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From the Editor

Ilan Safit

We welcome Spring, albeit belatedly, with a rich and varied issue of the *Research Bulletin*.

The current issue opens with a philosophical treatise by the *Bulletin*'s very first editor, Douglas Sloan. Working his way through the intellectual history that shaped up the Modernist, empiricist view of the world, thereby forming a new mode of "knowing" the world, Sloan declares a fundamental need to overcome it and its dominance in contemporary science, society, and culture.

Constructed on principles of empirical demonstrability, this mode of knowing has reduced the sphere of existence to mere matter-in-motion, imposing on the world and on the human culture that it has shaped a mechanistic view that covers everything from nature to the human mind, itself reduced to a soft-tissue mechanical computer of sorts. If humans are one more modality of matter-in-motion, Sloan argues, then the unique domains of humanity—values, meaning, ideas, and ideals—have been explained away from the world, as has any notion of spirituality, which the human embodies. While the dogmatic beholders of such a scientific, mechanistic worldview might have no issue with the erasure of spirituality from the dominant discourse, they will have to answer to the paradox of denying the impetus for meaning and value, which has set human inquiry in motion to begin with, and which is now banished from the realities of the world altogether. As Sloan summarizes with an astute quote from the British philosopher and Harvard professor Alfred North Whitehead: "Scientists animated by the purpose of proving that they are purposeless constitute an interesting subject of study." The much-needed alternative to the mechanistic worldview, Sloan concludes, is to develop and sustain "a living, knowledge-grasp of the qualities of life, meaning, beauty, and spirit," an endeavor to which the "whole of Rudolf Steiner's spiritual science is devoted."

Moving to the pedagogical, we encounter next Holly Koteen-Soulé's article, "Attention to Attention!" in which the author, a seasoned Waldorf teacher and trainer of teachers, underscores the need for self-checking the quality of attention teachers and parents pay the children under their care. It has become customary to complain about the divided and extremely limited attention capacities of the children and students born into the digital age, but how about us, adults of a previous century, who have also been swept up by the multiple distractions of modern life? Noting how children, especially before the age of seven, develop through imitation, Koteen-Soulé raises the question, to what extent the degradation of the quality of adults' attention plays a role in the increasing number of various learning challenges children are facing today. Bolstered by testimonies from Silicon Valley engineers and insights from recent studies on attention, this article also offers some helpful guidelines for mindful attention, which are of great importance to parents and teachers alike.

Lowell Monke, a professor of education who specializes in teaching adolescents about technology, makes a compelling connection between adolescent narcissistic behavior and the effects of social media. In an analytic description of the narcissistic personality, Monke demonstrates how important insights are gained by viewing phases of adolescence as being controlled by a subset of narcissistic qualities. These include self-absorption, a sense of entitlement, difficulty in forming close

relationships, and an aggressive reaction to criticism. Parents and educators, whose role it is to guide adolescents through their skewed, self-centered, yet self-blinding view of their place in the world, are facing a new obstacle in the form of social media. Constructed to reinforce and exploit the narcissistic tendencies to create amplified impressions and elicit favorable reactions, social media disposes adolescents to remain in the blind spot, from which pedagogical guidance and maturation would otherwise carry them away. The cure, Monke suggests, is the narrative of ecology, which reverts the individual to his or her humble place in the order of nature as well as in the social order. Such an "ecological consciousness," he argues, can be further enhanced by reviving the notion of *stewardship* as the responsibility to compassionately tend to the well-being of all that one is related to: environment, family, community, and especially to those who are in need. The promotion of stewardship in adolescents, Monke reminds us, requires adults to reclaim the role of steward if they are to steer erring adolescents back into the fold of a compassionate, altruistic society.

Following her survey of dyslexia among North American Waldorf students, published a year ago in the *Research Bulletin* (Vol. XXII, Number 1), Waldorf teacher and remediation specialist Lalla Carini expands her study of Waldorf approaches to detecting and remediating reading difficulties while keeping in step with contemporary findings in the field of neuroscience. Carini is encouraged, as should all Waldorf pedagogues be, by some important correlations she finds between Karl König's anthroposophically inspired study of literacy disorders (presented in his mid-century Camphill lectures, *On Reading and Writing*) and contemporary studies in the neuroscience of reading and writing difficulties. By reviewing recent mainstream studies against the backdrop of König's important work, Carini is providing a crucial anthroposophical lens through which better detection, understanding, and remediation of dyslexia can be achieved in the Waldorf classroom. This is a major contribution to Waldorf pedagogy in deepening our understanding of reading acquisition and of meeting the needs of struggling readers without separating them from the main classroom.

Adam Blanning, out of his practice as an anthroposophical physician, offers helpful diagnostic insights that aim to bridge the gaping gap between the therapeutic and the pedagogic support needed by autism spectrum children. Blanning moves from an outward, behavioral description inwards to the highly-specialized anthroposophic grid of the "constitutional polarities" (large-headed vs. small-headed; earthly vs. cosmic; rich vs. poor mental capacities of image-formation and memory) that designate irregular modes of incarnation of the ego in the physical body. While the article is rich in further specialized distinctions (the epileptic/hysterical constitutions, the maniacal and the feeble), which would certainly challenge the non-specialized reader, the general orientation of this important work should be clear: It is the extent to which one is at home in one's own body that affects one's comportment in the world and behavior towards others and is manifested by such comportment. Learning how to read these manifestations carefully and compassionately, as disruptions to the integration of the different levels of the human being, as described in anthroposophy, is paramount to the ability to offer support to children on the autism spectrum, support which will allow them to benefit from the remarkable gifts that come with their unique constitution.

In another reaffirming article, teacher, author, and economist Robert Oelhaf reviews rising innovations in mainstream and experimental education that tend to repeat and confirm the century-old practices of Waldorf education. Among these practices, Oelhaf notes the systematic engagement with the arts, a learning process that proceeds from physical movement to aesthetic and emotional feeling, a deliberative rhythm for the school day and year, a consistent relationship with adult-teachers, and even central

aspects of school self-governance, in which teachers, rather than external authorities, are in charge of the institutional decisions that would support their pedagogical efforts. The "case" Oelhaf makes for Waldorf education might not be necessary for those who have been practicing it in the classroom, where its efficacy is clear, but it certainly provides a contemporary vocabulary and a rich resource of scientific reassurances for teachers and schools who need to explain, at times even justify, the merits of Waldorf practices to skeptical, even anxious, parents.

Finally, we highly recommend reading Cindy Brooks' long review of Dorit Winter's book, *Train a Dog but Raise the Child: A Practical Primer*, which offers a sober yet pleasant reminder of what teachers and parents should and should not do, even when they have the best of intentions.

On the back-end of this issue, you will find, as always, reports from the world of Waldorf Publications, in print and online, and on the activities of the Research Institute for Waldorf Education. The latter report includes a reminder that the much-anticipated *Survey of Waldorf Graduates* is approaching its final stages and is slated to be published in the centennial year of Waldorf education. Stay tuned!

Authors who wish to have articles considered for publication in the *Research Bulletin* should submit them directly to the Editor at: theresearchbulletin@gmail.com.

Beyond the Mechanistic Worldview

Douglas Sloan

Since the beginning of the scientific revolution, in the 17th century, Western science and culture have been dominated by a materialistic, mechanical view of the world and our ability to know it. In effect, all non-material, or spiritual aspects have been purged from this worldview, as well as from the modes of thinking about and understanding the world.

The Mechanistic Worldview

A quantitative, mechanistic way of knowing can handle quantities and the machine aspects of the world with great efficacy. But the *qualities* of nature in and around us are disappearing—these are the qualities of life, meaning, beauty, and wholeness, the very qualities that have no place in the modern dominant conception of how and what we can know. What cannot be known was first thought to be secondary, then unimportant, and finally non-existent.

Three main assumptions about *what* we can know and *how* we know have dominated modern thinking and consciousness. These assumptions have had momentous consequences for all of modern life. The first assumption made a distinction between what can be known objectively and what is perceived subjectively; it ultimately views reality as a mechanism whose elements are observable and quantifiable. It received its modern stamp very early in the scientific revolution in the distinction that was made at that time between what were designated as "primary qualities" and "secondary qualities." The primary qualities included such phenomena as extension in space, mass, weight, motion, number, and so forth. In other words, the realm of the primary qualities was essentially that of the quantitative. The primary qualities, it was thought, could be known with clarity and certainty through empirical description and mathematics. The secondary qualities at first included such phenomena as color, taste, and sound, but eventually were extended to also include other such qualitative domains as value, meaning, and purpose. In this view, knowledge as such was thought to apply only to the primary qualities, the quantitative. While the secondary qualities might well be realities of experience, they could not, strictly speaking, be *known* because they depended on the observer. In short, the perception of secondary qualities was considered to be tainted by subjective feelings, habits, predispositions, and so forth. Consequently, it could provide no proper material for precise, objective knowledge as such.

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Accompanying this quantitative, mechanistic assumption were two further assumptions about what and how we can know. The first of these has been described as the "objectivistic assumption," which posits a fundamental separation between the knower and the object to be known. This assumption holds that if we want to know something properly, we must detach ourselves from it as completely as possible and describe it from the perspective of a mere, uninvolved onlooker. Appropriately, this assumption is also

sometimes referred to as the assumption of the "onlooker consciousness." It was thought important not to introduce personal qualities involving feelings and values into the knowing relationship; to do so would distort and skew the pure knowledge of reality as objective and independent of the knower.

The other assumption that accompanied this one has been called the "sensationist" or "sense-bound" assumption about knowable reality. This assumption, forcefully expressed, for example, by the 17th-century philosopher John Locke, holds that we can only know that which is given through our ordinary physical sense experience and through abstractions from sense experience. This assumption about knowing further ensured the limitation of knowledge to the purely quantitative and mechanical.

When [mechanistic assumptions] are extended to explain everything beyond the purely quantitative and mechanical, they become exceedingly destructive.

At first the assumptions of this mechanistic view were applied mainly to nature. Nature, according to Descartes and Newton, was regarded as ultimately quantitative—without qualities and without consciousness. It was to be understood entirely in terms of physical cause and effect, that is, mechanistically. Nature was regarded as essentially "a law-bound system of matter in motion, governed by the laws of the machine." Gradually, during the 19th and 20th centuries, this view was extended by many to the human realm and to the whole of society and culture. From this point of view, human beings themselves came also to be understood as essentially matter in motion. In this light, all human culture having to do with qualities and the non-material, such as meaning, values, purposes, ideals, and selves, came increasingly to be regarded as merely the surface manifestations—or epiphenomena—of matter in motion.

The assumptions of the mechanical worldview have proven dramatically effective in dealing with the quantitative and mechanistic dimensions of the world. The power and achievements of modern technology in every area—in communication, travel, medicine, construction, computation, and so on—would have been impossible without the development over the past four centuries of ever-enhanced ways of knowing and dealing with the quantitative and mechanical dimensions of the world. Mechanistic assumptions are useful abstractions from the whole that are extremely effective precisely for understanding and working with the quantitative and the mechanical. When, however, these assumptions are extended to explain everything beyond the purely quantitative and mechanical, they become exceedingly destructive. Our experience of the life, the beauty, and the meaning in nature comes to be regarded as merely the complicated combinations of dead, passive, and valueless matter in motion. By definition—or really by fiat—the whole realm of the spirit is eliminated.

A fundamental transformation of our theory of knowledge would mean recognizing and developing capacities for knowledge of the spirit, as well as of the material. In the most general sense, *spirit* refers to everything that is not matter, to all that is immaterial, to all that is non-sensory. What are these non-sensory realities, these realities of spirit? We have already mentioned them. They include meaning of every kind, including our ordinary ideas; values and ideals—the guiding ideas for achieving meaning; ultimate purposes and goals—formal and final ends; and qualities. Qualities include color, sound, and scent that are entwined with sense experience but whose full reality transcends the sensibly given—ask any artist if this isn't true. But qualities also include all that we experience as meaning, value, purpose, truth, beauty, goodness, freedom, love, and selves. Knowledge of the non-sensory spirit can, therefore, also

be described as knowledge of qualities in their fullest.

To recognize and practice capacities for non-sensory, qualitative knowledge—knowledge of spirit—would have far-reaching consequences for the whole of life, both individually and socially. A fundamental transformation of our knowing capacities must *per force* involve a fundamental transformation of ourselves: our feelings, our conceptual abilities, our powers of attention and concentration, our attitudes and values. A transforming of our dominant modern ways of knowing, by putting into conscious practice the capacities that include knowledge of both the material and the spiritual, and their intimate interconnection, would also be a transformation of ourselves and of our world.

It is important to bear in mind that the assumptions of the mechanistic worldview have become deeply ingrained in modern consciousness. To the extent that we embody modern consciousness, we all share in these assumptions to a greater or lesser degree. It is important to be aware that they often reassert themselves in our thinking even when we are engaged in trying to overcome them.

In what follows, we will ask, first, what have been the main criticisms, historically, of these assumptions of modern consciousness? Second, in light of these criticisms, do these assumptions still hold? to what effect? And, third, what have been the main consequences of these assumptions for the human being and for the world?

Criticisms of the Mechanistic Assumptions

Before looking at the criticisms as such, it may be worthwhile, first, to consider briefly the main attempt to accept and come to terms with the mechanical worldview, an attempt that has sought, at the same time, to maintain a firm place for human values. This response can be described as the "two-realm theory of truth." It is most clearly represented in the long-familiar distinction made between the truths of natural science and the truths of the humanities—roughly speaking, truth regarding matter, on the one hand, and truth regarding meanings, on the other. This two-fold approach to truth has a long history in western civilization. It was given its peculiarly modern cast very early in the scientific revolution by the distinction that was made, as we have seen, between the primary and the secondary qualities. During the 18th and 19th centuries, this two-realm theory of truth was further refined. It became institutionalized in the modern university, where it exerts, still to this day, its influence throughout the whole of modern education and culture. Science deals with nature, which, of course, is taken to include the human body. The humanities, as the name suggests, have as their purview the strictly human realm of meaning, values, purpose, and qualities. In this division, only the "truths of science," dealing, through empirical observation and mathematics, with nature conceived as matter in motion, are viewed as objective knowledge. The "truths of the humanities," dealing as they do with the realm of secondary qualities, are limited to the subjective realms of faith, tradition, feeling (aesthetic, religious, and cultural), social custom, social action, and so forth.

> What are these non-sensory realities, these realities of spirit? They include meaning of every kind, including our ordinary ideas; values and ideals—the guiding ideas for achieving meaning; ultimate purposes and goals—formal and final ends; and qualities.

This division between science and the humanities (in the German university: *Naturwissenschaften*—the natural sciences, and *Geisteswissenschaften*—literally the spiritual sciences) has had a tremendous influence in shaping the society and culture of the West. In the face of a thoroughgoing mechanistic science, this double affirmation has helped keep alive essential human qualities and concerns. Though merely subjective and in that respect generally regarded by the dominant paradigm as inferior to scientific knowledge, the humanities have been a major source for the creative pursuit of human meaning and values. At their best, the humanities have helped cultivate a humanely critical spirit that has often stood as a bulwark against doctrinaire, and even political, infringements upon human freedom and human rights. The affirmation of the two-realm theory of truth has been the main response of modern religious thinkers who have been eager to reconcile their faith commitments with the materialism of modern science. It seems also to have been the main response of those scientists who are serious about both their scientific profession and their personal faith and ethical concerns. It would be difficult to overestimate the positive influence this two-realm theory of truth has had for modern, western society and culture. Nevertheless, the theory has some extremely serious problems, including several that have become increasingly acute.

A major problem is that, from the start, the science/humanities division expresses and institutionalizes a deep alienation of the human being from nature. Nature, handed over to science, is seen as dead matter in motion. Completely separated from this nature, and standing over against it, are the humanities—the strictly human concerns of meaning, purpose, and value. This division at the heart of our education system has helped produce a profoundly split consciousness in western civilization.

A second problem is that, while in theory the relationship between the two sides is supposed to be symmetrical and balanced, in practice it turns out to be quite unequal. In this division, as in racial segregation, separate has not been equal. The quantitative side is nearly always regarded as the more important. This becomes especially clear in education, for instance, when in times of financial exigency, the first subjects to be eliminated in budget cutting are the arts, not chemistry, physics, or computer science. In the university, the subjects dealing with the qualitative—literature, philosophy, education, religion, the arts—are constantly on the defensive, often tempted to show themselves more quantifiable and empiricist to prove that they stand on an equal footing in the curriculum with the natural sciences.

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Finally, the most serious problem is the tendency for the mechanistic side to constantly encroach upon the humanities, such that all semblance of a symmetrical, equal relationship disappears. The claim is increasingly made that human beings and all that makes them uniquely human—meaning, values, ideals, love, their selfhood—can be understood like everything else in terms of matter in motion. *The mechanistic view not only attempts to explain nature, but also to explain away the human*. This tendency has become especially strong in contemporary western culture, with profoundly negative consequences, as explored below.

A growing recognition that the science/humanities two-truths dichotomy has serious problems, at least the three just mentioned, has led to challenges to the mechanistic worldview. Each of the three central assumptions of modern consciousness that we have looked at has been

subjected, especially during the past century, to a number of penetrating critiques. We must ask to what extent, if any, these criticisms have dislodged the dominance of the mechanistic view and its claim to be the only source of genuine knowledge.

The assumption of the objectivistic, onlooker view of knowing has been, perhaps, the most thoroughly criticized of the three. One of the most important criticisms has come from quantum physics, which recognizes that in the process of observing, the observer actively participates in and in effect alters the state of what is being observed. This fundamental undermining of the old, detached onlooker stance in observing and knowing by modern physics is especially telling, since it was within physics that the ideal of the detached onlooker was originally, and quite dogmatically, advanced. The assumption of the detached onlooker has also been challenged by participatory conceptions of knowing coming from several other directions. Ecological studies and feminist philosophy, for example, both stress that the deepest knowledge, whether of nature or of human beings, requires an interactive, participatory relationship between the knower and the known.

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The renowned theoretical physicist, David Bohm, is often quoted as having said, "It is clear that no mechanical explanation [of the physical universe] is now available." Process philosophers have also challenged the mechanistic view by arguing that the most adequate metaphor for understanding nature is not the machine, but the living organism.

Finally, the assumption that all genuine knowledge is sense-bound has been called into question from several sides. Perhaps the most important challenge to the sense-bound (or sensationist) assumption has come from philosophers who point out that we must presuppose a certain intuitive apprehension of non-sensory realities even for the possibility of ordinary sense-bound knowing. The Whiteheadean philosopher and theologian, David Ray Griffin, has argued, for example, that the assumption that we can have no intuition and perception of non-sensory entities (such as ideas, moral norms, meaning, cognitive rules of logic) "makes impossible any empirical grounding for many ideas that are inevitably presupposed in all our practice, including our practice of science."[1] Rudolf Steiner made a similar point in showing that all of our thinking presupposes an element of clairvoyance, that is, non-sensory perception. From this perspective, moving now from a theory of knowledge to its practice, a major task confronting us today is to strengthen and further develop these rudimentary, non-sensory capacities such that we can come to know the realm of qualities with the rigor, constancy, and insight necessary to the full transformation of knowing that our times require.

Persistence of the Mechanistic Assumptions

These challenges to the assumptions of the modern mindset are important. They point to new possibilities. Anthroposophists need to be aware of such new directions and be willing to cooperate with those, mostly non-anthroposophists, who are in the forefront of developing them. At the same time, however, we must ask, How effective have the criticisms been up to this point? What is needed to bring the positive potential for knowledge of the spiritual, the qualitative, to full fruition? In spite of the criticisms leveled at the mechanical philosophy from a number of quarters, it remains the dominant view not only of modern science but also of practitioners of other disciplines who have not established an

objective, or spiritual-empirical, epistemology for their disciplines. In spite of the fact, for example, that modern physics, as we have seen, contains certain fundamental challenges to non-participatory ways of knowing and to an exclusively mechanistic interpretation of reality, modern physics still remains purely quantitative. The quantities involved are essentially number, force, and motion, which are often dealt with in highly rarified formal ways. The physicists themselves are under no illusions that theirs is other than a quantitative enterprise, and as a matter of course, they still often describe their field not as quantum physics, but as quantum mechanics. Moreover, most physicists have limited themselves to a purely instrumentalist approach that does not even ask about the larger implications of their subject. Instead, they still see it as their task to develop mathematical formulae that enable them to predict the outcome of further experiments and observations. These aspects of modern physics have yet to be taken into account by those who are quick to draw conclusions about a presumptive new spirituality contained in quantum physics.

Another major field of scientific research today, that of cognitive science (brain research), is exceedingly mechanistic and reductionist. Mind is identified entirely with brain, and the whole of the human being is reduced to the functioning of the neurons in the brain and nervous system. All of this is interpreted strictly mechanistically. The late Francis Crick, the biologist who turned to cognitive science after his work on DNA, has described the fundamental view of modern cognitive science this way:

> 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]

Lest one suppose that this is the view of only one individual, consider this statement in which Crick was joined by the biologists Richard Dawkins and E.O. Wilson, the philosophers Isaiah Berlin, W.V.O. Quine, and the novelist Kurt Vonnegut. In this statement, which they issued as a justification of scientific research into the possibilities of cloning of higher mammals and human beings, they say:

> 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.
>
> – "Declaration in Defense of Cloning and the Integrity of Scientific Research," 1997

The mechanistic reduction of the human being here is complete (and, of course, it goes completely unchallenged by the simplistic conception of soul that is proposed as an alternative). The paradox in such writing lies in the fact that the ideas, values, and positions advanced by these scientists and thinkers must also be regarded as "electrochemical brain processes," thereby losing any qualitative advantage over other ideas, values, and positions, all reduced to the same level of electrochemical mechanism. Either these thinkers are making exceptions for their own ideas or they are unaware of the implications of the mechanistic view so deeply ingrained in the modern scientific mind.

Finally, in Neo-Darwinism, the dominant contemporary theory of evolution, the mechanistic assumptions reign supreme. In fact, Neo-Darwinism, as the sole and exclusive explanation of all evolution, means the extension of the materialistic, mechanistic assumptions to the whole of life. The fundamental principle of Neo-Darwinian theory holds that all of life must be regarded as a law-bound system of matter in motion, in which accidental events in the distant past have led to the current state of

biological and botanical life. In effect, biological and botanical life is what it is by chance; it could just as easily have been something else. One of the tragedies of the current battle between Neo-Darwinists and biblical creationists (both fundamentalist in their own ways) is that the reputable biologists who accept evolution, but not an exclusively Darwinian interpretation of it, are attacked by both sides and eliminated from the discussion.

Despite cogent criticisms brought against it, the mechanistic worldview remains strong and well entrenched. When it has been applied to the undeniable mechanical aspects of the world, the results have been impressive and often very important. Nothing in what is written here should be taken to suggest that the quantitative and mechanical approaches are unimportant or, in themselves, harmful, or that they should be rejected. They are abstractions useful for specific purposes. For their full and beneficent effect, the mechanical and quantitative approaches require a purposive and qualitative context that they cannot provide for themselves. In other words, it is in the context of a wider worldview, the one defined in terms of value, meaning, and purpose, that mechanical descriptions of the world are most useful. Without such a context for guidance, the mechanistic view tends to provide its own limited frame of reference as the dominant explanatory principle for all existence, with disastrous consequences.

Consequences of the Mechanistic Assumptions

The harmful consequences of mechanistic assumptions have been building in scope and intensity for the past three centuries. Now they threaten the future not only of human society and culture, but also of life on earth itself. It is crucial that human beings become aware of these consequences and of what is at stake. It is easy to look away; it is tempting, and almost irresistible, to fall into a kind of unconscious (albeit uneasy and niggling) complacency, as though the "okay world" will continue.

It is a temptation, however, which anthroposophists, of all people, are called to resist. Rudolf Steiner said: "We need to be awake and alive for the sake of humanity. If anthroposophy is to fulfill its purpose, its prime task must be to rouse people and make them really wake up."[3] He said this at the height of World War I, warning at the time that unless people did wake up and strive to understand the nature of what was happening, further catastrophes could only follow. In light of the disasters that have befallen humanity since, his warning remains as significant as when he issued it. It would be a daunting task to have to demonstrate that our situation today is any less perilous than in Rudolf Steiner's time.

"If anthroposophy is to fulfill its purpose, its prime task must be to rouse people and make them really wake up."

To be asked to look unblinkingly at the full dimensions of our situation today might appear at first to be a counsel of despair born of a dead-end pessimism. Nevertheless, Rudolf Steiner himself spoke of the necessity at times, on one level, of a "justifiable pessimism." At the deepest level of our lives, he said, we should be neither optimists nor pessimists but do our work. But on the level of becoming aware, he said a certain pessimism is justifiable: "justifiable" if it "becomes a challenge to be awake and to try, whatever your place in life may be, to awaken souls so that the science of the spirit can send out its impulses."[4]

Risking this justifiable pessimism, let us look at the situation the dominant assumptions of the modern mindset have helped create, assumptions that have worked to block the development of the science of the spirit.

Fundamentalist Science

As I've demonstrated previously, modern ways of knowing, limited as they are to the mechanistic and sense world, cannot deal with the non-sensory dimensions of human experience—meaning, values, and qualities—except to explain them away as surface epiphenomena of an underlying quantitative substratum. These non-sensory-spiritual realities, however, are the essence of human life, and they do not go away. They keep coming back, reasserting themselves. In the dominant modern view of knowledge, however, they cannot be known in any proper sense of the word; they can only be asserted arbitrarily and dogmatically, that is, fundamentalistically. The dominant modern, mechanistic assumptions make impossible a knowing of non-sensory realities that transcends social and cultural boundaries. Such a knowing could, in principle, be shared by all persons, and so serve as a common foundation for cooperation and resolution of conflict. Without such a knowledge basis, however, religious, ethical, and aesthetic judgments are all rendered dogmatic. This holds equally for political, economic, and scientific, as well as for religious, assertions of ultimate ends and values. In short, I would like to suggest that the dogmatism of modern science demonstrates a fundamentalist tendency akin to the one of religious fundamentalism, which refuses to reexamine its core beliefs even as they lead to clashes and conflicts with contemporary reality.

From this point of view, we can better understand one of the glaring ironies of religious fundamentalism, namely that it is largely a reaction against the corrosive acids of modernity and at the same time a prime expression of modernity. On the one hand, some fundamentalists have seen clearly that a mechanistic worldview is destructive of crucial human values and experience and have felt keenly the loss entailed: the dissolution and scattering of community, the undermining of identity, the loss of meaning. All this, religious fundamentalism strives to combat. On the other hand, fundamentalism can only wage this battle of resistance dogmatically and negatively because it has accepted the modern view that ultimate aims and values cannot be known. They can only be accepted and asserted dogmatically as given variously by religious scripture, tradition, cultural custom, group feeling, and so forth. The implementation of ultimate values, once given, can then be pursued by means of modern technology and technical reason.

Non-religious fundamentalisms—political, scientific, economic—are, of course, not combating the modern, mechanistic mindset, for they have embraced and are frequently major promoters of it. In their own way, however, they are as fundamentalist as the religious fundamentalists whom they see as their archenemies. Unwittingly, their value assertions are just as dogmatic as those of the religious fundamentalists. All in the modern world who would affirm and advance value commitments that have no grounding in qualitative, imaginative, spiritual knowing have to do so dogmatically, drawing upon the givens of tradition, ideological commitments, emotions, convention, or power interests. In this light, modern liberals and conservatives, each advancing against the other their contrasting value claims, often have more in common with one another than either would like to admit.

Because of its dominant sense-bound and mechanistic assumptions regarding the acceptable method and content of knowledge, the modern world in general has a quintessentially fundamentalist character. The tragedy is that when values clash, as they inevitably do, the arbitrary assertion of ultimate values can only end in conflict. There is no higher ground or a shared-value base in which a deeper unity can be sought.

The Degradation of the Human Being and the Destruction of Nature

The great 20th-century mathematician and philosopher, Alfred North Whitehead, once gave a description of the picture of nature presented by the mechanistic view of the universe: "Nature is a dull affair, soundless, scentless, colourless; merely the hurrying of material, endlessly, meaninglessly."[5] Subscribing to this view of the universe, many prominent scientists today affirm that their own scientific research reveals to us an ultimately meaningless, pointless world. The Harvard physicist, Steven Weinberg, has famously stated: "The more the universe seems comprehensible, the more it also seems pointless."[6] The biologist William Provine wrote: "Our modern understanding of evolution implies that ultimate meaning in life is nonexistent."[7] The astronomer Sandra Faber said, "The universe is completely pointless from a human perspective." And echoing the same thought, the Harvard astronomer Margaret Geller asked, "Why should the universe have a point? What point? It's just a physical system, what point is there?"[8] Many more similar statements from the highest ranks of the scientific community could be added. As one encounters these commanding nihilistic declarations, it is worth recalling Whitehead's wry comment: "Scientists animated by the purpose of proving that they are purposeless constitute an interesting subject for study."[9] But the irony here does not seem to shake the view of many leaders of the scientific community that ours is a meaningless world. Perhaps it is to their credit that at least they do not shrink from drawing the nihilistic consequences of their materialistic, mechanistic view.

When science is taken as the highest and sole source of explanation and guidance in human affairs, its view of a pointless, mechanistic world seeps into all aspects of modern society with profoundly negative effects.

These scientists are among the most influential of public figures. Science is the dominant modern faith and these scientists are its high priests, cultural icons for the whole of modern society. When science is taken as the highest and sole source of explanation and guidance in human affairs, its view of a pointless, mechanistic world seeps into all aspects of modern society with profoundly negative effects. This nihilism offers no support for affirming the realities of beauty, ethical ideals, and the responsible self. Nor does it offer any resources for recognizing and struggling with the depths of human existence—the human potential for good and evil, the mysteries of biography, the creativity of human imagination, the value of shared community and sacrifice for the other. Perhaps the only values—ideals, if they may be called that—supported by this nihilism are survival and self-aggrandizement in the struggle for survival.

In this view, the machine is regarded as clearly superior to the fallible, slow and limited, mortal human being. Increasingly we are inundated by proposals to "improve" the human being through genetic engineering, nanotechnology, and the creation of human-cybernetic machine hybrids. "Improve" in this context means to radically modify human nature. The hope is that the human being will no longer be subject to disease, death, and stupidity. There has even been the founding of a "World Transhumanist Association" aiming to promote the enhancement of human capacities. While it remains doubtful whether this technological transcendence of the human being as envisaged can be achieved, this kind of thinking undercuts and trivializes all recognition of the depths of human life in all its misery, grandeur, and potential. And it offers no resistance at all to what Owen Barfield has called the possible creation of a "fantastically hideous world."[10]

Probably the most pressing consequence today of the mechanistic philosophy and its

accompanying rejection of non-materialistic values is that, by removing the holistic view of an intrinsically meaningful and valuable nature, it has led to the relentless dismantling of nature. Erwin Chargaff, a noted biochemist and one of the few leading scientific critics of the modern scientistic faith, has written:

> The over-fragmentation of the vision of nature … has created a Humpty-Dumpty world that must become increasingly unmanageable as more and more pieces are broken off. The wonderful, inconceivably intricate tapestry is being pulled out, torn up, and analyzed; and at the end even the memory of the design is lost and can no longer be recalled.[11]

As several observers of the earth situation have commented, "Nature doesn't exist anymore"—only bits and pieces, fragments, remain.

In addition to having direct, disastrous consequences, the view of nature as nothing but matter in motion also supports the exploitation and misuse of the earth through an unrestrained economism—the constant drive for unlimited economic growth which is dependent on consumerism. The costs to the earth are now painfully apparent. The destruction of forests; the degrading of arable land; the pollution of lakes, rivers, and oceans; the depletion of fresh water sources; the mass extinction of living species; the worldwide collapse of fishing stocks—the list of destruction goes on alarmingly. The "Living Planet Report" by the World Wildlife Fund has recently concluded: "People are plundering the world's resources at a pace that outstrips the planet's capacity to sustain life."[12]

[T]he view of nature as nothing but matter in motion also supports the exploitation and misuse of the earth through an unrestrained economism.

A special responsibility for this state of affairs rests with the people of the United States, which contains only six percent of the world's population and consumes 30-40 percent of the world's resources. It is little comfort that India and China will soon share with America more and more of the responsibility for the pollution and destruction of the earth as the rate of their industrialization accelerates. The situation promises to worsen, and to do so very quickly. "Resource wars" over diminishing agricultural land, energy resources, and especially over fresh water are already being fought (as witnessed in the Middle East and Africa), and planning for more such wars worldwide has long been in process.

To add to all of this, if global warming and climate change come to pass as predicted by most of the world's experts, then all bets on the future are off.

We might think that this plundering of the earth is mainly due to thoughtlessness, greed, and general human cupidity. Certainly, greed and thoughtlessness have always been with us, and in all ages have played major roles in the depredation of the earth. But the problem in our time goes much deeper than that, so long as nature is regarded as basically a dead, meaningless machine, as only matter in motion. Greed and thoughtlessness—and comfortable indifference—are all given a free hand as never before, within the doubly disastrous context of overpopulation and destructive technology. As long as nature is regarded as having no qualities—no inner life, no meaning, no living wholeness—taking it apart for our own immediate pleasure and economic advantage is obviously that much easier to justify.

A vivid example, much overlooked, of how a mechanistic view of life, social and cultural attitudes, greed, habit and complacency, powerful technology, and hardness of heart all come together and intertwine is the treatment of animals by modern, industrial agriculture. Apart from the well-documented environmental degradation, communal decline, and spread of disease associated with the factory farming of

animals—particularly pigs, cows, and poultry—the suffering of the animals themselves is almost never faced. Yet, daily our culture inflicts cruelty and suffering on millions of animals of an intensity hitherto unknown. The animals are defined as "units of production" and are treated accordingly as useful pieces of machinery without feelings. Their entire lives are unrelieved wretchedness. A pall of suffering of living, feeling creatures hangs over our modern culture, and most of us are complicit in it, if only through willful ignorance of what is taking place. The suffering of these animals is one of the moral disasters of our time—obviously a startling claim amid all the many other horrendous, daily cruelties, but a true one nonetheless. The withholding of mercy to these fellow creatures bespeaks an appalling failure of imagination in thinking, a lack of empathy in feeling, and a weakness in moral willing. If it be said that the suffering of animals pales in importance in comparison to the horrid suffering of millions of human beings today, then it may be well to remember the words of Mahatma Gandhi: "The greatness of a nation and its moral progress can be judged by the way its animals are treated." This same lack of imagination, empathy, and moral determination stands as a barrier to the development of any powers of qualitative knowing.

Justifiable Pessimism

In 1971, John Cobb, a leading American philosopher and theologian, wrote a book, acknowledged by many today as a small classic on the state of the environment. It was entitled *Is It Too Late?* Almost 20 years later, Cobb and a former World Bank economist collaborated on a book on global economics. By that time, near the conclusion of their book they had to write:

> Each passing year we see foreclosed happier possibilities for the future. The recognition of possibilities gone forever inspires us with a sense of urgency. Delay is costly to us and ever more to our descendants and to the other species with which we share the planet. It is already very late. It is hard to avoid bitterness about what might have been done and about the additional missed opportunities each day. It is hard to avoid resentment toward those who continue so successfully to block the needed changes.
>
> Yet there is hope. On a hotter planet, with lost deltas and shrunken coastlines, under a more dangerous sun, with less arable land, fewer species of living things, a legacy of poisonous wastes, and much beauty irrevocably lost, there will still be the possibility that our children's children will learn at last to live as a community among communities. Perhaps they will learn also to forgive this generation its blind commitment to ever greater consumption. Perhaps they will even appreciate its belated efforts to leave them a planet still capable of supporting life in community.[13]

But now, again nearly another 20 years later, Cobb has recently written:

> Viewing nature as a machine has led human beings to treat it that way. We are moving toward a crisis of global proportions, and our mechanistic vision deters us from taking the drastic steps needed to change direction.[14]

We don't know if there will be a global catastrophe; predicting the future is risky. Most of the experts failed to foresee the sudden collapse of the Soviet Union or of Apartheid in South Africa. As one wag has commented, however: "Miracles are possible, but that's not where you put your money." It would be blind and irresponsible to ignore the many warnings of impending global disaster. If we do avoid the catastrophe (or, more likely, *catastrophes*), it will only be because human beings learned in time to know and attend to the qualities of the world. If the catastrophes do come, and it

may be sooner than later, it will be all the more important to have individuals and communities working together to develop and sustain through it all a living, knowledge-grasp of the qualities of life, meaning, beauty, and spirit—in ourselves and in the world. The whole of Rudolf Steiner's spiritual science is devoted to that end, and in a way that aims to have fundamental and specific implications for science, society, and culture. As far as the future of the earth is concerned, any meditative practice or path of spiritual development that does not have as a main goal the transformation of knowledge in science, society, and culture can only be irrelevant.

Steiner spoke of a "justifiable pessimism" at one level if it helps us to wake up and be alert. At a deeper level, however, as I noted earlier, he said we should be neither optimists nor pessimists, but do our work. In a lecture at the end of World War I, he said:

> You will preeminently keep the following before your souls: "I am, in any case, called to look at everything without illusion; I must be neither pessimistic nor optimistic, so that forces may awaken in my soul which give me the power to aid the free development of the human being, to contribute to human progress in the place and situation where I am." Even if the faults and tragedies of the age are very visible to spiritual science, this should not be an incitement to pessimism or optimism, but rather as a call to an inner awakening so that independent work and the cultivation of right thinking will result. For above all things, adequate understanding is necessary. If only a sufficient number of people today were motivated to say, "We absolutely must have a better understanding of things," then everything else would follow.[15]

This is the beginning foundation for a healthy society and culture—and for the healing of an ailing earth.

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Attention to Attention!

A Growing Need for Educators and Parents in the Digital Age

Holly Koteen-Soulé

Watching a small child pursue a beetle as it crawls through a forest of grass, or follow the course of a silvery raindrop down a windowpane, or all-consumingly lick an ice cream cone is a study in devoted attention. As parents and teachers, we are tickled by the full-bodied, uninterruptible ability of the young child to focus on an object or experience.

These delightful images stand in sharp contrast to the all-too-common sights of a plugged-in park walker oblivious to his surroundings, or two people at a restaurant both looking at their phones rather than into each other's eyes!

What has happened in the intervening years? How might these contrasting phenomena be related? How has electronic media, the smartphone in particular, changed our lives, our children's lives, and our parenting?

> What happens to a child's developing capacity to consciously direct his or her attention, when the attention of adults and older students is divided, distracted, or even deficient?

We know that electronic technology can be both useful and challenging. We also know that research strongly suggests that excessive media use is deleterious, especially to the health and development of children and teens. While televisions and computers can be sequestered away or turned off, the smartphone has become a ubiquitous feature of everyday life. As with other electronic media, but to an even greater extent, the smartphone has tethered the attention of its user, mostly unconsciously.

Warning Messages from Tech Workers

A recent special issue of the Weekend Magazine of the *Guardian* featured several designers and product developers who have begun speaking out about the dangers and unintended consequences of technological innovations, particularly the smartphone. One recent study, according to Justin Rosenstein, found that the mere presence of the smartphone, even when it is turned off, damages cognitive capacity. "Everyone is distracted. All of the time."[1]

A former Google employee, Tristan Harris, gave a TED talk in Vancouver, in which he said, "All of us are jacked into the system. All of our minds can be hijacked. Our choices are not as free as we think they are. I don't know a more urgent problem than this. It's changing our democracy, and it's changing our conversations and the relationships we want to have with each other."[2] Harris is the author of a 2013 memo to fellow Google employees, titled "A Call to Minimize Distraction and Respect User's Attention," and has subsequently made his concerns public.

Loren Brichter, who designed the "pull-to-refresh'" feature used in many apps, admits that "smartphones are useful tools, but they're addictive. … I have two kids and regret every moment that I am not paying attention to them because my smartphone has sucked me in."[3]

What Is Attention?

Attention is a primary factor in both parenting and education. We talk about "paying attention," "attention-getting behavior," and "attention deficit disorder," for example. Most generally speaking, attention could be understood as a basic constituent and function of human consciousness.

From this point of view, what does it mean for us and for our children that technology has "grabbed our attention?"

The American philosopher, William James, explored consciousness and attention, along with many other topics, in his seminal work, *The Principles of Psychology*, originally published in 1890. He describes attention as naturally selective, explaining that at any moment, outward life presents itself to us in myriad sensory possibilities. What interests us and what we attend to is what forms our experience of life.[4] Voluntary attention, requiring an effort of will, is quite different than the experience of involuntary attention.[5]

When we are online, our freedom to choose what to pay attention to may be more illusionary than real, in part because the interests of others are often leading and shaping us, as much or more than our own interests.

The Attention Economy

The Attention Economy is the title of a book by Thomas Davenport and John C. Beck.[6] It appeared in 2001, but the authors attribute the original concept named in its title to Herbert Simon, an economist and computer scientist, who wrote the following in 1971:

> In an information-rich world, the wealth of information means a dearth of something else; a scarcity of whatever that information consumes. What information consumes is rather obvious: It consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently.[7]

In the ensuing decades, the limited attention of the consumer has been recognized as an increasingly valuable resource in the information age, especially for online businesses. We can all bear witness to how often tantalizing ads and headlines interrupt our online sessions. We could even say that our attention has been commoditized, not unlike the way that labor came to be viewed as a commodity during the Industrial Revolution.

Matthew Crawford supports this view in his 2015 *New York Times* article:

> "All of our minds can be hijacked. Our choices are not as free as we think they are. I don't know a more urgent problem than this."

> Attention is a resource; a person has only so much of it. And yet we've auctioned off more and more of our public space to private commercial interests, with their constant demands on us to look at the products on display or simply absorb some bit of corporate messaging. Lately, our self-appointed disrupters have opened up a new frontier of capitalism, complete with its own frontier ethic: to boldly dig up and monetize every bit of private head space by appropriating our collective attention. In the process, we've sacrificed silence—the condition of not being addressed. And just as clean air makes it possible to breathe, silence makes it possible to think. What if we saw attention in the same way that we saw air or water, as a valuable resource that we hold in common? Perhaps, if we could envision an "attentional commons," then we could figure out how to protect it.[8]

Davenport and Beck refer to "attention as the new currency of business," but their focus is primarily on the psychological and organizational consequences of employees feeling overwhelmed by an imbalance of information to available attention, and on the importance of attention management. They describe four symptoms of organizational ADD (Attention Deficit Disorder):

1. Increased likelihood of missing key information when making decisions
2. Diminished time for reflection on anything else but email, etc.

3. Difficulty of holding others' attention without increased glitziness
4. Decreased ability to focus when necessary[9]

When I shared these symptoms with a group of educators, they agreed that all four could be descriptive of the learning problems they observe in grades and high school students.

What happens to a child's developing capacity to consciously direct his or her attention, when the attention of adults and older students is divided, distracted, or even deficient, as in the above description?

Attention and Presence

We used to speak about the importance of "quality time" with our children. Now, in the midst of our ultra-busy, multitasking lifestyle, we need to be as keenly aware of the quality of our attention. Are we fully present or are we only offering a shell of ourselves?

We speak about the importance of "quality time" with our children. Now …we need to be as keenly aware of the quality of our attention. Are we fully present or are we only offering a shell of ourselves?

The potency of a conversation or interaction between two people depends a great deal on the quality of attention that they give to each other. Is there a genuine interest in connecting? How well are we listening to each other? We have all experienced going through the motions of socializing while being preoccupied with thoughts, feelings, or plans that have nothing to do with what is happening around us at that moment.

This is particularly poignant in a conversation between an adult and child. A spouse who does not have the full attention of his or her partner may register an objection and get fuller participation. It is rare for a young child to be able to do the same. A tantrum may ensue, but if its cause is not recognized, it is unlikely to achieve a satisfactory resolution for either child or parent.

I did witness a four-year-old child say to his father, in a surprisingly wise and authoritative voice, as his father was glancing at his phone to see who had just sent him a message, "Put down your phone, Dad!" The implication was clear: 'I am talking to you!' The father complied, of course.

During my many years as an early childhood teacher, I had the opportunity to observe many interactions between children and adults. A young child can readily sense if and when "someone is at home." Typically, the child first relaxes and then becomes more animated. The image that best captures what can happen is of the long-absent spring sun coming out from behind a cloud! Children who sense the conscious, generous, fully present attention of adults around them can feel affirmed in their active devotion to life and supported to enter more firmly into their own beings.

Imitation in the Formative Early Years and Beyond

The attention of parents and caregivers is the critical factor in a young child's life because during the first seven years of life the child learns everything through imitation. We can recognize this fairly easily with regard to how children learn to speak, but imitation in the young child goes much deeper than what we can readily observe. Rudolf Steiner characterizes young children as wholly sense organs, such that they take in everything in their surroundings, especially everything connected to the human beings with whom they have daily contact. Here are Steiner's words to teachers and parents:

> But it is what you are that matters; if you are good, this will appear in your gestures; if you are bad-tempered, this will also appear in your gestures—in short, everything that you do yourself passes over into the children and makes its way within them. This is the essential

> point. Children are wholly sense organs, and react to all the impressions of the people around them. Therefore, the essential thing is not to imagine that children learn what is good or bad, that they learn this or that, but to know that everything that is done in their presence is transformed in the childish organisms into spirit, soul and body. The health of the children for their whole life depends on how you conduct yourself in their presence. The inclinations that children develop depend on how you behave in their presence.[10]

From this perspective, it seems clear to me that the quality of attention of the people with whom a child regularly interacts undoubtedly has an influence on the child, especially before the age of seven, when their development through imitation is strongest. The question that this brings up is how much of the rise of ADD and ADHD in our children today is due to their own constitutional situations and how much is it the result of, or aggravated by, the quality of the attention granted them by the adults in their surroundings.

Michaela Glöckler, a medical doctor and former Head of the Medical Section at the Goetheanum in Dornach, Switzerland, gave a lecture in Seattle in June of 2017, in which she spoke about the relationship between fundamental experiences in the first three years of a child's life and three major health and educational challenges in older children and teens. She correlated attention deficiency problems with a lack of concentrated or focused attention in the first year of life; problems of depression and aggression with the lack of a peaceful atmosphere for listening in the second year of life; problems of addictions and dependencies with a lack of feeling accepted, or of having an inner space to feel at home during the third year of life.

These observations, in addition to recent research, certainly underscore the foundational importance of the early years. I believe that the degradation of the quality of our own attention and its effect on our children is an area that bears greater study, as it may well have a role in many of the current challenges described above that are facing the children in our society today.

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My study has been focused primarily on the child under the age of seven. However, it is clear that further study of attention in relation to children age eight and up is necessary, given the significant developmental effects of electronic media on the capacity for attention in older children. Older children are still developing their capacity for attention and attention management and still need healthy role models in their parents and teachers, in relation to media use as well as in other areas of life.

Attention and Rhythm

Parental attention, as we are discussing it, does not mean being focused exclusively on one's child at all times. That kind of attention tends to be stifling and is not necessarily helpful for a child's development. Our attention, like our breathing, has to be rhythmic and fit the demands of the situation.

Some of our activities require us to be wakeful and others we can do without a lot of focus, as when an activity is very familiar or repetitive. The rhythm of taking hold and letting go of our concentration is normal and healthy. Working on a computer all day can be stressful for many reasons; a leading reason is the kind of wakeful attention that is required for such work. To be able to muster the force of concentration necessary for deep thinking, a significant meeting, or the timely completion of a project requires having rested and renewed one's capacity for attention.

With the young child, we alternate durations of being fully present with durations in which the child is free to be fully attentive to his or her own activities. There are also times when we are engaged in side-by-side activities. In this case our attention has a different, flowing quality, for example when we are walking, cooking, or gardening together with the child.

This kind of attention is different than multitasking, because the tasks being undertaken do not require the same kind of attention. Walking with a friend can sometimes promote a deeper conversation than if the two of us were sitting down in comfortable chairs. Occasionally, my best ideas come when I am ironing!

Our attention, like our breathing, has to be rhythmic and fit the demands of the situation.

Many psychologists, physicians, and educators are recommending screen-free rooms in the home and screen-free periods in the day and week. These suggestions, if they are built into the family's living habits, can be tremendously supportive to creating healthy rhythms for both parents and children.

The Re-schooling of Attention

This article began with a few examples of the kind of attention typical of the young child. We clearly enjoy sharing our children's delight at discovering their world. Those of us who spend time with young children are sometimes fortunate to be able to slow down and enter into their mood of wonder with them. This can be both refreshing and illuminating.

The Hungarian anthroposophist scholar and thinker, Georg Kühlewind, in *From Normal to Healthy,* describes the differences between a child's and an adult's perceptions:

> Above all, perceiving in a child is based far less on predetermined concepts, because these have not been formed. This is why the activity of the senses is more intense; everything has to be looked at, touched, and listened to. Also, this intense sense activity is still intertwined with the world of feelings, and the feelings are partly cognitive, that is really feeling, feeling toward the outside, not the self-feeling of the adult. The wonder of discovery and the wonder of mental experience are still united. The capacity for devoted attention is much greater in children than in adults, and this is so to the extent that the child does not yet turn his attention egotistically to himself. Psychic experience is multicolored and many-sided and can be characterized by joy. The joy does not apply to the thing perceived, but to perceiving itself. Or rather, perceiving is not yet as separated from the object as for the adult.[11]

A rich tapestry of sensory, feeling, and cognitive perceptions, that are outwardly oriented and not egocentric, can arise from devoted attention. This way of being and attending to the world, which is completely natural in a small child, is the conscious goal of many a mindful adult!

Toward this end, Kühlewind offers us three relevant pieces of advice: 1) Valuable practical experience in freedom of will can be gained by learning to concentrate our attention. 2) The intensity of our sense perceptions can be strengthened "with light, careful attention." 3) Both of these practices can help us transform our cultural addiction to external, passive pleasures into creative, artistic joy.[12]

Attention is important in a mindfulness practice, but no less important in everyday living, according to the research of the Hungarian-American psychologist, Mihaly Csikszentmihalyi. Csikszentmihalyi initially studied particularly creative and artistic individuals and coined the word "flow" to summarize what was common about their optimal experiences. In a subsequent study, he documented stories of ordinary people who also found flow in many aspects of their lives, including work, hobbies, and relationships.

Csikszentmihalyi characterizes flow as a state of complete immersion in an activity that is

intrinsically rewarding and lifts the course of one's life to a different level. The intense absorption in such a state is more like the joy for joy's sake of the small child, than it is like an adult's typical pleasure. "The important thing is to enjoy the activity for its own sake and to know that what matters is not the result, but the control one is acquiring over one's attention."[13] He maintains that while it is usually difficult to change the external circumstances of one's life, changing the focus of one's attention and thereby the contents of one's consciousness, is a much more reliable way to achieve a feeling of fulfillment.

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Attention as Love

Attention and consciousness are all-encompassing topics; it is advisable to study these topics ourselves and explore our own experiences with young children, as I have done above, in addition to working with the research of others.

Through the course of my own exploration, I have also begun to understand that, whether one is the giver or the receiver of attention, or sharing an experience with others, attention in the fullest sense involves all of our soul faculties—thinking, feeling and willing. As Mary Oliver, the poet, writes, "Attention without feeling… is only report."[14]

My own experience of genuine attention involves saying "yes," inwardly, in three different ways. Bringing myself to a specific focus is the first "yes," which is mostly connected to my thinking. In my feelings, the quality of "yes" is more like a listening, or creating a free space. While a portion of will is required in committing to both of these first two aspects, there is a third "yes" that comes as I let go of my own needs or agenda in giving attention to something or someone else; this aspect is a kind of selflessness in the will. To be the recipient of such full attention is to receive a rare and sometimes startling gift.

Simone Weil, the French philosopher, activist, and mystic, wrote compellingly about the role of attention in life and education:

> The poet produces something beautiful by fixing his attention on something real. It is the same with an act of love. To know that this man who is hungry and thirsty really exists as much as I do—that is enough, the rest follows of itself.
>
> The authentic and pure values—truth, beauty and goodness—in the activity of the human being are the result of the one and same act, a certain application of the full attention to the object. Teaching should have no aim but to prepare, by training the attention, for the possibility of such an act.[15]

Supporting the Forces of Life and Growth

The concern about our attention being co-opted by values and interests that are not our own, and, as such, significantly influencing our own and our children's lives, seems well founded. Some of the young people I know are beginning to be aware of the need to consciously manage their media use, but they seem to be exceptions to the norm.

It is equally clear that attention is a powerful force that can be transformative. An image that kept recurring to me, as I was working with this topic, was of two contrasting qualities of light. The light that we associate with our consciousness, which is largely metaphorical, is a warm, lively light. The light of our screens is cool, and I have often experienced it as drawing life

forces out of me. It is the former quality that can warm one's heart, "light up" one's eyes, nourish and heal us.

If we, parents and teachers, are willing to look at our own habits of attention and try to be healthy models for our children and students, it is possible to preserve and even strengthen the best of our human capacities.

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Raising Narcissus

Lowell Monke

Not long ago, I began teaching a college course on social media by asking my students to consider the old adage, "To a man with a hammer, everything looks like a nail." I then offered variations on the original adage and asked them to finish the sentence using other tools—a camera, a book, a computer. When we got to: "To a teenager with a cellphone…" it was not surprising that the students, all in their freshman year, began with a variety of affectionate responses. But when one student stated that she felt "naked without it," the tone changed. And when another stated that it often made him feel like he was in a "portable prison," what followed was a torrent of frustrations, even exhaustion, with the constant demands flowing through these extensions of their social selves. When I asked how often they shut the phones off, most admitted that outside of class they never turned off their devices. They couldn't pull away from them out of fear that their social lives—even their friendships—might wither and die.

As in the case with earlier technological innovations, the reaction by older generations to social media has been the typical confused mix of awe at the skill displayed by their offspring and fretful worry that their brains are turning to jello. Parents worry about online bullying; teachers complain that texting erodes writing skills (even as they and other role models do it themselves—often eroding their driving skills). We all get annoyed that young people seem to prefer to speak with someone who isn't present.

These types of common complaints have merit. But as my students' comments suggest, it is important to dig deeper. New technologies are generally shy about revealing their long-term influences on culture. Their greatest impacts tend to come through gradually rearranging all of our relationships. Who would have thought at the beginning of the 20th century that the internal combustion engine, for example, would so rearrange relationships in our physical environment that our entire planet would begin heating up. The most crucial question we need to address in thinking about social media is how they might be heating up the cultural environment. The answer to that question will go a long way toward helping us understand why social media has the kind of influence it does over young people's lives, why their relationship to it seems out of proportion with the rest of their lives.

New technologies… greatest impacts tend to come through gradually rearranging all of our relationships.

Ironically, a good place to start this investigation might be with MTV, the TV channel devoted to feeding, and exploiting, the cultural appetites of American youth, and now of the youth worldwide. To that end, the channel employs experts on youth culture to get inside the heads of their consumers. Occasionally they let slip what they find.

In 2007, for example, Judy McGrath, then CEO of the channel, stated that youth would flock to its new online social games because ''MTV speaks uniquely to a group of people who are endlessly fascinated with watching themselves.''[1]

One need not be an expert in Greek mythology for this comment to evoke the image of young Narcissus, sitting at the edge of a pond, transfixed by his own image. Nor must one be young to be aware that one of MTV's own most popular shows in the last decade, *Jersey Shore*,

serves as exhibit A in the rash of a "reality" programming that follows the lives of young narcissists.

There is plenty of evidence that narcissism is heating up in our culture. The number of diagnoses of the severe pathological Narcissistic Personality Disorder (NPD) has doubled in the last decade.[2] More importantly, there is evidence of a substantial rise in narcissistic traits in the general population. A review of the research on narcissism conducted by psychologists Jean Twenge and Keith Campbell indicates that "narcissistic personality traits rose just as fast as obesity from the 1980s to the present."[3]

It is this unprecedented increase in narcissistic tendencies across the entire population that is cause for concern and should push us past the trivializing pop-culture notion of narcissism as simply being in love with oneself. Vanity, self-promotion, and self-absorption, traits easily linked to self-love, are certainly typical features of narcissism. But so too are callous manipulation and use of others, difficulty in forming close relationships, a sense of entitlement, and aggression in response to criticism.[4]

It is important to note that these traits are not something that one either has or doesn't have. Narcissistic traits tend to expand and then recede in everyone, as we go through stages of seeing the world more, and then less, as an extension of ourselves. In fact, a large subset of these qualities almost defines adolescence. Even after that period of semi-insanity subsides, we need to retain a dash of these personality traits in order to feel some sense of power over our environment. Rather than a simple either/or condition, narcissism is shorthand notation for a complex set of personality traits that have gotten wrenched out of proper proportion with each other.

The term *narcissism* is derived from a Greek myth with which we are all familiar: A beautiful but cold-hearted boy loves and leaves many a girl, until the gods are asked to punish him for his callousness. Nemesis obliges, leading Narcissus to the quiet pond where he falls in love with his reflection. He becomes so transfixed by his own image that he can't pull away, sitting there until he withers and dies.

Widely known only in this skeletal form, it is not surprising that it is perceived as a cautionary tale against self-love. But this simple interpretation leaves out the most crucial detail of the story: Narcissus doesn't recognize that the image he is falling in love with is of himself. It is his lack of self-awareness that betrays him. Lacking internal knowledge of who he is, Narcissus mistakes his external image for another person, one who seems totally responsive to his every gesture and declarations of love. By the time he finally realizes that he has fallen in love with his own image, the bond created through this interaction (what we might refer to in today's hi-tech lingo as a feedback loop) is too strong to break.

> [M]ost [students] admitted that outside of class they never turned off their devices. They couldn't pull away from them out of fear that their social lives—even their friendships—might wither and die.

This feature of the myth is far more helpful in explaining what is happening today than the more straight-forward story of self-love. Contrary to popular perception, narcissists typically have high self-esteem.[5] But with no stable or well-developed inner sense of self, they have to constantly replenish that esteem by looking for favorable images of themselves in the reactions of others, using everyone around them as reflective mirrors. Thus, for narcissists, creating impressions is more important than producing results, making every encounter a performance, keenly tuned to elicit a favorable reaction from others.

None of this requires social media, of course. But that should not prevent us from considering

the possibility that these tools not only support narcissistic tendencies but might thwart efforts to move beyond them at the very stage in a young person's life when it is most important to exert that effort.

Marshall McLuhan suggested such a connection between media and narcissism fifty years ago. Sometimes called the godfather of media studies, McLuhan saw in the myth a metaphor for the way that technologies—mechanical extensions of ourselves—subtly desensitize engagement with the world. Noting that "Narcissus" was a play on the Greek word *narcosis*, McLuhan says of the boy:

> This extension of himself by mirror numbed his perceptions until he became the servomechanism of his own extended or repeated image. The nymph Echo tried to win his love with fragments of his own speech, but in vain. He was numb. He had adapted to his extension of himself and had become a closed system.[6]

[T]hese tools not only support narcissistic tendencies but might thwart efforts to move beyond them at the very stage in a young person's life when it is most important to exert that effort.

McLuhan draws our attention to the numbing effect of the water's surface, the mirror that seemed to Narcissus a window to a larger world. What he never understood was that it was also a barrier to fully engaging others in it.

Tools tend to make us numb because they always stand between us and the environment we are shaping with them. Philosopher Don Idhe vividly illustrated this with his description of the benefits and detriments of a simple apple picker.[7] This long pole with a small cage and hook at one end extends our reach, allowing us to pick many more apples from a tree than we could by hand. But we lose our sensual feel for the apples in the process and are thus prone to pick more bad ones. This characteristic may be what inspired playwright Max Frisch to define technology as "the knack of so arranging the world that we do not experience it."[8] It is probably what my own father sensed when, after 50 years of farming, he told me that as much as he appreciated the power of tractors, he enjoyed farming more with horses and mules because "I could feel the ground under my feet."

All of this was weighing on me as I listened to those first-year students bemoan their inability to get away from their cell phones. Without much forethought, I cut off the conversation, asked them to set all of their electronic equipment on the tables, and sent them outside with instructions to find an isolated place in the large wooded area at the center of campus. There they were to sit isolated from human contact for just 20 minutes.

With their treasured digital devices held ransom in the classroom, they all eventually returned to class. I feared they would say that it had been a waste of time. Instead, one after another expressed not just approval but gratitude for a respite from the incessant urge to check in. One student offered that it was the longest stretch of time he had been totally "alone" since ninth grade. I was struck not just with how eager they were to talk about how rare this experience has been, but by their difficulty in labeling it. The term I finally offered, "solitude," seemed as foreign to them as what they had just experienced. And they begged for more. So twice a week for the rest of the semester, in good weather and bad, these first-year students dropped off their electronic equipment and went to their special spaces for what became known as their "fifteen minutes of solitude."

These few repeated moments of time alone allowed my students to notice things—squirrels, bugs, the blueness of the sky, even a large fountain—they hadn't noticed before. They also noticed why they had missed them: Like

the students they were now observing from a distance, they had typically walked across campus talking or texting on their cell phones or listening to music on their headsets (often while walking with another student doing the same thing). They also noticed, to their surprise, how rarely students, absorbed with their media, greeted other students they passed by as they walked. When we eventually came upon McLuhan's passage, my students had no trouble recognizing how these and other digital tools made them numb to the creatures and people sharing the physical space around them.

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Of course, it wasn't the numbness that first captured Narcissus. He was held in place by the flattery of a beautiful person's slavish response to his every gesture and word. According to media critic Thomas de Zengotita, today's media is characterized by this same type of flattery.[9] Whether it is the silky-voiced actor/shill assuring you that you deserve the happiness her product will bring you, or the celebrated anchor relaying today's news as if he is sitting in your living room, or the ease with which one can collect Facebook "friends" like baseball cards, the underlying message behind so much of our media interaction is, "I stand at the center of my own electronically-constructed universe. This is all about me."

We shouldn't be surprised, then, that the most savvy marketing media company on Earth, Apple, years ago began putting an "i" at the beginning of the names of its products. Nor should we be surprised that Mark Zuckerberg once told his Facebook staff to organize users' news feeds by keeping in mind: "A squirrel dying in front of your house may be more relevant to your interests right now than people dying in Africa."[10] Zuckerberg may have been speaking in the spirit of acting locally, but there is no indication of an accompanying urge to think globally—or to think about anyone else at all. This is the elevation of personal interest to pathological concern. It is the logical outcome of a culture so driven by flattery (and the consumerism it serves) that only what reflects our personal interests matters.

Flattery is, at best, superficial. And though we often go online seeking some kind of intimate contact, the effect seems to be just the opposite. Facebook, for example, has grown to over a hundred million subscribers in the U.S. alone, each with, on average, 130 "friends," yet the number of Americans who say they have no one in whom they can confide has increased in the past ten years, to one in every four.[11] Being connected is not the same as being close.-

Nor does the ability to share intimate moments lead to greater intimacy. The oft-noted ease with which children today perform in front of the ubiquitous camera may indicate something other than just an ability to carry on as if the camera isn't there. It may indicate that they have adapted to performing as if the camera is always there.

It's easy to see why young people sense that they are living their lives on the screen. The latest data from the Kaiser Family Foundation research indicates that the average time that youth between the ages of eight and 18 spend using entertainment media has increased to over seven and a half hours a day. But because they often use more than one medium at a time, "they actually manage to pack a total of 10 hours and 45 minutes' worth of media content into those 7½ hours."[12] That's a lot of time performing, a lot of time consuming and tending to images.

Given such a total saturation of youth culture, the common defense—it's not the technology that's a problem, it's how you use it—sinks of its own weight. What Winston Churchill said about buildings, that "we shape our buildings and thereafter they shape us,"[13] is more generally true of technologies than most of us want to admit.

When our youth spend so much of their lives in virtual habitats constructed to reflect, reinforce, and exploit rather than diminish adolescent narcissism, it no longer matters so much how they use them as *that* they use them. The great need today is to direct Narcissus' gaze away from the pool.

Of course, that is no easy task. As most parents will attest, the power offered by social media is so seductive, so convenient, so much a fixture in youth culture that figuring out how to get their eyes directed away from those digital pools can seem an overwhelming challenge. Well-intended advice nearly always meets with skepticism. Years ago, I gave up suggesting specific activities to counter the lure of technology and quit offering rules for media use by children. I realized that demanding that children act differently in relation to this cultural force is futile and even unfair, unless they first are able to see their culture differently.

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The late Neil Postman argued that the first, most crucial—and typically ignored—step in helping children develop a healthy relationship with digital media is to offer them a powerful narrative about how they fit into the world, one compelling enough and worthy enough of their great energies that they can find a healthy home for technology rather than make technology their home.

Religion once provided such a narrative for most children, with stories and rituals that helped them make sense of the world. It still works for some. Patriotism has served that purpose for others. But neither is faring so well against the competing story conveyed to them today by technology, which is all about asserting power over the world.

That narrative has been causing trouble for our relationship with the physical world for a long time. And for decades now, efforts have been made to teach children a different worldview. When we help youth move away from seeing nature as something to gain power over toward understanding how they fit within it, we are teaching the counter-narrative of ecology.

The key to developing a healthy relationship with social media is recognizing the parallel that runs between technology's older impact on the natural environment and its newer impact on the social one. Indeed, Christopher Lasch suggested that the "culture of narcissism" he documented is an outgrowth of an out-of-proportion reaction against feelings of "helplessness and dependence" on nature, fueled in large part by technologies forged during the Industrial Revolution, the revolution that gave us the illusion of God-like power over nature.[14]

Thus, the modern Narcissus, who puts himself at the center of the universe, who thinks of others as objects for his own use, is essentially extending to his social relationships the pervasive industrial age attitude toward nature: alienated, exploitative, ill-at-ease with intimate contact but constantly flattered and encouraged by his technically-enhanced ability to manipulate and control the surrounding environment.

Lasch believed that developing an ecological consciousness could not only cure our delusion of god-like power over nature, but also cool off narcissistic tendencies. It is indeed difficult to be a narcissist while acknowledging the vicissitudes of nature, which doesn't cater to our whims or, indeed, treat us as special at all. The sense of humility that comes from recognizing that nature offers no unearned praise, nor even a hint of entitlement, helps situate us in the world. Indeed, this humility is our inner world's vow of fidelity to the external world.

Ecological consciousness may be the goal, but is there a narrative, a compelling story that we can pass along to our children that can get them there? I believe there is. There are likely many, in fact. The one I want to suggest here is captured, imperfectly but helpfully, by a concept perhaps as old as the Narcissus myth: It is told by the narrative of stewardship.

Stewardship is most closely affiliated with a sustainable use of land. It is a term not all environmentalists embrace due to its legacy, stemming from medieval times, of viewing the natural world as a resource we humans can manage for our own use. When I worked, right out of college, for a community of Mennonite farmers in central Kansas, their extensive use of the term contained none of that exploitative connotation. Perhaps because of their unusually strong emphasis on the social gospel, or perhaps because they extended the use of the term to their church and community relationships, stewardship meant for them a responsibility to lovingly and humbly tend to the health of all to which they were related: the earth, their families, the community, and particularly those in need.

That is the way I use the term here. Its adoption as a lens through which we view the world counters the narcissistic urge by fixing our attention not on how best to use others for our purposes, but rather on what best serves to preserve and strengthen our relationships with them. It reclaims the notion of community from the trivializing online idea of a loosely formed common interest group, reaffirming the commitment and hard work needed to maintain a web of complex relationships spun together in a common space.

Similarly, friendship from a stewardship orientation is not based simply on good times together. It is rooted in a deep sense of affiliation, commitment, and mutual responsibility grown from the seed of shared experience. It has nothing to do with hooking up or hanging out. It has everything to do with holding on and hanging together.

Thus, friendship is evidenced not just when your friend helps you get where you want to go, but also when she refuses to let you drift away from your true calling. It is evidenced not just when a friend "has your back," but when he calls you back to your best self. This is, in fact, the concept of a friend that moved Aristotle to claim that its opposite was not an enemy but a flatterer.

Mentoring is a type of friendship that spans generations, and is thus an inherent quality of stewardship. Mentors provide the mature guidance youth need to get their social relationships in proper proportion: to discover that to feel needed is as important as getting your own needs met; that seeking to be admirable in the eyes of a role model is the foundation of a moral life, whereas trying to impress whoever comes along is its abdication.

Unfortunately, too many of us have bought into the narrative that in a rapidly changing, high tech society our children live in a different world from ours, a world which somehow we have no right to help shape. Too often our own remote jobs limit our halting efforts to be role models and guides. And way too many of us seem unwilling or unable to turn our eyes away from our own reflective screens.

Thus, the first step many of us will have to take is to put the digital media away ourselves and invest the time needed to find our way back into the depths of our children's lives. Reaching that depth takes not just a few moments of quality time but lots of time from lots of grown-up people: time for humility, gratitude, compassion, selfless acts of kindness, generosity, and civic duty to slip uncelebrated into the fabric of shared daily activity.

Perhaps the most difficult change we will have to make as good stewards to the next generation is to let our children lie fallow for certain stretches of time. By this I mean we need to resist the temptation to focus all of our children's energies on activities that are calculated to reap some reward, be shown off on a Facebook page, or used to impress college recruiters.

Rousseau argued that the most important thing for a child to do is waste time. I certainly would not go that far. But narcissism flourishes on a diet of instrumentalism, where every action expects a payoff. We need to make more space and time for things such as free undirected play, telling stories, and just wandering around, not because it increases creativity or promises higher test scores but because these are things that we have long associated with a healthy childhood.

And sometimes, far more often than we realize, young people just need rest, to withdraw inwardly, to take inventory of their oft-wounded souls if they are to come to terms with who they really are and weave that insight into their relationship with the world. One of my own wise mentors once told me that contrary to the teacher's commandment to keep students "on task," I should never interrupt a student who is daydreaming—really important work was going on behind those glazed-over eyes.

Real experience, as John Dewey endlessly argued, is not just ceaseless action, but the constant interplay between action and reflection.[15] It was Narcissus' lack of internal reflection that left him unable to recognize and resist the image he projected onto the pool. Our inability, or reluctance, to conserve the time and space for our children to be left truly alone, denies them the opportunity to strengthen their inner sense of self, condemning far too many to share Narcissus' fate.

We have not been good stewards of childhood. Reclaiming that stewardship will certainly not be easy. We will have to create opportunities for activities—and inactivity—that help youth change the way they see themselves and their role in the community.

There are no formulas for this. Social ecology is an intensely local task. The good news is that young people seem to be increasingly aware of the hollowness of a mediated life and are receptive, even eager, to enlist in something that offers them a more meaningful sense of belonging. Many seem ready to be good stewards if only we are willing to teach them how. To figure that out we may first have to reteach ourselves to daydream.

ENDNOTES

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Lowell Monke, *PhD, taught courses on the philosophy of education and the impact of media on young people at Wittenberg University, OH, until retiring in 2014. He has authored numerous articles on technology and education and is co-author of* Breaking Down the Digital Walls: Learning to Teach in a Post-Modern World. *Lowell was a founding board member of the Alliance for Childhood and served as a technology advisor to the Washington Waldorf School for eight years. He now resides in Parker, CO.*

Building Bridges

Karl König's Phenomenology of Reading and Writing Disorders and the Current Neuroscience of Dyslexia

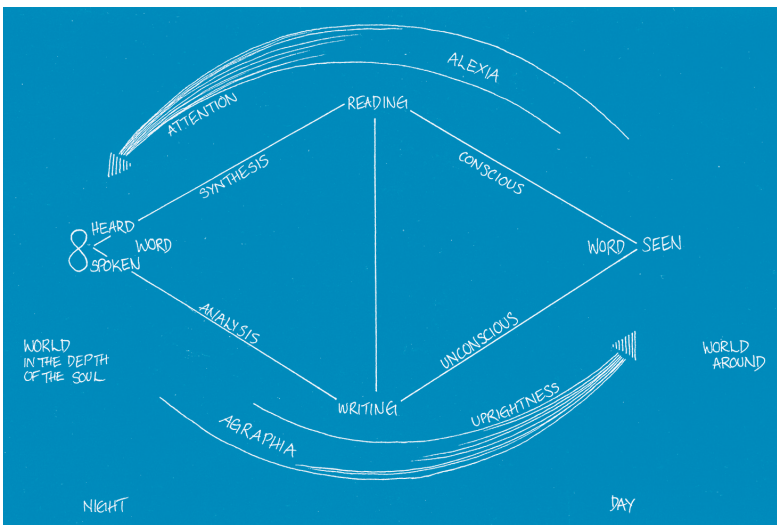
Lalla Carini

All our pedagogical and curative-educational efforts are directed at connecting one shore with the other, at connecting what is heard with what is seen. – Karl König, *Being Human*

In his lectures *On Reading and Writing*, given to Camphill teachers in 1957 and 1961 and first published in 2002, Karl König names four broad areas out of which literacy difficulties originate: uprightness, attentiveness, the realm of the heard and spoken word, and the realm of the seen word (2002, see figure below). König's typology of literacy disorders is the only comprehensive description, written by an anthroposophic doctor, available to Waldorf teachers in the English-speaking world. König acknowledges that learning difficulties can have their origin both at the level of the four bodily senses as well as in the four higher senses, specifically in the senses of speech and thought. His description sheds light on the long-standing question of how dyslexia is understood and addressed by Waldorf professionals, namely: Is screening and treatment of the four foundational senses sufficient in addressing dyslexia, or do other aspects need to be considered? Is a definition of dyslexia and of subtypes of specific reading disorders necessary and, if so, when and how are these definitions useful for an understanding of the difficulties faced by children?

The focus of this study is to look at König's paradigm through the lens of the current neuroscience of reading and reading difficulties and to show which theories stand to validate his typology. The goal is to demonstrate that, in spite of the inherent differences between these equally complex lenses, there is a clear continuum between a number of scientific hypotheses and König's typology.

The theories of dyslexia I will discuss in relation to König's typology are: the *automatization/cerebellar deficit hypothesis*, as brought forth by British researchers Roderick Nicolson and Angela Fawcett (Nicolson, 2008), in connection to body schema, or uprightness; the *dual route model of reading*, first developed by Coltheart (2005), which validates König's description of the dual nature of the word as sound and image; and the more recent *magnocellular hypothesis* described, amongst others, by French neuroscientist Stanislas Deheane in his book *Reading in the Brain* (2009). Bringing together these hypotheses into one unified set of phenomena, I will report on the synthesis proposed by Tufts University neuropsychologist Maryanne Wolf, *Proust and the Squid: The Story and Science of the Reading Brain.* It is not in the scope of this article to



The four realms of literacy difficulties (from König, On Reading and Writing*)*

discuss each of the theories in full, but simply to point out how they confirm König's paradigm.

The article is divided into two sections. Section I addresses the relationship between uprightness and attentiveness as a foundation for learning and the two memory systems (procedural and declarative). Section II focuses on the dual nature of the word and the dual route model. König's inquiry addresses both the wide spectrum of curative profiles, as well as the norm of students we meet in the standard Waldorf classroom. This article focuses on the latter.

Background

A survey I conducted in the spring of 2015 among 57 Waldorf schools in North America showed that, in spite of the incredible work done to address the rise in sensory-motor disorders so widespread among today's children, consensus has not been reached on how to detect and successfully address different types of literacy disorders in the Waldorf context (Carini, 2017).

A collaboration with outside practitioners is often necessary, and some schools have built relationships with specialists trained in Orton-Gillingham or in other methods for remediation. Schools that have established educational support positions are confronted with the question of whether Extra Lesson screenings are sufficient in detecting a dyslexic profile. Many find that there isn't always a direct correspondence between sensory-motor issues and language-based dysfunctions.

My professional experience working for three years as an educational support coordinator in a large urban Waldorf school alongside a certified educational therapist showed me that, in fact, a correspondence is not always there. Working with groups of struggling readers in the middle school allowed me to personally verify König's statements regarding different reading styles. Through my experience both as a class teacher and as a remedial teacher, I came to the conclusion that some children need help, at some point in their journey, to strengthen phonology or mental picturing, analytical or synthetic powers at the level of thinking and language processing.

All Waldorf teachers would benefit from being able to recognize learning profiles through an anthroposophical lens. Failure to develop this understanding results in Waldorf teachers' becoming insecure in their ability to meet struggling students. Guiding the parents through the sea of options available for addressing learning challenges is also difficult without a clear characterization or diagnosis.

My interest in the neuroscience of reading stems from a desire to further develop our Waldorf approaches for detecting and remediating reading difficulties in harmony with scientific findings. I hope the following description of the science of reading will help other teachers pursue a balanced approach between the extremes of the much advertised "early intervention" versus the hands-off stance that has historically led Waldorf professionals to even question the occurrence of something called *dyslexia* in the Waldorf classroom.

When I started teaching, 20 years ago, I was told that in Waldorf we did not teach phonics. A few years later, I realized that Steiner had a lot to say about phonology. Then, I read about brain imaging studies and I understood why Steiner's method of teaching letters through pictures was nothing short of genius. His indication to connect the sound to the symbol through a pictorial image foretold the discovery that, for reading to happen, two routes have to be activated in the brain. These are equivalent to two bridges: one bridge from letter-symbols to speech-sounds, and the other from letter-symbols to mental pictures (Deheane, 2009, p. 38). The present inquiry, though merely scratching the surface of a complex science, was spurred by the enthusiasm of that first important discovery.

Two Paradigms, One Complex Phenomenon

> Some specialists are still under the impression that we have (if we are right-handed) specific areas in the left side of our brain which are connected with our ability to speak, read, write and understand the written word. We can imagine the problems faced by such specialists when they find that other areas of the brain are damaged or injured, and yet a person still suffers from one of the thousands of possible forms of aphasia!
>
> – Karl König, *On Reading and Writing*

In the 25 years that have elapsed since Karl König gave his lectures *On Reading and Writing*, enormous leaps forward have been taken in our understanding of the complexity of the human brain. Imaging technologies now enable us to watch neurons as they fire while a person reads. Yale researcher Sally Shaywitz, in her landmark book, *Overcoming Dyslexia,* rightly claims that we have finally found consensus on the main cause of reading failure and that we now have proven methods that enable dyslexic people to read (2003, p. 3). Shaywitz is right in that the so-called *phonological principle* is now universally recognized as the main gateway to reading ability (Wolf, 2007, p. 175; Deheane, 2009, p. 238). She is also accurate in stating that a number of methods have shown success in teaching seriously dyslexic children to decode. However, just three years after Shaywitz's book was published in 2003, Tufts University neuroscientist Maryanne Wolf, author of *Proust and the Squid: The Story and Science of the Reading Brain,* proposed her *cumulative dyslexia hypothesis* as a way to overcome the impossibility of arriving at one all-encompassing cause:

> Dyslexia cannot be anything as simple as a flaw in the brain's "reading center" for no such thing exists. To find the causes of dyslexia, we must look to older structures of the brain and their multiple levels or processes, structures, neurons, and genes, all of which have to come together in rapid synchrony to form the reading circuit.

Wolf reports on what Charles Perfetti and his team at the University of Pittsburgh calls the "universal reading system" (pp. 62–63). This system, which includes all the ways the brain rearranges itself for reading in different languages, shows that "areas from all four lobes of the brain are involved" in the act of reading (pp. 63–64). Admitting that "the story of the blind men and the elephant remains an apt description of much of this research," Wolf seems to resort to a phenomenological approach; she places all the current hypotheses of dyslexia on a map of the human brain. What comes out is a "decent approximation of the major parts of the universal reading system."

"We were never born to read" (p. 3) is Wolf's opening statement. The key finding from neuroscience is that reading is a very new invention in the evolution of humanity. The structures and circuits that we use for reading were "originally devoted to other more basic brain processes, such as vision and spoken language" (2007, p. 5). Reading is the product of "*brain plasticity*"—"the human brain's extraordinary ability to make new connections among its existing structures," its ability "to be shaped by experience" (p. 3). In this sense, the ability to read should be more surprising than an inability to read (Nicolson, 2008, p. 12). This finding can be interpreted by Waldorf educators as supporting Rudolf Steiner's indication that reading should be taught gradually and artistically, so as to gently integrate sensory and motor processes and all twelve of our senses (Steiner, 2004, p. 120).

Like Steiner, König does not view the human being as determined by mechanisms in the brain. He begins by looking at reading and writing as archetypal phenomena. His discussion spans across disciplines as varied as philosophy of language, mythology, and

esoteric science. However, the areas of reading and writing difficulties he identifies find a clear correspondence in Wolf's map. König describes the "landscape" of these complex processes as different "countries" between which "we must build *bridges*" in order for reading and writing to develop. These realms are uprightness, attentiveness, the realm of the heard and spoken word, and the realm of the seen word.

Areas that form the map of the reading brain include older structures, such as the cerebellum, as well as the most recently developed pre-frontal cortex. Both are largely implicated in learning, in sensory processing, attention, and memory (Nicolson, 2008, pp. 28–29). Neuropsychologist and educator Jane Healy describes the "attention loop" (1987, pp. 97–98), which runs "from the brainstem up to the top level of the prefrontal cortex" with a "feedforward and feedback system" of "interconnecting loops" throughout the limbic system, or "emotional brain." This loop charts the threefold organization of the human brain into brain stem, limbic system and neo-cortex, Paul McLean's triune brain (pp. 11–12), which parallels the three soul forces of thinking, feeling, and will. The left and right hemispheres are directly involved in receptive and expressive language, and both connect to the left lateral occipital sulcus where visual analysis of word forms has its origin (Deheane, 2009, pp. 69–76). In looking at the architecture of the brain, it appears that all areas and all directions of space are involved in reading: above and below, front and back, left and right. The way cognitive functions must be integrated in the brain seems to mirror in some mysterious way our overall integration in physical space. Building of neural pathways between different areas of the brain is also necessary. Could these pathways correspond in some way to the "bridges" which König describes in his phenomenology of literacy?

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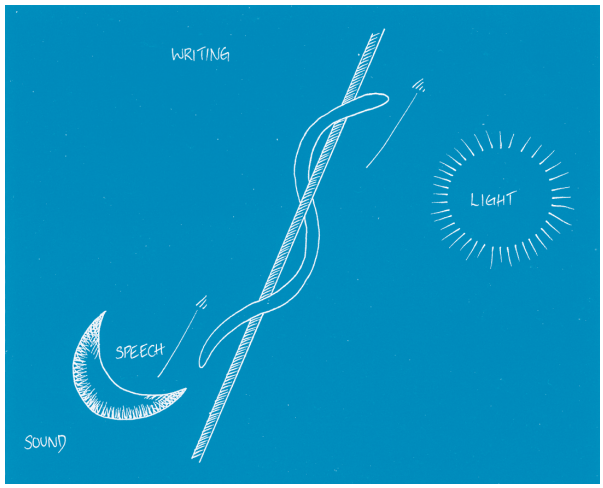
Uprightness and Attentiveness

Rudolf Steiner traces back all learning to the interplay of the two poles of the human being, the metabolic-limb system and the nerve-sense system, which meet in the rhythmic system of breathing and blood circulation. In his esoteric physiology, the first pole is the "night," the pole of "darkness," where the warm growth forces operate; the second is the "day," the pole of "light" where the cool forces of mental picturing and thinking reside (König, 2002). Waldorf teachers are familiar with the idea that learning is the transformation of growth forces into thought forces. The thought forces are first liberated when the child completes the process of physical incarnation, around the age of seven.

In *Being Human: Diagnosis in Curative Education*, König uses the terms *incarnation* and *discrimination* in relation to these two streams of forces. Incarnation is the individuality's gradual "[taking] possession of his own bodily organization step by step" (1989, p. 35). It can equally be seen as the integration of the four bodily senses to achieve what is known to physiologists as *body image* or *body schema:* "We perceive our body through learning to experience it more and more as a totality, as 'body image'" which "is nothing more than these four senses put together" (pp. 35–37). Discrimination is sensory processing, the gradual ability to "distinguish between the objects and beings of the world" (p. 36). Incarnation is a synthetic process. Discrimination is the same as analysis: "We experience the world by becoming aware of it analytically, step by step" (p. 45). König names these two poles also as *body and world*, *motor and sensory*.

In the lectures *On Reading and Writing*, König seems to simply rename the forces of incarnation and discrimination *uprightness* and *attentiveness*. The power of uprightness, through

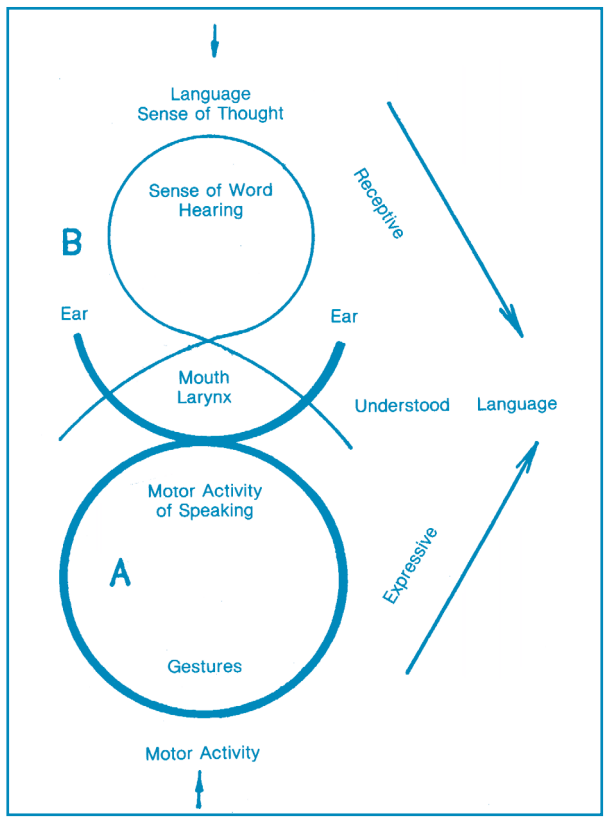


Uprightness and attentiveness (from König, On Reading and Writing*)*

spatial orientation, postural stability, and mature proprioceptive feedback enables the head pole to become still for learning. This is achieved *body schema* or the sum of the four foundational senses. The power of attentiveness König describes as "a soul power—a transcendent ability to create images." Is attentiveness the same as discrimination? Or is it perhaps the result of the process of developing sensory discrimination? Is attentiveness the ability for conscious mental representation, mental picturing, that is seen around age six-and-a-half, when the child is ready to enter school?

König says: "Attentiveness arises in the soul as it becomes permeated by the Ego" (2002, p. 126). The child enters school holding "the staff of uprightness"; around his head is the "magic circle of attention." In uprightness, the Ego works in the lower motor pole, in the unconscious realm of night darkness. In attentiveness, the Ego works in the upper pole, the conscious realm of day light.

The motor and sensory poles, the night and the day, meet in the middle system, where language also has its seat. "Motor activity [works] upward from the limbs, turning into gestures that accompany speech and enhance and support it, streaming upward into the larynx. In the larynx, with the help of the air element, "the flow of motor activity comes to a halt and is transformed so that sound is born out of movement" (1989, p. 66). What we call receptive and expressive speech, listening (with understanding) and speaking, stream from the two different poles. This is why a person can speak but not understand, or understand while being unable to speak. "These two components—the motor and sensory—work more intimately together in speech than anywhere else" (p. 61). Uprightness and attentiveness are two of the four "lands" that need to be connected if a child is to read and write. Reading and writing accompany listening and speaking in helping to connect, in the child, the pole of night to the pole of day, the unconscious pole of movement in speaking to the conscious realm of thinking in listening and understanding.



Receptive and expressive speech (from König, Being Human*)*

Uprightness and the Automatization/ Cerebellar Deficit Hypothesis

We can all picture the child who has not achieved uprightness or a mature body schema. In any Waldorf second grade classroom, at least one-third of the children show some immaturity in spatial orientation, vestibular stability, bilateral integration, or body geography. At least one-sixth also display some retention, or resurfacing, of primary reflexive patterns that should be integrated in the first three years. Based on informal reports given at Waldorf teacher conferences and in remedial workshops, it appears that rates of sensory-motor delay or Sensory Processing Disorder (SPD) have increased in the last twenty years. This seems to be the case outside of Waldorf as well (Harris, 2015), and the causes are attributed to a wide range of environmental factors.

Audrey McAllen developed her approach to remediation, based on the 1909 lectures given by Steiner on the senses, around the same time that Jean Ayres developed Sensory Integration (Ayres, 1972). McAllen's references in the scientific literature align very much with those of Ayres, which include C.S. Sherrington and O.L. Schrager & J.B. de Quiro (McAllen, 1998, pp. 35, 75), all of whom worked out of the *cerebellar deficit model*. What is this model? The cerebellum, or hind-brain, was traditionally considered only a motor area, but one with great plasticity, i.e., the cerebellum, when damaged, will recover fairly quickly. Later, it was found that the cerebellum controls the automatization of any skill, whether motor or cognitive, including balance and language dexterity (Fawcett & Nicolson, 2004). The loop of attention described by Healy shows precisely the connectivity that links the cerebellum to the center of memory, the thalamus, and from there to the prefrontal cortex, touching also the Broca area for language articulation. Its feedback loop to the cerebellum shows the reciprocal relationship between attention controls in the forebrain, memory of content (declarative memory system) and memory of skills as they become automatized (procedural memory system) (Nicolson, 2008). This means that any motor skill, from riding a bicycle to playing the recorder, to writing, to speech articulation, relies in some measure on the cerebellum in order to become automatic. The same is true for the coordination of multiple skills, such as speaking while moving, writing while sounding out words, and even reading out loud: "The cerebellum contributes to the cognitive processes integral to reading" (Nicolson, 2008, pp. 165–172).

A general correlation between balance, muscle tone, speech articulation and visual-motor coordination and a number of learning and attentional difficulties was proven to exist in 1973 by Harold Levinson (pp. 100–102). A longstanding evidence of clumsiness in dyslexic children dates back to Orton's work on laterality disturbances. However, research by Geschwind in the 1980s points to an unsolved mystery in "the fact that many of these clumsy children go on to successes in areas in which high degrees of manual dexterity are absolutely necessary" (Nicolson, 2008, p. 97). In fact, increasingly, we have been hearing about artists and athletes who identify as dyslexic.

In 1977, Frank Vellutino reported in his study on the causes of reversals in reading and writing. Vellutino asked a number of dyslexic people to copy letter symbols in several reversed directions, the way Steiner recommends doing form drawing of four quadrant symmetry in third grade. Vellutino then asked the same subjects to reproduce symbols in Hebrew letters, which was not their native alphabet. Vellutino found among his subjects a high level of accuracy in reproducing the forms, consistent across two different alphabet systems. Later, Vellutino tested the same subjects on rapidly naming the same English letters they had copied. In this test, he found a significant discrepancy between each subject's ability to visually track and copy the shapes and their ability to correctly associate names and sounds to each of the letter forms

(1977, p. 338). Vellutino's research marked a turning point in proving that the tendency to reversals, as well as transposition and omission of letters and words in both reading and writing, is "the result of deficiencies in verbal skills" (p. 338), that is, in speedily associating a sound or a name to a visual symbol.

Following these findings, the research world, divided as it is between highly specialized disciplines, has steered away from sensory-motor interpretations of literacy difficulties. The focus has turned toward higher order thinking and language (Wolf, 2007, p. 174), what Steiner would call the higher senses.

A host of factors contribute to sensory integration difficulties, from organic hindrances to birth stress, emotional trauma, environmental sensitivities, and poor lifestyle choices. This is why Waldorf educators place such importance on the development of the four bodily senses. The multiplicity of contributing factors is also what makes it so extremely difficult for researchers to establish a clear causality in the process (Nicolson, 2008, pp. 181–184). Researchers in the field acknowledge that a large number of remediation approaches tied to the cerebellar hypothesis lack clear evidence and often exploit the public's credence in the ultimate cure. The tendency on the part of teachers to over-diagnose sensory motor difficulties, especially in well-to-do school communities, has been decried by authors such as Madeleine Levine (quoted in Harris, 2015), who cites factual evidence showing that many of these difficulties disappear when children are given the space and the time to integrate naturally. In one study in which teenagers and adults with a history of dyslexia were tested, the incidence of motor coordination issues, which may range between 30% and 50% in school-age dyslexic children (Ramus, 2003a), was found to be about 25% (Ramus, 2003b).

...[M]any of these [sensory integration] difficulties disappear when children are given the space and the time to integrate naturally.

Automatization and Specific Procedural Learning Difficulties

An interesting development of the cerebellar hypothesis clarifies exactly which difficulties are attributable to a lack of sensory-motor integration. Nicolson and Fawcett have insisted on reframing the connection between dyslexia and sensory-motor development as a weakness in "*procedural memory*, which supports the learning and execution of motor and cognitive skills, especially those involving sequence" (p. 190). They have named their framework Specific Procedural Learning Difficulties (SPLD) to indicate sensorimotor/cognitive "habits" as "skills" that need to be made automatic. Examples of these are the quick recall of times tables facts, fluent handwriting, and the pattern recognition that enables children to decode words and to recognize morphological structures (pp. 192–193). In individuals who struggle with automaticity, *declarative memory*, the storage and use of knowledge of facts and events, may not be impacted at all. This explains why a child with strong pictorial memory, associative and reasoning capacities, and even superior verbal language skills may struggle to read or write (p. 191).

The British researchers found that early delays in motor development, which can later be resolved, may be at the root of the following dysfunctions in the procedural memory system: inefficient automatization of writing skills (dysgraphia), problems with articulation and phonation (apraxia of speech), automatization of auditory pattern recognition and sound-symbol correspondence (phonological dyslexia), automatization of visual pattern recognition affecting spelling (orthographic dyslexia), and difficulty in achieving the speed needed for reading fluency (reading automatization deficit) (pp. 204-209).

A significant difficulty found among children and adults with dyslexia is "tapping to the beat," a difficulty in coordinating foot or hand movement with the sound of a metronome at progressively higher speeds (p. 99). Usha Gotswami, of Cambridge University, speaks of *rhythmic entrainment* as the specific skill that is lacking in children with phonological dyslexia. Proving that a close relationship exists between movement and hearing, Gotswami points to tonal music and rhythmic movement as avenues for remediation (2013, p. 109). The connection between movement and hearing is at the heart of Rudolf Steiner's physiology. These findings should encourage more extensive studies on the effects of eurythmy therapy.

Attentiveness and Memory Formation

The important role played by the feeling life in developing attentiveness cannot be underestimated. The child remembers and learns from experiences that are engaging and relevant. The International Dyslexia Association (IDA) estimates that 30% of children who struggle to read and write have some difficulty with attention (Dakin, 2008). A child with attentional difficulties is either not ready for the level and type of attention that is expected of him, or he is overloaded with too many sense impressions, often including also heavy exposure to electronic media. These children live too strongly in the head pole of sensory consciousness, with overactive stress responses that impede mental imaging and memory formation. Brain-learning expert and teacher educator Eric Jensen, author of *Teaching with the Brain in Mind*, brings an abundance of research in support of the centrality of emotions in learning. Jensen explores many aspects of school ecology that are well understood by Waldorf educators and stresses the influence of rhythms in sleeping and waking in relation to cognition (2005, p. 49).

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Karl König reminds us that one goal in child development is teaching the head pole to become still for learning. "I have the impression that not enough attention is paid to the fact that the classroom is not a gymnasium," König states. The original meaning of the word school in Greek, *scholeion,* is "rest" or "leisure," *schole*. "This means that children should sit down, and, if possible, remain seated." This König claims specifically in relation to reading and writing, which are both activities that belong with the upper body (2002, p. 109). In regards to reading in particular, König states that, "while we need attentiveness in order to learn to read, it is also true that reading trains attentiveness" (2002, p. 126).

I have witnessed the power of attentiveness in several children in second grade who, according to our screenings of balance and visual tracking abilities, seemed to be far from ready to take up reading. All three boys observed were highly distractible, but alert, enthusiastic and divergent thinkers. They were all reading a month or so after the second grade screening with no prompting or pushing from their parents. Reading did help these smart children, and many others I have met since then, settle into their bodies. Such cases should encourage teachers to observe the distinction drawn by König between difficulties that originate in uprightness versus those that have to do with a lack of attentiveness; it is also a reminder to trust more in the power of the Waldorf art of education in supporting developmental integration over time.

We can sum up our discussion of uprightness and attentiveness by stating that in the earlier years, sometimes up to age nine, the "I" of the child is busy trying to make the physical body its home, while at the same time as a spirit-soul, through all its senses, it is striving to connect with the world and make sense of it. We can literally interpret "making sense" as an impulse

of the soul to unify the sense impressions into a single sense, a mental representation.* The making of this sense begins in the middle system, the feeling life, where memories are formed. According to both Jensen and Steiner, the rhythm of night and day, of physical sleeping and waking, is essential to the making of memory and learning. This is where the *writing*, the "inscribing" of the world, happens, and where reading of the world first takes place. When these processes are disrupted or incomplete and these two domains are disconnected, we cannot expect the child to achieve literacy.

"[W]hile we need attentiveness in order to learn to read, it is also true that reading trains attentiveness."

The Spoken and the Seen Word

Memory and Understanding as Archetypes for Reading and Writing

When the Waldorf class teacher asks a child to recall a story or a lesson the day after it was delivered, the child calls up images that had "gone to sleep" the previous day. Rudolf Steiner explains how these images or concepts "become alive" in the unconscious, acquiring a significance that is unique. To bring them back means to allow the child to recreate them for himself. This is why König states: "We should be quite clear that the child can read in the broader sense before he comes to school: He can read the sky, the tree, mother, sister; he can recognize and name; he can read images" (2002, p. 124).

Every kind of understanding, in Steiner's view, comes about through images: "To understand means that I meet myself" through these images. The concepts we evolve in day-waking consciousness are the shadow existence of these living images (König, 2002, p. 34). This is why in his first course for teachers, *The Foundations of Human Experience*, Steiner states that a teacher's work is to teach a child to sleep and to breathe, to move between the poles of conscious and unconscious image formation (1966, p. 22).

The word lives in the middle system as the mediator between the warm unconscious night pole and the cool pole of daylight consciousness. The word shares in the dual nature of sound and image. "In the larynx the flow of motor activity is transformed so that sound is born out of movement" (König, 1989, p. 66). In the middle system, the two poles of night and day are no longer on a vertical axis of body versus head, but rather on a relationship of center versus periphery and front versus back. Vision moves forward and backward in the frontal plane and requires a focus as the center between left and right. The organs of hearing, on the other hand, are placed at the periphery and stimulate our back space, rather than the front. Thus Steiner speaks of musical-rhythmical and sculptural-pictorial forces intersecting in the middle system (*Balance in Teaching*, 2007).

It is a person's whole body that expresses itself in speaking. In listening and understanding, in receptive language, we take in the entire individuality of the speaker, the images, the grammar, down to the level of the individual sounds. Receptive and expressive language are the meeting of the two poles. This is shown in autistic people who cannot speak because, as König explains, they are so caught up in the world that they are not able to distance themselves enough for the individuality to stream out freely through speech (p. 70).

The integration of the eye and the ear is especially strong in speaking and listening. In speaking, we transform our mental pictures into speech sound; in listening, we transpose the speech sounds we hear into mental pictures.

*I use the expression *mental representation* to intend any type of inner representation of sense impressions which uses the visual code as its primary mean. This includes the pictorial images stimulated by the Waldorf narrative approach as well as symbolic visual-spatial representations that are developed through schooling.

They form a double bridge between two lands, a bridge which is essential to literacy development. When this bridge cannot be built, we have various forms of aphasia. Without entering the domain of curative education, we must acknowledge that in the public school classroom, a vast majority of literacy issues have their origin in an impoverished language environment at home, which puts many children at a severe disadvantage (Wolf, 2007, pp. 102–104). Wolf recalls the eloquent apology of Socrates for an oral culture centered in the meaningful dialogue between teacher and student. She likens Socrates's position to that of Russian educational theorist, Lev Vygotsky, who held that "social interaction plays a pivotal role in a child's ever-deepening relationship between words and concepts" (p. 73).

Wolf argues with Socrates against the dangers of superficial understanding resulting from the diminished role of conversation between teachers and students. She sees this danger especially relevant today with the seemingly limitless information available to young people through media technology (p. 77). Wolf's argument strongly validates Steiner's overall emphasis on a culture of oral language rich in conversation, storytelling, speech, poetry, and drama.

Reading and Writing as a Resurrection Process

König speaks of reading and writing as a resurrection process. He states, with Steiner, that the current discourse on reading and writing misses "the way in which the Word—as Logos—is functionally alive in the human being" (2002, p. 45). With writing, the word is en-graved, made to die from its living nature as speech; it is committed to the physical world. With reading, the word must be resurrected, brought back to the spiritual dimension of living images.

With writing, the word is en-graved, made to die from its living nature as speech; it is committed to the physical world. With reading, the word must be resurrected, brought back to the spiritual dimension of living images.

Writing is speaking on paper. The organs of the larynx and mouth give way to the hand, fingers, paper, and pen as tools for inscribing the word into a physical visual form. Reading, on the other hand, is listening to the realm of "silent light" in order to bring back speech. Writing is an analytical process, moving from the whole, the image or thought behind the words, down to the single sounds. Reading is a synthetic process, reconstructing levels of meaning from the single letter, to the syllables, words, all the way to the sentence (pp. 43–47).

In *Balance in Teaching*, Steiner describes these same forces of analysis and synthesis as musical-rhythmical and sculptural-pictorial. Here he shows how the artistic curriculum given in the grade school years harmonizes these two poles and brings them into balance. Teachers recognize that children may have an affinity for one or the other of these forces, the musical or the pictorial. At the level of language, this translates into an affinity for the speech sense versus the sense of thought (both as concept and image) which is also manifested through speech. These two types of children correspond to what have become popularized as the auditory-sequential and the visual-spatial learners, as we shall see (2007, see Introduction by Douglas Gerwin, p. xiv).

Mindful of Steiner's discussion of "the reversed perception of eye and ear," König states that "all disturbances in reading and writing stem from the fact that the translation or bridge between hearing and seeing is possible only in some partial and fragmented way, or perhaps not at all" (*Being Human*, 1989, p. 71). As long as a child is unable to write under dictation, she has not crossed the bridge from 'silent light' to 'resounding darkness.' Only when the child is able to read silently has she succeeded in crossing all

the way from the pole of 'resounding darkness' to that of 'silent light.'

The Steiner method begins with writing, with an analytical process, from the whole to the parts, and in the movement pole. For reasons of space, I will not review it here. A beautiful presentation is given by Arthur Auer in three articles published in the *Research Bulletin* between 2006 and 2007, offering an essential resource for new teachers. In what follows, we will see how König recognizes the analytical/synthetic polarity in the way children take up reading.

A Tale of Two Readers

König holds that speaking and understanding never happen at quite the same time. The child who lives in the light element and rushes to synthesize meaning without carefully recreating the voice of the writer is avoiding crossing the bridge to the sound pole. The child who lives on the shore of sound may have difficulty crossing the bridge to understanding. König begins his exploration of reading issues by observing two types of readers whom he designates as the "laughing" and the "weeping" types. König associates each of these two types with a form of breathing. In the first type of reader, the "acoustic type," the eye goes slowly in short, broken movements from left to right along the line and then sweeps in a long coherent movement back from right to left again, only to move forward to the right again in short jumps. The exhale is in short breaths; the inhale in long. In the second type, "the weeping, or visual type," "the eye first moves along the line in a long sweep, then moves back to the beginning of the next line in short steps. It "skims over the script," exhaling in the long sweep, and then inhaling in steps (2002, p. 42). König observes that "the eye itself does not read, it just directs the Ego onto the text, the script or the print. The Ego uses the sense of touch in feeling, moving, fingering along the written line. It fingers along the text just as fingers move along the strings of a [musical] instrument… but out of the words an image appears and immediately understanding arises (p. 43).

König indicates that a written text is a form, just as a musical instrument is. The Ego "frees" or releases the form and "we understand." The child who struggles with sound symbol associations cannot cross the bridge from the pole of light to the pole of sound. The child who has difficulty synthesizing the meaning of words or phrases, who lacks the intuition for context clues, cannot build the bridge from sound to light.

The child who lives in the light element and rushes to synthesize meaning without carefully recreating the voice of the writer, is avoiding crossing the bridge to the sound pole. The child who lives on the shore of sound, may have difficulty crossing the bridge to understanding.

Lessons from Students

Six years ago, I began working with a small group of four sixth-graders who possessed, collectively, all the skills needed to work with the compelling young fiction my colleague had chosen for her class. Laura, nerve-sense, curious, could remember all the details in a story if she listened to it, but could not decode accurately enough to read fluently. Jacob, left handed, with a strong visual-spatial mind, could read quite well silently, but not out loud; he had very poor spelling. Marney, with a medical condition affecting the retrieval of memories, could read out loud with good expression and express the deep message in a story, but remembered very few descriptive elements; she could form beautiful sentences, and could sing beautifully. Sasha, very phlegmatic, also articulated thoughts beautifully and occasionally went off on interesting tangents, but struggled with procrastination and the ability to synthesize

essential themes. The warmth and cold poles, thick- and thin-skinned, indicated by Steiner in his Curative Education Course, were clearly visible in the constitutions of these four sixth-graders: Marney and Sasha, physically warmer in their bodies and warm in their manners, rounder in shape, more articulate in speaking, both musical; Jacob and Laura, both skinny, awake in their sense perceptions, nimble in peripheral space, able to recall images with ease, and classic in their inability to analyze words into the small units of sound.

These examples showed me the value of working consciously with the synthetic/analytical polarity.

The Realm of the Heard and Spoken Word: The Phonological Principle

Based on functional magnetic resonance images (fMRI), which register the blood activation in brain regions involved in reading, Yale researcher Sally Shaywitz was able to observe the route from the visual word-form area in the left occipito-temporal cortex to the phonological centers for speech recognition and articulation in the left temporal regions (the Broca and Wernicke areas). Shaywitz reports that this pathway is used by every child who decodes effectively. According to Wolf, 25% of struggling readers do not cross this bridge (2007, p. 189). The problem for these children lies in the sequential processing of heard speech sounds, or phonology, as well as in the ability to recognize phonemes, phonemic awareness (PA), connecting vowel and consonant patterns to their corresponding sounds. The existence of a *phonological principle* has been verified across languages the world over. In the U.S., where its incidence is highest due to the opaque nature of English spelling, it has led to the mandate for explicitly teaching phonemic awareness in order to help all children cross this bridge. This principle informs the current definition of dyslexia as

> a specific learning disability that is neurobiological in origin… characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. (IDA, 2002)

A closer look at Steiner's indications reveals that he acknowledges the phonological principle when he says that "training in careful listening lies at the basis of spelling," and that "if we cultivate accurate listening, we will also bring about accurate visual observation" (2006, p. 106). Steiner's method of teaching sound symbol associations through pictographs is brilliantly prescient of the findings that have led to the creation of the dual route model of reading.

The Heard Word and the Seen Word: The Dual Route Model

The *dual code model* of reading was originally developed by Max Coltheart from studying the effects of brain lesions on reading. At the brain level, this model recognizes both of König's bridges, from the eye to the ear and from the ear to the eye, as actual pathways, which light up in images in the reading brain. French neuroscientist and author of *Reading in the Brain*, Stanislas Deheane, distinguishes two routes for reading, starting from the "brain's letterbox" in the occipito-temporal region: the *phonological*, or *indirect route* (left hemisphere) leading to the language centers, and a *direct lexical route*, leading to centers in the superior temporal regions of the brain, called our "mental dictionary" (Deheane, 2009, pp. 61–68). This upper dorsal pathway is called "direct" because it connects directly the word-form to meaning. Research shows that this pathway is successfully used by expert readers, who can recognize words by sight. However, it is not an efficient route for beginning readers, who fail to develop the

phonics skills necessary to successfully decode new words. A percentage of children who display phonological dyslexia are the strong visual spatial thinkers, König's weeping types, who don't naturally develop the bridge to sounding.

The visual word form area (Deheane's "brain's letterbox") is the starting point for translating symbol to sound. This is a small portion of a center that also enables the recognition of shapes, objects, faces, and even colors. The fine recognition of letters is made possible in this center by a complex adaptation Deheane calls *neuronal recycling* (p. 74). The phenomenon of synesthesia (seeing forms in color), not infrequent in children under the age of eight, proves that the brain needs to undergo a reorganization in order to establish a secure bridge from image to sound (p. 215). This finding is definite proof that Steiner's idea of teaching each letter sound through a pictorial image greatly facilitates the building of both pathways.

The lexical route is essential for developing fluency. When this connection is less active, we see the second most common type of reading difficulty, designated as *surface dyslexia*. This difficulty may be affecting 20% of struggling children who don't succeed in becoming fluent comprehending readers. These are analytical readers, König's "laughing" types, often girls, whose difficulty easily goes undetected. The term *surface* may have to do with the fact that these children can be very diligent in applying decoding rules, stumbling mostly on irregular words. They may, with practice, become fluent readers. Their weakness is a lack of synthetic forces, manifesting as slowness in decoding words that don't follow the rules, and a lack of intuition in using context clues when reading passages, which goes with weak inner picturing, lack of fluency, and spotty comprehension. König places in this category shortsighted children and those with a squint.

The dual code model of reading has become popularized as right or left hemispheric dominance, developing the notion that people can be securely classified as right- or left-brained. In reality, the interaction between the two hemispheres is much more complex, as shown by Iain McGilchrist in his extensive review of neuroscientific findings in his book, *The Master and His Emissary* (2009). McGilchrist characterizes the difference between the two hemispheres as different approaches to the world: one, the left, more conceptual, strongly dependent on verbal language; the other, the right, more perceptual, associative, favoring visual and spatial representations. Based on this description, we can think of the left/right brain polarity as tendencies which are bound to come into a unique and different balance in each individual.

It is widely recognized that the connecting bridge between the two hemispheres, the corpus callosum, is not fully developed until school age, which is when we detect a transition to left brain processes of sequential analysis. From this, we could deduce that children with phonological dyslexia, who struggle to make a bridge to left brain processes, may be somewhat younger developmentally, appearing to resist accessing the conceptual realm. Conversely, children who show a lack of intuition for contextual clues and slowness in recognizing unusual orthographic patterns appear to struggle to make a bridge, at the brain level, between the language centers in the left hemisphere and the mental dictionary center in the right hemisphere.

Hidden Gifts and Special Learners: The Magnocellular Theory of Dyslexia

A movement toward better understanding the "neurodiversity" of reading has been growing exponentially. This movement affirms that the less efficient non-phonological route does not mark a dysfunction, but rather a different wiring of the brain, one that we are coming to associate with people who have a highly creative mind and the gift of making sweeping connections across distant regions of the brain and mind.

Not all people with a reading or spelling difficulty have special creative gifts. However,

according to Brock Eide and Fernette Eide, authors of *The Dyslexic Advantage*, 20% of the population show gifts in realms of thinking they define as "material, narrative, dynamic and interconnected." These are all characteristic of an approach to the world that is more perceptual and less conceptual, more creative and less sequential, more experiential and pictorial (Eide & Eide 2012). Dyslexia, a significant difficulty in learning to read, is one feature of this profile.

The magnocellular theory supports these observations. This model distinguishes between magnocells (large cells) and parvocells (small cells) in the cerebral cortex. The magnocells form pathways across the brain for fast recognition of visual and auditory stimuli. The parvocells support detailed analysis of the same (Nicolson, 2008, pp. 32–33). We could say that there are in the neocortex different pathways for fast synthetic thinking, as might be needed in order to quickly detect a predator coming toward us from a distance, as opposed to analytical pathways, as might be needed to develop a future plan for protection from predators.

Unique studies of the anatomy of dyslexic brains conducted by Geschwind and Galaburda in the late 1970s showed that the brains of bright people with dyslexia lack the kind of asymmetry between left and right hemisphere that is assumed in a normal brain, where the left side is bigger around the language regions. These brains were more symmetrical (Wolf, 2007, pp. 202–204). They also showed microscopic abnormalities (ectopias) in language areas of the cerebral cortex. Ectopias are patterns of scarring that follow neuronal migrations during fetal development. The result of these ectopias is a completely different brain architecture, a different neurological profile, which is especially disorganized in the left temporal region, and yet capable of establishing far-reaching connections between disparate parts of the brain (Deheane, 2009, pp. 243–250). This may be the origin of the gifts of synthetic pictorial thinking that accompany the deficits characteristic of phonological dyslexia. Evidence shows also a genetic component to this profile (p. 254). This theory accounts for difficulties in fine grain analysis of auditory and visual stimuli, which correspond to the two types of dyslexia we discussed, phonological and surface dyslexia.

Experienced Waldorf teachers who have taught one or more of these bright individuals with dyslexia recognize that the Waldorf curriculum honors their gifts of flexible creative thinking. At the same time, they realize that teaching these resistant learners to decode may require a specific approach which is beyond the scope of the class teacher.

The phenomenon described as *disorientation* by author Ron Davis in his book *The Gift of Dyslexia*, can be seen as the effect of magnocellular activity. In Davis's description, the reversals, omissions, and transpositions of letters experienced by some students with serious phonological dyslexia are distortions of perception which the dyslexic brain enacts "at an unconscious level in order to perceive [the letter symbols] multi-dimensionally" (1994, p. 17). The inability to access meaning by sequentially processing letter correspondence to speech sounds pushes the child with dyslexia to disorient in order to find a synthetic path to meaning.

Experienced Waldorf teachers who have taught one or more of these bright individuals with dyslexia recognize that the Waldorf curriculum honors their gifts of flexible, creative thinking. At the same time, they realize that teaching these resistant learners to decode may require a specific approach which is beyond the scope of the class teacher (Carini, p. 63).

The Landscape of Reading and Writing Disorders

Each child with a learning difficulty has unique traits that the teacher or therapist must learn to interpret. König's typology of writing and reading disorders can help us recognize the bridges that must be built so that the child can move across the four lands that make up the landscape of literacy.

In the table on the following page, I have connected each of König's types to recognized syndromes derived from current models of dyslexia (2002, p. 127). For each area, I also include König's suggested avenue for remediation. König clearly did not mean to be exhaustive with his indications; rather, he pointed the way, so teachers could go on to develop, out of their own intuition, the strategies most suitable to the needs of each individual child. In the section on uprightness, I included the puzzling question brought by Frank Vellutino's research on the origin of reversals. Further studies on remediation should address parallels between König's suggestions and methods developed from mainstream research.

Conclusion

The *Dyslexia Survey* showed that, in spite of a growing investment in educational support, a thorough understanding of reading difficulties has been lacking in many Waldorf schools (Carini, p. 64). Two opposing tendencies surfaced through the data: a discounting of the reality and implications of dyslexia and, conversely, an excessive reliance on mainstream programs for remediation. What also surfaced was a strong wish to better articulate a specifically Waldorf approach to these difficulties, to fine-tune screenings and observational assessments, and to think further about what effective strategies for remediation stem directly out of anthroposophy.

In this inquiry, I have attempted to validate Karl König's comprehensive typology of literacy difficulties through the most current research in the neuroscience of reading and dyslexia. Proper detection of these different types should happen primarily through deep observation and child study. It is hoped that more anthroposophic doctors will also take interest in describing these profiles and their possible connection to constitutional polarities. It is important that we keep updating our knowledge of the scientific paradigm and that we evaluate carefully when and how this knowledge is helpful in the Waldorf context.

I advocate that we develop further our strategies for remediation, and that we empower class teachers to keep dyslexic children in the Waldorf classroom where they belong.

I hope to have demonstrated that the two paradigms are not only compatible, but also that the overall Steiner method serves well the struggling child. I hope this description will strengthen the claim for a slower timeline for struggling students in the standard classroom, and for pointed support of the foundational senses across the grade school years, which is already strong in most of our schools. Last but not least, I advocate that we develop further our strategies for remediation, and that we empower class teachers to keep dyslexic children in the Waldorf classroom where they belong.

Area of difficulty	WRITING	READING	SYNDROMES
Uprightness	Laterality disturbances having to do with (1) the horizontal plane (above-below), or (2) the sagittal plane (left-right) **Rod & balance exercises; above-below and left-right mirror form drawing*	Laterality disturbances having to do with the sagittal plane (left-right) *Left-right mirror form drawing* [An open question: Laterality disturbances causing reversals, omissions and transpositions may have their origin in the pole of attentiveness]	For writing: difficulty with spatial orientation and balance causes poor letter formation, crowding and spacing issues (**Dysgraphia**) For reading: Difficulty with **analytical sequential processing** may originate at the magnocellular level, causing the phenomenon of "disorientation" (Davis)
Attentiveness	[See below. Attentiveness affects writing indirectly through overall memory weakness and weak sequential processing of memory pictures.]	There are difficulties with attention whereby fluency is weak. *Exercise fine-motor skills, eye-hand coordination and walking & speaking*	For reading: Difficulty with **automatization** (Specific Procedural Learning Difficulty, SPLD)
Realm of the Heard and Spoken Word	The analytical forces are weak. The child cannot translate into words what he wants to communicate on paper. This points to a difficulty with the sequential processing of memory pictures. *Exercise mental imaging involving sequences ('How many steps will it take to cross the yard?')*	The bridge from seeing to sounding is not built due to a lack of analytical powers. The letters never become familiar enough to translate symbol to sound. *Sing the text* [or read texts with strong prosody including poetry]	For writing: **Oral & Written Language Disorder** (OWL LD), difficulty with listening comprehension For reading: **Phonological Dyslexia**, difficulty with phonetic patterns, especially with new words and with non-words
Realm of the Seen Word	Difficulties in establishing memory of letter symbols as well as symbol sound connections *Singing the text to be read*	The child cannot synthesize the word out of its several component letters and gather their meaning. *Enliven fantasy, preview in pictures before reading*	For writing: **Oral & Written Language Disorde**r (OWL LD), difficulty with memory and mental imaging For reading: **Surface Dyslexia**, difficulty with irregular words, with context clues and, in general, with synthesizing meaning

*Konig's scant indications for remediation shown in italic

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Developmental Challenges, Opportunities, and Gifts for Children Coming into the World Today*

Adam Blanning

A question that often comes up in therapeutic circles is, "Are the children coming into the world today different from the children of previous generations?" The answer is undoubtedly yes. Many teachers and doctors have observed that things are changing. The reasons for those changes are less certain, however, as they come from many different sides. It is clear, however, that there are an increasing number of incarnation challenges that make it more difficult to properly meet the physical body and then to come into healthy connection with the world around it.

A related comment, or concern, is that many of the steps of development that seemed to unfold more naturally, more instinctively, in the past do not seem to unfold in the same way now. Many of today's children seem like a puzzle, needing extra attention and support. This means that we are being asked to look with new eyes. We are being asked to understand what underlies the most fundamental capacities of our humanity. Such knowledge informs the way we can nourish the life of all children. When anthroposophic medicine and Waldorf education were first being developed, there was perhaps a clearer distinction between the developmental supports needed for general education (pedagogy) and those needed for individualized (therapeutic) support. That distinction is blurred in many classrooms today.

The increasing prevalence of autism spectrum disorders is one expression of the challenges children meet in claiming and inhabiting the hereditary body. As a society, we have become quite aware of how the unfolding of higher social and moral capacities is hampered for these children. By learning about the different constitutions, we come to recognize that the ability to fully meet and sense another human being depends on how at home we are in the body. In the language of the polarities, the process of connection (through the nerve–sense system) builds upon a healthy process of integration (which builds the metabolic–limb system). So it is not unexpected to see, for example, that the formal diagnostic criteria for autism fall into categories of both challenged perceiving and reciprocating with the outside world and patterns of body-directed, self-stimulating behaviors. These closely mirror the outwardly-directed and inwardly-directed sensing pathways that make up the circle of the twelve senses.

If we look, we can see how the developmental gestures of the polarities relate to autistic behaviors. It is necessary to look from several sides, because it is hard to identify one single pole or even one single polarity as being the main challenge in autistic behaviors. Nonetheless, we can find clues that give us very practical therapeutic orientation.

The diagnostic criteria begin by introducing the outer, more social expressions of autism (in italics), with additional commentary that relates to the constitutional polarities following:

A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive):

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1. *Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.*[1]

These criteria show a spectrum of connection or, perhaps better said, lack of connection. We can think of this by asking, "How far out into the outer world can the child reach to sense the other?" Clearly part of the pathway through the outwardly-directed senses is being blunted. The path from vision, to warmth, to hearing, to word, to thought, to sense of "I" is not easily traveled. We can gain insight by following this progression and asking, "Where is a step skipped, or where does the sensing stop?"

Generally, for children with autistic behaviors, the sense of vision is intact, but the next step, the sensing of warmth, may be underdeveloped. Bringing warmth into an interaction or responding to another person's warmth (social, emotional, or spiritual) may not routinely enter into social exchange. So we should look to see how the sense of warmth is present in any autistic behavior.

We can gain… insight by asking, "Where is a step skipped, or where does the sensing stop?"

Next in the pathway comes hearing, and as we move further along, we may see another disruption, for although children with autistic behaviors may well be able to hear that another person is speaking (the hearing sense) and even understand the words (the word sense), they may not be able to reach further on to the ideas behind the words (the thought sense) or the nuances of experience and interpretation behind the thoughts (the "I" sense). Because sensing stops, communication is hampered. There is no easy flow through the higher senses, with the result that communication is sometimes puzzlingly concrete. To the child with an autistic experience, a word means a certain thing; interpretation is very literal, because sensing may stop with the word sense. Similarly, when information is shared by the child, it commonly comes without inflection or nuance. The more individual aspects of "thought" and "I" do not necessarily enter in, because they are not experienced. This necessarily affects the possibility for "normal back-and-forth conversation" and results in "reduced sharing" and even a full "failure to initiate or respond to social interactions." These children can really engage only with what they experience. They do not respond in the usual way because there are parts of the encounter that are not felt.

2. *Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.*[2]

Here, again, there is a spectrum of connection—how much is felt? Now the sensing process depends not just on our sensing through the outer senses but also on how an outer perception resonates within our own bodies. Children's understanding of facial expression, body language, and gesture depends on the health of their own inner sense of movement, balance, and even the life sense. People know that a sad expression is sad because one imitatively reflects the other person's muscle movements (even if it is not outwardly visible), which then resonate into a child's own feeling life. If children have trouble sensing their own body, have trouble connecting their feeling life with their own physical movements and activities, then the ability to sense into the physical expression of another person will also be compromised. These challenges—though they express themselves as limited outer social interaction—are really grounded in an incomplete development of the lower senses. This second set

of sensing activities, grounded in a sensing of self, remains opaque.

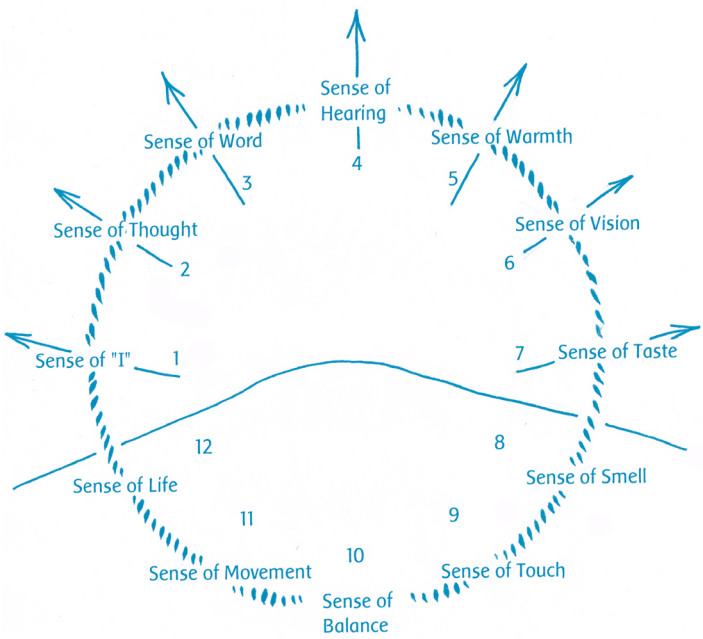
3. *Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.*[3]

These behaviors can be subtler and may be the only perceptible sensing imbalance with children who have Asperger's syndrome. This social challenge may relate not so much to a specific sense (like the sense of movement or the sense of thought) as to the whole physiology of the limbs.

We must work to stretch past the middle senses. This is emerging more and more as an urgent therapeutic, moral task.

Let us consider the capacity for social connection in yet another way. We are living in a world that overstimulates and prioritizes several of the middle senses—particularly smell, taste, and vision. Those sensory windows are bombarded continually, so that we are pulled to their activity over and over. Such a narrowed overemphasis distracts children from their inner sensing pathway and the development of the lower senses. It blunts their ability to self-soothe in very real ways (i.e., repeatedly offering a screen to a restless or bored child). This overemphasis on the middle senses also pulls attention away from the social / moral interaction that allows us to perceive beyond ourselves (as when a family is sitting at a table in a restaurant, all gazing independently at their smartphones). It is no wonder, then, that our ability to sense other human beings has stiffened and narrowed. We are all, as part of a modern, technological society, less practiced in using all twelve of our senses. That change is pervasive. We should consider the possibility that autism spectrum disorders represent an accentuation of this process to the point of an illness, a karmic challenge to stimulate us to learn and remember what it means to truly perceive the other. We must work to stretch past the middle senses. This is emerging more and more as an urgent therapeutic, moral task.

The next set of diagnostic criteria relates to the ways children anchor themselves in their bodies. These patterns can give us very helpful clues about how to meet them therapeutically. While they are listed as "disorders," as part of a diagnosis, these patterns are more truthfully part of the innate wisdom that lives inside these children—they are sensory-seeking and orientation-seeking behaviors. When outer experiences or interactions are too difficult to navigate, returning to familiar patterns of self-stimulation helps a child feel safer and more grounded.



Inwardly- and outwardly-directed senses[4]

B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive):

1. *Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypes, lining up toys or flipping objects, echolalia, idiosyncratic phrases).*[5]

Stereotyped or repetitive motor movements fall very much into the realm of anchoring through the lower senses. Hand flapping, rocking, or bouncing can be effective measures for following the inward pathway to the life sense, and if a child feels better inwardly, then outer experiences of disorientation are not so distressing. Even the examples of repetitive speech—"echolalia" (the repeating or parroting back of another's speech) or "idiosyncratic phrases" (repeating a stock phrase or set of words, which are often not in context)—are much more about inner anchoring and self-stimulation than an attempt to outwardly communicate. Many of the therapeutic indications for imbalanced movement (feeble / maniacal) and for strengthening the lower senses can be very helpful in these contexts.

2. *Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food every day).*[6]

"Extreme distress at small changes" and consistent retreat to familiar patterns have been discussed as aspects of the hysteric constitution. Many children with autistic behaviors exhibit distinct pockets of soul-soreness, which are compounded by the challenge of not being able to rely on some of the usual sensing pathways (as discussed earlier). Some sense activities may be heightened to help compensate for others that are numbed. This is a little bit like the vulnerability that comes from being in complete darkness (unable to use the vision sense) and being surprised by an unexpected loud noise (a de facto hypersensitive). Steiner's therapeutic indications for bringing the astral body back into a more balanced relationship with the physical and etheric bodies are very helpful, especially the indications for consciously helping children to know that you are feeling with them and understanding their experience, that you help guide their hand (as with a paintbrush). Subtle "shocks," in the form of humor or distraction, can also help to ease some of this "insistence on sameness."

3. *Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or repetitive interests).*[7]

These repetitive patterns can be part of a retreat to safe or known objects. Or they can speak to a rigidity of the body that extends into the soul life. Or they may be part of a repeated attempt to more fully penetrate the physical and etheric bodies, either via a more feeble pattern (repetitive gross motor) or an epileptic pushing through (working to connect over and over again with an outer element). It is good to look to see whether the perseverative pattern is more an expression of retreat (hysteric) or an attempt—however limited in its focus—to connect, connect, connect to what is outside (epileptic). Both this pulling back and pushing out can be seen.

4. *Hyper- or hyporeactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., apparent indifference to pain / temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).*[8]

These behaviors speak to the fact that for an autistic child, constitution may need to be considered in pieces, that is, that it is very possible for a child to have an epileptic pattern with one sense (needing to smell over and over or touch and rub over and over) combined with a more hysteric pattern related to another sense

activity (tremendous fear of loud or unexpected noise). The relationships of body and spirit are more complicated on this incarnation pathway, as the higher members may flow too far past the physical and etheric in one area yet be held back so strongly as to be nearly numbed in another. Therapeutic support, looking through the epileptic and hysteric lens, may need to be differentiated for specific sensory organs or sensory pathways.

The diagnostic criteria make clear that there can be a broad diversity of incarnation challenges in autism, but we can help the child find footholds through thoughtful observation and individualized therapeutic support.

An additional and sometimes challenging aspect of working with autism spectrum imbalances is that we may see incomplete development on both sides of a polarity, that is, that a child may have sluggish, heavy movement that alternates with quick, unpenetrated, and unguided movement. We may come to the conclusion that a child's body is both heavy from a dominant hereditary stream and unpenetrated because the "I" and astral body are only superficially engaged. In this way the child is both earthly and cosmic. This is an unusual situation, for most children truly do fall on one side or the other of the constitutional polarities, but when there are greater incarnation challenges, both sides of a child's physiology may need to be sculpted and guided.

We can see a similar paradoxical pattern with the other polarities as well, that a child with autism will sometimes show patterns of being both large-headed (challenged to really liberate forces away from the body in order to sense the outside world) and small-headed (challenged to fully meet and transform digestive substance taken into the body). Finding this constitutional duality in the sensing realm was just discussed (hyper- and hyposensitivity). Epileptic patterns (a thick-skinned numbness) and hysteric reactions (a true soul-soreness) may present in different sensory realms—like being numbed to self-movement but hypersensitive to sound—or both patterns may appear in the same sense organ, with a varying activity of the higher members flowing through (to be either thick-skinned or thin-skinned, depending on the specific stimulus and on the specific day).

Given all of these variations, it can be hard to know where to start. Here are a few observations that can help prioritize and organize therapeutic support. First, if we are faced with imbalances on both sides of a single polarity (say, both feeble and maniacal movement patterns), it is usually better to start with the more body-oriented side of the polarity—that is, start by making the density of the physical body more accessible and more comfortable. Then, once we have worked to warm and stir the body, we can invite the higher members in—loosening, then inviting, warming, then inviting, and so on. It does not work as well to ask the higher members to overcome their superficial engagement when the body is still hard to enter.

Many children with autism benefit from foundational digestive support. This …follows the archetypal patterning of childhood, that out of metabolic health and ripeness, thought and sensing activities emerge.

Similarly, if a child exhibits both a metabolic–limb system that is out of order (a small-headed tendency) and a nerve–sense system that is out of order (large-headed), we should work to strengthen digestion first. Many children with autism benefit from foundational digestive support. This should not seem unusual because it follows the archetypal patterning of childhood, that out of metabolic health and ripeness, thought and sensing activities emerge.

Within the epileptic-hysteric polarity, protecting hypersensitivity is often the best place to start. This does not mean that the

child should be buffered to a place of constant retreat or isolation—no, there does need to be encounter. Firm, steady touch can feel very good for hysteric sensing too; it just needs to start from an experience of safety and security and create opportunities for the child to initiate contact.

If support with anthroposophic medicines is being given, and there are imbalances on both sides of a polarity, supporting the rhythmic system can be very helpful. (We can think of medicines such as Cardiodoron, Aurum, even Belladonna). Specifically supporting the middle can be helpful with other therapeutic modalities as well, such as eurythmy therapy, music therapy, and so forth.

Another important consideration is to respect the biographical age of the child, which may not necessarily be the same as the developmental age. In the first seven years, strengthening the integration process of the metabolism should be the priority for an autistic child. From seven to fourteen years, give special attention to the rhythmic realm, to the feeling life, and to how etheric forces are being liberated. From ages fourteen to twenty-one, work to foster deeper, fuller sensing connection with the outside world. Supporting the appropriate developmental process for a particular age speaks to the soul and spiritual development of the child. This is still coursing forward, even if the soul and spirit are not able to fully shine through the physical and etheric bodies.

All of these suggestions should, naturally, be considered with flexibility. When we really look with sincere interest and devotion, answers are often whispered to us. If we are still totally without orientation, we can remember to look at the child's own (perhaps troubling) behaviors and ask what they are trying to accomplish. What experience are these children seeking, trying to create for themselves? They are being guided through an archetypal wisdom. We are, in fact, only humble partners in a seen and unseen developmental orchestration.

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As a closing thought, we look at the gifts of the different constitutions. Most of our considerations have been devoted to understanding the challenges of leaning too far to one side or the other, but one should indeed ask what is gained by working through a process that does not archetypally unfold. The answer—gifts of greater consciousness and experience, which arise out of the will activity that is part of any constitutional rebalancing.

Children preparing for birth gather the substance of their astral body in relation to the knowledge they already carry (like iron filings responding to a passing magnet). How well the heart, sense of balance, or eye is formed depends on how deeply the activity of those organs has been known. When a hereditary body is chosen that does not have a healthy liver, it might be because the liver process has not yet been met in full consciousness. Constitutional imbalances ask us repeatedly to meet a specific part of our physiology. When that imbalance can be worked with and transformed, riches come. The fruits may not be immediately visible; they may not be evident for many years—or with a really significant imbalance, perhaps not even until a future incarnation—but they do come.

We can be reassured that there are indeed gifts associated with each constitution if we remember that a meditative activity has been presented in concert with each of the three major polarities. This points to the fact that there is indeed a relationship between the developmental work of coming into the body and higher spiritual or moral capacities.

What kinds of gifts are related to constitution? They come from two different sides. The first aspect is not hard to recognize, in that we are naturally good at doing what comes naturally, that is, when one aspect of our

physiology naturally tends to lean to one side, we feel comfortable with it, and we know well how to live there. Such one-sidedness can be a challenge, but it can also act as a virtue. In other words, if one naturally connects to details (a small-headed inclination), then there will be lots of situations where that ability to analyze will be very helpful. Loving and living in details is then a great boon. Such innate gifts are granted to us as part of our constitutional tendencies—we receive them as part of our entry into life.

The secondary category of gifts is perhaps not quite so obvious and certainly not as easily won. They come out of the work we do with our own one-sidedness when we consciously strive to move past an inclination and to balance it. It might be very easy for a feeble child to sit all day and look at a well, to stay in the heaviness of the physical body, but for a maniacal child to learn to gaze in reverence—that has special potency. Children with a maniacal inclination have had to embrace their superficiality and move beyond it. We do not just happen into that activity—we help found it; we are a conscious participant in its creation. There is a will element involved, which lends a particularly moral quality to the new capacity.

The exact gifts revealed are, of course, as manifold as the individual variations of constitution. Here are some of the "fruits" that have been observed:

A love of work, optimism for what can become: Children who have really worked through the earthly / feeble constitution have strengthened their own capacity for initiating and sustaining activity. The practice of stirring and loosening the physical body, over and over again, brings knowledge about how the earthly realm can be worked with in order to make it a good home for the spirit. Steadfastness, a love of real work and labor—those are some of the fruits of having wrestled repeatedly with the density and heaviness of the earthly body. The child has learned how stiff or unwieldy physicality can, in fact, be refined and transformed. Sculptors and builders, architects and engineers, gardeners and farmers all benefit from carrying this kind of special relationship to the earthly element. This gift also expresses itself as optimism, especially about what is possible and what can still come into being.

> [T]here is indeed a relationship between the developmental work of coming into the body and higher spiritual or moral capacities.

A broad, impartial, but dedicated gaze: The child with a cosmic / maniacal constitution carries a certain natural freedom from earthly worries, a capacity for objectivity, and a skill for abstraction (as there is no burden of excessive sentimentality). Those qualities are innate, even as they are part of a certain superficiality. If that inherent tendency has really been worked with and transformed, inquisitiveness and a new reverence emerge—something along the lines of "I never realized how many different kinds of leaves there are in the world, until I started looking more closely." Learning to observe in this way brings powers of observation that are still flexible, not too enmeshed, yet quite astute. When this capacity for gazing with reverence ripens, many different ideas, topics, and interests can be pursued and investigated over the course of a lifetime. This could express itself in a love of invention, of inquiry into constitutional law, of anthropology or botany—all activities where a broad gaze needs to be combined with the power to penetrate very specific topics or activities and impartiality with a real reverence for ideas become manifest.

Making archetypes practical and perceptible: The child with a large-headed constitution often carries a kind of emotional and social shielding from life and stays a little innocent. Awareness emerges more slowly, as it is first preceded by metabolic maturation. This

means that there has been a stepwise, growing capacity to fully digest whatever is taken in, be it nutritional, social, or sensory. Inner preparation comes before outer activity. This is innate. When a child then learns to move past the amalgamation of large-headed thought (lumping it all into one) and instead finds connection to the details of the surrounding world, then a capacity emerges to make larger truths and archetypes approachable. The beauty or artistry of the whole is held, even as the details are being dealt with. A symphony conductor, grassroots organizer, novelist, or graphic designer all benefit from living in these larger realms of harmony, idealism, narration, and proportion, while making sure the practical aspects are not neglected.

> We learn to observe, to know the patterns and pathways of growth and development, and then take a step to help someone who is struggling.

Seeing nuance, with a potent sense for quality: The child with a small-headed constitution, who from early on has experienced an acute awareness of the world, is often very aware of the effect of outside influences on the body. This can be in the realm of substance, of food, of drink, of tone, or of form. When that sensing process evolves beyond distraction or brooding awareness, it can become a discerning sense for quality. Nuance, variation, freshness, and wholesomeness are evident and accessible. Most of the world's great chefs were probably not (large-headed) children who grew up content to eat anything. No, they knew right away what was good and what was not. Orienting toward the details of things but moving beyond that to a place of relation and comparison can make someone a wonderfully practical connoisseur. These are very healthy traits for an editor, a weaver, an accountant, a wine taster, or even an Olympic judge.

Perseverance, pushing to find new skill and capacity: The child with an epileptic constitution has had to push and push from the inside in order to meet the outside. The physical and etheric bodies have not fit like a glove; they are not a natural vessel. Connecting to the outer world is always a task. This brings a certain sheltering for the child, since with thick-skinned sensing often only the strongest stimuli are felt. That can make one better able to bear physical hardship. The repeated practice of working to push into and through the substance of the body literally strengthens the process for resculpting the physical and etheric. In this way, the body can be pushed to do what might not usually be tolerated. Battling with an epileptic constitution brings a strong drive to make the body a more fitting vessel for the spirit and to connect that spirit with the outside world and its elements. Many great athletes, warriors, and explorers show this capacity. They carry this kind of conquering spirit. An additional quality of the epileptic constitution is that while outer connection is not easy, when it is made, it is often genuine and forthright.

Finely-tuned encounters with tremendous receptivity: The child with a hysteric constitution has always felt far out into the world, easily beyond the borders of the physical body. Outer mood and expectation have never been a mystery; in fact, the outer environment has been so well known that it often determines the state of the child's inner world. Knowing one's place in the world therefore comes quickly and naturally, as does swiftly perceiving one's influence on the surroundings. While this can make for vulnerability, it can also evolve into a gift for connection and communication. Sympathy is strong—an actor on the stage greatly benefits from noting and responding to the inflection of another performer while being able to simultaneously perceive the mood and attention of the audience. The artistry of encounter, whether through a finely tuned

performance, a counseling session, a debate, or a nuanced negotiation, benefits from such strong sensing. Being able to feel and anticipate the other's reaction stands out as an important part of the process. Such receptivity makes for quick assessment and adjustment in all forms of interaction.

Each of these deeper gifts grows out of a process of self-knowledge. There are several archetypal steps.

- First comes the step of recognizing one's own inclination or a pattern. This can be great surprise, because up until now it was just natural—innate.
- Next, gather information about it. This allows us to step back from it a little, in order to begin to see it more objectively (perhaps even to begin to see it as an archetype or at least a pattern).
- Then we can take the additional step of actively engaging with that pattern in order to transform it or refine it. This third step is a will activity.

It is also what Steiner described as an essential aspect of personal development and which he related to the consciousness soul. Steiner characterized this modern phase of history we are in right now as the time of the consciousness soul, where we—as a whole social cohort of human beings—are being asked to move beyond mere sensing (which belongs to the "sentient," or sensing, soul) and beyond characterizing (which belongs to the "intellectual" or "mind" soul). We are being challenged—socially, emotionally, physiologically, morally—to recognize what belongs to our full humanity and then act in ways to claim and nurture those aspects. This third step is an important part of any illness and healing process, for we are generally not adequately aware of the importance of something until it falls far out of balance. When we then work to reclaim something, it becomes more truly ours than it ever was before, and we own it in a different way.

We learn to know things better through imbalance. One response to this is distress, to lament the loss of more instinctive, less complicated pathways into life. Indeed, when we focus on the immediate consequences of those challenges, there is reason to mourn, but if we can see the broader process and appreciate that something is also being learned, we find courage. By working through a process over and over—experiencing what it truly means to move, to feel, to sense, to connect—we know ourselves better.

The same process stands behind therapeutic work with children. We learn to observe, to know the patterns and pathways of growth and development, and then take a step to help someone who is struggling. Steiner brought a lovely imagination for this process with the image of a white rose:

> What is the difference among the sentient soul, intellectual (mind) soul, and consciousness soul? The sentient soul operates when we are merely gazing at the things of the external world. If we withdraw our attention for a while from the impressions of this outer world and work over them inwardly, then we are given over to the mind soul. But if we now take what has been worked over in thought, turn again to the outer world, and relate ourselves to it by passing over to deeds, then we are given over to the consciousness soul. For example, as long as I am simply looking at these flowers in front of me and my feelings are moved by the pure whiteness of the rose, I am given up to my sentient soul. If, however, I avert my gaze and no longer see the flowers but only think about

We are being challenged—socially, emotionally, physiologically, morally—to recognize what belongs to our full humanity and then act in ways to claim and nurture those aspects.

> them, then I am given over to my intellectual (mind) soul. In thought, I am working on the impressions I have received. If I say to myself now that—because the flowers have given me pleasure, I will gladden someone else by presenting them to that person and then pick them up to hand them over—I am performing a deed. I am passing from the realm of the mind soul into that of the consciousness soul and relating myself again to the outer world. Here is a third force that operates in human beings and enables us not only to work over the impressions of the outer world in thought, but also to relate ourselves to that world again.[9]

From this process we can see how working with the constitutional polarities contributes—one small step at a time, however humbly—toward the process of finding our true humanity. This is true when we work to help children find more balanced relationships with their bodies and with the world around them and when we look toward the future fruits that will come out of their growth and experience and to the greater knowledge we all carry forward as fruits of our communal striving and spiritual work.

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ENDNOTES

1 "Diagnostic Criteria for Autism Spectrum Disorder," Centers for Disease Control and Prevention, https://www.cdc.gov/ncbddd/autism/hcp-dsm.html, accessed Oct. 29, 2016.
2 "Diagnostic Criteria," CDC.
3 "Diagnostic Criteria," CDC.
4 Adapted from Rudolf Steiner's blackboard drawing, Aug. 8, 1920, in *Spiritual Science as a Foundation for Social Forms* (New York: Anthroposophic Press, 1986).
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A Case for Waldorf Education

Robert C. Oelhaf

The case for Waldorf education is clear for anyone familiar with pedagogical and physiological research of the last few decades. Although Waldorf schools have been working and teaching in much the same manner as the original school established by Rudolf Steiner in Stuttgart in 1919 (see Stockmeyer & Craddock, 2009), only recently has independent research confirmed the soundness of Steiner's pedagogy. Furthermore, international comparisons of test results for high school students have also produced support for the salient Waldorf school program elements. This kind of support is especially relevant to parents who often have questions about a school system which is in many ways different from the conventional, even though students are usually quite happy attending Waldorf schools. The present report seeks to summarize the relevant research results.

Building Brain Cells

As children grow, their brains grow along with the rest of their bodies. A larger brain capacity offers larger opportunities for registering and processing information. Research has shown that there are five ways to increase brain cell numbers (Begley, 1996; Hancock, 1996; see also Chugani, 2011). These are: music, art, handwork, movement, and personal connections to adults. All of these ways are strongly represented in Waldorf education.

Music. We all know that Albert Einstein played the violin. Whether this influenced his intelligence is anyone's guess. However, several research projects have shown the positive influence of musical experience on learning. Musical training stimulates brain development (First Evidence, 2006; Kingsbury, Overy & Woo, 2005). And comparison studies in schools have demonstrated that students who had music classes did better on math than those who did not, *even if the music classes replaced some of the math classes*. Students taking music classes also scored better in foreign languages and were noticeably more socially conscious (Stokes, 2002; Uhlig, 1999).

Music plays a significant role in Waldorf schools from grade one through high school. All students learn to play recorder in first grade and are encouraged to take up an orchestral instrument in third grade. Students in neighboring classes play together in orchestras. Vocal music is also introduced already in first grade, with the complexity of choral and solo material increasing by age level. By high school, students are often presenting musical dramas, from Mozart's *The Magic Flute* or Handel's *Messiah* to modern musicals. Monthly or bi-monthly assemblies for parents give students opportunities to perform for parents and peers. There may also be evening recitals.

Art. Specific pedagogical studies have verified the positive relationship between art and academic achievement (Gardiner et al., 1996).

In Waldorf schools there is a strong presence of the visual arts: painting, drawing, sculpture. Already in first grade, students are introduced to watercolors used in both abstract and representational art. Crayons and colored pencils are also used by students to construct their own Main Lesson books, in which they depict and describe the main stories or concepts of the content of the Main Lessons. An artistic approach to all subjects, including mathematics, helps to connect the more intellectual students with feeling life. Sculpture is also part of the curriculum, culminating in stone carving in 12th grade.

Handwork. Fine motor movements are now recognized as contributing to intelligence and success in school (Gardiner et al., 1996; Auer, 2001).

In Waldorf schools, handwork begins in first grade and continues through high school, with ever more challenging projects. First graders knit recorder cases for their first musical instruments. Later they advance to weaving, and they also learn to make yarn from raw wool and then design and make their own clothing. There is also handwork in other media, including wood and metal. As children grow, projects become more complex and demanding. As eighth graders and later in the 12th grade, students carry out independent projects that range from clothing, jewelry, or musical instruments to electronic equipment.

Fine motor movements are now recognized as contributing to intelligence and success in school.

Movement. Aside from boxing and football, sports generally have a good reputation as far as intelligence goes. After all, sports require focus and strategic thinking as well as skill (Zauer, 2010). Waldorf schools have always included eurythmy and gymnastics. Sports are played in the Waldorf upper grades, though generally those with potential head injuries are not encouraged.

Movement is an important part of Waldorf school method and curriculum. In the early grades, students stamp or clap out their times tables as they march around the classroom. (This exercise is especially important for young boys, who much enjoy making noise and stamping around to please the teacher rather than irritating her or him, which is too often the case in conventional schools.) Eurythmy, a mode of physical movement in which gestures are matched with speaking, musical sounds, and feelings, is taught from the first grade, with more complex movements and coordination introduced as the students progress. Next to some of the regular sports, gymnastics is also learned to foster a sense for orientation in space. Dramatic productions and recitation begin already in first grade and increase in complexity, culminating in the lower school with a Shakespearean production in the eighth grade and a more complex modern drama or musical in 12th grade.

Personal connections to adults (see Richtel, 2011). This is one area where Waldorf schools stand out dramatically from the trend in public and other private schools, where teachers and books are increasingly being replaced by computers.

The lower school class teacher, who normally carries a class from first through eighth grade, comes to know personally each child, as well as the family, through class meetings, parent conferences and home visits. Teachers are expected to keep each child in mind as they prepare their lessons. They are also sensitive to the developmental stage of each individual student, recognizing those who are able to push ahead to advanced work, and giving special attention to those needing more time and attention. Each student can be recognized for his or her positive contribution to the class. Through class projects, plays, outings, and camping trips, teachers and children get to know each other personally. A deep and abiding sense of respect and care between child and teacher is the ideal. The respect with which children in the early grades respond to the deep care they receive from their class teacher is transferred in the upper grades to a respect for great men and women in science, history, literature, and so forth.

Waldorf schools generally do introduce computers and calculators in the upper school, as useful tools. As with other modern technology, Waldorf schools are more interested in the inner workings of a machine, its historical development, appropriate use, and effect on modern society. However, all students learn the times table and how to do long multiplication and division, learning to trust themselves prior to trusting the machine.

Readiness

A brilliant economist, Knut Wicksell (1851–1926) developed Keynsian economics prior to or parallel to John Maynard Keynes, but received at the time little international recognition given that he published his work in his native Swedish. Today, Wicksell is recognized as the one who brought Sweden out of the Great Depression long before any other nation began its own recovery. Wicksell did not wish his sons to be subject to the state school system, so he sent them to live on a farm in the countryside until it was time for them to attend high school. Still, one son became a mathematician and the other a medical doctor.

With a sensitivity to learning readiness, Waldorf schools do not try to push children forward before they have reached the appropriate developmental stage, when learning is more efficient and also more fun and rewarding. Furthermore, the top results on the Programme for International Student Assessment, or PISA, tests come from countries where schooling begins late, not until age six or seven, and education proceeds through games and stories, much like in Waldorf kindergartens (Crehan, 2016).

As in the highest scoring countries, Waldorf schools also generally do not divide students by ability, although upper level high school math classes are often split between calculus and consumer or business math. Tracking students condemns the slow starters or late bloomers to perpetual second class status.

Handwriting

While many schools today view handwriting as no longer important in the contemporary keyboard world, Waldorf schools teach all children print and cursive writing, and all expect written work to be handwritten, at least through eighth grade, if not through 12th. While this may appear old-fashioned, recent research has demonstrated that handwriting activates the brain in ways that typing does not. Even at the university level, writing notes in class by hand results in better understanding and retention of material than when a laptop is used (Klass, 2016).

Foreign Languages: The Early Language Window

Children find it especially easy to assimilate a foreign language during the first seven years of life. Around age seven, the language window begins to close, but children are still able to learn fairly easily throughout the lower school years (Hancock, 1996; Kluger, 2013). Beyond their obvious advantage of the ability to communicate in other languages, people who become fluent in more than one language have been shown to have definite learning advantages over those who are monolingual. Bilingual brains are more efficient, apparently because they can automatically switch between languages, or "task switch," making this act easier in other mental domains. Being multilingual also proves to be cognitively beneficial later in life, as older multilingual people appear to have a slower rate of mental deterioration as they age and have on average a four-year advantage over monolinguals in terms of mental clarity before age-related brain deterioration sets in (Kluger, 2013).

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The language-learning window is recognized and made use of by Waldorf schools, teaching foreign languages from grade one. (A relatively recent experiment at Utah's public school system has begun introducing foreign language study in first grade in a growing program that expands to several more school districts every year [Kluger, 2013].)

Generally, two foreign languages are introduced in Waldorf schools in first grade. The

introduction of the new languages is first done through simple songs and poems, to develop a feel for the languages' sounds and rhythms. Later, vocabulary, grammar, conversation, literature, and culture are introduced as appropriate. In high school, through the worldwide network of hundreds of Waldorf schools, students may arrange to attend schools in other countries or participate in an exchange with a student in a sister school, for example, in Germany, Spain, France, or Colombia. It is not uncommon for students from abroad to appear as regular students in Waldorf schools.

Ability to Focus

More than the assimilation of facts or the ability to pass tests, success in life requires focus (Tough, 2012). Waldorf schools instill this ability through the Main Lesson system and through de-emphasizing testing and the rote memorization of facts.

Each morning the school day starts with a Main Lesson. This is a double period (or longer), in which one subject is the main focus for three or four weeks, for example, English, mathematics, physics, geography. The longer time-slot and daily instruction give the teacher opportunity to develop a topic thoroughly. Students write reports, often carry out individual or class projects, and complete their own Main Lesson books, which generally include daily essays and drawings or pictures illustrating the course material. There may be a written review (test) at the end of a block of study, but student participation and the written record are at least as important. In the elementary school, teachers submit written evaluations rather than grades. In the high school, written personal evaluations of each student in each class continue, together with a letter grade, which generally include all aspects of the course, not just test results.

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Computers and Technology

Waldorf schools introduce high school students to the major areas of modern technology through the science and mathematics classes. In addition, many schools also have separate technology blocks, factory visits, and opportunities to spend several weeks working and learning in a modern industrial setting. To use technical equipment without any idea how it works is a kind of "dumbing down," a loss in our confidence to understand and control our environment.

The use of personal computing technology—calculators, computers, laptops—is strongly discouraged in the lower school. In the high school, these are made use of as appropriate, namely, as tools to enable efficient complex analysis. In a 1984 computer workshop for Waldorf teachers, Joseph Weizenbaum, computer science pioneer at MIT, stated that computers are to be avoided prior to high school, and when introduced, they should be specifically presented as tools. The best preparation for university computer study is the liberal arts: art, music, language, history, and so forth. Learning to view modern technology as tools which humans control helps avoid the tendency to leave the human element out, to fall victim to the "tyranny of convenience," in which all decisions are turned over to a computer and the human is then "out of the loop" (Wu, 2018).

Learning and Forgetting

Over a hundred years ago the German psychologist, Hermann Ebbinghaus, discovered that when people relearn something, they penetrate to a deeper level of understanding. In Waldorf schools, we return to a subject after a year's break to relearn and penetrate to a deeper level. This is the Main Lesson block schedule, with subjects coming once a year for an intensive three to four weeks—for example, high school physics, chemistry, biology—instead of a whole year of memorizing and forgetting (Boser, 2017).

Artistic Teaching

Deep learning takes place through emotional or artistic connections, awakening the feelings (Foer, 2011). Certainly we remember best if the material is connected to our feelings. Waldorf teachers design their classrooms and their lessons with this in mind.

The classroom itself is aesthetically pleasing, with walls painted in flowing colors, wooden cabinets, and generally few or no right angles, in order to encourage "thinking outside the box." Human experience and the struggles of historical personalities make history and science come alive. Excitement, wonder, expectations can awaken connections. Teachers are encouraged to be creative in their approach, designing their own lesson plans as they envision the children in their own particular class.

Certainly we remember best if the material is connected to our feelings. Waldorf teachers design their classrooms and their lessons with this in mind.

Breaks between Classes

Controlled studies of university students have demonstrated that taking a break after a learning session, prior to going on to new material, significantly improves retention of what was just learned (Richtel, 2010).

In Waldorf schools, following the first (double) period of the day, the Main Lesson, there is a long break of generally a half hour. Then a series of perhaps three lessons follows prior to lunch. However, although there may be no breaks between these classes, generally one, often the middle one, is non-academic, such as chorus, orchestra, eurythmy, or gymnastics. Thus a good break often occurs between all academic classes. After the morning classes, lunch marks the break in the day, after which follow the afternoon classes, consisting mostly of arts or handcraft projects.

Private Schools, School Choice

Besides Waldorf schools, a variety of attempts have been tried to make alternative inroads into the mainstream public school system in this country. Such alternatives include prep schools, Montessori schools, free schools, and home schooling. More recently school vouchers, charter schools, including some Waldorf inspired schools, and for-profit schools have been tried.

The available studies often show improvements in school achievement among students attending independent schools (Free, 2007; Bohlmark & Lindahl, 2012). Furthermore, when school choice was introduced in Sweden, not only did the achievement of students in independent schools improve, but the students remaining in public schools also improved their test scores. The speculation was that competition had caused the remaining state schools to improve as well.

Art and Academics: Are Waldorf Students Left Behind?

Parents often wonder if students at Waldorf schools are prepared with sufficient academic rigor in mathematics and writing to succeed in other high schools and in college or university.

A detailed survey of Waldorf school graduates was carried out in Germany several years ago (Barz & Randoll, 2007). The general findings of this study were that Waldorf graduates at first found it more difficult to orient themselves in the higher academic world. However, once they made the transition, they were better able than their peers to set a course and pursue goals successfully. (As far as I know, the study, published in Germany as "*Absolventen von Waldorfschulen: Eine Empirische Studie zu Bildung und Lebensgestaltung*" [Graduates of Waldorf Schools: An Empirical Study of Education and Life-forming] has not been translated.)

With regard to written expression, a key element in any college curriculum or profession, Waldorf students develop writing skills well above the typical high school graduate, whose ability in this area is often bemoaned by college professors. Waldorf students, throughout their upper school years, constantly write reports and essays, which are corrected by their teachers and must be revised. In addition to regular English classes, writing is part of all Main Lessons, including those in math and the sciences.

Another survey, of North American Waldorf school alumni (available from AWSNA), included some 600 graduates. The results: 94% of graduates proceeded to college (most to elite, selective institutions), 88% of students graduated, and over 50% had done or were planning to do graduate work. As college students, they were often recognized by their college professors as self-directed, eager to learn, and demonstrating problem-solving abilities, communication skills, and social awareness (Mitchell & Gerwin, 2008). As a Waldorf college guidance counselor, I have visited over two dozen colleges and universities in the Northeast. Most admissions officers recognize the Waldorf name and had a very positive attitude, encouraging our students to apply. Rare is the applicant who comes in with the beautiful portfolios our students put together. They stand out also in their ability to express themselves verbally.

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International Comparisons: The Relevance of Finland

For several years, international student performance comparisons of 15-year-olds have been carried out using standardized tests, the so-called PISA studies. The school system which has consistently topped all the others is that of Finland. (Finland's scores have dropped somewhat in recent testings. See below.) There has been much speculation as to why this might be, and many researchers have traveled to Finland to try to find out (Alvarez, 2004; *The Economist*, 2006; Finland, 2006; *The Economist*, 2010; Sahlberg, 2010; Guttenplan, 2012; Wooldridge, 2013; Ripley, 2013).

Teacher-run Schools. The Finnish school system turns out to have much in common with Waldorf schools. One thing it obviously does *not* have in common is independent schools. In Finland, the schools are part of a government system. However, this system is totally different from the government systems of other countries, including the American system. Each school is independent and run by the teachers themselves. The role of the administration is to provide administration, facility management, etc., while all pedagogical decisions are made by the teachers. As in other top-performing school systems, teachers receive feedback from peers rather than evaluations by administrators (Crehan, 2016). Generally, the teachers work collegially, planning classes and programs together (Guttenplan, 2012). (This is also true in Chinese schools studied, certainly in the case of big city schools.) The Finnish schools do use testing, but the tests are designed by the teachers, primarily as diagnostics. Because teachers are treated as professionals, who are allowed to exercise their creativity and take initiative, there is a high demand for the available teaching positions. Applications to mandatory teacher training institutes far exceed available places. The profession has the top talent even though it pays comparatively low salaries. Still, given their professional status, teachers generally enjoy a high regard in the wider community. In short, the state school system is essentially a system of independent, teacher-run schools.

The similarity to Waldorf schools is clear: Waldorf schools are also independent and teacher-run. All pedagogical decisions are

made by the teachers themselves within set faculty committees and the College of Teachers. Certainly, Waldorf teachers are generally trained in the traditions and methodology designed by Rudolf Steiner and practiced throughout a hundred years of Waldorf school experience, but teachers and school communities are free and encouraged to develop new approaches and material appropriate to their students today and in the particular region and culture in which the school is located.

Beyond being teacher-run, the Finnish schools (and Finland in general) have other features reminiscent of Waldorf Schools:

- There is little homework before high school (age 16) (Hancock, 2011).
- Lower school teachers often continue with a class for five or six years.
- There are breaks between classes for students to go outside, play music or games, snack, or just relax and let the last class sink in.
- The State subsidizes music lessons, so playing music is not just for the upper classes.
- There is a strong handwork and craft tradition in Finland.

The Finnish example demonstrates that the main solutions often offered, namely, more funding and independent schools, though helpful, are not necessary for a first-rate school system. On the contrary, schools which are teacher-run give the best results, whether in a state system or not. All of these findings support Waldorf education.

In the results of the 2012 PISA testing (Finnished, 2013), Finland fell behind several East Asian systems, particularly in mathematics, but also in reading and science. (The lower scores continued in the latest round of testing.) The top performer was the Chinese city of Shanghai, though it does seem unfair to compare a city with national scores. Still, these systems display several key elements we have recognized: teacher training and status and improving the education of all students, including poor and disadvantaged. The downside of these systems is the extreme academic pressure and the lack of balance, as academic subjects fill the whole day from morning to night. Creativity, a key element in future success, is neglected. Furthermore, in China the poorer children from the countryside are often not admitted to the city school systems, thus giving results an upward bias.

[I]ndependent schools which are teacher-run give the best results, whether in a state system or not. All of these findings support Waldorf education.

It is worth noting the solution proposed by Finnish educators for addressing lower test scores. In contrast to the United States' "Common Core" program, with its focus on drill and memorization, Finland is planning to increase music and art and phenomenon-based learning in the schools. They view the decline in test scores as related to the influx of cell phones, which, in Finland as here, occupy students in free moments, replacing conversation, sports, games, music, and reading, which used to occupy students during their breaks.

Cell Phones

The bane of all children and school systems today, cell phone use, is generally banned in Waldorf schools, except for emergencies. In addition to impacting test scores negatively, recent observations by the author in local public school gym classes revealed a remarkable decline in social interaction. Teachers confirmed a dramatic change in student behavior. Although some students still play on traditional interscholastic teams, the majority display neither cooperation nor competition in their school gym classes. Gym teachers report that this behavior began about four or five years ago (2012), when cell phones became ubiquitous. In free play on the basketball court, students choose neither team nor individual competition, rather, they simply

toss loose balls at the nearest basket. During two days of observing six classes a day, with ten tables in each class, there was one competitive game. In all the others, students simply lobbed the ball back and forth, as if in a trance, until the end of the play period, when they could return to their phones.

Conclusion

Through this brief review of current research and pedagogical trends, we can see how Waldorf education has been practicing for close to a century many of the approaches that are now being recommended in the mainstream. Waldorf's engagement with music, the arts, handwork, and movement is shown today to be beneficial to the students' development in various areas. Similarly, the students' personal connection to adults, through the model of a consistent class teacher, and their exercises in handwriting, recitation, and focused study through the Main Lesson system all correspond to current mainstream recommendations. Waldorf's emphasis of second-language learning in early grades is being implemented in emerging alternative school systems, while its rhythms of relearning, longer breaks between classes, and appealing to the students' feelings are being picked up by research and classroom application. Finally, the Waldorf model of school self-governance is now showing signs of decisive success when studied in other school systems governed by its teachers, who are granted creative freedom within the guidelines of a clearly laid-out pedagogy.

All these findings make the case for Waldorf education as an approach that has recognized and practiced the successful pedagogical methods, the value and efficacy of which are only now being discovered by mainstream education through empirical research and study.

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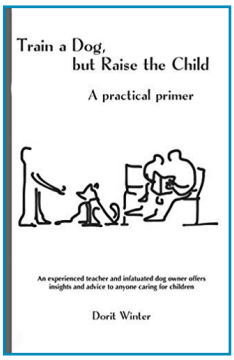
Book Review

Train a Dog but Raise the Child: A Practical Primer by Dorit Winter

Cindy Brooks



Train a Dog, but Raise the Child: A Practical Primer
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Many parent education books now focus on helping parents with two dimensions of the parent-child relationship: (1) fostering secure attachment and parent-child connection and (2) promoting children's emotional intelligence. Ever since the 1995 publication of psychologist Daniel Goleman's groundbreaking best-seller, *Emotional Intelligence: Why It Can Matter More Than IQ,* and the concurrent development of and research with brain imaging technologies, parenting educators have focused their attention more and more on parenting skills that build emotional intelligence and neural integration.

Brain-imaging studies of infants and parents have clarified the critical significance of parent-child interactions in the first year of life for the child's later development. During an infant's first year, neurological development takes place primarily within the right hemisphere where repeated experiences of parental soothing help establish connections between limbic and cortical centers. These physical connections, built through the soothing activities of attuned parents, provide the neurological foundation for the child's emotional maturity and resilience for the whole of life:

> For the rest of the life span, the right hemisphere that has been imprinted and organized by early relational experiences is dominant for the nonconscious reception, expression, communication, and regulation of emotion, essential functions for creating and maintaining social relationships, especially intimate ones.[1]

This vertical integration of the right hemisphere, established in the first year, is also seen as the neurological basis for the child's later development of trust, empathy, and morality.[2]

Researchers also have found that parents who attune to and guide their children with emotional intelligence throughout childhood raise children who are more likely to have better physical health, academic success, and social-emotional well-being; fewer behavior problems, including less violence; fewer negative feelings and more positive feelings; better self-regulation skills; and higher levels of resilience when faced with distress.[3]

So it makes sense that parent educators have been exploring how to help parents grow more emotionally-intelligent children. The central capacities being taught to parents include: noticing the child's emotion and one's own; recognizing the child's emotion as an opportunity to have intimacy with and give help to the child; listening empathically and validating the child's feelings and needs; responding empathically to the child's expression of feelings, wants and needs; and setting boundaries for behavior while helping the child solve the practical problems that are causing the child's emotional distress.

Waldorf education also values the emotional health of the child, and many Waldorf schools

and teachers are adopting strategies such as these to promote healthy communication and conflict resolution practices in their communities. As a child therapist and parenting educator, I have welcomed the increasing interest in fostering emotional intelligence and neural integration in children. The one aspect of this flood of attention to emotional intelligence that concerns me is the emphasis on talking to children about their feelings and asking them to reflect and be self-aware about their emotional lives before age 12.

My concern stems from Rudolf Steiner's insights regarding child development and the three phases of childhood, which I first encountered as I was beginning my work as a child and family therapist and which I have continued to explore in depth. It also stems from my own observations of children's developmental needs and difficulties, which I have encountered while working with children in play therapy and supporting their parents and from my work as a Waldorf parent educator. What has become clear to me from all these experiences is that children under the age of 12 are not ready for intellectual conversations with adults; in fact, such conversations work against their well-being. Many other Waldorf parenting educators emphasize this as well.[4]

Young children thrive when they can have plenty of physical movement, rich sensory experiences, purposeful work, and learn through imitation and doing. A regular daily and weekly routine is also essential for well-being in these years, as is protection from adult concerns and adult-style conversations. In the early years, when we talk to children abstractly, ask too many questions, or regularly ask them to be aware of adult concerns and concepts, including their feelings, then their integration with the physical body is weakened. I have seen first-hand how an overly intellectual parenting style can lead to anxiety, dysregulation and poor adjustment in a young child. During these years adults can best support a child's healthy growth by providing many opportunities for imaginative play, establishing a predictable life rhythm, engaging alongside the child in purposeful work, and communicating through action and action-words when relating with the child. This is what I have emphasized in my parent education work and in my own parent education materials.

[W]hen we talk to children abstractly, ask too many questions, or regularly ask them to be aware of adult concerns and concepts, including their feelings, then their integration with the physical body is weakened.

In the second phase of childhood, children thrive when they experience nourishment for their heart and life (etheric) forces. If we emphasize and activate the thinking of elementary-aged children through talking to them using our intellect, explaining and giving reasons about why we want them to do certain things, involving them regularly in adult concerns, or talking about abstract concepts, including about feelings, the child's heart and life forces are weakened. True nourishment for the heart at this time comes from imaginative, artistic experiences filled with wisdom and truth, such as stories from the world's great mythologies or biographies and stories of the great figures and events of human history. It also comes from activities and experiences that call forth what is noblest and best in the child (and in us), especially adventures in places that are life-giving and full of beauty. Family or community celebrations, regular moments of reverence and ritual, creative play, artistic and musical activities,[5] experiences of graceful, flowing movement—all these are the kinds of activities that open and nourish the heart and life forces of the child and build emotional intelligence, far more effectively and healthfully than conversations about feelings.

If we ask our children to talk and think a lot about their feelings before age 12, we are

encouraging them to use self-awareness, a capacity that belongs to the 'astral body,' which normally becomes active around age 12. The more we wake up a child's astral body in the years before 12, the more the child begins to feel and behave like a teenager—full of sass, with a desire for independence and teen-like interests, and less inclined to admire and revere parents. It is healthier for children to grow a strong and vibrant life body during the years 7-12 and not have their astral body awakened early. Early awakening of the astral body floods children with its teenage impulses at a time when they are still children and not ready to handle these forces.

Abstract thinking is an activity of the astral body. It is in the nature of abstract thinking to combust etheric forces.[6] This is why reading for a long time can make one tired. This is also why too much abstract thinking is harmful during the second phase of childhood, which is the phase dedicated to development and strengthening of the child's etheric forces.[7] In the years between 7 and 14, a person's life-store of etheric forces is being created; these are the forces that will support one's well-being and physical health for the rest of his or her life! So it is important to protect children in this phase of childhood from activities which weaken their etheric forces. All of the activities mentioned above, that help build emotional intelligence without intellectual conversations, are also activities that add to the vibrancy and strength of a child's life forces. In contrast, intellectual conversations (as well as digital media) use up the child's life forces. Too much talk and self-awareness during the elementary years produce a thinking that uses astral forces which eat the child's etheric forces—this is another adverse effect of an over-intellectual child rearing. It is important to protect children from activities which inhibit or diminish the fullness and vibrancy of their life body.

Waldorf communities understand the critical need to develop strength in the etheric body in the second phase of childhood. As such, we have a unique responsibility to the next generation to educate parents about how to nourish and protect their children's etheric bodies so that their children will have the strength they need in their years of maturity! This seems especially urgent given that our world[8] does not understand the importance of protecting children's life forces and is bursting with trends that work against a strong and healthy etheric in the child.[9]

…[W]e have a unique responsibility to the next generation to educate parents about how to nourish and protect their children's etheric bodies so that their children will have the strength they need in their years of maturity!

Dorit Winter, a retired master Waldorf teacher and mentor, has written a book for parents and teachers about how to raise children to become what only human beings can be: self-directed, mature, free-thinking agents of positive moral action in the world. This is also a book about fostering the emotional intelligence of the child, however one that is more in keeping with a Waldorf understanding of childhood. Ms. Winter focuses on developing healthy habits and a healthy parent-child and teacher-child relationship without recommending intellectual conversations with the child.

Reading Winter's book, *Train a Dog but Raise the Child*, is a bit like going for a hike in the mountains: at first you walk through dense forest enjoying the plants, rocks, and creatures that are in close view; then the trail mounts a hill and a panoramic vista unfolds that takes your breath away. There is plenty of food for thought in this unpretentious book, for parents and teachers alike. It is written without reference to Waldorf methods or the principles of the Waldorf approach to education, so that any reader will be able to relate to the truths and common sense of her approach.

The idea for *Train a Dog* emerged a few years ago while Winter was training her new dog, Scamp, to behave himself enough that the two of them could enjoy living together. Much was required for Scamp's training that reminded Winter of the training that first grade teachers engage in to help young children develop healthy classroom habits when they enter first grade. While being clear that training a dog and raising a child are two very different endeavors, and highlighting the immense potential in a child that a dog will never approach, Winter manages to weave in humorous anecdotes from her life with Scamp together with stories from her years in the classroom. The result is a compelling account of profoundly significant tenets of upbringing and education for parents and teachers who are striving to do right by the next generation.

From the beginning Winter insists that it is the responsibility of the guiding adults in each child's life, both teachers and parents, to look at themselves if something is not going well with the child. This requires "being a grownup," an achievement which is not a given even when someone reaches or surpasses the age of maturity. Being a grownup means, in part, that one can muster and hold a position of authority with children and not let them run their own lives or the lives of the adults who are guiding them. Children may have wills full of gusto that can daunt the wills of their parents and teachers, but Winter reminds us that children always lack judgment in varying degrees throughout childhood; hence there is a need for adults to take responsibility and an authoritative role in guiding the child.

Authority is a concept with such negative connotations for many parents that asking them to be an authority in relation to their child can be almost anathema. Many parent educators discuss the importance of parents' tolerating their children's dislikes and encourage parents to insist on children doing things they don't want to do. Still, many parents want so much to have their own unmet emotional needs fulfilled through the parent-child relationship that the concept of parenting with authority, however loving, is not an easy one for them to take up.

Winter's book speaks to the difficulty that parents naturally have in relating with authority to their own children. The book deftly distinguishes the different roles of parents and teachers and encourages parents and teachers to understand their different roles so that they can appreciate each other's perspectives as they collaborate.

> [The book] is written without reference to Waldorf methods or the principles of the Waldorf approach to education, so that any reader will be able to relate to the truths and common sense of her approach.

The adult capacities which are needed to help children develop healthy habits in their early years are explored through the lens of Winter's escapades in training Scamp as well as through examples from her years of teaching and mentoring other teachers. The importance of establishing good habits in the child is seen as central to healthy development. The capacities of firmness, fairness, consistency, and what it takes to really have these capacities (BE CONSISTENT, PRACTICE, HAVE CONSEQUENCES, NO EXCEPTIONS) are brought to life through illustrative stories. These picture the adult as loving authority without using heavy-handed methods while keeping children on track, with a quiet sense of humor in the background. Winter further brings balance to this call for form and order as she insists that the instilling of habits in a child must be done without suppressing that child's individuality. It is a child's individuality, after all, that becomes the free-thinking, mature, resilient, moral adult.

The author also explores the central need for objectivity. While she compassionately recognizes that parents have a much harder time being objective when considering their children's needs and behaviors, Winter suggests repeatedly that a

dose of objectivity will carry parents a long way in being effective and serving their children's true developmental needs. Objectivity is also seen as an absolute necessity for the teacher.

Other important lessons learned over many years are explored or touched upon: how to shape children's behavior in positive directions using only a whisper or no words at all, accompanied by meaningful gestures that engage the child's interest; how to anticipate children's needs so as to keep order and avoid chaos; how to be a model worthy of admiration; how to lead through enthusiasm rather than fear; how to develop and gradually increase the capacity for concentration in children; how to give rewards that foster health in the child and help build a positive sense of self; how to choose consequences for misbehavior that are effective in preventing the next impulse toward inappropriate action; and how to help children have a healthy relationship to food.

[A] dose of objectivity will carry parents a long way in being effective and serving their children's true developmental needs.

All of the skills that the book explores require being comfortable with taking a position of authority when parenting or teaching children. They also involve being ''cool," which means being detached from particular outcomes and also from the search for fulfillment of one's own ego needs. Winter repeatedly recognizes that this is more easily done by teachers than by parents, who have much more reason to be subjective, warm and invested in their own ego needs when relating to their children. Yet the benefits of cultivating a 'cool' approach even for parents are clear.

In fact, Winter suggests that an outwardly cool demeanor can be paired with an inwardly strong wish or intention in relation to a child and that the pairing of outward cool with inward warmth is what helps achieve positive outcomes for teachers and parents. Perhaps this is because the spiritual strength involved in managing such a pairing is unconsciously recognized by the child. Inspired by seeing real spiritual strength in the adult, the child responds with deep admiration and is moved to trust and attune with that adult's guidance and direction. In neuroscience, this kind of activity is called "co-regulation": the adult's regulated, integrated neural state moves the child's neural networks into "resonance."

Another well-tackled question in the book concerns children's happiness and whether they will love the teachers and parents who are guiding them with authority. Winter recognizes that, in considering such questions, it is important to understand the changing consciousness and needs of the child from preschool through eighth grade (and beyond). What makes a preschooler happy is very different from what makes a fifth grader or eighth grader happy. Whether the child is happy reflects in part the degree to which the child's true developmental needs are being met: Young children need freedom to move and play imaginatively; older children need deep engagement with their subjects and to be challenged by their teachers and parents. The bottom line seems to be: Children are happy when they have confidence in their teachers, and that confidence needs to be earned. The same goes for parents. It is a big responsibility to guide the next generation to adulthood! We have to be models worthy of imitation in the early years and worthy of admiration in the elementary years.

The remainder of the book opens our eyes to even bigger questions. How do we protect and foster the inner strength, vitality and spirits of our children in the face of cultural trends which interfere with or threaten their free and healthy development? Here Winter introduces us to researchers and experts who have examined several central areas of modern life that she suggests are wrecking havoc with children's inner lives:

- the penchant for frequent travel which leads to sensory overwhelm in a young child and to armoring, habituation, and suppression of self;
- competitive sports that can lead to hardening of the body and depression of the spirit;
- the ubiquity of technology so that children now live in a world of distracted adults as well as a world in which technology companies market to even very young children. As a result, many if not most children experience the digital world as: (1) alluring and addictive, (2) full of chaotic and intrusive sense impressions that regularly overwhelm their nervous systems and activate their lower brain centers (fight or flight), (3) a regular source of distraction, inattention, mindlessness and perforated concentration, and (4) detracting from the development of good judgment and moral values such as empathy and compassion.

There is much to contemplate in this grand finale of chapters: What makes for true sustenance in the world of the child? What will make for a future world reflecting the highest and best in the human being? How can human spiritual capacities be protected and strengthened? There is much for parents to decide if they dare confront a culture that seems increasingly inimical to deeper spiritual values.

Perhaps Winter will consider a sequel to provide even more of the hows and whys for parenting with loving authority, for it is clear that she has unique insights into the art of raising spiritually strong children.

ENDNOTES

1 Allan Schore, "Attachment, Affect Regulation and the Developing Right Brain: Linking Developmental Neuroscience to Pediatrics," *Pediatrics in Review,* June 2005.

2 Schore.

3 See especially Maurice Elias, Steven Tobias and Brian Friedlander, *Emotionally Intelligent Parenting* (New York: Three Rivers Press, 1999); John Gottman, *Raising an Emotionally Intelligent Child* (New York: Simon and Schuster, 1997); Harville Hendrix and Helen Hunt, *Giving the Love That Heals* (New York: Atria Books, 1997); Daniel J. Siegel and Mary Hartzell, *Parenting from the Inside Out* (Penguin Books, 2004); and Daniel J. Siegel and Tina Payne Bryson, *The Whole-Brain Child: 12 Revolutionary Strategies to Nurture Your Child's Developing Mind* (New York: Bantam Books, 2012), *No-Drama Discipline* (London: Scribe Publications, 2015), and *The Yes Brain: How to Cultivate Courage, Curiosity, and Resilience In Your Child* (New York: Bantam Books, 2018).

4 See especially Kim John Payne and Lisa Ross, *Simplicity Parenting* (New York: Ballantine Books, 2010), and Kim John Payne, *The Soul of Discipline* (New York: Ballantine Books, 2015).

5 Musical activities that are nourishing to the etheric include singing and playing instruments and listening to music that is not amplified or played on electronic instruments.

6 Our bodies have both anabolic and catabolic processes. Anabolic processes build up the body; catabolic processes tear down the body, releasing energy. Thinking is a catabolic process in which etheric forces are metabolized so that the process of thinking can occur.

7 Pictorial thinking, however, is strengthening to the etheric. Pictorial thinking is found, for example, in stories and imaginative activities.

8 The First World, at least.

9 Loss of imaginative play due to over-scheduling children after school; the so-called Nature Deficit Disorder that is a growing phenomenon; children's increasing access to all forms of digital media; and depletion of the soil and nutrient loss in our food supply due to the widespread use of chemical fertilizers and pesticides are some of these trends.

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Report from the Online Waldorf Library

Marianne Alsop

The Online Waldorf Library continues to be a popular and helpful site for information about Waldorf education with a total of 171,000 site visitors in 2017. It is exciting to see where Waldorf education is growing and where the OWL is meeting the need for freely accessible information, as indicated by increased visitors from China, Brazil, Argentina, and South Africa. English-speaking countries still claim the highest visitor rate at 65%.

In the first months of 2018, new Spanish eBooks added include: *Selección de textos de Química*; *Los Temperamentos y las Artes: Su relación y función en la pedagogía waldorf* (*Temperaments and the Arts* by Magda Lissau); *Vidas de romanos* (Roman Lives by Dorothy Harrer); and *El Misterio del Grial y las siete Artes Liberale* (*The Grail Mystery and the Seven Liberal Arts* by Frans Lutters). In late 2017, we included these eBooks in Spanish: *Panorama de los Jardines de Infancia Waldorf* (Overview of the Waldorf Kindergarten, ed. Joan Almon); and *El Hijo del Rey de Irlanda* (*The King of Ireland's Son* by Padraic Colum).

The OWL is excited to also include a new Mandarin Chinese translation of "Listen and You Will Hear" by Patrice Maynard. Books in Mandarin Chinese can be found by going to the "Books" tab on the Home page and scrolling down. Books in Spanish can be found by clicking on the Libros en Español tab on the Home page.

As always, back issues of the *Research Bulletin* and *Gateways* (published by Waldorf Early Childhood Association of North America), Pedagogical Section/Rundbrief, and a number of other international publications are available online in our Journals section.

The Online Waldorf Library welcomes your questions and we are happy to help you with your research projects.

www.waldorflibrary.org

Report from Waldorf Publications

Patrice Maynard

In addition to publishing its twice-yearly *Research Bulletin*, the Research Institute for Waldorf Education (RIWE) is busy with the continuing work on the Survey of Waldorf High School Graduates. Connie Stokes reports a strong response from graduates spanning the period 1990–2017, with close to a thousand graduates taking part in the initial online survey. A total of 40 Waldorf schools across the continent have been helpful in stimulating this good response.

RIWE's Executive Director, Douglas Gerwin, has been overseeing this project, as well as traveling across North America and to Brazil, in working with the International Forum for Steiner/Waldorf Education on the Waldorf 100 celebrations and teacher training curricula, teaching both adult and high school students, and leading the Center for Anthroposophy in its own teacher training endeavors.

Under the careful guidance of Marianne Alsop, the Online Waldorf Library continues to build its remarkable library, reaching 'round the world including Spanish-speaking countries and now Chinese-speaking teachers as well. And the much-appreciated course on Teaching Sensible Science, led by Michael D'Aleo, continues to fill the halls of schools with striving teachers and phenomenological science.

Waldorf Publications (WP) has reorganized itself in a new location, revitalizing a languishing "big box building"—a former Walmart—and settling in as a neighbor to the Rudolf Steiner Library. For the first time the WP office, shipping and handling, and inventory are all in one place at 351 Fairview Avenue in Hudson, NY. One longtime and loyal WP employee, Robin Bellack, retired, and the consolidation makes diminished staff viable. A recent settler in the Hudson Valley and graduate of the Seattle Waldorf Elementary School has joined WP as a part-time assistant in shipping and handling.

WP is enjoying a welcome increase in the volume of submissions for proposed new books. It might become necessary to pause from accepting prospectuses for a time while we catch up in publishing schedules. This indicates a maturing in our Waldorf community that is appropriate given the Waldorf 100 centennial approaching, with teachers recognizing the depth and breadth possible in the endlessly flexible Waldorf curriculum.

The Annual Appeal this year included a map illustrating the reach of RIWE through all its efforts. Visitors from 194 countries around the globe made use of RIWE's resources in 2017. They checked for articles, eBooks, and journal pieces on the Online Waldorf Library, www.waldorflibrary.org; they subscribed to the *Research Bulletin*; they used RIWE's website, www.waldorfresearchinstitute.org, to find research on a variety of topics; they purchased books from WP. Along with more than 51,000 friends on our much-trafficked Facebook page and the rich and informative blogs of the Library Lady at www.waldorfpublications.org, the reach of the Research Institute is long and the interest is growing—just about everywhere!

About the Research Institute for Waldorf Education

The Research Institute for Waldorf Education (RIWE), founded in 1996 in order to deepen and enhance the quality of Waldorf education, engages in sustained dialogue with the wider educational-cultural community and supports research to serve a wide range of educators in their work with children and adolescents.

The Research Institute supports projects dealing with essential contemporary educational issues such as computers and the effects of media on children, alternatives to standardized testing, physical health and psychological well-being of students, science teaching with a phenomenological approach, the role of the arts in education, and the philosophical underpinnings of Waldorf education.

As a sponsor of colloquia and conferences, the Research Institute brings together educators, psychologists, physicians, and social scientists for discussions on current issues related to education. RIWE publishes a *Research Bulletin* twice a year and prepares educational resources, including collections of eBooks and articles (a growing number of them newly translated into Spanish). Many of these publications are available without charge on the website of the Online Waldorf Library (OWL), a virtual library created and managed by the Research Institute: www.waldorflibrary.org.

In 2013 the Research Institute took over the publications arm of the Association of Waldorf Schools of North America (AWSNA) and re-branded it as Waldorf Publications. It includes resources for teachers and administrators, readers and children's books, collections of plays and poetry, science materials and kits, science and math newsletters, inspirational essays, proceedings of colloquia, and a range of publicity materials about Waldorf education. It also carries books published by the Waldorf Early Childhood Association of North America (WECAN) and the Pedagogical Section Council (PSC) of the School for Spiritual Science, as well as AWSNA's twice-yearly magazine *Renewal*.

As an initiative working on behalf of the Waldorf movement, the Research Institute receives support and guidance from the PSC and financial support through the following organizations:

- Astoria-Stiftung
- Foundation for Rudolf Steiner Books
- Freunde der Erziehungskunst
- Marshall and Margharite McComb Foundation
- Rudolf and Clara Kreutzer-Stiftung
- Rudolf Steiner Charitable Trust
- Sprout Foundation
- Waldorf Curriculum Fund
- Waldorf Educational Foundation
- Waldorf-Stiftung

The Research Institute is a tax-exempt organization and accepts contributions through its annual giving campaign and special appeals.

Summary of Activities Supported by the Research Institute

AVALON INITIATIVE

A think tank for questions of freedom in education

COLLOQUIA (with published proceedings) on teaching:

Chemistry
Computer and Information Technology
English
Life Sciences and Environmental Studies
Mathematics
Physical Sciences
U.S. History
World History: Symptomatology

ONLINE WALDORF LIBRARY (OWL)

Over 2500 articles and 850 book titles

RECENT RESEARCH PROJECTS

ActionWave study
Alternatives to Standardized Assessment
Computer Technology in Waldorf Schools
Human Sexuality Curriculum
Survey of Waldorf Graduates
Waldorf High School Curriculum Research Projects

RESEARCH BULLETIN

Two issues per year of essays, articles, reviews, and commentaries on educational themes

RETREATS OF THE RESEARCH INSTITUTE

Presentations and discussions exploring contemporary questions related to education

RIWE WEBSITE

Collections of articles and news features on current educational issues

TEACHING SENSIBLE SCIENCE

Three one-week courses on teaching science in elementary grades using a phenomenological approach

WALDORF PUBLICATIONS

Over 400 book titles, plus science kits, publicity materials on Waldorf education

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