

[Fra Goethe's Way of Science: A Phenomenology of Nature, David Seamon & Arthur Zajonc, editors. Albany, NY: State University of New York Press, 1998.]

Goethe, Nature, and Phenomenology

Johann Wolfgang von Goethe (1749-1832) is best known for his poetry and plays, described by many literary critics as some of the most perceptive and evocative imaginative literature ever written. Many fewer people realize, however, that Goethe also produced a sizable body of scientific work that focused on such diverse topics as plants, color, clouds, weather, morphology, and geology. Goethe believed that these studies, rather than his literary work, would some day be recognized as his greatest contribution to humankind.

In its time, Goethe's way of science was highly unusual because it moved away from a quantitative, materialist approach to things in nature and emphasized, instead, an intimate, firsthand encounter between student and thing studied. Direct experiential contact became the basis for scientific generalization and understanding. Goethe's contemporaries and several following generations, however, largely ignored his writings on nature. These works were seen either as subjective artistic descriptions written by a scientific dilettante or as a form of philosophical idealism that arbitrarily imposed intellectual constructs on the things of nature. Only in the twentieth century, with the philosophical articulation of phenomenology, do we have a conceptual language able to describe Goethe's way of science accurately. Though there are many styles of phenomenology, its central aim, in the words of phenomenological founder Edmund Husserl, is "to the things themselves"-in other words, how would the thing studied describe itself if it had the ability to speak?

[...]

Delicate empiricism

One phrase that Goethe used to describe his method was delicate empiricism (*zarte Empirie*)-the effort to understand a thing's meaning through prolonged empathetic looking and seeing grounded in direct experience. He sought to use firsthand encounter directed in a kindly but rigorous way to know the thing in itself. "Natural objects," he wrote, "should be sought and investigated as they are and not to suit observers, but respectfully as if they were divine beings." Goethe believed that, too often, the methods and recording instruments of conventional science separate the student from the thing studied and lead to an arbitrary or inaccurate understanding:

It is a calamity that the use of experiment has severed nature from man, so that he is content to understand nature merely through what artificial instruments reveal and by so doing even restricts her achievements...Microscopes and telescopes, in actual fact, confuse man's innate clarity of mind.

Rather than remove himself from the thing, Goethe sought to encounter it intimately through the educable powers of human perception: "The human being himself, to the extent that he makes sound use of his senses, is the most exact physical apparatus that can exist." Goethe's aim was to bring this potential perceptual power to bear on a particular phenomenon and thereby better see and understand it. "One instance, he wrote, "is often worth a thousand, bearing all within itself." His way of

investigation sought to guide actively these special moments of recognition and thus gradually to gather a more complete understanding of the phenomenon.

Goethe emphasized that perhaps the greatest danger in the transition from seeing to interpreting is the tendency of the mind to impose an intellectual structure that is not really present in the thing itself: "How difficult it is...to refrain from replacing the thing with its sign, to keep the object alive before us instead of killing it with the word." The student must proceed carefully when making the transition from experience and seeing to judgement and interpretation, guarding against such dangers as "impatience, precipitancy, self-satisfaction, rigidity, narrow thoughts, presumption, indolence, indiscretion, instability, and whatever else the entire retinue might be called."

Because accurate looking and seeing are crucial in Goethe's way of study, he stresses the importance of training and education. He believed that observers are not all equal in their ability to see. Each person must develop his or her perceptual powers through effort, practice, and perseverance. "Nature speaks upward to the known senses of man," he wrote, "downward to unknown senses of his." If we cannot understand a particular phenomenon, we must learn to make fuller use of our senses and "to bring our intellect into line with what they tell."

Yet Goethe argued that it is not enough to train only the outer senses and the intellect. He maintained that, as a person's abilities to see outwardly improve, so do his or her inner recognitions and perceptions become more sensitive: "Each phenomenon in nature, rightly observed, wakens in us a new organ of inner understanding." As one learns to see more clearly, he or she also learns to see more deeply. One becomes more "at home" with the phenomenon, understanding it with greater empathy, concern and respect.

In time, he believed, this method reveals affective, qualitative meanings as well as empirical, sensual content. "There may be a difference," he claimed, "between seeing and seeing...The eyes of the spirit have to work in perpetual living connexion with those of the body, for one otherwise risks seeing yet seeing past a thing." This kind of understanding does not come readily, but it can be had, Goethe argued, by anyone who immerses himself or herself in systematic training. "Thus, not through an extraordinary spiritual gift, not through momentary inspiration, unexpected and unique, but through consistent work, did I eventually achieve such satisfactory results," he wrote about his own scientific discoveries.

[Derudover et nyt uddrag: her fra "Doing Goethean Science" af Craig Holdrege, angående studiet af planter i overensstemmelse med Goethes videnskabelige metode]

Exact Sensorial Imagination and Living Understanding

After I go out and observe, I make a point of actively re-membering the observations. With my mind's eye I inwardly recreate the form of the leaves, I inwardly sense the colors and the smells, and so on. This process of conscious picture building is what Goethe called "exact sensorial imagination" (Goethe, 1824; in Miller, 1995, p. 46). It entails using the faculty of imagination to experience more vividly what I have observed. I try to be as precise as possible—and will often notice where I haven't

observed carefully enough, which I try to do the next time I'm out. When you do this kind of conscious picture building, you grow more and more connected to what you're observing.

But there's something else. The plant begins to reveal itself as a process. When we begin observing, we have many separate images, and we have to overcome separateness to begin seeing the plant as the living creature it is. The life of a plant plays itself out in the ongoing unfolding and decay of organs (leaves, stalks, flowers, etc.). We are presented with a drama of transformation that we can enter into. But we can't enter into it through observation alone. We need to utilize our faculty of imagination to connect within ourselves what is already connected within the plant. As Goethe writes:

“If I look at the created object, inquire into its creation, and follow this process back as far as I can, I will find a series of steps. Since these are not actually seen together before me, I must visualize them in my memory so that they form a certain ideal whole. At first I will tend to think in terms of steps, but nature leaves no gaps, and thus, in the end, I will have to see this progression of uninterrupted activity as a whole. I can do so by dissolving the particular without destroying the impression.” (Goethe, 1795, in Miller 1995, p. 75)

So to begin to grasp the flow of life and its specific qualities in skunk cabbage, you have to work to make your thinking fluid (process-oriented) and dynamic. In Goethe's words, “If we want to approach a living perception (*Anschauung*) of nature, we must become as mobile and flexible as nature herself” (Goethe, 1807; translation by CH; in Miller p. 64).