feel. The years of early childhood are the time to prepare the soil. Once the emotions have been aroused---a feeling of sympathy, pity, admiration, or love—then we wish for knowledge about the object of our emotion” (Carson, 1965, p.54, my emph.)

Carson was fortunate to have received this kind of education as a child and The Sense of Wonder carries on that tradition. As an adult she was also largely influenced by the example of Schweitzer whose account of reverence for life affirmed many of her childhood teachings. In fact, Carson dedicated Silent Spring to “Albert Schweitzer, who said ‘Man has lost the capacity to foresee and to forestall. He will end by destroying the

earth'. ” As she wrote to a friend in 1952, “I think he is an extremely significant figure. His Reverence-for-Life philosophy is of course somewhat like my own” (Freeman, 1995, p.62). Schweitzer’s influence on Carson is most evident in her work that went on largely behind the scenes, for the humane treatment of laboratory and farm animals. Carson was awarded Albert Schweitzer Medal for her animal welfare work in 1963.

As Carson noted to her friend, her sense of wonder and Schweitzer’s reverence for life are quite similar in some respects. Schweitzer defines reverence as “sympathy, love and, in general, all enthusiastic feeling of real value” (1950, p.256) Our primary duty is to avoid causing unnecessary harm. A person who has reverence “shatters no ice crystal that sparkles in the sun, tears no leaf from its tree, breaks off no flower, and is careful not to crush any insect as he walks.” (1950, p. 254) Schweitzer declined to give more specific guidelines than this, partly because opportunities for exhibiting reverence are so infinite and variable, but also because he felt that indepth argumentation should not be needed. Most ethical theorists, Schweitzer argues, “refuse to admit the ethical nature of any sympathy for life outside the circle of humanity.” Attempts to extend sympathy in the direction of nonhuman life seems to require “extensive and detailed justification” whereas the correctness of extending such regard for other humans is seen as self-evident (1950, p.239).

Philip Cafaro, who has explored Carson’s form of environmental virtue, notes a similar tendency in Carson to avoid “complicated ethical argument” preferring “short, emphatic” claims stemming from a general pro-life stance and a basic assertion of “the moral considerability of nonhuman beings” (Cafaro, 2002, p.59) For Carson and Schweitzer, reverent action is less a compromise between idealism and realism than it is a

disposition—an attitude of constant vigilance to become “ever more obstinate” in opposing “the necessity of destroying and injuring life” (Schweitzer, 1950, p.263).

Sometimes harm is unavoidable and nature itself is not wholly benign; relations within the natural world itself are characterized by what Schweitzer’s calls a contest of wills-to-live, a struggle that is at once creative and destructive. “Sometimes we have no choice but to disturb these relationships,” Carson writes in Silent Spring. “But we should do so thoughtfully with full awareness that what we do may have consequences remote in time and place.” (1962, p.64) A well known story about Rachel Carson is that she insisted upon returning organisms to their natural environments after studying them, a habit instilled in her by her mother as well as by nature study teachings. This practice forms an interesting contrast with E.O. Wilson who was already pulling insects apart by age 13. But the greatest contrast between Carson and Wilson is that Wilson believes we can arrive at an all-encompassing ethic on the basis of selfish genetics supplemented with rational self-interest. Carson’s approach, and the approach of nature study and Albert Schweitzer, emphasizes sympathetic, emotional, and sensory engagement as primary, with detailed scientific knowledge as a subsequent stage that builds upon experiences of wonder and love. Enlightened self interest does not seem sufficient, on its own, to fill in the gaps left by biophilia.

### **Paying Back and Paying Forward**

Of course, Wilson would probably argue that while Carson did a great deal of good in the world, her apparent altruism is easily derivable from egoistic desires: certainly, she

received numerous awards, medals, and significant fame in return for her efforts. She may have even been self-deceived about her motives.

Carson's case is interesting precisely because she knew she was dying—she was racing against time to finish Silent Spring and was aware that she might not be around for any accolades. But Wilson would remain unimpressed with this response: Carson's behavior is not unlike “altruistic suicides” in which considerations of personal vanity and pride reach even beyond the grave (Wilson, 1978, p.150) As I said before, there is no way of refuting this line of argument. We can never know that we have really plumbed the depths of another's motives—or even our own, as the egoists point out. But the self-interest hypothesis is not really a scientific hypothesis at all, as D.S. Wilson and Elliot Sober point out. It may well be nonfalsifiable—a research program unto itself, rather than a scientifically testable hypothesis.

Perhaps the best definition of altruism for Rachel Carson's life and work is captured by the phrase, “pay it forward:” a nonunilateral form of altruism that involves not *pay off* or *pay back* but *passing on* what one has received to (even unrelated) others. Carson's posthumously published Sense of Wonder is a good example of this. As a legacy for future generations, it was her way of expressing her indebtedness to those who gave her a love of nature by paying it forward. There is no reason why this form of altruism cannot persist just as well, if not better than tit for tat strategies. For one thing, it is far less likely to breed suspicion. One of the most effective ways of passing on traits to the next generation, without producing offspring, is through *teaching*. In this way, altruism can persist in cultural evolution, with or without genetic ties, as D.S. Wilson and Sober have emphasized (Wilson and Sober, 1998). This model of altruism seems most

accurate for Carson's life and work. Just as Schweitzer's example inspired Carson, so Carson's work has provided an example for future generations of humans, including those not genetically related to her.

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