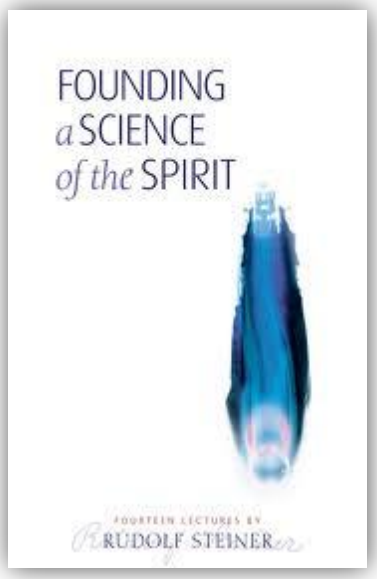
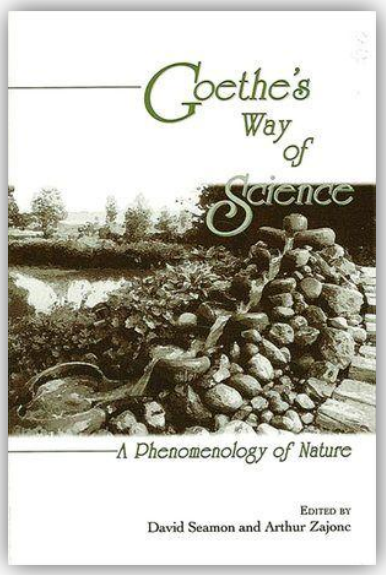
Goethean Science to See the World Differently, in its Entirety

We all have that innate longing to know the world. To date, we have been seeing the world predominantly through one reductionist way, and this has diminished our connection to the whole. One of the dimensions articulated in Sustainable Agriculture is holistic, integrative science. But do we have the means to achieve this given our current training in thinking and learning, our mental framework, and our educational background?

Einstein said that… *"We can't solve problems by using the same kind of thinking we used when we created them."* So we need a different kind of science to approach scientific inquiry; not the one or from the program that created chemical based, monocropping type agriculture. Let us see how Goethean Science may be of help.

An excerpt of the following articles will give us a glimpse of what it is… Then we see that the mainstream way to science or of knowing the world is a far cry from that which would lead us to the greater and deep truth. It will be a long way to reach the reform that we dream of, but we can start somewhere. Immersing ourselves in nature and in art and doing deep organic agriculture brings us back to the path and be at one with nature.





Goethean Looking & Seeing: Questions to Keep in Mind

- What is happening?
- What is this saying?
- How is this coming to be?
- What belongs together?
- What do I see?
- What remains apart?
- How does this belong together with itself?
- Is it itself?
- Can I read this in itself?

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1. **Goethean Science.** http://www.kheper.net/metamorphosis/Goethean.html

Goethean science is an approach to knowing the world, that serves as an intuitive or "right brain" (so to speak) complement to the traditional rationalistic "left brain" science… As the name suggests, it was founded by the German poet Johann Wolfgang von Goethe (1749-1832), who was in turn influenced by earlier philosophers like Spinoza and Leibniz. Although Goethe was best known as a poet and playwright, he actually spent many years (from 1777 until his death) engaged in scientific pursuits. His research and ideas spanned such diverse fields as geology, meteorology, osteology, botany and plant development, morphology and embryology, and the nature of colour and vision… **Goethe's particular way of doing science is interesting, because it is was opposite the mechanistic and reductionistic paradigms** of his contemporaries such as Newton and Laplace. Fundamental to Goethe's approach to science was his insistence that the scientist is not a passive observer of an external universe, but rather engaged in a reciprocal, participatory relationship with nature, and hence the observer is able to interact with the observed… Goethe's science was not well received. His wave theory of light lost out to the particle theory of Newton and others (now of course we have both, thanks to **quantum physics,** but that is only after along dark journey through reductionistic materialism). There were botanists who used his work on plants, and his theory of colour later gained respect in the fields of psychology and visual arts. But the most active and enthusiastic exponent of his work was **Rudolf Steiner**, the founder of **Anthroposophy**, who in the first few decades of the 20th century combined Goethe's science with Rosicrucianism and Blavatskyian Theosophy. Some of Steiner's successors have further developed this stream of neo-Goethean thought, and today the Anthroposophical movement is the most active and creative exponent of Goethe's science. They even have a "Goetheanum" (designed by Steiner) in Switzerland…

… Goethe's Spiritual Science. Goethe's science seek an understanding of processes by delving into the phenomenon experientially. It requires stepping outside of theory and common place preconceptions and actively engaging the full range of human abilities, senses and imagination, in perceiving the real world. Any phenomena, for example, rocks, plants, animals or humans - any relationships between things or social relations, or the nature of form and function, can be explored using Goethe's method of approaching phenomena. The approach bears similarities to the phenomenology of Husserl and his successors. However, it is in its practical use that the approach to phenomena has the potential to change the way we, for example, interact with the land, teach science or develop our human potential. Goethe spoke of opening up or growing new 'organs of perception' which would expand our understandings of the world into an integrated whole (this is an idea that Steiner developed into "supersensible perception" and which he saw as the next stage of human evolution)… Goethean science is therefore also a spiritual path, an integration of science and art, a science of quality and of wholeness, the development of a science of compassion.

… **Goethean and Conventional Science.** Goethean and Conventional Science sit uncomfortably with each other. Conventional Science would see Goethean science as no more than a historical oddity, long since disproved. Goetheans have the same either/or attitude. Since *they* are right, conventional science must be wrong. This is the annoying polemical attitude Poppelbaum takes in his otherwise fascinating study in Goethean-Anthroposophical zoosophy, *A New Zoology*. The idea is that the Goethean does not need to superimpose a rationalistic or reductionistic explanatory mechanism over top of the observed phenomenon, but rather simply takes the intuitive imaginative experience at face value.

To me this approach is very limited. It harkens back to the tale of the blind men and the elephant, in which each blind man presumes the little bit of the elephant he has hold of constitutes the entire beast. There is really no contradiction between Goethean/Anthroposophical and Conventional Science. The Goethean position pertains to the etheric and the inner physical level, the conventional scientific to the material/mundane and the external physical. They are like yin and yang, wave and particle, the two brain hemispheres or the two psychic functions suggested by Stan Gooch. A true understanding of nature, and a true universal science, needs and requires both.

2. Introduction to Goethean phenomenology.

http://www.dynamisch.nu/feno/english/e1intro.html
http://www.dynamisch.nu/feno/english/e3pheno1.html

Goethean phenomenology (short: phenomenology), or **Goethean science, assumes the existence of a physical world and a spiritual world, which influence each other**. Spiritual phenomena are not regarded as the products of matter, but as independent phenomena that permeate and guide the physical world. Hence, the spiritual world is one of the factors which determine visible phenomena, and lies hidden behind them. Visible phenomena can be used to explore the spiritual world.

Rudolf Steiner (1861 – 1925) has often contended that it is possible to explore the spiritual world, just as we explore the visible world, and he developed a variety of methods for this purpose. One of these methods is that of phenomenology. Phenomenology starts by carefully studying objects, situations, events, etc. The phenomenologist then uses the observations as a basis to penetrate into the spiritual world. An important element is that, as an observer, you not only observe an object in a detached manner, but develop an intimate connection with it, penetrate into it and incorporate it in your mental image.

Goethean phenomenology is based on the way in which Goethe (1749 – 1832) studied phenomena in the eighteenth century. Rudolph Steiner developed this method further, after which it was particularly Jochen Bockemühl who elaborated and published on it. Goethean phenomenology must be distinguished from the phenomenology developed by people like Heidegger and Husserl, which is a type of philosophy that uses phenomena as a starting point for philosophical considerations.

3. **Doing Goethean Science** By Craig Holdrege. The Nature Institute.

http://www.janushead.org/8-1/holdrege.pdf

Practicing the Goethean approach to science involves heightened methodological awareness and sensitivity to the way we engage in the phenomenal world. We need to overcome our habit of viewing the world in terms of objects and leave behind the scientific propensity to explain via reification and reductive models. I describe science as a conversation with nature and how this perspective can inform a new scientific frame of mind. I then present the Goethean approach via a practical example (a study of a plant, skunk cabbage) and discuss some of the essential features of Goethean methodology and insight: the riddle; into the phenomenon; exact picture building; and seeing the whole.

4. Seeing Nature Whole - A Goethean Approach

http://natureinstitute.org/nature/

If we want to attain a living understanding of nature, we must become as flexible and mobile as nature herself. - Goethe

Many of us were introduced to biology—the science of life—by dissecting frogs, and we never learned anything about living frogs in nature. Modern biology has increasingly moved out of nature and into the laboratory, driven by a desire to find an underlying mechanistic basis of life. Despite all its success, this approach is one-sided and urgently calls for a counterbalancing movement toward nature. Only if we find ways of transforming our propensity to reduce the world to parts and mechanisms, will we be able to see, value, and protect the integrity of nature and the interconnectedness of all things. This demands a new way of seeing.

Our methodology is inspired by integrative thinkers and scientists, such as Johann Wolfgang von Goethe, Rudolf Steiner, and Kurt Goldstein.

5. What is Goethean Science?

http://www.awakenings.com/jcms/anthroposophy-and-goethean/35-general-anthroposophic-and-goethean/45-goethean-science.html

"A spiritual understanding of nature on the basis of Goethe's method of training observation and thought"

Goethean science is science based on the approach of Johann Wolfgang von Goethe, author of FAUST, and who is most generally known for his poetry and literature. Goethe himself in fact saw his principle contributions to culture as being in the area of science. He authored many works on science, notably The Metamorphosis of Plants and his Theory of Color. Goethe stressed that one had to start with the actual phenomenon, and that it impossible to divorce oneself from participation in nature, contrary to the method of contemporary science. As a generalization, it could be said that he was one of the first holistic thinkers, in the modern sense, to emerge in western culture…

6. Exploring Goethean Science

http://www.schumachercollege.org.uk/learning-resources/exploring-goethean-science

… As we fly through this age of information flow, genetics and molecular technology, people are becoming increasingly alienated from a meaningful understanding of the

natural world. Science has been vigilant in its interrogation of the natural world to wrest answers from her depths of mystery. It is a quest for more and more data to fill our mountainous logbook of Knowledge, written in the language of objective fact, number and the genetic code. However, this is the knowledge of a world which has been so fragmented, so dissected by our analyses, that we can no longer recognise how this myriad of independent parts relate in the larger picture.

Most problematically, meaningful understanding of the world is lost because our 'objective' analyses have denied the language of human experience in this canon of 'truth'. Meaning however, is manifest only in the context of interrelation. The 'objective' lens of the scientist enforces the separation between the observer and the observed and thus denies the web of relationships which we experience in life. It is not surprising then, that nothing remotely resonant with our living experience has emerged out of this vast array of inert information. It is not surprising that we find ourselves in a time of ecological crisis and alienation from nature: through this veil of objectivity we have severed our meaningful relationships with nature, and therefore, the obligation to interact with her responsibly. How then do we transcend this mechanistic world view and heal our relationship to the earth?...

7. Why we need a new Science

http://www.rsarchive.org/Books/GA001/English/MP1988/Download/GA001E.pdf

Interlude Glimpsing a Goethean way of seeing… When I first heard mention of Goethean science, a science of qualities, in 2000, I became excited at the thought of a discipline or way of working that valued many different ways of knowing. I looked out for suitable opportunities to learn more. A few years later, at Schumacher College, I briefly met Margaret Colquhoun, a Goethean scientist who teaches the method, but no workshops were planned at the time. Knowing more about Goethean science might help my own students (and me) **understand more about the metamorphosis of systems and develop a greater sense of awe and wonder for the more-than-human-world. It seemed to offer a route to ground out the idea of a deeper connection with our planet into some sort of action.**

8. Learning to See Life, Developing the Goethean Approach to Science.

Written by Craig Holdrege

http://www.waldorflibrary.org/index.php?option=com_content&view=article&id=747:-learning-to-see-life-developing-the-goethean-approach-to-science&catid=127:articles&Itemid=5

The Goethean approach is not about opposition to traditional science; it is concerned with evolving the discipline of science further so that we can begin to understand life in a way that is modeled after life. For this to occur we have to work to transform ourselves as human beings and begin forming, as Goethe put it, new organs of perception.

Download the article of the same title: "Learning to See Life, Developing the Goethean Approach to Science" here… http://www.natureinstitute.org/txt/ch/learn_to_see.htm

9. Goethean Phenomenology

http://www.ratohealth.com/#!methods/c1ech

Goethean science is considered phenomenological in that subjective sensory and imaginative faculties are used to ponder phenomenon and allow it to reveal its inner secrets. Johann Wolfgang von Goethe (1749-1832) introduced this approach to observing the natural world by combining objective observation and subjective imaginative thinking, for example observing plant rhythms and change through time.

10. Other suggested readings on the subject:

Goethean Science as a Way of Knowing.
Daniel C. Wahl. University of Dundee. http://www.janushead.org/8-1/wahl.pdf

Goethean Science by Rudolf Steiner.
http://www.rsarchive.org/Books/GA001/English/MP1988/Download/GA001E.pdf

Goethe's Way of Science: A Phenomenology of Nature by David Seamon, Arthur Zajonc

Though best known for his superlative poetry and plays, Johann Wolfgang von Goethe (1749-1832) also produced a sizable body of scientific work that focused on such diverse topics as plants, color, clouds, weather, and geology. Goethe's way of science is highly unusual because it seeks to draw together the intuitive awareness of art with the rigorous observation and thinking of science. Written by major scholars and practitioners of Goethean science today, this book considers the philosophical foundations of Goethe's approach and applies the method to the real world of nature, including studies of plants, animals, and the movement of water.Part I discusses the philosophical foundations of the approach and clarifies its epistemology and methodology; Part II applies the method to the real world of nature; and Part III examines the future of Goethean science and emphasizes its great value for better understanding and caring for the natural environment.

11. A video…

http://www.youtube.com/watch?v=ZzdrBnOZt94 … Inspired by an introduction to Goethean Science, this animation tries to capture an experience of getting to understand the nature of a rose bush.

12. A slide presentation…

A Goethean Phenomenology of Water: The Work of Naturalist Paul Krafel, Hydrologist Theodor Schwenk, & Sculptor John Wilkes

http://www.academia.edu/1701515/A_Goethean_Phenomenology_of_Water_The_Work_of_Naturalist_Paul_Krafel_Hydrologist_Theodor_Schwenk_and_Sculptor_John_Wilkes

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