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From the Editor

Elan Leibner

Dear Readers:

This is the first issue of the *Research Bulletin* since the passing of David Mitchell, Co-Director of the Research Institute for Waldorf Education, colleague, mentor, friend, and a general inspiration to so many of us. David's ardent wish was that the *Bulletin* be a place where practicing teachers as well as a wide circle of readers interested in Waldorf education would find content and inspiration in a language adequate to current standards of research and discourse. He did not want "Waldorf navel-gazing," as he called it, nor a dry academic journal, but rather a bridge that would facilitate the movement of ideas back and forth between academia and the Waldorf classroom.

We hope that this issue may please him. The articles, coming mostly from educators working in accredited academic settings, address both the internal aspects of Waldorf pedagogy and its broader philosophical and theoretical underpinnings. David's memory is also tastefully commemorated in brief tributes by his fellow Co-Director, Douglas Gerwin, and by Patrice Maynard of AWSNA.

Betty Staley contributes an essay discussing the three castles of Arthurian lore as metaphors for the spiritual tasks of Waldorf teachers. This work arose out of a study undertaken by the Pedagogical Section Council on the theme of the College of Teachers, to which the most recent issue of the *Bulletin* (Vol. XVII, No. 1) was devoted. Bringing her many years of practice and reflection to bear on some of the thorniest challenges facing individuals and faculties in Waldorf schools, Staley offers insights and inspiration towards a culture of inner and outer knighthood.

Florian Osswald, Co-Leader of the Pedagogical Section of the School of Spiritual Science, Goetheanum, Dornach, gave the keynote lectures at last summer's AWSNA conference. In an article originally written for our sister publication in New Zealand and Australia, Osswald covers much the same content of his lectures at the conference. Through this article, readers will gain a sense of Osswald's lively and thoroughly humane presence. While he has already spent the last academic year in his new post, his many years of high school teaching math and science continue to shine through his way of speaking and writing.

Frederick Amrine and Jost Schieren, both newly appointed trustees of the Research Institute, discuss from different perspectives the philosophical and conceptual underpinnings of Waldorf education. Amrine's contribution—the first in a planned series covering the philosophical roots of Waldorf education—begins with a discussion of Kant and Goethe, describing two concentric revolutions in the history of Western philosophy. Readers who might otherwise feel impatience with philosophic disquisitions are advised that, from Amrine's pen, philosophy flows like a compelling adventure novel. Schieren's article, on the concept of learning in Waldorf education, is a useful treatment of a core question in current educational discussions in that he relates Waldorf practices to contemporary thinkers' writings. Those readers concerned with explaining (or understanding) Waldorf education within an academic framework will find Schieren's work especially relevant and clear.

Arthur Auer, a frequent contributor over the years, returns to the pages of the *Bulletin* to offer further thoughts about clay modeling with children. Part of his mission is to debunk

the notion that clay modeling is somehow unsuitable for young children, but his article goes well beyond this issue to raise valuable questions about a range of modeling-related topics. Like Osswald, Auer has children very much present in his discourse. His treatment of questions such as warming beeswax for children with cold hands reveals his eminently practical and classroom-based life experience.

From Irene Jung, a German colleague, comes an intriguing description of an action research project in Hamburg. She relates how a class teacher who allowed his class to spend the first part of every morning lesson outdoors saw a significant reduction in problematic behavior and learning difficulties. Mentors of new teachers, as well as teachers working with the younger grades, would do well to give the possibilities raised in this short article serious consideration.

From the other end of the life of the mind, Michael D'Aleo discusses the Higgs Field and Boson and how one might begin to think about them. His article, adapted from a book he has been publishing online one chapter at a time, addresses in a timely and insightful manner the complex issues that came to the fore with the announcement a few months ago of the discovery of the "Higgs-like" particle. D'Aleo depicts the history of the concept of the atom, arriving at a contemplation of the difference between "things" and "relationships" as core concepts underlying experience.[1]

In all, this is a meaty and diverse issue. Happy Reading!

1. Readers interested in science, the teaching of science, and D'Aleo's work in general will be happy to know that he and his colleagues will once again be offering the Teaching Sensible Science course in two locations: beginning February 2013 in Baltimore, MD, and April 2013 in Seattle, WA. All relevant information, as well as testimonials from participants in prior courses and registration forms, can be found at the end of this issue.

In Memoriam: David Spear Mitchell

In what turned out to be a final contribution to his voluminous set of writings on Waldorf education, David Mitchell posed a fundamental question, followed by a characteristically bold reply. "What Stands Behind a Waldorf School?" he asked in an article that appeared in this journal just a year ago. To which his first response was: "I contend there is no such thing as a Waldorf school—there are only schools striving to become Waldorf schools."

He went on to explain:

> A true Waldorf school is always in the state of becoming. This involves human striving and self-development during which teachers remain open, constantly observing, and focused on Waldorf ideals while being centered in the world.[1]

6 December 1945 – 8 June 2012
Co-Director of the Research Institute for Waldorf Education

In retrospect, we may say that this passage could just as well be a description not only of a Waldorf school but also of David himself, in that he devoted his life—with a will that was at once mighty and gentle—to a program of ceaseless becoming. With bounding energy and boundless enthusiasm, he shouldered one building project after another with a potent mixture of knowledge, courage, and dedication, while remaining "constantly observing and focused on Waldorf ideals."

David's shoulders were broad and his arms were strong, figuratively as well as literally. As a young man he seemed headed towards a career in professional football when, through an encounter with a friend, he met anthroposophy and so also Waldorf education. Instead of pursuing life in the glaring klieg lights of a grand stadium, he opted for the relative obscurity of a country classroom, taking the inaugural first grade through eight years at the Pine Hill Waldorf School in Wilton, New Hampshire. At the same time as he was building up this little school, he was also building his own home—tools in one hand, a "how-to" book in the other—and raising with his wife, Anniken, a family of four children.

After a stint as high school teacher and director of admissions across the road at High Mowing, a Waldorf boarding and day high school, David felt called to yet another building project, this one at the base of the rugged Flatirons of the Rocky Mountains. Here he helped to pioneer a new high school at the Shining Mountain Waldorf School in Boulder, Colorado. For this, much to his surprise, he was selected by the Amgen Corporation as Colorado's "Teacher of the Year."

Perhaps David's most ambitious project was still to come. At the urging of his friend Wolfgang Schad, a Waldorf high school teacher and university professor revered for his essays on biology and phenomenology, David began to produce a growing collection of new books and articles under the aegis of the Association of Waldorf Schools of North America (AWSNA), an institution with which he was already deeply involved. From this initiative was born AWSNA

Publications, which David parlayed with the help of a generous donor and the backing of the circle of North American Waldorf schools into an international house of several hundred titles. There is barely a Waldorf teacher in the English-speaking world today who has not benefited from some educational resource that David discovered, wrote, edited, designed, distributed, marketed—or put together as a science teaching kit.

In addition to his prodigious output as Chair of AWSNA Publications, David served for the last eight years, with me, as Co-Director of the Research Institute for Waldorf Education. In this capacity he expanded the Institute's twice-yearly *Research Bulletin* (which he managed meticulously right into the details of design and layout) and pioneered several major research projects, including a widely cited *Survey of Waldorf Graduates*, the first overview of its kind on this continent. He also reached out on behalf of the Institute to other like-minded groups in Europe and Australia, forging networks of collaborative research and joint publications.

In his final years, David began almost single-handedly to build up via the Research Institute's Online Waldorf Library (OWL) a freely available series of eBooks and other electronically reproduced materials on Waldorf education that otherwise would have remained inaccessible to the wider public. As Marianne Alsop, the librarian of the OWL, pointed out to him shortly before he died, well over 75% of the contents of this electronic clearinghouse could be traced to his research, editing, and production.

So what *is* it that stands behind a Waldorf school? In the latter part of the article cited earlier, David offers his own response: the spiritual being that feels drawn to the striving of strong teachers! As he points out, it is not the strength of individual teachers—necessary though that is, along with the appetite of children to learn and the trust of their parents in the education—that sustains a school; rather it is an ineffable yet almost tangible presence that shines through those teachers who, despite their differences and tensions, succeed in collaborating for the sake of Waldorf education. At such moments, something greater than any single human being comes to life in the school.

David was painfully aware of the obstacles standing in the way of this kind of collaboration, since strong individuals are as likely to butt up against each other as they are to collaborate. As David put it,

> Inner strength, this strong personality, is a matter of personal destiny. Either one has it or one hasn't. It can't be faked. While this strength of personality makes the teacher adequate for the classroom, it can make him or her less inclined to fit comfortably into a community.[2]

David certainly exuded this kind of strength and he struggled mightily to put it at the service of collaboration, forever wrestling with the impatience to "go it alone." The very fact, for instance, that he chose to work in harness with a fellow co-director for close on a decade underscores his dedication to this ideal. Though he could be highly productive on his own—often getting up before dawn and still working late into the evening—he observed more than once to me how much more he accomplished when he felt the spirit of collaboration hovering over a project. Over the years I have learned immensely from his example and from his struggle.

David Mitchell, we know, cannot be replaced. Just as the Research Institute and AWSNA Publications were different (in the latter case, non-existent) before he came on the scene, so these institutions will be different in light of his departure. However, because he was by nature a builder—a maker of things both physical and metaphysical—he leaves behind a home where the spirit of Waldorf education can flourish and grow. For this, as for his generous heart and mischievous sense of adventure, we are indeed blessed.

At a colloquium of anthroposophical leaders held in Ann Arbor, MI, just two months after David died, one of the participants handed out a verse printed on small squares of plain white paper. No one seemed to know the precise origin of these lines, which were annotated "Verse by Rudolf Steiner via David Mitchell, AWSNA Summer 1999." Clearly this verse carried special significance for David, as it now may for those who contemplate it in his name.

– Douglas Gerwin

Endnotes

1. Cf. David Mitchell, "What Stands Behind a Waldorf School?" in *Research Bulletin* Vol. XVI, No. 2, pp.17–20.
2. Ibid., p. 19.

To resolve our past
Requires knowledge.

To forge our future
We need courage.

To experience the present
We must develop dedication.

Our thinking needs
Riddles to wake up.

Our feeling needs
Pain to mature.

Our willing needs
Resistance to become strong.

– Rudolf Steiner

To Celebrate the Life on Earth of David Mitchell

Let the wind blow through you and
it will not blow you down.

– Lakota saying

Finding adequate words to celebrate the life of David Mitchell, a man who worked so potently with words as author, editor, and Chair of AWSNA Publications, is indeed a daunting task. It heightens the difficulty of formulating an encomium for such a man as he. My own human frame is too small to contain the feelings that rise up in remembering and picturing a spirit so powerful, so vast in vision as his. It is necessary, however, to honor the man, as imperfect as such an attempt is inevitably to be.

David and I first met in 1987. He was at Pine Hill and High Mowing Waldorf schools at the time while I was working to establish the Merriconeag School in Maine. I felt very lucky to be billeted at the Mitchells' home three years later in the summer of 1990 during my teacher training at Antioch University New England. David commanded my admiration and appreciation because he was so insightful, kind, and attentive. In my room, for instance, David left out a copy of Michael Spence's recently-published book on economics, because he remembered my interest in this topic.

For me, David embodied what AWSNA is and means. AWSNA Publications was his response to an identified need for high quality materials for teachers. Evidently inspired by the remarkable Wolfgang Schad, David took up the task of providing a steady stream of valuable books and articles for Waldorf teachers and for those who wished to know more about this vibrant education.

Until some time around 1999, my eighth grade year of teaching, I read almost every book that David produced. Then it became too much for me because David was laying his hands on so many texts—in all over 400 books and monographs—so that the world (and teachers most especially) could better understand the significance and purpose of Waldorf education. Later, when I was appointed to the leadership of AWSNA, I got

to see at close quarters David's tremendous breadth of vision and his boundless creativity to serve the needs of the Waldorf movement and beyond.

David not only published books, of course. As Co-Director of the Research Institute, a position he shared with Douglas Gerwin, David was *the* "research center" of the English-speaking world. Questions of all kinds came to him from around the world, and he would take the time to answer these no matter who the questioner or what the question. He would crawl through the ancient stacks of the Rudolf Steiner Library, search for hours without stopping, ponder conundrums, and discuss ideas energetically, all to find the answer to a question or to follow a line of research he knew would be useful. Clearinghouse, teacher, scientist, translator, recognizer, direction setter, and positive influence on all of us, in the Waldorf movement, in our culture—all these in a single individual!

David was most like the wind. Mighty, gentle, forming things in its path, terrible in its ferociousness and always kind in its ultimate motives—cleansing, pruning, refreshing, carrying seeds, bearing the breath of the earth, ringing chimes, and carrying the birds of air-like thoughts thousands of miles beyond where they could ever go without him. Understanding this image, as I did one day in a failed attempt at a birthday poem for him, made it possible for me to "let the wind blow through" rather than stand against it.

Trusting and being formed. This does not cease with David's new journey. Like the wind, his work goes on without end!

– Patrice Maynard

The Three Castles and the Esoteric Life of the Teacher

Betty Staley

We live in a time when human beings are called upon to wake up and develop a new consciousness. Before the fifteenth century, prior to the birth of the consciousness soul, one could live out of one's natural development. There was still a feeling that beyond the physical world, spiritual beings were active and working with human beings. That has not been the case for the last five hundred years. More and more individuals have felt cut off and isolated from spiritual connections. In the nineteenth century Friedrich Nietzsche described it well with the expression "God is Dead." Spiritual beings have not disappeared, but they no longer take an active interest in the human being's physical development. Their work has been completed. Now, in the freedom we so value, we have the task of offering spiritual beings moral impulses that come out of our own efforts. Only then will they be interested. It is not destined that this will happen. It is up to us.

We have many choices in this age of freedom. We can choose to consciously awaken moral forces within ourselves or simply rely on traditions for moral guidance. We can be apathetic to moral forces stirring within, sleep through life unaware of choices available, or even work against moral forces by inviting forces of evil into our souls. We can see evidence of choices people make just by reading the daily newspaper.

Teachers have a special responsibility to understand and recognize the perilous situation of our time. Our task is to create and foster a relationship with our children that will help them find their true humanity, allowing them to make choices guided by an inner moral compass. In addition, we need to go beyond interest in students in our classroom to a concern for humanity at large, particularly in the context of the kinds of temptation that seek to weaken or even destroy the awakening ego of human souls.

Wolfram von Eschenbach, in his telling of *Parzival*, has laid before us great imaginations of this modern condition and the journey that the serious teacher can embark upon as a path of initiation.

In the legend of Parzival, there are three castles—the Castle of King Arthur, the Castle of the Grail, and the Castle of Wonders. Parzival and Gawan, as twin seekers, represent the modern consciousness-soul human being journeying through the three castles on a path of initiation. When I refer to the three castles, I am using them as images of three different ways in which the teacher is challenged in his or her inner development.

> Now…we have the task of offering spiritual beings moral impulses that come out of our own efforts.

Behind the Arthurian and the Parzival quests lie the deepest mysteries connected with the cosmic intelligence of Michael and soul transformation. Each mystery responds to the historical challenge of its time. In the path through the Castle of Wonders we have the possibility of transforming dark forces into light. There is no specific order in working with the three castles, since each relates to a particular aspect of what needs attention. The conscious integration of the three leads to healthy inner development. Through understanding what happens in each of these castles, the teacher can nurture his or her esoteric life in service of the Good.

The Castle of King Arthur – *Living in the sentient soul: finding ourselves in the social realm*

There are many legends around King Arthur, and it can be confusing to figure out which depict the historical Arthur and which the legendary one. The name "Arthur" denoted an initiate who had reached the rank of leading one of the Mystery Schools that existed in pre-Christian times and continued until at least the ninth century. Richard Seddon describes the task of the Mystery School of Arthur as being

> …to carry into the Christian era the wisdom which the builders of the megaliths—during the previous age of Michael around 2500 BC—had acquired through their observations of the way the spiritual forces from sun, moon and planets varied in their passage through the zodiac. (p. 14)

The three castles are used as images of three different ways in which teachers are challenged in their inner development.

Seddon points out that the name "Arthur" is Celtic, deriving from *Art-Hu. Art* means "to plough," and *Hu* is the Welsh name of the Sun God who descended to earth, known to us as the Christ. Thus the name "Arthur" is "the ploughman of the Sun God" relating the star wisdom with practical work on earth. As Virginia Sease puts it,

> Rudolf Steiner describes how Arthur and his knights experienced the sun in a quite specific way, and how they had experienced the Christ on the Sun before He had left it in order to descend to earth. The Arthurian knights had taken up this experience of the Christ on the Sun in their own etheric bodies. …They took the Christ into themselves. This created a foundation for their mission. They sent emissaries out across Europe in order to battle the wildness in the astral bodies of Europe's population, as well as to purify and civilize it. (p. 23)

René Querido adds to this picture:

> The Celtic Stream, even as it embraced Christianity, had never forsaken the cosmos. Because of this, as the strength of the Grail impulse increased (about the fifth century AD), it became possible for a group of men to appear who represented the cosmic forces in such a way that they were able to fulfill a world destiny. These men were King Arthur and his Knights of the Round Table. They stood, with King Arthur as the Sun at their center and with each king so embodying the impulse of one of the zodiacal constellations, that together they could act as a twelvefold whole. The Holy Grail was the ideal toward which their vision ever turned and which guided their deeds. As a Michael community they fought to ensure Michael's continued dominion over Cosmic Intelligence; they struggled against the severance of intelligence from Michael. They strove against the old demonic forces and on behalf of civilization. This community fought longer than any other that Michael should remain regent over Intelligence. This was the mission of the Arthurian Round Table. (p. 62)

As the knights of King Arthur took on the mission to purify astral bodies, we as teachers must take on that task for ourselves. It is in our work in the faculty that we are often challenged with the all-too-human qualities in our soul life: jealousy, envy, need for power, arrogance, judgment, gossip, and even a sense of martyrdom.

When we picture King Arthur and the Round Table, we imagine a castle occupied with knights and ladies dressed in elegant clothing, following the rules of chivalry. In order to become a knight of King Arthur, one had to perform brave deeds, defend ladies, and kill monsters. When Arthur traveled beyond the confines of his castle, he would lay down a silken cloth that represented the Round Table. Wherever Arthur went, he and his knights undertook noble deeds that brought law and order to the realm. Thus, within our classrooms we continue the connection to the Spiritual Being of the school that we cultivate in the faculty meeting and in our daily meditation.

This work is represented by the sphere of rights—the relationship of one to another in the social community. Those who belonged to it were a brotherhood. The Round Table was an image of the zodiac, with King Arthur as the sun, radiating order. He was the king, the head, out of which streamed forces of the sentient soul, of warmth and good fellowship, which illuminated the social life of the kingdom.

Faculty members act as the Court of King Arthur, gathering around the imagination of the Being of the school and the Being of Waldorf education.

Faculty members act as the Court of King Arthur, gathering around the imagination of the Being of the school and the Being of Waldorf education, as Rudolf Steiner described it at the opening of the first Waldorf school:

> My dear friends, It is our duty to be aware of the importance of our task. This we shall achieve if we realize that this school is to become the bearer of quite a special impulse. And so, first of all, we must direct our thoughts towards the consciousness that something special is to be borne into the world through this education. Such a realization will come about if we do not look upon this act of founding the school as an ordinary everyday event, but as a *festive act in the great ordering of the world.* In this sense I wish to take the first step by expressing the deepest gratitude in the name of the Great Spirit who is to lead mankind out of its present state of suffering and misery into a higher stage of development in education and training. …Let us look upon ourselves as human beings whom karma has brought to this place where something is to happen which shall surpass ordinary events—something which may make all participants here feel that they have witnessed a festive moment of world destiny. (*Towards the Deepening of Waldorf Education,* p. 53)

There are the special moments that occur in faculty meetings and meetings of the College of Teachers when we are attuned to one another, recognizing the tasks we have taken on, doing our inner work faithfully, and striving to serve the Being of the school. Then we can feel something new has entered human social life, something that is only a seed now but that carries the potential for future working. This must have been similar for Arthur who was trying to bring about a new world order based on justice and law rather than vengeance and power.

Each faculty is a gathering of teachers who have been brought together by karma. They are charged with working together as a brotherhood, a sisterhood, for the benefit of the children in the school. This is not easy. The social life is the warmth mantle that surrounds each school. We may feel it when we walk into a school building or onto the school grounds. We may sense through the care of the environment, the quality of the children's work, the way teachers greet each other, or the way teachers and parents relate, that something special lives here.

Today, social and antisocial forces work very strongly in this area. When we live in the sentient soul quality, we are experiencing our "I" through the sentient soul in which surge astral forces of sympathy and antipathy. There are times when we stand in our individuality and at the same time experience ourselves as a member of a group. Faculty members can experience themselves gathered around the table, inspired by the Spirit working into their hearts as into a spiritual vessel. But at other times they can experience small cliques of teachers, making decisions out of limited interest sub-groups. For example, a school may be starting a high school. The class teachers say, "We can't spend so much money on the high school. There are so many more things we need in the elementary school. We have worked long and hard and deserve this." Or, it might be the high school teachers who claim they work the hardest and therefore need to be paid more. Or the early childhood teachers claim they are the doorway to the school and need to have more time to strengthen their etheric bodies, and so forth. Rather than speaking as one of the circle, each person takes refuge in his or her group identity. This also happens in relationships with parents. The teachers may hold themselves up as the experts and say, "We teachers know about this because we know anthroposophy, but you parents don't understand it," or "The College of Teachers has made this decision, but we cannot share the process with you because everything we talk about is sacred and secret."

The esoteric life of the teacher in relation to King Arthur's castle is to learn to be a true social being.

The esoteric life of the teacher in relation to King Arthur's castle is to learn to be a true social being, bringing nobility and orderliness to the school community.

> After Arthur was crowned king, he set about righting the wrongs that had been done in England since the death of Uther Pendragon. He forced those who had wrongfully taken the land of others to return it to the rightful owners. He set free many prisoners who were unjustly held. He demanded that all should obey the laws of the realm. (Sterne, p. 19)

How would Arthur battle for his kingdom? The initiate Merlin guided him to a shining blue lake.

> In the middle of the lake, Arthur saw an arm clothed in white samite, mysterious and wonderful. High above the blue water, the raised arm held a sword encased in a rich scabbard embellished all in gold. Arthur asked the Lady of the Lake for the sword, for he had none of his own. "Sir Arthur, King of England, the sword Excalibur is mine. If you will give me a gift when I ask it, you shall have the sword." Arthur agreed and rowed out to the center of the lake and reached for the sword Excalibur. At his touch the hand let go the hilt, and hand and arm sank slowly under the water. (Sterne, pp. 26–27)

Arthur's sword came from the supersensible world in order to aid in his mission on earth. Arthur was guided from infancy by Merlin, his protector and guide, whose task was to serve the good. In a similar way did Rudolf Steiner speak to the teachers of the Waldorf school when he said: "In the evenings before your meditation, ask the Angels, Archangels and Archai that they may help you in your work on the following day." (Recollections of Caroline von Heydebrand and Walter Johannes Stein, in *Towards the Deepening of Waldorf Education,* p. 62)

Teachers in Waldorf schools often hold the ideal of Waldorf education in the highest place, even as a utopia. However, the difference between the ideal and the real can be very frustrating. To keep striving for the ideal can

become a daily mantra. Yet one cannot have blinders on to what is happening between people in the confusions of everyday life. The ideal can create distance between colleagues, one of whom may judge the other as being "more Waldorf." As we follow the Arthurian legends, we find that Camelot, the city Merlin had built using all the arts his magic could command, was also subject to human failings. Despite the ideals Arthur had so valiantly required of his Round Table and of those in his castle, the transgressions of Guinevere and Lancelot, the hatred of Modred, and the quick retreat from forgiveness to vengeance, made Camelot disappear from the earthly realm and continue only as an intention, as a hope for the future.

To be realistic, we can't live in paradise on the physical plane. To think that one can is an illusion. And yet our times demand that we strive to be social, recognizing that we have both social and anti-social forces working in our souls. But despite the challenges, we must keep trying to develop ourselves as social beings.

What does it mean to be a social being when we are constantly aware of anti-social forces in our own thinking, as well in the thoughts of others around us?

When we listen to another person, we are often not really listening, but instead we are thinking about our own response. We want to let the other person know what is on our mind. In order to hold on to our own thought, we resist what the other person is saying. We don't want our own thoughts to be overshadowed by the other person's words. We resist the tendency of our thinking to be put to sleep by the other person. A small battle rages between speaker and listener. But even if our thinking is put to sleep, our feeling and willing are not. In the contrast between our own thoughts and the speaker's, we wake up to ourselves. If we did not, we would go along with whatever the speaker said and we would lose self-awareness. For the modern person, this would be intolerable. This dynamic between two people is mostly unconscious, but at times we become aware of how anti-social we really are, and we can hardly help it. Our own sense of self-love encourages us to make our own point known, whether by nodding or shaking our head in agreement or disagreement, or by stating our position without letting the other person finish a thought.

While half of our soul life is anti-social, the other half is social. Rudolf Steiner tells us that, when we are asleep at night, we are meeting each other and are united socially. There are no boundaries between us. However, the moment we wake up, we begin to develop our conceptual life, and anti-social impulses come streaming in. Sitting in a meeting, we feel that we already know what our colleagues are going to say, so we don't really need to listen. We build a wall around ourselves, knowing with certainty that we are right and the speaker is wrong. Most of us don't think we walk around harboring pre-judgments or prejudices, but they are working unconsciously.

What shall we do to bring a social impulse to this situation? We have to consciously master these anti-social forces, recognizing that people are not fixed but are always developing. We have to respect freedom of thought and not impose our thoughts on someone else. We have to allow people to question us without becoming our enemies.

The faculty develops the structure of the castle, the Round Table, which establishes the working relationships between the different members. The structure that is established allows for processes to take place. The structure may be hierarchical or horizontal. It may be constituted of committees with clear mandates given to each committee, or it may be administratively centralized. However it is organized, there should be clear processes that are agreed upon so that the group knows how to deal with issues as they come up. Having clear processes helps keep antipathy from getting out of hand. The anti-social forces wake

us up; they are part of the modern condition in which we treasure our independence, standing up for what we want. However, we need to look beyond our own desires to the life of the community and help create processes to bring balance and order. For example, what structure exists so that parents can voice a grievance without thinking the teacher will take it out on their child? What processes are there to evaluate an assembly without a teacher feeling attacked or at least unappreciated? What structure is in place for mandates? What forms of appreciation recognize people's efforts? How can we learn to be critical without attacking? How do we work with principles of conflict resolution?

In our feeling life we tend to distort the picture we have of another person, and negative feelings rise up. We are tossed back and forth between sympathy and antipathy. We can love one another for a brief time, but after that, something comes up, maybe from a past meeting, and we become critical and judgmental. Sometimes we aren't even conscious that this is happening. How can we bring healthy social forces to bear?

We must learn to know the other person more deeply so we can broaden the image we have been holding of him or her. Since most of our judgments are based on sympathy and antipathy, we have to go beyond them to a new understanding. Out of interest we must get to know the other faculty member better; what is the person interested in, what was his childhood like, what does she feel passionate about? How can we help a new teacher feel a sense of belonging with the group? Is there a good balance in the rights sphere between equality for all and times when an individual case needs to be considered differently?

In our will life we are also influenced by sympathies and antipathies. Our idealism can justify a feeling of self-righteousness. When two colleagues hold to competing ideals which lead to different decisions, it is important to recognize that each one wants what is best for the children and society. Trying to find a third way may lift the issue out of the personal. Other colleagues can be helpful in resolving such a social problem.

We love a particular person because he or she does what we would do, or we dislike the person who does things differently. Most of the time when we think we're expressing love for another person, we are actually engaged in the illusion of love; it is really self-love. We feel proud that we sacrificed something of ourselves for the other person, but if we are really honest, we find we liked the feeling in ourselves of giving, enjoyed our own sense of generosity. It is a case of masked egoism, and we need to use self-discipline and self-reflection to overcome the feeling of being self-satisfied.

The challenge of operating in King Arthur's castle is to live horizontally, with the image of the King as the Being of the school. Of course, there may be hierarchical roles, but those are agreed to by the group. The true hierarchy is a spiritual one. The biggest challenge in this castle is the maturing of our social life in the consideration of the good of the whole.

Anything that prevents the human Ego from working out of the social forces holds us back. We need to put the interests of the other before those of self-interest as a new way of working. In King Arthur's time, the knights rode out into the forests to fight monsters. In our time we have to wake up to the monsters within and, in the way we work, make room for something higher to enter.

The Grail Castle –
Living in the heart-mind soul

The Grail Castle is different from the castle of King Arthur. In order to enter it, one has to cross a bridge over a moat, leaving everyday life behind and passing into the spiritual world. Parzival stumbled into it when he was seeking his mother, not knowing she had died. Parzival did not understand anything about the Grail Castle. He was amazed by it, but he did not ask any questions.

Later, the hermit Trevrizent explained to Parzival the rules of the Grail Castle and its

connection with the Grail King, Anfortas. When the former Grail King, Frimurtel (Trevrizent's father) lost his life, his eldest son, Anfortas, was chosen to succeed him as king and Lord of the Grail and the Grail's company. As Anfortas came into his manhood, he left the Castle in search of excitement and adventure. The rule was that if any Lord of the Grail craved a love other than the one whose name came up on the Grail writing, he would suffer distress and grievous misery.

Anfortas went against his duty and was filled with passion for a particular woman. He bravely fought for her and won great fame and, in doing that, became prideful. This also violated the code of behavior, which required moderation in all things. His desires led him further and further in search of adventure to prove his manhood to the woman, and eventually he was wounded in the testicles with a poisoned spear by a heathen who sought the Grail for its power. Anfortas was still the King of the Grail, but he was wounded and could not carry out his responsibilities.

Of course, none of this was known to Parzival. However, he saw that the king was suffering, he saw a strange procession with squires carrying a bleeding lance, and he heard members of the castle moaning in deep anguish. He remembered only that Gurnemanz had told him not to talk so much, and so he did not ask any questions.

As Parzival continued on his journey, he slowly began to wake up. After meeting Sigune and recognizing that he had failed in not asking the question, "he felt a deep remorse … that he had been so slow to question as he sat by the side of the sorrowful host. His self-reproaches and the heat of the day brought the sweat pouring from him." (Book V)

When we recognize that we have missed an opportunity with a student, a colleague, or a parent, we may feel overwhelmed with guilt. Why was I asleep? Will there be another opportunity? How can I heal this situation? As with Parzival, we also can be asleep to another person's pain and suffering. A child in our class may have gone through a difficult experience, but we did not notice it. Perhaps his favorite pet died or perhaps her grandmother became very ill. When we find out later, we may realize we had not been a careful observer and had missed an important opportunity to support the child.

Parzival tries to make up for his thoughtless behavior with Jeschute when he forces Orilus to reconcile with his wife. "Then Parzival did as a man who is true must do. He took the holy casket and swore an oath upon it of his own free will. And he framed the oath thus, 'Upon my honor as a knight—whether I have the honor myself or not, whoever sees me bear my shield will know me a member of knighthood's order—the power of this name, so the code of chivalry teaches us, has often won great fame and its name is still exalted today. May I stand disgraced forever before the world and all my honor be lost, and as pledge for these words let my happiness, with my deeds, be offered here before the Hand Supreme that, I believe, God bears. May I suffer shame and scorn forever by His power, in body and in soul, if this lady did do anything amiss when I snatched her brooch from her and took her golden ring as well. I was a fool then, not a man, and not yet grown to wisdom.' " (Book V)

When we look back upon our day during a "Review of the Day" exercise, we can re-experience our actions. At times we may feel the kind of shame that Parzival felt, and out of that embarrassment we may vow to ourselves to heal whatever pains we have caused. I well remember Cecil Harwood, one of the teachers in my Waldorf training, speaking about the mistakes we would make as young teachers. He told us that, at the beginning of our teaching career, the angels of the children would forgive our mistakes as long as we had enthusiasm. As we gained experience, we would become more personally responsible for our actions and might suffer because of our lost opportunities and feel guilt.

In Book VI three very important events happen that serve as guidance for the teacher

in relation to spiritual practice. At the very moment when Parzival is reaching his goal, to become a member of the Round Table, Kundry publicly accuses him of the sinful deed of not asking the question of the wounded king in the Grail Castle. "The fame and power of the Round Table are lamed now that Sir Parzival has joined its company, though he also bears, as he sits over there, the outward signs of a knight. …A curse on the beauty of your face and on your manly limbs. …May your mouth become empty, I mean of the tongue within it, as your heart is empty of real feeling! You adder's fang!" Parzival, shamed, leaves the Round Table to seek the Grail and make amends.

Another knight, Gawan, is wrongfully accused of killing a man and must face battle against a powerful enemy. The chivalric code requires that he respond to such a challenge even though he is innocent. He, too, must leave the Round Table.

Despite the pain that the knights experience in this scene, they learn about the existence of Parzival's half-brother, and they learn about the Castle of Wonders where four hundred maidens and four queens are held captive. In addition to the pain, the new relationship between Parzival and Gawan becomes one of joy and fulfillment that will carry them through the next stages of their journey.

In Book IX Parzival crosses a threshold into maturity. He meets Trevrizent and realizes he needs help. "Parzival the warrior dismounted at once, and standing with great modesty before him, he told of the people who had shown him the way and how they had praised the hermit's counsels. Then he said, 'Sir, now give me counsel. I am a man who has sinned.' "

After Parzival learns of his lineage, of the deaths he has caused, and of his relationship with Trevrizent, he confesses and begs forgiveness. Trevrizent's reply is one that should be helpful to us when we realize our mistakes: "And you must not grieve too much. You should in right measure grieve and abstain from grief." As we take responsibility for our imperfections, we also need to forgive ourselves and go forward rather than live too strongly in self-recrimination.

The Grail Castle represents the scene of the Intellectual or Heart-Mind Soul. The seeker who enters the Grail Castle is challenged to spiritualize the thinking forces. Over time man's thinking has become more and more dead, rigid, and cold, guided by old traditions and custom. With a one-sided development of intelligence, human thinking has given way to pride, haughtiness, and cruelty. The materialistic influence on thinking has led people to intellectualism. While objectivity and clear thinking are a necessary part of the Heart-Mind Soul, the challenge of the Grail Castle is to enter on the path of developing capacities of perception. That is our challenge as teachers.

The seeker who enters the Grail Castle is challenged to spiritualize the thinking forces.

When we enter the realm of the Grail Castle in our Heart-Mind Soul, we find we are interconnected with other people in our lives. We are given the opportunities in daily practice to grow spiritually as we transform our thinking, strengthening our connections with the spiritual world and shaping our daily lives in alignment with our higher self. As we work more and more out of individual freedom rather than rules of conduct, we expand our soul capacities so that the work of the Heart-Mind Soul is transformed into Consciousness Soul activity.

The events connected with all aspects of the Grail Castle have consequence for the esoteric life of the teacher. It is both a lonely path and a path we take with others. Our inner meditative life is one that we develop between the hierarchies and ourselves. In our meditation we relate to the spiritual hierarchies every night.

- How I carried out my thought life during the day determines the way I enter the presence of the Angels.

- How I used my speech during the day determines whether I come worthily to the Archangels.
- How I used my movement during the day determines whether I come worthily near to the Archai.

In our daily behavior we must seek equanimity rather than excess. Moderation and humility help us as we stand in awe before the child, asking: "Who are you? What is your destiny? How can I serve you?" Steiner's Six Basic Exercises or the Eightfold Path of Buddha can help us in this development.

Each teacher is responsible for acting out of the wisdom of transformed thinking and out of a balanced feeling life in interaction with a group of colleagues, with parents, and with children. We embody this meaning when the teachers are asked to:

> Imbue yourself with the power of imagination,
> Have courage for the truth,
> Sharpen your feeling for responsibility of Soul. (cf. Steiner, *Study of Man,* p. 190)

In our esoteric practice we must strive for the truth. There will be times when we feel wrongly judged by a colleague or parent. We have to wrestle with the wish to prove ourselves right, to strike back, to find some certainty in the midst of unknowingness. To strive for the truth without needing to demean or destroy the other is the challenge here. Opening ourselves to the gifts of others helps us to appreciate those we may have previously misunderstood.

In our work with the children, it is important to recognize that the soul of a growing child has come down to earth from a previous incarnation. The child is not an accident, nor a mere product of genes. Our observation of the child and the child study we carry out in our faculty meetings lay the basis for our insights of how to work with each child. We can honor the gifts and challenges that come from the past. Through spiritualizing our thinking about the child, we build a picture of the child and his or her needs. Then we can understand that our task is to help clear away obstacles so that the child may meet his or her own destiny.

The path to the Grail is a spiritualized Christianity (in the broadest sense of the word) that welcomes all religions and all people.

As we work with children, parents, and colleagues, our thoughts must go beyond our family, racial, and national roots. The path to the Grail is a spiritualized Christianity (in the broadest sense of the word) that welcomes all religions and all people. One truth has many aspects.

As Parzival is nearing the Grail Castle at the end of his journey, he meets Feirefis, his half-brother. Parzival is told he must choose a companion to accompany him. Although Feirefis is born of a Muslim mother and Christian father, and is himself a pagan owing loyalty to many gods and goddesses, he is the one who is chosen. Von Eschenbach is pointing to a future when a particular religion will no longer be the defining authority for transformation.

We are not only traversing our individual path, but we are deeply connected with our colleagues, the staff, the children, and their families. It is not a matter of our reaching a higher stage of development for its own sake. Once we have reached a certain stage on the inner path, we have to remember to take our brothers and sisters with us. There is no salvation for as long as even a single fellow human being remains excluded.

At different times in the legend, we see the importance of balance between the masculine and feminine in developing our higher self. Parzival could not have awakened to his task

without the help of Sigune and Kundry. Gawan needed the wisdom of the frozen queen (his grandmother), the challenge of the feisty Orgilus, and the tenderness of the ferryman's daughter Bene to become a complete person. We do not work in our own king- (or queen-) doms. Every teacher, every staff member helps us on our way.

Those who approach the Grail must ask questions. This is an attitude of soul as we work together in a school. We may not have the answers, but we need to learn to ask the right questions. Sometimes the questions are uninvited, they stir up tension, but they serve the purpose of clearing a path to Truth. The path for the teacher who enters the Grail Castle is a lonely, individual path to transform ordinary thinking into spiritual communion. Then the transformed thinking can become a resource for the transformation of the school.

In Volume 8 of *Karmic Relationships*, Rudolf Steiner writes:

> There … stands King Arthur's castle where men still turn to the Cosmic Intelligence and where they strive to instill the Intelligence belonging to the universe into civilization on earth. And [there] stands that other castle, the Grail castle, where the Intelligence is no longer drawn from the heavens but where it is realized that what is wisdom before men is foolishness before God and what is wisdom before God is foolishness before men. (p. 39)

The intelligence of the Grail Castle is found on earth, no longer flowing from the heavens. It is here in our everyday earthly activity that we do our spiritual work. It is the inner path of meditation in which we deepen our connection to the world outside and the world within. Parzival had to learn these lessons also in order to transform his thinking and be genuinely ready to stand before the Grail King and ask the question.

The Castle of Wonders – Entering into the consciousness soul

The Castle of Wonders with its surrounding region signifies the deepest mysteries of the laws of karma and reincarnation. Each of us has a Castle of Wonders: the dark places in our soul where shadows lurk and ugliness confronts us. We can also call it a Castle of Wounds, since we each carry the hurts from childhood and youth (as well as from past life experience) into our adult life. Often we choose not to enter this castle because it is so painful, and yet we must if we are to follow the path of the consciousness soul—the path where Gawan enters into initiation. To be able to enter the Castle of King Arthur and transform our social life, and to enter the Castle of the Grail and transform our thinking life, we must take the steps and face our will and our feelings in the Castle of Wonders. However, in addition to painful experiences bound up with the Castle of Wonders, there are also the possibilities of healing and joy. Many of the steps we take in this region are unconscious. We meet people to whom we owe karmic debts as well as those who need to offer us healing. This is the region where the ordering of karma can be set in motion.

The Castle of Wonders signifies the deepest mysteries of the laws of karma and reincarnation.

In the Parzival legend, Gawan enters a new realm and is quickly filled with passion for a woman who scorns him. He sees beyond her outer appearance and he shows restraint and patience. After he has shown compassion to an injured knight and risked his life for her, the woman's mask is dropped, and a real love awakens in her. As Gawan continues moving through this land of wonders, he notices that everything is topsy-turvy and it is hard to figure out what is what. This is often true with karma.

As he is on his way to the Grail (a task given to him as penance), he reaches the ferryman's house and has to cross over a river to enter into the kingdom of the Castle of Wonders. Gawan has now entered into his soul world where he will meet unbalanced aspects of himself and evil forces lurking to envelop him. This is his path of initiation. In contrast to Parzival who didn't ask the question, Gawan asks why the four hundred maidens were locked in the castle, but he is told not to ask. When he persists in trying to find out why, the ferryman lends him a shield and tells him to arm himself.

As teachers, when we decide to enter into our own soul world, we need certain protection so that we can keep our center in the midst of travail. To serve life means we will be severely tested.

The ferryman tells Gawan to leave his horse outside and meet the trader, who tells him that if he succeeds he will receive all the wealth of the kingdom. When we enter the dark parts of our soul where imbalance and evil forces live, we have to go alone. Inside the castle are all the enemies of the Grail (of spiritualized thinking). When we overcome these forces, we receive the wealth of Oneness, of Completeness of body, soul, and spirit. The castle is fortified on all sides. How hard it is for us to take up the journey of initiation. Strong walls protect our vulnerability and flaws. Do we have the courage to carry on?

As Gawan enters the castle he sees the huge wonder bed shifting back and forth, and it is hard for him to jump onto it and claim it. He leaps into the middle of it, and it thunderously bangs back and forth against the walls. When the bed comes to a stop, Gawan is shaken and doesn't know what is coming next. The Castle of Wonders concerns the Word, the Truth. The banging of the bed might be like our tongue moving. There is an Arabic saying, "While the word is yet unspoken, you are master of it; when once it is spoken it is master of you."

When we begin the path of initiation, it is difficult to get a handle on the tasks. One may try this or that, but it is too hard to focus, to carry out our intention in practice. We may decide it isn't worth the effort to master our will, it's too hard, and we return to past ways of relating. Then our work becomes hollow, for we are no longer allowing an opening for the spirit to shine, the angel of the child to guide us, the Being of the school to illumine us.

Back in the Castle of Wonders, Gawan is pelted with stones from five hundred slingshots, so much so that his shield is dented. Five hundred arrows are aimed at him as well.

Often when we enter the soul world, we find people attack us, misunderstand us, and try to manipulate us. We have to master our will and not react unthinkingly. We say to ourselves, "Patience, heart, patience." There are many ways we keep on the armor so we won't experience the stones and arrows—self-medicating through drugs or alcohol, losing ourselves in television, computer programs or social media, promiscuity, numbing our feeling life, or even leaving the school because we don't have the courage to face ourselves.

One of the most common means by which we get in our own way is through denial. Perhaps through our mentor or an evaluator, observations are made of our work, along with suggestions. It is difficult and painful to hear criticism. But how do we handle it? Do we welcome it as a way to continue growing? Do we deny it? Do we blame a few parents who have launched complaints against us? Do we say we were never told about these problems before? Do we go on attack, rallying half of the class parents to our side, accusing the school of unfairness? Legitimate questions are put to the school: Are processes in place to help a teacher meet difficult situations? What kind of support is there? What is objective evaluation?

Often one finds that a teacher who has difficulty in one school may have had the same problem elsewhere. The problem may take time to surface, but it will come out. It is another call for the teacher to take the problem seriously and do the soul work involved.

Gawan is beaten up by a thug, and then a huge lion attacks him. Gawan manages to cut off its leg, but he is wounded too and is losing blood. He manages to kill the lion before falling unconscious. He has almost lost the battle. It isn't a complete win because Gawan is badly injured.

In addition to the wounds from our childhood and youth we bear the wounds of our adult experiences. Colleagueship issues can wound one, friendships can become betrayals, and lovers can become enemies. Do we retaliate or do we master our will and our words? Are we going to carry our wounds to our grave or begin to heal them?

The mystery of the relationship between the Castle of Wonders and the Grail Castle is expressed when Arnive, the elderly queen, who is caring for Gawan's wounds says, "I will quickly bring you relief. Kundry *la sorciere* is kind enough to come and see me frequently, and whatever may be done with medicines she imparts to me. Ever since Anfortas has been in such wretched pain so that he was in need of help, this salve has aided in keeping him from death; it came from Munsalvaesche [the Grail castle]."

By conquering the Castle of Wonders, Gawan becomes the master of the region, the queens and ladies are freed from their spell, and Gawan goes out and battles knights and proves his love for Orgeluse. When he stands up to her taunting, he reclaims himself. Orgeluse in turn is freed from her anger and sarcasm. She tells him how her lover Cidegast was slain by King Gramoflanz, from whom Gawan has just taken the wreath, and then continues and tells him the secret behind Anfortas' wounding, of Clinschor's evil, and of the bravery of the Red Knight who refused her love. Having healed the karmic knot, Gawan and Orgeluse return to the castle and are welcomed by the enchanted ladies.

Gawan has become master of himself as well as master of the Castle of Wonders. Now he has the presence of mind to ask Arnive, the elder, about the origins of Clinschor's magical powers. Arnive tells him the secrets behind Clinschor's evil actions and how she and the other maidens had fallen under his power. But now that Gawan is master over Clinschor's land, everything can return to its previous harmony.

The maidens and the elder queens are now freed. Before, the feminine forces had been held hostage, frozen in time. When they are released, they can care for Gawan and bring him back to health. All who were frozen are freed to meet once again and deepen their relationships. We can ask ourselves: What is frozen in our soul life? What needs to be freed?

Without the freeing of the feminine, Gawan cannot allow his heart to rule. But he does heal his heart so that he will be able to give to others and rule with love and compassion. He is now the master of the Castle of Wonders, and in so becoming, all the women are freed. What a picture for us as we work on the negative forces in our soul life—bringing courage and heart-warmth to our inner struggle, thus freeing the forces of love for others!

The Castle of Wonders is entangled in mystery, miscommunication, and danger. This is expressed in the difficulty Gawan faces in his battle with Gramoflanz. His sister Itonje is in love with Gramoflanz, even though they have never met. However, Gawan is set to battle Gramoflanz. If he succeeds, his sister will be devastated. If Gramoflanz wins, Itonje will be devastated at the loss of her brother. Orgeluse wants Gramoflanz defeated because of the way he wounded her in the past. Gawan wants to defeat Gramoflanz to prove his love for Orgeluse. There seems to be no way out. To make matters worse, Gawan invites Arthur to bring the whole Round Table to observe the battle and celebrate his winning and his wedding. This situation is fraught with tragedy.

However, the elders step in with their wisdom. King Brandelidelin (Gramoflanz' uncle) sits by Ginover (Guinevere) the Queen and speaks with her. Arthur then leads

Brandelidelin away to the tent, shares a drink, and lays out the situation. King Brandelidelin understands. "Sir, it is our sisters' children who will face each other in hatred. We must prevent the battle. There can be only one outcome, that they love each other with true affection. Your niece Itonje should first bid my nephew give up the battle for her sake, if he desires her love. Thus the battle, with all its strife, will be avoided completely. And do you also help my nephew to win the favor of the duchess."

"That I will do," says Arthur. "Gawan, my sister's son, has enough power over her that she, finely bred as she is, will leave to the two of us, to him and to me, the settlement of the issue. And you then make peace on your side." (Book XIV) Through this action of the elders, reconciliation takes place.

Self-mastery of the Word cautions us to avoid gossip, complaint, criticism, cynicism, backbiting, and even feigned politeness when life or the world seems painful, unpleasing, or difficult. Mastery of the Word calls for us to be authentic. Clinschor, the Black magician, created the Castle of Wonders out of a desire for revenge, out of jealousy, anger, and hatred. Gawan has to transform these feelings and become the master of the Will and thus free Clinschor as well as himself and the rest of the kingdom. Such feelings live in our souls, too. If we transform them, the shadows in our soul, the Clinschor in us gives up his power and the negative feelings can become kindness, courtesy, healing, courage, commitment, and love. We can point to the journey through the Castle of Wonders as a therapeutic path.

We can point to the journey through the Castle of Wonders as a therapeutic path.

Conclusion

There is a question that is left hanging in the Parzival legend. Could Parzival have healed Anfortas if Gawan had not mastered the Castle of Wonders?

Parzival is traveling the lonely journey to find the Grail castle again and to ask the question of Anfortas, the wounded Grail King. It is not a matter of knowing what words to ask. Parzival has had to undergo soul transformation so that when he asks the question, it comes out of a deep longing born of soul sorrow. He has to be authentic. However, behind the scenes, Gawan heals the karmic entanglement of Anfortas and Clinschor. I believe this is also necessary in order for Parzival to fulfill his destiny. Parzival represents the conscious search for wholeness and healing. Gawan represents the healing of what is broken so that the next step in initiation can take place. Reconciliation, love, and healing are essential if we are to go forward and carry out our destiny.

As Waldorf teachers we are also on the path of the three castles. We live in the Arthurian castle when we create Waldorf schools that are harmonious and orderly. We live in the Grail castle when we work on our meditative life. We live in the transformed Castle of Wonders when we heal karmic problems that keep us from being free to go forward in the future.

The path of the three castles is an esoteric path for teachers to transform their soul forces. In each castle we meet ourselves on a different level.

The path of the three castles is an esoteric path for teachers to transform their soul forces. In each castle we meet ourselves on a different level—on the social, in our thinking, and in our soul challenges. The three paths become one path, entwining thinking, feeling, and will as they interact and create a vessel for the "I." In the crowning moments when the three join as one,

we become the new kings of ourselves, and we are able to represent the spiritual task of Waldorf education.

Note:

The terms Sun-Being, Great Spirit, and Time Spirit are used at times to refer to the Christ in the spiritual world, and not specifically to Christianity as a religion.

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Learning for Life – Learning from Life

Florian Osswald

Schools are always faced with new challenges. It is part of the teacher's task to become aware of the spirit of the times and learn to understand it. Awareness can start with the most simple of events, possibly with the following daily occurrence: Young people enter the school and leave it again.

This is an interesting area of observation. We may experience their coming in and going out like a deep breath which complements every school day. It is a movement without which school could not happen, and it is a movement that continues throughout the school day, because breathing in and out is an underlying concept of teaching. We welcome the pupils in the morning and we say goodbye to them at the end of the day. Every lesson lives between these two—the beginning and the end—and between them unfolds a variety of learning processes. Here we already see a crucial feature of teaching: teaching is not only about the teaching of knowledge. "Correct" breathing implies another quality, a quality that echoes in our daily teaching routines. Even if we do not consciously shape this breathing process, it is nonetheless influenced by the activities we do with the pupils. If we carefully observe how the pupils enter and leave the school, we may be able to perceive whether breathing is nurtured at a particular school.

Learning for life / Learning from life

The class teacher plays a prominent role in the life of a Waldorf school. Today, however, the eight-year duration of the class teacher's time with a class is being questioned. People ask how a single person can possibly teach every subject competently, since they tend to think this is an impossible task. Specialist subject teachers would do the job much better, wouldn't they? If we were to focus only on a teacher's knowledge of a subject, we would have to agree, but there is more to teaching than just imparting knowledge of a subject.

What, then, is so special about a class teacher? It is his or her ability to be the role model of an ever-changing and developing human being. A strong inner image must be created to try to respond to children's development from first through eighth grades. I once observed how some ninth grade students were carefully watching their former class teacher; they wanted to see how she had changed in the five weeks between the end of the previous school year and the beginning of the new one and whether she would handle the transition successfully. Watching her appear on stage with her new first grade children made her former students not only smile but also feel a deep respect for her. It is the development of the human being that is particularly important and not only the teaching of facts and knowledge.

This is not to say that competence in a subject is not essential; subject knowledge is indeed crucial. Therefore, many schools have arranged support for class teachers in particular subject areas, whether in the form of another teacher taking on a specific subject for the class teacher or of the class teacher collaborating with a colleague. Through these considerations, we may begin to discern that *life itself* is a teacher. We need to work with this reality more consciously.

> The first social-educational area is one which is to serve our newly founded Waldorf school, the area that includes classes for adolescents, the tuition, and education by which people are to be

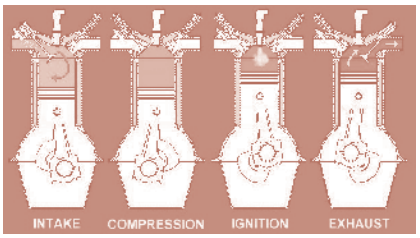
> prepared for what is required of them by a truly social thinking both now and for the foreseeable future. …The other area we can consider social and pedagogical is that, of which I would say, it should impart the "theory of life." We are in a poor way if we face life rigidly and as a stranger. We stand rightly in life only if every moment of every day and every week of every year is a source of learning for us, for our further development. We will have experienced our school best—no matter how far we have come in it—if we have learned through this school how to learn from life. … Life is a school for every healthy human being.[1]

Therefore we do not leave real life at the doorstep of the classroom. We invite it in, but it has to be in a form appropriate to the children. By doing this, we make it possible for the pupils to face life in an increasingly conscious way until, in the upper grades, they can begin to practice reflecting upon their own experiences.

So, how does this look in practice? One of the lessons in the lower school is "From Grain to Bread." The children are actively involved in the complete process throughout the cycle of the seasons, from the sowing of the grain to the baking of the bread. Thus the children experience fully all the related activities in a holistic way. Later, in the upper grades, students spend three weeks with people with learning difficulties, people who need help with managing routine tasks. The students start to ask themselves what it means to have learning difficulties. What kind of help is appropriate without causing offense? What is the connection between themselves and a person with learning difficulties? These challenging questions arise out of real encounters and are not abstract or theoretical. Out of this kind of interaction with real life emerges learning from life and learning for life. But who has prepared this lesson? For the time being, the answer remains in the dark, but something does indeed happen and we are able to look back on it. Looking back is a way of reflection that connects the experience to real life.

Indeed, school happens not only inside the classroom. It is of utmost importance that teaching, the core task of the school, connects theoretical knowledge with the world and with life. At Waldorf schools we study plants not only in books but also in their natural surroundings during regular nature walks and later in botany camps. The same can be said for mathematical forms such as the parabola. We calculate and draw it but we do not forget its appearance in an "earthly" context—the parabolic mirror, for instance, or the trajectory of a jet of water. Yet, even more important now is the question of relevance between a parabola or a plant and the student. As teachers we prepare our lessons and form a connection to the subject content; a meaningful content will have a connection to the world and also a connection to ourselves. How does this connection live within us?

As an example, let us take a four-stroke engine, a so-called Otto engine.



Allow me to take you through a sequence of activities which I used to do with my students when I introduced this engine. Please observe how your relationship to the engine changes as we go through the process together.

The sequence is as follows: 1. Intake (or suction) stroke. 2. Compression stroke. 3. Combustion (or power) stroke. 4. Exhaust stroke. I draw the rhythm and function on the board and the students can see the actual parts of the engine itself. Now I start up an open engine; then I bring the engine closer and the students' understanding grows. Implicit in all these activities, the questions will arise: What does this engine have to do with me as a human being? How can I bring about a dynamic

relationship between the knowledge and the students?

Here is an attempt to make a new connection: the four phases can be demonstrated acoustically.

Intake stroke (strong sound of breathing in): SHSHSHSHSHSHSH
Compression stroke (breathing out): AAAAAAAHHH
Combustion stroke (breathing in): Boom!!!
Exhaust stroke (breathing out): Phooo!
Or, in one breath: SH – AH – Boom – Phooo
Let's do this now to a strict rhythm: SH – AH … etc.

It quickly becomes clear that this is a rhythm that leaves us breathless. It does not correspond to our natural breathing rhythm. But we practice it and try to observe the effect on ourselves. The next step comes out of the fact that there is not only one cylinder in such an engine but usually four of them. So we divide the class into four groups and create a Four-Stroke-Engine Canon.

An inner picture, almost like an inner gesture of the engine, emerges through this activity. Through engaging with this gesture, we interact with the content of the lesson in such a way that its core can show itself. Furthermore, we have been uplifted by this experience. The students have been invigorated because they understand the content better, and we are invigorated because we have made the effort to engage with an inner gesture. This is the realm of the life forces that, on the one side, enable learning and, on the other, rejuvenate us. Real learning has an invigorating effect and gives us new strength. It is a celebration!

Nevertheless, let us not forget that a celebration needs to be properly prepared. It needs planning and devotion to make it a success. However, everyone who has ever prepared a party knows how many unexpected things can happen. Not only is knowledge needed in such a situation but also the ability to accept whatever comes—indeed, to be able to see the unexpected as a welcome challenge rather than as a setback.

Vaulting

Not long ago I watched a group of gymnasts doing the wildest kinds of jumps: direct vaults, handsprings, somersaults, and so forth. I was impressed with the sequence of vaults from start to finish. First, the athletes concentrated. They visualized their vault, they imagined every phase precisely until they felt ready to go. Then they started. But on the way they had to let go of their inner images. While running towards the vaulting table, they had to release their images and build up a complete presence culminating in the point of take-off and flying through the air. Finally, there was the moment of landing, preferably on their feet. Unfortunately, the athletes were unable stop at the landing point and thus missed a beautiful opportunity to remain at the landing point for an instant and assess their achievement, both in terms of its success and its shortcomings.

This sequence of events may also serve as a metaphor for the three phases of education: preparation, teaching, and reflection. We prepare our lessons. We know what we want to do, we have internalized the lesson's content. Then we enter the classroom. Now we have to let go and allow a presence of mind to form our encounters with the students. How are they today? What lives in them today? If we see teaching as an art, we also have to understand that learning happens in the void between teacher and pupil. This void is an indefinite and mysterious space that comes into being only in the encounter between student and teacher; therefore we need to reflect upon it afterwards and ask ourselves what happened.

What, then, about the first phase of preparation: How does it relate to teaching? Do we have to make an inner leap at some point? Rudolf Steiner starts his account of this phase with an important indication:

> We can accomplish our work only if we do not see it as simply a matter of intellect or feeling, but, in the highest sense, as a moral spiritual task.[2]

Please imagine that I have a piece of yellow chalk in one hand and a blue piece in the other. What can I create out of the tension between yellow and blue? One possibility is to mix the colors and make a new color: green. Green is neither blue nor yellow. If I look at this action I would describe it as a matter of intellect or feeling. It corresponds to something very commonplace today. I often see essays that students have pieced together from various fragments of texts found on the Internet. This manner of working is not confined to pupils, of course; teachers also know it well. We take a section from this course book and a fragment from another book, combine them, and in this way arrive at a new lesson.

A real challenge, however, is to address the following question: In one hand I have a piece of chalk in the primary color yellow, in the other hand a piece in the primary color blue, but how do I get from these two primary colors to the third primary color, red?

An answer can be found only if we dare to make an inner jump.

In his writings and lectures, Steiner challenges us again and again to make these kinds of jumps. We cannot do justice to his thinking if we do not leap.

Enabling students to face the future, or Education is self-education

Let us take a next step and look at the jump from another angle.

> Basically, there is no education other than self-education, whatever the level may be. …Every education is self-education, and as teachers we can only provide the environment for the child's own self-education. We have to provide the most favorable conditions in which, through our agency, the child can educate itself in accordance with its own destiny.[3]

We are teachers not only on the basis of our own education or on the basis of being employed by a school; we are teachers chiefly on the grounds that we are in a constant process of development, in a process of self-education. In our demanding profession it is of utmost importance to focus on the process of self-education.

We know from classroom practice that we need to support and develop the aspect of light in our students. In this practice lies the strength to command our shadow side. Our most dignified task as teachers is to strengthen our own light and let it shine, to encourage the children and trust them. When we trust individual students to find within themselves the power to mature, we demonstrate that in every one of us there lives the seeds of the future.

Let me give you an example: I knew a ninth grade student who was an excellent gymnast. In fact, he was better than his gym teacher. Understandably, some tension arose between them. When the teacher wanted to introduce somersaults to the class, for instance, the student, out of a sense of defiance, demanded that the teacher demonstrate first. This was the last straw. The teacher brought the case to the College of Teachers. At first, the teachers considered punishments, but when they shifted their focus to asking about what the student should actually learn, a new idea emerged: the student was asked to become the gym teacher's assistant for two weeks. The parents gave permission for their son to be freed from the regular timetable. Within a couple of days the student and the gym teacher became a good team. The student realized that his clever showing off had been frustrating for his peers and had sabotaged a positive learning environment. He came to understand just how much imagination it takes to respond repeatedly to the same situation. The successful working towards the future, as it happened in

this case, helped to foster new confidence in the student. It was the vision of the future that was helpful rather than looking into the past. In a radical way we can say that the question "Who am I?" needs to be answered more with the help of a future vision, with a vision towards what wants to come into being. Healthy confidence is no longer fostered by the past.

This becomes clear when we look at people's careers today. In the past, individuals chose their professions according to their family's traditions. This is no longer the case. Young people today have to find their own way, out of their own strength. The crucial task for developing adolescents is to accept themselves and to become able to face their future. As teachers we ought to provide a helpful environment for these processes.

Self-governance

Rudolf Steiner's pedagogical initiatives were not restricted to the classroom; they consisted of much more. For adolescents to emancipate themselves out of their own freedom requires an environment that puts this ideal into practice. We are called to do our work in this spirit. Out of this emerges one of the most pressing questions of our time: How do free individuals work together?

Steiner created an exceptional moment at the beginning of his teaching course in 1919 when he talked about a new dimension of cooperation. He initiated a progressive form of communication, a new kind of listening and speaking. Every single one of us is called to become a creative, productive individual in an atmosphere of mutual acceptance. How is this to be understood? One remarkable example lives in a school I visited recently in which each teacher was encouraged to pursue his or her own research project and was given the necessary support to do so. Thus, a number of studies emerged within a short time and started to enliven the teaching practice at this particular school. A college of researchers grew. The teachers' own productivity was encouraged by the receptiveness of the others. In other words, initiative was encouraged. The spiritual world was taken into account in this kind of research. This spirit of initiative creates room for potential and this, in turn, can have an inspiring effect on the management of the school. Day-to-day cooperation becomes a vessel for impulses from the spiritual world, and it is this collaboration which shapes the management structures. In other words, a circle is not merely a series of individual points.

For a circle to be a circle, the space between the points must be filled. What one human being can give to another, what each wants to give each other, this is what fills the void and thus creates a completed circle.

Today, we have drawn an arc across teaching—let us hope a colorful one. Now we have to step into it. From the theme of learning for life and learning from life, past the gestures of an engine, and finally to the possibilities of cooperation, everywhere we have found the same theme: it needs to be put into practice.

A rich field of opportunities for practice opens up. It is not only more work and pressure. It is an activity that enlivens us and lightens the load; it refreshes us and leads us into the core of our work.

Endnotes

1. Rudolf Steiner, GA 297, Lecture 4 (not available in English).
2. Rudolf Steiner, *The Foundations of Human Experience*, GA 293 (Hudson, NY: Anthroposophic Press, 1996), p. 33.
3. Rudolf Steiner, *The Child's Changing Consciousness and Waldorf Education*, GA 306 (Hudson, NY: Anthroposophic Press, 1988), p. 145.

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The Philosophical Roots of Waldorf Education[1]

Part One: The Revolution

Frederick Amrine

Kicking away the ladder

This first rubric might be puzzling, but readers who are very well-schooled in Western intellectual history will recognize the allusion right away. It comes from the end of Wittgenstein's *Tractatus Logico-Philosophicus*, from the early twentieth century, which is—or at least seems to be—a severe, very abstract treatise on symbolic logic. At the end of this brief treatise comes an astonishing statement by Wittgenstein: "My propositions are elucidatory in this way: He who understands me finally recognizes them as senseless, when he has climbed out through them, on them, over them. (He must, so to speak, kick away the ladder after he has climbed up on it.) He must surmount these propositions; then he sees the world rightly."

Wittgenstein concludes the treatise with a single, gnomic sentence: "Whereof one cannot speak, thereof one must be silent," which follows from another very famous passage near the end. There, Wittgenstein draws a distinction between things that can be "said" (meaning, captured in the language of propositional logic) and things that can only be "shown." By "shown" he means that one can only point someone towards them and then invite that person to go and have that experience on his own, freely. It can't be delivered; it can't be demonstrated; it can't be proved; it can't be captured in any fixed, propositional form of language. Whoever has attained it herself can only point at it as a transcendent experience that others need to go and have on their own.

And so that's the keynote I want to sound at the beginning of this series of short articles on the philosophical roots of Waldorf education. It's about a threshold and about transcendence at that threshold; about reaching a threshold via one route and then "kicking away" what one used to get there, in order to have a fundamentally different kind of experience on the other side of the threshold. And it really is, in that sense, about something revolutionary within cognition. That's why I have Wittgenstein kicking away the ladder: because that verb captures the revolutionary force of his thought.[2] We don't just gently ease it away; we kick it away. We reject it.

Now, Wittgenstein is talking about something that's obviously very difficult to express. In fact, he comes right out and asserts that it can't be said; it can only be shown. What can be said is only the ladder that leads you up to that experience, but that's precisely the thing that needs to be "kicked away." There's no algorithm for this new experience; there's no prescribed set of steps that one can take; there's no recipe for it that will guarantee that one gets there. So we're talking about something that really is revolutionary, something really new.

Let's move away from Wittgenstein, but please hold on to the spirit of his remarks. I want to turn now to a different period in intellectual history, to the second half of the eighteenth century. Before moving on to Rudolf Steiner himself, I am going to discuss four figures: Goethe as a scientist, exemplified by his *Metamorphosis of Plants*; the great German idealist philosophers Hegel and Fichte; and Schiller as the author of the essay, "On the Aesthetic Education of the Human Being." I think it's no exaggeration to say, and everyone would immediately agree, that this is a revolutionary period in general. Of course one thinks first of the French Revolution, but this is a period in which there is also a tremendous

revolution in philosophy, and there's likewise a great revolution within aesthetics, which resulted in what we call rather loosely "Romanticism."

The revolution inside the revolution

Right away I want to complicate that picture, and distinguish two different philosophical revolutions, one of which is nested inside the other; one can picture the relationship as concentric circles, if that helps. So we've got a larger revolution, and inside that revolution yet another revolution. This is, of course, far too schematic, but one needs to play a little fast and loose in order to cover such a large terrain in a small space, so forgive me for that. Let's call the big revolution the Kantian revolution, and then inside this Kantian revolution is the more specific thing upon which I want to focus principally.

Now the Kantian revolution was something that happened with breathtaking speed. One would be hard-pressed to find another moment in history in which human thinking changed so utterly over such a short period of time. Kant published the first major work in this philosophical revolution, the *Critique of Pure Reason*, in 1781, and then finished the job, as it were, in 1790 with the publication of his third critique or *Critique of Judgment*, with a number of other important works along the way. Extraordinary! This great revolution unfolded over a mere ten years. And Kant was right in his claim that a revolution was needed, because the philosophical establishment—let's call it the *ancien régime* of philosophy—had reached a double dead-end. We need to recapitulate quickly this well-known story within the history of philosophy.

One great, longstanding tradition within Western thought, Rationalism, goes back to Plato and arguably beyond. Kant was trained as a rationalist, and it bothered him deeply that with regard to the great problems of metaphysics—"God, freedom and immortality" (one can trace the history of those speculations back through the Middle Ages to Plato and beyond)—that in metaphysics, unlike the sciences, there seemed to be no progress. We debate these questions over and over again, but nobody ever seems to win in some definitive way; we seem never to move on. Kant was deeply troubled by this and started to wonder whether there was something about this rational way of doing philosophy as such that was problematic. So Kant decided to come to terms with this issue once and for all, and the result was his performing one of the greatest intellectual feats in human history. I don't care how one feels about Kant: one has to admire this moment. What Kant actually did was distill all the great questions in the history of this ongoing rationalist project into a short list of archetypal über-questions, if you will, and then he proceeded to mount airtight, logical defenses of both sides of all these questions. To his own satisfaction and to the satisfaction of just about everyone since, Kant proved that it's possible to mount equally valid, rational arguments on both sides of every major issue in the history of metaphysics. Kant called these conflicting demonstrations "the antinomies of reason," and he drew from them what seemed to him the only possible conclusion: the game's up. It turns out that the *ancien régime* of the rationalist project cannot solve these problems in principle, and this was a devastating realization. Thus, Kant famously referred to the antinomies as one of the "three alarms that awakened him from his dogmatic slumbers."

The other great project in the history of philosophy is that of modern empiricism, going back to Hobbes and Bacon. Of course the great modern empiricists were mostly British: Locke and Hume represent the culmination of the movement. Hume, who was a contemporary of Kant, decided to push the empiricist project to its logical conclusion: he took deeply seriously the empiricist dictum that there's "nothing in the mind that was not previously in the senses." The mind itself is a *tabula rasa*—a blank slate upon which the senses write their

data. Hume wanted to know: what are the full and final consequences of that position? So he cross-examined his own presuppositions and came to a startling conclusion. He came to the realization that one can never find relations of any kind, notably causality or identity, in this way. One can find atomistic events, which certainly have arrived as data through the senses, but causal relationship is not a possible sense experience. So then Hume sat back and asked: well, if not through the senses, then how do I know about causality and identity? Causality is not an experience in the world. Finally, Hume decided that, in fact, he didn't know about causality; our feeling of causal necessity is really what he termed a "habit of perception"; it's more like biting one's nails than knowing something. We're just accustomed to certain things happening after other things, and we call that causality, but we have no right to do so. And even worse, the same conclusions apply to personal identity. All of those ramshackle, atomistic things that seem to happen to you or me as a person, are just that: ramshackle events, because the personal identity that seemingly binds them all together—we can call it your proper name or my proper name—has never been experienced. And so, personal identity turns out to be nothing but a habit of perception, and that conclusion is devastating to, for example, ethics. How can one have science without causality? How can one have ethics without personal identity? And any number of other problems follows. In this way, Hume ended up in a position of total skepticism, and said that very openly.

Kant read Hume and was persuaded that the empiricist project had likewise run up against a dead-end. There were two "games that were being played" (as some philosophers would put it), and now both showed themselves to be impossible. So it was that philosophy really needed at this point to be placed upon a completely new foundation. That's what Kant proceeded to do, and that's what I want to call "the Kantian Revolution."

Let's try to specify, if only in a few words, what that revolution was and what makes it so revolutionary. Kant himself (who was not a modest man) called it a "Copernican revolution," and he surely was right at least as to the magnitude of the event. Moreover, Kant's revolution was "Copernican" in the sense that it involved a fundamental reversal of the polarities: what had seemed to be peripheral was now at the center, and what had seemed to be at the center was now at the periphery. In the *ancien régime*, something extra-human or supra-human—the material world of empirical experience that arrives as data, or the supra-individual, overarching metaphysical structures of a rational cosmos—had been primary. In those models, the human mind reflects one or the other. But Kant realized that neither of those models worked, so he substituted for them a radically different model in which experience is not a reflection of some supra-personal structure that one discovers or posits, but rather, human experience is something that's actively constituted by the perceiving subject. The great revolutionary moment, at which Kant launched the revolution, is in an early chapter—the first full chapter—of *Critique of Pure Reason*.[3] It's called "The Transcendental Aesthetic," but it's not about art; it's about perception. That chapter ends with an important passage in which Kant says (imagining a rainy day): not only the raindrops, but the spherical shape of the raindrops, and indeed, even the very space within which they fall—all these seeming "things" are actually representations. That means they are constituted actively in the form in which they are experienced by a perceiving subject.

A tremendously revolutionary moment! It's hard to overstate just how revolutionary this moment was. And I think it's partly because we all live in this philosophical world now that we don't always appreciate or understand the magnitude of Kant's accomplishment. We live in that world now because Kant made it. But the young people who were alive at that time

understood; they felt tremendously liberated by this new Kantian philosophy. When one looks at those old engravings of them wearing their wigs, it's hard to imagine them as Young Turks running around with their hair on fire, but that's what they were, a bunch of Young Turks who were totally turned on by Kant. Fichte read Kant's *Critique of Pure Reason*, gave up his job—which admittedly wasn't a great job (it was the eighteenth-century equivalent of driving a taxi), but nevertheless, he gave up his job—on the spot, and then proceeded to walk, on foot, all the way across what's now Poland to knock on Kant's front door. Fichte's hair was on fire.

But, as we all know, famously, the revolution remained incomplete because Kant got stuck and ended up in a dualism that is deeply unsatisfying. In fact, let's call it a "double dualism"—sorry, we have to write a kind of shorthand here. Kant is a whole world!—a dualism within epistemology or theory of knowledge, and a dualism within ethics. Kant ended up deciding that, whatever that faculty is that's actively constituting human experience—from the inside out now, not from the outside in!—it's something that we can't know directly; it's what Kant called, notoriously, the thing-in-itself, meaning something apart from what we're able to construct and constitute. As a case in point: Kant is the one who invented the term *produktive Einbildungskraft,* translated into English as "imagination" or "productive imagination." He kept talking about it, initially with surprise at the discovery. First in the footnotes, then around the edges of his argument, and then eventually in the main argument of his text, he marveled out loud that, wherever he tried to go, he kept stumbling upon the "productive imagination." But he didn't have a way of talking about it yet: it's a "thing-in-itself." And then he had even stranger and more difficult locutions for it. For example, the subject that must be actively synthesizing the coherent world of our knowledge but can't be seen doing that, he called "the transcendental unity of apperception." That's very puzzling and obscure, but what's clear enough is that it's just a name for a kind of a blank. "The transcendental unity of apperception" is a description of the results of something's activity, that's all. But because that "something" is a thing-in-itself, I can't experience it, name it, or describe how it works: I can only see the results of its activity. So that's very unsatisfying: the foundation of this exciting new way of doing philosophy is, oh, by the way, behind a locked door. Or, as Kant described that hidden synthetic activity so memorably: "The secret Masonic handshakes are exchanged behind a curtain."

And then in ethics we end up in a dualism, because Kant as the consummate rationalist decided that, if we're going to be autonomous, if we're going to be free, we need to be the ones who give ourselves our own maxims, who dictate the norms of conduct to ourselves. Then what's the criterion for morality? It's conformity to our own maxims. So what we need is a kind of bare, formal principle, which he famously termed "the categorical imperative," whereby we impose upon ourselves the same duties that we expect other people to impose upon themselves. So the basis of ethics is a purely formal principle, which may sound disappointing in retrospect. But what's easy to forget is how exciting this was at a time in which customary morality, or religious revelation, or any number of other patriarchal, hierarchical structures—tradition, custom, "the authorities" in all their guises—had been dictating morality. None of that! None of that survived the acid test. …We're going to be the lawgivers, and we're going to give the moral law to ourselves.

But then how do we protect ourselves against our own subjectivity, against our own "inclination," or *Neigung*, as Kant called it? By making ethics a purely rational enterprise and by rigorously subduing affect and will; they are the enemy. As a result, we end up

with a very stark ethical dualism in which we're divided against ourselves. Our "inner Prussian," if you like, suppresses affect—the world of sentiment—and will. In fact, Kant became really quite perverse, and everybody noticed it right away. Kant went so far as to claim openly that the most dangerous thing in ethics is—love for the moral deed! Love turns out to be the enemy of morality! You know something's wrong when you end up in that place. It's because Kant saw love as nothing more than affect, nothing more than selfish, subjective inclination. Many of his readers saw immediately that there was something dreadfully wrong with Kant's ethics.

It became clear to at least a small circle of people that another revolution was needed. Kant had been profoundly revolutionary, but not revolutionary enough. He had not transformed his thinking; Kant had thought new thoughts, but he had not actually transformed the faculty of thinking in his epistemology. And in his ethics, he saw no way to actually transform the faculties of feeling and willing, which is why he felt he could only suppress them in favor of rationality. What was needed was a revolution inside the revolution, that smaller concentric circle I invited you to imagine earlier.

Now, it's important to understand that this was a sympathetic revolution. The story is a little more complicated with Goethe, but even in the case of Goethe, these people considered themselves Kantians, and what they decided was that Kant had been basically right, but that he had not executed his program correctly. And so what all of these people now in this second, inner revolution felt they were doing—and in the case of Fichte and Schiller, said very openly—was rewriting the letter of Kant in the spirit of Kant.

And this second revolution went even faster! The main development unfolded in the quick succession of three works that I think constituted this second revolution within German Idealism. The first was published in 1790, the same year as Kant's last—his third—critique, the *Critique of Judgment*: Goethe's *Metamorphosis of Plants*.[4] Then in 1794, Fichte published a very difficult work of philosophy, written at lightning speed (three months at the most), that has been translated into English as *The Science of Knowledge*.[5] Right on the heels of Fichte's book—in fact using a key insight from it—Friedrich Schiller published his *Letters on the Aesthetic Education of the Human Being*.[6] Within four years, this "inner revolution" had been accomplished. And then, a little over a decade later, Hegel gave it full, systematic expression in his *Phenomenology of Spirit* of 1807.[7]

Goethe's *Metamorphosis of Plants*

Let's begin with Goethe's *Metamorphosis of Plants*. Goethe had been very taken with Linnaeus. He wanted to become a good botanist, so at a certain point he began carrying around Linnaeus' massive textbook on botany everywhere he went, like a kind of Bible. And he tried to use Linnaean taxonomy to understand the plant kingdom but gradually became disappointed by it.

Goethe came to feel that there was something very arbitrary and superficial about Linnaean taxonomy because it involved, basically, counting organs of various kinds and then grouping species according to the number of organs they exhibited. He came to feel that this approach really did not penetrate at all into how the plant lives in its essential nature, especially because—and here's the second point—if you really think about it, the plant is, above all, dynamic. Plants are perhaps the most dynamic thing in all of nature. Plants are pure movement and growth, pure metamorphosis, so it's especially problematic to try to capture the plant within such a static structure. Moreover, when Goethe actually tried, empirically—not just with his senses, but with his mind's eye—to follow very closely and precisely the stages in the growth of the plant, he didn't find that the organs of the plant were

neatly separate from each other. He found many ambiguous organs; one would flow into the other and so forth. So he really wanted to develop a radically new way of understanding the plant, but then understanding the plant as a stepping-stone toward understanding life—understanding how living creatures function as living organisms. So plants were for Goethe the key to understanding organic form as such, not just in nature but in the arts as well. (The latter is a big topic for another day.)

Thus it was that Goethe began looking at plants in a very different way—as suites of leaves, graded series of leaf forms that are generated in the course of the plant's growth. The accompanying diagram attempts to represent a generalized schema of the typical sequence in the growth of annuals. Within this archetypal sequence, Goethe identified seven stages: the cotyledons, the stem and leaves, the calyx, the corolla, the sexual organs, the fruit, and the seed. So we have here a kind of ideal sequence. When Goethe studied this suite of ideal forms, one of the most important things that he noted was a certain pattern that one saw replicated over and over again: a theme with lots of different variations. One can see it intuitively in the drawing (Fig. 1). Goethe used Greek terms for that: *systole* and *diastole*. (In monitoring blood pressure, there are two registrations, the "systolic" and the "diastolic" pressure. Systolic is the higher number, because it's the pressure when the heart contracts; the other is lower because it's when the heart is relaxing.) Like the human heart, the plant contracts and expands, contracts and expands, over and over in a rhythm. But in the plant, the process intensifies as the plant grows. The relatively contracted cotyledons give way to the expanded stem leaves, which contract sharply into the calyx (typically very small and green, right up underneath the blossom). What follows is even more intense: the colored blossom bursts forth—a real qualitative leap and an expansion into a new realm of color. Then a powerful contraction into the sexual organs,

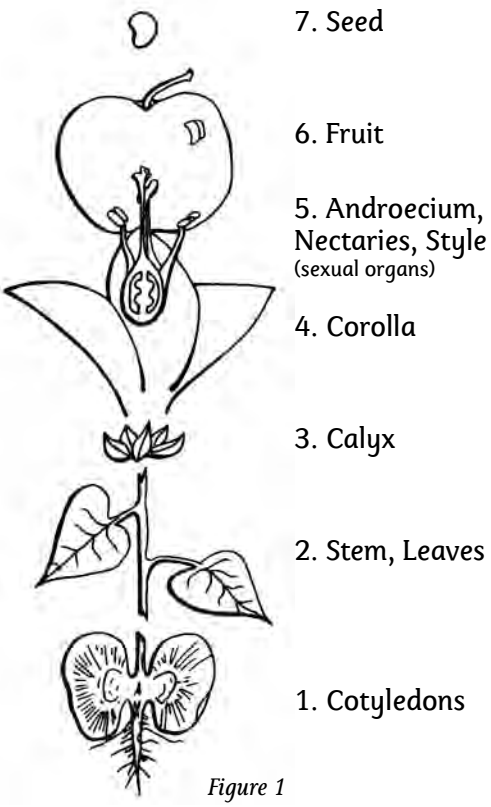

Figure 1

which are typically filament-like, as though the plant had to sacrifice the efflorescence of the previous stage in order to reproduce. But again something of a higher order is being called forth—a whole new plant—in another qualitative leap. Then what can be a huge expansion into the fruit (think of a pumpkin or a watermelon or even a tomato), and then contraction into a seed, which can be tiny (as in the mustard seed of the Biblical parable). And so one finds a living, breathing rhythm of expansion and contraction accompanied by what Goethe called *Steigerung*, "heightening" or "intensification." It's as though the plant moves through a series of polar oppositions, repeatedly internalizing its forces so that it can then leap forth at a higher level that resolves the polarity through "heightening."

From Goethe to Hegel

If one has studied Hegel, one might recognize this progression as a picture of—surprise!—thinking. That's Hegelian dialectic. Polarities are generated in a living

way, and then they are overcome by rising above the polarity. In German, the antithesis is *aufgehoben*, a verb that conveys perfectly through its two basic meanings how the opposition is "cancelled" by being "raised up." What Hegel described purely in terms of thought, Goethe saw as a transparent set of formative activities in the plant. More on that in a minute.

Goethe began to see and to think that, actually, the plant is never in any of these particular forms. Rather, it's an activity that moves between the forms. My late and great colleague, the philosopher Ronald Brady, has written brilliantly on this. In an essay on Goethe's morphology, he came up with a formulation that I always want to quote at this point: Goethe realized that the plant is the music moving between the notes.[8] A beautiful metaphor! What is a musical melody? A melody isn't the first note plus the second note, and so forth, and certainly it doesn't reside in any one of the notes. Music is something that moves through and between the notes. In the same way, for Goethe, the plant is the music that moves through the notes.

Another analogy for this is Zeno's paradox about the flying arrow that actually never moves. And Zeno's right about that! When I teach this at the University, I toss a tennis ball across the room in a shallow arc, and then I ask the students: What did you see? Of course, they answer: "I saw the ball move." But then I ask them, holding the ball at various points along the arc it had traced when thrown: Was it moving here? Here? Here? And so forth. With a little bit of reflection, what gradually comes out is that, if you look at the ball solely in terms of our sensory experience, it never moves; every time you look at the ball, it's standing still. As a sensory experience, Zeno's arrow never moves. What moves is in our thinking. Movement is something ideal that we intuit within the real. If one wants to get really radical, one can say: none of us has ever heard music with our ears because music is what moves between the audible tones. Music is also something ideal that we intuit within the real. Goethe says the same thing about the plant: the plant is (in the language of phenomenology) an intentional experience; it is something that we humans intuit inside the real and that never appears outside of our own cognitive activity, the activity that we bring to bear upon it.

So what Goethe did was to write a revolutionary study of botany, selecting certain species in which the gap—the space between the tones, as it were—is as small as possible. One example is the tulip, in which the calyx actually runs fluidly right into the corolla—what poets call "the streaks of the tulip"—painted, as it were, right onto the blossom petals. Hence, *Metamorphosis of Plants* is really a kind of workbook in which we can practice this kind of intuition of the ideal within the real. The all-important thing to realize here is that the *ancien régime* of empiricism had been fundamentally transformed by the time Goethe did this. What Goethe has given us is actually a workbook that teaches us how to engage the energy of our intentional faculty. It teaches us how to engage in a controlled way the constructive activity that Kant had talked about which allows us to intuit the ideal within the real. Goethe has given us a workbook that helps us to develop a kind of pure thinking—ideal, pure, not contingent—within perceiving. So what Goethe has actually done, I would argue, is create a school for a certain kind of thinking. At the empirical pole, Goethe has utterly transformed sense-perception by turning it inside-out, if you will, and then giving us a place to practice—meditatively! That's what "meditation" means; it comes from the Latin verb meaning "to practice"—Goethe has given us a set of exercises we can use to engage meditatively a certain kind of synthetic thinking.

Let's revisit Hegelian dialectic now in this light. Hegel went on and rehearsed that kind of thinking in purely philosophical terms, inside of pure thought. Hegel got it! Hegel understood

what Goethe was trying to do. There is a very important and revealing moment early on in Hegel's revolutionary masterpiece, the "Preface" to his *Phenomenology of Spirit* (1807), in which he described a radically new way of doing philosophical thinking: "The more that conventional opinion gets fixated on the antithesis of truth and falsity, the more it tends to expect a given philosophical system to be either accepted or contradicted; and hence it finds only acceptance or rejection." The *ancien régime* thought of philosophy as a set of thought-edifices; we say "yes" to them or "no" to them; we build on them, or we attack them, and so forth. That's false, said Hegel. Such a way of thinking "does not comprehend the diversity of philosophical systems as the progressive unfolding of the truth"—note the morphological language that is starting to emerge—"but rather sees it in its simple disagreements." Typical Hegel now, no transition, just a qualitative leap: "The bud disappears in the bursting forth of the blossom," Hegel wrote, "…And one might say that the former is refuted by the latter." That's the old way of thinking Hegel rejected, because, of course, that's not how we look at a living organism. We say: this particular organ is just another moment within a continuous development. "Similarly, when the fruit appears, the blossom is shown up in its turn as a false manifestation of the plant, and the fruit now emerges as the truth of it instead." These forms are not just distinguished from one another; they also supplant one another as mutually incompatible—if one looks at the plant in the wrong way. But if one looks at these forms in the right way, then "their fluid nature makes them moments of an organic unity in which they not only do not conflict, but in which each is as necessary as the other." So, for Hegel, real thinking is an organism that unfolds like a plant. "And this mutual necessity alone constitutes the life of the whole."[9] Where did Hegel learn to think in this new way? Surprisingly, he learned it not on his own and not from other philosophers, but from Goethe's plant morphology. Some Hegel scholars know this and have confirmed it.

Let's now recall what was dissatisfying about Kant: we ended up in a stark dualism. Goethe overcame this dualism within epistemology by finding a pure, archetypal thinking inside of perceiving. Goethe found within perceiving a pure, ideal, synthetic activity that Kant had presupposed but declared unknowable. Goethe replied: it is knowable if one intensifies one's cognitive activity to such a degree that what for Kant had been a limit is turned into a threshold.

So the result of Goethe's studies is an experience that simply can't be captured in propositional language. One can't say what the plant is in a logical way, but one can point to it as an experience and give people a set of exercises that, if they're willing to do the work, will lead them to that experience. In Wittgenstein's terms, the experience cannot be said, but it can be shown. So the result is a new, integral, holistic way of thinking. Our meditative contemplation of the phenomena—that concept is not a stretch at this point; we've gotten there on our own—meditation has transformed our thinking into a new kind of higher perceiving. Referring to the Romantics and building upon them, Rudolf Steiner called this new kind of intuitive thinking "Imagination." Through Imagination, we are able to intuit the ideal within the real.

In light of the genealogy we have traced, it should not surprise us to recall that one of the first meditative exercises that Steiner suggests in his "basic book" *How to Know Higher Worlds*[10] is to watch attentively the process of a plant growing and dying. So there also, Steiner is taking us up to a threshold where our faculties are transformed, and I submit that Steiner is getting at exactly the same thing as Goethe and Hegel. By contributing so centrally to Rudolf Steiner's epistemology, Goethe and Hegel formed two of the deepest roots of Waldorf education.

to be continued

Endnotes

1. The first two articles in this four-part series are based on lectures originally presented at Esalen and the California Institute of Integral Studies. In many places, the original, oral style has been retained.
2. A more literal translation of *wegwerfen* is "throw away."
3. Immanuel Kant, *Critique of Pure Reason*, trans. Norman Kemp Smith (New York: Palgrave Macmillan, 2007) is the standard English translation.
4. J.W. von Goethe, *The Metamorphosis of Plants* (Cambridge, MA: MIT Press, 2009). This splendid and affordable edition has gorgeous color photos by Gordon Miller of the plants Goethe discusses.
5. Trans. Heath and Lachs (Cambridge: Cambridge University Press, 1982).
6. Here the translation of choice (the only one even to consider) is the Oxford University Press edition translated by Wilkinson and Willoughby. Unfortunately, they chose to translate *Mensch* in the title as "man" rather than "human being," but it is otherwise a magnificent edition.
7. Trans. A.V. Miller (New York: Oxford University Press, 1977).
8. "Goethe's Natural Science: Some Non-Cartesian Meditations," in *Towards a Man-Centered Medical Science*, ed. Karl E. Schaefer, et al. (Mount Kisco, NY: Futura, 1977), pp. 137–165.
9. G.W.F. Hegel, *Phenomenology of Spirit* (New York: Oxford University Press, 1977), p. 2.
10. Rudolf Steiner, *How to Know Higher Worlds: A Modern Path of Initiation* (Anthroposophic Press, 1994).

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The Concept of Learning in Waldorf Education

Jost Schieren

Introductory case study: A ninth grade farm trip

Thirty-five students are spending two weeks at an organic farm in northern Germany. This is a ninth grade, with almost equal numbers of boys and girls. The farm is responsible for providing these young people with accommodation, meals, and educational instruction. Every day there are tasks to be done in the following areas: work with animals (pigs and cows), the cheese dairy, vegetable garden and orchard, field work, and forestry. In groups of five the students work in each of these areas in turn. In addition there are daily mini-lessons on various aspects of farming and forestry.

For the first three to five days the students struggle to embrace the challenges. Removed from their familiar surroundings, tied to a demanding, though not overly strenuous, work process, they feel it is all too much. Getting up early (at 6:30am), which is actually not much different from a normal school day, proves very laborious. Since many parents have supplied their children with large amounts of sweets and snacks, the healthy and nourishing meals provided by the farm at first go largely uneaten. Tasks that are simple but require some staying power—like digging a vegetable bed—lead many students, after a very short time, to imagine they are exhausted. The working atmosphere at this early stage is thus rather strained.

Then something happens on the fourth day: while everyone is eating lunch, one of the girls comes running excitedly into the dining hall with the news that one of the farm horses has broken out of its paddock. With one accord the pupils are on their feet and rush off to catch the horse. They find it grazing in a meadow not too far from the paddock. As the students, all bunched together, approach it, it takes to its heels, stops about twenty to thirty yards further on, and resumes grazing. The pursuers never succeed in getting any closer than the horse's preferred distance of about twenty yards. Every time they try to close in, the horse keeps its distance. They spend the next three quarters of an hour in heated discussions over how to solve the problem. By then the horse has reached a copse, in which there is a little glade rounded off at one end.

The group agrees upon a plan of action: they surround the horse on both sides, without infringing upon its space, and then close in from behind. While doing this they manage to refrain from speaking or making any sudden movements, and in this way, within half an hour, they have succeeded in returning the horse to its paddock.

The adult observers soon realize that this episode has broken the spell of the first few days: the work has become less arduous, the students draw lots to see who will get up at 5:00 o'clock in the morning instead of 6:30 to be in the byre early enough to help with milking and, last but not least, the ample helpings of food now go into hungry young bellies instead of back to the kitchen uneaten. When the fourteen days are up and it is time to leave, there are tearful farewells with the family who runs the farm and with animals that have become favorites. It also comes about that a small group of students voluntarily returns to help on the farm during the following summer holidays.

The concept of learning

Since the dawn of Western culture, a prime concern of all thinkers—from philosophers to

psychologists, education theorists and, most recently, neuroscientists—has been the nature of the process of learning and its significance in human life. The variety of ideas about the nature of learning reflects the range of ideas of human nature and/or worldviews from which they arise, and this in turn bears witness to the diverse aspects of learning upon which the scientific gaze is focused. Although there are often sharply opposing arguments in play, it is less a question of right and wrong and more of deciding which concept of learning and, in consequence, which worldview one will embrace.

Viewing the human being as equipped with a potential for freedom and capable of acting out of self-motivation and insight (a view championed by anthroposophy) entails an attempt to organize learning in an open way and make it more responsive to personal requirements. This gives us a point of departure for the consideration of Waldorf education, which now follows.

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Representation and will

In lecture after lecture, given to the college of the first Waldorf school in Stuttgart in 1919 and in subsequent years, Rudolf Steiner emphatically pointed out that Waldorf education, contrary to the school systems of his time, is not about "head-learning" but about "limb-learning" (1980). The importance of these expressions is clear: the aim is not the one-sided inculcation of facts and ideas, but the education of the will. Steiner thus strongly rejected what he saw as the "cerebralized" education of his day.

In this he was saying something essentially similar to other contemporary educational reformers. School, according to Steiner, does not exist solely to instruct the "head." Its purpose is not to cram as large a volume of facts (in the form of mental representations) as possible into the pupils' heads. He criticized the one-sided emphasis upon accumulating such representations and storing them in the memory for the purposes of examinations.

The problem lies not in the representations as such—they, of course, have their place in Waldorf education and need to be learned and retained. It lies rather in the fact that representations give no hint to consciousness of their cognitive origins, namely, the mind's own activity in productively combining percept and concept. Epistemologically speaking, they suppress our participation in the construction of reality, thus casting our conscious experience in the mould of subject-object dualism. Consciousness in representation-mode construes the world as something opposite to its own being—an entity set apart in principle. If school lessons are conducted in such a way that emphasis is placed solely upon the reception and reproduction from memory of contents that have the character of representations, this will have the effect of reinforcing in experience the separation of mind and world. Only insofar as teaching style is not restricted to conveying contents of this kind alone, but takes account of the individual mind's active contribution to the formation of representations and makes practical, didactic use of it, will the mind's participation in the construction of reality enter into experience.

This leads to an essentially monistic form of awareness, which experiences itself as not separated from the phenomena, but involved, both epistemologically and functionally, in the genesis of reality and which provides the basis for the development of an individual's abilities.

Steiner repeatedly stressed that educating the "will" was paramount. In the present

context "will" refers to the active contribution made by the human organism to the coming into being of representations. It is the dispositional and conditional abilities that are formed in this active constituting of reality. In this sense, then, the aim of learning in Waldorf education is the formation of dispositions (increase in abilities through encountering the world) and conditions (the generation of concepts by human thinking).[2]

Steiner repeatedly stressed that educating the "will" was paramount.

The ninth grade trip: what was learned?

Having thus described this case study of a learning process, the question is: what did the students learn? They became actively engaged in the farm as a whole. As an organism the farm set certain tasks that needed to be done, and the students made them their own. In doing so, they learned something about the origin of foodstuffs, about the processes they have to be put through, about working with animals and plants, and about human nutrition in general. In other words they learned something about a particular aspect of the world and how it works. Moreover, they discovered their ability to mobilize their own capacity for effort and developed a strong motivation for work. Through having been placed in a position of caring for the natural world, and especially for the animals, they went some way towards developing an ethic of respect for nature, reflected in a newly-won ability for appropriate action. Not least, the class community greatly benefited from an improved level of mutual respect and considerateness.

Learning, in Waldorf terms, is really about an experience of the world that is directly relevant to practical life.

All in all, then, the learning that took place here encompassed skills in a wide range of areas: emotional (sympathetic engagement with the farm), motivational and volitional (readiness to work, perseverance), cognitive (agricultural knowledge), ethical-moral (respect for nature), and social (class community).

A key factor in all this was the episode of the runaway horse. It was a learning opportunity built into the structure of the visit as a whole, but even so it cannot be said to have been the sole reason for the success of the learning process. What it did was to create a major turning point. It was a real-life situation. The learning did not take place in a classroom under "artificial" conditions set up by a teacher, but in the context of an actual working farm. All the work processes the students went through were at the same time those of the farm itself. This is, of course, an exception to the normal school day, but it illustrates a key element of what learning, in Waldorf terms, is really about, namely, an experience of the world that is directly relevant to practical life. This aspect of learning will now be considered in relation to meaning and truth.

Truth

Every learning process is accompanied by a certain question, which may or may not be verbalized: "why do I have to learn this?" No student will be satisfied with the answer: "because you'll need it later in life." Learning must be meaningful in itself. For instance, the acquisition in early childhood of practical and motor skills (grasping, walking, speech, and so forth) represents an immediate experience of success in learning. The newly-learned abilities are geared to the purposes of satisfying various needs. This is meaningful.

As the child then passes through school, the immediate experience of meaning will tend to recede into the background as the level of abstraction in lesson content increases. This calls for a teaching methodology centered

upon the creation of meaning. By drawing upon content in tune with developmental phases, real life, and human nature, such teaching integrates meaning—in the form of relevance—into the educational landscape as a whole. The point is to establish a relevant connection to the world, against which the correctness of the things one has learned and acquired can be gauged. The world is the yardstick upon which educational success is to be measured.

Käte Meyer-Drawe grants the establishing of a concrete connection to the world a very important place in the process of learning, designating it as the promotion of "phenomenal rights." (2008a) And here Alfred Schirlbauer quite rightly calls for truth- and/or accuracy-based learning: "with no relation to 'truth' and 'accuracy,' it would make little or no sense to speak of insight, understanding or knowledge." (2008, p. 205) Here, of course, truth is not intended in any ultimate philosophical sense. Rather, it is being used in its more pragmatic meaning of everyday logic, which appears as the working knowledge that proves itself in every successfully performed action and as the general understanding that lives in the particularity of whatever content learning is focused on. In connection with the previously mentioned faculties of disposition and condition, truth implies the object-relational attachment of acquired concepts to percepts (individualization, which leads to dispositions), and to other concepts (generalization, which leads to conditions).

Schirlbauer writes, in reference to Theodor Ballauff (Ballauff 1970), that "thinking cannot be willed, rather it must assimilate us; we are taken hold of by a train of thought when 'we think'." (2008, p. 207) In effect, he is pointing out that our experience of how insight arises provides evidence of the autonomy of thinking. The learning subject experiences the objective attachment of certain faculties to the inherent requirements of an object, in this case of a thought. In this position, however, the subject is not overpowered or placed under compulsion; rather insights, whether implicit or explicit, act as a catalyst for the development of the subject's abilities. An insight does not entail any kind of compulsion, since it is also the product of the activity of a subject. (cf. Witzenmann 1992) It would be absurd to maintain that we are forced to open the door before leaving a room because we know it is a good idea. The subject determines his or her own actions on the basis of acquired insights, which exist in the form of individually validated truths.

> To learn is to participate in the workings of the world as mirrored by acquired dispositional and conditional abilities.

Upon such a background the currently oft-quoted formula of learning to learn is simply redundant. Learning, after all, is not an end in itself; it is always directed towards something. That is the main test of its occurrence. Schirlbauer makes a strong distinction between such an object- or content-oriented concept of learning and a mere training in various methods: "learning and teaching theory must be about the contents being learned and taught, because without them there can be no learning, because … the 'contents' are the thoughts we learn to think in the process of learning." (2008, p. 205) For their part, the thoughts stand in relation to a something, "which provides the sole basis for any talk of the correctness, appropriateness, or, ultimately, the truth of a judgement." (Ibid.) Describing things thus in terms of concrete object-relations (where "object" can be understood as "world") expands the concept of learning as "content-oriented." It is not geared towards the past, as in the model that sees learning as the acquiring of a canon of knowledge set down in a curriculum. Rather, very much in the style of the previously described case-study, it points to a more

holistic form of learning, which encompasses implicit areas of "knowledge."

In this sense, to learn is to participate in the workings of the world as mirrored by acquired dispositional and conditional abilities. Waldorf education puts this understanding of learning into practice, in that it has a decided preference for experiential and practical learning processes. Projects involving arts, crafts, and industrial skills are systematically integrated into the school day. Even the more abstract, cognitive subjects, such as mathematics, are taught in as imaginative and practical a way as possible.

Remembering

There is a further aspect to be considered: the process of learning cannot succeed unless that which has been learned persists in time and does not simply dissipate. It must be preserved. Here Rudolf Steiner speaks of "treasures of the past." (1922, p. 52) Whatever else it might be, learning is always a process of perpetuation. That which has been acquired by learning becomes a lasting component of the human personality. For this to happen, memory must be activated. Rudolf Steiner describes the faculty of memory as a fundamental attribute of the human soul. Within this context the word *soul* is functionally defined as the preserver of the past.

How, then, according to Steiner, does memory work? On this question there is an illuminating passage in his book *Theosophy*. Having begun by pointing out the transitory nature of sensations, he then goes more closely into the process of memory:

> The body would allow all impressions to sink back again into nothing were it not that whilst the present image is being formed through the act of perception, something is also taking place in the relationship between the outer world and the soul, as a result of which the man is able, subsequently, to form, through his own inner processes, a fresh image of that which he received in the first place as an image from outside himself. (1922)

This is a rather complex formulation, especially in that he says something also takes place between the outer world and the soul through which representations are formed in the present. What does this mean? Steiner points to the process by which representations are formed. As previously described, he regards them as produced by the union of sensory perceptions and concepts generated by thinking. He decisively rejects naïve realism—the notion that external phenomena are perceived and then laid down in consciousness as representations.

The human being is not simply a receptive vessel for the world but is highly active and productive in relation to it. It is not that images of a ready-made reality are simply taken in; rather, human consciousness is actively involved in the construction of reality. However, as previously mentioned, in our experience of representations, we are not conscious of the participatory process that went into their formation. For waking consciousness the (already formed) representation is the starting point. Since this is an end-product of the process whereby reality is constructed, and is thus already distinct from it, Witzenmann emphatically states: "Our normal consciousness is thus a representational consciousness, containing little in the way of actual reality." (1985, p. 61)

Witzenmann distinguishes between a fundamental structure[3] of human cognition actively involved in the construction of reality and a secondary structure, which expresses this constructive process in the form of representational memory images. In Steiner's terms this fundamental structure is the unifying of percept and concept. This is the process that takes place between the outer world and the soul, and makes it possible for the human being to "form, through his own inner processes, a

fresh image of that which he received in the first place as an image from outside himself." (Steiner 1922) These processes, which are experienced inwardly, Steiner designates as memory. He defines his position as follows:

> Anyone who has acquired practice in observing the life of the soul will be able to realize how erroneous it is to say that a man has a perception today, and tomorrow, through memory, the same perception appears again, having meanwhile remained somewhere or other within him. No; the perception which I now have is a phenomenon which passes away with the "now." When recollection takes place, a process occurs in me which is a result of something that happened, in addition to the calling forth of the actual present image, in the relation between the external world and me. The image called forth through remembrance is a new one, and not the old one preserved. Recollection consists in the fact that one can make a fresh mental image to oneself, and not that a former image can revive. What appears again in recollection is something different from the original image itself. (1922, p. 50)

According to this view, it is not the previously formed representation that appears again, but a newly formed one. This occurs in relation to "something that happened, in addition to the calling forth of the actual present image, in the relation between the external world and me." (Ibid.) But this "something" is none other than the original participatory joining of percept and concept just now termed fundamental structure. This amounts to the formulation, on Steiner's part, of a new concept of recollection: recollection is not only concerned with established representations, but, in recalling something to memory, the participatory element in the previous formation of the concept enters into consciousness. This creates what could be called the magic of recollection—the fact that to recollect is to overcome passive, dualistic spectator consciousness, for in doing so we become aware of the participatory activity that went into the previous making of the recollected representation, and at the same time of the self as an entity capable of developing dispositional abilities in relation to reality. In various contexts Rudolf Steiner has referred to this as recollection of spirit: in recollecting, the human being implicitly recollects the fact that he is a spiritual being, productively involved—in that to be so is part of his own self-realization—in the formation of reality. At the same time this gives us the essence of Steiner's concept of spirit: spirit is not simply a world of beings existing in the beyond, but the inner being of man actively expressed within reality.

Spirit is not simply a world of beings existing in the beyond, but the inner being of man actively expressed within reality.

An inkling of this magic of recollection can be felt, for instance, from visiting, after long absence, some childhood haunt and being moved by the smallest impressions—a specific scent or a particular quality of light. It becomes apparent that one is not only registering the impression of the moment, but at the same time recollecting one's past involvement in its making, in other words, one's own being.

Forgetting

Cognition and memory, as portrayed by Rudolf Steiner, are highly active processes. This has direct consequences for the learning process. In Waldorf education learning is understood as the active exploration of reality. It cannot be efficacious unless the human subject is as involved in the process as possible.

Learning, therefore, is no mere pouring of material into a passive, receptive vessel, but an active, personal, and emotional process. In learning, the human personality attains its own particular configuration, since in the process it moulds itself according to its own sense of reality. From the point of view of Waldorf methodology, therefore, it is inadvisable to make pre-determined facts, images, and ideas the object of learning. While these may be useful in providing direction and structure, the crucial thing for the process of learning is to implement awareness of the learner's participation in the construction of reality. This is done through ensuring that what happens in the classroom involves direct experience and practical action. Steiner emphasized, moreover, that it is essential for the Waldorf teacher to use "pictures" and "flexible concepts" in his or her teaching. This amounts to another way of pointing out the inadvisability of using fixed content.

There is, however, something else to be considered—the aspect of forgetting. In his approach to learning, one of Rudolf Steiner's most noteworthy achievements is his elucidation of the significance of forgetting in the learning process. Of course, strictly speaking, what is meant here is deliberate forgetting; for incidental forgetting is directly associated with forgetting one's participation in the construction of reality. Deliberate forgetting, on the other hand, functions such that the normal tendency for the conscious mind to be dominated by acquired representations is more or less systematically superseded. This is practiced in Waldorf education by keeping representations more "open," by pictorial teaching and the use of flexible concepts. Lessons are structured in such a way that typically they will end with a directly relevant experiential moment of some kind (often in the form of a story), or better still with an open question. In conventional Waldorf parlance, this is referred to as "taking something into the night." On subsequent days the theme will be taken up and gone into in more depth. Organizing lessons in so-called "main lesson blocks," in which a particular subject will be taught for the first two hours every morning for three or four weeks, is a form highly suited to deepening the material from day to day and integrating sleep into the process.

This approach to learning, developed by Rudolf Steiner more than ninety years ago, is now being empirically investigated by brain scientists.

This approach to learning, developed by Rudolf Steiner more than ninety years ago, is now being empirically investigated by brain scientists. Chiefly American research has shown that lesson contents are anchored better in the memory just before the sleep phase. (Karni et al. 1994, Wilson and McNaughton 1994, Plihal 1997) In this a distinction is made between the so-called declarative memory, mostly responsible for storing items of knowledge, and the non-declarative or procedural memory, responsible for skills and actions. The findings of Wilson and McNaughton and Karni indicate that so-called REM sleep is associated with non-declarative knowledge processing, and deep sleep with declarative.

In addition to the importance of the night for learning, which is thereby consolidated and secured, the principle of the main-lesson form also entails that a given subject, after being intensely focused upon for three or four weeks, is then left to rest for a while. This does not mean that the contents of the lesson are forgotten, but it does imply that the mind's grip upon them is loosened. When the same subject then appears on the timetable three to six months later, the representations will have lost their formerly sharp contours, and the students are now required, in the sense of the

Steiner passage quoted earlier, to make new ones. In so doing they have the opportunity to re-experience their connection to the subject as a part of their own biography.

Transformation

A further, previously mentioned, dimension of learning implicit in all this is transformation. The case of the agricultural field trip described earlier demonstrated that the first days on the farm had very much the character of a crisis. Learning always involves effort; it must of necessity lead to a crisis. Even good teachers cannot spare their students the effort of learning. Good teaching does not mean that everything comes easily to the students and no crises arise. It means, rather, good crisis management, which involves teaching them how to cope with the struggles and crises of learning. Errors and mistakes thus become important and necessary wake-up calls, which sharpen alertness to what is "correct." (cf. Benner 2005) If a learner cannot become aware of what he is doing wrong, then he can never develop a sense for what is correct. A pedagogical approach that seeks to deal with this by penalizing errors (for instance, by giving bad grades) will be counter-productive. The crises intrinsic to learning lead to the learner's changing his accustomed view of the content. The fixed structure of representations is breached. A transformation takes place. The subject transforms him- or herself in relation to the conditions of the object.

Good teaching means good crisis management, which involves teaching students how to cope with the struggles and crises of learning.

That is one aspect of the process. The other is that transformation also happens in the opposite direction—from object to subject. In every successful learning process, the objects transform themselves in the dispositional and conditional capacities of the subject. The French painter Paul Cézanne used the phrase *sur le motif* to describe this reciprocal transformation of subject and object and visualized it as the image of clasped hands. If this occurs, learning becomes a highly satisfying experience because the human personality has become identified with its own abilities in a certain area of knowledge.

Mother Holle

The well-known Grimms' fairy tale, "Mother Holle," contains many images directly relating to the learning process as described here and will now be interpreted in this connection (on this, see Witzenmann 1993). The story is about a woman who has two daughters, one "ugly and lazy" who never lifts a finger—she does not engage with reality in any way—and one "beautiful and hard-working" who goes to the well every day and sits there spinning. She does engage with reality, in that by dispositional means she spins her concepts into her percepts, and her thinking by conditional means into the cognitive context. She does this with such energy that she makes her hands bleed. In other words, she pours her own self into the process of reality, and this takes effort. Mere spectator consciousness does not get its hands bloody. Then this girl loses her spindle in the well. This is something of a crisis. It is crucial for the learning process, for it goes beyond the subject's limits (the known, the cognitively secure). Active thinking loses itself in the phenomena, and a will element, which does not have the same degree of wakefulness as representational consciousness, comes to the fore. The latter is being transcended. The human being loses himself in the phenomena. In the case-study this was the moment when the students jumped up from the lunch table to go and catch the horse. In the story, jumping into the well brings the girl to a new world: the subject is not forming representations of phenomena, but rather the phenomena begin

to express themselves in the subject. In the language of fairy tale imagery, the loaves say that they want to be taken out of the oven, and the apple tree that it wants to be shaken. The girl does all this and willingly becomes the servant of Mother Holle, who with her long teeth represents the wisdom and order of the world,[4] with which the girl, on account of her own active will, is able to engage. When she leaves the world of Mother Holle, she returns showered with gold. These are the "treasures of the past"—everything she has learned through actively engaging in reality. She has been equipped with the gold of her acquired abilities.

The other girl, who is lazy and ugly, would also like to have some gold. But she cannot let go of her fixed ideas. She pricks her finger on a thorny hedge to make it bleed. This can be taken as an image of a more mechanical kind of learning. Instead of drawing blood on the spindle of one's own thinking and feeling the pain of it, one does so on a thorny hedge of unwieldy, ready-made contents. The girl then jumps into the well, but cannot let go her fixed ideas and has no way of engaging actively with reality. She leaves Mother Holle's kingdom covered in pitch. This brings into relief the problem of a form of education that piles on information, but does little for the development of genuine abilities.

Summary

The main points of this article are as follows:

• Transformation: Learning involves a crisis-laden relinquishing of fixed ideas and an active engagement with reality. This amounts to a mutual integration of self and world. Piaget called this *équilibration* (1976).

• Forgetting: To learn, one needs to forget; this means that the strong attachment to certain representations must be loosened. Sleep is a component of the learning process.

• Abilities: The rich reward of learning is the benefit to the self in the growth of one's own abilities. Dispositional and conditional abilities are developed.

• Comprehensiveness: Learning occurs through interaction with reality; this interaction should be as comprehensive (holistic), active, and—above all—experiential as possible. It is not just an accumulation of factual knowledge.

• Truth: In learning, the human being engages with the world and its order, the laws of which then express themselves in the abilities thus acquired.

• Meaning: This ability-based engagement with the world is what creates the experience of meaning through learning and gives it its intrinsic relevance.

Endnotes

1. This article was first published in the online journal *RoSE* (*Journal for Research on Steiner Education*; www.rosejourn.com). It has been edited for publication in the *Research Bulletin* by Elan Leibner with the approval of the author.
2. Editor's note: The terms "disposition" and "condition" are used by the author in the sense first coined by Herbert Witzenmann (1905–1985), especially in his book *Der Urgedanke.* The original article includes a detailed elaboration of Witzenmann's presentation.
3. Translator's note: The word in German is *Grundstruktur*, and it is evident from the context that this fundamental structure is to be construed as a mental activity. Although in English the word "structure" is normally understood as the result rather than the cause of activity, I have left the phrase as it is. It is perhaps worth pointing out that there are English terms for this fundamental structure. Susanne Langer calls it "formulation," Henri Bortoft calls it "cognitive perception," and Owen Barfield calls it "figuration."
4. In his interpretation of this tale, Eugen Drewermann calls her "Mother Earth" (2002).

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Modeling Clay – for All Ages?

Arthur Auer

> We continue this [artistic working in the early grades] by moving on to three- dimensional, plastic forms, using plasticine if it is available and whatever else we can get if it isn't—even if it's mud from the street, it doesn't matter! The point is to develop the ability to see forms [*Formanschauen*] and feel forms [*Formgefuehl* = Form-Feeling][1]

Invigorating street mud

In the quote cited above, Rudolf Steiner points out that the main purpose of pedagogical modeling is for teachers to make a start and have their students activate their hands regularly in creating forms. The forming and form-sensing activity is paramount, regardless of the malleable material used—"even street mud if it is the only thing available, it doesn't matter!" Elsewhere he calls street mud "a very good material" for this important purpose.[2]

Observation of young children playing for lengthy times shaping cool, wet mud or sand or cold snow shows us what a primal impulse sculptural activity is for human beings. Our hands want to reshape and transform the earth.

Plentiful earth materials like sand, dirt, and clay lend themselves naturally and readily to modeling activity outdoors and indoors. Hella Loewe, a long-time Waldorf class teacher, found that clay is a wonderfully malleable material and ideal for engaging and invigorating children in the early grades. Her boisterous class developed a passion for their weekly modeling lessons and was harmonized by them. Following each session, she saw "with pleasure how my children developed healthy, ruddy cheeks; even the delicate, pale ones appeared rosy and stimulated."[3]

Clay for first and second grades

Steiner emphasized the artistic value of young children "handling clay" and even "struggling with [such] outer materials." Their exertion helps them develop willpower and connect actively with the world. In his words:

> ...Whatever subject is being taught, the child's inherent impulse to play, which is an intrinsic part of his or her makeup, can be guided into artistic activities. And when children enter the first and second grades, they are perfectly able to make this transition. However clumsy children of six or seven may be when modeling, painting, or finding their way into music and poetry, if teachers know how to permeate their lessons with artistry, even young children as miniature sculptors or painters can begin to have the experience that human nature does not end at the fingertips, that is, at the periphery of the skin, but flows out into the world. The adult being is growing in children whenever they put their being into handling clay [*Ton*], wood, or paints. In these very interactions with materials, children grow, learning to perceive how closely the human being is interwoven with the fabric of the world. These [artistic channels] permit a freedom of inner activity while at the same time forcing the children to struggle with outer materials, as we have to do in adult work.[4]

Waldorf teachers should note specially that, in the quote above, Steiner is speaking of first and second graders modeling with clay.

Choosing other useful materials

In addition to mud, clay, and wood, Steiner also refers to wax and plasticine as suitable modeling materials. (He himself invented his own mixture of plasticine—although not for school purpose—and created numerous architectural models and figures out of it, some quite large.) Caroline von Heydebrand (1886–1938), one of the twelve founding class teachers in the first Waldorf school who practiced modeling and the use of beeswax in her classroom, poignantly described its pedagogical implications:

> Just as the young child digs and plays in his sand pile or in the earth, making little men and animals or baking mud pies, so a little later does the older child occupy his creative imagination with more permanent materials. The nearer he approaches the change of teeth, the more markedly do the formative forces reveal themselves—since their activity in this change of teeth is now, as it were, concluded—in the impulse the child feels to use his creative powers of soul in fashioning forms, in painting, and in modeling. And just as the child Jesus [according to legend] was happy when he made his cuckoo-birds out of the moist, clayish earth which he found in the lanes where he played, and with which he made them look alive as he patted them into shape, so is the other child now satisfied also if he has a bit of loam or clay which he finds perhaps near at hand. If only he can make something, he will look for his material till he finds it. On the other hand, if his parents can give him beeswax, for example, to model with, then in the very act of kneading this noble material, his creative will—working as it does in the circulation of the blood and warming his hands till they are all aglow—makes itself felt even to the very tips of his fingers. Thus not only is the skillfulness of his hands increased, but his imaginative capacity is also aroused and nurtured. For we know how similarly the movements and gestures of both hands and feet react when the child is learning to speak: how they help him to learn, to form ideas, and to think. …In his play, first of all, is the child's creative activity developed. Later, it shows itself in his happy enjoyment, his eagerness to recreate in his own way the beauty of the world. …The road lead[s] from a healthy, wisely-directed play-impulse in childhood to a consciously dutiful activity in mature life.[5]

Similarly, Cecil Harwood (1898–1975), a founding teacher of the first Waldorf school in the English-speaking world, characterized the child's early desire to shape objects with the hands as a profoundly organic, artistic need:

> [Young children] need all the more to be given artistic food because the desire is still, so to speak, organic. Look at the imagination of children, their make-believe games, their wide-eyed love of stories, their uncontrollable desire to paint and draw, the itching of their fingers to shape and model, even if they have no better material than dirty clay from a backyard garden, or wax pulled fearfully from the melting wall round the candle flame. …Painting, modeling, acting, rhythmical movement—these must become for these young children the very way of knowledge. If you succeed in teaching in this way, you are uniting what is nowadays divided—the forces of the head with the forces of feeling and movement. You are strengthening the binding point of thought and feeling and will.[6]

Michael Howard, a sculptor who has worked extensively with Waldorf teachers and teachers in training, encourages them

to appreciate the particular capacities that different materials stimulate in children and to avoid prejudging the suitability of materials:

> Teachers who have the children model are to be commended, whatever the material and method they employ. However, since most teachers are not sculptors, they are understandably grateful for any indications that give them direction. In Waldorf schools there is a prevailing view that from pre-school up through grade three children should model with beeswax. Promoting the merits of beeswax typically includes the judgment that clay should not be used with young children because it is harmful to them. The explanation commonly given is that the cold, wet clay robs the children's forces.
>
> If this is the case, we may well ask if it is harmful for young children to play in puddles, streams, wet sand, mud, snow and the cold water from the sink. Playing with such materials can be messy and thus can cause some inconvenience, but I have never heard anyone say they are harmful. Quite the opposite, it is generally regarded as normal and healthy. If there is any reason for concern, it is surely in regard to those children who avoid playing with materials such as sand and snow. One finds the same healthy delight and creative play in a group of children mucking out in a natural clay pit as in a sandbox.
>
> Such observations alone are reason enough to be wary of the view that clay is inappropriate or harmful in the early years. Those who do not trust their own experience about the healthy nature of clay modeling may look to Rudolf Steiner for the definitive insight. Research by colleagues both in Europe and America has thus far found not one statement from Steiner that hints at harmful effects of clay at any age.
>
> I raise the issue of clay modeling for two reasons. As a sculpture teacher I feel called to challenge what seems an unfounded dogmatism in my realm of activity. But the use of clay is not the real issue. More significantly, it serves as an example where vigilance is called for. If we recognize a dogmatic mindset creeping into one or two areas of our educational work, however minor in itself, is it not likely that there are others? The issue I raise is the threat posed by a dogmatic mindset per se, where in the name of "best practice" any principle or method is fixed into the one-right-way. The reason we should be alert to even minor expressions of a dogmatic stance is because as a soul gesture it is the polar opposite of what makes education an art. To judge clay as harmful is to short-circuit a possibly creative pedagogical activity. Instead of judging clay as good or bad, we might ask ourselves: What does each material—beeswax, clay, sand, mud, wood, wool—offer for the development of different capacities? If our inner gesture is experientially open rather than conceptually closed, we open ourselves to appreciate the potential of one material to engage one aspect of human nature while another material may best be used to exercise another capacity.[7]

Clay for early childhood activity

Elizabeth Grunelius, one of the early pioneering kindergarten teachers in the first Waldorf School in Stuttgart, gave enthusiastic endorsement for the use of clay with young children and advice on how to orchestrate modeling with kindergartners:

> Another general [kindergarten] activity is work with clay. …First thing in the morning the children help to push their

tables together and spread a large oilcloth over them. Then they distribute the boards, one to each place, and bring a good-sized lump of clay for each board. The children can hardly wait to plunge their hands into the plastic material and to start forming it. Sometimes the teacher will set to work too, and the children can see how he handles the material. Occasionally the forms of animals—a horse, a cow, a little goat, a duck or even an elephant or a giraffe—will emerge, and the children will immediately want to have them and play with them. Of course the children will be free to watch the teacher or follow their own incentives.

In clay work, as in painting, the results are not made the subject of discussion or comparative analysis; the work is placed on a shelf for the rest of the morning, and after the children have gone home, a few pieces of special interest are selected and kept, while the remainder of the clay goes back into the container.[8]

Further experiences with clay

For me clay with the right moisture is the quintessential, archetypal earth medium for modeling at all ages 3 to 103+. It gives way to hand pressure with just the right resistance and at the same time holds its form wonderfully. Clay's water-permeated texture becomes almost magically flesh-like in feel and look. It is no wonder many ancient cultures associated it with the creation of the human being!

Clay also lends itself to handling good-sized pieces and "whole-hand modeling." All parts of the threefold hand can be fully engaged in the process: concave palm (feeling), fingers (thinking/nerve sense), and the lower, very muscular base before the wrist and muscular thumb (will).

The children in my three class groups in the Waldorf school (1977–1998) loved our weekly clay exercises and special main lesson projects—a whole adobe village—and always tackled them with gusto. In past years, I have been invited into the first and second grade to give occasional clay modeling lessons. Today's children are eager and in need of taking up this therapeutically-resistant substance of Mother Earth and imaginatively and passionately transforming it. They find it exciting to be modeling pure geometric forms just as they love to make two-dimensional ones in their form drawing lessons. And, of course their hands are always "full of" animals, people, and dwellings!

Khnum the Moulder, the Ram-Headed God, shaped human beings and all flesh, modeled the gods, and fashioned the world egg on his potter's wheel.
–Egyptian Mythology

And God formed the human being of the clay of the ground and breathed into his nostrils the breath of life…
–Genesis

Wise Prometheus modeled human beings out of river clay and in the shape of the gods. He desired fire for his creations.
–Greek Mythology

Warming beeswax

I have also conducted countless exercises and projects in grades 1–5 with colored beeswax to the delight of the children. Beeswax, however, is hard and stiff at first and can offer uncomfortable resistance for young children. There are ways to pre-warm the material so that it becomes as malleable as clay. Children can hold it between their warm hands for many minutes while one tells a story or they can put it down their shirts, "into the oven" on their stomachs. Sometimes we put pieces on the windowsill in the sun or on the radiator, watching out that it does not become too soft or melt outright!

In this connection, Hanne Huber, an experienced kindergarten teacher, has published a wonderful action research book

Gestalten mit Bienenwachs im Vorschulalter [*Modeling with Beeswax in the Preschool Age*]. This manual is sumptuously illustrated with pictures of figures that kindergartners as little builders have constructed out of pieces of soft wax. (It is valuable even for those who do not read German.) Frau Huber describes how children can soften beeswax in a warm-water bath at hand temperature or how the teacher can place it in the oven at 122 degrees F (50 degrees C) for an hour before use. (I have also heard of a kindergarten teacher who skillfully mixed up batches of warm wax in a pot on the stove and served out soft lumps.)

Coloring beeswax?

Frau Huber also prefers to use beeswax with its natural golden color rather than a colored assortment. She found that "sculptural qualities find their fullest expression in using the *one* natural color."[9] The emphasis is then primarily on the form experience rather than combining it with an experience of color, which is left to the painting lesson, in which form becomes secondary or even relatively non-existent. Sculptor Michael Howard agrees:

> Often the beeswax that is used for modeling is brightly colored. Children and teachers alike may find these colors cheerful and fun, for example, a gnome with a red shirt, blue pants, and a green hat with a yellow feather. What are the pedagogical issues a teacher might consider regarding the color of beeswax? If we want the children to have a *color* experience, we have them paint. When painting they do not sculpt, they do not give three-dimensional form to the pigment. If we want them to have a form experience, we should help them focus on forming the clay or beeswax. In giving them colored beeswax we are distracting them from a full *form* experience; we are asking them to paint while they are sculpting. Put another way, using brightly colored beeswax stimulates the sense-nerve will. If our pedagogical intent is to develop the feeling-will through sculptural forming, then we would use clay or beeswax that has a simple earth tone.[10]

Fingering beeswax

I also experience that beeswax modeling tends to emphasize the nerve sense pole in the use of the fingertips rather than the palm and muscular base of the hand. With clay one can shape out the whole mass of a piece with the whole hand and then proceed to detailing with fingers and tips as a final stage. Doing a lot of beeswax modeling I find can neglect whole-hand modeling and using the fullest potential of our hands' plasticity. Beeswax modeling tends toward what I would call a kind of fine motor, intellectual "picky-ness." Children can become caught up prematurely with fine details rather than first artistically capturing the primal gesture of a subject. Of course, beeswax can be very helpful for a child who needs to improve fine motor skills, but perhaps that is better achieved through handwork and sewing. (As another perspective, a European Waldorf art teacher of decades' experience visited the United States recently and remarked that he was astounded at how often beeswax was emphasized in American schools and teacher workshops. "We never did it like that!" he exclaimed.)

In my opinion, teachers need to continuously evaluate their repertoire of arts and methods for a variety and balance of capacities. Michael Howard gives an example of such an ongoing assessment process applied to the two media we have been discussing:

> We might discover that certain materials are best suited for sense-nerve activity while other materials lend themselves better to feeling-will activity. If we determine that we need to exercise their sense-nerve will, or what is commonly called head/hand coordination, then beeswax is well suited. The inclination

> to make recognizable objects—bowls, birds, and so forth, but especially, the fine fingertip manner of forming small shapes in wax, engages the sense-nerve will. If on the other hand we wish the children to exercise their feeling-will, clay is particularly suitable. Clay can naturally be used in larger quantities that invite whole hand movements. This in turn allows the students to focus more on feeling the quality of the forms rather than on conceptual associations.[11]

Plasticine magic mirrors and spontaneous hand dexterity

An interesting medium whose qualities lie between clay and beeswax is plasticine, an earthen material mixed with a non-toxic binder. This material can be costly in comparison to clay and does not lend itself to making large pieces. It can, however, be used over and over. I found a variety of earth-colored brown plasticine that responded more readily to simple hand warmth than beeswax but did not become too soft to retain forms.

My students in the lower grades each flattened two walnut-sized lumps of plasticine into two thin, round "magic mirrors" out of which all kinds of forms could emerge. They stored these in a plastic zip bag in their desks. At a moment's notice I could have students bring forth the pieces for quick warming between the palms and for spontaneous modeling and often just short exercises. With a word such as "sphere" or "bird" from me, hands launched into action. After the children held up what they had produced, they reverently curled the form into a rounded lump, smoothed its edges, and then flattened it into a magic mirror for future use. Needless to say, my children became very dexterous and flexibly creative over time. Their hands could spontaneously "speak forth" quick forms at a moment's notice, even as part of the warm-up section of a main lesson.

Daily, brief, hand exercises with plasticine serve nicely as the forerunners to a much more formal weekly modeling lesson with clay, which requires more preparation and time.[12]

Endnotes

1. Rudolf Steiner, "Second Curriculum Lecture," in *Discussions with Teachers* (Hudson, NY: Anthroposophic Press, 1997), p. 198.
2. Rudolf Steiner, *Kingdom of Childhood*, Lecture 6 (Hudson, NY: Anthroposophic Press, 1995), pp. 93–94.
3. Hella Loewe, "Modeling in the Early Grades," Arthur Auer, translator, *Bund Rundbrief,* Nr.70, November 2000. Frau Loewe's initial articles evolved and were expanded wonderfully into a manual entitled *Basic Sculptural Modeling: Developing the Will by Working with Pure Forms in the First Three Grades* (Fair Oaks, CA: AWSNA Publications, 2006).
4. Rudolf Steiner, "Education and Art," in *Waldorf Education and Anthroposophy*, Volume 2, Lecture 3 (Hudson, NY: Anthroposophic Press, 1996), pp. 58–59.
5. Caroline von Heydebrand, *The Child at Play* (London: Anthroposophic Publishing, 1928), card covers, pp.17–20.
6. A.C. Harwood, *The Way of a Child* (London: Rudolf Steiner Press, 1997), p. 32.
7. Michael Howard, *Educating the Will* (Fair Oaks, CA: AWSNA Publications, 2004), pp. 37–39.
8. Elizabeth Grunelius, *Early Childhood Education and the Waldorf School Plan* (Fair Oaks, CA: Rudolf Steiner College Press, 1991), pp. 18–19.
9. Hanne Huber, *Gestalten mit Bienenwachs im Vorschulalter[Modeling with Beeswax in the Preschool Age]* (Stuttgart: Verlag Freies Geistesleben, 2001), p. 9.
10. Op. cit. Howard, p. 40.
11. Ibid., p. 39.
12. *Learning about the World through Modeling: Sculptural Ideas for School and Home* by Arthur Auer, MEd. (AWSNA Publications, 2001). For more perspectives and tips, see the chapters on: Choice of Materials, Beeswax, Clay and Water, Practical Aspects, Rudolf Steiner's Advice, Summary of Suggestions, In Touch with Our Hands, Hand Movements in Space and Matter.

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Anything But Children's Play:
What Play in School Means for Learning

Irene Jung

A research project at the Rudolf Steiner School in Hamburg-Bergstedt, Germany, on what play in the school means for learning, as part of a larger research project with the theme "Independent [self-reliant] Learning," was conducted under the supervision of the Academy for Developmental Mentoring and supported financially by Software AG-Stiftung. The participating teachers carried out individual projects that they hoped would encourage individual work and learning; they evaluated the results and incorporated them into their lessons. The author of this article conducted the following investigation into the effects of play on a child's ability to learn.

Eight-thirty in the morning, outside in the schoolyard

The class teacher of Grade Four, Knut Krödel, observes the boys in his class standing by the garden plot next to a side wing of the school building. There are two groups pelting each other with the bark mulch that is scattered in the garden. There is also quite a bit of mulch scattered all over the pavement next to the garden. Immediately the teacher hurries over to the boys. But before he can begin his admonition, one of the boys comes over to him to say: "Everything is all right. We have set up rules. Afterwards we will sweep it all up." And in fact, a half hour later the bark mulch has disappeared from the pavement and is neatly distributed in the garden. For three days the children play this game, and on each day they clean up after the game.

A few weeks later, at the same time, in an abandoned corner behind the gym, the children of Class Four want to build a climbing structure. To begin they dig out the earth one meter deep in four locations. The first thirty centimeters is pretty easy to dig, but the rest is very difficult work. After that, four posts are cemented in place. Then, suddenly, they are no longer interested. The four posts satisfy them. The class teacher encourages them to keeping going with the project, but without success. They are already heading for another corner of the schoolyard.

Shouldn't these children already be in the classroom? What do playing with mulch and building a climbing structure have to do with school?

Playing outside before main lesson

For one whole year, with the children of his fourth grade class, Knut Krödel carried out the project, "Playing before Main Lesson." Every morning, shortly after eight o'clock, after arriving in the classroom, greeting each other and saying the morning verse, they headed outside.

Here the children were allowed to play in the spacious, idyllically laid-out school yard for one whole hour, according to their heart's desire, in the wind and weather, without any direction or instruction from their teacher. He was, to be sure, always present and was the contact person when the children needed help, and he played with them from time to time when the children invited him, but otherwise he held himself apart and observed. This was all with the permission of the parents. How did it come about?

"After long observation I had perceived that around nine years of age children lose their will to learn, and they experience more problems with learning. Often I heard this sentence: 'School just isn't fun for me any more.' The parents, as well, told me that their children were groaning in the morning, from the time of waking until arriving at school. How can

this be? I thought to myself, 'We want to bring about exactly the opposite!'"

Other considerations connected with these thoughts. What does learning actually mean? Waldorf schools with their holistic approach have never understood learning to be just an accumulation of knowledge or the product of the visible work of the student. This can be seen in the many musical lessons, as well as the many other common social undertakings such as the monthly assemblies, the fairs, the festivals that are put on by the children working together. These things not only build a sense of community and give a glimpse of the actual lessons, but they also foster the perceptual capacities of the students, as well as their creative imagination and their joy in discovery. Along with these aspects, they also encourage, often in a playful way, their entire personality.

Naturally, even in Waldorf schools, the original form of play is displaced by the canon of subjects that must be taught. Play remains something that the child can give himself up to only after his other obligations—schoolwork, homework, often private music or sports lessons, and chores—have all been met.

Often, however, not even then is there any time for play. Since the television, the computer, and electronic games have gained entry into the children's bedrooms, play has increasingly fallen further and further into the background. The potential results for the development of the child's personality, not to mention the effect on the acquisition of necessary academic capacities for learning, are well known. The numbers continue to grow, of students who are not able to concentrate on their work for more than a few minutes in a lesson, who cannot work alone, and who cannot complete a task once it is begun, or only with great difficulty. It was to counter these developments that the "play hour" was instituted at the Rudolf Steiner School in Hamburg-Bergstedt. Class teacher Knut Krödel resisted the usual separation between play and instruction.

Learning during play

"When do children learn? Children learn while they are playing! To begin with, they learn about the outer things of the world. They must come to know that the things with which they are surrounded can be changed by their activity. They can have an influence on the world. Children often have different ideas about the changes they would like to make, and then in the actual doing, they learn how things really stand.

"In every game there are rules that are invented. The children test the rules and themselves, in so far as they pay attention to the reactions of their peers and their environment. In this process they learn a great deal. I have observed that children always set up rules in their play together. And consequences are immediately applied when there is a violation. In this way children learn to be fair. The one who always wants to be the leader will soon realize that his playmates turn away from him. So they must find compromises, in order for the game to continue. It is fascinating to watch children in this process. In this way they are learning social competence. In contrast, no child learns social competence when the teacher tells him how he should behave."

Awakening the joy of learning

To re-enliven and stimulate the children's joy in learning was the great goal that Knut Krödel hoped to bring about with his project. A further objective was to find an answer to the tantalizing questions: What kind of impact would play have on the one and a half hour main lesson that followed immediately after the play hour? Would the children retain the trust in their own capacities and their own initiative? Would they be more curious, more imaginative, have more joy in discovering things? How did the social relations develop among the children?

In answer to these questions, the class teacher replied: "All the students came into the

lesson with high spirits and an even temper, they worked joyfully, and had no difficulties joining in with the lesson and following along. At the same time they were able to achieve much more than the previous two fourth grade classes that I had taught in earlier class cycles. They learned fractions, for example, in a shorter, more intense period of time, with greater certainty. I also noticed a great difference in writing dictation between this group of students and earlier fourth grades. And they began to help one another more, which I also attributed to the play period."

Learning on their own

In the fifth grade, during the 2009–10 school year, the play hour was changed. The time allowed to play outside became a free hour "at [the child's] disposal." This was to take into account the age of the children, now heading into prepuberty. In addition they investigated in which direction the period would develop under the new conditions. This showed that the children were learning to manage their own time. Often they went outside to play, and then at other times they played in the classroom. But they no longer only played.

On many days, as a matter of course, they worked at their desks in their main lesson books, or quizzed each other on their vocabulary words, gave each other dictation to write, or practiced for a report. Once in a while the class teacher was asked for help, for example when a child had not understood a new lesson. This independence was also observed by the teacher in the main lessons that followed: "The children have slowly gained in form, and it seems that the play time has borne fruit. It seems that what they learned there has worked on in other subjects. When I teach them French, they learn eagerly and with joy. In the main lesson block about Egypt, I notice that they show tremendous joy and curiosity in their reports. Almost every day we experience that a child has come up with a new, creative idea to make everything interesting. It all started with a talk by K., who spoke about the pyramids. She brought in a pyramid that she had made herself, and after her talk she even gave a quiz to the students, to see if they had been paying attention.

"Today E. and P. came in and spoke about Ramses. They had large beautiful pictures and even some photos, too. As the main attraction —they had wrapped up a child, to show what happened to the excavator when he unwrapped the mummy. T. had made a little ship out of papyrus. But it was J. who took the cake, as he spoke about chariots, and presented a large drawing on the blackboard, that was appreciated by all with a great 'Ah'."

And what did the students have to say [about this project]? In a written survey at the end of the fifth grade, of the 38 children who participated, 24 said that since the project began, they were much happier to come to school, and 19 children said that they could learn much better since the beginning of the project. 23 children said they would like to keep the play hour in the coming school year. And only 12 children wrote that the play hour was not so important.

Now an interesting task begins for the class teacher to pursue: to find out what kind of lasting effects the playtime during the past two years will have on the present learning of the children.

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Higgs Field and a View of the Material World that Makes Sense

Michael D'Aleo

For centuries no concept has been as misunderstood or the subject of so much speculation and investigation as the concept of matter. In earlier times, people drew their views on the nature of matter from ancient religious texts and oral traditions, whether they were indigenous, Eastern, or Western in origin. In the West, the eclipse of these traditional views and their replacement by the dawning of the empirical scientific era began already at the time of the Ancient Greeks but gained momentum only with the advent of mechanics and the science of Galileo.

Further steps along this path came during the early nineteenth century with the ideas of John Dalton—father of the concept of the atom in the form many of us learned in high school—and during the century that followed with the work of a host of scientists and mathematicians. Finally, we arrive at our present century, during which the ideas of the Higgs Field and Boson have made their debut in the popular press. While many people are enamored with the idea of the "smallest particle" (sometimes referred to as "the God-particle"), others read these descriptions and dismiss them as nonsense.

Earlier this year I was finishing work on a book entitled, *Embracing Materialism and Letting It Go: An Experiential Guide to Overcoming an Object-Based World Conception*. While much of the book is intended to help develop a deeper understanding of the basis of our everyday experience, the two central chapters tackle the concept of the atom and suggest a new framework for thinking about the Higgs Boson and Field. A significant portion of these chapters is offered below. A free download of the entire book in PDF format is available at www.sensri.org.

We pick up the historical evolution of the concept of the atom with William Crookes, the first scientist who actually observed experimental evidence that suggested the world might be other than simply "stuff."

Born into an aristocratic family in 1832, William Crookes was an Englishman of considerable means. Recognizing his good fortune, he decided to dedicate himself to the pursuit of science. Since he was also a part of the growing Spiritualist movement of his time, Crookes took a great interest in electrical phenomena, the mysterious and somewhat new emanation that had only recently begun to be harnessed by the early to mid 1800s. It had been found that electrical effects could instill movement in animals and humans, even those that were lifeless. Mary Shelley's *Frankenstein,* recently published in 1818, was based on people's fascination with electrical phenomena. If electrical effects could stir lifeless beings into movement, then perhaps the nature of all life lay hidden in the depths of electricity's secrets. Crookes' interest in science and the spirit had found a worthy subject for investigation.

Over time, Crookes performed a number of different experiments. We will focus on a key one, involving a glass tube in which an electric current is placed across the ends of the tube in order to electrify the air or gas contained inside it. This technique was developed in the late 1860s and early 1870s. When Crookes began these experiments, he noted a faint glow emanating from the tube when an electrical potential was placed across it. He experimented by evacuating the tube so that less gas was present than would normally fill the space. To his surprise, the more gas he evacuated from the tube, the more brilliant became the glow. In fact, Crookes began to notice that

the emanations were not simply confined to the tube, but actually appeared outside the tube, as if they were leaving it. The behavior of the gas surprised Crookes greatly. How could any material escape an enclosed glass tube? No solid, liquid or even gas was capable of escaping such a space. Crookes felt that he had discovered a new type of matter. Given that the emanation appeared to radiate out of the tube, Crookes called his discovery "radiant matter."

In effect, Crookes had discovered the first challenge to the so-called corpuscular theory of matter. More interestingly, he had done so by conducting empirical experiments and not simply by stating a new thought or conjecture. While few recognized at the time the implications of his discovery, it was clear that the nature of the material world was far subtler than had previously been thought. Scientists were going to have to come to terms with Crookes' new observations. In time, looking for electrical effects and their manifestation in the material world became a standard means for investigating the essence of the material world.

The late 1800s saw many scientists probing more deeply into the nature of matter, trying hard to find its subtle basis. While many steps were taken in this exploration, we will look at the work of the next Englishman in the series, J.J. Thomson. Like Crookes, Thomson performed many of his investigations and experiments using an electrical apparatus. In time, Thomson was able to find that Crookes' "radiant matter" was not only electrical in production, but that its direction of streaming could be influenced by other electrical effects. The "radiant matter" was either deflected in a different direction as the result of external magnetic effects, or simply left in its original emanating directions if kept from any external effects. Between 1897 and 1904, Thomson was able to determine that the electrical effects happening on a very small scale suggested that the electrical polarity of the field was not uniform. He described the periphery of the fields as generally having negative polarity, while the center contained concentrated bits of positive polarity. Thomson likened his discovery to plum pudding with a gelatinous outer layer and hard bits (plums) in the center.

Thomson's discovery was a huge breakthrough in the evolution of the concept of the atom. "That which cannot be cut"—the original meaning of the Greek word *a-tom*—appeared to have qualities that were more subtle than the discrete ultimate entity that had been postulated by most scientists and philosophers. In other words, the concept of the atom as the ultimate basis of matter, as a fixed entity, was beginning to be challenged.

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Thomson's research was carried on by other individuals, most notably another citizen of the British Empire, Ernest Rutherford. Born in New Zealand, Rutherford was recognized early in his schooling as a boy of talent. He quickly made his way through advanced education and soon began doing research at the Cavendish Labs in Cambridge under J.J. Thomson.

Rutherford's key contribution to the story of the atom is referred to as the Gold Foil Experiment, which he developed with some students in 1911. In this experiment, Rutherford took a piece of gold foil that had been hammered into an incredibly thin surface. The surface was so thin that it was essentially translucent. Gold's unique malleability allows a one-ounce piece, approximately the size of a half dollar, to be hammered so thinly that it covers an area of 100 square feet. Once the gold foil had been prepared, Rutherford took a device that produced "radiant matter" (today we would call these emissions "alpha rays") and placed the gold foil between the electrical device and a piece of specially prepared film that would change color when exposed to this radiant matter. Rutherford further greatly

narrowed the scope of the area where the radiant matter could be produced. As a result, individual spots could be observed on the film, even though the gold foil was placed between the film and the electrical device. However, in a few cases, the spots found on the film were at a noticeable angle from the scope of the area created by the electrical device. Furthermore, in a few cases, one in eight thousand, no spot was registered on the film at all.

Eventually, Rutherford, with his graduate assistant, placed a piece of film behind the electrical device. It was then that he was able to record the missing signature of the radiant matter, though it appeared in the opposite direction from where it began. In Rutherford's own words, "It was as if we had shot a bullet at a piece of tissue paper and it bounced back!" It appeared that, in these rare cases, the radiant matter must have left the electrical device and come into close proximity with such a strong electrical interaction that it was repelled backwards and was therefore picked up by the film behind the device. This was truly astounding. Most of the time the radiant matter simply passed through the gold foil but occasionally it was deflected or simply bounced back. Rutherford inferred from these experiments that most of matter must be empty space with small, localized areas of negative (deflected) or positive (repulsed) spatial qualities. The key here was that most of matter now consisted of "nothing." The concept of matter was quickly losing its quality of "thing-ness" and was therefore open to being replaced by a new concept.

Perhaps the best description of the excitement felt by members on the leading edge of science at that time was given by Arthur James Balfour in an address to the British Association for the Advancement of Science at Cambridge on August 17, 1904. A short excerpt is given below:

> But today there are those who regard gross matter, the matter of everyday experience, as the mere appearance of which electricity is the physical basis: who think that the elementary atom of the chemist, itself far beyond the limits of direct perception, is but a connected system of monads or sub-atoms which are not electrified matter, but are electricity itself. …

It is hard to overlook the work of Bohr, Chadwick, Einstein, and Born, but in the interest of keeping to the essential elements of our theme we will press on. In 1925, physics was to begin a tremendously new attempt at defining the nature of matter. Spurred on by the many great minds of the time, only a few of which are mentioned above, three new approaches arrived on the scene.

First, a French physicist named Louis DeBroglie suggested that rather than focusing on a corpuscular model for matter, one could develop a model based on a harmonic wave form, similar to the notes in a musical composition, to distinguish the different qualities of matter. He developed a series of mathematical relationships and termed the resulting waves DeBroglie waves.

The second breakthrough came from a German physicist named Werner Heisenberg, who put forth his famous Uncertainty Principle. Heisenberg stated that, in short, whenever we try to know any particular aspect of a given experiment, simply the act of setting up the experiment or apparatus to observe that particular quality changes the context of the situation we are observing. This principle can be transposed into any aspect of our daily life. In the act of observing, it is impossible to remove the observer from the experiment. (Much more is written about this in later chapters of the aforementioned book, but not published here.)

Finally, the third big breakthrough came from an Austrian physicist named Erwin Schrödinger. Schrödinger took a very pragmatic approach to what had resulted from

the physics of the previous twenty years. He became less interested in knowing exactly what matter is, and instead shifted the emphasis to predicting the likelihood (or probability) of a specific event or series of events happening. Along with a number of other scientists, he developed what eventually came to be known as Quantum Mechanics.

All three of these physicists were eventually awarded the Nobel Prize for Physics: DeBroglie in 1929, Heisenberg in 1930, and Schrödinger in 1932.

What is most important here is that, in the minds of the leading physicists of their time, the concept of a material basis for the world had been totally superseded and was no longer in contention as a worldview. This was to last for only a few years, however, until the mid 1930s. Once the threat of another war loomed on the horizon, most of the leading physicists were put on fast-track research projects to develop something other than an understanding of the nature of the physical world. The race to develop the atomic bomb, the ultimate form of destruction, was on, and each country taking part in this race was concerned that the other might achieve this goal first. This focus on "splitting the atom" for the purpose of creating new weaponry was to dominate physics and continue through World War II and into the beginning of the Cold War. It wasn't until the 1960s that a significant number of new research projects was launched, many of them centered around the study of a whole new group of "subatomic particles." The atom, "that which cannot be cut," had already been cut into a nucleus, further cut into positively charged areas of space (protons) and neutrally charged areas of space (neutrons) surrounded by a negatively charged area of space (electrons). Now, each of these "particles" was formed from other entities. Other entities were postulated to exist, and research was funded to find them—namely positrons, hadrons, quarks, and other entities. For a while, it appeared that the formulation of a new concept of matter was hopelessly caught up in a search for smaller and smaller "particles." To be sure, the leading scientists doing the research were often able to describe their work as non-materially based, but the shift to a new worldview seemed to be present in very few, if any, of their daily lives. What was done in the lab was one "thing," what happened in their daily life was "a different matter."

What is most important here is that…the concept of a material basis for the world had been totally superceded and was no longer in contention as a worldview.

Finally, toward the very end of the twentieth century and at the beginning of our own, a new view of the material world has begun to rise again. One of these new views is based on the work of Peter Higgs. The Higgs view contains both particles and what is called the Higgs Field. In the case of the latter, we once again stand at the edge of the possibility of a new conception of the material world. In the view of Higgs, there are a number of fields of activity. When the word *field* is used, one should not think of a "thing" but rather conceptualize a spatial area in which one type of phenomena may arise. The Higgs Field way of looking at the world postulates that when the Higgs Field comes into the same spatial area as certain other types of fields, the quality of mass arises in matter. The key to this type of thinking is not to think of a "thing," but instead to imagine a new property or quality arising in a place where no quality existed before.

Thus, matter is ultimately not made of objects; instead, when the qualities of visual opacity and tangibility arise in the same spatial area, we describe the correspondence of qualities as matter. Other sensed qualities may also arise in the same spatial area such as sounds, smells, tastes, and so forth. Matter

is not the cause of these sensations but rather the concept that unites the correspondence of sensed qualities.

Demonstrating the nature of matter

The following demonstration forms part of a course I have been teaching involving scientific or conceptual themes. While the necessary materials are simple, I have found that the demonstration is both effective and surprising. To begin, I invite one of the course participants to serve as assistant. After assuring the volunteer that nothing unsafe will happen, I continue with the following instructions. First, I have the assistant stand before me with eyes closed and hand held out in front. I then say that I will place something into the hand, at which point the assistant is to grasp the object tightly and keep the hand completely still while holding the object.

The rest of the students are instructed to remain silent and observe the assistant, who (with eyes closed) is able only to feel what is happening. No student will have both experiences. What the remaining students see is that I pull out a long metal bolt about four inches in length. Attached to the end of the metal bolt is a series of five disks approximately 3/8″ in diameter (just a bit bigger than the bolt). These are stacked one on top of the other. The bolt is placed in the assistant's hand, with the series of stacked disks facing me.

At this point I pull out five additional stacked concentric cylinders and begin to move them toward the stack on the end of the bolt that the assistant is holding. When the stack I am holding in my hand is pushed within about one inch of the assistant's stack (they are not yet in physical contact), the remaining participants see the assistant's hand move even though the objects do not touch. With a reminder to the assistant to keep the hand still, this process is repeated to the delight of the observers, and often to the mild frustration of the assistant. At no time do the two stacks of disks ever come into physical contact. At this point, the rest of the participants have a fairly good idea what is happening. I continue to move the assistant's hand in this way, and then ask the assistant to open eyes while the movement is occurring. With eyes open, the assistant may utter note of surprise upon realizing what had been happening.

Commentary on the demonstration

As we review the experience, the assistant—let's call her Jane—usually states that with her eyes closed she believed that the movement of her hand was caused by my grasping the end of the bolt and moving it around. When the assistant opens her eyes and sees that this is not the case, there is an initial surprise as she sees that there is no physical contact between what is in her hand and anything in mine. An invisible relationship has been established between the cylinders in hers and the ones in mine. Almost immediately, the concept of "magnets" comes into the observer's thinking and the mystery is solved. Or is it?

> The key to this type of (new) thinking is not to think of a "thing" but instead to imagine a new property or quality arising in a place where no quality existed before.

Now we begin a careful analysis of the demonstration, remembering that the group could see while Jane could only feel. The students could see that the "objects" were moving, yet they were not touching. Upon closer examination, we realize that the observers were not "seeing objects" but, instead, were seeing images that they then conceptualized as being separate objects. They saw an image and out of habit associated it with the tactile, tangible quality of an object. Normally, we would expect no movement between the objects until we saw the images

touch. When, as a result of the close proximity of the images, the untouched object and the hand grasping it began to move, the students were confronted with an unexpected observation. Some of them quickly inferred that the metal disks were magnets. Had we begun with an object whose image is red and u-shaped, most people would have immediately recognized that image as being a magnet. It is only because the form of the image and its color were more nondescript that the students were more likely to expect that the objects would not move until their images were actually touching.

The assistant, Jane, had a different experience. She felt the tangible sensation in her hand and assumed that any motion of her hand would be due to the object in her hand being moved. She simply assumed that the tangible quality in her hand was solely the quality of an object. While she was correct in thinking that the initial tangible quality in her hand was the result of an interaction of objects, her assumption became problematic when she assumed that the second tangible experience in her hand was also due to an object interaction. Upon opening her eyes, she realized that the second tangible experience was due to an invisible interaction. The name we usually give to this invisible interaction is magnetic attraction. In this second case, we have a tangible experience with no directly associated visual image; from a visual perspective, the space in between is filled with nothing or no-thing.

The distinction between the various types of visual and tangible interactions can be grouped together in the following manner.

Case 1. *Images by themselves are real experiences.*

In the world of our everyday experience, do we have "real" visual experiences (as opposed to hallucinations, dreams, and so forth) that have no tangible counterpart? Do we ascribe reality to images that can be seen but not touched? Usually with some prodding we arrive at such examples as rainbows and holograms. In both cases, an image is seen but with no tangible counterpart. Students find it fascinating to see an image that has all of the visual attributes of three-dimensional appearance, but that is lacking any tangible attribute at all. The key here is to recognize that no one will ascribe object-like status to the hologram, but most observers will agree that a hologram does indeed have a reality from the perspective of vision. Is a hologram a real experience? Yes, the hologram has a visual quality that can be repeatedly experienced! What makes the hologram a bit uncanny is that the image has no tangible counterpart.

Case 2. *Tangible experiences by themselves are real experiences.*

In our everyday life, do we have tangible experiences (for example, experiences of pressure on the surface of our skin) that have no visible counterpart? Again, with a bit of questioning, students will begin to offer examples of magnetic interactions, some electrical interactions, and even experiences in nature such as wind. With further discussion, most students will report having had an experience of "feeling eyes on them"—that is, having the sensation of being watched, often while walking down a road, by some unseen observer. Here we have a tangible experience (pressure), or the very subtle sensation of someone watching, with no visual image to support the idea that something has come into contact with us. We may be more at ease accepting the idea that the earth is one pole of a magnetic interaction with our handheld compass being the opposite pole. However, few of us follow the implications of such a way of thinking to the end.

Case 3. *Nothing—no tangible or visual sensation*

In this case the situation is quite clear. While we can hear a sound or recognize a specific scent, without an experience that unifies both a visual image and a tangible counterpart to this image, we have nothing: no-thing.

Case 4. *Things—when the visual and tangible sensations are both present!*

Now we have arrived at a central point in our investigation. It has become apparent that we can form the concept of matter—whether as an object or as a thing—only when two or more of our senses are engaged. The two key senses for the concept of an object to arise are touch (we are aware of pressure) and vision (we experience visual opacity—one image appears incomplete as another image appears to take up the space in the visual field where we would assume the first image would continue). Even with transparent substances, we can observe refraction, a shift in the visual field.

We form the concept of matter–whether as an object or as a thing–only when two or more of our senses are engaged.

What is important here is that the object does not cause the sensations; in fact, the reverse is the case. We can form the concept of the object only if we experience at least the two sensations of vision and touch. The senses of taste, smell, sound, temperature, and so forth enrich our experience and will result in our forming a more distinct mental picture of the experience. However, we cannot escape the fact that only through an experience of a relationship, through the senses, can we form a concept of the thing "out there" and simultaneously become aware of myself as "in here." The concepts of *self* and *object* arise from the same unity of experience, and ultimately arise out of relationship. Even more intriguing is the realization that the sense of self and sense of object both arise from the same unity of relationship. While we can separate them conceptually, their origin in perception is non-existent. The world exists not as a series of objects, but instead we come to the concept of object as a result of relational experiences.

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Relationship, or *between-ness*, is the necessary precondition for forming or knowing any aspect of existence. The world-I polarity is an expression of *betweens*, in which we express the poles of the experience as *self* and *world*. The idea (and it is an idea) that the world is fundamentally a series of objects interacting suffers from the fallacy that to form the concept of object, I must already have passed—in many cases unconsciously—through the precondition of experiencing.

Looking Forward

What would our lives be like if, instead of simply recalling the visual form and tactile sensation when we hear the name of an "object," we recalled the myriad sense impressions and relationships that we experienced when we first developed the concept? Imagine if every experience we had was a full host of sensory impressions! This would be the beginning of a new way of being. Life would be a series of relational experiences rather than the serial interactions of objects. This would be the New Physics, a new way of being on earth; it would be a more fully human manner of experiencing existence.

The world of objects is simply a set conceptual mind-frames. The world of experiences is no less real and, in fact, is the basis by which we form the concept of "object" in the first place. The great error is that once we have had a certain number of experiences, we habitually shift to an object orientation and forget about the experience. At that moment, we stop participating in the world and instead experience the world as "out there" and our self as "in here." At that moment, we lose the immediacy of experience

we had when we were younger and begin to live in the abstract world of the grown-up. The limitations we place on the world "out there" are matched only by those that we place on our self when we think only in object-like concepts. The thoughts of the separate "self in here" and the "world out there" are the direct result of a worldview in which it is believed that material is the causal element of all existence. We now may come to appreciate how this view is simply wrong. We form the concept of matter based only on a synthesis of experience-based sensations. And yet we go round and round looking for some fixed system of beginnings. Here again, the search for fixed beginnings is also a residue of a materially-based conceptual system.

Another means of conceptualization is possible. The experiences themselves, the *between-ness* we habitually think of as world-I, can lead to *what*? If we can let go of the what, new possibilities arise. It may be that only then, when we let go of the "what," can we truly begin to live.

While the discovery of the "Higgs-like particle," as scientists were careful to call it, was treated by the media as nothing but another triumph of "proper science," the conceptual framework that led to the search for this elusive particle in the first place may well be an important stepping stone towards a much-needed reevaluation of common assumptions about the very nature of reality.

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The limitations we place on the world "out there" are matched only by those that we place on our "self" when we think only in object-like concepts.

Report on the Online Waldorf Library

Marianne Alsop

Earlier this year the new web site of the Online Waldorf Library (OWL) made its debut with a new look and an upgraded database retrieval system specific to online libraries. Visitors to the Home Page can now find, under the menu heading, "Books," an extensive listing related to Waldorf education including almost 100 eBooks. Each book listed on the OWL has a link to where this book may be purchased.

The OWL also includes articles on Waldorf education from a number of North American and international journals; all articles are available for download. Recently the *Journal for Research on Rudolf Steiner Education* (*RoSE*) was added. This peer-reviewed journal is a collaborative effort between colleges in Norway and Germany.

Also available are all past issues of the *Pacifica Journal*, published by the Anthroposophical Society in Hawaii, which offer a remarkable picture of the growth of Waldorf education in the Far East. Also from the Home Page the visitor can find articles and books by Rudolf Steiner.

The volume of questions from site visitors has increased greatly over the past months: requests for information on why parents choose Waldorf education for their child; questions about foreign language teaching, class plays and building projects for Third Grade; queries about the development of the five-year-old, indications on nutrition by Rudolf Steiner, resources for Waldorf home school kindergarten, multi-cultural resources for Native American children, and looping in charter schools.

Readers looking for a specific resource or wishing to pursue a general question concerning Waldorf education are invited to contact me directly.

Marianne Alsop, Librarian
Online Waldorf Library
www.waldorflibrary.org

Visit the
Online Waldorf Library
at

www.waldorflibrary.org

RESEARCH INSTITUTE FOR
Waldorf
EDUCATION

Announcing two part-time courses starting in February and April 2013 for new and experienced Waldorf educators who wish to deepen their practice and understanding of teaching science in the 6th–8th grades

TEACHING SENSIBLE SCIENCE

Teachers who have taken this course rave about it.
(You can read some testimonials on the next pages.)
Teachers who did not take it are asking,
"When will the next cycle begin?"

Answer: Starting in February 2013,
at the Waldorf School of Baltimore
4801 Tamarind Road
Baltimore, Maryland

Starting in April 2013,
at the Seattle Waldorf School
2728 NE 100th Street
Seattle, WA, 98125

Register now by filling out the form and returning it promptly to:
Michael D'Aleo
Teaching Sensible Science
23 Hutchins Street
Saratoga Springs
NY 12866-2601
Phone: (518) 587-0457 e-mail: spalight@verizon.net

Sponsored by the Research Institute for Waldorf Education, SENSRI, and the Waldorf Schools of Baltimore and Seattle. Seattle course co-sponsored by Sound Circle Teacher Training.

TEACHING SENSIBLE SCIENCE

Sponsored by
Research Institute for Waldorf Education, SENSRI,
and the Waldorf Schools of Baltimore and Seattle

Of the many subjects taught in the eight-year cycle of a class teacher, few are more challenging than the science main lessons of the 6th, 7th, and 8th grades. These main lessons arise at a time when pupils are developing a much stronger ability to perceive the world as being separate from themselves; this capacity is crucial for scientific inquiry.

To help cultivate in their pupils these powers of perception in a healthy way, Waldorf teachers approach science by means of a method different from what is typically used in more traditional schools. Said simply, this method is "phenomena-centered" rather than based on the testing and application of theories. While most Waldorf teachers will have heard of this approach, few will have experienced this method themselves as school children, and many may have made only fleeting acquaintance with this approach during their teacher training. As a result, teaching science in Waldorf grade school classes is not always sufficiently strong or rigorous to satisfy the needs of young adolescents.

Once again a part-time course—entitled "Teaching Sensible Science"—will be offered during this coming school year to help teachers develop a deeper understanding and experience of phenomena-based science so that they can feel more confident using this method in their own classrooms. The course will consist of:

- Workshops and discussions on the foundations of a phenomenological approach to science (primarily the physical sciences)
- Practical sessions with experienced class teachers who will demonstrate these methods and help participants prepare class experiments and demonstrations for use in their own classrooms
- Artistic classes: drawing for the main lesson book, eurythmy
- Daily question and answer sessions to review the day's work

The intention of this course is to give the teacher a living connection to science so that this same enthusiasm, understanding, and interest can be shared when the teacher is working with the students in the classroom. All practicing grade school teachers or those who are slated to teach upper grade school science are strongly encouraged to attend this program.

For descriptions of "phenomena-centered science" see Michael D'Aleo's "What Is Phenomenology?" and David Mitchell's "The Teaching of Science" at www.waldorflibrary.org. For a more detailed description of this course, see the articles by Bob Amis and Michael D'Aleo in the Research Bulletin (Volumes XII & XIII) or at www.waldorfresearchinstitute.org.

Comments from participants in the most recent cycle of this course:

"The Teaching Sensible Science course has revolutionized my consciousness of how the world reveals itself to my senses, and this in turn has thoroughly enlivened my work in the classroom as well as my personal development. …As with all quality courses in teaching, this course gives both practical tools and methods for the classroom and stimulating food for our own inner growth and education."
-- Tim Morrissey, Olympia Waldorf School (former engineer, now class teacher)

"The course has been meaningful to me in terms of how I teach, yet more importantly, how I perceive the world around me. Although I consider what I have gained thus far to be a life-long practice, I have on many occasions enjoyed the keen insights that have come to me, and the lack of assumptions I would normally create in my less-than-awake thinking. I have thoroughly enjoyed working with fellow colleagues from many regions of the country, as we grappled with new ways of seeing the world, as well as growing in our other sense faculties. …I highly recommend this course for those seeking to expand their awareness of the world around them, and hoping to facilitate the same level of growth and awareness in their students." -- Gail Lescher, Live Oak Waldorf School (class teacher)

The course will be divided into three week-long sessions:

SESSION 1: **Baltimore: Thursday eve. 14 February – Wednesday noon 20 February 2013**
Seattle: Sunday eve. March 31 – Saturday noon, April 6, 2013

SESSION 2: **(B) Tuesday eve. 18 June – Monday noon 24 June 2013**
(S) Sunday eve. August 18 – Saturday noon, August 24, 2013

SESSION 3: **(B) Thursday eve. 10 October – Tuesday noon 15 October 2013**
(Columbus Day weekend in the U.S. and Thanksgiving in Canada)
(S) Sunday eve. December 29, 2012 – Saturday noon, Jan. 4, 2014

Presenters:

Lylli Anthon has been a grades teacher at the Halton Waldorf School near Toronto, Canada, for over 20 years. She has taken one class from grades 1 to 8, but now concentrates on grades 6, 7, and 8, having graduated three such groups. She continues as a class teacher to this age group, offering chemistry blocks in grades 7 and 8. Lylli's professional interest is focused on the art of teaching, especially in mathematics and the sciences.

Gary Banks worked as a research engineer on the NASA Space Station project before entering teaching. He took a class through eight grades at the Denver Waldorf School, then worked as high school science teacher at High Mowing and class teacher at Pine Hill Waldorf School before moving to Michigan, where he teaches chemistry and biology at the Rudolf Steiner School of Ann Arbor.

Michael D'Aleo left a career in engineering to become an upper grades class teacher before helping to found the high school at the Waldorf School of Saratoga Springs, where he teaches physics. Co-author of Sensible Physics Teaching, a guide for teaching physics in the 6th, 7th, and 8th grades, Michael is Director of Research at the Saratoga Experiential Natural Science Research Institute (SENSRI); he is also on the faculty of The Center for Anthroposophy's Waldorf High School Teacher Education Program.

Barbara Richardson, who specializes in eurythmy in the workplace, has led artistic classes for many different adult professionals including chemists, doctors, nurses, farmers, and teachers. Formerly at Arcturus Rudolf Steiner Education Program, Barbara is now teacher and Coordinator of Foundation Studies at The Center for Anthroposophy.

Registration

Prompt registration is crucial since sign-up for this course will be limited to 25 people to ensure sufficient individual attention.

Cost

Registration fee for entire three weeks of the program (payable to "Research Institute for Waldorf Education") (non-refundable deposit of $250 due with application) (*late registration fee of $300 added after 15 December 2012*)		$ 1650
Housing (shared room)	w/ breakfast: 17 nights @ $30 per night	$ 425
Housing (private room)	w/ breakfast: 17 nights @ $40 per night	$ 680
Lunch/Snacks (Participants will be on their own for dinner.)		$ 225

Limited financial aid is available to those who send letter of request before the registration deadline.

For further information or to register, contact:

Michael D'Aleo
SENSRI
23 Hutchins Street
Saratoga Springs
NY 12866-2601
Phone: (518) 587-0457 e-mail: *spalight@verizon.net*

To register, complete the form below and submit it with $250 deposit, payable to "Research Institute for Waldorf Education," to the address above before December 15, 2012.

Your name: _____

Your school: _____

Home address: _____

Home phone number: _____ E-mail address: _____

Housing Request:

Shared room _____ Private room _____ None needed _____

Meals:

Lunch/Snacks (circle one) Yes No Special dietary needs _____

About the Research Institute for Waldorf Education

The Research Institute for Waldorf Education is an initiative working on behalf of the Waldorf school movement. It receives support and guidance from the Pedagogical Section of the School of Spiritual Science and financial support through the Association of Waldorf Schools of North America (AWSNA), the Midwest Shared Gifting Group, the Waldorf Schools Fund, the Waldorf Curriculum Fund, and private donors through the Rudolf Steiner Foundation.

The Research Institute was founded in 1996 in order to deepen and enhance the quality of Waldorf education, to engage in serious and sustained dialogue with the wider educational-cultural community, and to support research that would serve educators in all types of schools in their work with children and adolescents.

The Research Institute has responded to the call for research as a top priority of the Waldorf school movement by becoming a supporting organization of AWSNA and by co-sponsoring research projects with the Association and with the Pedagogical Section.

We support research projects that deal with essential contemporary educational issues such as the role of play in early childhood, attention-related disorders, trends in adolescent development and innovations in the high school curriculum, survey of Waldorf graduates, learning expectations and assessment, computers in education, the role of art in education, and new ways to identify and address different learning styles. The Research Institute has sponsored colloquia and conferences that have brought together educators, psychologists, doctors, and social scientists. We have published a *Research Bulletin* twice a year for the last decade, and we are developing and distributing educational resources to help teachers in all aspects of their work.

We sponsor the Online Waldorf Library: www.waldorflibrary.org, whose mission is to make available contemporary writings on Waldorf education, and we host our own site: www.waldorfresearchinstitute.org, where up-to-date research is posted.

The Research Institute is a 501(c) (3) tax-exempt organization and gratefully accepts donations.

Summary of Activities Supported by the Research Institute

Projects

The following projects are in process or have been undertaken by the Research Institute:

Teaching Sensible Science Seminars
Sexual Education Grades 4–12
Survey of Waldorf Seniors
Waldorf High School Research Projects

Books and Papers

The following books and papers were printed by the Research Institute and are available from AWSNA Publications:

- *Topics in Mathematics for the 11th Grade*
- *Tapping the Wellsprings of Health in Adolescence*
- *New Approaches to Teaching Grammar*
- *Developmental Signatures: Core Values and Practices in Waldorf Education for Children Ages 3–9*
- *Education, Teaching, and Practical Life* by Rudolf Steiner
- *Survey of Waldorf Graduates, Phase I*
- *Survey of Waldorf Graduates, Phase II*
- *Survey of Waldorf Graduates, Phase III*
- *Effects of High-Stakes Testing on Children*

Subject-Specific Colloquia, 2000–2010:

Chemistry
Mathematics
Computer and Information Technology
English
United States History
Life Science and Environmental Studies
World History – Symptomatology
Physics

Proceedings for all of the above are available from AWSNA Publications at: www.whywaldorfworks.org.

Resource Development

Online Waldorf Library, a website of resources for Waldorf education

Themes in Waldorf Education, compilation of Rudolf Steiner's indications on teaching language arts and mathematics

Education, Teaching, and Practical Life by Rudolf Steiner

Developmental Signatures – new source book

Earth Science by Hans-Ulrich Schmutz

Over 200 articles placed on OWL from Steiner Library

100+ eBooks created and placed Online for teacher reference

Please visit our website at:

www.waldorfresearchinstitute.org

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Donations

for the continuation of the work of the Research Institute are tax deductible.

Research Institute for Waldorf Education

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I would like an annual subscription to the *Research Bulletin*, starting with the next issue (Volume XVIII Number 1). There are two issues each year.

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