He who has art and science also has religion,

He who has neither had better have religion!

Goethe

Two interrelated concepts lie at the heart of deep ecology's call for an ecological world-view and the accompanying belief that the environmental crisis can be traced to philosophical problems at the heart of the dominant modern world-view. One concept is holism; the other is ecological consciousness. Deep ecologists hold that any viable and authentic environmental philosophy must be based on a deep-felt care for, and identification with, the non-human world. We need to adopt, both individually and culturally, an ecological consciousness.

Metaphysical holism in deep ecology entails a world-view that can be contrasted with the dominant reductionist world-view of modern industrial society. Because of its concern with metaphysical holism, as in Arne Naess's use of Spinoza or as found in Devall and Sessions, deep ecology is inherently subversive in challenging the reductionist approach of the orthodox scientific world-view. We're reminded of Paul Sears' assertion that ecology is a subversive subject. Ecology is subversive because its basic premise is holism. (1)

To propose that any real kind of science could be subversive is no longer a particularly startling claim to make. The ultimate claims to knowledge and objectivity of orthodox science have been undermined this century as philosophers of science such as Thomas Kuhn have demonstrated the historicity of scientific knowledge. As Henri Bortoët puts it, science is not an autonomous activity standing outside history. Science can be true, but it is not fundamental. If science is freed from the dogmatic scientism of the past, and if nature can manifest in different ways, then there is the possibility of a different kind of science, which is complementary to mainstream science. (2)
The participatory strand in the science of ecology suggests another approach to science. An Arcadian tradition can be traced through Gilbert White, Henry Thoreau, John Muir, to Aldo Leopold and beyond. The participatory methods practised by Thoreau and Muir, for example, bear a strong resemblance to the way of science developed and practised by Johann Wolfgang von Goethe (1749-1832), the German Romantic poet and scientist. (3) In Goethe's way of science, wholeness and ecological consciousness are understood as a necessary unity. Goethe's way of science is subversive, because at its heart is the understanding of wholeness. But a true understanding of wholeness can only be achieved through a different way of seeing.

The authentic whole is not the totality of the parts that can be grasped intellectually, because there are no parts that are independent of the whole. An example of an authentic whole is the hologram, in which the whole is present in each of the parts. The parts cannot be regarded as separate entities; every part essentially is the result of its relation to the whole, and in fact contains the whole. The whole is encountered within the depth of the parts, and this can only be achieved with a different way of seeing. This way of seeing involves a transformation in the mode of consciousness, a switch from the "analytical" mode to the "intuitive" mode. The analytical mode is verbal, linear and logical. The intuitive mode is holistic, non-verbal and non-linear.

Goethe pursued his way of science diligently for more than twenty years. His most famous contributions were The Metamorphosis of Plants (1790), and Theory of Colours (1810). In the latter, Goethe rebelled against the orthodox Newtonian doctrine. In Newton's Opticks (1704), colours are explained by a quantitative mathematical method. In Newtonian science only primary qualities, such as number, magnitude and position, are taken to be real. Secondary qualities, such as colour, taste and sound, are regarded as the effects of primary qualities on the senses, they are subjective, and therefore, not really part of objective nature. Newton's project was to replace the phenomenon with a mathematical model that incorporates only the primary qualities; so, colour as "colour" is eliminated. (4) The Newtonian method became the driving force of positivist science. It was this method that Goethe opposed.

In his work on colour, Goethe was seeking an explanation that reclaimed the qualitative experience of colours, establishing a method by which the quality of the colours is understood to be necessary, not contingent as it is in Newton's method. Goethe provided a phenomenology of colour, rather than an explanatory model. He came to understand the phenomenon of colour within the intensive depth of the phenomenon itself. With Goethe's method we do not try to explain the phenomenon in terms of some hidden mechanism, we enter into a dimension "within" the phenomenon, and the phenomenon is understood in terms of itself. Applied to the living world, Goethe's way achieves what Kant held was beyond the capacity of humans: the development of an "intuitive intellect," which alone can comprehend organic nature. Goethe did it and showed how anyone could achieve the same if they knew how to look.

In Goethe's method, "how" to look is the key. We must switch our attention away from the verbal-intellectual mind and into "seeing." This way of seeing is active, not passive. We plunge into seeing the qualities of the phenomenon. This takes us away from the uniformity imposed on nature by the intellectual mind and we experience the non-uniformity, richness and diversity of the world. In this way we arrive at the simplest case, the "pure phenomenon," the part that contains the authentic whole. This is the aim of the first stage of Goethe's method. What is particular in our normal way of seeing becomes universal in the intuitive mode. Goethe described the pure phenomenon as "an instance worth a thousand, bearing all within itself." The classic example is found in Goethe's observation that "all is leaf." For the rational mind, the leaf is just one part of the plant along with the petals and stamens. These parts are regarded as essentially separate and independent of each other. But with the switch to the intuitive mode of consciousness the leaf is understood in a universal sense as an "omnipotential form," rather than as a
particular physical leaf.

The process of active seeing is deepened in Goethe's subsequent stages, in "exact sensorial imagination," or guided imagery. We visualize the phenomenon in imagination. This is sensory and concrete, not abstract, attention is withdrawn further from the verbal, and consciousness is restructured into an "organ of holistic perception."(5) The purpose of this stage is to realize an element of the phenomenon not given to sense experience. This is the law, the organization or unity of the phenomenon. The intuitive understanding of the leaf, the one single organ, allows us to grasp the continuity of form of the plant. We can visualize the "coming into being " of the plant, its metamorphic sequence. With a reversal of perception, the universal is not a generalization abstracted from the particular; it is perceived as "shining in the particular." We see not an assemblage of parts, an analytical snapshot; we see the intensive depth of the plant, another dimension in which "it shows itself as itself."(6)

Through this method, Goethe showed how a way of science could be conducted that begins with the world as we experience it. Modern science does the opposite, overriding the world of experience in favour of explanatory mathematical models that lie behind the scenes. While orthodox positivist science claims to start from experience it dismisses our direct, qualitative experience of the world. The secondary qualities are understood as the effect on the senses of primary qualities, which can be expressed mathematically. The secondary qualities are thus regarded as merely subjective experience and not really part of "objective" nature. All experience is reduced to a quantitative mathematical explanation. The sensory experiences of colours, the phenomena of colour, are replaced by a series of numbers. In this way, orthodox science involves an intellectual separation from the world of experience; the hallmark of orthodox science is detached intellectualizing. The success of positivist science has led to an ever-increasing alienation of the world of science from the world of everyday experience. (7) While positivist science replaces the phenomenon with numbers, Goethe's way of science dwells in the phenomenon. Goethe enters into the world and comes to an intuitive understanding of the wholeness within the intensive depth of the phenomenon. A Goethean account of holism is intelligible and accessible through practice of his way of science. Indeed, it can "only" be arrived at through practice. Goethe's beauty is that he describes a method that can be followed, it is eminently "doable." The work cannot be grasped by detached intellectualizing. It is practical, we get our hands dirty and we train the mind to function intuitively, rather than only intellectually. But the intuitive mode is precise, not vague. A high degree of discipline is essential to develop a Goethean practice.

Through this hands-on practice, and with the use of guided imagination, we experience a deeper and more direct contact with the world of organic nature that has distinct implications for environmental ethics. We can consider two different kinds of approaches to environmental ethics. One approach involves the application of traditional ethical theories, the rational and universal normative theories of utilitarianism and deontology. These theories articulate rules and principles to guide our behaviour, answering the question "What ought I to do?" The other approach is of a fundamentally different kind. There is a shift away from abstracted rules toward our lived experience. This approach is in the tradition of the ethics of virtue of Plato and Aristotle. Rather than rules, moral character is the basis of such ethics. Instead of proposing an answer to the question "What ought I to do?", an ethics of character addresses the question "What kind of person ought I to be?"(8)

The concept of "ecological consciousness" fits into this second approach. An ecological consciousness is bound up with our lived experience of the world. By practising Goethe's way of science, an ecological consciousness is developed. Goethean practice involves the switch from our customary verbal-intellectual mind, the analytical mode, to the intuitive mode of consciousness. Only through the intuitive mode of consciousness can we experience oneness with the world of organic nature, Kant's "intuitive intellect," rather
than separation. By developing and nurturing our intuitive intellect we will develop feelings of empathy with and reverence towards the world of organic nature. We will literally change ourselves; our fundamental attitude toward nature will change.

However, the intuitive mode of consciousness does not displace the analytical mode, the two are complementary; a healthy mental life is one of balance. In the same way, the ethics of care fostered by ecological consciousness does not displace the traditional normative ethical theories of utilitarianism and deontology. An ethics of care does not provide us with ethical imperatives, ought-to-dos; rather we develop a feeling of oneness or at-homeness within the world that inspires an ecological attitude. It is foundational, the "precondition" of other value systems. While we cannot convey the intuitive understanding of the world in verbal-intellectual language, we take with us into the world an understanding that will deeply influence our attitudes and actions towards the world, an ecological consciousness.

The implications of a Goethean approach go beyond environmental ethics toward a comprehensive environmental philosophy. Goethean practice, as an essentially phenomenological practice, re-connects us with our place in Nature. If the Newtonian way of science separates us from the world, denying the qualities and reality of the world as experienced by our senses in favour of abstract explanations, then Goethe's way of science reveals our necessary connection with the world. As a phenomenological method, our whole body and being participates. Dwelling in natural phenomena with all the senses is necessary for us to focus on all the qualities of nature. We gain an intuitive understanding of the authentic wholeness of nature, the dynamic "primal source of all being," which enhances our experience of being part of the world. With continued practice and experience, we become more and more identified with and aware of our place in the world; we are back in our true home. We are back with ecology, the study of the home, the subversive science. Practice, ethics and ecosophy - the wisdom of the home - all come together in a genuinely holistic way of life, bound up in place.

References


Ibid., pp.77-82.

Ibid., p.22.

Ibid., p.18


Chris Storey: