

Opening Lecture
From Phenomena to Insight IV -- Scientific Understanding and Birth of the Astral Body
February 21, 2017 by Jon McAlice

Dear Colleagues!

Welcome! We find ourselves together again. It is the beginning of another journey, an exploration into the art of teaching well, the art of striving to teach better, to become better teachers. Each year we are brought together through our shared interest in this task or challenge and from the sense that we might learn from one another.

We are here in a certain place, at a certain time. What is happening is happening in real-time, tangible space. I am not a hologram, I am not a digital projection, this is not You-Tube. It is February 2017. This is California, somewhat north of San Francisco, somewhat east of the Pacific Ocean. The moon is waning. The afternoon has been clear. The ground is moist from recent rain. The earth is greening.

This greening is a peculiar thing. Where was it before the rain came? Then there was only the sunlight. The earth was brown. The rain came and moistened the earth. The sun came again and the earth greened.

Before the rain came, where was the green?

Before the sun came, where was the green?

We could ask this green, this mysterious lovely green: where were you before the rain came, before the sun let its warm light dance upon the moistened earth? Where did you come from?

And this green, this mysterious presence woven through and through with the wonder of life appearing would answer: What would it answer? I have come from nowhere. I am always here. Mine is a no-coming, just as it is a no-going. When the conditions are such that I am visible, I am visible. When they are such that I not visible, I am not visible. At times I am apparent, at times I am hidden.

I first experienced Thich Nhat Hahn at the end of the Vietnam War. He spoke to us at a retreat in Vermont. He carried a box of matches, if I remember correctly, a box of strike anywhere matches. He spoke to us of the true nature of things. Consider a flame. Where does it come from? Where does it go to? He spoke with the flame, gently and with humor: My dear little flame where do you come from? Where do you go?

The flame answered: Thay, why do ask these things of me? I am a no-coming. I am a no-going.

Can you see Thay smiling? He raised his box of matches and said: The flame is in the box. He took out a match. He said: The flame is in the match. It is hidden in the box. It is hidden in the match. Perhaps, he said, it is hidden in my fingers that hold the match. Now it is hidden. If I change the conditions it becomes un-hidden. It becomes visible. It changes its way of existing. It enters into a different relationship with its immediate surroundings. I feel its warmth. We can see its light. It becomes this flame. I can turn the match downwards. The flame grows strong. I turn the match upwards. This flame, our flame, grows weak. It dwindles and, pfft, goes back into hiding.

To participate in the no-coming coming and the no-going going and the emerging – the flaring of the flame, the greening of the earth, I must share with them a presence in the space of here and in the time of now. The way I am present in the here and now is one of the conditions for the way in which the world is able to bring itself out of hiding.

The question of space remains somewhat of a riddle for me. I struggle to coax it out of hiding. Perhaps my more accomplished colleagues will shed some light on the matter as the week unfolds.

I do have some experience with time. It is no less difficult to fathom, flowing as it does so gently forth, but there are aspects of it that live so strongly within each of us that it somehow feels less foreign.

Will you allow me to tell you a story? It is a good way to begin a journey together.

Normally we tend to live lives of more or less hurried regularity. This is, however, not always the case. Events may upset this habituated regularity, letting layers of experience become visible in ways they hadn't been before. Historical moments also have that effect. Modes of experience that normally exist unnoticed alongside one another become juxtaposed. The late 1980's and early 1990's were such a time in Europe. Perhaps we are living in such a period now – a period of shifting boundaries. I made frequent trips to various Eastern European countries during those years. On one of these trips, this time to Romania, I had the opportunity to catch a glimpse of time.

On Friday morning, I taught an embryology main lesson in Basel. My overnight bag was under my desk. After class a colleague drove me to the airport, where I just caught the only flight that day to Bucharest. We landed there just in time for me to catch the

last flight of the week to Cluj, a small city in the north of the country. I arrived there in time to open a weekend teacher education seminar.

The trip home was different. I had to be back in Basel Monday morning to continue the block. There was a flight from Bucharest Sunday afternoon over Munich that would get me back to Basel in the evening. There was, however no flight from Cluj to Bucharest until 6:00 Monday morning. By car, the drive took between 6 and 7 hours.

We left before dawn.

As we drove through the first small village on the route to Bucharest, there were lights going on in some of the houses. Passing through the next village, we saw peasant farmers leaving their houses with milking pails and, in some cases, kerosene lanterns. In the next village, the road took us by a row of small barns. We could see farmers mucking out the stalls and settling in to milk. Further down the road we met farmers heading home with full pails of milk. As we continued we caught glimpses of the villagers at breakfast, then dressed up, walking to church, then chatting in the village square.

In addition to this arrow-like journey through the cyclical unfolding of the last remnants of peasant culture in Europe, there are two other time experiences I became aware of on that journey.

The first occurred just outside of the town of Slimnic. We came around a curve to find the road blocked by a flock of sheep, a large flock of sheep. The shepherd was an impressive figure, clad in a full-length sheepskin cloak, with a tall wooden staff. We slowed, came to a standstill and watched as this pastoral multitude ambled unperturbed up the road, heading in the same direction as we were. Leonidas, the driver, became nervous. He was responsible for getting me back in time. The shepherd showed no intention of clearing the road for us. In fact, he gave no sign that he was even aware of our presence. Leonidas hooped. The man ambled on. We crept along behind. After what seemed an eternity, like magic, the flock parted and a lane opened in their midst. The shepherd turned and, smiling under his sheepskin cap, waved us through.

A little later, on the outskirts of the city of Sibiu, we came upon a Gypsy encampment at the edge of a long meadow flanking the road. A group of boys were grooming their horses. I waved as we came alongside. Two of them leapt on to their horse's backs and raced beside us down the length of the meadow, laughing with the

joy of the chase. We too were caught up in the joy of it all. And then suddenly it was past. They wheeled away and disappeared into the distance.

What had seemed to take forever with the shepherd was whisked away in a moment as we watched the boys.

I once sat for hours waiting for word of my son who was in surgery only to discover, when I looked a clock that barely 20 minutes had gone by.

The experience of how long something takes is intricately caught up with our own inner lives. The passing of time expands or contracts depending on my relationship to the events in which I find myself. This flexible experience of time expanding and contracting in concert with the depth of my engagement is as real for me, perhaps more real than the measured tread of time trapped in endless circuits of a clock face.

They belong to two very different worlds.

The last glimpse I had into the riddle of time occurred at the end of this journey. When we reached Bucharest, I had time to stop for a short visit with Prof. Flonta before continuing on to the airport. He is an epistemologist, was a student of Jean Piaget in Geneva and, at the time one of the foremost Romanian scholars of Wittgenstein and the philosophy of science. He was also an ardent student of Rudolf Steiner's epistemological writings. I visited him whenever I was able to make time. Within minutes of my arrival, we were once again immersed in an intense discussion, this time concerning the difference between sensation and perception, he punctuating his points by feeding me various types of pickled peppers.

Time came to a standstill.

It ceased to be a matter of concern. It was neither fast nor slow. It did not come, it did not go. We were graced with an expanded now, a spaciousness of time.

We can say that there are four aspects of time that play a role in daily experience. Three of them are experienced; one exists because of our predilection for measuring things. This latter is what we most often first think of when considering time. We can call it measured time, physical time or linear time, Newton spoke of it as mathematical time. It marches steadily onwards. Today the official marker of this regular progression is the element cesium, an element that became widely known following the Chernobyl disaster. One isotope of this element – Cesium 133 – shifts regularly between two energy states at the rate of exactly 9,162,631,770 times per second. Clocks calibrated to the pulse of a cesium atom are accurate to 1 second in 300,000 million years. This

measured tread of time is what allows us to plan, to measure, to predict. It is considered to be objective.

Biological time expresses itself in various ways, each of which shares two characteristics: they are cyclical and rhythmic. Peasant life and, to some extent, the life of a modern farmer unfold in accordance with the rhythms of the seasons, the daily rhythms of animal life, regular recurrences of the activities of tilling, seeding, cultivating, harvesting, storing or taking to market: a rhythm of life that came again and again, carried on through generations. Spring returned each year, summer followed spring, autumn summer. Year for year, just as the sun rises each day, as the stars appear, as the earth greens. This is true also of the less visible rhythms that accompany life. This rhythmic, cyclic quality is never static. The circadian rhythms, those that approximate the 24 hour rhythm, are named so because they are "about a day" long. *Circa* is Latin for about, *dia* for day. Biological time is rhythmic and cyclic, but also fluid: no two cycles are ever quite the same. They reflect the recurrence of the same thing differently. Thus life does not stand still. An organism arrives at the outset of each new cycle having lived through the one before. The beginning of each new cycle finds us at a new starting point. These cycles are less circles than spirals, a circular unfolding. There are moments of contraction, when little happens, and expansion, when everything seems to happen at once. The flow is not steady, trapped like water in a canal. This is the temporal expression of life itself, not its reflection.

The experience of duration, how long an hour seems, is something that has much more to do with our inner lives. Here we find that each moment is caught up with both what we bring to it – our pasts – and, as well, the future in the form of hopes, wishes, desires, longings. The past lives on as memory in all its varied forms, the future comes to meet us in each and every encounter. This experience of time is at once completely subjective and deeply meaningful. It led Augustine to question God so searchingly. In it past and future meet to shape our relationship to the present.

The fourth aspect of our relationship to time has to do with timelessness and timeliness, the eternal present and the presenced eternal. Here we are ushered into an experience of time that is once again objective, yet free of all sensory expression.

The young child lives completely in this fourth aspect of time. Each moment is complete unto itself. A child at play is the perfect picture of the eternal present. She experiences the world not as something separate from her that must be understood. She stands in the middle of it, amidst and within it. She is part of its living wholeness,

integrated totally into its "isness". Her time is now; her place is here. Time and place flow together forming the presence of an eternal now.

As a child grows, this experience of time begins to change. Tomorrow arises, and then yesterday. This stream of experienced time emerges in concert with the awakening of the child's emerging sense of self. Memories and anticipation begin to play a role in a child's life, although when they first appear they are not quite as orderly as we might hope. Many parents and teachers make the understandable mistake of trying to shape the child's emerging sense of soul time or biographical time in accordance with their own, to teach them about time. This is not necessary. The child's grasp of this stream of time develops in accord with her ability to place herself in relation to the world around her.

Where we are challenged as educators in today's world is to give children a strong sense of rhythm, to teach them, as it were, to love and trust the rhythms of their lives. The conscious experience of this quality of time grows as the child does. Children who experience strong rhythms as they grow tend to only begin to become conscious of them towards the middle of childhood. Consciousness often awakens first when a habituated rhythm falls away. At our house, we quite faithfully say grace before each meal. Morning, midday and evening each have their own grace. These vary somewhat with the seasons. The changing of the grace marks the changing of the season. It is the younger ones at the table, the 6 – 10 year-olds who display the most discomfort at a forgotten grace.

The young adolescents seem to care less. In fact, for them these rhythms no longer appear to be anything more than an imposition. They do not experience them as being filled with life. The adolescent awakens to a different kind of time. Her time is scheduled and planned. Things happen in expected sequences. Tantrums arise if the planned sequence is disturbed. The consciousness of time as an abstract, linear movement awakens as the organic processes of maturation come to a close. In Rudolf Steiner's words: "At this point, one has taken hold of the most remote aspect of human nature, the skeleton, and one's adaptation to the outer world is complete. Only now do we become a true child of the world; we live now with the mechanistic dynamic of the world, and now does we experience so-called causality in life."¹ It is about this time

¹ Rudolf Steiner, "Teachers As Artists in Education", lecture on August 22, 1922, Oxford, England in *The Spiritual Ground of Education*, GA305, Anthroposophic Press, 2004.

that we introduce time as a mathematical concept, the notion of mathematical time that can be expressed as one element of an equation, for instance $T = D/V$, where D equals distance and V equals velocity.

The awakening of this consciousness marks a turning point in the development of the child, or now, young person; a new birth as it were. In Rudolf Steiner's terms, it marks the beginning of the birth of the astral body, a process that spans roughly the ages of 12 to 16, or grades 7 – 10. We plan to look at this birthing process more closely over the course of the coming days, to try to get a better sense of how it brings itself to expression in the souls of our students as they pass through the grades and to better understand how the way we teach in the different grades can support its healthy progress.

Returning to the different experiences of time, we might say that each experience expresses a quality of relatedness to the world. In their development leading up to puberty children pass through these stages naturally. They reflect the child's emergent sense of self. Each step of self-consciousness is accompanied by a stronger sense of separateness. With puberty, a child begins to awaken to the fact that, from one perspective, he is a thing among other things. He has become an earthly being or, as my friend John likes to say, an Earthling. Coming to earth is not always easy for our students. The awakening is accompanied by much confusion compounded by the chaotic nature of the myriad physiological changes taking place simultaneously with their bodies. The world confronts me as a stranger, my body can no longer be counted to respond as it used to, and at the same time, I discover that I no longer have any certainty at all about my self.

It is at this point in the young person's biography that Rudolf Steiner emphasizes the importance of a scientific approach and introduces the sciences as such into the curriculum. He was not speaking about science as a system of beliefs or a construction of materialistic explanations for events considered to be external to us. He was not speaking of scientism. He was speaking of science as an activity, a way of relating, a way of entering into relationship. He was speaking of science as a practice.

This seems important to keep in mind today. Science has in many ways replaced religion as the primary form of belief in our society. We speak of scientific advances with the kind of awe and the sense of infallibility once reserved for the divine. Our trust is split about equally between computer technology and science regarding finding viable pathways for the future.

This is, however, not what we are speaking about when we consider the role of scientific thinking in adolescence development, especially within the context of Waldorf education. We are not interested in initiating our young people into the modern mystical belief system called science. What we are most interested in is the ability of the young person to find his way back into the world through the doorway now opened by the intellect, in his ability to participate in the world consciously, to find his way back to the “eternal now”.

Puberty marks a turning point in individual development, science a practice that enables a young person to navigate the turning. As we enter into the practice of science with our students, we can ask ourselves what it is we hope to achieve. Where do we hope our students will have arrived at the end of high school? What will they take from these years of exploration with them out into the world?

I think that if we wish to answer these questions from within the context of Waldorf education, it is important to remember that Steiner initiated a way of looking at education, which differs from most of what we are accustomed to. In general, there are two diametrically opposed approaches to education. One, the most widely accepted, is output or performance oriented. Students are taught in ways designed to insure that they achieve expected outcomes in predictable time periods. Curricula are designed and delivered, classrooms are managed, students are tested, schools and teachers held accountable.

At the other extreme we have the stream of education that has its roots in thinkers like Jean-Jacques Rousseau and its latest expression in the growing numbers of parents embracing the notion of un-schooling. Let children run free, give them interesting environments and they will learn. Learning is a process, as vital and natural as the growth of a plant.

We can discover multiple variations on these two polar themes throughout education today.

Steiner, however, took another tack. Waldorf education is neither one nor the other, nor is it the former simply made more hospitable and “free” through aspects of the latter. Steiner’s approach arises from his radically different understanding of the emergent human self and the role learning plays in individual development. If we think of output-based education on one side and process- or experience-based education on the other, we can see that Steiner described an educational approach that is in many ways a Hegelian synthesis of the two. Waldorf education is an encounter-based

approach to learning that encourages children to live deeply into both what they encounter in the world and the way these encounters live on within them. The challenge we face as teachers: to make sure the encounters are not only real, but that the way they come about resonates with the students' changing relationship to the world.

This becomes especially interesting following puberty. I think we can safely venture to say that child development up to puberty and the way it comes to expression in the child's changing consciousness is a natural process. We can work with it, we can work against it, we can play a helpful role or place obstacles in the child's path, but the process itself is something that lies beyond our grasp. This is not true of what happens after puberty. Oddly enough, we seem to arrive at intellectual thinking naturally. It is, however, not in our *nature* to go further. Going further is something we choose to do.

And this is the challenge that lies in teaching science, teaching anything really, to students after they pass through the portal of disenchantment that puberty represents. Can we teach in such a way that they find themselves encouraged to overcome the sense of separation inherent in intellectual thought and find the way to a new experience of intentional participation?

Can we lead them back the way they have come, step by step, never, however, negating the clarity and sense of self that the intellect offers?

I would suggest that the answer is yes and that the way we do science with our students is a key part of the process. The nature of causality is such that it requires us to search for the cause of any given effect in the time preceding the appearance of the effect. Causal thought is always limited by having to search for something that is no longer there in order to explain what is there. In other words, in order to solve the riddles awakened in us in the encounter with a sensuous phenomenon in the here and now, we must turn towards the non-phenomenological world. In order to do so, we must remove ourselves from the embodied participation in the phenomenon as conscious subjects and become observers, taking up a third person perspective.

The first step in the process outlined above lies in cultivating a way of exploring phenomena that doesn't necessitate a purely third person perspective. In an essay with the title *Is Goethe's Theory of Color Science?*, the contemporary German philosopher Gernot Bohme developed a series of arguments that "indicate[d] that it is not absurd to ask about alternatives to modern natural science". This would be necessary "if the need were felt for a science of perception... Interest in a science of this kind could

occur...if the concern were not only the experiences of man with nature, but also the experience of oneself in one's relation to nature". Of this science he writes: "If we wish to construct a science, that is a systematic body of knowledge, dealing with the realm of sensuous phenomena, then the principle of causality cannot be used as a general model. It is rather a question, on the one hand, of inquiring into the ordered conditions necessary for the appearance of the phenomena to be investigated and, on the other hand, of seeking their orderly relationship with one another."²

Shifting from a causal approach to understanding to one, which seeks to recognize the conditions needed for a phenomenon to enter into appearance – for flame to become this flame – creates a space of intimacy occupied both by the observed and the observer within which the consciousness of the observer plays an active role.

If the first step is to shift from causal thinking to one, which recognizes phenomenal appearance as the expression of a constellation of conditions, the next is to learn to see what I have recognized to be necessary and/or sufficient conditions in their relationships with one another and the phenomena at hand. Of this step, the recently deceased British thinker and Goethe scholar Henri Bortofft wrote: "...relationship cannot be experienced as such in the analytical mode of consciousness. Since it is in this mode the elements which are related that stand out in experience, the relationship itself can only seem to be a shadowy abstraction to the intellectual mind. The perception of relationship as *such* would require a simultaneous perception of the whole, and hence the restructuring of consciousness into the holistic mode.... The perception of a necessary connection in the perception of a relationship as a real factor in the phenomenon, instead of being only a mental abstraction added on to what is experienced with the senses. The reality of a relationship, the necessity of a connection is not experienced as such either by the senses alone or by the intellectual mind."³

Relationship in a sensuous phenomenon is not something we perceive with the senses. It lies outside the reach of the senses. It is neither tangible nor visible. To

² Böhme G. (1987) Is Goethe's Theory of Color Science? In: Amrine F., Zucker F.J., Wheeler H. (eds) Goethe and the Sciences: A Reappraisal. Boston Studies in the Philosophy of Science, vol 97. Springer, Dordrecht.

³ Bortoft, Henri, *The Wholeness of Nature: Goethe's way toward a science of conscious participation in nature*, Lindisfarne Press, 1996, [ISBN 978-0-940262-79-9](https://www.amazon.com/Wholeness-Nature-Goethe-way-toward-science-conscious-participation-nature/dp/0940262799).

experience relationship as something real or formative necessitates a shift in our own relationship to the phenomenon. The two practices Goethe described in this regard are *exact sensorial imagination* and *contrasting and comparing*. In the former, we bring, as it were the phenomenon inside, using our own imaginative activity to recreate it within. What was once external to us becomes a living part of our own soul experience. The latter entails placing the various aspects of the phenomenon in relation to one another and the whole as well as in relation to qualitatively similar phenomenon.

Only through such practices do we begin to become aware of the experiences that indicate the third step in this journey from intellectual isolation to intuitive participation. I have chosen to term this way of thinking *contextual*. Others have different terminology. Bortofft terms it holistic. However we choose to call it, this way of thinking has as its primary characteristic the dissolution of the perceived intellectual boundary between our thinking activity and the apparent phenomenon. The latter lives in us as we do in it.

This brings us back to where we started. And as T. S. Eliot intimated are able to “know the place for the first time”⁴. The young child’s experience of the eternal present is undisturbed by the intellectual specter of isolation and separateness. He is in it but knows it not. Separateness becomes a real experience only with the passage through puberty. In the high school years we have the possibility of treading a path with our students that allow them to come to a new experience of the eternal in the act of understanding.

The primary task of a high school teacher, especially a high science teacher, is to introduce students to the practices and ways of seeing that can enable them to go this path on their own and to help them experience that the act of understanding is a path of individual growth and transformation that brings them ever closer to the encountered world. Perhaps then they can come to experience themselves as the flame that in burning brings itself into appearance.

⁴ Eliot, T.S., Little Gidding, 1942.