

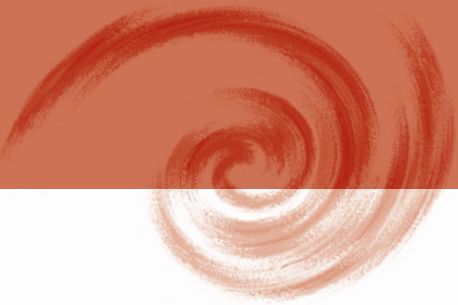


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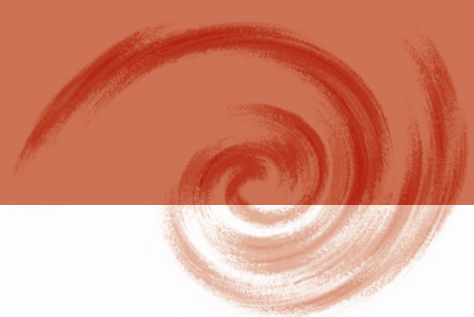
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Report from the Co-Directors

David Mitchell and Douglas Gerwin

During his closing address to the International Kolisko Conference this past summer in Sweden, Christof Wiechert, Leader of the Pedagogical Section at the Goetheanum, divided the first century of Waldorf education into three distinct periods.¹ The first phase began with the original Waldorf School in 1919 and lasted some 30 years into the early 1950s; he characterized this period as “the descent of the Waldorf pedagogical impulse into the world.” During this time Waldorf education took root, first in Germany, then spread to other parts of Europe and, gradually, to other continents, starting with the United States in the 1920s.

Then came a second phase, which Wiechert characterized as the “age of pedagogical heroes.” During this time a gradually increasing number of Waldorf schools were shepherded by strong and often beloved individuals, who served essentially as self-reliant leaders surrounded by dedicated circles of teachers and parents. This phase, lasting somewhat more than 30 years, carried Waldorf education into the late 1980s.

Now, we have entered into a third and final phase of Waldorf education in this century in which individual heroes have either passed away or, at least, handed on the leadership of their schools to a new generation of teachers—and to a growing number of administrators. These groups face the task of leading their schools, not simply as single individuals, but in strong circles of collaboration. The key to success in this third phase, according to Wiechert, is that all of the colleagues in a school, not only those designated as its leaders, feel part of this circle of leadership. Otherwise, there is the risk that schools will attempt to hearken back to earlier—but by now outdated—forms of governance, or that the impulse of Waldorf education will simply withdraw from the field of education altogether and await another century and a new set of impulses.

Wiechert’s clarion call for a more intensive collaboration among Waldorf school educators underscores the importance of Waldorf

researchers sharing their insights, as well as their unresolved questions. Indeed, the purpose of this Kolisko conference of teachers and physicians—held every four years in the name of Eugen Kolisko, the first Waldorf school doctor—is to further collaboration among Waldorf educators, on the one hand, and physicians and therapists, on the other. At Wiechert’s prompting, some 40 conference participants interested in how Waldorf school graduates fare after high school met twice during the week-long gathering to hear initial findings of a joint survey of Waldorf alumni in North American and Europe. Results of this survey, which involved some 550 North America and more than 2,000 German and Swiss Waldorf school graduates, are previewed in this issue of the *Research Bulletin* and will appear later this year in a separate monograph.

This is only one of several collaborative projects under way between the Research Institute and the Pädagogische Forschungsstelle (the research arm of the association of German Waldorf schools, based in Stuttgart). An additional joint research venture, still in its early phase, concerns the effects of testing and other forms of assessment on children. It is planned that the collaborative work will result in a paper in support of children everywhere in the world who are confronted by high stakes testing. Alternative methods of student assessment from Waldorf schools will also be explored. If you have contributions that you would like to have considered, please contact us.

On the North American continent, the Research Institute continues to sponsor individual research projects and surveys, some of which are described in this issue, and to facilitate a new cycle of “Teaching Sensible Science,” a program for Waldorf school class teachers designed to deepen their teaching of science in the elementary grades. Beyond these special projects, the Research Institute provides ongoing support to teachers in the form of the Online Waldorf Library—www.waldorflibrary.org—and its own

website—www.waldorfresearchinstitute.org.

With the steady backing of the Waldorf Educational Foundation, the Waldorf Schools Fund, a small circle of individual and anonymous donors, and a growing number of supporting members and individual subscribers, the Research Institute has been able to stimulate new research projects within the Waldorf school movement and reach out to like-minded groups engaged in the educational issues of our times. The next cycle of projects includes:

- Further analysis of the Survey of Waldorf Graduates (Phase III)
- Survey of Waldorf school parents
- Research into the teaching of grammar
- Publication of a new set of education lectures by Rudolf Steiner, not previously translated, *Education, Teaching, and the Practical Life* (see excerpt in this edition of the *Research Bulletin*)
- Commissioning of articles by Institute Research Fellows

- Research on the effects of testing on children
- Joint publication with the Waldorf Early Childhood Association of North America (WECAN) and the Association of Waldorf Schools of North America (AWSNA) on research in Sweden and Germany on first grade readiness and school entry.

The Research Institute for Waldorf Education has several projects worthy of funding beyond the foundation grants that we currently receive. If you have the desire to support and further these efforts, a tax-deductible donation would be gratefully received.

1. Christof Wiechert, Lecture at the International Kolisko Conference, Järna, Sweden, August 2006.

Stephen Keith Sagarin

Clarity, depth, and perspective—attributes of sight—characterize the contents of this issue of the *Research Bulletin*. Reading the contents of this issue we can experience the clarity, depth of field, and perspectives these authors bring to their material. What will we do, however, with this clarity? How will we employ our new sense and knowledge? The articles collected here aim to affect the way we teach, the way we think about our students, and the way we live in the communities of our schools. Clear sight can lead to confident action.

The clear sight of some of our authors, however, reveals potentially controversial points of view. Judy Lubin, an economic theorist and Waldorf school parent, describes ways in which the U.S. economy is changing—has already changed—in ways that make Waldorf school students particularly well suited to success. This is not to say that Waldorf school students will become the wealthiest members of a ruling class, but that their creativity and flexibility of thinking will enable them to gain and retain employment more easily than someone educated better to fill a pigeonhole. Further, Lubin makes clear that Steiner's view of the appropriate role of a truly independent individual in a tripartite social organism is as an entrepreneur. Given cooperative, non-competitive interpretations of Steiner's social work, it is refreshing to read Lubin's possibly controversial interpretation and realize that it is grounded firmly in Steiner's work.

Daniel Hindes, similarly, bases his look at teaching left-handed children on Steiner's words. Any Waldorf school teacher who believes that there is a pat "Waldorf" approach to left-handedness will find him- or herself confronting descriptions that are nuanced and that leave room for experimentation and engagement with actual students, not images of pathology.

When interpretations of Steiner's work are based clearly on his words and yet still strike us as controversial, assuming we are willing to think through what we believe we already know, we are

bracingly drawn from our conventional thinking into a new engagement with Steiner's work. This can only renew us and our work.

In his report on schools' festival lives, Eugene Schwartz tempts controversy by challenging us to reverse a trend toward inclusive festivals that are subsequently drained of real meaning. Can we recover the meaning of festivals without the risk of offending one or another group of parents or teachers? A question that he does not ask but that we pose here, possibly for future consideration, regards the appropriate role of festivals in Waldorf schools to begin with. Steiner wrote profoundly about education. He wrote profoundly about festivals and their meanings. But it is not clear that festivals necessarily or even appropriately need to find expression in Waldorf schools.

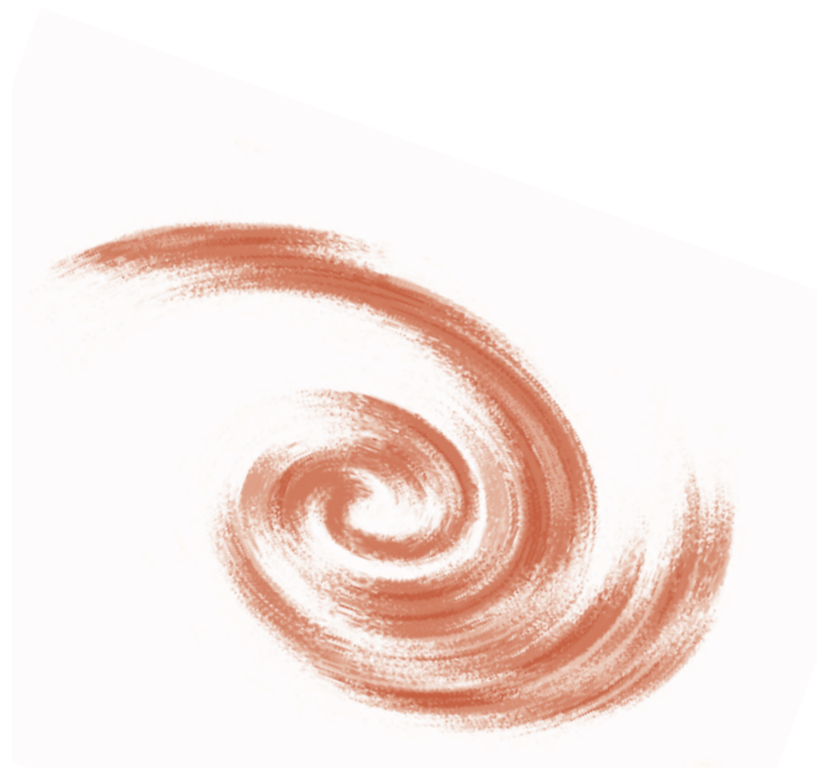
We invite readers to respond in writing to these or other views; conversation among readers can help to clarify our understanding of Steiner's work and its implementation in Waldorf schools.

Not all of the articles and reports here necessarily contain seeds of controversy. Arthur Auer beautifully limns the teaching of reading, deepening and grounding what many of us believe we know already, even if we do not know the why and how. Dorit Winter uses the polarity between objective love and subjective love to examine the sometimes difficult relationship between parents and teachers regarding their students and children. Susan Johnson offers a holistic look at the constitutional challenges that occupy many of our students. Jane Swain relates cognitive development to body and, especially, hand development in young children. Finally, Rudolf Steiner, in a previously unpublished excerpt from a book forthcoming in English, challenges us to understand and take seriously the idea of spiritual research.

The contents of this issue achieve more fully than usual our aim to speak in each issue to teachers of high school, elementary school, and early childhood. The articles examine and present much that we know is good and right about what happens in Waldorf schools. They also describe

ways in which we can do better by our students. We may have wondered how good we are—how close are we to fulfilling Steiner's view of good education? The answer, in part, is that we are very good at some things and virtually ignorant of others. Where controversy appears, we must acknowledge that we may have seen things incor-

rectly, and, consequently, we may need to change old habits and practices. And some perspectives—I'm thinking particularly of Dorit Winter's here—ask us to think in ways we may not have previously in order to find solutions to the challenges that face us.

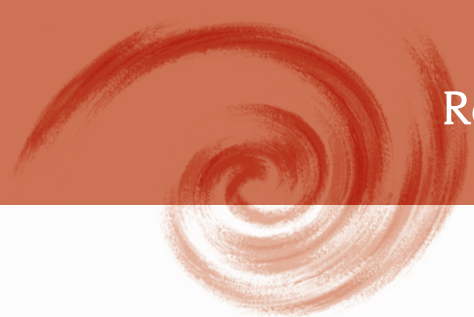


The Research Institute is seeking financial support to undertake new research. If you wish to make a contribution or are aware of an individual or a Foundation that may be interested in supporting the research of Waldorf education, please contact David Mitchell or Douglas Gerwin at:

researchinstitute@earthlink.net

or

(603) 654-2566



Reading in Waldorf Schools, Part II: Beginning in Flow and Warmth

Arthur Auer

Early Reading

When creative human capacities such as imagination are inhibited through misguided educational methods, persons can find it challenging or impossible to realize their fullest potentialities in life. Rudolf Steiner observed that the effects of reading too early combined with “faulty methods,” which he was personally spared in his early years, can interfere with a person’s destiny. In his words, they “make bodies unfit” physiologically and “harden” them so that the individual spirit “cannot enter fully into the body”:

...It may not be at all beneficial for such a child to learn to read too early. For by doing so something is being blocked for life. ...For it is possible to trace back a hardening of the entire human organism...to a faulty method of introducing reading to a child.¹

In various other lectures, Steiner cites similar effects² attributable to one-sided and overly intellectual early reading programs, including:

- Weakening of the breathing process, congestion, and asthma³
- Migraine-like conditions⁴
- Overtaxing the [brain’s] gray matter, incurring unusual salt deposits⁵
- Diverse forms of sclerosis, such as arteriosclerosis⁶

Steiner refers to these negative effects, however, as “subtle,” which probably means that in a strict medical sense they are physically hard to measure, even today with our chemical analyses, MRIs, and other technologies. Each of the indications cited above needs to be examined in more depth to identify correlations with recent findings of other researchers.⁷

Flow

How we are able to extend ourselves into life is intimately connected with how we inhabit our physical bodies and minds as malleable instruments of the spirit and its intentions. Conditions such as premature hardening and fixity, according to Steiner, interfere with the penetration of a human ego into an organism. How a child interacts with and learns from the world can either strengthen her natural instinct to connect, and stay connected, or isolate and cut her off from life. Steiner provocatively states that a major goal of education is to teach a child to breathe properly. Not only does he refer to the physical process, but also to educating a balanced breathing and a flowing in and out of the soul and spirit in relation to the body and the world.

The life-filled nature of young children calls for, above all, imaginative and inspired artistic movement, flow and “breathing” in the educational process. Rhythmic flow promotes connection and growth and helps dissolve the hardening elements and influences to which he refers. To attain fullest expression, the human spirit or ego needs to be able to shape a growing organism that is fluid, permeable, and flexible—and one that also allows it to retain the child’s innate spiritual capacity to creatively flow out into the world and be at one with it. According to Steiner’s physiological insights, it is no coincidence that our bodies consist of so much water and other flowing elements. The younger a human being, the more she consists proportionally of water, the embryo being mostly water! In speaking of the education of children, Steiner makes a striking correlation between learning and our fluid and gaseous natures. Water and air allow life, warmth, consciousness, and learning capacities to enter and flow flexibly through a child’s being in a human, moral way:

Too little attention is paid by people with a materialistic outlook to the mutual interaction between the soul and spiritual nature and the

physical body...it no longer has an understanding of the material processes, which it observes only externally, and that it no longer recognizes that a moral element enters the physical...90% of the human body consists of liquid substances which are in constant flow and which, consequently, cannot be drawn in fixed outline.... We are [also] part of the air surrounding us, which is constantly fluctuating within us. And what of the conditions of warmth? In reality we have to discriminate between our solid, liquid, aeriform, and warmth organizations....[If the] human being is a solid organism [as the physiology textbooks misleadingly depict and imply]—if this were really the whole truth, then it would be little wonder if the moral element, the life of the soul, could not penetrate this solid bone matter or this apparently rigid blood circulation. The physical and moral life would have to have separate existences. But if you include the liquid, gaseous and also the warmth organizations in your picture of the individual, then you have a fine agent, a refined entity—for example, in the varying states of warmth for allowing the existing moral constitution to also extend into the physical processes of warmth.... This unity between what is physical and what is of a moral nature. ...It is essential to have this awareness. ... It will enable us to know how to treat the child who otherwise will develop inner opposition towards what it has to learn. It should be our aim to allow our young pupils to grow gradually and naturally into their subjects, and then they will also love what they have to learn. But this will happen only if their inner forces become fully involved in these new activities.⁸

Accordingly, the path to reading as a culminating cerebral activity does not begin with prematurely hardened, fixed letter outlines of fine machine print but rather with warm and flowing artistic activity that appropriately invigorates and prepares the soft organism of the child in her tender, formative state.

Carla Hannaford similarly stresses the significance of water and flow in the functioning of learning and intelligence:

**It is essential to
[be aware that
there is] a unity
between what is
physical and what
is of moral nature.**

[Water] is the magic elixir for learning, the “secret potion” if you will. Water is one of the most important and most abundant inorganic substances in the body. It makes up from 45% to 75% of our total body weight.... Water comprises more of the brain (with estimates of 90%) than of any other organ of the body, with muscles next at 75%, and then kidneys.⁹

Hannaford describes many different ways in which “water assists learning and thought.” It plays, for example, a vital role in nerve net development, dendritic growth and the

healthy “dissolution of salt,” which corresponds with Steiner’s concern about the “incurring of unusual salt deposits.” Water is also critically responsible for the proper maintenance of cellular polarity that in our mental processing means “faster information processing for higher level reasoning” and “allows selective focus.”¹⁰

The water/electrolyte balance is so critical to the living system....

High cellular polarity (membrane potential) raises the threshold of sensitivity at the cell membrane, effectively increasing the integrity of the cell membrane by lowering its sensitivity to outside stimuli. Surrounded as we are by a world of stimuli, high membrane polarity gives us a choice. It takes more of a stimulus to activate a nerve impulse, so we can choose what stimuli we wish to focus our attention on and not be distracted by irrelevant stimuli. As we will see, this enhances selective focus for increased learning, strengthens immunity and health, and protects against the effects of external electromagnetic fields.¹¹

Healthy breathing of the flowing element of air and oxygen is also another indispensable factor in the learning process, according to Hannaford. She finds it significant that “the brain makes up only one fiftieth of the body’s weight and yet it uses an amazing one fifth of the body’s oxygen.”¹² Such facts can be related to Steiner’s statements that a healthy education is really learning to breathe properly and that a weakening of the breathing process and congestion interfere with learning.

Logic (Left) Hemisphere

Pieces observed first
Parts of language
Language syntax, semantics
Letters, sentences
Language oriented
Technique
Art (media, tool use, how to)

Gestalt (Right) Hemisphere

Whole picture observed first
Language comprehension
Image, emotion, meaning
Rhythm, flow, dialect
Feelings/experience oriented
Flow and movement
Art (image, emotion, flow)

Equally interesting are Hannaford's characterizations of the functions of the right or Gestalt brain hemisphere compared to left or logic hemisphere, several of which indicate the importance of flow in learning. Above is a partial list of comparative functions.¹³

Lively six and seven year olds enter first grade relating to the world in a right hemisphere mode. The Gestalt hemisphere becomes enlarged and articulated itself during the ages of roughly four to seven years. In an evolutionary sense, its mode can be viewed as the older one and echoes the consciousness of ancient peoples, which was configured for mythic image and flow in nature rather than logic and literacy. In contrast, the left, logic hemisphere does not typically develop and expand until ages seven to nine.¹⁴ At school age, the conventions and requirements of modern civilization dictate that children learn how to make the evolutionary switch to an increased emphasis on left hemispheric modes of learning. Ideally, they do this in an organic and developmentally appropriate way so that valuable right brain capacities such as imagination are not eclipsed and lost; and so that they can utilize the abilities of both hemispheres and move between them at will via the corpus callosum. Some studies have shown that females are more versatile in using the corpus callosum to go back and forth between hemispheres than are males.

Given this developmental sequence, Hannaford concludes, "The most natural way... for children to learn when first in school at age five and six is through image, emotion and spontaneous movement."¹⁵ This is just what Waldorf education strives for—a balanced development of thinking as picture, feeling, and willed activity—of head, heart, and hands. It seeks to educate children so that they have ready access to all sides

of their being and to multiple intelligences. Children then learn to flow back and forth with versatility not just between their cerebral hemispheres but also within their whole bodies and with the world.

On this topic of flow and learning, the work of Mihaly Csikszentmihalyi at the University of Chicago is also interesting. He characterizes very high states of learning, engagement, and performance as "flow." In this condition, human beings become joyfully absorbed in a given pursuit in an extraordinary way.¹⁶ These studies caught the attention of educational psychologists like Daniel Goleman, who developed the idea of emotional intelligence, and Howard Gardner, originator of the theory of multiple intelligences. Goleman believes:

being able to enter flow is emotional intelligence at its best; flow represents perhaps the ultimate in harnessing the emotions in the service of performance and learning. In flow emotions are not just contained and channeled, but positive, energized, and aligned with the task at hand.¹⁷

And, later:

[T]he flow model suggests that achieving mastery of any skill or body of knowledge should ideally happen naturally, as the child is drawn to areas that spontaneously engage her—that, in essence, she loves. That initial passion can be the seed for high levels of attainment.¹⁸

Gardner, according to Goleman, "sees flow, and the positive states that typify it, as part of the healthiest way to teach children, motivating them from the inside rather than by threat or promise of reward."¹⁹ Such psychological descriptions of the flow state contain many striking par-

allels to how Steiner believes children should experience the learning process with love, devotion, and joy. They become engaged in their whole being and feel a subject right into their toes. Such a heightened state of learning is more than mere self-absorption in an activity but includes the capacity to flow into the whole environment and live into other beings and other objects in a warm, loving, and deeply interested way. It involves being at one with them in consciousness, and learning from and understanding them compassionately from the inside—a capacity Steiner calls intuition.

Warmth

Like water, warmth is another vital flowing element that is at the core of our human nature and of the Waldorf schools' method of education. In a healthy writing and reading process, children need to warm to the letters and words they are learning in order to digest them properly and integrate them into their beings. For this reason, Waldorf school teachers warmly animate the alphabet letters so that they become familiar and lovable friends. (I will give examples of how this is done in part III of this paper.) The children come to love drawing and writing their letter companions. Love is the ultimate human warmth, love that welcomes the incarnating individual into the body and into the learning process in the most efficient and penetrating way. The role played by love, warming, and passionate interest—being fired up, as adolescents say—however, goes far beyond making the learning process pleasant and palatable. Warmth and love are, I believe, the driving forces of human cognition and of its central core, called imagination, the inner image-making capacity of the mind's eye. This is because human beings are naturally designed so that every perception and experience has its image in us and every image is imbued with an emotion or feeling.

In several thought-provoking lectures on the physiology of writing and reading, Dr. Karl Koenig explains and illustrates how the alphabet has its

Warm love is the main element intended by nature and spirit to make this fused emotional-cognitive learning system function and flow effectively at the performance levels of genius for which it was designed.

origins in the deeply felt image-making faculty of the human being. As he points out, "Every kind of understanding comes about through images."²⁰ Image making or imagination is the core function of our human mode of cognition. And, according to Steiner, "the work of the imagination shapes and builds the forms of the brain."²¹ These insights correlate with current research.

Neuroscientist Antonio Damasio, for example, holds that we translate almost all of our experiences into mental images or mental patterns that are the primary units of our minds. Furthermore, mental images are not just visual, but also encompass "auditory [images], olfactory, gustatory, [and] somatosensory." The somatosensory is a "modality [that] includes ... touch, muscular, temperature, pain, visceral, and vestibular [images]."²² Equally significant, each of our mental images has an emotional component. Neurologically, we cannot just perceive or know something in a neural fashion. We are always moved within—

we experience "e-motion"—feel the thing on some level, even if it is not conscious.

...[F]ew if any perceptions of any object or event, actually present or recalled from memory, are ever neutral in emotional terms. Through either innate design or by learning, we react to, perhaps all, objects with emotions....²³

Virtually every image, actually perceived or recalled, is accompanied by some reaction from the apparatus of emotion.²⁴

Certainly on a conscious level we all have evidence of how strong, vivid emotions or feelings cognitively call up and are linked with strong vivid memory images. Emotion and feeling are without doubt major organizers in our cognitive life. Damasio describes how the flow of our feeling and emotional life is inextricably bound up with the flow processes of our perceiving, knowing, and learning. The multiplicity of images we gather from experiences is integrated and coordinated in a wondrous mental flow process we call thinking:

The process we come to know as mind when mental images become ours as a result of consciousness is a continuous flow of images many of which turn out to be interrelated.... Thought is an acceptable word to denote such a flow of images.²⁵

The currents of this image flow of our thinking, centered in the watery brain, intimately weave together with the image flow of emotion and feeling, centered in our liquid blood and moist breath. Both become connected in the process of learning:

[A]ssociative learning has linked emotions with thoughts in a rich two-way network. Certain thoughts evoke certain emotions and vice versa. Cognitive and emotional levels of processing are continuously linked.²⁶

In my experience, warm love is the main element intended by nature and spirit to make this fused emotional-cognitive learning system function and flow effectively at the performance levels of genius for which it was designed. An education of fear or cold, dry, information inputs, geared to test results, does not make biological, psychological, or spiritual sense, is uninformed, and ignores current neuroscience. It freezes and hardens the flow system and reduces and deadens human potential dramatically, even human electrical potential. It is no coincidence that our mental life is reflected in the beautiful wave and flow patterns of synaptic firings within us. Even on a cellular level we become literally fired up and energized in our thinking, feeling, and doing. This physical firing is not just a nice metaphor for a warm fired up interest on a mental and emotional level but is a part of how we are created as integrated beings of energy and imagination. Hannaford well summarizes in general terms the implications of such neuropsychological findings for education when she concludes:

Our mind/body system learns through experiencing life in context, in relationship to everything else, and it is our emotions, our feelings that mediate that context. In order to learn, think or create, learners must have an emotional commitment. Otherwise education becomes just an intellectual exercise.... Students who are highly motivated to learn, already possessing an emotional commitment, will learn because they love to learn.²⁷

Anchoring the learning of writing and reading firmly in the activity of imagination at the core of human cognition and in the warm energy of deep human feeling powerfully fosters this commitment to learning—one that is educationally woven into the very fibers of a child's being for life.

(In a concluding article, "Reading in a Waldorf School, Part III," I will illustrate and discuss specific examples of various approaches to introducing writing and reading.)

Endnotes

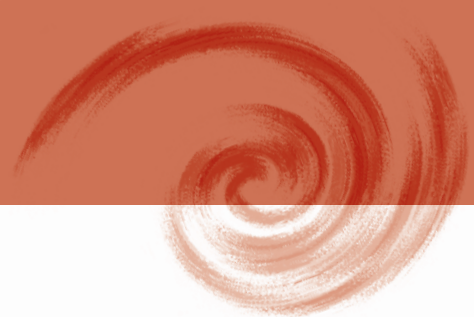
1. Steiner, R. (1988) *The Child's Changing Consciousness and Waldorf Education*, CW 306. 88.
2. Readers are encouraged to study these physiological indications in contexts of the full lectures, which often include example of how to introduce reading in a healthy manner. While he was not trained as a physiologist, Steiner did have an extensive scientific education and kept himself up to date with research in many fields, including the neuroscience of his times. Many of his pedagogical recommendations anticipate the neuropsychological discoveries of the last fifteen years and their enormous implications for teaching children. Steiner strove to anchor Waldorf school methods firmly in physiology and charged the Waldorf school doctor with a vital role in working with the faculty.
3. Steiner, R. (1997) *Essentials of Education*, CW 308. 33.
4. Steiner, R. (1996) *Education for Adolescence*, CW 302. 63.
5. *Ibid.*, 62-63.
6. Steiner, R. *The Child's Changing Consciousness and Waldorf Education*, 86
7. We can conduct some informal research on ourselves individually and observe such ill effects when we experience how our eyes, heads, and bodies feel when we have read and studied too much and too long, say for an examination. We feel too full of something, emotionally pent up, nervous, frazzled, and even burned out. We need to get up, move about, and seek fresh air outside. Motor activities like walking and exercising bring balance and refreshment. Raking leaves can be surprisingly restorative with its rhythmic and satisfying grooming of the earth, the smell of leaves, the sensory feast of everything in surrounding nature. One hour of vigorous activity in the front yard can wipe away the hangover of four hours of work on the computer.

8. Steiner, R. (1988) *The Child's Changing Consciousness and Waldorf Education*, CW 306. 87-88.
9. Hannaford, C. (1995) *Smart Moves: Why Learning is Not All in Your Head*, 138.
10. Ibid., 139.
11. Ibid., 140.
12. Ibid., 146.
13. Ibid., 79.
14. Ibid., 83.
15. Ibid.
16. Csikszentmihalyi, M. (1990) *Flow: The Psychology of Optimal Experience*.
17. Goleman, D. (1995) *Emotional Intelligence*, 90.
18. Ibid., 94-95.
19. Ibid.
20. Koenig, K. (1957) *Campbell Conferences and Seminars on Reading and Writing*, vol.1, 16. Koenig was founder of the Campbell/Steiner communities for the mentally challenged.
21. Steiner, R. (1996) *The Education of the Child*, CW 34. 20.
22. Dimasio, A. (1999) *The Feeling of What Happens*, 318. Interestingly, Dimasio does "not use the word image to refer to... the neural aspect of the process [for which he] use[s] terms such as neural pattern or map." 317.
23. Ibid., 94.
24. Ibid., 58.
25. Ibid., 318.
26. Ibid., 71.
27. Hannaford, C. (1995) *Smart Moves: Why Learning is Not All in Your Head*. 56.
28. Editor's note: "CW" refers to Steiner's Collected Works. This designation often appears also as GA, an abbreviation of the German *Gesammt Ausgabe*.

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Rudolf Steiner on Teaching Left-Handed Children

Daniel Hinder

Rudolf Steiner's position on the pedagogical treatment of left-handed children has been much misunderstood over the years. This is partly due to the obscurity of the references. Steiner's indications concerning the pedagogical treatment of left-handed children are buried among the transcriptions of his spoken indications on education. They are not in written works or essays. Some of them were only officially published in English in 1998, and others remain unavailable to this day. The "telephone effect" also contributes to this misunderstanding. When a complex statement is retold from memory through a chain of three or four people, it is inevitably simplified and altered, and this appears to be the case with several misunderstandings that circulate to this day in Waldorf school circles.

Contrary to what we occasionally hear, Steiner did not advocate switching left-handed children to make them right-handed. Steiner's actual position, detailed below, was that ambidextrous children younger than nine should be encouraged to write with one dominant hand, preferably the right. His remarks were made under specific circumstances, and with a number of qualifiers.

Some advocates of left-handedness maintain that such a switch is improper, and even that it constitutes child abuse. The most extreme variation of this argument is that anything that interferes in any way with the inclinations of children to write with whichever hand they prefer is abusive. This position raises the question: Does any pedagogical treatment whatsoever that interferes with a child's natural inclination to do anything also constitute child abuse? Or is this only true when considering the writing hand? Since much education consists of guiding and modifying children's natural inclinations, I do not believe that it

is reasonable to reject Steiner's position outright. That said, Steiner's statements deserve scrutiny.

Steiner's Indications

Steiner's complete statements on left-handedness in children come from the following sources: the two volumes in English (three volumes in German) of Faculty Meetings (GA 300 a, b, and c), volume 309 of the complete works (translated as *The Roots of Education*; the translation, however, is lacking the question and answer section that contains the statement on left-handedness), and the lecture cycle published as *The Renewal of Education*.

The most reliable summary of Steiner's views is most likely found in the untranslated portion of *The Roots of Education*. This is a word-for-word stenographic reconstruction of Steiner's direct

answer to the question. It is also chronologically the last of Steiner's indications on the subject. From the question and answer session following the lecture of April 15, 1924:

Question: How is one to introduce writing to left-handed children?

Rudolf Steiner: With left-handed children it is necessary that you attempt to do as much as possible to change them into right-handed children. Only, if you notice in practice that it is not working at all, then naturally you must then work with their left-handedness. But what we really want is that such left-handed children become right-handed ones; this is usually successful, especially in the case of writing, longhand writing. It is naturally necessary that one closely observe the child that one is attempting to switch from left-handed to right-handed writing; observe how subtly, at a certain stage, when he or she has made an effort for a time, a certain fluidity arises in the manipulation of ideas. Observe

Rudolf Steiner's comments on dominance and on switching children from left- to right-handedness are more thoughtful and complex than many teachers believe.

also how the child under certain circumstances continually stumbles over his or her speech due to thinking too fast, and the like. You must observe this with the greatest care and then make the child him- or herself aware of such things, because the relationship between the development of the arm and hands and the development of the speech center in the brain is considerably more important to the development of the whole human being than we generally think. Many other things besides this have an influence on whether a child is left- or right-handed.¹

This quotation shows how easy it would be to misunderstand Steiner's position. If we look only at the first sentence, it would appear that Steiner intended teachers to forcibly switch all left-handed children. But Steiner's actual position is not nearly that simple, and in practice could even leave a child to write with the left hand. Notice also Steiner's basic approach—the emphasis on close observation, the warning to discontinue if the treatment is not working, and the clearly stated pedagogical goals. Prescient, too, is Steiner's observation of the relationship between fine motor skills and cognitive development, an area that is just beginning to come into prominence eighty years later.

The next quotations are taken from the volumes *Faculty Meetings with Rudolf Steiner*. The contents of these volumes belong to the least reliable portion of Rudolf Steiner's works. What we read is a translation of a summary by an editor of the notes of some of the people who attended the faculty meetings. These are not word-for-word stenographic recordings, and not anything Steiner ever reviewed himself. Editors Erich Gabert and Hans Rudolf Niederhäuser, working at the Steiner Archive, constructed these volumes using primarily the notes of Dr. Karl Schubert, one of the founding teachers at the first Waldorf School, and complemented by the notes of other participants. As Gabert and Niederhäuser note in their preface, "...the notes all have a very fragmented quality. The editors' task was to position the fragments so that they support one another, thus giving the most complete picture possible." Heavy editing went into the

Prescient, too, is Steiner's observations of the relationship between fine motor skills and cognitive development.

reconstruction of Steiner's statements, and these are not at all his actual words. There was considerable debate whether or not even to publish them, but, since even less complete versions were circulating, the Archives decided to proceed.

A teacher asks about writing with the left-hand.

Dr. Steiner: In general, you will find that those children who have spiritual tendencies can write without difficulty as they will, left- or right-handed. Children who are materialistically oriented will become addled by writing with both hands. There is a reason for right-handedness. In our materialistic age, children who are left-handed will become idiotic if they alternately use both hands. That is a very questionable thing to do in those circumstances that involve reasoning, but there is no problem in drawing. You can allow them to draw with either hand.²

Note that the state Steiner wishes to avoid is writing with both hands, not writing exclusively with the left. If this quotation accurately reflects Steiner's position, it would clearly be preferred by Steiner that a left-handed child remain exclusively left-handed in his or her writing than that he or she start writing occasionally with the right hand. This statement is quite a bit shorter than the answer of April 15, 1924; it may well be abridged, missing qualifiers and explanations. Further, we should note that the phrasing is a bit harsher than is typical of Steiner—particularly the word "idiotic" seems atypical. Concluding anything from such fragmentary indications is difficult.

A question about piano playing sheds a bit more light:

A music teacher: I would like to ask about learning to play the piano in connection with using both hands.

Dr. Steiner: That is a very correct perception. It is true that it is possible to correct left-handedness quite easily through practicing the piano. That is something we need to keep in mind. We should always correct left-handedness. However, in this connection, we should also take the child's temperament into account so

that melancholics give the right hand preference. You can easily find a tendency with them to play with the left hand. We should emphasize the left hand with the choleric. With phlegmatics you should see to it that they use both hands in balance, and the same is true for the sanguines. That is very important. It would also be an advantage if you tried as much as possible to train children away from simply mechanical feeling when playing the piano, but have them learn to play the keys as such. They should learn to feel the various places on the piano up and down, right and left, so that they feel the piano itself. It is also a good idea to have them play without any written music, at least in the beginning.³

The answer already indicates that the question is incomplete. What is a correct conception? Inasmuch as we can reconstruct the thought process from this fragmentary source, Steiner appears to be addressing lateral dominance issues in general, indicating that piano playing has a beneficial effect especially for the left-handed. He also appears to be warning that in observing handedness, the educator should be aware of the possible influence of temperament on the diagnosis. Steiner also gives general tips on piano instruction. This paragraph in particular seems to be abbreviated.

Here is Steiner's later answer to a more direct question: A teacher asks whether the tendency towards left-handedness should be broken.

Dr. Steiner: In general, yes. At the younger ages, approximately before the age of nine, you can accustom left-handed children to right-handedness at school. You should not do that only if it would have a damaging effect, which is very seldom the case. [See the faculty meeting of December 18, 1923. The notes of one teacher at the December meeting relate the following: "That [the need to switch to the right hand for writing] is not true for clearly left-handed people. Those who are clearly left-handed should be allowed to write with their left hand."] Children are not a sum of things, but exponentially complicated. If you attempt to create symmetry between the right and left with the children, and you exercise both hands in balance, that can lead to weak-mindedness later in life.

The phenomenon of left-handedness is clearly karmic, and, in connection with karma, it is

one of karmic weakness. Allow me to give an example: People who overworked in their previous life, so that they did too much, not just physically or intellectually, but, in general, spiritually, within their soul or feeling, will enter the succeeding life with an intense weakness. That person will be unable to overcome the karmic weakness in the lower human being. (The part of the human being that results from the life between death and a new birth is particularly concentrated in the lower human being, whereas the part that comes from the previous earthly life is concentrated more in the head.) So, what would otherwise be strongly developed becomes weak, and the left leg and left hand are relied upon as a crutch. The preference for the left hand results in the right side of the brain, instead of the left, being used in speech.

If you give in to that too much, then that weakness may perhaps remain for a later, a third earthly life. If you do not give in, then the weakness is brought into balance.

If you make a child do everything equally well with the right and left hands, writing, drawing, work and so forth, the inner human being will be neutralized. Then the I and the astral body are so far removed that the person becomes quite lethargic in later life. Without any intervention, the etheric body is stronger toward the left than the right, and the astral body is more developed toward the right than the left. That is something you may not ignore; you should pay attention to it. However, we may not attempt a simple mechanical balance. The most naive thing you can do is to have as a goal that the children should work with both hands equally well. A desire for a balanced development of both hands arises from today's complete misunderstanding of the nature of the human being.⁴

This is the second longest passage on the subject. Even if these words are not an oversimplification in the notes of the participants, and accurately reflect Steiner's actual statements, it is important to note Steiner's caveat, consistent with the Hippocratic Oath: First, do no harm.

A final quotation from the Faculty Meetings:

A teacher: S.J. in the 7th grade is doing better writing with her left hand than with her right.

Dr. Steiner: You should remind her that she should write only with her right hand. You could try having her lift her left leg so that she hops around on her right leg, that is, have her jump around on her right leg with her left leg drawn up close to her. She is ambidextrous.

If there are children who are clearly left-handed, you'll need to decide. That is something you can observe. You need to look at the left hand. With real left-handed children the right hand appears as though exchanged; the left hand looks like the right hand in that it has more lines than the right hand (Footnote: The notes of one of the teachers contained the following: "That is not true for clearly left-handed people. Those who are clearly left-handed should be allowed to write with the left hand."⁵)

This could also be done through the eyes. You could have children who are really left-handed raise the right hand and look at it with both eyes. Observe how their eyes cross as they move their gaze up their arm until they reach the right hand and then move their gaze back. Then have them stretch their arm. Do that three times.⁶

In this quotation Steiner is again specifically addressing ambidexterity. This is clear even through the fragmentary notes of the participants, each of whom appears to have understood the ideas in his or her own way. Steiner's recommendation is specifically for one student, known personally to him. His diagnosis is that this student is ambidextrous, and for that reason should be encouraged to write with the left hand. Steiner further gives indications to the teachers as to how they are to distinguish true left-handedness from ambidexterity. Like the other passages, it shows a great deal of flexibility in Steiner's approach to the whole question of how to handle children who use the left hand for writing.

Rudolf Steiner made the following remarks during a series of lectures to an audience of public school teachers in Basel, Switzerland. This quotation is from the lecture of May 7, 1920. Again the remarks deal primarily with the question of

ambidexterity, and not specifically left-handedness.

Now I come to a question I have often been asked and that has some significance, namely, the question of left-handedness or ambidexterity.

[I]t would clearly be preferable to Steiner that a left-handed child remain exclusively left-handed in his or her writing than that he or she start writing occasionally with the right hand.

Right-handedness has become a general human habit that we use for writing and other tasks. It is certainly appropriate to extend that by making the left hand, in a sense, more dexterous. That has a certain justification. When we discuss such things, however, our discussion will bear fruit only if we have some deeper insight into the conditions of human life. When we move into a period in which the entire human being should be awakened, when we move into a period in which, in

addition to the capacities for abstraction that are so well developed today, the feeling for culture and a capacity to feel as well as act would play a role, we will be able to speak quite differently about many questions than we can now. If education continues as it is today, so that people are always stuck in abstractions (materialism is precisely what is stuck in abstractions) and education does not help us to understand the material through the spiritual then, after a time, you will become convinced that teaching people to use both hands for writing will trap them in a kind of mental weakness. That results in part from how we are today as human beings, and how we presently use the right hand to a much greater extent than the left. The fact that the whole human being is not completely symmetrically formed also plays a part, particularly in regard to certain organs. When we use both hands to write, for example, this has a deep effect upon the entire human organism.

I would not speak about such things had I not done considerable research in this area and had I not tried, for example, to understand what it means to use the left hand. When people develop a capacity for observing the human being, they will be able to determine through experimenting what it means to use the left hand. When human beings reach a certain level of independence of the spirit and soul from the physical body, it is good to use the left hand; but the dependence of modern

people upon the physical body causes a tremendous revolution in the physical body itself when the left hand is used in the same manner, for example, in writing, as the right. One of the most important points in this regard is that this would stress the right side of the body, the right side of the brain, beyond what modern people can normally tolerate. When people have been taught according to the methods and educational principles we have discussed here, then they may also be ambidextrous. In modern society, we may not simply go on to using both hands. These are things I can say from experience. Statistics would certainly support what I have said today.⁷

These stenographically reconstructed statements were not revised by Steiner, but there is little reason to doubt that they accurately represent his words. Consistent with his other statements on the subject, Steiner strongly objects to ambidexterity, either natural or acquired, and gives a number of explanations for this view. He also hints at the significance of the larger issue of laterality in the entire body. Most interesting is the statement, repeated a week later, that students properly educated in the Waldorf school method would be able to write with the left hand without any harmful effects.

Neuroscience and Steiner's View

As far as I have been able to determine, neuroscience as a whole does not have anything close to a unified opinion on brain-dominance issues. Left-handedness is an aspect of laterality.⁸ No one is purely right-handed or left-handed, but one side is generally dominant, and this has a relationship to the hemisphere of the brain involved. Further, the causes of left-handedness are not known.⁹ Nor is there an agreement on the significance of laterality.

The brain center for articulate speech was located in 1861 by Paul Broca (1824–80) as the third convolution of the left frontal lobe.¹⁰ This

prompted much research into identifying centers for other cortical functions,¹¹ research that continues to this day. After much investigation, it has been determined that there is no one-to-one correspondence between handedness and lateralization of higher cortical functions in the brain. Despite the absence of a strong form of correspondence, a weak form is evident, in that “close to 99 percent of right-handed people... [and] at least 60 percent of left-handed and ambidextrous people... have left-hemisphere language” localization of higher cortical functions. The significance of this is not understood.

Summing up research on switching, the *Encyclopedia Britannica* notes, “The consistency with which children use one hand in preference to the other increases with age, at least through the preschool years and probably longer.” That is, the preference is gradually built during the early years when the brain is still developing most, and becomes increasingly set. “Most children can be trained to use and to prefer the right hand for any

activity, and many have been so trained without obvious harmful effects.... The wisdom of interfering with a child's spontaneous preference, however, has been questioned.”¹²

Although the origin, purpose, and significance of laterality are not completely understood, anthroposophists would prob-

ably see much of the research as confirming Steiner's model. For example, Steiner's statement above—“Without any intervention, the etheric body is stronger toward the left than the right, and the astral body is more developed toward the right than the left”¹³—appears to be confirmed by research into laterality, such as, “The left hemisphere also appears to be more involved than the right in the programming of complex sequences of movement and in some aspects of awareness of one's own body.”¹⁴ These are largely functions related more to the etheric body, while “The right hemisphere, then, appears to be specialized for some aspects of higher-level visual perception,

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spatial orientation, and route finding (sense of direction)...”,¹⁵ indicating aspects with more of a relationship to the astral body.

Steiner seemed to be indicating that in issues of laterality, a left-hand dominance for writing will subsequently have an influence on characteristics of developing thinking. That is, what hand we write with as young children will influence the development of our ability to think. An interesting area of inquiry is the relationship between environmental influences and brain development. Whether students use the left or right hand for writing would be considered an environmental influence on neurological development. At least one study found that it does. The study examined the question of whether neurological development can be influenced by pedagogical treatment, and specifically just the type of treatment that Steiner indicated by telling teachers to encourage left-dominant children to write with their right hand. The study found:

Results indicate reading skill performance is dependent on the relationship between hand preference and the direction of brain asymmetry. Right-handed students whose left temporal plane was larger than the right demonstrated superior reading skills when they came from an average or high socio-economic environment. Right-handed children with reversed asymmetry were at risk for reading failure, especially if they came from a poor family.¹⁶

This study does not definitively answer any questions, but it does indicate that there is indeed a relationship among how children write, the way their brains develop, and their subsequent cognitive abilities.

In summary, neuroscientific research does not provide a definitive answer to either clearly support or refute Steiner's recommendations. Indications are mixed; however, there is some evidence to indicate that Steiner's recommendations may have practical benefit.

Conclusion

Steiner's recommendations are not easily summarized, and can appear at first glance to be somewhat contradictory. In all cases he recommended that ambidextrous children be encouraged to write with only one hand, preferably the right. Further, he warned that intentionally training children in ambidextrous writing would be harmful. Truly left-handed children (and he gave a few tests for determining true left-handedness) should be allowed to write with the left hand. Other children who simply prefer writing with the left hand should be encouraged to switch to the right, with a few caveats. Steiner was careful to repeat that any switching should never harm the child, and that the teacher must pay close attention to the child before, during, and after the intervention to properly evaluate the effects. Finally, Steiner gave detailed explanations for why the issue was important, explanations that have not been contradicted by subsequent advances in neuroscience, though neither have they been confirmed. In the end, Steiner's position on the pedagogical treatment of left-handed children is not a policy or a doctrine, but a set of indications for educators to study and contemplate as they consider individualized solutions for individual students.

Endnotes

1. Rudolf Steiner. "Anthroposophische Pädagogik und ihre Voraussetzungen." Dornach: Rudolf Steiner-Nachlaßverwaltung, 1972. Page 90. (GA 309. Unrevised stenographic reconstruction of the actual words of Rudolf Steiner. Translated by Daniel Hindes. Published in English as *The Roots of Education*; the English edition is missing the Question and Answer section that contains the statement on left-handedness.)
2. Rudolf Steiner. *Faculty Meetings with Rudolf Steiner*. Hudson, NY: Anthroposophic Press 1998. Page 100. Translated by Robert F. Lathe and Nancy Parsons Whittaker from the German (GA 300a,b,c).
3. Ibid., 345–346.
4. Ibid., 635–636.
5. In other words, only cross dominant left-handed children were to be taught to write with the right hand.
6. Ibid., 695–696.
7. Rudolf Steiner. *The Renewal of Education*. Great Barrington, MA: Anthroposophic Press, 2001. Page 213. (GA 301).
8. "Some authors believe such laterality is inherited; others, that the child is trained to it; and still others, that biases are initiated in an infant during pregnancy by some organization of intrauterine forces, such as those producing twinning, or some extrauterine environmental influences. It is possible all three hypotheses are, in some measure, correct." "Laterality." *Encyclopedia Britannica* 2002 Deluxe Edition. CD-ROM. New York: Encyclopedia Britannica, 2002.
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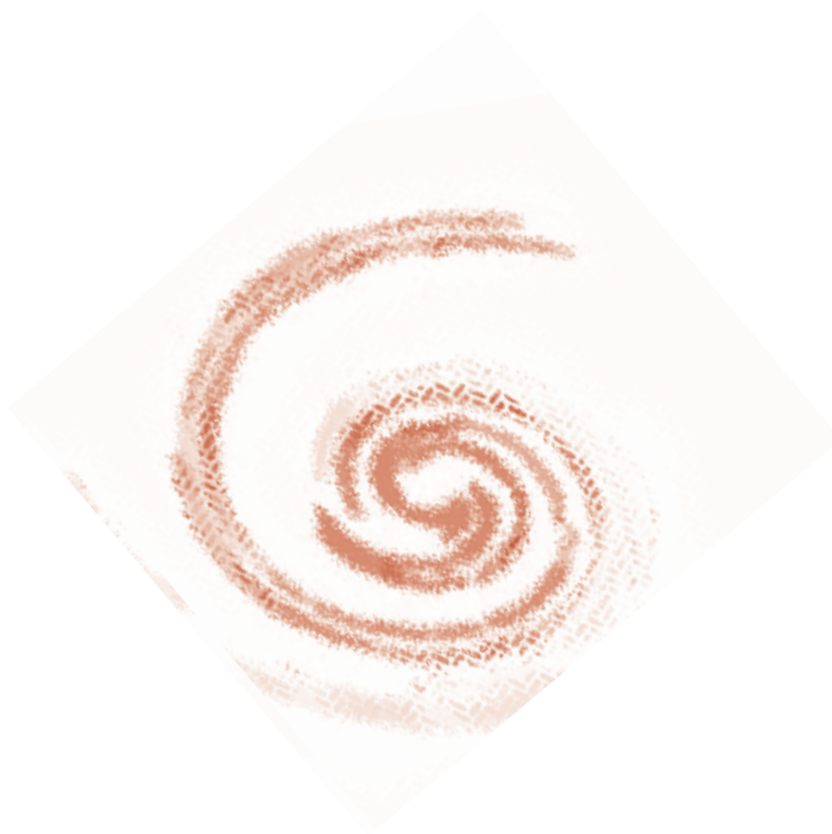
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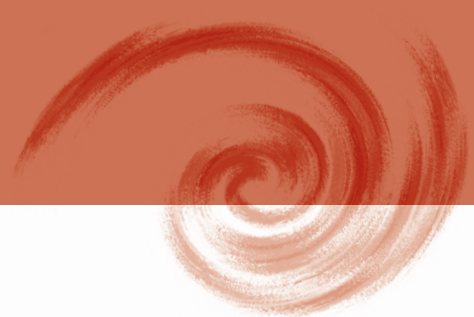
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The Tricky Triangle

Children, Parents, and Teachers

Dorit Winter

*A*ny school community has three distinct populations. But, in Waldorf schools at least, after 78 years, the relationship among them has changed. There are the children. There are the children's parents. There are the children's teachers. Children—parents—teachers. Why are these relationships so tricky?¹

Inherent in the blood relationship of parent and child is intimacy at the cost of objectivity. In the best of circumstances, a mother's or father's love is unconditional; the parent is strongly bonded with the child. They are united in a tight nucleus. In times gone by this tight bond might have extended to the larger family, to the tribe. Tribal behavior does not concern itself with an individual. Tribal loyalty precludes objective perception of the differences between one person and the next. Much evil has resulted from tribal consciousness, a consciousness which ruled in ancient civilizations when individual development was vouchsafed the entitled few—pharaoh, priest, chieftain—who determined the fates of their tribes.

Since the Renaissance, civilizations have tended to reward the achievement of individuals. For individuals to succeed, they must leave behind the circumscription of their tribe. Fictional heroes and heroines often take this route. So do real people who must often clash with “the old”—the family, the ancestors—in order to assert “the new,” the individual. We call that growing up.

In a sense, parents and children need to be “tribal” in their disposition. Loyalty, unconditional love, support through thick and thin are requisite. This is a subjective love.

Objective love is quite a different thing. Objective love is not tribal; it does not exclude, it includes. Objective love does not love only its own, does not love only the familiar, but can enfold the separate, the individual.

It may sound simplistic, but that makes it no

less true, to say that the entire trajectory of education consists of transforming subjective love into objective love. We can grasp how difficult this transformation is when we consider that we have been engaged in it for thousands of years. In this sense, education is a microcosm of the evolution of human consciousness.

Objectivity in any form is challenging. We cannot help but see everything from our own point of view, subjectively. Intention, discipline, schooling, and effort are required if we are to overcome our inherent natural inclination for subjectivity.

Pure objectivity is not the ideal. Pure objectivity is machine-like. A machine does not make exceptions. It does not see the individual circumstance, the individual need. Bureaucracies are maddeningly objective; objective to a fault. They care nothing for individual circumstances. A telephone “menu” is perfectly objective. So is the computer.

The ideal is tempered objectivity. Objectivity tempered by love.

But whereas love is inherent in subjectivity, it is acquired in objectivity.

The love of a parent for a child is subjective. The love of a teacher for a child is, or should be, objective. The love of a parent for a child must be subjective.

The love of the teacher for a child must be objective. But neither the sympathy of a subjective relationship, nor the distance of an objective one, can flourish by itself.

In a Waldorf teacher training, the fundamental goal is to enable the adult student to jettison her or his own sack of rocks, so that he or she can approach a child without the distorting weight of personal predilections. Such imbalances are part and parcel of each of us. We have our biographies, or life circumstances, or likes and dislikes, sympathies and antipathies. Waldorf education is predicated on the notion that a teacher aims to

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see through these screens, to see a child as the child is. Such objectivity includes compassion, but it is the compassion of which the higher self is capable. Parental love is, so to speak, a “given”. We are meant to love our families, to stick to one another through thick and thin. But such an attitude does not easily embrace the “tough love” that a teacher must cultivate.

A Waldorf school teacher strives to connect his or her higher self to the nascent higher self of the child or youngster. This objective attitude, if achieved, leaves the child free. The child is not made in the teacher’s image. The child is not there to satisfy a teacher’s needs, certainly not the teacher’s need to love. Yet love the children the teachers do. If they are not conscious of the appropriate form of their love, troubles abound. And parents feel, rightly, compromised.

Thus we arrive at the fundamental reality of the tricky triangle with which we started. The role of a parent is different from the role of a teacher. They play different roles in the life of a child.

It is obvious. But in a Waldorf school community, these essentially different roles can become confused.

Many Waldorf school parents gratefully align their home life with school ideas, with a “Waldorf lifestyle”: no TV, healthy diet, bedtime rituals, daily rhythm, and so on. Furthermore, they are encouraged to become active in their children’s school. Without this active parent engagement in the schools, the schools would likely grind to a halt. In truth, parent volunteers constitute an indispensable asset in any Waldorf school. And that’s where the confusion of roles can easily become an issue. If a parent becomes indispensable to the running of any aspect of the school, how is that parent to understand the limit of his or her role?

Waldorf school teachers are nothing if not committed to their calling. Theirs is not a profession, we are wont to say, theirs is a vocation. Many graduates of Waldorf teacher training programs will tell you that they became Waldorf school teachers in order to do something meaningful in the world.

They are, generally speaking, passionate about their work. “Teachers-as-artists,” theirs is more than a job. The danger for them is that they identify too much with the children they teach.

They become subjective. They lose their objectivity.

Seventy-eight years ago² there was still some formality in the relationship of parent and child to teacher. The teacher was endowed with some inherent authority. In the 33 years that I’ve been involved in Waldorf education (45 years if we start when I entered the 10th grade at the Rudolf Steiner School in New York City) this authority has gone the way of most formalities. It has evaporated, along with all sorts of expectations, which in that bygone era were considered normal. Dress, language, behavior... all have become informal. In all that informality it’s little wonder that parents and teachers are confused about their roles.

But if we don’t clarify these roles, if this confusion persists, Waldorf education will also become confused, vitiated, and porous.

Waldorf teaching is a profession. The Waldorf teacher has skills and knowledge that are specific to the Waldorf teacher. Any teacher must have skills, must know what she or he is talking about, have the knowledge she or he is mandated to impart. But, in addition, the Waldorf teacher is schooled in self-knowledge. And this self-knowledge comes through the Waldorf teacher’s study of anthroposophy. Anthroposophy informs a Waldorf school curriculum, but it also provides the framework for the Waldorf teacher’s inner striving, without which she or he will not become a Waldorf teacher.

And this striving is largely hidden from parents. Parents may catch glimpses of it, but essentially, they are shut out from it, unless they take the trouble to engage in such a schooling themselves.

Thus the parents may find themselves looking at a scene they cannot quite penetrate. What are those teachers up to? Why won’t they “open up”? Why do some of them act as if their classrooms have an invisible threshold that parents may not cross? Parents feel that something mysterious is going on. Some parents join the teacher training or a study group in their school. But others may start to criticize, to complain, in an attempt to make comprehensible what is otherwise not comprehensible. In so doing, they unwittingly weaken the very thing that makes a Waldorf school what it is.

As anyone who has tried it knows, a good marriage requires a good measure of independ-

ence by both parties. Two strong individuals are more likely to last in that relationship than two needy people who have joined forces to overcome their loneliness. Strength in the individual, independence of the individual, will mean less suspicion, more trust; less imposed restraint, more acceptance of the other as he or she is. Generally, it's a long path to reach that goal, a path strewn with boulders of our own making. Most of us have not had "marriage training." When we fall out of love, we either find a new foundation for the relationship, or cause one another endless grief. But what would "marriage training" be? One of its goals would have to be self-reliance. For only when we are self-reliant can we have a healthy, free, and independent relationship with the other.

Parents are never "free" of their children. Theirs is a lifelong connectedness. But a teacher must always be "free" of the children. If parents and teachers understand the difference in their relationship to a child, then parents and teachers will be able to have a self-reliant relationship to one another. They will not fear encroachment by the other on their own territory. Then a true collaboration can support the growing, maturing, developing child who must master so much, learn so much, cope with so much.

"Love," says Rudolf Steiner, "is the experiencing of another being in one's own soul."³ Such surrender, if it is not to result in maudlin and co-dependent sympathy, requires strength. Waldorf teacher training is not a panacea, but, through the study and schooling of anthroposophy, it can provide a means for garnering this type of strength so that the teacher can, by experiencing the child in his or her own soul, recognize what the child truly needs in order to gain access to his or her highest self. This can only work if the child is in no way being used by the teacher. Selfless compassion in the teacher can educate the child for life.

This is a noble calling. And a challenging one. It is an ongoing process. A Waldorf teacher is never a finished product. If a Waldorf teacher is a finished product, she or he is no longer a true Waldorf teacher. Of course, self-development cannot be undertaken at the cost of a healthy relationship to the children, but it really is the case

Selfless compassion in the teacher can educate the child for life.

that just as continual evolution is inherent in the picture of the growing child, so it is also inherent in the picture of the teacher, who must also continue to grow. The rate of growth is slower for the adult. And the adult must become his or her own best teacher, always striving, striving especially for true self-knowledge, which cannot easily lull itself into complacency, especially as regards selflessness. Without understanding from the parents, a teacher's achievements are much harder to accomplish. And without understanding from the teacher, parents' achievements are much harder to accomplish, too.

Support from a strong partner is not blind support. But if both parties, parents and teachers, can meet each other through the security of their very different roles in the life of the child and in the life of the school, Waldorf education has a much better chance of flourishing into the future.

Knowing that the role of the parent in his or her relationship to the child is fundamentally different from the role of the teacher in his or her relationship to the children can help us recognize that the role of the parent to the life in the school must also be different from the role of the teacher to the life in the school. Because every Waldorf school is its own independent entity, each school will have to find its own way to the practical details of parent-teacher collaboration. What, for instance, is the task of the College of Teachers? What is the task of the Board?

These questions vex us in our Waldorf school communities because we are unable to delineate our roles clearly. Any decision regarding the welfare of the children should be in the hands of those working with the children, the teachers. Any decision regarding the welfare of the institution should be in the hands of those legally responsible for the institution, namely, the Board. But simple as this sounds in theory, it seems endlessly complicated in real life. In real life we get confused about our mandate, we lose sight of the common goal, we get polarized. Our great striving is to keep the whole child before us: head, heart, and hands; thinking, feeling, and willing; spirit, soul, and body. Only by recognizing the true task of each of these three will we be able to educate the child to withstand the storms of life.

And only if parents and teachers recognize their distinct tasks will schools withstand the fracturing forces loose in the world. Then parents and teachers can all be proud of the amazing work, the daily miracles that grace life in Waldorf schools.

Endnotes

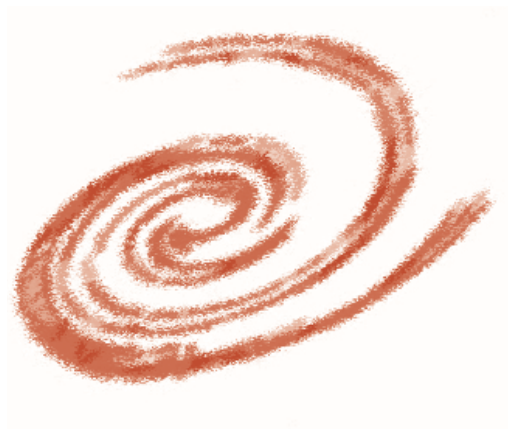
1. In the greater San Francisco Bay Area, five Waldorf school teachers, including several long-time teachers, from four schools have been dismissed since Easter 2006. One teacher officially resigned—but that may be a case of splitting hairs. In each case, serious concerns about the process, and in particular about parent influence on the process, have been raised by teachers and parents alike. What follows is an attempt to find some clarifying thoughts. Ultimately each school, as an autonomous institution, will have to find its own method of dealing with this ever difficult question, but clearly the phenomenon is now so widespread

that we might consider facing it together.

2. The Rudolf Steiner School in New York City was founded in 1928.

3. Steiner, R. *A Road to Self-Knowledge and the Threshold of the Spiritual World*, Ch. 9. Steiner Press, London: 1975.

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Healing Children Who Have Attentional, Emotional, and Learning Challenges

Susan R. Johnson, M.D.

There is an epidemic in our society. More and more children are being assigned more and more labels, labels such as Attention Deficit Disorder (ADD), Attention Deficit Hyperactivity Disorder (ADHD), receptive or expressive language disorders, learning disabilities that include visual or auditory processing disorders, and the autistic spectrum disorders like Pervasive Developmental Delay (PDD), Asperger's syndrome, and autism, to name only a few. What is happening to our children? What do these labels really mean?

While I was growing up, my brother was diagnosed as autistic at a major university center in California when he was 2 1/2 years old. He had fine motor and gross motor delays, made poor eye contact, cried a lot from frustration, and didn't speak words. When he finally started to talk, around age four, he wasn't so frustrated anymore, he became more social, and he no longer fit the definition of autism. So his diagnosis was changed to a speech and language disorder, especially since his speech was so difficult to understand. He still became frustrated when trying to communicate. He had trouble expressing his ideas and getting others to understand his speech. Because he had many temper tantrums during those early years and seemed to be in constant motion, he was also given the label of Minimal Brain Dysfunction (the word used in the 1960s for Attention Deficit Disorder) and placed on medication.

When my brother started school, he struggled with reading and writing. He had a brilliant mind and could remember almost everything that was said to him, but he couldn't write his ideas down on paper and he had difficulties with spelling and handwriting. Book reports and papers were hard to write, and he was labeled lazy by his teachers throughout grade school. It wasn't until college that a professor realized how gifted he was, and how difficult it was for him to express his ideas in writing. He was reevaluated at that same university center and now labeled as having a non-verbal learning disability.

All of these labels affected my brother's self esteem. I believe he saw himself as not being normal or smart enough. As he grew older, he lacked the confidence to follow his dreams and the courage to risk failure because he felt he had failed so many times. Because of his experience, I have never believed in labels. Labels place children into boxes from which they can't easily escape. Labels are meaningless to me when a child like my brother could move from one box to another while the experts couldn't agree on which box to put him in.

During my fellowship training in behavioral and developmental pediatrics, I learned that 70% of children labeled with Attention Deficit Disorder also have some form of auditory or visual learning disability, but no one can explain why. Most of the therapies given to these children were what I call "sit down therapies." Movement therapy, like occupational therapy, was seen as a way to get children from the door of the classroom to their chairs. Once the children were seated, I was taught that the brain could be educated through speech therapy, practicing phonics, or drilling math concepts. These children were often placed in special education classes. Regardless of their intelligence, however, I never saw these children get out of special education classes. I watched while they fell behind their peers and their self-esteem suffered.

The birth of my son really taught me to look more closely at what was beneath all of these labels. First of all, because my son never crept on his belly and had a persistent stiff neck after his c-section birth, other parents convinced me to take him to a gifted osteopathic physician for Biodynamic Cranial Therapy. Next, it was my son's Waldorf-trained preschool and kindergarten teachers who first taught me about the importance of movement in the development and healing of neurological pathways. My son had a gifted kindergarten teacher who worked with him after school for 2 hours, twice a week, for 1 1/2 years, doing lots of harmonious, noncompetitive, rhythmic

mic movements. It was calming to be in her presence. She lived in the present. When she sliced apples for the children to make applesauce, the thoughts of her mind, feelings in her heart, and the actual movements of her body were all aligned with the task of slicing apples. In her speech and in all of her movements, her mind, heart, and body were as one. My son went from grasping a crayon with his fist and scribbling at the age of 4 1/2 years to finger knitting and weaving during the next 1 1/2 years. He went from being unable to catch even large balls easily to juggling tennis balls with her across the room. His balance, auditory processing, and speech articulation all dramatically improved. He became a social being who could relate to and play imaginatively with his peers while his oversensitivity to touch seemed to disappear.

I had to know what his Waldorf preschool and kindergarten teachers knew about the relationship of movement to brain development. I had already completed four years of medical school, three years of pediatric residency, and three years of a fellowship, training in behavior and developmental pediatrics. I had learned how to identify the various pathways of learning, whether auditory, visual, or kinesthetic, but I didn't learn anything about sensory integration. After watching my son's transformation, I completed a three-year Waldorf teacher education program, and then spent another year studying sensory integration with Ingun Schneider, a physical therapist and sensory integration specialist at Rudolf Steiner College. I attended numerous workshops by neuropsychologists like Judith Bluestone of the HANDLE Institute and Carla Hannaford, who works with Brain Gym. What I have learned from all of these experiences is that movement forms the neurological pathways in a child that are later used for reading, writing, spelling, mathematics, focusing of attention, and creative thinking.

There is a relationship between the development of the vestibular system, which includes balance and muscle tone, and auditory processing, which includes the ability to understand and follow verbal instructions. If a child whose hearing is

normal still has difficulty with auditory processing following verbal instructions, then strengthening his or her balance will help. If a child has low muscle tone and a tendency to drool and lisp during speech, then working with movement, specifically balance, will strengthen that child's overall muscle tone and improve the articulation of consonants.

There is also a relationship between proprioception—a child's ability to know where his or her body is in space—and the child's ability to sit still and pay attention. A child will have difficulty focusing his or her attention if the proprioceptive system is not fully formed or integrated. During the first seven years of life, a child's mind needs to map the location of pressure receptors within the muscles, tendons, and joints of the entire body. You might say that there is a universal law that the mind must know where the body is at all times. If a child's mind can't locate the differ-

ent parts of his or her body when sitting still, then the child will need to actively move the muscles or sit on his or her feet in order for his or her mind to feel connected to the body while the child is looking at the blackboard and paying attention to the teacher. Unfortunately, a child who wiggles in his or her chair while gazing at the teacher will often be seen as not paying attention and, perhaps, labeled as having Attention Deficit Disorder.

In addition, this same child, who hasn't developed a sense of spatial awareness and doesn't feel where his or her body is in space, also lacks an inner sense of movement when looking at abstract forms like letters or numbers. The child's eyes will follow the movement, the lines and curves of the letters and numbers, but the forms won't imprint. The child will forget the shapes and not remember which way the number 2 or 3 goes or which letter is "b" and which is "d." In addition to being labeled as having ADD, a child with proprioceptive difficulties often gets labeled as having visual processing and visual memory types of learning disabilities.

Finally, if a child's sense of touch is not fully integrated, which can happen after a rapid vaginal birth, a c-section delivery, or the use of suction forceps, then the child will be hypersensitive and sometimes even hyposensitive—relatively

The birth of my son really taught me to look more closely at what was beneath [the labeling of children].

unresponsive—to tactile stimulation. Such a child wants the labels removed from the back of his or her clothing or he or she wants socks turned inside out so he or she doesn't feel the seams. Such children often don't like wearing long pants, long sleeves, or jackets because they feel the wrinkling of the fabric against their skin when they move their arms or legs. Their scalp is hypersensitive and they don't like to have their hair brushed or combed. They don't like their nails to be clipped. These are the children who often withdraw from a group of peers and appear shy because they are afraid of being inadvertently touched by another child. A simple touch can sometimes feel like a hit or slap. Sometimes these children appear aggressive, hitting other children in what they perceive as self-defense after being touched or bumped into by another child. It is as if this gentle touch or bump is magnified one hundred times.

In general, children with any of these sensory integration issues often have difficulties with peer relationships. Their minds and eyes are too busy just trying to help them maintain balance, figure out where they are in space, and avoid bumping into other objects and other people. These children are multi-tasking, and they do not have the luxury or the freedom of their minds and thinking to pay attention to the subtle non-verbal cues of other children around them. Since much communication is non-verbal, their peer relationships suffer.

In addition, because children with one or more sensory integration difficulties are always multi-tasking, their nervous systems are constantly stressed. These children live in their "fight and flight" sympathetic nervous system just to survive each day. Children predominantly functioning under this stress are by definition not in the present moment. They can't pay attention or focus on just one stimulus at a time because their survival depends upon being able to pay attention to many different things in their body and in their environment all at the same time. These are the children who are often labeled as hyperactive. Their pupils are often

dilated, their hands and feet are often cool, they are hyper-vigilant and easily distracted, they are hypersensitive to sounds, and they have difficulty focusing their attention. Their movements are jerky and mechanical and their digestion is compromised. They are also extremely sensitive to the effects of sugar and caffeine and have temper tantrums and melt-downs throughout the day. In this survival state, such children can't access their higher centers of learning, and therefore new pathways and neurological connections are not easily formed.

Labels like ADD, ADHD, speech and language disorders, learning disabilities, and the autistic spectrum disorders may actually represent an increasing severity of sensory integration dysfunction. Children labeled with ADD have poorly integrated proprioceptive systems and this may also create visual processing disorders. Children labeled with auditory processing problems, especially if they forget what they are supposed to do when moving their bodies, may have vestibular difficulties. Children labeled with autism will have severe impairment of their proprioceptive, vestibular, and tactile systems, in addition to having weak metabolisms and, potentially, leaky intestinal tracts.

There is a relationship between the development of the vestibular system, which includes balance and muscle tone, and auditory processing, which includes the ability to understand and follow verbal instructions.

When a child has a history of frequent antibiotic use, especially in the first two years of life, has a diet high in simple sugars, or has undergone lots of stress, then he or she may be missing most of the healthy intestinal bacteria. The intestine may be overgrown by yeast organisms that cause inflammation and loss of integrity of the intestinal wall. Partially digested proteins from various foods, like soy, gluten from wheat, and casein from milk, are absorbed through the

inflamed, leaky intestinal wall instead of being eliminated with bowel movements. These partially digested proteins are broken down inside the body and their toxic by-products can pass across the blood-brain barrier into the central nervous system, affecting speech centers and other sensitive areas of the brain.

So what can be done to help and heal our children's nervous systems? First, I support rhythmic, harmonious, noncompetitive movement activities like walking, hiking, and swimming. I support movement therapies that strengthen balance, proprioception, and touch. These movement therapies, which are done to help integrate a child's sensory system, must be gentle and slow. Care must be taken not to further activate the sympathetic nervous system. If the movement therapies are done too quickly or too competitively, then proper pathways can't form. The child needs to be in the relaxed, parasympathetic nervous system in order to make new pathways. The child needs to be fully engaged in the moment, full of love and enthusiasm for what he or she is doing. Movement therapies cannot be prescribed like recipes from a cookbook or items from a list. The therapist needs to be present to the child's movement and fully engaged with the child in a loving way so that child can relax, move, and create neural pathways.

Next, it is time to stop medicating our children with stimulants. These stimulant medications may dampen or inhibit pathways competing for a child's attention, but we still don't know what these drugs may be doing to that child's future capacity for learning.

I also support an educational environment that teaches our children about the world using all of their senses, including vision, hearing, and, especially, hands-on learning experiences. Our culture and even some educational institutions, with their reliance on television, computers, and

videogames for teaching, are not developing our children's minds and senses. Competitive sports in very young children overstimulate and activate the sympathetic nervous system. Sugary foods, a lack of essential omega 3 fatty acids (found in cod liver oil, fish, walnuts, flax seed oil, algae, dark green leafy vegetables, and breast milk), inadequate sleep, a sedentary lifestyle all make it hard for children's neurological pathways to be myelinated and formed. In addition, toxins in our environment, including mercury in some of our vaccinations, also may have affected these sensitive pathways.

It is time to stop labeling our children and putting them on medications that just alter their neurohormone levels. It is time to slow down and focus on being in the present moment. It is time to start promoting a healthy lifestyle including nutritious foods, adequate sleep, and turning off television, videos, and computers. It is time to provide lots of healthy rhythmic movement for our children to do at home, in school, and out in nature. It is time to start healing our children.

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What Will Today's Children Need for Financial Success in Tomorrow's Economy?

Judy Lubin

The growing "creative age" economy calls for the development of human capacities, capacities that Waldorf schools have cultivated for nearly a century.

A Changing Economy

Today's economy is changing. While Waldorf school educators have long believed in the importance of educating children to develop into capable, competent human beings, we are entering a time in which economic success increasingly depends on these same principles. The skills and capacities needed for financial success in the new economy are those that are already a focus of development in Waldorf education: creativity, social skills, self-knowledge, and an inner sense of responsibility or virtue.

A quick look at anecdotal evidence shows a shift in skill categories and job types. Computer programming, work that we used to consider white-collar and highly skilled, is increasingly done, not just outside the United States, but specifically in economies that we would call developing or less developed. Summarizing various sources, journalist Daniel Pink finds that, within the next two years, one in ten computer or Internet technology (IT) jobs will move overseas. By 2010, one in four will leave the United States. Forrester Research predicts that, by 2015, more than 3 million white-collar jobs, with an accompanying \$136 billion in wages, will move to lower-cost countries.¹ Developed nations like Japan and those in Western Europe will see similar patterns of white-collar job movement.

The IT industry is not the only one experiencing this trend. The white-collar financial services industry, over the next five years, will transfer approximately half a million jobs to lower wage areas of the world, according to an AT Kearney estimate.²

[E]ducating the whole human being is becoming an economic necessity, not simply an alternative lifestyle.

In almost all cases, the types of white-collar jobs that are leaving economies like ours are those that rely on routine cognitive skills. For example, while computer programming requires cognitive abilities, much programming is routine enough that it can be done by computers themselves, precisely because it is so heavily rule-dependent. The common website development tool PageMaker is just one example of a program that writes programs as it translates graphic displays into HTML code.

Two separate studies, one by NYU economics professor Edward Wolff³ and the other by Frank Levy and Richard Murnane,⁴ economics professors at MIT and Harvard, respectively, have shown that, over the past decades, we have seen little to no growth in jobs that require either manual or routine cognitive skills. The output of routine cog-

nitive, or rule-based, skills is invariably a product that is itself routinely enough produced that it can be coded and sent through a wire. This means that routine cognitive work, like manufacturing, can be done wherever it is cheapest, by a machine or in a low wage country. In Bangalore,

India, for example, IT workers currently earn about one-seventh of the wages that the same work used to earn in the U.S. Accordingly, Bangalore is currently absorbing a large portion of outsourced IT work.

In this context, the SATs and other standardized tests, like writing computer programs, require cognitive work, but, precisely because the answers must fit into one of several boxes, can only test routine cognition. Increasingly, those with high SAT scores and little else to show on college applications will find themselves prepared only for low wage jobs.

The Creative Age

The type of work that is on the rise and still earns

a decent living is work that involves not only uniquely human skills, as opposed to skills that a computer can copy, but skills that are not standardized across humans. Both Wolff and Levy and Murnane find that nearly all job growth over the past several decades has come in the form of jobs requiring complex communication and complex cognitive work or expert thinking.⁵ By “expert thinking,” the authors primarily mean solving problems that have not yet been solved. To simplify their terminology, job growth has occurred in those jobs that require creativity and relationships.

Case studies of Silicon Valley show that the manufacture of commodity products has long ago moved offshore. Companies that remain are those that innovate and those that produce custom products for a small set of clients. The success of these custom shops depends substantially on the ability of the people within the company to maintain stable relationships with clients.⁶

Even if we haven't yet agreed upon a new name—the “creative age” gets my vote—we have realized that the term “information age” barely begins to grasp the concept of our current reality. Today, more Americans are employed in the arts, entertainment, and design industries than are employed as lawyers, accountants, and auditors. Compared to the mid 1990s, ten times more people work as graphic designers. Our economy also has more artists and writers than ever before.⁷

Using a stringent definition of creative industries that includes primarily artistic work or innovation, business consultant John Howkins⁸ estimates that the value of the creative economy in 1997 was \$2.2 trillion (seven percent of world GDP), and is growing at five percent per year. The United States and other developed countries contain the greatest share of this creative economy.

Attempting to account for changes in the way work itself is done, Carnegie Mellon economics professor Richard Florida uses a more liberal definition of creative work. He finds that more than thirty percent of the work force belongs to the “creative class,” a group of people whose primary occupation involves creativity-based human capital and whose numbers now surpass those of the

[T]he human being is the economic driver of the modern economy, a stark contrast to the machine-driven economy of the industrial age.

working class.⁹ Florida's definition of “creative worker” stretches the common sense definition to include managers and others who perform jobs that still can be done in the old fashioned, non-creative way. This comes from the attempt, however, to recognize that even old jobs are being done differently. UCLA education professor Mike Rose agrees with a multi-industry analysis that finds that, these days, even jobs that we would consider blue-collar require high levels of cognitive capacity.¹⁰

Their insights are supported by researchers like David Angel,¹¹ who finds that production engineers in Silicon Valley are responsible for almost as much innovation, through problem solving during manufacturing, as design engineers. Concurrently, these engineers earn substantially higher wages than production engineers in the same industry, who work under different policies that confine creativity to the design stage. Incidentally, Silicon Valley firms have continually outperformed firms with more hierarchical structures, structures that confine innovation.

Structures

When skimming across the surface of today's new economy, we may wonder if these changes are not just the latest fad. But an examination of these changes at the structural level of the economy shows that we are moving into a time in which broader human skills form the basis for success.

Before examining the structural foundation of the new creative economy more deeply, however, we will explore the structure of the industrial age economy that we are leaving behind. The goal is to trace the economic forces that pressured society to emphasize the human-as-automaton paradigm and to show how the creative economy is reversing this pressure, so that economic success is becoming more aligned with personal goals and the process of becoming human.

The industrial age was a time in which first manual and then routine cognitive skills were emphasized. We have found that the work of both of these skill categories can be replicated by machines. Yet, there is something deeper, at the

structural level of the industrial age economy, that reinforced a less human-centered path.

While the industrial age was driven by the creative innovation that led to the machines that then dominated the economy, the machines themselves quickly became more salient than their invention. At the beginning of the industrial age, most of the new machinery was used to increase productivity at pre-industrial tasks, like farming. But, for individual economic success, the important point was not so much the increase in productivity, but, rather, that the machines themselves were scarce. While we had invented our way into higher productivity in many tasks, we had not yet invented a way to produce the machines themselves quickly and easily. Because of its scarcity, machinery generated economic value. Physical capital, not human skill, became the main wealth-creating asset of the economy. Unlike human skill, physical capital is stored externally to humans and is fully transferable from one person to another.

In the industrial age, physical capital did transfer straight up the capitalist hierarchy, despite the clear violation of decentralized economic power required of foundational free market theories. By the early 2000s, the wealthiest ten percent held ninety percent of the nation's marketable wealth. With forty percent of the nation's wealth owned by just one percent of the population, our modern democracy is exactly as top-heavy as England's monarchy in the 1700s.¹²

In other words, the industrial age was a time in which the single most important capacity for the generation of wealth was wealth itself. This recognition tells us what concerned industrial-age parents wanted to do to ensure their children's success—build wealth and pass it on.

For most, this was easier said than done. With an uneven distribution of capital and an uneven ability to generate new wealth, the industrial age saw a new game that looked surprisingly like the old game of aristocracy. Asset owners needed workers to use the owner's assets for production in the same way that kings needed peasants to work their large land holdings. For asset owners, the ability to be creative and to take risks with their assets led to success. For those who did not own financial assets, success depended on an ability to continue working with someone else's financial assets. The ability to obey became the

single most important capacity for financial success for those who had jobs and did not own the means to their livelihood. Our system of public corporations, by the way, ensures that even CEOs have bosses—the shareholders.

Obedience

The story of management consultant Frederick Taylor shows the extent to which the ability to obey was monitored. In the early 1800s, Taylor timed workers while they dug holes. Setting the standard at the time of the quickest worker, Taylor rewarded those who dug faster and punished those who dug more slowly. With the invention of the pay for performance contract, Taylor set the stage for employment relations for the whole of the industrial age.

Modern evidence from the field of psychology¹³ clearly shows that these types of contracts work as intended only with highly measurable, standardized tasks that involve no learning—at the time of measurement, the workers already knew how to dig a hole. The rest of the time, they inhibit an employee's inner motivation and sense of responsibility. Such methods particularly hinder the development of creativity and, therefore, suppress the productivity of creative work because they keep responses within the set of known answers. Such fences are antithetical to creativity. Yet pay-for-performance contracts were widespread by the end of the industrial age. This is likely because the type of work most often done during the industrial age was either manual or routinely cognitive, work that is less distorted by Taylor-style incentives than is creative work. That the system became widespread is also due to the fact that asset holders held enough power to enforce it.

Whatever the reason, industrial-age workers who wanted access to assets in order to earn some share in financial success had to accustom themselves to being measured at standardized tasks. The higher the stakes on these contracts, the more the ability to cheat convincingly found its place on the path to monetary success. The likes of Enron and WorldCom show us how far the economy has gone in this direction.

Once this system and its results are recognized, it becomes clear why testing became a major tool by which asset owners could choose employees, employees to whom access to assets

would be granted. It also makes clear why parents would play along with this system of testing, and why public schools—whose seed was planted in the mid-1800s under the guise of socializing children to participate in the industrial-age economy—would expend so much effort to acclimate children to measurement and to rate children according to their ability to perform on highly measurable tasks.

Everyone an Entrepreneur

These are some of the very issues that Rudolf Steiner's threefold social organism was meant to address.¹⁴ They are also the very issues that are becoming outdated in the modern economy. To this end, it is useful to remember that Steiner explicitly envisages his threefold social organism to create a situation in which everyone is an entrepreneur. No person will sell his or her labor, only the product of the labor. There will be no worker-boss relationship as we know it today. Instead, every individual will be in charge of his or her own career. A system of rights will help entrepreneurs negotiate on equal footing, so that economic cooperation can occur in an environment of dignity for everyone.

While this description is a far cry from the industrial-age economy that dominated Steiner's day, it is the very direction in which we are moving. No evidence suggests that we are on track soon to reach the full promise of a threefold social organism. We do, however, increasingly see the need for the same entrepreneurial skills that are needed to make Steiner's vision a reality. Further, the primary assets that creative economy participants use to ply their entrepreneurial talents are those that are uniquely human in nature. In other words, educating the whole human being is becoming an economic necessity, not simply an alternative lifestyle choice.

We must expect that we will invent ourselves into a new system that is more in keeping with the entrepreneurial nature of a human-based economy. The uneven wealth distribution brought about during the industrial age means that the "have-nots" have the same incentives to overthrow the "haves" as peasants have to overthrow an unjust monarchy. Rather than revolution, however, incentives also exist to invent a new system around the old, as we are currently doing.

We do not live in a world in which everyone is an entrepreneur, but we are much closer now than we were during the industrial age. Pink estimates that, in 2001, thirty percent of Americans were entrepreneurs in that they were self-employed, contract workers, or involved in a micro-business of fewer than four employees.¹⁵ Although large corporations, because of their political power, still predominate, the number of smaller companies is on the rise. Today, more than half of U.S. businesses, and ninety percent of engineering firms, are micro-businesses.¹⁶

With high rates of job turnover in modern times, even many of those who work for large companies do so with an understanding that the employment relationship is but a part of the career that they themselves manage. By the mid-1990s, economist Henry Farber¹⁷ found that, for the entire economy, approximately half of all jobs last less than one year. In creative economies like Silicon Valley, these numbers can be even higher. Up to sixty percent of Silicon Valley engineers quit in a given year,¹⁸ with almost eighty percent of resignations reflecting movement to another Silicon Valley job, showing that, instead of being committed to a single firm in the fashion of the late industrial age, these engineers are committed to their own careers in the Valley. Management expert Suzy Wetlaufer¹⁹ interviewed some of these highly successful high-tech workers and found that they will stay at a company only if the work delivers a constant stream of growth and challenge that engages their hearts and minds.

Not only is the creative economy more entrepreneurial, but its roots are structured differently. By the 1980s, economic and sociological researchers had coined the term "agglomeration economy" for areas like Silicon Valley that were the beginnings of what Howkins and others now call the creative economy. These agglomeration economies both begin with and thrive on an influx of human thinking capacities. While the ability to continually increase aggregate levels of human cognition is the make-or-break criterion, a snowball effect means that the more competent workers an area has, the easier it is to attract even more workers, each of whom values working with other competent people. Growth becomes endogenous and the area experiences high levels of innovation and high levels of new start-ups.²⁰

Florida goes further to find that the whole of today's economy is moving toward an agglomeration style and that success today depends upon the level to which any area can master the three T's: Technology, Talent, and Tolerance (openness to new ideas, cognitive flexibility).²¹

Technology, of course, encompasses more than just computers and machines. The machines themselves are actually the product of the process of technology, which represents the know-how and ability to create a tangible product. Indeed, since machines like laptop computers are so cheaply and easily available, the cognitive aspects of technology are more readily apparent in the process. Technology, then, is dependent upon human cognitive capacities, as are talent and tolerance. In other words, the human being is the economic driver of the modern economy, a stark contrast to the machine-driven economy of the industrial age.

There is both good news and bad news in this realization. The good news is that an economy in which the main resources reside within individual humans should lead to a wider dispersion of economic resources. We also have an opportunity to experience a more entrepreneurial environment. As owner of his or her own cognitive assets, everyone is an entrepreneur.

The bad news comes from the flip side of the same argument. Since we can't directly transfer today's economic assets without teaching and experience, society cannot simply hand economic success to its children. Instead, we must help them to develop their own human capacities. It should be noted that the United States is quickly slipping from its leadership of the creative economy and that its "innovative infrastructure" is decaying.²²

Creative Capacities

Let's take a closer look at the capacities that workers in today's and tomorrow's creative economy will need to develop in order to succeed. Of course, in a creative economy, they will need the capacity of creativity: the ability to create value from the combination of human ingenuity and raw materials. While parts of the new economy are making use of artistic creativity, the underlying skills are those of creative problem solving and innovation in general. Levy and Murnane²³ see it as the ability to solve a problem that has not yet

been solved, which includes the ability to think flexibly about technical problems, social problems, and all manner of other problems. But the capacity of creativity also includes the ability to run the entire creative process from idea generation to, potentially, the formation of a tangible product. In this use of the term, thinking, feeling, and willing, qualities well known to Waldorf educators, are all necessary components.

Because they will be plying their own human assets in their entrepreneurial endeavors, today's children will need to know how to make full use of their human assets. In other words, they will need to know themselves. To make money from something as simple as a machine requires an understanding of how the machine works. The same is true of our own human resources when we put those resources to the money-making tasks in our lives. Included in this capacity is the ability to know one's skills and interests, the ability to muster the self-confidence needed to take a creative risk, the ability to get oneself into the high productivity state of "flow", as psychologist Mihaly Csikszentmihalyi calls it, and much more.

We can discover additional necessary capacities by examining the form and structure of modern economies. A typical industrial- or financial-age firm is organized in a hierarchical manner, as is the industry itself. It can be charted as a pyramid, with the CEO on top and layers of increasing numbers below. Firms are connected by formal ownership, by rigid ownership-like legal agreements, or by competitors.

Agglomeration economies, like Silicon Valley, however, are organized by dynamic, flexible networks of firms and of people. They can be charted as a pattern of interconnected "players" with little or no implied hierarchy. Relationships or "soft" contracts—agreements to work things out when a disagreement arises—replace the formal ownership arrangements and exacting legal contracts used by industrial-age industries. Competition and cooperation are interspersed, with the same companies sometimes facing each other both as competitors and as partners.²⁴

In this world, relationships matter. UC-Berkeley Information Management Professor AnnaLee Saxenian finds that all business in Silicon Valley flows through a rich network of people and that these relationships determine everything from new firm formation to daily work flow.²⁵ In

the modern economy, as a whole, relationships matter. Princeton economist Alan Blinder and his colleagues find that eighty-five percent of non-farm goods and services are sold to people with whom the firm has an ongoing relationship.²⁶ Since a firm is not a person, these relationships must be managed by the people within the firm.

Relationships Matter

The formation of London's St Luke's advertising agency is a case in point. In 1995, Omnicom bought the advertising agency of Chiat/Day. Fearing layoffs, the people of Chiat/Day's London office did not want to be under Omnicom's control. En masse, the employees quit Chiat/Day and started a new company, St Luke's, which maintained all previous client relationships and operated just as it had under the Chiat/Day name, leaving Omnicom holding an empty bag.²⁷ Omnicom may have owned the "company," but the employees owned the relationships with the clients. The company's entire value was stored in the client relationships.

Relationships matter not just because the economy is structured by levels of relationships among firms, but because the primary economic assets reside within individuals. Before an innovation becomes a marketable product, it is an idea that lives within the mind of the innovator. Few ideas get to market without the help of other ideas. This means that the people holding correlative ideas must work together in order to create tangible products. Relationships and interpersonal cooperation are part and parcel of the creative economy.

The emphasis on relationships brings to light another necessary capacity. In an economy in which relationships and "soft" contracts replace exacting legal obligations, trust and trustworthiness become essential. If Chiat/Day's employees had trusted Omnicom not to implement mass layoffs, they would not have left Omnicom with an expensive empty shell of a company. A reputation for trustworthiness is an important asset in the creative economy. Developing such a reputation requires the ability to act with responsibility and with a sense of ethics. I call this capacity virtue, although many other terms could be used.

Success, then, in the type of economy toward which we are moving, and that today's children

will experience, depends upon the capacities of creativity, self-knowledge, social skills, and virtue, however labeled. The main point is that today's children will need to succeed on the terms of entrepreneurs and not as laborers. There is evidence to suggest that these skills, or something akin to them, have always been necessary for success. We are, however, coming, in the mainstream, to an increased understanding of their importance.

Downsides

While I have so far painted a fairly rosy picture of the creative economy, we should note that there are downsides to this change. I have worked in the bastions of both industrial capitalism—Wall Street—and the creative economy—Silicon Valley. In every manner, I experienced Silicon Valley as a place more supportive of human beings and of human ideals, as well as a more enjoyable and more egalitarian place to work. Working in the Valley, however, was no walk in the park. Hours were long, high levels of responsibility were expected, and I would not have survived without a continually fueled inner drive.

In general, in the creative economy individual markets and firms are notoriously unstable, even as the system itself remains stable. For those who do not manage personal change well, the level of flexibility required by the creative age may bring about nostalgia for the industrial age. Further, while the cooperative nature of creative age markets does ease competition, this can be a double-edged sword. With a minor decrease in competitiveness, there is more room for everyone to breathe and plenty of room for cooperation. But, if easing competitiveness goes unchecked, we can easily find a single firm dominating an entire market, a situation that rings of exploitation, not of freedom.

Most important, even though there is clearly a push toward a more human-focused economy, the dehumanizing forces that took hold during the industrial age are far from banished. As during any change, a careful eye on the direction of the change and a strong participative hand are needed to ensure that the creative economy lives up to its more humanizing potential.

We can take heart, however, from the understanding that, increasingly, parents will face less

pressure to socialize their children to fit into a dehumanizing system and will be increasingly interested in finding an education system that emphasizes fuller human capacities like creativity, cognitive flexibility, social skills, and the will force of an entrepreneur. Waldorf education, with its foundations in the entrepreneurial environment of Steiner's envisaged threefold social organism, has long been prepared for this challenge.

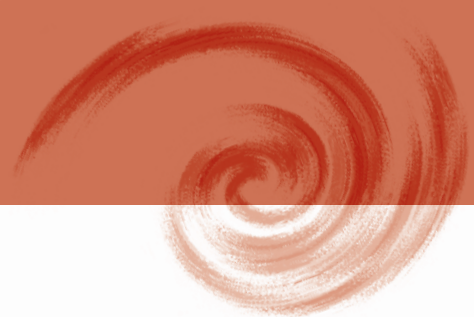
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The Development of the Hand in the Young Child

Jane Swain

This article describes some of the intricacies and the abundance of amazing stages through which infants and toddlers progress in their fine motor development, so that professionals familiar with the basic concepts of motor development can begin to recognize these movements in their work with children.¹ I avoid giving specific ages for motor milestones, since each child will progress wisely at her own pace, and the quality of the movement is what is most important, not the timetable.² While each child develops uniquely, I present an archetype of development. If the child skips a stage or two, all is not lost. All of us, at any age, have potential for further growth and development. I do not wish to support a deficit model or a fix-it mentality on the part of teachers and caregivers of infants and very young children, but rather to help them see the genius of the child at work in the unfolding of her fine motor development. I encourage professionals to supplement knowledge such as that contained in this article by honing their own skills in observation for a short period of time each day.

Her position in the womb influences the newborn. It gets quite tight in the womb during the last months so that, at birth, the baby is over-stretched on her backside and somewhat contracted in her arms and legs. Her shoulders are elevated toward her ears, so that it looks as if she doesn't have much of a neck. Her hands are generally held in fists when she is resting. Her head is rotated to either side, the neck extended. The newborn cannot keep her head in the midline position.

The newborn may have tremors, as myelination of the nerves is not yet complete. Random movements of arms and legs are jerky, unsophisticated, and without voluntary control. The baby moves in undifferentiated total patterns. For example, if her arm moves out to the side with the elbow straight, the hand will usually open too, as

this completes the total pattern. Similarly, when the baby nurses, occasionally the hands also perform a sucking movement, as if the entire body is sucking. The grasp reflex is in full force; if one touches the palm of the hand, the fingers will curl. Her motor and startle reflexes are also strong, so that if her head drops backward slightly or she hears a sudden loud noise, she will cry, her arms and fingers will extend or open and then flex or close across the body in a two-part response.

One really can't speak about the hand without commenting on the eyes and the breathing, because these are related. The newborn's eyes can

focus at about seven inches, which is the distance to the mother's face when she is being held in the nursing position. The newborn is a "belly breather." While breathing actually occurs in the chest, we see the in and out motion in the abdomen.

Time passes, and the baby is not so flexed anymore. At rest, the arms and legs roll out, a little

farther away from the body, and the elbows are straighter. The arms move more, in a windmilling sort of motion. The hands open more, although the grasp reflex still manifests strongly if something is placed in the palm of the hand. The baby still can't keep her head in the midline position, and the neck is still extended. In fact, the baby is even more asymmetrical than she was at birth. This is when the asymmetric tonic neck reflex influences the baby's movements. In this reflex, if the head is turned to one side, the face-side arm and fingers straighten, and the skull-side arm and fingers flex or curl. Now the baby begins to notice her hand and spends much time looking at it. What is this? Could this possibly be part of me? Gradually vision and movement become more integrated.

Time passes, and early stages of head control emerge when the baby is lying on her back and her head can come to midline and stay there. The

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baby learns to tuck her chin, instead of keeping it extended, as in the earlier months. This new head position is liberating. Now the eyes start to converge, better tracking occurs, and the baby can shift her gaze more easily between two objects. The shoulders lower, and the neck starts to be revealed. The hands come to the midline position. The grasp reflex fades; the hands are predominantly open at rest, and the very early stages of a volitional grasp begin. The baby still can't combine reaching out with grasping, however. Grasping is a flexion pattern, and reaching is an extension pattern. Combining the two is too complicated, but the baby can grasp at her clothes at her chest, because here the fingers and arm are both flexing.

As more time passes, the baby comes more fully into this glorious stage of symmetry and midline orientation, a noteworthy accomplishment. The head comes to the midline position for longer periods of time. The hands play together at the midline position, and everything goes in the mouth. The hands also find the knees. In another few weeks they find the feet—which also go in the mouth. As the baby plays with her knees and feet in the midline position, she may turn to look toward the side, and, surprisingly, plop over to lie fully on her side. This characteristically happens at first by accident, and then the baby learns to do it intentionally. Time passes and she will learn to roll all the way over into the prone position, and also from prone to her back.

At this time of symmetry and midline orientation, the baby reaches out for toys. The reflexive grasp fades as the volitional grasp comes more and more into the picture. This early volitional grasp is a primitive pattern whereby the baby grasps from the pinkie side of the hand with no involvement of the thumb, called an ulnar palmar grasp. She reaches with poor aim, and overshoots when she reaches. The cerebellum has not yet developed fully; it will later correct the reach in midstream and fine-tune her aim.

The reach is visually directed, that is, she must see her hand and the object. She needs vision because her sense of where her body parts are in space and what they are doing—proprioception—is far from fully developed. Spending more time bearing weight through her hands in the prone position and in crawling will help her to develop this sense of proprioception. The baby now bangs objects with a strong downward motion. She can't yet control how hard the muscles are contracting. With all this activity of the hand, the baby begins to develop a concept of cause and effect, of consequence: she purposely reproduces an interesting result that occurred initially by chance. This is a lovely example of the

intimate relationship between movement and learning.

When she lies on her back and plays with toys, the baby starts to work on more complex hand skills. Transferring an object from one hand directly to the other is too hard, so she uses an interesting strategy with her mouth. She takes an object from one hand, puts it in her mouth, and then grasps it with her other hand.

Once she has the capacity to roll to her tummy, the baby explores the prone position. She learns to push down into the supporting surface. It

With [the] activity of the hand, the baby begins to develop a concept of cause and effect, of consequence: she purposely reproduces an interesting result that occurred initially by chance. This is a lovely example of the intimate relationship between movement and learning.

is very important to know where down is. Think how disturbed we feel when we lose this fundamental relationship to gravity, for example, in an earthquake or on a carnival ride. Older children who have poor balance and are fearful of movement very often have difficulty finding their orientation to the supporting surface beneath them. Initially, the baby pushes down through her forearms to come up on her elbows. With time, she shifts her weight onto one side in order to reach for a toy with the other arm. After a while, she pushes down and comes up onto extended, straight arms. In this position, she experiences deep pressure into the base of her hand, and begins to work on wrist control. On extended arms, she gradually learns to shift more onto one

side in order to reach with the other arm. Soon she pivots in both directions.

All this work in the prone position lengthens and strengthens the muscles that stabilize the shoulder blades on the rib cage. The shoulder blades can gradually hold themselves in various positions on the rib cage, depending upon where the hand is used in space.

This work in the prone position also provides the brain with wonderful deep pressure and joint sensation coming from the hand and especially from the thumb side of the hand. So the baby's brain registers more accurately where her thumb is and what it is doing, which in turn promotes more coordinated use of her thumb.

Now the grasp changes from the pinkie side of the hand—ulnar palmar grasp—to the thumb side of the hand—radial palmar grasp—which also has no opposition of the thumb yet. With improved proprioception, she has less need for visually directed reaching.

The grasp is voluntary now, but the baby has no concept of pressure when she grasps. She will grasp objects very tightly. This primitive pattern sometimes still remains in older school-aged children and can be observed when they grasp a pencil with excessive pressure. At this point the baby has mastered the extremes of grasping and reaching, that is, she grasps too tightly, and she releases a toy with a fling of the entire arm, a total extension pattern. Now she scratches at a surface, such as the crib sheet or the carpet, with her fingers, and this activity works on the midranges of grasp and release.

The baby employs her new hand skills by exploring toys and objects. She is using judgment, spatial perception, and she is learning about the qualities of objects. Cognitive development does indeed go hand in hand with fine motor development.

As the baby masters rolling and uses rolling to get from one place to another, she rotates her trunk, activating the abdominal muscles. In the newborn, the ribs are initially horizontally oriented. As the abdominal muscles become more

active, they pull on the ribs, and this changes the orientation of the ribs to slant downward, as in the adult ribcage. The activated abdominal muscles also stabilize the ribcage, and this alters the interplay of the breathing muscles. As a result, the baby's breathing gradually changes to a thoracic breathing pattern. We see the in and out motion

of breathing now in the chest, rather than in the belly, and the baby's lung capacity increases. She can cry louder and longer. She also has more lung capacity for babbling, and this favorably influences speech development. All this work in the horizontal position helps the baby to control her trunk, so that she has a stable base from which to control her head. Good

head control contributes to coordinated eye movements, which in turn affect eye-hand coordination.

The baby becomes more and more active in the prone position. She assumes the "airplane" position, arms and legs up off the floor, and then "swims" in this position. She crawls on her belly. She rises onto extended arms, and pushes her body backward. During this motion, the shoulder blades glide downward on the ribcage, and the muscles and tissues are further elongated. This is significant transformation from the newborn's shoulder elevation toward the ears.

The baby plays freely on her side, on her elbow, and also up on her extended arm. Only now does she come into the sitting position on her own. She transitions through various positions, for example, from sitting to hands and knees to lying on her side.

The baby starts to crawl, and tries a variety of crawling options. She may crawl using her arms in the normal way and bend her trunk to the side so that her legs are not really engaged. She may crawl with the same-side arm and leg moving together. And she will crawl reciprocally, which involves a complicated counter-rotation in the trunk whereby the upper trunk rotates in one direction and the lower trunk rotates in the opposite direction. During all this work in the prone

In educational action research this form of attention needs to be acknowledged and taken into the arena of conscious, creative inquiry. . . . It is by the gateway of [consciousness] that we bring the self-understanding of science in touch with moral life and the cosmos.

position and on her hands and knees, the weight of the body is transferred through the hand in various patterns. This weight transfer helps to develop the arches of the hand.

Reciprocal crawling, especially, and the transitions through the various positions, shift the baby's weight through the thumb side of the hand. The shifting of weight enlivens the thumb; the brain receives further proprioception and deep pressure from the thumb, and now the baby begins to master thumb opposition in a variety of ways. In one pattern, the thumb pad opposes the side of the index finger, a lateral pincer grasp. In another pattern, the thumb pad opposes the pad of the index finger, an inferior pincer grasp. In a third pattern, the thumb pad opposes the pads of the index and long finger, the three jaw chuck grasp. The baby now becomes very active in exploring and picking up every piece of fuzz around the house.

The crawling specifically elongates the index finger tendon, readying it for more coordinated work. The baby learns to point and poke with her index finger. She can isolate one finger from the others, rather than use the total patterns of the newborn period. The baby frequently crawls with a toy in her hand, which further stretches out the tendons of the wrist. Crawling also offers the opportunity to enhance coordination of the eyes. The baby looks from one hand to the other and back again when she crawls, in the same pattern that the eyes later use for reading. The baby looks down at her hands and then across the room and back down again in the same pattern that the eyes later use for copying from a blackboard to a paper on a desk.

At this time, the baby picks up objects of different weights. Her arm initially falls and then readjusts according to the weight of each particular object. She can release an object into a container if her wrist is stabilized on the container's edge. She no longer needs to fling her arm or use her mouth. With more time, she releases an object in the air without needing to support the wrist.

The baby masters bear walking. She pulls herself up to a standing position, first using mostly her arms, and then increasingly using her feet. She cruises along a coffee table or other surfaces at a helpful height and then learns to walk freely. Her shoulder blades pull back, her arms are out to

the sides, and her hands are up in the air when she initially stands alone and walks freely. This helps to stabilize her in the upright position. Gradually the arms relax and come down as the child's balance improves, and the hands are freed for activity in the standing position. The toddler masters a more sophisticated form of opposition where the tip of the thumb opposes the tip of the index finger, a superior pincer grasp, rather than using only the pads of the fingers.

Toddlers love to give an object to another person and then have it returned. This game celebrates the capacities of the hand. Giving and receiving are archetypal movement of the hands that she has worked so many months to master. Fine motor development continues as the child grows older, but, at this point, she has achieved an incredible amount, and has laid a solid foundation for all that is yet to come.

Endnotes

1. I write this article from my experience as a physical therapist, and specifically from my postgraduate pediatric training in the neurodevelopment treatment (NDT) approach. Bena Bobarh and Karel Bobarh, M.D., developed this approach, and I am indebted to their genius. I also gratefully acknowledge my NDT instructor, Judy Bierman. Additionally, the work of Emmi Pikler has deeply influenced me. Her work is a healing balm that aids infants and young children in the development of healthy fine motor skills. In Pikler's approach, the caregiver gives the infant generous floor time for self-initiated gross motor and fine motor movement, because the caregiver understands that the child has an innate capacity to guide this unfolding motor development, if given the time and space to do so. I also acknowledge my Spacial Dynamics® training under the direction of Jaimen McMillan, and my study of sensory integration, originated by Jean Ayres.

2. I choose to use the female pronoun throughout.

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Rudolf Steiner

The following is an excerpt of a chapter, entitled "The Supersensible in Human Beings and the Universe," from Rudolf Steiner's untranslated book, Education, Teaching, and Practical Life, edited by David Mitchell © AWSNA Publications 2006, available in Spring 2007.

I would like to indicate here briefly some essential points on how one can become a spiritual researcher today, completely in keeping with the organization of today's human body.

Not everybody needs to become a spiritual scientist, but some people aspire to do so. Up to a certain point, everybody can at least become an experimenter in spiritual science, by taking up the exercises I have described in my books and lectures. But whoever wants to become a spiritual scientist nowadays must no longer do it through the physical chanting of mantras, but use instead the purely supersensible practice of thought.

Now, we have learned to think precise thoughts. If I look at the starry sky in scientific astronomy, I am dealing with precise thinking in physics and chemistry. We are striving for the same in biological research, the exploration of living beings, and we feel especially satisfied if we know how to investigate the material world in the same manner in which we train our thoughts to solve mathematical problems. This has even led to the saying that there is only as much exact natural science as there is mathematics in the sciences. For this reason one speaks of exact sciences. Everything must be surveyed in observation and experiment, in the same way we survey the matter when solving a mathematical problem. This is what "exact science" means.

Anthroposophical spiritual science speaks in the same way about "exact clairvoyance." As the contemporary scientist investigates the world exactly, the person who becomes an anthroposophical researcher does the same, only in a dif-

ferent field. One discovers gradually that there are forces hidden in the souls, which remain unused in ordinary life and ordinary science. One discovers, little by little, that the soul, spirit, and physical-sensory are really not yet separated in the very young child, and that the child to some extent pours into speech, into thinking, into upright walking, forces that previously existed in supersensible form. Everything which pours into the blood during the first stage of life, everything which vibrates in the organs, all this pours itself out to the extent that the human being is oriented outward; it pours out into speech, and especially into thought.

But we can turn back the flow. The oriental sage's disciple attempted to attain through chanting, meditation, or inner speaking what one might call the connection between the supersensible in man and the supersensible in the world. Modern humanity must turn thinking itself inward. We

must be able to tell ourselves in complete earnestness: We have come a long way with the observation of external nature. We are looking at the exact thoughts of the star constellations and the planetary paths. We are looking

at the exact thoughts of electricity, magnetism, warmth, sound, and light. We look into the world—exact thoughts re-create this world within us. As spiritual scientists we must be able to put ourselves in a situation in which we look away from all the thoughts that lead us outward to the stars, electricity, magnetic, and warmth phenomena. Like the old sage turning his mantras inward and thus allowing the logos to reveal itself to him, we must be able to turn the power of thinking inward. We must learn to soar inward in our thinking with the same energy we apply outwardly through our senses. The senses are bodily structures that help us, so that we need not use up our own strength, the strength of soul. Thus our meditative thinking will become so strong that our

**Modern humanity
must turn thinking
itself inward.**

thoughts, even while developed in the inner soul being, become as vivid as sensations.

Just think how alive, how intense everything is when you hear sounds, when you see colors, when sensations of warmth and cold pervade your body. Think how dry and abstract those thoughts are that you retain from your experience of the outer world. Meditation consists in so strengthening, so intensifying the thoughts that dawn within us when we hand ourselves to the impassive observation of our thoughts, that they become as bright and clear as sensations. In this way, we achieve a new level of thinking. Ordinary day-by-day thinking is such that one feels passive: these thoughts are actually devoid of strength, mere images, copies of the outer world. It is possible, through meditation, to learn to live in the world of thoughts as one lives in one's forces of growth, as one lives in hunger and thirst, as one lives in an inner sense of physical ease—this is the fruit of meditation. One only needs to learn one thing in order to experience the thought world in this manner: one must learn to weave lovingly in thoughts.

Being a spiritual scientist means having to practice this science with the same devotion as the physicist practicing year-round in his lab. The astronomer practices all year at his observatory. It is really no easier to be a spiritual scientist than to be an astronomer or a physicist. Everybody can verify the spiritual scientist's claims. All it takes is a little attention, as I described in my book *How to Know Higher Worlds*. But just as little as it is necessary to become an astronomer in order to apply the fruits of astronomy in one's worldview, just as little does one need to become a spiritual scientist in order for spiritual science to become an element of our civilization, of our cultural life. Quite the contrary, the kind of interpersonal connections which it can bring about, and which actually must arise in the not-too-distant future—in order to stop the decadence—the kind of social cooperation, of community between human beings that will become necessary and possible, and which is

Meditation consists in so strengthening, so intensifying the thoughts that dawn within us when we hand ourselves to the impassive observation of our thoughts, that they become as bright and clear as sensations.

already needed now, these will be substantially stimulated if one restores confidence to human social life. Those deserve our trust who, from the depth of their soul, speak about spiritual supersensible worlds because as spiritual scientists they arise to them.

Wherever souls can live in intimate closeness, so that the intimacy of the supersensible world can be shared in the supersensible being of humanity, in such a social order forces will be revived that can uniquely fortify our social life. Therefore it is entirely unfounded and only egotistical to say: I do not value the results of anthroposophical science research about the supersensible, for I cannot see things for myself. We all are so constituted that we each have a predisposition for truth, not for untruth. Not everybody can do research about the supersensible world, just as not everybody can paint a picture. As everybody can admire an image that was painted artfully, so anyone can acknowledge the truth of spiritual science as described here, provided he is fully human, with a predisposition for truth, not out of blind faith but out of an inner experience of the truth of spiritual science.

This spiritual science can only be obtained insofar as through meditation, through (thoughtful) concentration in the thinking life itself, one can progress from abstract thinking to a concrete pictorial thinking, to a thinking that is inwardly alive. In this thinking, cosmic thoughts are resurrected. In this thinking, the person will feel he is on the

first step of the path to the supersensible world.

Ancient humanity proceeded from something more material, from speech directed inwardly. Modern humanity must start from something more spiritual, from thought directed inwardly, find a connection with the supersensible in the world, and regain the ability to speak of this supersensible realm in the world. If one thus enters the supersensible world by way of inwardly experienced thinking and the supersensible in one's own being partakes of the supersensible in the universe, what one finds will not remain empty words. In precisely the same way the mate-

rial world surrounds us with the multitude of plant forms, animal forms, and the light streaming down from the stars, just so to some extent the material world will fade before spiritual contemplation is revealed in pictorial thinking and a spiritual world dawns for us. We now do not just experience the sun's physical radiance; we see a world of spiritual beings, whose physical image is the physical sun. We draw the physical appearance of the sun into

the spiritual being of the sun. And through the physical appearance of the moon, we penetrate to the spiritual moon-beings. We learn to see that spiritual moon-beings lead the human soul out of spiritual-soul worlds, through birth, into earthly life, where the mother and the father receive them into the body. We learn to know how, in the spiritual sun beings, lie the forces that later lead the human being through death, and we learn to see the path of the human soul out of supersensible worlds.

This knowledge is still amplified if instead of training the will by adopting body postures, as the ancient Orientals used to do, one develops the will in the same way one has developed thinking into a precise clairvoyance. It was a training of the will, when human beings suppressed their orientation to the outside world, crossed their legs and sat on them in order to receive from the supersensible world, through the human being, perceptions from different streams in the world. Modern humans cannot do this. Their organism is different, they must work directly with the will. Whatever the ancient Easterner might have developed in a more physical fashion through body postures (also by turning the body to the east, the west, the south), all this has become an imposture for modern people. Modern humans must take their will immediately in hand. And you will find in *How to Know Higher Worlds* and *Esoteric Science* a whole series of exercises for self-control, self-education, especially cultivation of the will. Here are a few.

A person who is used to following the course of external events earlier in the day may change his/her thinking: for instance in the evening, visu-

By visualizing the course of nature in reverse sequence, the person can think beyond the natural flow of events, the person thinks at cross-stream. This strengthens the activity of will in thinking.

alize the last thing one experienced in the day, then what was experienced earlier in the day, and so forth until morning. By visualizing the course of nature in reverse sequence, the person can think beyond the natural flow of events, the person thinks at cross-stream. This strengthens the activity of will in thinking. This is particularly the case if one pays attention to very small details. Say you imagine climbing stairs: instead of picturing your-

self climbing the staircase, visualize yourself standing on the last step, going backward breaking loose from the actual experience and present the ascent as a descent. This strengthens the will activity in thinking. I can also fortify this will when undertaking my self-education by telling myself: I have such and such a habit; I will alter it; three years from now I must in one particular respect have acquired a completely different habit. There are hundreds of such exercises, will exercises, aimed directly at transforming the will, so that it is loosened from the restrictions of mere physicality.

In so doing, modern man performs an exercise similar to the one practiced in the Eastern sage's postures. We cannot return to these old exercises for reasons I have explained. But in this way, modern humans can achieve an immediate relationship between their own supersensible being and the supersensible being of the world.

This can be clarified with a metaphor. Take the human eye: what makes it a seeing organ? Imagine the cataract: it is a hardening of the lens or the cornea, which shows that if matter becomes dominant in the eye, the eye can no longer be used to see. In order to serve vision, the eye must be absolutely transparent in particular parts of its organ. It must to some extent be "selfless" to serve the human being. Just so our body, when we fortify it through exercises, becomes a spiritual sense organ. Our body at particular moments of cognition, not in ordinary life, is no longer penetrated by compulsions, instincts, desires. It becomes purified, as does the eye, in order to become transparent. And just as one sees the world of color through the transparent eye, so

with a wish- and desire-free body, the body is not always transparent but it can be made transparent for particular times. It gets trained for transparency to the spiritual world, the supersensible world to which one belongs as supersensible essence.

Thus we learn to know what is truly supersensible in man. To see through what happens with a person who made his body transparent and lives in the purely supersensible world, means having solved the riddle of death. In that contemplation, we have life out of the body—we know how one lives after relinquishing the physical body and crossing the gate of death. One knows what it means to live in the world without the body. In this fashion one learns to know one's own supersensible being. And insofar as we learn to know it, as we see it crossing the gate of death while alive, we learn that it can be taken up in a supersensible world, just as, at conception it was released into earthly life by the supersensible world. And by learning to know our own human supersensible nature, by learning how in life the soul can cross the gates of death, we also learn that the soul can be received by a supersensible

universe, just as it was originally released into earthly life by the supersensible world. We learn to see now the supersensible realm of the world. In living thought achieved through meditation, we learn to see behind the sun the spiritual sun-world, behind the moon the spiritual moon-world, these spiritual beings that lead man into earthly existence and that lead him out of earthly existence. And then we know that after death our living soul is received by the living being of the world, the living being of the Universe, the supersensible Universe. Just as our body is received by the material world and called to death, so too our human soul is called to life in the eternal realm by those beings which one sees through in the supersensible realm of the world.

We can then see the path followed by human civilizations as one that gives us strength to incorporate morality and religion into the natural world order, by cultivating the will, a cultivation which can be effected in very precise exercises, just like mathematics, through thought exercises that lead to an exact clairvoyance. This is what we need today.

Do the Festivals Have a Future?

Eugene Schwartz

*A*s the Waldorf school movement continues to expand in North America, the risk grows that there will be some dilution of its basic principles. With this in mind, it is not surprising that the passionate and comprehensive celebration of the Christian Festivals that characterized the Waldorf school movement in its earlier years is fading. What follows are some thoughts on how this important change has come about and how the future of these Festivals may be understood.

Why have the Christian Festivals become less important to schools in the past few years? Several factors play into this:

- A decreasing interest in and commitment to the Christian basis of anthroposophy among teachers. Although Waldorf educators will generally agree that it is impossible to work with the Waldorf method without understanding its anthroposophical basis, many younger teachers do not see anthroposophy as their personal spiritual path. They will stage Festival celebrations “for the children,” but not necessarily feel an inner link to the pageantry and traditions.
- The expansion of Waldorf methods into charter schools, public schools, and home schools. Such expansion is undoubtedly necessary to bring even a modicum of the Waldorf experience to children whose social or economic circumstances prevent them from finding their way to independent Waldorf schools. Over the next decades, charter schools, public schools, and, above all, home schools are likely to be the points of most significant growth in the Waldorf school movement. At the same time, these schools are also the least likely to emphasize the Christian Festivals as a pillar of Waldorf education. Critics often focus on

precisely this gray area in the Waldorf movement, making individual teachers and even independent schools reluctant to do anything that would appear remotely religious. Myriad legal, religious, and personal issues stand as obstacles to the celebration of the Festivals in these settings, and there is little that independent Waldorf schools can do to ameliorate this situation.

- Because of their popularity, it is relatively painless to get families to engage in the celebration of such non-controversial holidays as Halloween, Thanksgiving, and May Day. Martin Luther King, Jr. Day has taken on the importance that Abraham Lincoln’s Birthday, which is no longer a national holiday, once held. I should note that I have never taught a Waldorf class fourth grade or older that didn’t demand that Rudolf Steiner’s birthday should be a school holiday, i.e. a day off, so perhaps this occasion, too, will one day be added to the list. The term “holiday” has itself drifted far from its “holy day” meaning to connote a more generalized time of celebration and vacation from school or work. American children are exposed to ceaseless advertising campaigns that emphasize the fun of consuming in celebration of many of these holidays, and it is difficult for the relatively obscure Festivals celebrated in Waldorf schools to compete with the consumerist drive of corporate America.
- The growing pluralism of the Waldorf school population. One mark of the success of independent Waldorf schools is the diversity of religions in their student bodies. For the past few years, more attempts have been made to incorporate non-Christian religious symbols

and stories into the Christian Festival celebrations, e.g., the lighting of a menorah at the Advent Garden. At the request of non-Christian families, some schools have given their Festival celebrations and pageants more generic names, so that Michaelmas becomes the Fall Festival and the Advent Garden is called the Spiral of Light. In situations where it is not possible to soften or eliminate the “Christian message,” e.g., a performance of the “Shepherds’ Play,” parents may keep children home on the day of its performance.

Any one of these bulleted points could serve as a field for future research into the viability of the Festivals, but I want to pay special attention to the fourth point, the watering down of Christian Festivals in independent Waldorf schools. This increasing tendency to smooth over differences by pretending they don’t exist is represented well by the answer to the frequently asked question (FAQ), “What are Michaelmas, St. John’s Day, etc.?” provided by one of the better-informed “Waldorf” web sites:

The four seasonal festivals are Michaelmas (fall), Christmas (winter), Easter (spring), and St. John (summer).

Michaelmas, September 29: St. Michael is known as the conqueror of the dragon, the heavenly hero with his starry sword (cosmic iron) who gives strength to people.

Christmas: An ancient festival; celebrated when the sun sends the least power to the earth, as a festival which awakens in the human being an inkling of the very wellsprings of existence, of an eternal reality. It is a time when the soul withdraws into the innermost depths to experience within itself the inner spiritual light.

Easter derives its name from pre-Christian goddess symbols of rebirth, fertility and spring. The renewal of man’s being is celebrated with that of the earth. Ancient symbols of the hare and egg are both known as signs of the return of life after winter’s sleep.

St. John - June 24 - Midsummer Day: Ancient peoples, watching the sun reach its high point at this time, lit bonfires to encourage it to shine and ripen their crops. It is a time when

the cosmos brings the spiritual to man - a time when the spiritual, which animates and weaves through everything in nature, is revealed.¹

It seems significant that the only time that the word “Christian” appears in these descriptions is in the phrase “pre-Christian.” Except for the Michaelmas paragraph, every description describes precisely those aspects of the ancient festivals that Rudolf Steiner emphasized the Christ Being had come to change or even completely transform. In order to make the Christian Festivals palatable to parents interested in Waldorf education, the author of the Waldorf Resources web page turns them back into pre-Christian Festivals.

The pluralistic student body that is served by independent Waldorf schools in North America should be a fructifying source of inspiration for the sort of renewal of the Christian Festivals that Steiner repeatedly described. In practice, however, faculties make few efforts to take up such an undoubtedly challenging task as creating Festival celebrations that speak to the “universally human”—Festivals that would be clear about differences while finding the ties that bind us all to one another. Instead—especially at Advent and Hanukkah time—many schools go out of their way to placate nervous parents by staging Festival celebrations that are the equivalent of milk that has been homogenized and pasteurized; no one will be harmed by the event, but little really nourishing remains.

The Waldorf school in which I taught for many years was distinguished by significant populations of observant Jewish families. The seemingly endless weeks of Advent preceding Christmas, that is, Winter Break, not to speak of the Three Kings’ celebration following the break, were often agonizing for them. As a proactive measure, I offered a lecture on “Religion in the Waldorf School” in November, followed by two more lectures on Steiner’s Christian perspective: “Cosmic Christianity” and “Christianity on Earth.” The audience grew in number every week, and, though no one was converted, parents appreciated the school’s willingness to be transparent about its philosophical foundations.

If the celebration of the Festivals was merely another line item on that nebulous list called the “Waldorf curriculum” there would not be too

much cause for concern about the present state of affairs; many aspects of the curriculum are being questioned and changed. In regard to the Christian Festivals, however, we have Rudolf Steiner's admonitions that the very relationship of the earth to the heavens is in the balance and that this relationship depends on the Festivals being rightly understood and rightly celebrated.

A phenomenon such as "global warming" reflects the kind of homogenization of the four seasons that in turn reflects the listless relationship that many Americans have to the turning points of the year and their enlivened celebration. Research conducted by the University of Illinois recently discovered that significantly less meteoric iron—a substance Steiner described as carrying powerful Michaelic forces—is reaching the earth:

Polar clouds are known to play a major role in the destruction of Earth's protective ozone layer, creating the springtime "ozone hole" above Antarctica. Now, scientists have found that polar clouds also play a significant role in removing meteoric iron from Earth's mesosphere. The discovery could help researchers refine their models of atmospheric chemistry and global warming.³

Which, we may ask, came first—our alienation from the cosmic significance of the seasons, or the atmospheric blurring of the clear boundaries between the seasons, with all of the consequences that may ensue for life on earth?

On a purely pedagogical level, there is growing concern about the newly-labeled phenomenon of "Nature-Deficit Disorder." Describing recent research that points to the benefits of immersion in natural settings for children with ADHD, Richard Louv, author of *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder*, writes:

If a greener environment can play a role in curing ADHD, few if any studies have explicitly examined whether the converse is also true: that ADHD may be a set of symptoms initiated or aggravated by lack of exposure to nature. By this line of thinking, many children may benefit from medications, but the real disorder lies in the society that has disengaged children from nature and imposed on them an artificial environment for which they have not evolved. Viewed from this angle, children and adults

alike would suffer from what might be called nature-deficit disorder, not in a clinical sense, but as a condition caused by the cumulative human costs of alienation from nature, including diminished use of the senses, attention difficulties, and higher rates of physical and emotional illnesses.⁴

On both the macrocosmic and microcosmic levels we ignore the world of nature at our peril. The Christian Festivals and their renewal and expansion, as described by Steiner, provide a vital and comforting space in which children and adults alike can renew and expand their relationship with the earth and its relationship with the sun, moon, and stars.

Endnotes

1. <http://www.waldorfresources.com>.
2. These lectures are available on CD at www.millennialchild.com.
3. <http://www.news.uiuc.edu/NEWS/04/0415/meteoriciron.html>.
4. <http://www.oriononline.org/pages/om/05-4om/Louv.html>.

Spirituality in Higher Education A UCLA Study

Arthur Zajonc

*T*he week before Thanksgiving I found myself at the University of California in Los Angeles (UCLA) among approximately sixty academics invited to be part of a proactive effort to support spirituality in higher education through both curricular and co-curricular means. Ten teams of four had been invited from diverse colleges and universities, including Carnegie Mellon, UC Irvine, Bates, and Wellesley. We were at UCLA's prestigious Higher Education Research Institute (HERI) at the behest of Professors Alexander "Sandy" and Helen Astin, founders of HERI, who have been researching the spiritual life of students and the professoriate in recent years. Some years ago they came to the realization that

...the relative amount of attention that colleges and universities devote to the "exterior" and "interior" aspects of students' development has gotten out of balance... we have increasingly come to neglect the student's inner development—the sphere of values and beliefs, emotional maturity, spirituality, and self-understanding.

The Astins and their research team, therefore, set out first to "examine the spiritual development of undergraduate students during their college years," and then to do an analogous study of spirituality in the professoriate.

In 2004 HERI's Spirituality in Higher Education research project surveyed 112,000 first-year students at 236 colleges and universities with a follow-up survey scheduled for 2007; in 2005 a similar survey of professors was performed. I offer a sampling of their findings concerning incoming freshmen:¹

- College students show a high degree of spiritual interest and involvement. Three-fourths say that they are "searching for meaning/purpose in life" or that they have discussions about the meaning of life with friends. Similar numbers have high expectations that college

will help them develop emotionally and spiritually.

- Many are engaged in a spiritual quest, with nearly half reporting that they consider it "essential" or "very important" to seek opportunities to help them grow spiritually.
- Eight students in ten attended religious services during the past year and similar numbers discussed religion with both friends and family.
- More than two-thirds pray, and four in ten consider it very important that they follow religious teachings in their everyday life.
- Almost eight students in ten believe in God, with more than half perceiving God as "love" or as the "creator," and about half experiencing God as a "protector."
- As they begin college, freshmen have high expectations for the role their institutions will play in their emotional and spiritual development. They place great value on their college enhancing their self-understanding, helping them develop personal values, and encouraging their expression of spirituality.

Some of the leading indicators from the survey are:

Believe in the sacredness of life	83%*
Have an interest in spirituality	80%*
Search for meaning/purpose in life	76%*
Have discussions about the meaning of life with friends	74%*
My spirituality is a source of joy	64%**
Seek out opportunities to help me grow spiritually	47%***

*Describes students to some or a great extent

**Agree strongly or somewhat

***Consider it essential or very important

The statistics for professors are similarly revealing:

Consider myself a spiritual person	81%*
Goal: Developing a meaningful philosophy of life	70%**
Seek out opportunities to grow spiritually	69%*
Engage in self-reflection	68%***
Goal: Integrating spirituality in my life	47%**

*To some or a great extent
**Essential or very important
***To a great extent

When faculty members were asked whether colleges should facilitate students' spiritual development, only 30% agreed. This was in accord with the results of a smaller study of college juniors who said that faculty rarely or never offered them the opportunity for spiritual or religious discussions or conversation around meaning, purpose, and values.

The recent UCLA meeting I attended had the explicit intention to redress this lack of opportunity afforded to students and to address the core dimension of their lives. Students come to campuses in their first year of college life with the hope that, in addition to traditional academics,

they will develop a meaningful philosophy that touches on the core dimensions of their humanity. Too often they leave without this aspect of their lives being addressed. Those gathered at UCLA recognized value in developing curricular offerings and in developing non-academic supports for students as they explore and deepen their spiritual lives. The issue of language, and even the use of the word "spirituality," was thoroughly discussed, especially by representatives from large public universities. While we all agreed that colleges and universities should do much more to deepen student engagement around meaning, purpose, and values, some did not agree that we should frame it as a spiritual or religious issue. We will be working on these matters in the years to come, both through research and through direct innovation at some of America's leading colleges and universities.

Endnotes

- 1. Full results available at www.spirituality.ucla.edu.

Quicksand and Quagmires of the Soul The Subconscious Stimulation of Youth through Media

David S. Mitchell

Twenty-five years ago I read a report from Liverpool, England, in which a researcher established a high correlation between adolescent crime in Liverpool and its suburbs and American television programs. The report established a ratio between a crime committed and the portrayal of the crime in a television drama. Reports like this one on “copy-cat crime” are popular among sociologists and researchers. They show, however, a statistical correlation, not a causal relationship. Did young people, for example, watch violent television programs and then commit acts of violence, or were young people prone to committing acts of violence drawn to watching these shows on television? Keeping this in mind, and intrigued by the possible implications of this research, I kept a watchful eye out for research establishing a relationship between visual and audio impressions and how they make an imprint on the souls of young people.

The following represents some current research, much of which may seem intuitively obvious, that provides teachers and parents with research-based reasons to steer their offspring away from television violence, particularly as it is found in professional wrestling, and music with sexual lyrics.

Monkey See, Monkey Do

Consensus reports have now been released by the American Academy of Pediatrics, the American Psychiatric Association, the Surgeon General, the National Institute of Mental Health, and more than 1,000 reports and studies conducted by leading figures within medical and public health organizations. These studies point overwhelmingly to a causal connection between media violence and aggressive behavior in some children.

A connection has also been established between viewing acts of violence and the subsequent desensitization that occurs following that

exposure, violence in real life, and the creation of an internalized climate of fear.

A published report claims that today’s average American child watches 28 hours of television per week. That same child typically sits down to at least an hour a day playing video or computer games. Several more hours each week are spent watching movies and videos and listening to music, tallying far more hours than a child spends in school or with his or her family. By the age of 18 that same child will have watched more than 200,000 acts of violence on television, including 16,000 murders.¹

If Music Be the Food of Sex

Music lyrics also influence the subconscious minds of youth. The average youth listens to music 1.5 to 2.5 hours per day.² A study, based on telephone interviews with 1,461 participants aged 12 to 17, in *Pediatrics*, released in August 2006,³ and entitled “Exposure to Degrading versus Nondegrading Music Lyrics and Sexual Behavior Among Youth,” was conducted by a team⁴ from the RAND Corporation.⁵ Among heavy listeners of music with explicit references to sex acts and lyrics⁶ that depict women as sexual objects, 61 percent of teenagers began having sex within two years, versus 29 percent of those who said they never or rarely listened to such music. Federal statistics show that about 750,000 teens around the country become pregnant each year, and an estimated 4 million contract sexually transmitted diseases.⁷

“These portrayals objectify and degrade women in ways that are clear, but they do the same to men by depicting them as sex-driven studs,”⁸ said Steven Martino, a RAND psychologist who led the study. Explicit lyrics are more likely to trigger early sexual behavior than those in which sexual references are more veiled and relationships appear more committed. In addition, exposure to sexually degrading music may also

have worrisome implications for what boys and girls come to expect from their future relationships.

Exposure to lots of sexually degrading music gives young people a specific message about sex. Boys learn they should be relentless in pursuit of women and girls learn to view themselves as sex objects. “We think that really lowers kids’ inhibitions and makes them less thoughtful about sexual decisions,” Martino said.⁹ Martino explained that the researchers tried to account for other factors that could affect teens’ sexual behavior, including parental permissiveness, and yet they still found that explicit lyrics had a strong influence.¹⁰ David Walsh, a psychologist who heads the National Institute on Media and the Family, said the results make sense, and echo research on the influence of videos and other visual media. The brain’s impulse-control center undergoes ‘major construction’ during the teen years at the same time that an interest in sex starts to blossom, he said.¹¹

Benjamin Chavis, chief executive officer of the Hip-Hop Summit Action Network, a coalition of hip-hop musicians and recording industry executives, said explicit music lyrics are a cultural expression that reflects social and economic realities.¹²

Another recent survey from the U.S. Department of Health suggested that most sexually experienced teens wish they had waited longer to have intercourse; other data indicate that unplanned pregnancy and sexually transmitted diseases are more common among those who begin sexual activity earlier.¹³

The RAND study recommends that parents set limits on what music their children can purchase and listen to and be careful not to listen to sexually degrading music themselves when their children are around.

Professional Wrestling

A separate study by the Wake Forest University School of Medicine¹⁴ also published in *Pediatrics*¹⁵ found that teenagers who watched professional wrestling on television were likelier to behave violently than other youth and, surprisingly, girls seem to be more influenced than boys. The study found that teens of both sexes who watched wrestling more often were more likely to carry

weapons, fight on dates, and exhibit other violent behavior. Robert DuRant, the leader of the study, said girls who watched wrestling six or more times over the two-week period had a 170 percent higher chance of starting a date fight than those who didn’t watch wrestling. For boys, there was a 77 percent higher rate of initiating a fight among those who watched wrestling.¹⁶

Considered more entertainment than sport, professional wrestling pits colorful wrestlers portraying demons and heroes against each other in choreographed violence. It is dominated by World Wrestling Entertainment Inc., which airs shows such as RAW, Killer in the Cage, Smackdown, and SummerSlam. The WWE reported about \$47 million in net income during its last fiscal year.

World Wrestling Entertainment spokesman Gary Davis rejected the findings of the Wake Forest study. “In contrast to the findings of this flawed study, many of our fans attest that watching World Wrestling Entertainment (WWE) programming has been a positive experience for them and their children,” he said. Vince McMahon, pro wrestling’s promoter icon, blasted the study as “junk science”¹⁷ and said the WWE is threatening the University with a lawsuit for doing the research.¹⁸

Be Awake

It should be clear that adults need to exercise renewed wakefulness and a high level of consciousness with regard to the well-being of their children because moral quicksand and ethical quagmires exist around every corner. One can never be sure today that young people will have solid ground upon which to walk.

Endnotes

1. <http://www.babyzone.com/features/content/display.asp?TopicID=75&ContentID=968>.

2.

<http://www.rand.org/news/press.06/08.07.html>.

3. You can read the full study at:

<http://pediatricsaappublications.org/cgi/content/full/118/2/e430>.

4. The researchers included Steven C. Martino, Ph.D., Rebecca L. Collins, Ph.D., Marc N. Elliott, Ph.D., Amy Strachman, M.A., David E. Kanouse, Ph.D., and Sandra H. Berry, M.A.

5. RAND Health, a division of the RAND Corporation, is the nation's largest independent health policy research program, with a broad research portfolio that focuses on health care quality, costs and delivery, among other topics.

6. Examples of degrading sexual lyrics include: "Half the ho's hate me, half them love me/The ones that hate me/Only hate me 'cause they ain't fu***** me/And they say I'm lucky/Do you think I've got time/To fu** all these ho's?" – from Ja Rule, "Livin' It Up."

7. <http://www.rand.org/news/press.06/08.07.html>.

8. <http://pediatrics.aappublications.org/cgi/content/full/118/2/e430>.

9. <http://pediatrics.aappublications.org/cgi/content/full/118/2/e430>.

10. "This study tests the prospective relationship between exposure to degrading and nondegrading sexual music content and subsequent changes in adolescent sexual behavior. We collected longitudinal data on adolescents' media use and sexual behavior, conducting three surveys. Music listening was assessed in the second of these three surveys and used to predict initiation of sexual activities in the following 2 years among participants, taking into account sexual experiences before the second survey. This design allowed for the possibility that sexual experience influences teens' selection of sexual music content and accounted for that possibility in testing for the effects of music on sexual behavior. The design also allowed us to take into account baseline characteristics that might contribute both to sexual behavior and exposure to sexual content in music, including several individual and family characteristics. By controlling for these possible confounding variables, we were able to more confidently attrib-

ute any differences in teens' sexual behavior to their exposure to sexual content in music.

Teens who said they listened to lots of music with degrading sexual messages were almost twice as likely to start having intercourse or other sexual activities within the next two years, compared with teens who listened to little or no sexually degrading music.

Among heavy listeners, fifty-one percent started having sex within two years, versus twenty-nine percent of those who said they listened to little or no sexually degrading music."

11. <http://www.cnn.com/2006/HEALTH/parenting/08/07/sexlyrics.teens.ap/>.

12. http://www.boston.com/news/nation/articles/2006/08/07/lyrics_linked_to_teen_sex_in_study/.

13. <http://www.cwfa.org/articledisplay.asp?id=6321&department=CWA&categoryid=pornography>

14. A team led by Robert H. DuRant, a professor of pediatrics, social science, and health policy at Wake Forest's Baptist Medical Center, surveyed about 2,000 students in Winston-Salem and Forsyth County public high schools in the fall of 1999 and again in April 2000. Just over half the group was male.

15. You can read the full study at: <http://pediatrics.aappublications.org/cgi/reprint/118/2/e265>.

16. <http://pediatrics.aappublications.org/cgi/reprint/118/2/e265>.

17. http://corporate.wwe.com/news/2006/2006_08_07_v2.jsp.

18. The WWE also issued a brief press statement condemning the findings: "We find the study flawed and ridiculous and we are contemplating legal action."

Waldorf Graduate Research, Phase II Update

Arthur M. Pittis, Survey Administrator

Phase 2 Survey Process

During the spring of 2005, the Research Institute for Waldorf Education contracted with me to administer the *Survey of Waldorf Graduates, Phase II*. The first phase of this research project, published a year ago in the *Research Bulletin*, listed both the colleges and universities to which Waldorf high school graduates were accepted and the schools that the graduates actually entered.

Phase II of this project delves more deeply into the lives of Waldorf school alumni/ae with the intention of determining:

- Colleges and universities attended and completed
- Fields of study pursued in college or university
- Degrees and level of degrees earned
- Occupations pursued after college or university, or after high school
- Personal and social interests and values
- Quality of personal relationships
- Quality of personal health
- Perceptions by professors and employers of Waldorf school graduates

Phase II Survey Design and Administration

The survey tool, developed by David Mitchell and Douglas Gerwin, consists of both statistical and open-ended questions, grouped into the following categories:

- 1) Participant information (6 questions)
- 2) Education for Waldorf school alumni cur-

rently attending (12 questions) or graduated from college/university (14 questions)

3) Employment/occupation for Waldorf school alumni/ae who did not attend college or university (11 questions)

4) Workforce experience (19 multiple choice, rated questions)

5) Cultural and social activities (16 questions; 15 sub-questions rating importance and frequency of activities)

6) Relationships (7 questions)

7) General experience of life (5 questions)

8) Lasting role of Waldorf education in life (10 questions, including 37 multiple choice sub-questions ranking the influence and importance of Waldorf education on aspects of the participants' lives)

9) Health and wellness (6 questions)

I subcontracted with the on-line provider SurveyMonkey.com. In addition to posting the survey, SurveyMonkey.com also provided on-line mailing list management software and a variety of filtering tools and downloading options, including comma separated value (spread sheet), tabular report, and HTML formats.

In November 2005, I sought assistance from Courtney Lipscomb to manage mailing lists, mailings, phone calls and, where needed, to troubleshoot the on-line software, and transfer the print survey to electronic format, which was then tested and retested for ease of use and workability.

Collection of Contact Information from Waldorf High Schools

Of the 37 Waldorf high schools in North America, 26 had graduating classes in 2004. In addition, one graduate from a Waldorf high

school that closed some years ago opted to take the survey, bringing to 27 the total number of Waldorf high schools represented in the survey. All of the 26 schools included in Phase I of the survey were requested in the fall of 2005 to supply full contact information—mail, telephone, and email—on six alumni/ae from each of the following high school classes: 1994, 1996, 1998, 2000, and 2002. In other words, each school was asked to provide current contact information for thirty-six graduates. While a small handful of schools responded immediately with the requested information, contact with the appropriate person in the majority of the schools was difficult to establish. It was here that a problem, already experienced during Phase I of the project, reappeared—namely, inadequate record keeping. Only a half-dozen schools had up-to-date contact information on their graduates; the rest had spotty information. It was heartening, however, that almost all the schools made the best effort possible to provide the requested information, thereby allowing the survey to commence.

By late December 2005 Lipscomb and I had gathered a contact list of approximately 500 e-mail addresses; in early January we sent the first invitations to all of the names on this list, resulting in a bounce-back rate of approximately 10%. We followed up on bounce-backs with postcards and, eventually, phone calls, when phone numbers were available. A week after sending the initial invitation we supplied the graduates with an email link to the on-line survey, followed by three reminders and re-invitations to those on the list who had not responded.

Because this first invitation resulted in roughly a 50% response rate—or about 250 respondents—the Research Institute decided to extend the survey to all Waldorf alumni/ae who had graduated between 1994 and 2004, and to as many pre-1994 alumni/ae as older schools could supply. This decision ultimately yielded contact information on 900 alumni/ae. The on-line survey remained available to graduates for just over four months, until April 30, 2006.

Participants

Of the 900 Waldorf school alumni/ae invited to participate in the on-line survey, 556 agreed to

take part; of this number 523 answered a sufficient number of survey questions to be included in the results. Some of the remaining 33 respondents had attended only one or more years of a Waldorf elementary school and were therefore deleted from the pool; a handful of graduates asked to be removed from our contact list. The remaining 341 graduates either ignored the offer or responded after the survey had closed.

Of the 523 participants, 87% graduated from mature schools and 13% from medium and young schools. Though the survey did not specifically ask the participants to identify themselves by gender, from their first names it was possible to determine that about 57% were female and 43% were male. These percentages are roughly comparable to the ratio of boys to girls in the Waldorf high schools across North America.

Initially I divided the respondents into three groups:

- Those who had completed college or university (331 participants)
- Those currently attending college or university at the time of the survey (160)
- Those who did not attend or complete college or university (65)

As we collated the responses there were many more responses from the older schools than from the younger schools. Consequently, we looked at the respondents first as a whole group and, second, as two groups—namely graduates of Waldorf high schools before 1994 (220 participants, mostly from mature schools) and graduates from 1994–2005 (303 participants from all schools). In addition, to determine whether the data was skewed by the results from two older schools that had provided 50% of the responses, key elements of the data were analyzed separately. For instance, colleges attended, degrees earned, and occupations pursued by participants from these two schools were compared with the profiles of alumni/ae from all of the remaining schools. No significant differences emerged from this exercise and, therefore, those two schools were included in the full data collection.

Most Respondents Attended Mature High Schools				
Age of School	First Graduating Class	Number of Schools	Number of Participants	Percent of Total Participation
Mature Schools	1943–1994	12	456	87.2%
Medium Schools	1995–1999	5	21	4.0%
Young Schools	2000–2004	9	46	8.8%
Total		26	523	100%

Waldorf High Schools Where Respondents Attended			
School's Age: Mat (mature); M (medium); Y (young)			
Austin Waldorf School (Y)	11	Rudolf Steiner School of Ann Arbor (Y)	1
Chicago Waldorf School (M)	2	Sacramento Waldorf School (Mat)	18
Denver Waldorf School (M)	3	San Francisco Waldorf School (Y)	9
East Bay Waldorf School (Y)	2	Shining Mountain Waldorf School (M)	8
Eugene Waldorf School (Y)	1	Summerfield Waldorf School (Mat)	14
Green Meadow Waldorf School (Mat)	23	Tara Performing Arts High School (Y)	12
Hawthorne Valley School (Mat)	6	Toronto Waldorf School (Mat)	17
High Mowing School (Mat)	153	Vancouver Waldorf School (Mat)	25
Highland Hall Waldorf School (Mat)	11	Waldorf High School of Mass. Bay (Y)	6
Honolulu Waldorf School (M)	4	Waldorf School of Garden City (Mat)	35
Island Oak Waldorf School (Y)	2	Waldorf School of Saratoga Springs (Y)	2
Kimberton Waldorf School (Mat)	103	Washington Waldorf School (Mat)	23
Rudolf Steiner School NYC (Mat)	28	Youth Initiative High School (M)	4

Sorting Collected Data

The data collected from the statistical questions were much easier to sort and organize than were the anecdotal and narrative answers to open-ended questions. A similar situation arose when participants entered more than one answer to a single question. All data were passed to the Research Institute for evaluation and analysis.

Professor/Employer Supplementary Survey

Beyond the survey of Waldorf alumni/ae, separate surveys were sent to 105 professors and 20 employers whom respondents had identified. Replies from over 40 professors and several work supervisors regarding school alumni/ae with whom they had established relationships will be

included in the Research Institute's analysis of the survey.

Analysis of Data

Following an initial review of the data, the Research Institute for Waldorf Education has begun a more in-depth study, identifying trends, describing relationships, evaluating anecdotal responses, and developing a systematic statistical analysis of quantifiable sections that will be published in January 2007.

Teaching Sensible Science

Bob Amis with Contributions from Michael D'Aleo

*A*s Waldorf school class teachers, we strive to fulfill the potentialities of Rudolf Steiner's vision in our own classrooms. This is a daunting task, but perhaps nowhere is it more intimidating than in the science curriculum of the middle grades. As teachers, how do we transcend rote practice of a string of demonstrations and experiments in the physical sciences, and embody a phenomenological approach to science? How do we empower our students to become active participants in developing their own relationship with the world, rather than passively accepting the concepts that are handed down to them by others?

In an effort to help teachers meet this challenge, Douglas Gerwin, director of the Center for Anthroposophy, and Michael D'Aleo, high school science teacher at the Waldorf School of Saratoga Springs, co-founder of SENSRI (Saratoga Experiential Natural Science Research Institute), and co-author of *Sensible Physics Teaching*, created a training program focused on physics and chemistry curricula for grades six, seven, and eight. Now in its second cycle, the course is composed of three one-week sessions. The first session took place this past June and focused on sixth grade physics. Session two convened for five days in early October and centered around seventh grade physics and chemistry curricula. The third session will take place over a full week in February 2007 and will cover eighth grade physics and chemistry.

Participants in the course represent schools from all over North America, from New England down the eastern seaboard to Baltimore, and across the continent to Arizona, Washington, California, British Columbia, and Ontario. They teach classes ranging from grade three to grade eight. Most are in their first cycle and are preparing to enter the upper elementary school years. Others are in their second or third cycle and are seeking to deepen their knowledge of phenomenology and share it with their colleagues back home. One participant is a veteran woodworking and science teacher from New Hampshire who

brought with him a wealth of experience to share with the group.

The course is led by Michael D'Aleo, a mechanical engineer with expertise in thermal physics, a scientific researcher, and an experienced Waldorf school teacher and teacher educator at the Center for Anthroposophy and at Sunbridge College. His insights into the phenomenological approach to science and science education form the backbone of the course. He is assisted by Barbara Richardson, Lylli Anthon, and Bob Amis. Barbara is a gifted and experienced eurythmist, eurythmy instructor, and Waldorf school class teacher. Lylli is a highly experienced class teacher, taking a class from first through eighth grade and then repeating the middle school years many times. Bob has been a middle school teacher for the past five years after a career in business.

Our days begin with eurythmy, followed by an epistemological presentation and discussion led by Michael. A second eurythmy session brings the morning to a close. After lunch, we conduct experiments and demonstrations that are appropriate to the physics curriculum of the grade in question, followed by a lively discussion about the principles and relationships that unite the phenomena in the experiments, and how best to bring these experiences to students. Chemistry is covered in evening sessions.

The most recent meeting of the "Teaching Sensible Science" course, in October 2006, focused on seventh grade physics and chemistry, beginning with an evening session in which D'Aleo led us to a nearby pond to observe. This served as an excellent introduction to the seventh grade optics curriculum, but also provided a springboard for him to help us understand the importance of the intention of the observer in a sensory experience. In our discussion the next morning, we were all impressed by the variety of observations that people had made around the pond the night before. These included reflected images of objects across the pond, the quality of the light on the pond's

surface, the presence and absence of color, the patterns of shadows, the effect of ripples, and objects floating on the surface of the pond.

Taking the idea that observation is informed by conceptual understanding a step further, D'Aleo showed the group a series of images, like the Necker cube, that can be seen in multiple ways, and other images that may first appear to be random collections of light and dark shapes but that—with insight—are recognized as images of familiar objects. This exercise highlighted the way in which we constantly organize sensory experiences in order to “make sense” of the world. This capacity is necessary in order to function in the world, but we need to be keenly aware of it if we are to develop our observational skills. If we are to perceive the world clearly, we must constantly distinguish between what in our consciousness is sensory experience—percept—and what is a mental organizing, or naming, of that experience—concept. This ability enables us to distinguish between what we actually experience in the moment and what we have learned in the past. It keeps us awake to the moment, and it also opens us up to the possibility of a new way of seeing or interpreting what we experience. This activity is fundamental to innovation and scientific discovery.

Distinguishing between percept and concept is also one of the key capacities we can nurture in our students during science courses. In setting the mood for these courses, D'Aleo encouraged us to invite students into fresh explorations of phenomena, as if they are seeing them for the first time. The teacher must also intend this if the students are to take each experience seriously. We can point out to students that most scientific discoveries occur not because someone witnesses a radically new and different physical phenomenon for the first time on the planet, but because someone notices something in a familiar phenomenon and then begins to think about it in a new way. This invitation is especially important for those students whose heads are full of half-understood scientific concepts, who may recognize one of the phenomena in an experiment, believe that they know what is going to happen and why, and then stop observing carefully, or, worse, blurt out some disconcerting prediction.

Later in the week, D'Aleo deepened the dis-

cussion by taking us through Rudolf Steiner's description of levels of motivation for action, showing us how we can guide students toward higher levels of motivation in the way we teach science. He also led us through a conversation about the role of our twelve senses in relationship with the outside world.

In our afternoon sessions, we tackled experiments in the fields of optics, mechanics, and electricity. Anthon, Amis, or D'Aleo led some of the experiments, while participants led others. Those who chose to lead a demonstration got valuable experience in the art of guiding a discussion and helping students to uncover the principles that unite the phenomena. Although this process is difficult, it is rewarding when a student has his or her own “Aha!” moment, one that arrives following willful striving.

Although our schedule was full, we took the time to explore each experiment as thoroughly as seemed fruitful. Discussion of the experiments was also given its full due, as it has to be in the classroom if students are to come to their own insights. Participants were much more confident in their use of the language of phenomenology during this second week than they had been at our first meeting. They were able to describe their observations more precisely, distinguishing more comfortably between percepts and concepts. This allowed us to move more quickly through the discussion of each experiment. Among the more impressive demonstrations we conducted and observed were the camera obscura, the law of rotational balance, the human mouth as a source of wet-cell electrical activity, and the lime kiln.

The lime kiln is part of a Waldorf chemistry curriculum, which was covered in two evening sessions. During the first night, Anthon presented an overview of a seventh grade chemistry curriculum, and then took the group through a study of acids and bases. The second evening session centered on a discussion of the lime cycle. A lime kiln was constructed during a lunch break and then fired up the next morning. The following day, when we dug through the smoldering ashes, the chalk and limestone were barely recognizable. When D'Aleo poured some water on them, however, they hissed and fizzed and smoked and steamed and crackled in a satisfying manner, eliciting “ohs” and “ahs” from onlookers. We com-

pleted the cycle by using our newly made mortar to adhere two bricks together.

Our curricular activities were leavened by Richardson's insightful eurhythmy sessions. Always striving to complement classroom topics, she led us through a number of activities that helped us to find our places in the cosmos and in the group, work cooperatively with others, explore the power of effective speech, and provide a much needed out-breathing in the rhythm of the day.

In our final session together, D'Aleo provided a societal context for our work. He observed that modern science has lost its aesthetic sense. There is too much emphasis on the final product, and not enough on the activity of the process. When technology embraces the activity in which it is engaged, a new sense of beauty will arise, along with a deeper, more meaningful relationship with the process and the product. This will go a long way toward solving our current environmental

problems. Then, as so often happened, Richardson provided us with the perfect passage, this one from Steiner's *The Michael Mystery*, and with it an abiding image for our time together:

One imagination of the Archangel Michael is the following: He reigns through the course of time clad in cosmic light as his essential being, shaping cosmic warmth as the revelation of his nature. As a being he conducts himself like a world, asserts himself only as he asserts the world, guiding forces earthward from every corner of the universe.

For those interested, a third cycle of the Teaching Sensible Science course is being planned to begin in the autumn of 2007 on the West Coast. For more information, please contact Michael D'Aleo at spalight@verizon.net, or Douglas Gerwin at researchinstitute@earthlink.net.



Copper distillate



Copper salt



Electricity experienced



Building a limestone kiln



The experience of a tingle
from a low electrical charge



Exploring limestone extrusions

Working with Slower-Paced Math Students

Lori MacKinder

Last year (*Research Bulletin* XI, 1, Autumn 2005) I wrote about three distinct qualities of slower paced or hands-on math students. To review briefly, these math students are typically feeling-based persons. This means that their feeling lives dominate their will and thinking. Second, they are highly intuitive. They often somatically sense their surroundings and they are impacted and swayed by impressions they receive. Third, they are commonly picture-image learners who frequently need to form mental pictures or stories before they can understand a concept. As a teacher, it is helpful to be aware of the special qualities of these students who commonly are identified as dyslexic, are diagnosed with ADD or ADHD, are contending with emotional issues, or have experienced a trauma in their earlier years. Given this picture, how are we to teach these students? What is required for feeling-based, intuitive, picture-image math students to succeed?

Unfortunately, there is not one answer to these questions. Teachers may choose among various methods. Some common methods include self-paced student work groups in which the grade is dependent upon assignments completed, one-on-one teaching from student to adult, or regular classroom instruction with groups of 6 to 20 students.

This report will examine building a strong lower level math class, using regular classroom instruction, through teacher preparation. To begin, it is fundamentally important that the slower-paced math teacher focus on everything through the lens of assessment and have a willingness to change. The teacher should assess the following before each class begins: self, classroom, materials, warm-ups, and content.

Self

How am I this year, this month, this week, today, and in this moment? Am I healthy and loving? Do I enjoy what I do? Ronald Davis and Eldon Braun conclude in their book, *The Gift of Dyslexia*, that

dyslexics have special talents of perception, imagination, and intuition. They cite talented and brilliant figures from Leonardo da Vinci through Albert Einstein and Winston Churchill to Walt Disney to support their claim. In the classroom, these talents mean that these students may intuit the teacher's mood and the moods of others in the room. It is especially important, therefore, for a teacher to work at becoming open and welcoming. When open students read lack of health or disease in others, they often shut down, deeming unsafe the environment or persons in it. Self-care and self-nurture are keys to a healthful inner world. For teachers, time for self-care can be challenging to find and yet so important to a productive learning environment for our students. In this vein, a teacher's wellness is an essential part of classroom preparation. (See Mitchell, D., "Soul Hygiene and Longevity for Teachers," *Research Bulletin* XI, 1, Autumn 2005.)

Classroom

How are such elements as the room's cleanliness, light, circulation, warmth, aesthetics, spaciousness, smell, and sound? How does the environment affect the twelve senses: touch, life, self-movement, balance, smell, taste, sight, temperature, hearing, speech, concept, and ego? How are these senses affected by or nurtured in the classroom? I have experienced, for example, my students' complete unwillingness to begin a day's learning on days when our classroom has been recently sanitized. The odor in the room repels sensitive students. On some summer days, leaving the lights off may increase participation and awareness. Colored chalk has a way of keeping students' attention at the board when used in an organized manner. Teachers can also open up their own senses and be in the classroom before class in order to get a feel for what students may experience.

Materials

How will I meet the needs of my students with such materials as books, supplies, writing utensils, paper, compasses, straight edges, and colors? It is important for slower-paced math students, who tend to be disorganized and forgetful, to have a safe backup supply of what is needed to learn during a day of math. Many of these students struggle with remembering to bring their backpack and supplies to school each day. It can greatly add to the ease of the room if the students know that they can still do the work assigned using borrowed books, paper, and pencils for a day.

Warming Up

What is in my warm-up bag? Do I have warm-ups that could induce laughter, connection, breath, centering, relaxation, depth, or an increase in energy, if necessary? Am I ready to use them based on how the students show up? Sometimes, teachers will have worked diligently to prepare for class but students show up emotionally shut down or intellectually blocked. This can happen for a number of reasons, many beyond teachers' control. Students may, for example, be exhausted from the other lessons of the day, upset with a friend, hungry, or sleepy. It then becomes the task of the teacher to enliven the students and reopen their feeling life and mental capacities. Nothing works better for this than movement coupled with laughter. Five to ten minutes of movement exercises, rhythm activities, or a game can be enough. Theater and improvisational games are teenage favorites. Sensory integration activities, Extra Lesson exercises, or simply a quick jog around the track work well here, also. These warm-ups have potential to build community, trust, and openness; they can offer a bit of healing, too. *Theater Games for the Classroom: A Teacher's Handbook*, by Viola Spolin, is full of wonderful and quick games that work well as classroom warm-ups.

Content

Am I prepared for today's lesson with multiple teaching methods? Am I prepared to throw the lesson out the window if necessary? Am I prepared to go faster or slower today based on the students' availability? Teachers work hard at

keeping a class on track with the required material for a year. We worry about covering enough material to prepare students for their next educational step. We can feel burdened by the responsibility of delivering a large amount of content in a short amount of classroom time. If a student is pushed through learning too quickly the material becomes deadened. Balancing quantity with quality or content with assimilation is difficult.

An important aspect of content is teaching in large picture images and with the use of manipulatives and colors wherever possible. A strong bridge needs to be built for the slower-paced math student between the semi-abstract and the abstract. Teach, for example, using stories to explain math concepts. David Berg of Making Math Real, Berkeley, teaches an Algebra 1 course for teachers that is wonderfully heavy in stories. Work with manipulatives such as Algebra Tiles, GeoMags, or origami. Color code chalkboard work. Have students create models of current work whenever possible. Relate math to sports or money. Write clear, easy-to-follow steps on the board for any problem that requires more than three steps to solve.

The method that I find most effective is the color-coding of chalkboard work. Not only is it pleasing to look at but it is also a way to organize the board for typically disorganized students. Take, for example, the difficulties of the subtraction step in polynomial long division. The most common error for slower-paced math students with this topic is to add or subtract incorrectly. If, however, in the subtraction step, all the signs change color as well as value, it is easy for students to work correctly and spot their own errors. The same is true for subtracting algebraic fractions. When the subtraction signs are color coded first, it is easier for students to identify the trickier problems that need distribution. Solving for a variable becomes quicker and easier when the unknown is a special color throughout the equation. I often give extra credit to students who color-code their quiz sheet before they begin to work on the problems. I have noticed a direct correlation between this color work and a decrease in simple errors on these quizzes.

Remediation and Further Research

Teacher preparation is only part of what is necessary for students' success. Other elements that contribute to success are actual class time and the responsibility of the students themselves. In many cases, students arrive in class needing remediation before higher-level work can begin. Some signs of needed remediation, not intuitively obvious, that could be examined in future research,

are incorrect pencil grip and ear infections. I have noticed this past year that approximately one third of my slower-paced math students have an incorrect pencil grip and many of them suffer or suffered from frequent ear infections. Other teachers may discover other signs that add to a complete picture of a math student in need of extra help.

Report on the Online Waldorf Library

Marianne Alsop

Each day brings a variety of questions from all over the world. Over the past five months inquiries have come from individuals in many countries including Japan, India, Canada, Ireland, New Zealand, Australia, South Africa, the United Kingdom, Mexico, Argentina, and Brazil as well as teachers and parents in Waldorf schools across North America. The summer brought many more inquiries from home schooling parents in the U.S. and Canada, while those inquiries from the southern hemisphere decreased.

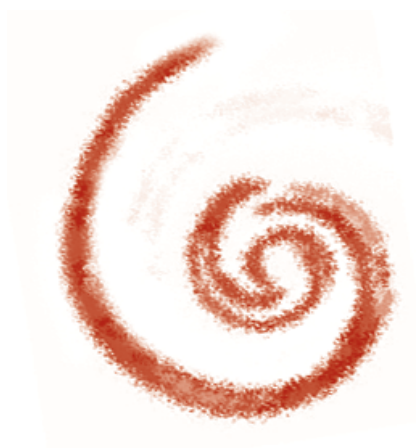
Topics of interest include the Oberufer Christmas Plays, which have been requested four times in the past five months. Interestingly these requests all came from abroad. Research questions included math instruction for first graders; the link between drawing, writing, and reading; foreign language instruction in first grade; and making the case for combined classes.

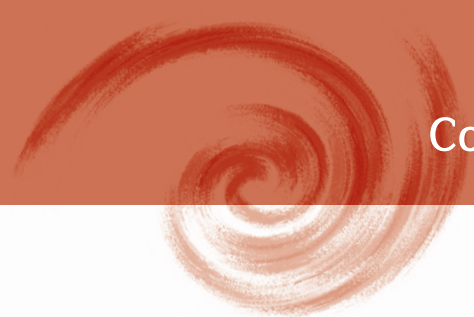
Informational questions also included physics instruction in 6th grade; school administration; working with mandates; developing early childhood programs; developing movement education programs; homework; forming multicultural cur-

riculum (parents and teachers) groups; the importance of imitation in early childhood; and remedial education. I continue to receive requests to translate our online articles.

Newly published and reissued books continue to be added weekly; in the past months I have added nearly 30 new titles and over 40 new articles not including those in past issues of the *Research Bulletin* and *Gateways*. New articles from the *Rundbrief* can be found through the search database by subject and publisher. Articles from *Kindling*, the Journal for Steiner Early Childhood Education in the U.K., are also being posted twice a year. Requests have been received for more online issues of the *Waldorf Science Newsletter* and the text of lectures from the most recent AWSNA teachers conference.

Over the past months the most frequently visited areas on the website include the Search database and the back issues of the *Research Bulletin*. Great interest continues in the *Waldorf Journal Projects*.





Contents from Past *Research Bulletins*

Volume I, Number 1

- Waldorf Education in an Inner City Public School System
 - Research Report
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 - Eugene Schwartz
- Waldorf Education Research Institute in North America
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Balance in Teaching, Balance in Working, Balance in Living
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– Kim Payne and Bonnie River-Bento

Learning Expectations and Assessment Project (LEAP)
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– Michaela Glöckler, M.D.

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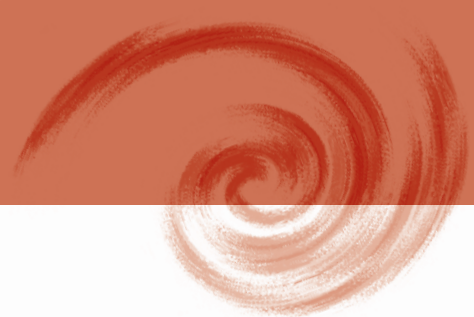
– Kimberly Kinsler and Edward Joyner

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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, 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.

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Art in Human Development
Attention-Related Disorders Research Project
Effects of Testing on Children
Evaluation of the Urban Waldorf School in Milwaukee
Learning Expectations and Assessment Project
Mathematics – Phobias and Remediation
Reading, Writing, and Reading Comprehension
Survey of Waldorf Seniors
Teaching Sensible Science Workshops
Waldorf High School Research Projects
Waldorf Graduates Survey Phase I
Waldorf Graduates Survey Phase II

Colloquia and Conferences

Towards Wholeness in Learning, 1996
Pathways of Healthy Child Development, 1998
Andover Proceedings: Tapping the Wellsprings of Health in Adolescence, 2001
Waldorf High School Research Project
Subject-Specific Colloquia, 2000-2004
Chemistry
United States History
Mathematics
English
Computer and Information Technology
Life Science and Environmental Studies
World History – Symptomatology

Resource Development

Computers in Education, handbook for teachers
Being on Earth, a book for scientists and teachers
On-Line 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

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