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From the Editor

Douglas Sloan

New Co-directors for the Research Institute

Susan Howard, Director of the Research Institute for Waldorf Education, is leaving that position in order to take up new responsibilities as co-coordinator of the International Waldorf Kindergarten Association, a world association of Waldorf early childhood educators. Douglas Gerwin and David Mitchell will assume the role held by Susan as co-directors of the Research Institute.

It is largely through Susan Howard's insight, initiative, and diligent work that the Research Institute was first founded, and, over the years, has become a main center within the North American Waldorf movement for identifying and carrying out important research tasks of Waldorf education. Susan co-founded the Research Institute with me in 1996 in response to a call from Henry Barnes at the Association of Waldorf Schools of North America (AWSNA) Delegates meeting that year for some way to implement concerted and sustained research in Waldorf education. Susan served as co-director of the Institute from 1996 to 2000. At that time, Roberto Trostli took over for two years as the first paid (part-time) director of the Research Institute and editor of the *Research Bulletin*. In the year 2000, he was succeeded by Susan, who served as director from then to the present. In addition to her new role as co-coordinator of the International Waldorf Kindergarten Association, Susan will continue as chair and coordinator of the Waldorf Early Childhood Association of North America

(WECAN). And she will continue to direct the part-time Early Childhood Teacher Education Program at Sunbridge College.

It should be noted and underscored, however, that Susan will continue to be a member of the Board of the Research Institute, and, through her new work internationally, will help to expand concretely the connections of the Research Institute with Waldorf education world-wide. One of her responsibilities, for example, with the International Kindergarten Association (and for WECAN as well) is to work with research and publications in early childhood education. That, she says, will continue to be a major purpose of her activities on the Research Institute Board with the aim of fostering and disseminating research being done on healthy early childhood development and education.

As editor of the *Research Bulletin* and long a colleague of Susan Howard, I want to take this opportunity to express my personal gratitude for all that she has done to make the Research Institute a reality that can continue to develop and to serve Waldorf education into the future. I am also deeply grateful for all her essential advice, good counsel, and input over the years for the *Research Bulletin* (and readers would not be amiss if they hear in this a sigh of relief on my part that she will still be available as a continuing member of the Board for her indispensable editorial consultation).

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The Research Institute is especially fortunate to have as its new co-directors (taken in alphabetical order) Douglas Gerwin and David Mitchell. Both bring great wisdom and long years of experience in various aspects of Waldorf education to the leadership of the Institute.

Douglas Gerwin, Ph.D., is director of the Center for Anthroposophy in Wilton, New Hampshire. Himself a Waldorf graduate, Douglas has taught at the university level, and, for the past 21 years, at the high school level in subjects ranging from biology and history to German and music. In 1984 he received his doctorate in psychology and literature from the University of Dallas, where he also taught. Before entering the teaching profession, he served from 1972 to 1978 as foreign correspondent, editor, and radio broadcaster for Reuters News Agency in Europe.

Douglas presently divides his time between adult education and teaching in various North American Waldorf high schools. In 1994, he founded, and currently chairs, the Waldorf High School Teacher Education Program under the auspices of the Center for Anthroposophy. This program offers Waldorf teacher preparation in conjunction with Antioch University's New England Graduate School. In 1998, he helped to launch the Waldorf High School Research Project, an initiative sponsored by AWSNA and the Research Institute for Waldorf Education. The Research Project is charged with investigating changes in the nature of adolescence today, as well as initiating research related to the Waldorf high school curriculum and pedagogy. In addition to writing a number of articles on adolescence and the Waldorf curriculum, Douglas Gerwin is editor of three books related to Waldorf education: *For the Love of Literature: A Celebration of Language and Imagination* (1996); *Genesis of a Waldorf High School: A Source Book* (1997/2001); and *The Andover Proceedings: Tapping the Wellsprings of Health in Adolescence* (2002). Douglas Gerwin resides in Amherst, Massachusetts, with his wife Connie, a Waldorf high school teacher of mathematics. Their two children, now young adults, both attended Waldorf schools in the United States and Germany.

David Mitchell, new co-director of the Institute

with Douglas Gerwin, is chair of AWSNA Publications and is a member of the Development Committee. His engagement and leadership in Waldorf education has been extensive and deep. For ten years (from 1992-2002), he was on the high school faculty of the Shining Mountain Waldorf High School in Boulder, Colorado, which he helped found, teaching life sciences, Shakespeare, and blacksmithing. Before that he was one of the founders of and a class teacher for twenty years (1972-1992) at the Pine Hill Waldorf School in Wilton, New Hampshire. During much of the time in New Hampshire (1978-1992), he also helped initiate and teach in the Waldorf Program at Antioch New England Graduate School. He has held and continues to be involved in numerous leadership positions in AWSNA, and from 1990 to the present has been a member of the U.S. Department of Education Committee for Private School Leadership. David Mitchell has received recognition in several national "Who's Who" registries of outstanding professional educators. Under his editorial leadership, the AWSNA Publications Committee has become a major source of Waldorf and Waldorf-related books and other literature. David is an alumnus of the University of Massachusetts and has done graduate work at the University of Heidelberg in Germany, Emerson College in England, and the University of Oslo in Norway. He and his wife have four children and live in Boulder, Colorado.

Douglas Gerwin and David Mitchell bring rich personal and professional resources to the directorship of the Research Institute—resources that will help maintain the continuity and enable the further development of the Research Institute work established by Susan Howard and Roberto Trostli.

About This Issue

Nearly all the articles in this issue deal with various aspects of how the image we hold of the human being has direct implications for education, with specific reference to the healthy development of the young child. In this regard we are especially fortunate to welcome again two authors who have contributed to previous issues of the *Research Bulletin*, Steve Talbott and Dr. Michaela Glöckler.

Steve Talbott's article, "Science and the Child," looks specifically at the current attempts, increasingly widespread in our general culture, to produce "better children"—to "improve" children through genetic engineering and through the use of drugs to control behavior. His article, however, puts this issue in a much wider and richer context, examining the dominant, modern scientific conception of nature and of the human being. This is the view that all of life is essentially quantitative and mechanistic. Talbott examines the conceptual limitations of the mechanistic view and its fundamentally destructive consequences. He calls for the development of a qualitative science—a science of qualities—that would enable us—among many other things such as being able to deal adequately with meaning, values, life, and qualities themselves, truly to "listen to the child"—to recognize the wholeness, the integrity, and the wisdom of childhood itself. Beyond being a fascinating, critical examination of current mechanistic attempts to "improve" children, this article is foundational in every sense, showing the crucial importance for all of life and, not least, for education, of our view of the human being and our ways of knowing.

The two articles by Dr. Glöckler build a new model for approaching the questions of health and disease, a model reported by her in earlier articles of the *Research Bulletin*. This approach, given the name *salutogenesis* from the two Greek words meaning health and origins, stresses a primary concern with the conditions that promote health, rather than a dominant concern with *pathogenesis*, the treatment of disease, the latter being the primary approach to date of most modern medicine. Her first article, "Can Meditation Take the Place of Exercise?" looks at the relationship between meditation, movement, and health. Meditation cannot replace physical movement, and in young children, especially, should not. For young children, movement is essential to the full development of their intellectual, emotional, and social capacities. For the teacher, movement is, of course, also important, but contemplative practice is indispensable. Dr. Glöckler explores this relation in this article, which focuses on the stages of life and the different members of the human being.

In her second article in this issue, "Non-Verbal

Education: A Necessity in the Developmental Stages," Dr. Glöckler shows the crucial importance of non-verbal learning during the early imitative stage of the child for the later healthy and full development of the growing human being. In exploring the nature of non-verbal education, she also provides concrete indications of how one learns to educate non-verbally.

Related to the articles by Steve Talbott and Dr. Glöckler is the research report entitled, "The Lowering of School Age and the Changes in Childhood." Although this report refers to efforts of Waldorf educators in Germany to respond creatively to the growing movement there to lower the beginning school enrollment age, this report has direct relevance to the American situation where similar pressures for ever-earlier academics, along with standardized testing, which is part of this movement, continue to mount. This is a movement driven primarily by political/economic interests, not the interests of the child. The report looks broadly at the situation of Waldorf elementary schools in Germany, the changes in children now entering the schools, the challenge posed by the lowering of school age, and the developmental problems this age-lowering threatens. North American Waldorf educators should find this report extremely helpful in understanding our own situation. Furthermore, the concrete projects described in the report, projects being developed by German Waldorf educators for adequately dealing with these new pressures and changing situations, may prove helpfully suggestive to North American Waldorf educators facing similar challenges.

The article by David Adams, "Organic Functionalism: An Important Principle of the Visual Arts in Waldorf School Crafts and Architecture," will be of interest not only to teachers of applied visual arts, but also to all who are concerned with the interconnections among the visual arts, the larger architectural environment, the healthy physical and spiritual development of children (*salutogenesis* again), and the social impact which these interconnections—or lack thereof—involve. The author concludes that the "organic functional" aspect of Steiner's artistic hopes for Waldorf education have been much neglected in North America."

Some Brief Reflections on Waldorf Education as a Powerful Counterforce to the Modern Assault on the Human Being

The article by Steve Talbott in this issue has prompted these reflections on the issue he raises of the importance of the image we have of the human being and its role in education. Every educational theory and its practice imply and draw upon some image of the human being. So we must ask of every educational endeavor, “What image of the human being is at work in it, and what are the consequences?” To drastically oversimplify, Waldorf education views the human being as a wholeness of body, soul, and spirit with the potential of becoming a free, responsible, caring, and creative individual. Through its pedagogy and curriculum, Waldorf education strives to nurture that becoming to its fullest in each individual child. Unfortunately, as Steve Talbott’s article makes vividly clear, modern culture and education are increasingly dominated by images of the human being that fix and reduce the human to something less than human, to some kind of mechanistic entity.

In the preface to his recent book, *The Age of Spiritual Machines: When Computers Exceed Human Intelligence*, Ray Kurzweil, a leading figure in the “artificial intelligence” community, writes: “The primary political and philosophical issue of the next century [this century] will be the definition of who we are—of how we define human.”¹ Kurzweil has, indeed, identified one of the central questions facing us today. Kurzweil himself, however, is not simply making a neutral statement. Rather, he is contending for a specific image of the human being as a machine. Granted, his is not the old machine of wheels, gears, and cogs, but, rather, the new, streamlined, cybernetic machine of electronic and chemical reactions as information carriers. This image nonetheless depicts the human being as entirely the product of material forces, and, in effect, reduces meaning, values, purpose, the whole realm of qualities, and selves to mere reflections of material, mechanistic forces and processes.

The late Francis Crick, noted biochemist become cognitive scientist, starkly expressed this view a few years ago in the opening paragraph of his book, *The Astonishing Hypothesis: The Scientific Search for the*

Soul. Crick wrote:

You, your joys and sorrows, your memories and your ambitions, your sense of personal identity are in fact no more than the behaviour of a vast assembly of nerve cells and their associated molecules. . . . you’re nothing but a pack of neurons.²

Such an image of the human being is dominant today in many fields—cognitive science, genetic research, and much of modern medicine, to name a few. This image also permeates a good deal of popular culture, popular consciousness, and modern education. Consider, for example, this 1997 statement of the International Academy of Humanism in which Crick was joined by other leading figures, including biologists Richard Dawkins and E.O. Wilson and the “humanists” Isaiah Berlin, W.V. Quine, and Kurt Vonnegut. In justification for the scientists’ demanding a free hand in human cloning, they write:

Humanity’s rich repertoire of thoughts, feelings, aspirations, and hopes seems to arise from electrochemical brain processes, not from an immaterial soul that operates in ways no instrument can discover. . . . Views of human nature rooted in humanity’s tribal past [tribal past meaning, as they say earlier in their statement, humankind’s religious and moral traditions] ought not to be our primary criterion for making moral judgments about cloning [and presumably about anything else].³

Several observations should make us highly suspicious of such statements from the outset. In the first place, if we agree that the whole “rich repertoire” of culture is simply the reflection of electrochemical brain processes and nothing else, we have to include in those processes the thoughts and words of those who write such statements. So why should we accept the results of *their* electrochemical brain processes rather than our own? Furthermore, these statements are patently self-serving. In spite of the seemingly objective, scientific language, the clear intent is to justify unrestrained scientific and technological development without any considerations of the moral and environmental consequences. Power and profit are intimately intertwined with this supposedly scientific view.

Beyond these initial common sense responses, there are other reasons for calling into question an exclusively mechanistic view of the human being. The doctrine of the mind as simply another word for brain mechanisms means, to Crick and others, that no non-sensory, immaterial realities exist: no soul and spirit, for sure; but also no meaning, purpose, values, truth, beauty, or goodness. No ideas even. All these are, at most, a kind of illusory foam churned up by the electrochemical discharges of the human machine.

Such a view can, of course, never do justice to the reality of ideas, because ideas are non-sensory, immaterial. To be sure, most of our ideas probably arise initially in connection with our sense experiences of the physical world, but they themselves are never found among the objects of that world. Nonetheless, they can be powerful enough to penetrate that world, enabling us to understand and transform it radically. After all, it is by means of ideas that atoms are split. The fundamental power of ideas was once vividly expressed by the great mathematician Stanislaus Ulam, who was active in the Manhattan Project. “It is still an unending source of surprise for me,” he wrote, “to see how a few scribbles on a blackboard or on a sheet of paper could change the course of human affairs.”⁴ And we ought not to forget that books that reduce ideas to mechanistic electrochemical discharges are themselves presented in the form of ideas.

Furthermore, a whole class of ideas exists called ideals: truth, beauty, goodness, love, joy, patience, kindness, fidelity, and so forth. These ideas—non-sensory, immaterial through and through—are extraordinarily powerful, for, to the extent that we are able to identify with them, they change us. Machines, obviously, are unaffected by ideal, moral considerations, and neither will human beings be so affected to the extent that they allow themselves to be defined, treated, and act as machines.

Taken seriously, the view of the human being as a machine permits programming of the machine. But it means also that all actions of the individual are unfree, completely determined by the automatic operations of the machine, rather than by an at least partially free and responsible self. Since mechanical operations cannot take responsibility or be held

accountable, any conceptions of human freedom, self-directed action, responsibility, and creativity are rendered meaningless. And, yet, all of us, including those who hold to the mechanistic view of the human being, have to assume in practice that our behavior is influenced by plans, purposes, and motives, for which we are responsible. When people write books promulgating the view of the human being as mechanistically determined, they surely believe that they themselves freely write those books, even though for the purpose of persuading readers that there is no freedom, purpose, or self-determination. A theory that has to assume in practice a freedom, purpose, and self-determination denied by the theory itself would appear to be rampantly self-contradictory.

Of course, a view that denies the existence of a self that can be held accountable would lend itself to the interests of those who are eager to engineer and control nature and human beings, and, in short, to employ any technology that works to their special advantage—and to do all this at will, without restraint, and for a profit. This is a view, moreover, that undergirds the growing global conglomerate of scientists, governments, universities, and corporations that seek to exploit and control nature and human beings for their own power, profit, and prestige. Unfortunately, this image of the human—and of all life itself—permeates much modern education from top to bottom.

Over a century ago in an essay on education, Ralph Waldo Emerson said that “the surest bulwark of all that is sacred in the human being is not to accept degrading views.” Our culture and education today are shot through with degrading views and their destructive consequences. Nevertheless, the human being is—for a time at least—still human, a being of body, soul, and spirit; a being of interwoven intelligence, emotion, and intention, all capable of infinite development. This, our full human being, contains within itself the resources for countering and transforming all those forces that would reduce the human to the non-human. But we must recognize, strengthen, and draw upon this fullness of the human being while it is still possible, while there is still time. Ours is now a critical moment, for ominous signs exist that the time remaining for the fully human is seriously threatened and may be

drastically limited. This is why Waldorf education is far more important than we ourselves are perhaps even aware.

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2. Francis Crick, *The Astonishing Hypothesis: The Scientific Search for the Soul* (New York: Scribners, 1994).
3. Quoted in Leon Kass, "The Moral Meaning of Genetic Technology," *Commentary*, Vol. 108 (September, 1999): 38.
4. Quoted in Richard Rhodes, *The Making of the Atomic Bomb* (New York: Simon and Schuster, 1986), p. 11.





Science and the Child

Steve Talbott

Why do leaves turn red? Where does the sun go at night? What made Whiskers die? Will Mommy die sometime, and, Daddy, will you die, too?

Children are notorious for posing naïve and perplexing questions. When one of our sons was four years old, he asked, “Why did God make poisonous snakes?” I do not recall our answer, but very much doubt whether it was helpful. And who among us can do justice to the most perplexing question of all—the one incarnated in every newborn child: “Who are you, and for what purpose have you entered our lives?”

The child’s large and difficult questions arise, not from complex theoretical constructions, but from simplicity—“childish simplicity” we are tempted to say, with a slightly patronizing smile. We need, after all, to defend serious discourse against fruitless inquiries about God and the moral significance of poisonous snakes. This is why our more child-like questions have, over the past few hundred years, disappeared from science. They are anachronisms, echoing hollowly off the instrument panels and surgically precise tools of the laboratory. Their implications would be only an embarrassing distraction oddly disjoined from the prevailing paths of technical investigation. “Child, for what purpose have you come?” Imagine a genetic engineer or an evolutionary theorist asking such a question!

Yet a strange thing is happening. Questions rather like the child’s impossible ones are now being forced upon us from the side of science. The biotechnologist, faced not with poisonous snakes but with “defective” children, is led to ask, “Where do these defects come from? Can we unmake them?” And further, regarding the child’s destiny: “Why do we age and die? Must we submit passively to human limitation?”

I say “rather like” the child’s questions. For the child is always inquiring about meaning and purpose. His question about why we age and die is morally, teleologically, and aesthetically tinged. The scientist, by contrast, is asking about the mechanisms that “implement” aging and death, and wondering to what effect we might manipulate them.

Such, at least, is the usual distinction, not only between child and scientist, but also between the scientific dialogue and the larger human conversa-

Author’s note: *This is a revised version of an article that appeared in the Winter 2004 issue of The New Atlantis. I had been invited to write a response to a report of the President’s Council on Bioethics, “Beyond Therapy: Biotechnology and the Pursuit of Happiness”—and specifically to the chapter entitled “Better Children.” The chapter deals with attempts to improve children through genetic engineering and through the use of drugs to control behavior. You will find the report at www.bioethics.gov.*

tion. But the distinction is muddled when scientists tell us (or conspire in our belief) that they are gaining the knowledge to engineer better children. How can you recognize a better child if you must shun the language of value? More specifically, how can we, as scientists or parents, propose to manipulate an individual child's destiny if we cannot seriously ask about that destiny—about identity and purpose and tasks?

If the scientist is to join in such a conversation, then nothing less than a second scientific revolution will have occurred. Science will have been reopened to the categories of meaning, value, and purpose. The genetic engineer and the evolutionary theorist will learn to ask, "Child, for what purpose have you come—and how can we make things better for you?"

Without such a revolution there will be no true societal conversation. Rather, we will hear two utterly different and dissonant styles of speaking and they will spawn endless confusions between them. Using one style we will converse with the child, and therefore at least partly in the child's terms. With the other we will converse about the child, concerning ourselves with the manipulation of genetic, hormonal, neural, and other mechanisms as if we were engaged in little more than an engineering project.

Ends and Means

The President's Council on Bioethics, with its discussion of "Better Children," has stepped boldly into the no-man's land between these two ways of speaking. Perhaps wisely, "Beyond Therapy" has not asked for a revolution in science. Instead it has tried only to delimit the engineering project and to establish the propriety of discussing the ends and purposes of human life.

The Council begins with the most fundamental question of all: "What, exactly, is a good or a better child?"

Is it a child who is more able and talented? If so, able in what and talented how? Is it a child with better character? If so, having which traits or virtues? More obedient or more independent? More sensitive or more enduring? More daring or more measured? Better behaved or more assertive? Is it a child with the right attitude and disposition toward the world? If so, should he or

she tend more toward reverence or skepticism, high-mindedness or toleration, the love of justice or the love of mercy? As these questions make clear, human goods and good humans come in many forms, and the various goods and virtues are often in tension with one another. Should we therefore aim at balanced and "well-rounded" children, or should we aim also or instead at genuine excellence in some one or a few dimensions?¹

Against the backdrop of these unanswered (and perhaps unanswerable) questions, the Council considers various genetic and pharmacological technologies that promise to give us "better" children. The genetic technologies aim at shaping, choosing, or improving a child's native endowments. Prenatal diagnosis permits us to weed out fetuses with undesirable genetic traits. Preimplantation genetic screening allows us to select in vitro embryos with desired genetic traits. Genetic engineering would allow us to produce certain genetic traits by deliberate design.

For now, prenatal diagnosis and preimplantation screening present only restricted possibilities for "improved" children. These methods are limited by the genetic resources of the parents, neither of whom may have the desired trait. Further, most traits require the interplay of many genes, so even if the parents had the right genes, it would be nearly impossible—short of producing and screening thousands of embryos—to find one with the right genetic combination. And even if our scientific understanding enabled us reliably to identify trait-specific gene combinations, it remains the case that our powers of control would still be limited. As the Council points out, "since most traits of interest to parents seeking better children are heavily influenced by the environment, even successful genetic screening and embryo selection might not, in many cases, produce the desired result."²

As for genetic engineering—that is, the direct insertion of desired genes into an embryo—the difficulties are even more imposing. Not only is there the challenge of working with genes that interact in still largely unknown ways, but there is also the problem of inserting these genes into the embryo without damaging it or causing unintended side-effects. The history of genetic engineering in nonhuman species

has been one long crescendo of discovery about such unintended consequences.

The root of the problem is that the side-effects are not really side-effects. They are a meaningful activity of the organism. As my colleague, Craig Holdrege, has shown in *Genetics and the Manipulation of Life*,³ the organism deals with a genetic or biochemical intrusion much as it deals with a disturbance of its external environment—by responding as an integral whole. This is true even in the plant. For example, when researchers inserted carotene-producing genes in tomato plants, the plants did produce more carotene. But the substance appeared in plant parts that normally don't have carotene (seed coats and cotyledons)—and the more the carotene, the smaller the plant became. Similarly, when herbicide resistance was genetically engineered into a mustard species (*Arabidopsis*), the generally self-pollinating plants started cross-pollinating at twenty times the normal rate. Such side-effects, whether obvious or subtle, turn out to be more the rule than the exception.

The reason for this is simply that the organism adapts to a disturbance with its entire being and according to its own distinctive manner of existence. Manipulating the parts forces a question that can be answered only by the governing whole: “Who are you? What sort of a unity are you trying to express?” Even when our aim is nothing more than effective, machine-like control, we cannot prevent the organism from responding in a meaningful and conversational manner. And if this is the case with a plant, it is certainly also the case with a child. Given the difficulties and limitations involved in the various genetic technologies, the Council believes that “prophecies and predictions of a ‘new (positive) eugenics’ seem greatly exaggerated.”⁴ But this does not relieve it of concern about the changes now afoot. Even prenatal screening for disease, already a common practice, may be “shifting parental and societal attitudes toward prospective children: from simple acceptance to judgment and control, from seeing a child as an unconditionally welcome gift to seeing him as a conditionally acceptable product.”⁵

Beyond Passive-Aggressive Objectivity

In the second part of the chapter on “Better

Children,” the Council explores new pharmacological ways of altering children’s behavior. It endorses the therapeutic use of behavior-modifying drugs in difficult cases, while questioning the casual reliance on drugs as a general strategy for obtaining well-balanced children. It notes that “most children whose behavior is restless and unruly could (and eventually do) learn to behave better, through instruction and example, and by maturing over time.” Drugs short-circuit this learning process by acting directly on the body. They raise the question as to whether we are looking for the mere outward, behavioral result, or, instead, for the inner shaping of character that can only be learned:

If the development of character depends on effort to choose and act appropriately, often in the face of resisting desires and impulses, then the more direct pharmacological approach bypasses a crucial element. The beneficiaries of drug-induced good conduct may not really be learning self-control; they may be learning to think it is not necessary.⁶

The child, that is, may come to “look upon himself as governed largely by chemical impulses and not by moral decisions grounded in some sense of what is right and appropriate.”⁷

So the control of behavior is one thing, and the moral education of the child is quite another. Given where we are now, making this distinction is an important step. But we should not imagine (and I doubt the Council imagines) that we have harmonized the two conversations. The dilemma remains: how do we bring the researcher’s language of fact and control into worthwhile dialogue with the parent’s language of ethics and purpose? Wouldn’t this be like bringing the sober, sophisticated world of the mature scientist into meaningful relationship with the naïve, morally infused world of the child?

The idea of any such convergence may seem outrageous. And yet, when the scientist offers the parent a menu of options for obtaining “better children,” it is he himself who puts the questions of meaning, value, and purpose on the table. When the going gets tough, he cannot fairly retreat into the “silence of objectivity.” He cannot reasonably say, “I offer you better children, but do not ask me what ‘better’ means or who the child is.” This passive-aggressive refusal to engage the

issue is least acceptable when coming from the person who forced the issue in the first place—even if the issue threatens revolution.

Can We Get from “Ought” to “Is”?

In the blithe spirit of the child—whose destiny we are, after all, presuming to address—I wish to say a few words about the revolution. Desperately brief words, necessarily, but words suggestive, I hope, of an ultimate potential for our two conversations to become one.

Not that we should underestimate the challenge. Scientists have apparent reason for their reluctance to “come out of the closet” with their values. It has long been part of their discipline to refuse as best they can all explicit dealings with questions of value, and the practical benefits of this austere objectivity appear to have been spectacular. In this light, the latter-day quandaries of biotechnology look suspiciously like a trap, baited with all those metaphysical and discipline-sapping enticements from which scientists have till now taken such great pains to flee. How, then, can we possibly ask the scientist, as a scientist, to participate in discussions about the moral education of the child or the moral implications of a genetic alteration? Don’t we leave those topics for the ethicist?

More and more we do (as the President’s Council on Bioethics can surely testify), which helps to explain the disjointed nature of the two conversations. The disjunction has long been canonized in the philosophical proverb, “You cannot get from facts to values.” There is no way to get from statements about what is to statements about what ought to be. “Is” and “ought” seem to come from different, incommensurable worlds. It hardly needs adding that the scientist is passionately committed to the factual and objective—to the is-ness of things.

Look at the world through more child-like eyes, however, and the situation is wondrously transformed. The question becomes, not how do we get from an “is” to an “ought,” but rather the reverse. Putting it broadly: how do we manage to narrow our understanding down to a mere statement of fact when we start with such valuative and psycheladen terms as “good,” “evil,” “ugly,” “beautiful,” “meaningful,” and “purposeful”?

For we do start that way. Historically, the narrow-

ing down is exactly what happened. By all accounts the ancients experienced themselves as living within an ensouled world—one thoroughly drenched in perceptions of goodness and value. Even the *physis* or “elementary substance” of the early Greek philosophers was, as Francis Cornford remarked, not only a material thing but at the same time a “soul-substance.” Further, “the properties of immutability and impenetrability ascribed [by some Greek philosophers] to atoms are the last degenerate forms of divine attributes.”⁸

What is true historically is true also of the individual biography. The child, too, lives in an ensouled world. His incessant questions of meaning and purpose (“Why ...?”) testify to an inborn conviction that the underlying reality of the world is psychic and voluntary, bearing an obligation to sustain good and reasonable appearances. Only with maturation does the child slowly gain a world of fact, an is-world, to set beside his birthright-world of congenial value.

Moreover, the birthright is never relinquished. Look at the mature human being—in the life of family and community, of work and recreation, of friendship and enmity, of politics and the academy—and you will be hard put to find a single act, word, or gesture that is not suffused with value and purpose. This is true even of the scientist in his laboratory, who, if he could really drain all his actions of their valuative content—say, by treating his colleagues like objects or, for that matter, treating sophisticated instruments like junk—would be dismissed as a psychopath.

No, we do not find a realm of value-free, psychically disinfected fact within the human sphere—except in one place: the intellectual constructions we have lately undertaken in the name of science and its philosophy. These constructions are aimed, as far as possible, at representing an antiseptic world cleansed of everything human. It has, of course, been doubted whether such a cleansing is possible. In any case—and speaking from the naïve, child-like vantage point—we might naturally paraphrase Cornford by asking whether the antiseptic world of mere fact is the last “degenerate” form of the psyche’s intrinsically much fuller affirmations. Certainly this is the way it looks historically. But there is a further question whether, even as a final achieve-

ment, the fact-world attains independence. Or does it remain parasitic upon the less denatured reality from which it arose?

Don't forget that these intellectual constructions of science take place according to certain restrictive rules, and the historical acceptance of the restrictions was a matter of choice. Moreover, the choices amounted to a decision, conscious or otherwise, to exclude from consideration everything meaningful and psyche-laden—everything that did not serve the insistent drive toward a pure is-world. And it remains highly significant that these very same choices are linked to the most problematic aspects of science today. Here are two examples of what I mean.

Focusing Down to a Null Point

The child who asks about the red leaves of autumn is asking about red, not the wavelengths and frequencies of a physics text. He lives within a vivid world of sense qualities. This is why the Dutch psychologist, Jan Hendrik van den Berg, conceives the following exchange:

“Why are the leaves red, Dad?” “Because it is so beautiful, child. Don't you see how beautiful it is, all these autumn colors?” There is no truer answer. That is how the leaves are red.⁹

Of course, this is not the final or complete answer. As the child gets older, the answer could be enriched, not diminished, by an understanding of the interworkings and so-called “mechanisms” of a natural world that remains qualitative through and through. But a fateful choice intervened to alter any such understanding.

Beginning with Galileo there was a conscious disregard of qualities within science—and this for the simple reason that qualities, as every child knows, are inescapably freighted with psyche. We experience qualities “in here”—within consciousness. But what is insufficiently realized is that we also experience qualities “out there,” in the only external world we have. We cannot characterize a world—any sort of world—without qualities. Subtract all qualitative content from your thoughts about things, and there will be no things left. Try to imagine a tree without color or visible form, without sound in a breeze, without the smell of sap and leaf, without felt solidity, and the tree will have ceased betraying any sign of its existence. If you are

inclined to redeem the situation with talk of molecules or subatomic particles, try to characterize those without appealing to qualities!

It's fine to say, “We get from the qualitative world to the realities of hard science by dealing only with what can be quantified.” But the phrase “what can be quantified” is puzzling, since it has no meaning if we cannot say anything significant about the “what” we are quantifying. Given a set of quantities, we have to know what they are quantities of, if we are to know anything at all about the actually existent world. And how do we characterize a “what” without qualities?

You can, then, begin to see what a vanishing, ghostly world we bequeath to the child. But, of course, scientists do in fact rely on their awareness of qualities. Otherwise, the world would have completely disappeared and they would have nothing to explain. It's just that the discipline of their science does not explicitly recognize the sense world in its own terms—the qualitative terms that pose, not only the child's questions, but also the only questions a truly observation-based science can have. The reason for the omission is clear: if researchers actually reckoned with the qualities they begin with and rely on, they would no longer find themselves theorizing within a pure is-world. This by their own admission, since the whole reason for rejecting qualities in the first place was that they are “contaminated” by the psyche and its values.

A second historical choice, less conscious in its origins, was to proceed by a method of analysis, assigning ultimate explanatory significance to the furthest products of the analysis. The problem here is that one never stops to consider a thing in its own terms. The fiery tree of autumn resolves into root, branch, and leaf, the leaf into cells, the cells into organelles, the organelles into biochemicals ... and so on without end, down to the most remote subatomic entities. “Without end” because there could be no satisfactory end. If understanding must be given in terms of analysis, and if the analysis were ever to stop at some fundamental, unanalyzable thing, then that thing (upon which all else is erected) must, according to our method, stand as an incomprehensible mystery, no more approachable than divine fiat.

Analysis is an essential direction of movement in all

scientific cognition. But if it is not counterbalanced by an opposite movement, then we can never say anything about what is there—what is presenting itself significantly as this particular thing of this particular sort. We can speak only of the elements it consists of. But this hardly helps, for of these elements in their own right we can again say nothing, but must refer instead to what they consist of. We have no place to stop and say, “Behold this.” By itself alone, the method is a way of never having to face anything. No wonder, then, that neither the evolutionary theorist nor geneticist ever sees in the organism a creature of which we might stop and ask, “Who are you?”

A one-sided method of analysis, in other words, brings us again to a kind of emptiness. And, again, we must say: science is not really empty. The scientist is always recognizing the insistent presence of things in the world—significant wholes—even if the nature of this recognition receives no formal or systematic acknowledgment alongside the analytic cleaving of wholes into parts. After all, you are not likely to set about analyzing a thing if you have not first glimpsed it, at least intuitively, as a significant entity in itself. But your preferred method of analysis does not encourage you to attend to this whole in its own terms. If it did, you might find yourself caught up in something more like a conversation than in the mere manipulation of parts.

A Little Child Shall Lead Them

These historical choices—to reject qualities and to proceed by a one-sided method of analysis—confront scientists with a problem that looms so threateningly near and so incomprehensibly large that ignoring it is almost the only option. If, however, we could get up the courage to face the problem squarely, it might suggest to us that we can never shrink the child’s rich cognitive inheritance all the way down to an is-world of mere fact. We can approach this end-point only in modern physics, and we achieve the approach only by depriving our theoretical constructions of their content. The reassuring certainties we enjoy in these constructions are the formal certainties of mathematics. But they alone cannot give us a world. Some of the greatest physicists, in their more child-like, soul-searching moments, have admitted as much. Einstein once remarked:

As far as the propositions of mathematics refer to reality, they are not certain; and as far as they are certain, they do not refer to reality.¹⁰

Another physicist, Sir Arthur Eddington, may have had the same problem in mind when he wrote,

[Our knowledge of physics] is only an empty shell—a form of symbols. It is knowledge of structural form, and not knowledge of content. All through the physical world runs that unknown content, which must surely be the stuff of our consciousness.¹¹

Likewise, a pre-eminent physicist of our own era, Richard Feynman, confessed that “we have no knowledge of what energy is”—and this same cognitive darkness overshadows the other key terms of our physics, such as mass, force, motion, time, and space.

All this forcibly brings the truth home to us: we can hardly claim to have an is-world of fact without value, of object without subject, given that both fact and object have become blanks to us, with their content shoved under our methodological rug. Did we not exclude their content from view precisely because it speaks a language akin to our own interior? So, yes, if we ignore the world’s content, we do come nearer to an is-world, but it turns out to be an empty world precisely because we have ignored its content. And this content is exactly what the child sees and puts a name to with his wonderfully innocent and simple observations.

You may think it strange to arrive at puzzles of physics in a discussion of biotechnology and its application to children. How have we gotten so far afield? But in an analytic era with its inevitable fragmentation and intense specialization, recovering a single, unified language for approaching the child means realizing first of all that far afield is not really far afield. The most fateful, scientifically developed “drug” we administer to the child is not some highly specialized biomolecule bathing his neurons, but rather the ambient, scientific world-view saturating his consciousness. And the whole effect of this view, centered as it is in the emptied fact-world of physics, is to rob nature of any congenial content for the child.

One way or another, we conduct a wide-ranging and gravely significant conversation with every child. If our language remains that of fact and con-

trol, then the language itself will dehumanize the child fully as much as any of the biochemical and genetic ministrations that are such natural consequences of the language.

In *Beyond Therapy* the President's Council on Bioethics has shown how revealing a second, value-centered language can be. But the decisive question remains whether we can bring the two ways of speaking together in a harmony of meaning. Can we, for example, learn to approach the genome in the spirit of the child's soul-piercing "Why ... ?" or the parent's quizzical "Who are you?" Might it be that real breakthroughs in genetics—breakthroughs of understanding rather than of technique—await our ability to look at the organism qualitatively, in its own meaningful terms? And if we do so will we not find the whole speaking through every part, so that the child's genome can, when approached in the right spirit, be discovered as part of the child's—this child's—revelation of himself? Finally, is not our receptivity to this revelatory aspect of the human organism a prerequisite for entering into a conversation with the child about his "betterment"?

These questions, like those of the child, may seem hopelessly large and impossible, ill-fitted to the science we are comfortable with. But perhaps what makes them discomfiting is our long habit of turning away from them, and our attempt (always unsuccessful) to escape the meaningful and living language adequate for framing them.

If we could transform our dealings with the child into a genuinely two-way conversation, it might prove healing, not only for the child, but for us adults and our science as well. Then the most important thing might not be our perhaps impertinent question, "How can we make you better?" Rather, it might be how the child's innocent simplicity can counterbalance our sophisticated but one-sided adult constructions. If the child does bring a task to the world, part of it may be to help us become a little more child-like in facing a value-soaked world—fearless in addressing this world with impossibly large questions, and fearless as well in listening for impossibly large answers.

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Can Meditation Take the Place of Exercise?

Only a Differentiated Picture of the Human Being Gives Us the Key to the Different Levels of Health

Michaela Glöckler, M.D.

Editorial Note: *When the Olympic games are held, the human body receives a lot of attention. There is a relationship between movement and health. And it behooves especially those who are on a spiritual path to "guard their physical and mental health." (Rudolf Steiner) Meditation cannot replace physical movement; by the same token, contemplative practice is indispensable. Michaela Glöckler makes this clear in the following article which focuses especially on the stages of life and the different members of the human being.**

Physical exercise is a central concern in our time. The word exercise has come to include all manner of movement exercises today; the term either refers to outer techniques which are akin to gymnastics or to inner work grounded in meditative practice. The latter implies forms of exercise involving highly refined types of movement that are hardly perceptible from the outside, movements that can lead over into directing forces and currents inside the body. The aim of this work is to bring about a change within one's own constitution, and to promote harmony and health. The human body is more and more recognized as changeable, vulnerable, unique, and irreplaceable.

This one special body—with its possibilities for inner and outer movement—is the place where the human being, as an individual, can become aware of

the self in relation to the whole of existence. Only inasmuch as I move myself in a physical, psychological, or spiritual sense do I become conscious of the fact that I actually exist on these different levels. Without movement or inner activity I neither experience myself nor the world. Seen in this way, opportunities for movement and opportunities for development are one and the same thing.

There is physical and soul/spiritual movement suitable to every stage of life and, also, commensurate health. Therefore it is a decisive factor for childhood, with its imperative to incarnate and make a

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home in the physical world, that sufficient room and stimulus for bodily movement are given. Bodily dexterity, muscle strength, and stamina in walking, jumping, and “working” must all be built up; all these things need years and years of practice and repetition. To achieve this, sport, dance, and—in Waldorf schools—eurythmy all have their different effects; all of these forms of movement work in their own particular ways and they are not interchangeable.

Forms of Movement for Body, Soul, and Spirit

When we are engaged in sports, our spirit and soul are completely focused on the aim to be achieved in the physical world. In tennis, for example, the focus is on hitting the ball. This orientation makes the practice of sport an incarnating activity; it awakens us to the here and now in time and space. However, within our constitution the activity of sports also furthers materialism, because in sports the spiritual serves the body to the highest degree possible. In dance, body and spirit serve motives and needs of the soul. The kinds of expression and experience furthered for the soul depend on the kind of dance-technique. In eurythmy, on the other hand, body and soul are adapted to the forms of movement which are particular to the life processes of the body. This includes the means of expression of a conscious life in soul and spirit.

The degree to which a human being can move and express himself freely in the course of his life depends on the solidity and versatility he has been able to achieve in his inner and outer freedom of movement. And just as meditation cannot replace physical movement in childhood and youth, sports and physical movement cannot replace what has to be achieved in later life. In youth it is necessary to do physical exercise in order to incarnate properly; later on in life, incarnating activity is needed. In order to come to oneself and wake up to one’s spiritual home, one needs to practice contemplation and meditation in accordance with one’s intrinsic spiritual motives. Physical exercise and meditation both have their time in life and need to be determined in accordance with the particular demands and needs of the individual.

Development through the Tasks We Take upon Ourselves

It is hard to find general rules in this realm, because of the difference in destinies and needs presented by each individual life. Also, the debate of the last 10 or 20 years between the different models of preventing illnesses, pathogenesis and salutogenesis, has shown us that health depends to a large degree on an individual’s will to live and overall motivation. Even though it makes sense to recognize possible harmful influences for body and soul and to avoid them, and, simultaneously, live as healthy a life as possible (pathogenetic orientation), there is also validity in the fact that people will not be able to develop enough strength and resistance without challenges, without being taxed, and without facing threats and danger; these will make us able to deal with stress and cope with life and all its vicissitudes (salutogenetic orientation). We each need to learn to define our own individual boundaries in what we are able to take up and achieve.

The discussions around this theme, between pathogenesis and salutogenesis, do show how helpful it is to have a differentiated picture of the human being and to be aware of individual destiny. When these factors are taken into account, one gains the clarity one needs in order to proceed in one’s own life. After all, the physical body has its own laws and needs a specific stimulus for all its organs. The eye needs to deal with light and color in order to learn to see properly; the organs of digestion need different types of food. For the brain to develop properly, it is necessary, among many other things, that a multiplicity of movement exercises are offered in the context of coordination and dexterity.

The laws of the etheric organism are the opposite of those of the physical. Here we meet a system of regulatory processes that serves the preservation of life functions, regeneration, and also healing. What is important here is not so much a focus on specific organs; the point here is to stimulate the total organism. In order to stimulate the etheric, the system as a whole needs to be addressed. This can be achieved by means of a healthy way of living as well as by taking into account how the soul is treated. After all, joy, contentment, beauty, religious and artistic exercises as well as impressions of nature

are not merely sensations in their own right. They also have a positive effect on our feeling of well-being and, with that, the functions of the etheric organism.

On a soul level, however, the laws of polarity reign. In this realm it is necessary always to keep an eye on the opposite sides and find a new balance in every situation. Here we are dealing with the tension between sympathies and antipathies, concentration and relaxation, hyperactivity and exhaustion, feelings of abundance and emptiness. These opposites which exist in our consciousness and are carried by the astral body, must be recognized, metamorphosed, and utilized to support regenerative and developmental processes.

On the level of the I (the I organization), however, different laws hold sway. Here we are concerned with integration and building identity, as well as the ability to communicate on a spiritual level. That which counts here are the things a human being commits to, the areas where an individual chooses to engage in life and is able to take responsibility. These factors become an integrated part of each individuality.

Viewed in this way there are two wellsprings of health: the etheric organism and the activity of the I. Those are matched with the two levels on which the human constitution functions: the physical organism and the astral organization. These latter two are also where outer and inner causes of illness originate. The more we pay attention to our physical health (proceeding from the ether body) and to our spiritual health (proceeding from the I organization), the more we will be able to gain spiritual and bodily mobility on our way through life.

Michaela Glöckler was born in Stuttgart, Germany, in 1946. She studied medicine at the universities of Tübingen and Marburg and went on to study pediatrics at the community hospital of Herdecke and at the University children's clinic of Bochum. She practiced as a pediatrician and school doctor for ten years. Since Easter 1988, she has been the leader of the Medical Section at the Goetheanum. She lectures and writes books on medical, physical, and religious topics, and also on counseling. She writes: "In my practice as a pediatrician I met many children with movement challenges who were struggling with speech problems and learning disabilities. As a result I have come to value the benefits of movement more and more, particularly in infancy and in childhood in general. My work as a physician has also made me realize that bodily fitness and good nutrition are not the only prerequisites for a healthy life. Active work in the realm of the spirit and the soul are needed just as much."





Non-Verbal Education: A Necessity in the Developmental Stages

Michaela Glöckler, M.D.

It is not moral preaching and not reasoned instruction that work on children in the right way: that which works is what the adults in their surroundings do visibly before their eyes. — Rudolf Steiner

Typically, human beings never finish learning, and even when getting older they will keep adding new things to what has already been attained. At the same time, it is obvious that the degree and manner of learning changes during the course of life. Every stage of life is specially adapted to certain learning processes. This shows most significantly in the first twenty years when, along with bodily growth, the soul-spirit's ability to take things in and readiness to learn are buoyant. With this sketch as background, we may focus our attention on the preschool years.

The Development of Learning Ability up to the Beginning of Adulthood

During the course of their development children learn in different ways. In the first years it happens through imitation: e.g., walking, talking, thinking, the handling of objects, getting dressed and undressed, eating habits, shaking hands when meeting people, and much more. What lies behind this?

Learning through imitation means teaching yourself according to a perceived role model. Without any explanations or pedagogical instruction being given, children absorb all the events happening around them, practicing out of their own inner drive until they have attained the corresponding skills. Children do not learn to speak through explanation, nor do they learn to walk through instructions on how to move. They learn these complicated and far-reaching human capacities solely through their own inner drive, modeled on the pattern provided by adults. This concentrated, imitative learning of the child—an activity which is kindled by the role model and tirelessly practiced—is here termed non-verbal learning, i.e., learning without words. Parents who endeavor to set an example for their children in this manner could, therefore, be called non-verbal educators.

An example might make clear what this means. In a doctor's practice it often happens that when a mother and child come into the office a problem arises. The doctor has greeted the mother and then

turns to the child who also holds out her hand. Often with little children it is not the right hand but the left. The mother who knows about non-verbal education will look on calmly while the child gives the doctor her left hand. The doctor takes it in a friendly way; however, the mother who is not accustomed to this method of child-upbringing will immediately instruct the child to give the doctor the “proper” hand. Ashamed or disappointed, the child often will just withdraw her hand. The spontaneous readiness to greet has vanished; sometimes the hand sinks down listlessly or slips behind the back, and an awkward silence arises. How different it is for the child who shakes hands out of pure imitation, where it is left to the doctor to determine whether, after having taken the left hand and said, “Hello,” he also does the same thing with the right hand, or simply leaves it at one handshake, knowing full well that things will correct themselves between the ages of five and seven.

If an adult corrects children verbally in the preschool years, their age-appropriate mode of learning is not supported, thus bringing an element into their education that is only applicable to a later stage of life. Since a preschool child is able to understand the meaning of an action intuitively and then imitate it, he or she is not ready to deal with explanations about the deed. The readiness for action—both the will and the physical motoric (i.e., its movement) is still bound to the sense experience. The eminent French developmental psychologist Jean Piaget identified this phase as sensory-motor intelligence (sensory stands for sense experience; motor stands for organs of movement, i.e., the muscular system). Intelligence and meaning are not yet abstracted independently from the bodily experience, but work directly, intuitively through the senses so that the movement, dependent upon the senses, happens as one, unified, imitative process. In the most intelligent way, children can do what they see and repeat what they hear. Everything that they experience is understood immediately, even if they have no words or concepts for it. The whole sense world is experienced directly and “sensibly”—it instantly “makes sense!” This only changes when thinking becomes emancipated from the body, at which point direct sense experience is lost. When this emancipation occurs, sense

experience is accompanied more and more by thought. It is more conscious. This later mode of learning, grounded in thinking, is much harder to attain and grows much more slowly than the intuitive preschool mode.

It is therefore important not to shorten the imitative phase by developing abstract intelligence prematurely. However, this is exactly what happens when the little child is educated verbally, through explanations being offered. Moreover, this premature awakening of abstract intelligence often occurs, for example, when a child of four, who has already “enjoyed” this mode of verbal education, is admitted to school. Such children are often seen standing apart or lolling around with their hands in their pockets watching what the others are doing. They have no inclination to enter into the games that are going on so uninhibitedly and imitatively. It usually takes six months or longer until they are ready to join in and, through seeing what the others are doing, become just as involved.

Why is it so important that preschool children have the opportunity to imitate as much as possible? This is because every activity, and especially every physical skill which arises through imitation, not only prepares abilities for later life but also gives impetus to the healthy development of physical functioning during those years. We must not forget that children are not only learning; day-by-day they are growing up. Learning and growing are inextricably bound together. So the question is: does every learning process also support the child’s physical development? It is obvious that physical development in children is best stimulated by copying and participating in activities that require skillful dexterity rather than by sitting still—as for instance in front of the television or with electronically controlled toys and games where a minimum of skillful movement is required. It is also good, where possible, to avoid being hemmed in within small apartments without any interesting things going on to stimulate imitation. Rather, give children the possibility of bringing all their physical capacities into play (particularly their movement capability, their sense of balance, and their fine and gross motor skills).

Every act of learning is at the same time an act of

will. Learning requires effort. With preschool children, the will is still integrally bound to the sensory activity, without any intervening cognition. Uniquely, this gives the possibility for optimal learning in accordance with the functions of the sense organs and the interest with which the child uses his sense organs to take in the world. Some children have more interest, some less. There are those with the possibility of wide-awake attention and those whose powers of attention are weak. The adults must know how they can awaken the children's interests and gain their attention. This happens when whatever needs to be done is undertaken joyfully and with enthusiasm. Something done with care and in a loving, enthusiastic manner evokes the child's interest much more than when one does things in a listless, uninterested or even grudging way. Something similar can be seen also with older children. For example, when it is a question of who should clear up after the meal, if someone jumps up and says, "I'll wash up today. Anyone coming to help?" and then disappears into the kitchen to make a start, others will now follow suit, rather than when everyone gets up quietly after the meal and tries to make himself invisible with the hope that someone else will do it. The more convinced an adult is about what he does, the more attractive it is for the imitative situation of the child.

All this changes when school begins and the child's readiness to act becomes more independent of sense impressions. As motivation, he now needs his feelings to be stirred, for between the change of teeth and puberty the feeling life develops. The children now do not react primarily to what they see and experience, but to what they feel. They judge everything they experience according to feeling. Sympathy and antipathy play a big part in this. Which teacher they like, which clothes please them, which pupils in the class are "slow" (as some children put it)—all this is affirmed and discussed. What pleases them, and what does not, play a big role in all they do. The teacher must succeed in arousing feelings that give wings to their willingness to learn. However, since learning is always bound up with effort, it cannot only be a matter of the pupils learning what they enjoy learning. It is much more important that the pupils learn to love making an effort of will in the whole process of learning.

They can achieve this when they come to like the adult concerned. Indeed, just at this age we meet the phenomenon of those pupils making good progress in the subjects where they like the teacher. For example, a child who has never understood anything in mathematics suddenly becomes quite a successful pupil after a change of teachers, if the new one has an empathetic connection with the child.

At this age, naturally, verbal education is necessary. It is also appropriate because the intelligence of the child has become emancipated to the extent that she can retain in her memory what the teacher has said. She grasps the meaning that is contained in word and sentence independently of outer action. This ability appears towards the end of the kindergarten, when it is time for elementary school to begin. You can recognize this in how children listen to a story. As long as they remain in the non-verbal mode of learning, their memory is not yet independent. They love to hear the same stories again and again and to play the same games over and over. Grownups are often amazed that the children do not get bored. They do not because their memory has not yet reached this level of independence; the intelligence lives completely in activity. The children have, so to speak, a repetitive memory. In the repetition of an event or story they feel that they know it already. The pleasure of remembering only stirs while re-enacting the event or re-hearing the story, and not in the independent way that is later the case.

This new mode of learning hops to the forefront between the sixth and eighth years. You first notice it when, suddenly, the child does not want her beloved bedtime story, but instead wants to hear something new. She no longer lights up happily when mother says that it's time for *Snow White*, but objects: "I know that one so well already, I want a different one." Then this moment has come. As long as the children are glad to hear the same story repeated again and again they are still in the non-verbal phase in which intelligence is not accessible to them *in abstracto*.

After puberty, eagerness to act requires yet another motivation. Neither example nor feeling alone provides sufficient motivation. Young people must see

for themselves what they have to do. It becomes more and more evident that adolescents will only do what they understand, while acknowledging the reasons. Will and readiness for action have now become dependent on thinking and on insight. Young people do not want to carry out an action primarily to please an adult, but because they see some justification for it. If these different modes of learning in childhood and youth are taken into account, the task of education is made easier. If not, problems and conflicts arise which have to be overcome every single day and are deleterious for the climate of learning.

How Does One Learn to Educate Non-Verbally?

We are often faced with the predicament: How do we react in the preschool years when the child refuses to do what we ask? How do we get the child to do what we want without a huge torrent of explanation and justification? Here one can learn a great deal in one of the kindergartens where non-verbal education is practiced. In the Waldorf kindergarten, for example, it works as follows. When the children are playing outside, walking on stilts or building little dens, and it is time to come indoors to eat, many of them get upset at the thought of their fun being curtailed. It is a great help, in such circumstances, if the meal is always at the same time and the children are accustomed to it. Habit is an important support for non-verbal education. It becomes self-evident that you follow the routine.

The kindergarten teacher goes from group to group, singing the song that she sings every morning, signifying that they leave their treasured game and come in to eat. A few children are already following her. This extends into a little parade which affects and draws the others. More and more join in until the whole group goes inside. No scolding, no admonition, no telling off—simply going inside embraced by everyone.

A mother once said to me, “When I hear you speaking like this I find it all perfectly understandable; but then when I’m at home I always ask myself, why has my clarity disappeared? It does not work as I hoped it would.” This is the kind of problem that confronts people who are embarking

on non-verbal education. So why is it so difficult? Why is it hardly possible today for an adult to refrain from a whole rigmarole of explanations when he wants something from a child? He has to learn that instead of words he needs to act with concentration. One has to do something that usually does not happen today; namely, unite oneself with what one wishes in such a way that one can perform it almost as a ritual, through one’s whole disposition, and then bring it to full expression. When I speak about something and simultaneously think about it, I am immediately distanced from it. I think “about” it. I talk “about” it. I am not it. I am not in it—I am not completely at one with it. It cannot speak out of me, or allow itself to manifest through me.

This disconnected “talking about a thing” is rampant today. With one person you talk about something in one way and with another person you talk about it in another way. Opinions have something relative about them; you do not want to tie yourself down. This is typical of the intellectual culture in which we live. One distances oneself; one does not take things seriously but remains “objective.” Seldom is it necessary to really throw oneself heart and soul into something. Many pupils are not used to taking seriously something that has been said by an adult. They think everything can be discussed and made negotiable—that ultimately it is not decisive. And then they are extremely surprised when they meet a grownup whose every word carries weight.

Today we have all been brought up in this rather hazy, noncommittal way of life. This means that a degree of uncertainty will have brushed off on us. Most people have inferiority complexes—they know they do not really understand a lot of what is going on in the world. This kind of uncertainty in judgment, resulting in being unable to form an opinion, is widespread. Also relatively widespread is the feeling that what one thinks has only limited value; everything could actually be quite different. Openness and critical distance are naturally indispensable preconditions for a genuine and realistic striving after knowledge. But they are undermining for the phase of non-verbal education. At that age children simply want to experience the meaning in everything that confronts them. If the adult cannot

give this meaning because he or she is not convinced, or is uncertain, or experiences things as relative and only of limited importance, the child does not receive what she or he needs. The child loses confidence, and, through this, many typical educational problems belonging to this age group ensue.

The Rediscovery of Body Language

Nowadays there is a whole spectrum of psychotherapies—different schools ranging from sensitivity training to Gestalt therapy—which aim to convey to people what they think and feel inwardly, and how to relearn to express this in an honest way, through the body as well, and to show this in body language. It has been shown that many people become ill through unbearable tension arising between what they experience inwardly and the facade that they show to the world. It is not that I am recommending the above-named psychotherapeutic methods for learning how to educate non-verbally. I merely want to emphasize that the possibility of non-verbal education—that is, the ability to show through body language without words what one is thinking and what is meaningful—is something that is very foreign to many adults in our time, and symptoms of illnesses often appear as a consequence.

For learning how to educate in a non-verbal way I have two recommendations. First, eurythmy, where in every movement something meaningful and entirely in correspondence with feeling and thinking is brought to expression—providing one practices diligently. Second, acting or drama, where one learns to move expressively and only to say what one really has to at a particular moment. It would be ideal if parents of pre-school children would get together in groups, and act small scenes in mime in order to express thoughts and feelings, patterns of behavior, commands and taboos, as well as everyday problems in a non-verbal way. They should then exchange impressions about what they have experienced. It is fascinating to see how engaged children become when an adult makes an interesting movement or when his face has a meaningful expression that is inclined towards mimicry. They love this sort of thing. The children will do everything the adult is asking of them simply because they do not want to let him escape. They love to provoke simple expressive reactions in adults and like it when their

parents show their emotions.

In this connection, it often happens that children in the kindergarten pick up all sorts of rude words and trot these out provocatively in one or another situation. A typical case might be as follows. A mother meets an acquaintance on the street and begins a conversation. Little Johnny stands there and begins using rude or vulgar words. With interest he observes how the friend becomes uncomfortable and the mother becomes embarrassed. Meanwhile Johnny is relishing the scene. But if the grownups continue talking unperturbed and ignore him as a sign that his choice of words is not affecting them, the child will soon realize that the effort is not worth it.

How does it happen that children instinctively know either that they have succeeded with such provocation or that it is not worth their while? Had Johnny just been walking with his mother alone, in all probability he would not have come out with anything of the sort. Such words only came into his mind when his mother started talking to her friend. Once again, in the non-verbal phase, children instantly absorb the meaning of all sensory experiences. They do not experience the sense experience as separate from rational understanding. So it is possible for them intuitively to grasp the moral qualities in the soul life of the adult. That which occurs for us adults in later life only in special situations when, for example, we sense that there is an “atmosphere” in a room we are entering, or when we notice that two people are in love with each other, is a daily and ongoing occurrence for children. As soon as the mother meets her friend, the child feels that her interest has been deflected from him towards the other person. Through his provocative behavior he would like to bring it about that he is once again the center of her attention. However, he must learn that this cannot always be, and the mother achieves this when she is quite consistent in doing what she considers is right—in this case, continuing to talk to her friend. If she empathizes with the child, and understands that he feels a little forlorn, it will be easy for her, even while she’s talking, to keep casting a glance at him, or make some little movement so that he does not feel left high and dry. In this way she may keep the child from becoming provocative.

Conditions for Free and Responsible Action

There is yet a third hindrance vis-a-vis non-verbal education—the wish of many parents to allow their child to be free, not to follow directions. Hence, in order that he not be alienated, the three-year-old is asked what he would like to eat or what clothes he would like to wear. Whoever realizes that children of this age learn through example and are prone to absorbing any uncertainty in the adult's attitude (for example that he is indecisive about what he wants and therefore asks the child) will change his stance for the sake of the child. Freedom can only develop when one has achieved one's own mature insight. Of course, there are preliminary stages in the development of freedom. In the non-verbal phase of education this consists in allowing the child to imitate what he sees unrestrictedly and without reserve. He must be allowed to move freely. The house should be so organized that one does not have to prohibit the children from this or that; rather their impulse towards activity should be allowed free rein. The example comes from the grownups, but the way in which the child responds is freely experienced and freely formed. Similarly, later at school, when the children learn something because they like their teacher, the element of freedom plays an important role. Because the child likes doing something, she feels free, even if the impulse for the activity has originated from an adult and not from herself. If children have been allowed to develop through these preliminary stages, they will also be in the position after puberty, when independent thinking and powers of judgment ripen, to act out of free, self-determined insight and personal understanding. Only then is true freedom possible.

To summarize: in the preschool era, the key is trust in adults and free play of movement; in the school years, love and joy of doing; and in young adulthood, recognition for what is true and right—these are the preconditions for free and responsible action.

Adults who bring trust towards the child so that she will make use of her freedom at maturity will feel themselves, in the time up to then, like a proxy, merely replacing those capabilities over which the child has no sovereignty during the course of her

education. They will hold back whenever the child has reached a sufficient degree of independence. Correspondingly, the child initially brings to the adult, and especially in the preschool years, deep trust that the teacher will do what is right. An infant lying with open arms and open eyes, his diaper changed, is at the same time an archetypal image of trust-filled bliss. She allows everything to happen to her. Something of this original trust persists through the whole preschool period, expressing itself also in her need to give herself over to imitation. The child regards everything that happens around her as worthy of imitation and trust. That is why it is so important that this trust is not betrayed. It is betrayed, however, when the child experiences that an adult does not know his own mind. Likewise, when the course of the day lacks regularity and rhythm and security. But, if good habits are installed in the form of a definite sleeping-waking rhythm, in regular meal times, and in regular alternation of play and rest, the child feels herself safe and protected, experiencing the course of such a day as something into which she may gladly enter.

As can be gathered from the above, it is straightforward to understand the principle of non-verbal education; the challenge is to put it into daily practice.

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Organic Functionalism: An Important Principle of the Visual Arts in Waldorf School Crafts and Architecture

David Adams

Waldorf education was intended not only to be an effective, holistic, child-centered approach to the education of children but also to be a force for larger cultural change.

Do we who work in Waldorf schools ever think of ourselves as cultural revolutionaries? One of Rudolf Steiner's often-overlooked ideals for Waldorf education in this connection was the development of a certain harmony between the approach to teaching applied visual arts—handwork and crafts—and the approach by which the forms and spaces of the surrounding classrooms were designed and built. The same ideals were to guide both kinds of form-creating activity.

Steiner envisioned the development of a new cooperation between crafts/handwork, manual training, and artistic feeling.¹ His indications for the teaching of crafts in the Waldorf schools aimed to lay the foundation for this direction in the students' developing will and feeling, so that the combining of utility and beauty could gradually become a practical habit, both within school graduates and, through their influence, in society in general.² Following an identical principle of design, school architecture and crafts instruction would together serve a new vision of the spiritual renewal of the design elements in our everyday environment.

A few quotations from Rudolf Steiner will indicate

how he felt this to be a compelling social need of modern times: “[D]o we not see how art has lost its connection with life? . . . We see how inartistic our everyday surroundings have become. Art has made an illusory progress. All the buildings around us with which we come in contact in our daily routine are as devoid of artistic beauty as possible. Practical life cannot be raised to artistic form because art has separated from life.”³ “All the atrocities which surround us in any city of Europe we may happen to be in, would vanish if only we would cultivate for a few generations the sense of beauty which lives unspoiled in every child.”⁴ “We need today to bring about the marriage between life and art which, however, can flourish only in the soil of a free life of spirit. . . . Imagine every schoolroom, not decorated in the way often thought artistic today, but shaped by an artist in such a way that each single form is in harmony with what his eye should fall upon when the child is learning his tables. Thoughts that are to be socially effective cannot work socially unless, while they are being formed, there flows into the soul as a side-stream of the spiritual life what comes from a really living environment. For this, however, art needs to take a quite different course during children's growing years from what is now accorded it.”⁵

What are the principles of the approach Steiner wanted to inaugurate in the Waldorf schools? He

indicated the essential concept in a comment on handwork teaching: “The starting-point in handwork and the crafts should always be the purpose to be served by the object in question. This is what determines its color and form. . . . In every case we must take into account the purpose which the object has to fulfill in life—that is the meaning of handicrafts.”⁶ Likewise in architecture, Steiner indicated that the first step is to ask oneself “What happens?” i.e., what activities are to go on within a building?⁷ Around these activities, these functions, the forms and spaces of the building should be designed. He used the analogies of the close-fitting relationship between a walnut kernel and its nutshell, as well as between a cake mold and a cake, to depict the kind of harmonious connection he intended between form and function (thinking of “function” in a broad, multi-dimensional way). The classrooms and school buildings were intended to support the educational functions and the processes of human development that take place within the school.

Form follows function. Style follows use. This is the fundamental concept. Its practice means that every work of design will have a functionally appropriate, individual form or structural gesture. This applies equally to large buildings and to the smaller, more intimate objects of our everyday life.

In the case of smaller, utilitarian objects, the individualized form-gesture should express the character of the object’s invisible function or purpose, especially its relationship to its human user. Louise van Blommestein, the original crafts teacher at the Fortbildungsschule (“Continuation School”) in Dornach, recalled Steiner emphasizing that in all the artistic objects created for daily life “it was the purposeful relationship to the human being, for whom they were being made, that was important, and this relationship was to be expressed in design and color.”⁸ A building or a wooden spoon was fully functional (or beautiful) only when all aspects of its effects on users were satisfied by the designed form. This was possible only when the form was developed “organically” from its internal function and intended user activity, “as if grown out of the object itself.”⁹ Ideally, the forms designed would not only fulfill but also visually declare their holistically conceived functions. This is an approach to

design that I have called “organic functionalism.”¹⁰

Such objects should also be designed so that they “fit” artistically into their intended surroundings. A dining room table should not appear the same as a library table. Looking at a tablecloth embroidered by a student, Steiner once indicated how specific a visual design could be: “This is a tablecloth for use on a round table in a reception room in which guests assemble to drink tea.”¹¹

Through efforts along these lines, the artistic element can arise directly from the everyday practical activities of life, from those activities that give the object or building itself its meaning. Art does not then remain isolated from ordinary life within museums and galleries but can flow out into daily experience. “Beauty must not remain captive in museums,” announced Steiner. “Step by step we must work for its release.”¹² He felt this desired social development, which Waldorf education was intended to serve, to be important for the very renewal of spiritual life within society:

It is a matter of great and social significance to men, that everything by which they are immediately surrounded in life should take on an artistic form. Every spoon, every glass, should have a form well adapted to its use, instead of a form chosen at random to serve the purpose. One should see at a glance, from its form, what service a thing performs in life, and at the same time recognize its beauty. Then for the first time large numbers of people will feel spiritual life to be a vital necessity, when spiritual life and practical life are brought into direct connection with each other. . . . art, born of spiritual science, [will] attain to the power of giving direct form to every chair, every table, to every man-created object.¹³

What do these principles mean in actual practice? The following examples from the crafts curriculum, primarily from Steiner’s own lectures on Waldorf education, will help make the approach of “organic functionalism” more concrete and understandable. After this, we will look briefly at school architecture.

Embroidery Design

Waldorf students usually learn to embroider in the fourth grade, sometimes starting as early as the third grade. In seventh grade they expand this foundation in connection with clothing and sometimes take up more advanced embroidery in the ninth grade. Steiner once remarked at a teacher's conference, "There are people who embroider a thing, but whose embroidery might equally well be on something else."¹⁴ Organic functionalism demands that an embroidery design express the function of the object onto which it is embroidered and the relationship of that object to the human being.

If, for example, the object is an embroidered glove, then one should be able to see that this glove is for a human hand. The asymmetry of the hand—the thicker palm and back of the hand contrasting with the more slender fingers—as well as the structural character of the muscles and bones within the hand, can all be expressed, to an extent, in an embroidered pattern. Traditional crafts designs often have something of this character (**figure 1**). It is similar for the foot with the decoration of the slippers often made in sixth-grade handwork classes, where the "form and coloring must be especially strong and heavy round the heel, for this is where the weight of the body rests most strongly. . . . Toward the front the motifs should be lighter in color, as well as round the opening for the foot."¹⁵ This reflects Steiner's principle that the inside of a useful object should be lighter than the outside.¹⁶

Another important principle in relation to the human user was expressed in a remark Steiner made about an ink-pen wiper, whose surface had been completely covered with embroidery by the student. Rather, he commented, it should have been designed to leave a space free for the thumb to take hold of it (as in **figure 2**). What a person does with his or her hands in using the object must enter into the embroidered design. It was a basic design principle that "an object should always be lightest in color where a human being has to hold it."¹⁷ A similar idea applies to the design of an embroidered wallet or needlebook (**figure 3**).

These principles received an interesting elaboration with Steiner's comments on the task he set a ninth

grade class to embroider a cushion or pillow. We quote here in full from a telling report by pioneer Waldorf crafts teacher Hedwig Hauck:

This very question—how to embroider a cushion—had been discussed by Rudolf Steiner on various occasions. "For," he said, "it can happen when you lie on a modern cushion that you wake up and find the embroidered pattern imprinted on your cheek." In the Christmas lectures given to teachers in 1921 he made sketches on the blackboard and said: "It isn't possible to lay your head on this cushion (**figure 4**), because the thing in the middle will scratch you! It does not express the real function of a cushion at all. This is how it should be done (**figure 5**) . . . and now you can only lie with your face to the right. If it is to be done really artistically, the same design must be put facing left on the back of the cushion" (**figure 6**).

All kinds of questions arose among the listeners as to how else a cushion could be artistically designed. It was thought, for example, that it would be fully in harmony with the function of the cushion if it were embroidered only along its four edges, for Rudolf Steiner had said in Dornach on another occasion that in the middle of the cushion is the human being—nothing is there—but around him are his dreams.

When he was shown a cushion embroidered in this way along its four edges (**figure 7**), he laid it flat on his open hand and tried, turning it in all four directions, to lay his head on it, until he gave up the attempt and said: "But how can I get into it? Here it is closed—there it is closed—it is closed on all sides. One cannot get in at all." Then he took a pencil, drew a sketch of a cushion (**figure 8**), and said: "It must be embroidered in such a way that one can see where the head and the neck should be. The design must open out towards the bottom so that the human body can get in, and in the middle at the top the design opens out again."¹⁸

After he had sketched the embroidery for the cushion he drew a number of short firm strokes along the bottom seam and said: "The lower edge must be strongly emphasized; it must be clearly defined. The side edges must be too, but less so as you approach the top. The lower edge must be

especially strong (there is no seam along the top). Then on the back of the pillow (**figure 9**) you can embroider something in all four corners, or you can embroider in the middle, to show that one cannot lie there”(**figure 10**).¹⁹

Cosies for tea or coffee pots, Steiner noted, should have a lot of reddish color in them to show that they are used to keep the beverage warm.²⁰ They should also be designed to show where the opening is located (i.e., below) as well as which end retains the heat (**figure 11**).²¹ The same principle would be true in reverse for the workbags often sewn and embroidered in grades 3 or 4 (**figure 12**) as well as for handbags or shopping bags.²²

Aside from being designed to fit into its future surroundings, a tablecloth should also be designed for a table with a certain number of legs (**figures 13 and 14**). Thus, one could see visually for just what kind of table and purpose a tablecloth was intended. An embroidery design for a dining room tablecloth or placemat ought to leave space for silverware and plates, which could be enclosed in a kind of frame whose design took into consideration the number of people at the table (**figure 15**).

Clothing

In the seventh grade, and usually for one or two years thereafter, Waldorf students learn to make items of clothing, first by hand sewing and then by machine sewing. Steiner encouraged teachers to try to overcome the dictates of current fashion and teach the children to design their own clothing in a freer, more artistic way that expresses a relationship to the specific personality of the wearer and to the part of the human body involved.

One of his favorite examples with regard to clothing design tries to make a clear, functional distinction between the embroidered design for the neckline at the top of a dress and one for the hem at the bottom:

You see girls . . . sitting in a needlework class sewing some kind of pattern round the neck, round the waist-band, and round the hem of a dress, and one is dismayed to find that it is always the same pattern! And when you meet a young lady hooped around in this way, she

looks as though she has been squeezed together by this pattern which is the same above and below. Head and feet have been completely ignored, while in fact the pattern ought to be metamorphosed in accordance with these (**figure 16**).²³

In 1922 at Oxford he spoke as follows:

The child must learn very early on that a band designed for the neck has a tendency to open downwards, it has a downward direction; that a girdle or waistband tends both upwards and downwards; and that the lower hem of a dress has an upward-striving tendency, and must have a kind of base below upon which it stands. It is a terrible thing if a child is taught merely to design a band artistically. The child should know how the band should look according to its position on the human being wearing it (**figure 17**).²⁴

Furthermore, remarked Steiner, a garment should be lighter toward the top to show a relationship to air and light, and heavier (darker) toward the bottom to show a relationship to the ground (likewise for shoes, which are actually in contact with the ground). “Face and hands express the human spirit and radiate out, so to speak, so that near these, the colors should always be lighter.”²⁵ In general, he added, it would be good to design a garment to be symmetrical to the central vertical line of the body’s front.²⁶

With regard to clothing accessories, gloves and shoes were already mentioned under “Embroidery Design.” The design and trimming of a hat should likewise be in keeping with its function. Steiner suggested that the hat designer “should express the fact that the hat is placed from above downwards onto the head: it bears a similar relation to the head as the roof to a house.”²⁷ A hat “should sit firmly on the head as though held by it, and, . . . if there is a brim, a gentle transition should be made from it to the part of the hat close to the head.”²⁸ A brim must be bent downward in the back, but in front “you can bend the brim upwards, so that the face is free of covering. Then even the shape of the hat says that it is protecting the head, but allowing a free view into the world.”²⁹

Woodwork

Throughout the Waldorf woodwork curriculum, which begins in fifth or sixth grade and can continue through twelfth grade, a variety of utilitarian objects are made by the students. The fundamental functional principles of the design of these objects are established near the beginning with one of the first projects, the carving of a wooden spoon. There, it is important that the handle of the spoon is designed and carved in a somewhat asymmetrical, rounded form that fits comfortably into the shape, size, and grip of the human hand that will use it (**figures 18 and 19**). An impression of the hand's grasp might be made first in clay as a guide. The same principle can be seen in gradually more complex projects, such as a small serving bowl (**figures 20 and 21**); also note how the concentric pattern of tree rings is used to help shape the bowl area) and an unusual knife handle (**figure 22**), which fits with remarkable precision into the irregular hollow shape of an adult human hand. (This would more likely be a letter-opener project in a Waldorf school.)

A few other projects, mostly from later grades, illustrate the same ideal of fitting the object's design to the way it will be used by a human being. Carved candle holders include handles adapted to the grasp of the human hand (**figure 23**). A carved wooden box features a broad, overhanging lid with the underside of the lid grooved to fit a lifting finger (**figures 24 and 25**). Lids for such boxes can also be carved with suitable indentations for the thumb and fingers to lift (**figure 26**).

In their junior and senior years of high school, students may also begin to create items of furniture. A common first project is a three-legged stool with the seat slightly gouged out to fit the rear end of the body that will sit on it. The idea that a chair or other piece of furniture is beautiful only to the *eye* Steiner called “an absurd idea.” Rather, he said, “We want to *feel* the chair, feel the beauty of the chair when we *sit* on it.”³⁰ Artistic beauty must always arise in close connection to actual use.

Book Design

In the eleventh grade, Waldorf school students

learn the art of bookbinding. Steiner placed a high value on learning this craft: “In bookbinding the children have to learn how to unite something spiritual with the physical.”³¹ Ideally, the students first study the content and structure of the book before beginning a book cover design. The design will then arise out of the ideas or story of the book combined with the essential nature of the book cover's function.

Steiner's numerous comments on the design of books can only be summarized here. A book cover (or folder) should express its purpose as a *cover* by being darker than its contents, the pages within. The design of the cover should also show clearly which is the top and bottom and which is the front and back. The supporting back should normally be darker and less articulated than the front. To prepare the reader, the ideal would be to represent the essential content of the book in the cover design. However, the design should be primarily located in the upper left-hand area of the book cover. The lower right-hand corner and edge can be left uncovered by design or text (or perhaps contain another design motif pushing in from outside the cover) in order to indicate where the hand grasps the cover to open it: “The place where we touch or take hold of an object should always be lighter than the rest of it. It will then be as though the human being were radiating light.” One should be able to see from the design of the cover that it is meant to be opened (for an example, see **figure 27**). However, commented Steiner, today one seldom sees this; rather, books “usually bear some design which actually requires one to leave them shut, not to open them at all.”³²

In general, an upright oblong shape should be used for anything written or printed, while a horizontal oblong shape should be used for drawings and pictures (**figure 28**). A book (or perhaps each chapter) might also have an end-vignette on the last page to bring the content to a conclusion or to summarize visually its essential content or mood. Visually, every part of the book design must clearly belong to the whole.

Color in Interior Decoration

Steiner once observed that there are many small

household items that can be made by hand and then painted by the students (e.g., lamp shades), paying special attention to the functional role of color within the home environment. As Steiner observed on a number of occasions, the individual character of each color must be carefully adapted to its particular use:

“If for instance you think of green,” he said, “you can easily think of green card-tables. Because a game is a limited, pedantic activity, something very philistine, one can think of such an arrangement—a room with card-tables covered with green. What I mean is that it would be enough to make you run away if you were invited to play cards on a mauve table. On the other hand, a lilac-colored room or a room furnished throughout in mauve would lend itself very well, shall we say, to mystical conversation—in the best and in the worst sense. . . . Thus we note that by virtue of its own nature color has an inner character; whereas green allows itself to be defined, lilac, peach or flesh color tend to spread into vagueness.”³³

On another occasion he tried to reinforce the importance of a connection between the aesthetic impact of a color and its particular use:

“I want to say this: if I should enter somebody’s dining-room and find people eating there from plates which had a red glaze, it would give me the impression that these were people who wanted to enjoy their food like real gourmets. But if I saw them eating from blue plates then I would think they were not gourmets but just hungry people wanting to satisfy their appetite. Somebody else might have another impression, but that is not what matters. What matters is, that everything one meets in life seems to have an aesthetic effect on one. This forms itself into a sort of faint imagination or vision. . . . Even if it is not generally true that a party of people eating from plates which are colored red must necessarily be a crowd of gourmets, from an aesthetic point of view it still holds true. In the same way one could say that if somebody receives me in a red room and stands there in front of me without saying a word, being a really dull sort of person, I feel like saying: ‘He real-

ly lies by receiving me in this red room, because it makes me expect somebody there who has a lot to say to me and doesn’t let me talk all the time.’ It makes him look as if he were deceiving me—his way of living seems a lie to me.”³⁴

The particular qualities of each color should also be used in designing wall painting or wall decoration within the school. Again, the colors must be related to functions—either the function of architectural details (such as a warming or intensification of wall color toward the entrance to a classroom or beginning of a stairway) or to support the educational functions taking place within the classrooms. Steiner provided a number of recommendations for the specific colors of each classroom, changing through the years as the children mature. This idea leads us to consider architecture once again.

School Architecture

Rudolf Steiner—who himself designed seventeen buildings and gave more than seventy lectures on architecture—often spoke about the powerful effects exerted upon us by the buildings in which we live, work, study, learn, and shop. He maintained that the best architectural and utilitarian design does not arise only from considerations of structural and physical functions, but rather should be “living forms” that also speak to the emotional, psychological, mental, moral, and spiritual natures of human users. Architectural forms and spaces should arise organically from such “inner functions” as well as from outer functions. To authentically relate to and nourish these inner dimensions of human experience, argued Steiner, a building should present “an environment that will express the human being’s inner being in forms.”³⁵ Sculptural forms with dynamism and organic movement speak better to the human psyche than do the static or geometrical forms of most previous architecture and design. Hard, psychologically opaque, or merely intellectually conceived forms can stir semiconscious feelings of alienation in their users; they are not experienced as physically or psychologically “user-friendly.”

What might these ideas mean in practice when applied to the design of a Waldorf school building? First of all, it is important that the artistically based

instruction of the teacher is supported by classroom spaces that are also artistically modeled (and for which a standard rectangular room is generally the least suitable). A more organic architecture offers greater support to the organically related, mobile, and flexible thought-processes that Waldorf teachers hope to develop in their students. But, most essentially, the application of these ideas would involve progressive changes in the floor plans, ceiling designs, and overall shapes of classrooms as students advance through the grades and through different developmental phases (see **figures 29, 30, and 31** for examples of such plans).

The progression of rooms begins with the simply whole, unitary, roundish spaces of the kindergarten and preschool, reflecting and welcoming the children's experience of the world during those years. Not only the entire room, but the windows, doors, ceiling, and furnishings can have a rounded or curved form (**figure 32**).

That which is softer, more rounded, and more unified in the preschool and early elementary years will gradually become firmer, more articulated, and more angular as students advance through their schooling. Appropriate classroom murals, wall pictures, and colors should also change through the grades, as described by Steiner.³⁶ For example, the walls of the first-grade classroom would be painted in warmer, reddish colors and feature images from fairy tales. By contrast, the walls of the sixth-grade room would be painted in cooler, bluish colors and feature images of the individual human being, especially a human being in nature ("a man standing in a landscape in sunshine or rain; or a small lake with a man rowing on it," suggested Steiner). Being surrounded during each school day by pedagogically appropriate wall paintings can exert a powerful counter-force to the less helpful influence of the television, film, and advertising images that flood the experience of most students today.³⁷ In a similar way all of the visible elements of a building's design—lighting, doorways, corridors, stairwells, materials, arrangement of spaces, and so on—can be shaped out of an awareness of their role within the educational functions of the structure.

But what about the form of a school building as a whole? Although I could profitably discuss exam-

ples of Steiner's own buildings to make clear what his design principles might mean in architectural practice,³⁸ the Rudolf Steiner School in Ittigen, Switzerland, provides an excellent example of how a whole building can manifest these design principles. Located just outside Bern, this school building was completed in 1977 and was the design product of architects Arthur Bieri and Gerhard Egger working closely with Eckhart Dönges, a sculpture and eurythmy teacher at the school. The three-level building is carefully related to its surrounding environment—on the one hand, to the alpine mountain vistas on all sides (**figure 33**) and, on the other, to a traditional broad-roofed Swiss farmhouse that stands nearby on the same property (**figures 34 and 35**). The school building is threefold in overall conception, with a center section flanked by two long wings. This configuration expresses the essential function of the building: a nurturing, motherly gesture of protection as the two "arms" of the school building embrace the broad plaza in front of the school where children (and parents) often gather. This same gesture is repeated in a sculptural motif over the central doorway (**figure 36**) as well as in the framing for the auditorium stage and the railing for the rear balcony, where orchestra or choir are frequently positioned during school assemblies and performances (**figures 37 and 38**).

Unlike many featureless, rectangular modern buildings, the Rudolf Steiner School clearly announces its main entrance in bold, projecting forms and clearly identifies its front and back sides (see **figures 36 and 39**). The rounded contours and fluidly modeled stairs of this entrance invite the visitor to move easily upward and into the school. Even the door handles support the welcoming expression (**figure 40**). Spaces for the hand to fit comfortably inside are carved out of each wooden door, and the right-hand indentation is cut and articulated somewhat more sharply than the left-hand one. This is an expression of the fact that most people are right-handed and, thus, more awake on their right side. The handles on the inside of the door are shaped like large, simple buttons, making it visually obvious that one pushes them to open the door, even as the forms on the outside express that they must be grasped and pulled. The organic visual design directly tells the user the function of the door with

no need for “push” or “pull” signs.

In the entrance lobby tall, muscular columns clearly and reassuringly support the somewhat low, “child-scale” ceiling. They also provide an architectural image of the kind of “wakeful uprightness” that we hope students will adopt as they make the transition from outdoors to their classrooms (**figure 41**). On the stairways dynamically interpenetrating forms encourage the students to keep moving up or down the stairs (**figure 42**). The doorways to each classroom feature organically-designed frames whose flared bases express their solid foundations. The angularly curved tops reflect the natural human experience of a curved sphere above—whether we think of this as our own head or the sky (**figure 43**). Both the shape of the doorway and the type of wood used change as students progress through the classrooms of different grades, moving from rounded to more angular and wakeful forms.³⁹

The classrooms are arranged within the building in accordance with an awareness of the qualities of different spatial directions. Rooms for the more earth-related lessons (such as the sciences, gardening, physical education, woodwork, and metalwork) are located on the ground floor. Classrooms for grades one through twelve are located on the main (second) floor, moving from east to west. The spaces for more aesthetic or refined subjects, such as music, eurythmy, painting, and sculpture, are located on the upper floor. To give but one example of an individual classroom, one of the two eurythmy rooms shows how it echoes the graceful, rhythmic movements of that art while the element of uprightness is reinforced by sculptural pilasters along the side walls (**figure 44**). The room uses radiant heating provided by a network of water pipes beneath the flooring. This system provides an even, cozy heat, particularly for the feet of the moving eurythmists. The Ittigen building demonstrates how architecture can make an important and positive contribution to the process of education.

Conclusion

The examples discussed above should make clear the essential design principle that Steiner intended to be used equally within the Waldorf crafts curriculum and in the school building’s architecture:

Every form is sensitively adapted to the nature of the human beings who use them. But this “organic functional” aspect of Steiner’s artistic hopes for Waldorf education has been much neglected in North America. For example, in the recently published book *Will-Developed Intelligence: Handwork and Practical Arts in the Waldorf School*, although many benefits of Waldorf crafts instruction are discussed, there is hardly a mention of this design approach, which for Steiner was to be one of the chief guiding principles of education in the crafts.⁴⁰

This principle was to be a means for “ennobling” children’s feelings for color, form, and line already during the elementary school years so that they could bring an unspoiled sense of practical beauty with them into their life activities and thereby gradually transform the design of our surroundings to something more enlivening and harmonious.⁴¹ At the same time the progressing crafts curriculum could help to gently lead children into a more pragmatic, “down-to-earth” relationship to their still new earthly home, as noted by Michael Martin: “The child is borne into life on the stream of beauty; it is the guarantee against succumbing to the ‘merely useful’ on earth. But the human being must enter the other stream, coming from the earth itself, must connect with the necessities and demands of life.”⁴²

In the end, design measures such as these—whether introduced at the “micro” level of crafts instruction or at the “macro” level of school architecture—not only hold the promise of best supporting the developmentally-based educational tasks of the Waldorf school but also of helping to bring an artistic element into the design of our larger everyday surroundings and buildings, a design element that will gradually make them worthy of the human being as a being of soul and spirit as well as body.

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2. I would like to acknowledge the assistance of the late Margaret Frohlich, who generously shared with me her

wisdom regarding principles of Waldorf crafts teaching and examples of her own or her students' work (including many of the illustrations for this article).

3. Rudolf Steiner, *The Social Future*, 3rd ed., trans. Henry B. Monges (Spring Valley, New York: Anthroposophic Press, 1972), p. 80.

4. Rudolf Steiner, *Lectures to Teachers*, a report by Albert Steffen of lectures in Dornach, Christmas 1921, trans. Daphne Harwood (London: Anthroposophical Publishing Company, 1931), p. 80.

5. Rudolf Steiner, *A Social Basis for Primary and Secondary Education* (College of Teachers, Michael Hall, Forest Row, Sussex, 1958; reprinted 1975 by Waldorf Institute, Adelphi University), p. 38.

6. Quoted in Hauck in *Handwork*, p. 64.

7. Quoted in Rex Raab, "Rudolf Steiner as Architect," *Architectural Association Quarterly*, 12 (1980): 54.

8. Louise van Blommestein, "Rudolf Steiner in Action: Indications for Design in Handwork—Part I," *Steiner Education* 31, 1 (January 1997): 33. Her recollections of indications from Steiner for crafts teaching and design are an invaluable record and a helpful complement to Hauck's book. The second part of her essay is found in *Steiner Education* 33, 2 (July 1999): 21-25, 28.

9. van Blommestein, "Rudolf Steiner in Action—Part 1," p. 33.

10. For a more detailed exposition of this theme in relationship to architecture, see my articles "Form Follows Function: The Hidden Relationship between Architecture and Nature," *Towards* 3, 2 (Winter 1989): 10-20; later rewritten as "The Form-Function Relationship in Architecture and Nature: Organic and Mechanistic Functionalism," Penn Valley, California: Center for Architectural & Design Research, 2000; and "Rudolf Steiner's First Goetheanum as an Illustration of Organic Functionalism," *Journal of the Society of Architectural Historians* 51, 2 (June 1992): 182-204; also reprinted as a booklet by Center for Architectural & Design Research, Penn Valley, California.

11. Hauck, *Handwork*, p. 29.

12. Steiner, *Lectures to Teachers*, p. 79.

13. Steiner, *The Social Future*, p. 94.

14. Rudolf Steiner, Teacher's Conference, November 16, 1922, quoted in Hauck, *Handwork*, p. 67.

15. van Blommestein, "Rudolf Steiner in Action—Part 2," p. 25; also see Hauck, *Handwork*, p. 25.

16. van Blommestein, "Rudolf Steiner in Action—Part 1," p. 33.

17. Ibid.

18. van Blommestein relates this as follows: "There must be a space at the top for the spirit to flow in and a space at the bottom so that the head can get into this colorful world of dreams." "Rudolf Steiner in Action—Part 2," p. 21.

19. Hauck, *Handwork*, p. 30 (different figure numbering is substituted). We are fortunate to have her more detailed account of the Christmastime 1921 lecture on "Aesthetic Education" that was reported much more briefly in summary by Albert Steffen and published in Steiner, *Lectures to Teachers*, pp. 77-82.

20. Hauck, *Handwork*, p. 42; see also van Blommestein, "Rudolf Steiner in Action—Part 2," pp. 22, 24.

21. Hauck, *Handwork*, pp. 20-21.

22. For more details on these items, see van Blommestein, "Rudolf Steiner in Action—Part 1," p. 35.

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25. van Blommestein, "Rudolf Steiner in Action—Part 2," p. 24.

26. Hauck, *Handwork*, p. 37.

27. Ibid.

28. Ibid.

29. van Blommestein, "Rudolf Steiner in Action—Part 2," p. 28.

30. Hauck, *Handwork*, p. 67 (Teachers' Conference, June 17, 1921; see also Rudolf Steiner, *Practical Advice*

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to *Teachers*, trans. Johanna Collis (London: Rudolf Steiner Press, 1976), p. 45.

31. Hauck, *Handwork*, p. 69.

32. Both quotations from Hauck's notes of the 1921 "Aesthetic Education" lecture, *Handwork*, p. 34 (see note 19 above).

33. Hauck, *Handwork*, p. 42; for an alternate translation, see Rudolf Steiner, *Colour*, trans. John Salter and Pauline Wehrle (London: Rudolf Steiner Press, 1992), pp. 32-33.

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36. Steiner's recommendations are repeated in Hauck, *Handwork*, pp. 74-78; can also be found in Part XI of E. A. Karl Stockmeyer, *Rudolf Steiner's Curriculum for Waldorf Schools*, trans. R. Everett-Zade (Forest Row, England: Steiner Schools Fellowship, various editions).

37. For more on murals, see Rex Raab, "Isn't It Time to Move Forward?" *Steiner Education* 31, 1 (January 1997): 5-7.

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39. Elm is used for grades 1-4, oak for grades 5-8, and ash for grades 9-12.

40. David Mitchell and Patricia Livingston, *Will-*

Developed Intelligence (Fair Oaks, CA: AWSNA, 1999). Another recently published compendium on crafts teaching, the long overdue translation of Michael Martin's *Educating through Arts and Crafts* (Forest Row: Steiner Schools Fellowship, 1999) is slightly better in this respect; see pp. 28, 60-61, and 70-71.

41. Steiner, *Lectures to Teachers*, p. 80.

42. Martin, *Educating through Arts and Crafts*, p. 70.

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Figure 1. Traditional embroidered gloves from Norway and Sweden.



Figure 2. Rudolf Steiner. Sketch of Ink Pen Wiper.

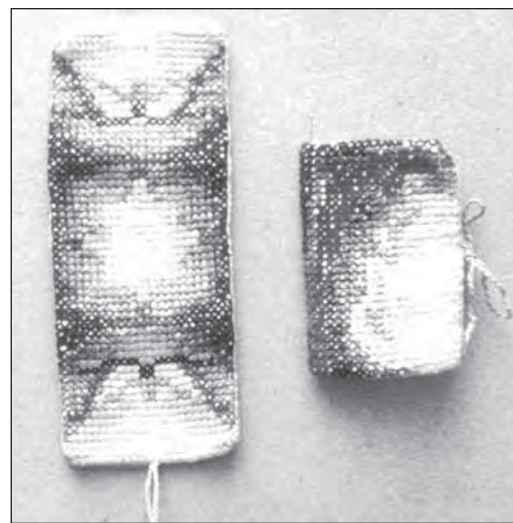


Figure 3. Embroidered Needlebooks (open and closed), Kimberton Waldorf School.

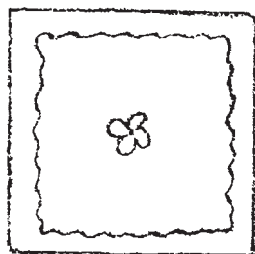


Figure 4. Rudolf Steiner. Sketch of Embroidered Cushion (Wrong), 1921.



Figure 5. Rudolf Steiner. Sketch of Embroidered Cushion, 1921.



Figure 6. Rudolf Steiner. Sketch of Embroidered Cushion, 1921.

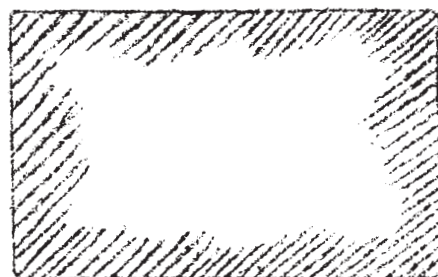


Figure 7. Rudolf Steiner. Sketch of Embroidered Cushion (Wrong), 1921.

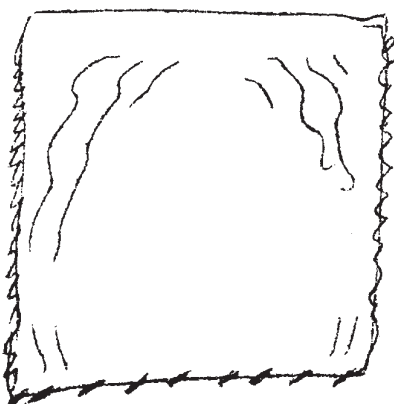


Figure 8. Rudolf Steiner. Sketch of Embroidered Cushion, 1921.

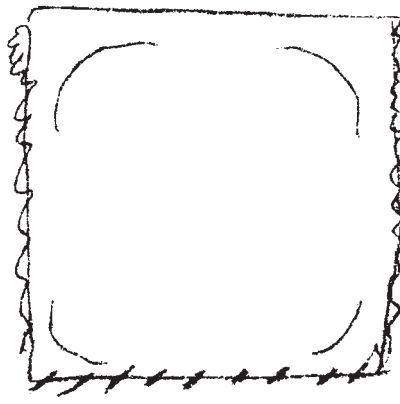


Figure 9. Rudolf Steiner. Sketch of Embroidered Cushion, 1921.

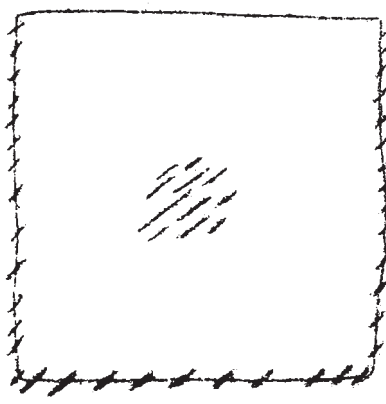


Figure 10. Rudolf Steiner. Sketch of Embroidered Cushion, 1921.

Figure 11. Embroidered Tea Cosy, Stuttgart Waldorf School, Germany.

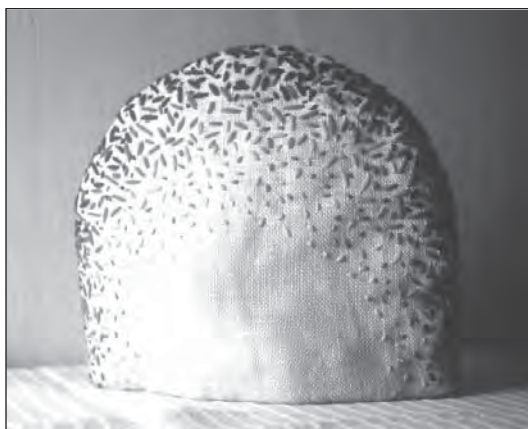


Figure 12. Embroidered Workbags, Kimberton Waldorf School.

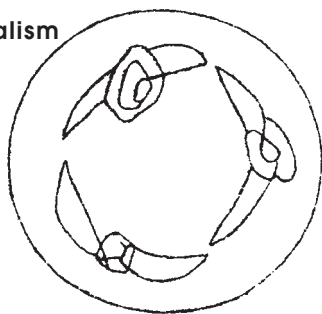


Figure 13. Rudolf Steiner. Tablecloth for a 3-legged Table, Sketch.

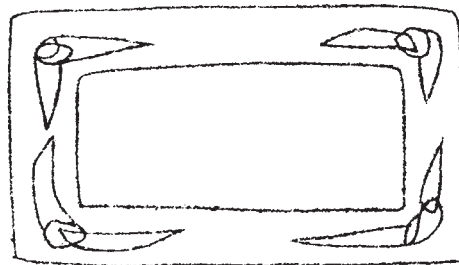


Figure 14. Rudolf Steiner. Tablecloth for a 4-legged Table, Sketch.

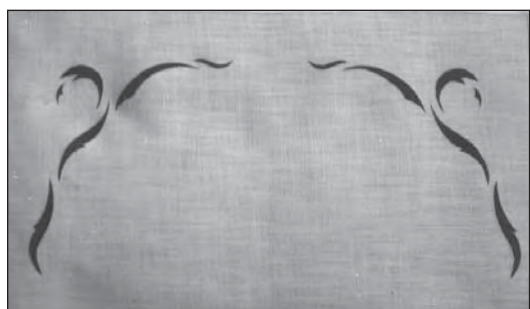


Figure 15. Stenciled Placemat. Rudolf Steiner School, New York.

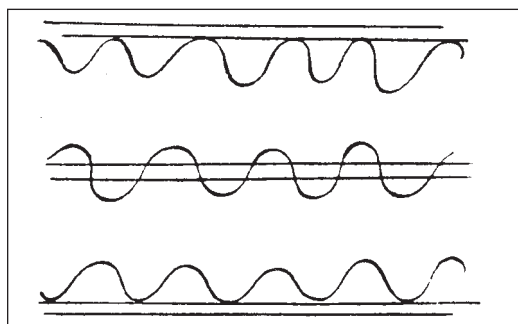


Figure 17. Rudolf Steiner. Sketch of Patterns for Embroidered Dress Hems.

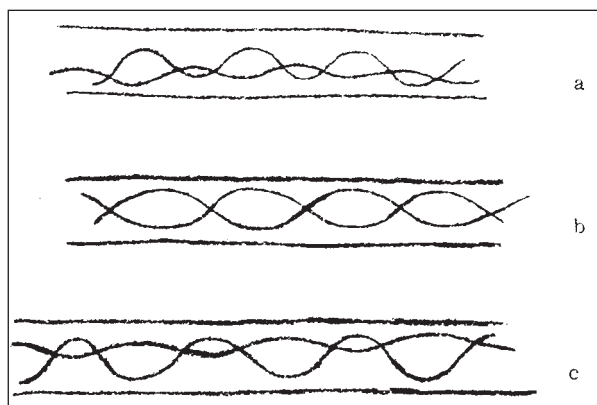


Figure 16. Rudolf Steiner. Sketch of Patterns for Embroidered Dress Hems.

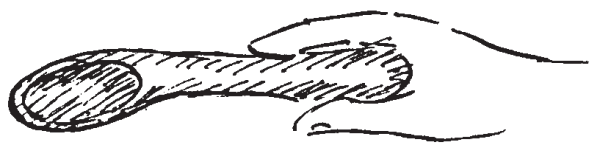


Figure 19. Hand Grasping Wooden Spoon. Drawing from Anke-Usche Clausen and Martin Riedel, *Plastisches Gestalten in Holz* (Stuttgart: J. Ch. Mellinger, 1972), p. 334.



Figure 18. Carved Wooden Spoons and Fork, Grade 6, Kimberton Waldorf School, 1995.

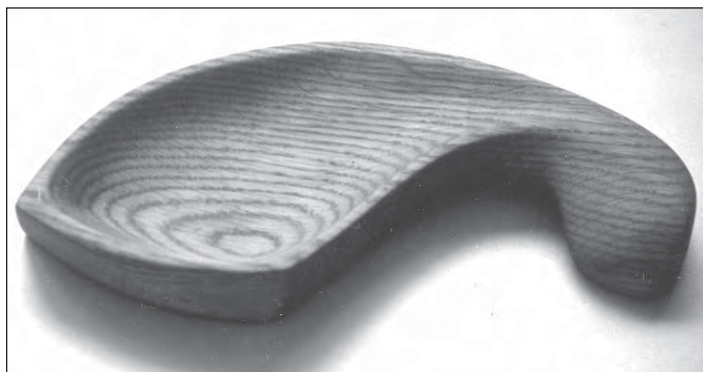


Figure 20. Carved Wooden Serving Bowl, Kimberton Waldorf School.



Figure 21. Hand Holding Carved Wooden Serving Bowl, cherry, carved by Margaret Frohlich, mid-1960s.

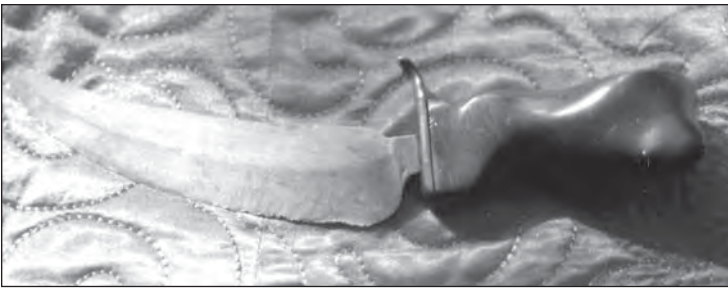


Figure 22. Carl Schleicher. Knife with Carved Wooden Handle, mid-1920s, South America.

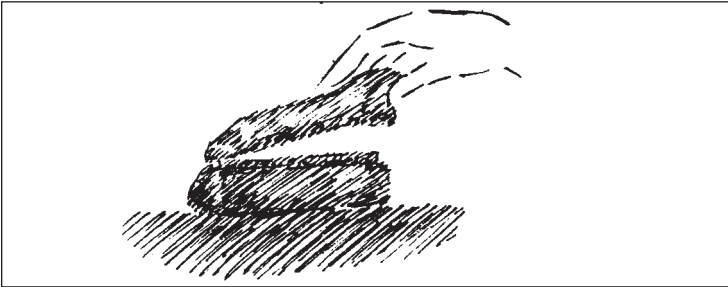


Figure 24. Hand Lifting Wooden Box Lid. Drawing in Clausen and Riedel, *Plastisches Gestalten in Holz*, p. 343.

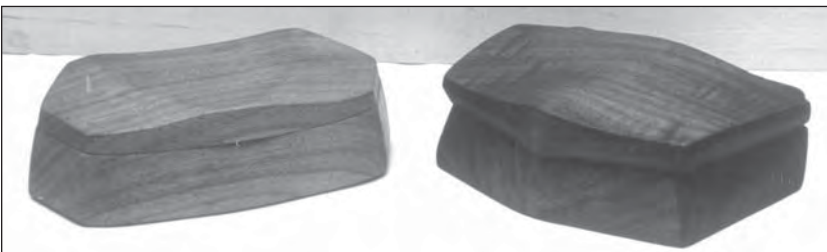


Figure 25. Carved Wooden Boxes. Kimberton Waldorf School.

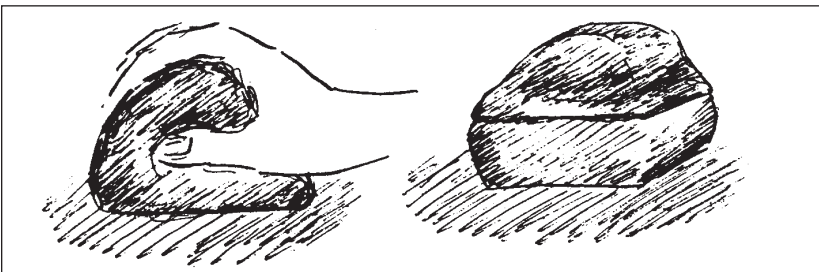


Figure 26. Wooden Box with Indentation in Lid for Thumb and Fingers. Drawing in Clausen and Riedel, *Plastisches Gestalten in Holz*, p. 342.

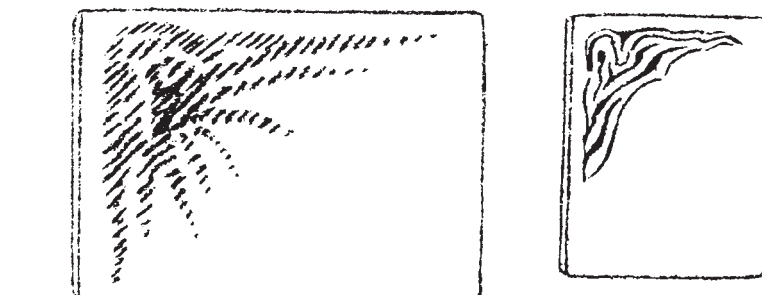


Figure 27. Hedwig Hauck(?): Sketches of Book Cover Designs.

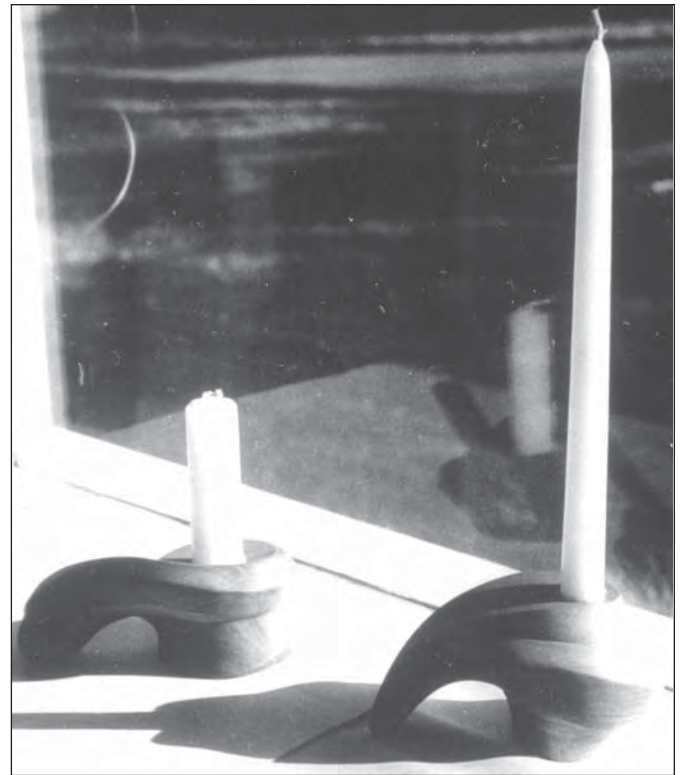


Figure 23. Carved Wooden Candleholders, Kimberton Waldorf School.



Figure 28. Rudolf Steiner. Book Cover Design, 1923.

Figure 29. Werner Seyfert.
Groundplans of Classrooms
for Grades 1-12,
Heidenheim
Waldorf School, Germany,
ca. 1974.

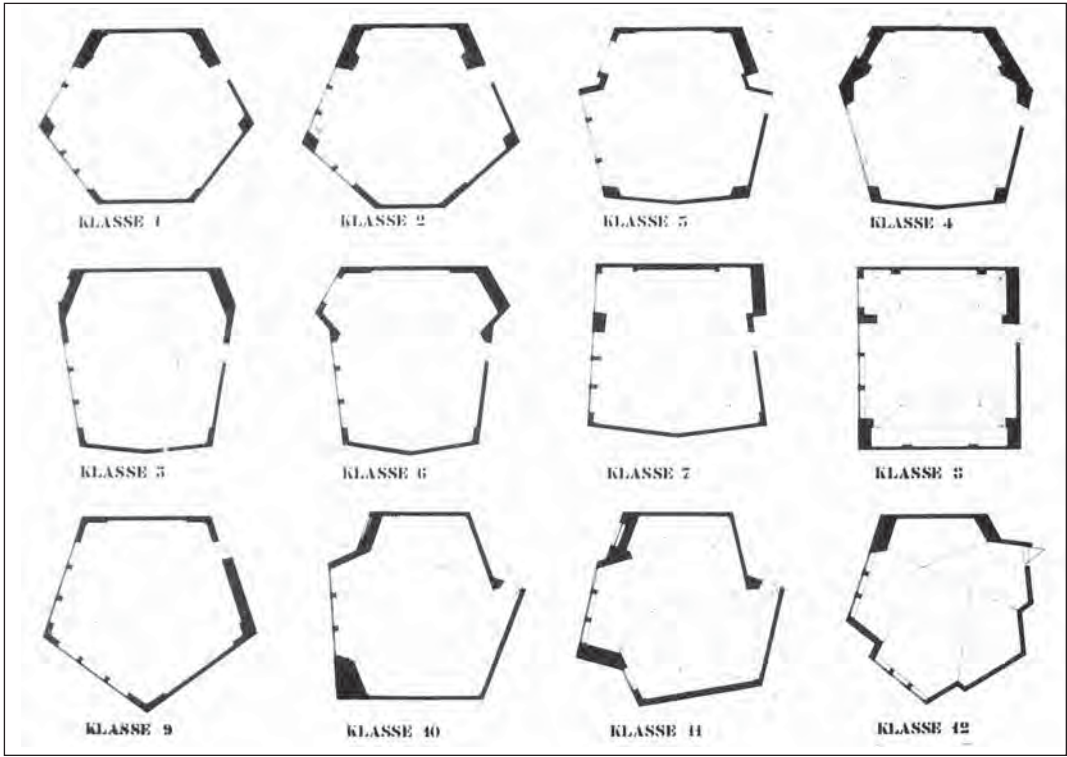


Figure 30.
Werner Seyfert.
Groundplans and
Corresponding
Models of
Classrooms for
Grades 1, 3, 5, 6,
and 12,
Heidenheim
Waldorf School,
ca. 1974.

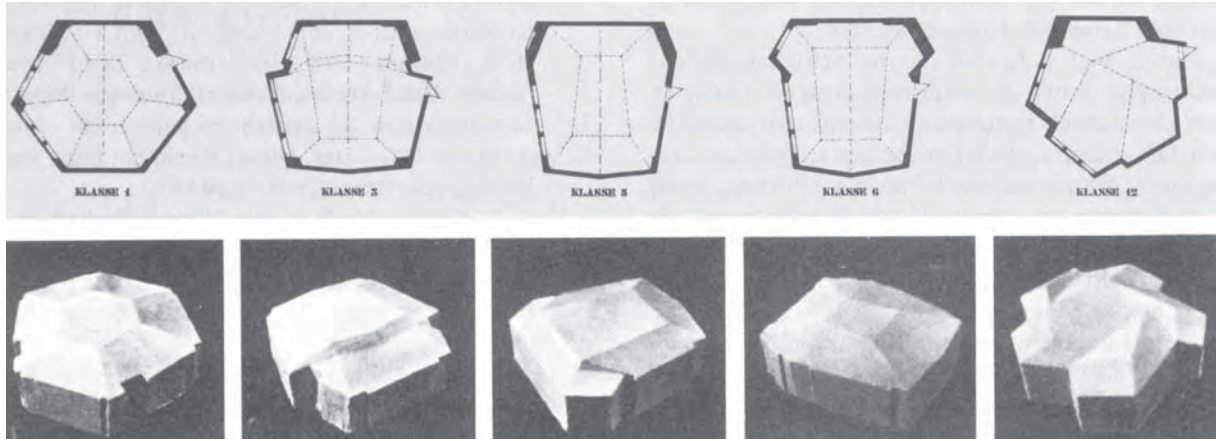


Figure 31. Pentzek and
Knierem, Architects, Stuttgart.
Ceiling Plans for Classrooms,
Grades 1-12, Waldorf School,
Bonn, Germany, ca. 1981-85.

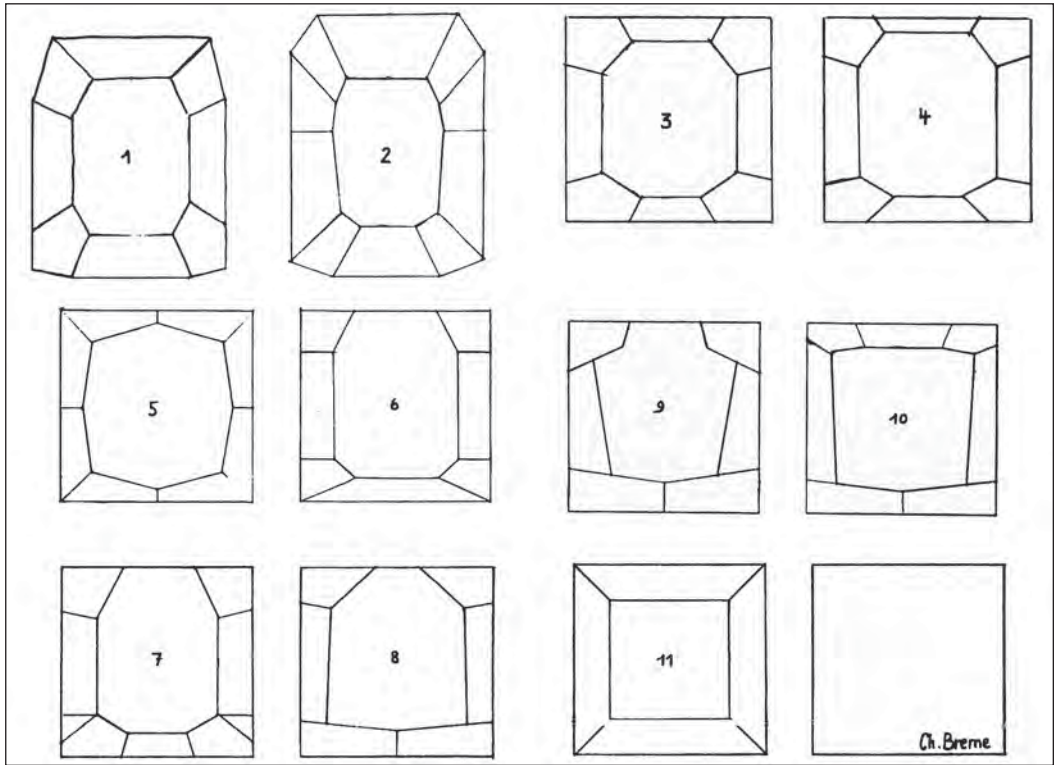




Figure 32. Kindergarten interior, Ekkarthof Curative Home, Lengwil-Oberhofen, Switzerland, 1967-73 (Rex Raab, architect).



Figure 33. Arthur Bien, Gerhard Eggers, Eckhart Donges. Rudolf Steiner School, Ittigen (Bern), Switzerland, c 1977



Figure 34. Farm House on Grounds of Rudolf Steiner School, Ittigen.



Figure 35. Rudolf Steiner School, Ittigen (Bern), showing kinship to nearby traditional Swiss farmhouse.



Figure 36. Rudolf Steiner School, Ittigen, front entrance.



Figure 37. Auditorium, Rudolf Steiner School, Ittigen.

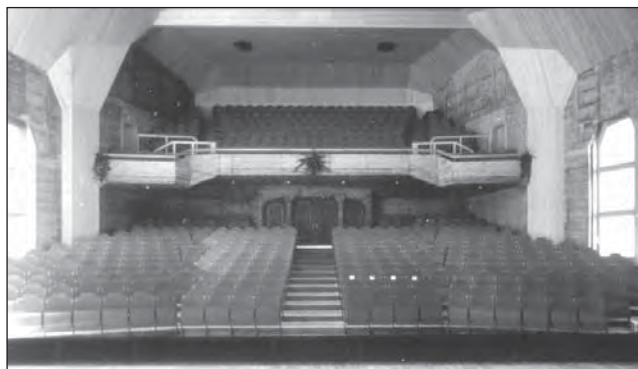


Figure 38. Balcony in Rear Auditorium, Rudolf Steiner School, Ittigen.



Figure 39. Front Facade, Rudolf Steiner School, Ittigen.



Figure 40. Carved Door Handles, Rudolf Steiner School, Ittigen.



Figure 41. Entrance Lobby, Rudolf Steiner School, Ittigen.



Figure 42. Stairway Landing, Rudolf Steiner School, Ittigen.



Figure 43. Classroom Doorway, Rudolf Steiner School, Ittigen.

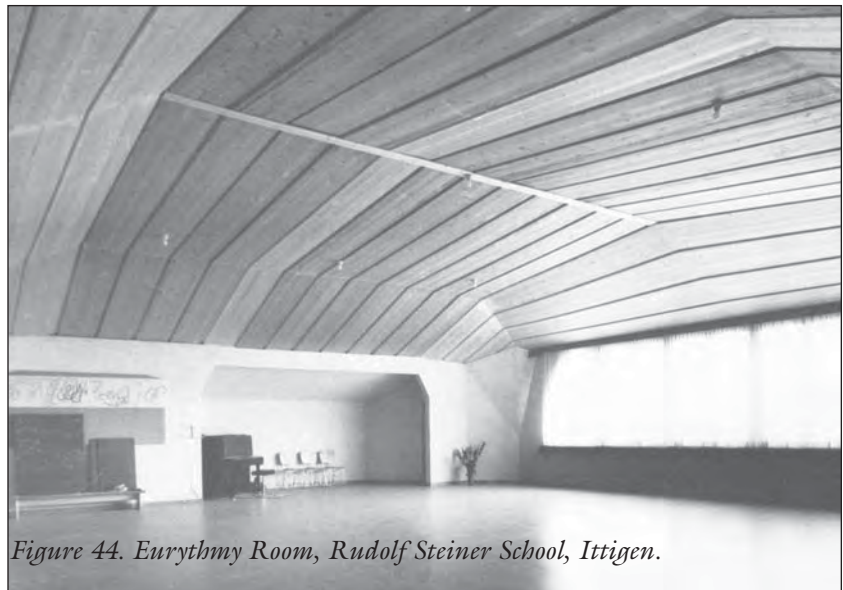


Figure 44. Eurythmy Room, Rudolf Steiner School, Ittigen.



The Lowering of School Age and the Changes in Childhood: An Interim Report

Claudia McKeen, Reiner Patzlaff, and Martyn Rawson

In December of 2003 the magazine *Erziehungskunst* (The Art of Education) published an article on the salutogenetic project “Gesundheitsfördernde Pädagogik” (Pedagogy Promoting Health), which was undertaken that autumn (2003) by the pedagogical research section of the Bund der Freien Waldorfschulen (Association of Waldorf Schools in Germany) and the Institute for Pedagogy, Ecology of the Senses, and Media Studies in Stuttgart. The project was commissioned by the German Association of Waldorf Schools, the International Association of Waldorf Kindergartens, the Society for Anthroposophical Physicians in Germany, the Medical Section, and the Pedagogical Section at the Goetheanum. The impetus for the project was given by the impending lowering of the school age in various states in Germany. Both school doctors and Waldorf teachers are worried about this because the anthroposophical view of the human being is quite specific in this matter. Academic learning is not to be started at an arbitrary point: when one starts too early, growth forces are used up which should in fact still be used to form the physical constitution. Starting earlier is done at the expense of these vital forces and thus jeopardizes the further development of the child. With the health of many modern children being taxed enough as it is, a further threat could be formed by the additional stress of lowering the elementary school age by a full year.

Therefore an initiative group, consisting of physicians, scientists, and people working out of Waldorf pedagogy, set itself the task to engage in scientific research on young children to investigate the connection between the development of a healthy constitution and the development of learning. Reports in three areas were planned from the inception; the work has progressed in the meantime, and in this article we would like to report how far we have come.

Should School Age Also Be Lowered in Waldorf Schools?

In the autumn of 2003 we sent out a relatively wide-ranging questionnaire in order to gain an idea of the views held by kindergarten teachers and lower grade colleagues in different areas of Germany with regard to the present-day pedagogical situation. We wanted to know what their experience told them concerning the question of children starting school earlier, and, especially, what long-term changes they have noticed in child development.

It became obvious that these questions have conse-

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quences for the future position of the Waldorf schools and Waldorf kindergartens, consequences that also extend into the area of politics. For in several states in Germany, preparations are underway in state schools for children to begin elementary school at an earlier age. And not only that: it will also no longer be possible to allow children to repeat a grade. Until recently, children could be put back a year, but this will be forbidden in the near future, with very few exceptions. It is already quite a common occurrence that parents are given the option to send their five-year-old to school earlier if they wish to do so (the so-called “Kann-Kinder” [able children]); in cases where parents avail themselves of that opportunity, there is no way back.

Even though the Waldorf schools are not obliged by law to join in lowering the elementary school age, they would still have to comply with the ban on sending children back a grade. This raises the question of how Waldorf schools can still attract students in the future, when they stick to the traditional school age and refuse to take children a year earlier. Would not such a position be doomed to failure from the start?

This also brings up a hard question for the Waldorf kindergartens: How will life in the kindergarten be affected by this? How will it be when the group of oldest children—often called the “royal children” in Germany—are no longer there, because they have already gone on to elementary school? Would it not be much better pedagogically to continue to carry this age group in the kindergarten, but in a form specifically tailored to them? This might be done in such a way that from the outside it would look like an ordinary grade and involve elementary school teachers from a Waldorf school close by. However, in actual practice, such a class would be located in the trusted environment of the kindergarten. It would, of course, probably not be possible in every case to find the Waldorf school needed with which to cooperate, and even if that were possible, Waldorf schools often object, justly, that it would be necessary to institute a “grade zero” in order to be able to take in children who do not come from a Waldorf kindergarten. However, if there were such a grade zero, most of the five or six-year-olds (and their parents, respectively) would then likely want to press ahead from kindergarten into the “real school.” Instituting a transition class in the kindergarten would then be unnecessary,

unless the kindergarten were in the same location as the rest of the school. A multiplicity of fundamental questions such as these would arise.

With respect to the discussion concerning these issues, a discussion which has already started, the research group would like to stress that it does not consider it to be its task to find the right organizational form, imposed from above as it were, in order to meet the changed situation. Every institution will have to decide these matters for itself, taking into account the local conditions and individual possibilities. The research group should be working together with their colleagues to tackle the question of how to shape the transition pedagogically from early childhood into elementary school age. That is to say, how do we safeguard the developmental demands of the child when we shape a healthy and sensible transition, independent of the organizational form in which it takes place?

Hence it was of great importance for us to begin first of all by getting input from colleagues who are actually working with children between the ages of three and nine and to find out how they judge the present-day situation from a pedagogical point of view. The first results of our questionnaire give the following picture.

An Assessment of the Situation in the Kindergarten

From the questionnaire we sent out, we were able to incorporate results up to March 25, 2004. We received responses from a total of 153 early childhood educators from 126 German Waldorf preschools. It was especially interesting to notice the strong response to the question, “Have you noticed changes in child development during the past 10 years?” What follows is a summary of the most frequent responses.

- There is a noticeable decrease in children’s ability to imitate and to play and in the power of imagination.
- Children’s health is weaker, they are more nervous and fearful, and there is an increase in allergies and infections.
- In motor movement, there is less dexterity, a slowing in development, and more feebleness.
- Children play differently; they are louder and wilder.

- Children talk a lot, are slow to get going, and have a hard time listening.
- Today's children are very much individuals, strongly developed intellectually, and awake in their heads.
- They often have no sense of boundaries and are very much oriented towards adults; their capacity for devotion is less.
- Social skills and thoughtfulness can be counted on less.

It is noticeable that the enumeration of weaknesses and deficits predominates. The number of children having deficits such as the ones listed above is estimated to be very high (between 50 and 70 percent). A comparable list of new capacities, which can be valued positively, is generally absent. Are there none? Or should we have asked for them more explicitly?

Likewise, educators gave very differentiated answers to the question: "What would happen if children aged five and one-half to seven were missing from the group, because they would be attending a preparatory class or would be in elementary school?" The tenor of the answers was usually as follows:

- Younger children would miss the example of the older ones. Much would be missing in the way of child culture, stimulus for playing, and richness of ideas.
- Forming habits in the rhythm of the day and the course of the seasons, including also the carrying out of practical activities such as washing hands and dressing, would be much more difficult without the older children who remember how to do that. The grown-ups would have to demonstrate much more, or explain.
- It would only be beneficial for many children to have a third year in the kindergarten and thus remain longer in the activity of playing.
- It would increase the number of younger children in every group, which would mean a significant change in the structure of the groups; groups would be much more difficult to manage.
- A different opinion: there would be more peace and quiet in the kindergarten and the

little ones would be able to play more in an age appropriate way.

- Something would be taken away from the older children, and this would especially affect the great number who are only children. They would be missing out on the social practice of learning with and from the little children in sharing responsibility and developing care and empathy. They would not be able to feel pride about their own abilities, nor would the resulting strengthening of self-confidence be able to unfold.
- On the other hand, if the older children were in a group by themselves, they would not have to put up with waiting times. Special challenges could be arranged for them and they could be occupied with age appropriate activities (something which often is presently taking place in cases where special days or programs are arranged for the older children).

Early childhood educators in Waldorf kindergartens are predominantly of the opinion that the concept for the kindergarten as it has existed up to now would come into question if kindergarten no longer incorporated the five and six year-olds. This age group is seen as an essential part of the culture of the kindergarten, and its absence would mean disadvantages for all children. However, many kindergarten teachers and administrators feel the lack of a closer cooperation with the schools which take in their children, and they are worried that the input of early childhood educators would not be heard at all if preparatory classes were to be established.

How Do Things Stand in Elementary Schools?

We received forms with answers to our questionnaire from 84 German elementary Waldorf schools. In these, we likewise found that the question "Did you perceive general changes in child development during the past five years?" found a wide response.

Frequent observations were:

- There are still many "sound," healthy children, but the number of "unhealthy" children is increasing.
- Children have less dexterity than used to be the case. Coordination, fine and gross motor

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movements are less strongly developed (for example when children hop or stand on one leg).

- Illnesses are more frequent, children suffer pains, are pale, tired, or have indefinite bellyaches or headaches.
- The powers of imitation have waned. Even simple instructions are hard to follow for many children.
- The power of imagination has definitely become weaker.
- Concentration is bad; children have a hard time listening and their memories are weak.
- Children are restless; they cannot sit still.
- The sense of the rhythm is often weakly developed.
- The development of speech is often retarded (for example: a smaller vocabulary, use of shorter sentences, uncertainties in grammar, and retelling stories is becoming harder).

Not only were deficits noticed by teachers, but, in addition, a number of quite different, remarkable changes were registered as well.

- A much more individual approach has become necessary in the lower grades. There is a stronger need for personal attention, often connected with a lack of boundaries and a decrease in perception of social needs.
- The difference between boys and girls has become much more noticeable (90 percent of the difficult children are boys).
- When entering the school, many more children than before know their letters and can even read.
- Children show strong practical abilities, they want to be outside and want to have more time for play.
- Children are more spontaneous and open in their contact with the world. They are often sensitive, delicate, very awake, and also critical at this early age.
- They have a strong longing for spiritual matters and are often very spiritually oriented.

- They are more independent than they used to be, do not want guidance, yet look for orientation.
- “The Rubicon” (the developmental step in the ninth year, which involves the child becoming more distant towards the world) occurs earlier, as can be seen from the distance they show towards the teacher and also from related matters.

As in the case of the questionnaire for the early childhood educators, the teachers were likewise asked to consider how the lowering of school-age would affect their schools. What follows are typical answers given to the question “What, in your opinion, would the effect be for your school of lowering school entry to age five?”

- We find no positive aspects to the projected change and cannot assess how we would deal with it.
- We would be forced to establish a grade zero (a preschool or entry-level class). We would not be able to get around accepting five-year-olds.
- It would be necessary to collaborate more closely with the kindergarten.
- The traditional Waldorf kindergarten would have to be rethought and tackled in a different way.
- The curriculum we have used up to now would not apply to the school anymore, and it would be necessary to think of different educational concepts. (The model of the school in Bochum and team teaching were frequently mentioned.)
- The existing architectural layout of the school would no longer be functional and a complete remodeling would be necessary.
- It would be necessary to work with smaller classes and more therapeutic assistance would likewise be needed.
- Parental involvement would have to be intensified.

There was general unanimity in the conclusion teachers came to: we will not be able to avoid establishing preschool classes. It will entail new

pedagogical concepts; however, the necessary research will have to be done both by local school communities and on a regional level.

Preliminary Conclusions of the Questionnaire

It is clear that Waldorf schools are facing a new task: the transition from kindergarten to elementary school will have to be thoroughly rethought and shaped anew. On the surface, the point seems to be to find an organizational form which can meet the changed political requirements. Much more important, however, are the clearly stated grounds to turn our full energy towards this task for reasons which have nothing to do with political pressure. Again and again we are facing a host of well-known symptoms which are being reported in kindergartens and schools. All of them point to the fact that the constitution of present-day children has changed considerably. Children are different both in body and soul, and this is certainly to be connected with the changed circumstances created by adults (this, however, was not what the questionnaire was about). Children bring completely new conditions, demands, and problems into schools, newer than was the case 10 or 20 years ago, and therefore they need to be met pedagogically in a new way in order to do justice to our present time.

But how do we get there? Colleagues see three things which would be needed:

- 1) Collaboration between kindergartens and elementary schools must be much more intensive than has been the case up to now.
- 2) We must work at the pedagogical concepts, basing ourselves in proper research which takes into account how the human being develops and incorporates pedagogical and medicinal viewpoints.
- 3) Parents and teachers must work together more strongly.

Project 1: Pedagogical Model for Education between Age Three and Nine

The preliminary results of the questionnaire have reinforced the intention of the research group to

work together with the representatives of schools and kindergartens to create a pedagogical model that does not follow the traditional division between kindergarten and elementary school. Instead, the model should include the period going from the beginning of kindergarten up to the time of "The "Rubicon." In so doing, the development of the child from age three up to nine is seen as an ongoing process of formation and education.

In creating such a model, we have several targets in mind. On the one hand, it should offer *colleagues* who are working with this age group workable criteria based on real insight into child development, criteria which can serve to orient them in concretely shaping the transition from kindergarten into elementary school. On the other hand, it should offer *parents* criteria which clarify viewpoints coming out of Waldorf pedagogy, in order to help them make up their minds when they want to send their child to elementary school (insofar as they will still have the political freedom to choose in this matter). The third aim is that this research should make our viewpoints clear vis-a-vis the outside world. Several states are currently preparing educational models for early childhood education that will soon become anchored in law. Because of this, Waldorf kindergartens will see themselves, in the near future, faced with the necessity to formulate pedagogical models which are in harmony with their practices. This formulation of pedagogical aims will only be acceptable to the public when it is based on the latest scientific research. A work such as this cannot be accomplished by kindergartens on their own and therefore calls for a task force spanning the separate regions.

In the autumn of 2003, a larger group of colleagues from kindergartens and elementary schools came together and accomplished considerable preparatory work. It became more and more clear that the educational model we are striving for within the current political developments will only have the necessary weight and find acceptance when it is officially endorsed by the participating institutions and is formulated on their behalf. It is for that reason that we asked the boards of the German Waldorf School Association and the International Association for Waldorf Kindergartens to augment the existing working groups, which primarily work together on

a regional level, with competent representatives from the whole of Germany and thus lift the work to a federal level. We also asked the boards to give this total grouping a formal mandate to draw up the pedagogical aims, so that a document can come into being to which the whole of the Waldorf movement can adhere.

Project 2: Standardized Criteria For School Entry

In the second target area of the project, the research group seeks to investigate if it is possible to show scientifically whether there is a connection between the point at which a child enters school and the subsequent medical and educational history of that child. If so, can any conclusions be drawn from it? A considerable database will be needed to accomplish this, one which still has to be created by tracking the detailed development of as many children as possible at the point of school entry and comparing that data with later data. It should also be possible to compare this information with data collected from official bureaus of health.

The prerequisite for the validity of the data, however, is that the research be carried out according to standardized criteria, which is something new for German Waldorf schools. In order to accomplish this, Claudia McKeen has been working on a standardized research form and has placed this at the disposal of German Waldorf schools as a pilot project to be used by colleagues responsible for school entry in the various schools, with the request to incorporate and use the indicated research criteria in their own newly undertaken research into school readiness procedures. From the fullness of reliable criteria, we selected, in particular, those items which appeared to indicate strongly whether the vital forces shaping the body have become free or not. Some of the questions were taken from the research form used by the Board of Health in Cologne in order to facilitate comparison with official data at a later point in time.

We are also planning, in connection with project 2, a retrospective study, which will investigate the development and health of the youngest and oldest children in a given class. This project will have to incorporate data from as many classes as possible and span as many years as possible.

Project 3: Salutogenetic Research

The 3rd project area aims to do research to investigate the connection between the development of a healthy constitution and the educational process. First contacts are being made with experts in the field of epidemiology and with study leaders who have experience with scientific studies of this kind. In addition we are presently in touch with researchers of body rhythm, who have developed new instruments and methods that observe heart-beat-breath ratios. These observations could give us the ability to recognize subtle influences that affect children in school and to detect how definite, clearly definable activities, educational content and methods work to strengthen or weaken health. In contrast to the kind of long-term research which can only show a general correlation between health and educational methods, styles, and so forth, and is questionable in its methodology, this kind of study could lead to a direct and measurable correlation between a quite definite detail of education or of the instructional process and a strengthening or weakening of the health of the child. We hope to have a concrete plan with this intention in place in the next months.

Claudia McKeen, M.D. worked as the school physician for the Uhlandshöhe Waldorf School in Stuttgart and presently works at the Institute For Pedagogy, Ecology of the Senses, and Media Studies (IPSUM) in Stuttgart.

Dr. Rainer Patzlaff worked for a long time as a Waldorf teacher, media researcher and publicist. Since 2001, he has led the Institute For Pedagogy, Ecology of the Senses, and Media Studies (IPSUM) in Stuttgart, which he founded.

Martyn Rawson worked for over 25 years as a class teacher, speech teacher, and high school teacher in Great Britain and Germany. Since 2003, he has taught at the Freie Hochschule Stuttgart, at the seminar for Waldorf pedagogy, and at the pedagogical research department of the Association for Waldorf Schools in Stuttgart.





The Online Waldorf Library www.waldorflibrary.org

Marianne Alsop

It has been a busy summer for the Waldorf Online Library (OWL). In May I began working to redesign the website with the help of Tom Beauchamp, a Waldorf graduate whom I had worked with during my time as Managing Editor of *Renewal*. Tom is a Waldorf lifer, having graduated from the Sacramento Waldorf High School and University of California at Santa Cruz with a degree in fine arts. He has worked as a graphic designer and website designer for the past ten years. Tom facilitated the new page layout based on my input.

The new home page allows OWL to highlight new resources and additions to the website, and these are the areas where we have seen the greatest interest these past months. The dissertation by Stephanie Brooks, "Establishing Successful and Healthy Teacher and Parent Relationships in Waldorf Schools," has by far had the greatest number of hits and the largest number of inquiries from all over the world! The comments from site visitors who read this piece online indicate to me that similar articles would be greatly welcomed by Waldorf school communities.

Since the website was redesigned, the number of comments, questions, and inquiries has risen steadily. A slow day for me is just three or four people writing to OWL. I now have correspondence with individuals in a number of countries: the Philippines, China, Australia, Holland, and, of

course, a great many in the United States. The questions and inquiries are varied, but I have been grateful to have on my bookcase a copy of each book, article, or journal that we have on the site. For me, personally, it is so gratifying to be able to answer these questions that come to OWL, and I utilize the actual book resources much as any librarian would. In the early spring I receive a lot of questions from students doing research; in the summer I hear mostly from teachers; and in the fall and winter, it is the parents and teachers who are online and looking for information. I feel we are able to offer many of the resources that our visitors are looking for. My online consultants continue to be very helpful. Eric Fairman, a longtime Waldorf teacher in Australia, has now joined the consultant group.

In addition, I have been focusing on adding the great volume of articles in the archives of the many journals we make available to the search database. In the past these have been only available by going directly to the particular journal and scrolling through all the past issues, a cumbersome and time-consuming task for the site visitor. Recently added to the site are the *Foundations of Waldorf Education* series from Steiner Press. These can be found under "Books in pdf format" in the Search section, as well as by individual title and author. Roberto Trostli has graciously contributed a number of his original plays for the elementary grades,

along with birthday verses; all have been very well received, judging by the number of hits these items receive.

The OWL site now has some 400 books in English in the search database, with an ever-increasing number of new books being added every week. My request for more original plays, curriculum notes, and stories have not yielded the hoped-for results. Many Waldorf teachers are self-publishing their work, which we do make available on the OWL site as a book resource that can be purchased. I continue to encourage teachers to share their writings that can be offered freely with us.

It became very evident during the initial phase of redesign that the database, as Dave Alsop had created it, and which has served us well for these past years, needed to be overhauled. We now have so many kinds of data to store and to make accessible that I asked Terry Donahue, a local database designer, to expand the database capacity and word search capability. This is an ongoing upgrade that Terry and I continue to work on. He has made it easier to add data on my side of things, but there are still some bugs that we are working on, the elimination of which will allow for faster, more accurate searches very soon.

We continue to average 2,000 visitors a month, with the majority of our visitors coming from the United States and Canada. International usage is continuing to be strong with a number of new visitors from small island countries: Trinidad/Tobago, Dominican Republic, Jamaica, Samoa, as well as the larger countries of Macedonia, China, and Vietnam. It does appear that individuals interested in Waldorf education are finding us on line!

Site visitors over the past few months have asked for more information (free information) about Waldorf school administration, parenting topics, therapeutic movement, and foreign language study. There are also still quite a number of requests for information about student evaluation and how Waldorf schools “test.”

In California, there have been no new, independent Waldorf schools founded for nearly three years, only new, public-based charter schools using Waldorf methods. I receive a number of questions each

week from parent groups working to establish these public-based schools. These groups are reinterpreting the Waldorf curriculum to suit the needs of their public school systems, something that has caused quite a bit of confusion.

I continue to be extremely enthusiastic about the Online Waldorf Library. There is a wonderful community of people interested in Waldorf education in the world. I feel we are becoming more and more connected through venues like OWL. It is really becoming a place to share ideas and comments, not just a place to look something up. I welcome suggestions as to how I can continue to improve the site.





About the Research Institute for Waldorf Education

The Research Institute for Waldorf Education is an initiative on behalf of the Waldorf movement. It has received 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 and the Waldorf Schools Fund.

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 movement by becoming a supporting organization of AWSNA and by co-sponsoring research projects with the Association.

We have supported research projects that deal with essential contemporary educational issues such as 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 nine years, and we are developing and distributing educational resources to help teachers in all aspects of their work.

The Research Institute is a 501(c) (3) tax-exempt organization.

Summary of Activities supported by the Research Institute:

Research Projects

Art in Human Development
Attention Related Disorders Research Project
Exploring the Four Polarities in Child Development
Evaluation of the Urban Waldorf School in Milwaukee
Waldorf High School Research Project Learning Expectations and Assessment Project
Waldorf Graduates Survey

Colloquia and Conferences

Towards Wholeness in Learning, 1996
Pathways of Healthy Child Development, 1998
Waldorf High School Research Colloquia,
2000-2004

Resource Development

Computers in Education—handbook for teachers
Being on Earth—a book for scientists and teachers
Online Waldorf Library—a website of resources for

Waldorf education

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

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The Research Institute for Waldorf Education

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Announcing a new part time course in 2005 for practicing Waldorf educators on the teaching of science in the 6th-8th grades

Teaching Sensible Science

Sponsored by

*Saratoga Experimental Natural Science Research Institute (SENSRI),
The Waldorf High School Research Project, and The Waldorf School of
Saratoga Springs*

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

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

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

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

The intention of this course is to give the teacher a living connection to science so that this same

enthusiasm, understanding, and interest can be shared when the teacher is working with the students in the classroom. All practicing grade school teachers or those who are slated to teach upper grade school science are strongly encouraged to attend this program.

The course will be divided into three sessions, beginning in the spring of 2005:

SESSION 1: Sunday, March 13-Saturday, March 19

SESSION 2: Sunday, June 26-Saturday, July 2

SESSION 3: Thursday, October 6-Monday, October 10
(Columbus Day Weekend/Canadian Thanksgiving)

All sessions will take place at the Waldorf School of Saratoga Springs, located 30 minutes north of Albany, New York. The airport in Albany is served by most major airlines including Southwest Airlines.

Presenters:

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

Gary Banks worked as a research engineer on the NASA Space Station project before entering teaching. He took a class through eight grades at the Denver Waldorf School and also taught high school science at High Mowing School. He is presently starting a new first grade at the Pine Hill Waldorf School.

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

Center for Anthroposophy's Waldorf High School Teacher Education Program.

Barbara Richardson, who specializes in eurythmy in the workplace, has led artistic classes for many different adult professionals including chemists, doctors, nurses, farmers, and teachers. A founding faculty member of the Arturus Rudolf Steiner Education Program in Chicago, Barbara is now a teacher and administrator at the Waldorf Institute of the Great Lakes in southeastern Michigan.

**For descriptions of "phenomena centered science" see Michael D'Aleo's "What Is Phenomenology?" and David Mitchell's "The Teaching of Science" at www.waldorflibrary.org.*



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