

THE FOUR PLANES OF DEVELOPMENT

by Camillo Grazzini

Camillo Grazzini presents two charts designed by Maria Montessori to illustrate the four planes of development. His meticulously researched commentary signals, almost prophetically, an emerging organic vision of the developmental continuum from birth to adulthood so relevant to the educational needs of our time.

MONTESSORI'S HOLISTIC VIEW

The Four Planes (or Phases) of Development is nothing other than an overall vision of Montessori's developmental psychology, and therefore constitutes a grand framework or structure in which any more detailed study or examination finds its appropriate place (Montessori, Maria. "The Four Planes of Education"). Thus, all that we have heard during the last few days about the child from birth to three years of age, the child from three to six years, the child from six to twelve, concerns a much more detailed look at individual planes or sub-planes of development, but all of it fits within this great framework.

The Four Planes, then, is only a framework, and yet, at the same time, it is extremely important precisely because it is Montessori's overall view of development: the development of the individual from birth (or even before birth) right through to maturity. This vision of the whole of development provides, we could say, a *holistic* view of the

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developing human being,¹ and it explains and justifies the constant Montessori idea of the importance of education as a “help to life.”

Most AMI teachers and trainers are specialized in relation to children of particular ages; AMI courses and the related diplomas specify the ages concerned. All of the courses, however, include lectures on the Four Planes in order to provide the students with the background necessary for understanding the particular age with which their course is concerned. Moreover, although the Four Planes of Development constitutes a single item of any course, it is actually greater than any single Montessori course. Thus it lends perspective and depth to our understanding, and at the same time, it constrains our point of view to our particular age range. (For example, we know that we cannot, and should not, try to use a Children’s House approach in elementary, or the elementary approach in the Children’s House.)

Surely it is this very grand view of development—this understanding of the cyclical and non-repeatable nature of “the seasons of developing life”²—that constitutes one of the great distinguishing features of Montessori’s work.

What I propose to do today is not to repeat, or even to summarize, what has already been said by Montessorians preceding me, or perhaps will be said by those who follow me. What I intend to do is to present Montessori’s concept of the full process and structure of development by means of her two charts for the four planes of development. Since Maria Montessori presented these two charts in Italy shortly before her death, neither one of them is all that well known outside of Italy. However, the first chart, the one with the triangles, the one that we call “the constructive rhythm of life,” is more familiar, if

¹Montessori’s view of human development is never *atomistic* but always *holistic*. It is holistic in two senses: Firstly, Montessori considers all aspects of development (physical, intellectual, emotional, etc.); secondly, Montessori considers all the phases of developing life. Thus Montessori is doubly holistic: For any single stage of development, Montessori considers the whole individual; the whole individual at a particular stage of development is considered within the whole continuum of development.

²“This is the time—we might call it ‘the season of life’—when written language can ripen like a fruit” (Montessori, *The Formation of Man*).

only because it is presented in the Bergamo courses. The second chart, the second pictorial representation devised by Maria Montessori as a metaphorical image of the four planes of development, is hardly known at all, and, at first sight, it seems rather strange because it looks so very plantlike....

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It is very interesting to realize that Maria Montessori, virtually at the end of her life and in the space of only one year, prepared two charts to illustrate the four planes of development: two different charts for one and the same theme. The two charts could not be more different in their mode of representing these stages of growth, in their visual impact, and therefore, to some extent, in the underlying message that is being conveyed.

CHART 1: PERUGIA, 1950

Let us examine the first chart (Montessori, First lecture), shown in Figure 1. In reality, it consists of two parts: The part above illustrates Montessori's view of human development, while the part below represents the system of education that is actually being offered by our society.

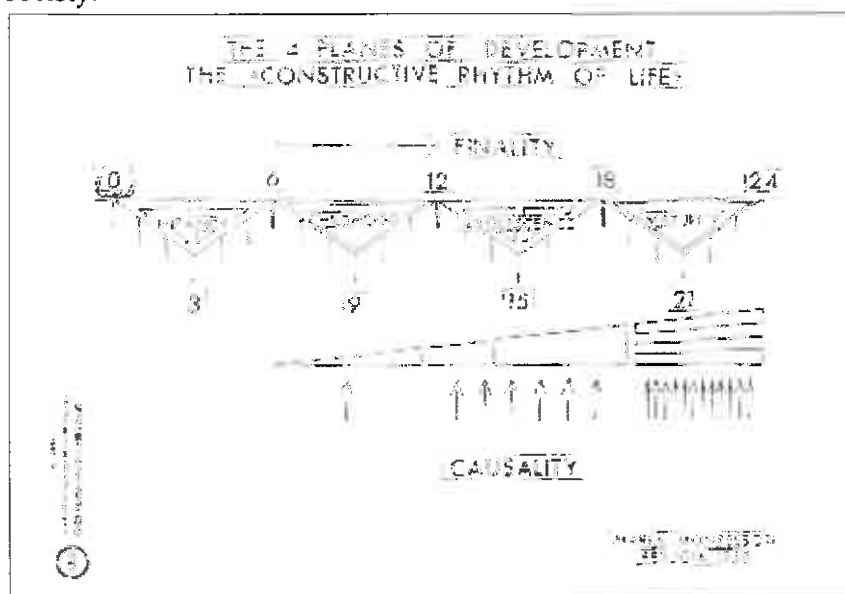


Figure 1. Chart 1, Perugia, 1950.

I. The Triangles: Montessori's Geometric Image of the Rhythm of Development

In a manuscript written by Montessori about this chart, she says that scientific studies and meticulous testing carried out in all parts of the world, with children of different races and different socio-economic conditions, have shown scientists that development does not proceed in a linear or constant fashion. On the contrary, it proceeds or occurs in periods or cycles or planes, such as we see represented here in her drawing.

Along the top we find the horizontal line that is the line of life, indicating the chronological age of the individual. Along this same line we find distinct periods of development marked out for the years from birth to twenty-four, with a rhythm of six years for each. It is this "skip" counting by sixes that gives the rhythm of development or, as Montessori calls it, "the constructive rhythm of life." Starting at zero, the moment of birth, we immediately find a great flame enveloping the 0; the flame symbolizes the vital center or the vital charge of psychic life.

Coming out from the zero, there is an oblique line, which is the line of progression; it represents the progression of particular sensitivities and the related characteristics. This line of progression does not continue indefinitely; such a continuation would make no sense in terms of Nature. Just imagine an adult with the accentuated characteristics of a little child! In fact, the line of progression reaches its maximum around the middle of the six-year period, which, in this case, means at around three years of age. From this point on, the line of progression changes direction and becomes a line of regression/retrogression. This too does not continue indefinitely: It comes to an end when it meets the line of life, in this case, at around six years of age.

The two lines of progression and retrogression, together with the line of life, determine a triangular area, which represents a plane of development, in this case, the first plane of development. Montessori calls the left side of the triangle the opening of a stage of life; life, in other words, opens up to a set of particular experiences and consequently to the related acquisitions or conquests. The right side of the

triangle represents the closing of a stage of life, in preparation for the opening of a new stage of development with its new sensitivities and characteristics.

In this same way, four planes of development are determined, four planes that Montessori identifies as infancy, childhood, adolescence, and maturity.

Since the four planes are represented by four triangles identical in shape and size, this representation is strictly stylized and geometric in character. The visual impression is always one of perfect regularity and symmetry. However, what is really being illustrated and emphasized by the use of these triangles is the vital role of the sensitive periods or sensitivities, which, as they change their nature from one phase to another, determine the characteristics of each and every phase. The sensitivities pertinent to a particular phase appear, increase, reach a maximum, and then decline; new sensitivities appear, reach a maximum, and decline to give way to yet other, new sensitivities; and so on. It is these sensitivities, then, that guide development and determine its rhythm.

Nonetheless, the four triangles, and therefore the four planes, are distinguished two by two through the use of color. The pattern of color that we see—red, blue, red, blue—simultaneously conveys two ideas: One plane is utterly different from another; one plane, in some essential way, resembles another. These ideas are reinforced in other ways: the use of thick outlines as opposed to thin ones, the fact that some planes are divided into two equal sub-planes while others remain undivided. The divided triangles in red, with their thick outlines, stand for the “creative periods” of developing life: infancy and adolescence. The undivided triangles in blue stand for the “calm phases of uniform growth”: childhood and maturity.

* * *

Although Montessori’s geometric representation can visually convey her fundamental ideas about development, to understand more one has to turn to what Montessori wrote; and that is what we shall do now, by consulting her published works.

The "Red Plane" of Infancy

The plane of infancy, zero to six, is the one of fundamental importance for the formation of the individual. Interestingly enough, the work that the individual undertakes for his or her own formation is so different during each half of this plane that Montessori clearly divides infancy into two sub-planes.

The Spiritual Embryo. The infant from zero to three is identified by Montessori as a *spiritual embryo*, and it is worth our while to understand why.

At birth, the infant seems to be a "nothing," "in the sense that he has no psychic qualities nor pre-established powers of movement" (Montessori, *The Absorbent Mind*). "Every baby," says Montessori, "has the same appearance; he is motionless, empty, insignificant." Yet this infant has within himself "potentialities which determine his development"; "there exists within this inert being a global power, a human creative essence, which drives him to form a man of his time, a man of his civilization" (*The Absorbent Mind*). (It is, of course, for this reason that we find that great flame around the zero on Montessori's chart.)

Montessori goes on:

It follows that the new-born child has to do a piece of formative work which corresponds in the psychological sphere to the one just done by the embryo in the physical sphere. Before him there is a period of life different from that which he led in the womb; yet still unlike that of the man he is to become. This post-natal work is a constructive activity which is carried on in what may be called the "formative period," and it makes the baby into a kind of "Spiritual Embryo."

Man seems to have two embryonic periods. One is prenatal like that of the animals; the other is postnatal and only man has this. (*The Absorbent Mind*)

In other words, the human species, and only the human species, has a "double embryonic life" (*The Absorbent Mind*).

Thus, during the first three years of life, a part of life which is forgotten by the very individual who experienced it, the basic human powers are created. Montessori explains as follows:

In this psycho-embryonic period various powers develop separately and independently of one another; for example, language, arm movements, leg movements, etc. Certain sensory powers also take shape. And this is what reminds us of the prenatal period, when the physical organs are developing each on its own account and regardless of the others. For, in this psycho-embryonic period, the [psychic/human] functions are developing separately. And it is not surprising that we cannot remember this period, for there is still no unity in the personality—the unity can only come when the parts are completed. (*The Absorbent Mind*)

Because of the nature of the work of development during the first three years of life, and because of how this work is carried out, Montessori also calls the infant from zero to three the *unconscious creator*.

The Conscious Worker. The nature of the work of development changes during the second sub-plane of infancy, during the years from three to six.

At the age of three, “life seems to begin again; for now consciousness appears fully and clearly.” And what this child or infant wants to do is “to master his environment, finding therein the means for his development.” But what is it exactly that he has to develop? All those functions, all those powers which were being created before the age of three, he now has to develop through conscious experiences and through the exercising of his will. Montessori points out that there are two tendencies at work within this older infant: “One is the extension of consciousness by activities performed on the environment; the other is for the perfecting and enrichment of those powers already formed.” Thus, “the period from three to six is one of ‘constructive perfectionment’ by means of activity” (*The Absorbent Mind*).

The child's hands, guided by his intelligence, begin to do jobs of a definitely human type. This child is always busy doing something with his hands, and for this reason the years from three to six have been called "the blessed age of play." That "play," however, is really work, the child's work for his own development. Thus Montessori calls the infant from three to six the *conscious worker*.

Montessori, however, has more to say on the nature of the work of development during this sub-plane of infancy:

The individual human being is a unity, but this unity has to be built and consolidated through active experiences directed at the environment and provoked by Nature. All the separate embryonic developments which occurred from 0 to 3 years must in the end function together and become integrated so as to serve the individual personality. This is what is happening during the period from 3 to 6 when the hands are working, guided by the mind. If external circumstances prevent this integration from taking place, then the [same] energies continue to drive the partial formations which develop in a disorganized way and deviate away from their proper goal. The hand moves aimlessly; the mind wanders far from reality; language takes pleasure in itself; the body moves clumsily. And these separate energies, finding nothing to satisfy them, give rise to innumerable combinations of wrong and deviated development, sources of conflicts and disturbances. Such deviations cannot be attributed to the personality itself; they have to be understood as the result of a failure to organize the personality. (*The Absorbent Mind*)

But then, as Montessori points out, when the environment offers motives for constructive activity, all the energies concentrate together and the deviations disappear. Only then, when the child has the possibility, the freedom, to develop normally, will we see the true personality of the child. It is this process of transition from deviated to normal development that Montessori calls *normalization*; and it is normalization that must be our greatest concern for the second sub-plane of infancy. During, and as a result of, the process of normalization, the child develops character (in the good sense of the word) quite spontaneously. Montessori, in fact, also identifies the period from

three to six years of age as the “embryonic period for the formation of character” (*The Absorbent Mind*).

The “Blue Plane” of Childhood

The plane of childhood, six to twelve, is an altogether different stage of developmental life, although firmly based on the preceding plane as is natural and necessary. Montessori describes the second plane as a “calm phase of uniform growth,” and as such, this plane remains undivided in Montessori’s drawing (cited in Grazzini).

If during the first plane the human functions and powers were first created and then integrated, perfected, and enriched, then during this plane they can expand both physically and psychologically. Indeed, this child’s mental powers are now such that they can not only expand but also soar, rising to new heights, for during this period “the abstract plane of the human mind is organized” (Montessori, *From Childhood to Adolescence*).

Consequently, there is a great expansion in this child’s field of action: Physical and mental horizons open up and there is no limit to what this child can explore, if the opportunities are there and the conditions are favorable. The child’s powers and possibilities during this period are so great that, as Montessori points out, it is easy to underestimate his capacities and thereby set up unnecessary limits and restrictions. For this plane, Montessori always emphasizes wider contacts, an expansive education, a vastness of culture, the open environment.

While the infant incarnated and thereby became adapted to the reality immediately surrounding him (an audible, visible, tangible reality), this child can explore, internalize, and thereby become adapted to a reality as large as the world, the universe, the whole of humanity, all of culture (a reality which is not necessarily either visible or tangible because of time or distance or other factors).

While the little child lived and thrived in an atmosphere of unquestioning love and could, together with other infants, build a

The planes of development are necessarily also interdependent, for the human being is always a unity. An earlier plane always prepares for the one that follows, forms its basis, nurtures the energies which urge the individual towards the succeeding period of life. Thus the individual passes from one plane of independence to another—physical, mental, moral, economic, spiritual—always urged on by the forces of Nature itself.

social community by “cohesion,” a “society in embryo” (*The Absorbent Mind*) cemented by the bonds of love, this child has to explore the whole question of morality and can, together with other children, build a community or society that is organized on a conscious plane both in terms of rules to be governed by and work to be done.

The child of the second plane is hungry for culture, which means for knowledge and understanding: the knowledge and understanding of the world built by Nature and of

that built by mankind. He is endowed with the necessary capacities: the power of imagination, the power of abstract thought and reasoning, physical strength, and health.

I hardly need to say that Cosmic Education is the answer to the characteristics of this plane, to this child’s sensitivities, needs, and aspirations.

The “Red Plane” of Adolescence

With the plane of adolescence, twelve to eighteen, we come to another plane of creation. This time we are not witnessing the creation of the being as a complete and distinctly human being, but the creation of the adult of the species, with the power to procreate and give rise to the new generations that permit the continuation of a human group, a human race, the human species.

This is the plane when the individual leaves behind the state of childhood and enters the state of adulthood, becoming a member of society in his or her own right. Physically speaking, the transition from the juvenile to the adult state is given by puberty; psychologically speaking, there is a transition from the child who has to live in a family to the adult who has to live in society.

This is the time, says Montessori, “when the social man is created but has not yet reached full development”; “this is the time, the ‘sensitive period,’ when there should develop the most noble characteristics that would prepare a man to be social, that is to say, a sense of justice and a sense of personal dignity” (*From Childhood to Adolescence*).

However, Montessori points out that “the period of life in which physical maturity is attained is a delicate and difficult time, because of the rapid development and change which the organism must go through.” As a result, the human organism becomes prone to certain diseases and certain forms of weakness. “From the psychological point of view this is also a critical age. There are doubts and hesitations, violent emotions, discouragement and an unexpected decrease of intellectual capacity” (*From Childhood to Adolescence*).

The twin problems of protecting the adolescent during the time of the difficult physical transition and helping the adolescent for his entry into society led to Montessori’s proposal of the *Erdkinder* (the “Landchildren”) for the period of secondary education. This proposal includes various experiences of productive work which contribute to economic independence and thereby strengthen the adolescent’s self-confidence and faith in himself.

The “Blue Plane” of Maturity

The plane of maturity, eighteen to twenty-four, corresponds more or less to university life, the period of university studies.

The individual who arrives at university is already “formed,” but this is a time of life (if all has gone well before) when the individual can develop the spiritual strength and independence for a personal mission in life. This individual can become a human being whose aspirations have transcended the temptation of personal advantages in the way of power and possessions, a human being who has attained a high level of moral conscience and responsibility and can work for the good of humanity. (Montessori also makes it very clear that this individual would work while studying for the sake of economic independence and a sound moral equilibrium.)

The Four Planes

We have seen how the old idea of linear development, according to which there is no change of form but only a gradual increase from what is tiny to what is large, from what is less to what is more, has been superseded by the idea of developing life as one of transformation, as one of taking different forms and passing through different and distinct stages or planes (both physically and psychically). The differences are, indeed, so marked that Montessori compares the planes of development to the stages of metamorphosis. Thus the developmental life of a human being is a sequence of births, of the emergence and disappearance of potentialities, of the birth and death of those interests and characteristics which are a manifestation of the ruling sensitivities.

But the planes of development are necessarily also interdependent, for the human being is always a unity. An earlier plane always

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prepares for the one that follows, forms its basis, nurtures the energies which urge the individual towards the succeeding period of life. Thus the individual passes from one plane of independence to another—physical, mental, moral, economic, spiritual—always urged on by the forces of Nature itself, forces which are inherent and irrepressible and whose aim or goal is always that of the complete, fully formed, and fully functioning adult human being, an adult not only adapted to his time and place but also capable of

adapting to new situations and circumstances, ultimately an adult who can work for the good of humanity and can participate in humanity's (cosmic) mission on this Earth.

This is the meaning that we must give to the long, single arrow of finality that Montessori has placed above her drawing of the four planes of development; it is Nature's arrow and represents the natural

and normal process of development with its spontaneous manifestations that have to be respected if the goal is to be reached.

II. Society's Single Plane (The Older the Better!)

The second part of the chart (the part below) represents, as we already know, the system of education that is actually being offered by our society. In reality, the bottom drawing also represents Montessori's criticism of the existing system of education, as we shall see.

This drawing consists of a single, great, inclined plane, a plane that rests on the usual line of life that indicates the chronological age of the individual. This line of life is in perfect correspondence with the one above, which makes it very easy to compare the two drawings. The inclined plane starts at six years of age and finds its maximum expansion during the years of university studies, between the ages of eighteen and twenty-four. It starts at six because this is the beginning of compulsory education in Italy; obviously, it could start at five, six, or seven years, depending on the country one has in mind. However, at whatever age it starts, there is always a "void" in relation to the first plane, the one that is of such fundamental importance for the formation of a human being.

This great inclined plane represents the "educational field of action," but it also reveals an underlying concept of development, which is nothing other than the old idea of linear development. The oblique line indicating the inclined plane steadily rises with the years, from age six on, rising higher and higher as the individual becomes older. The blocks into which the plane is subdivided represent the various grades or levels into which education has been divided: elementary school/primary education; middle school/junior high; senior high; university. The arrows below stand for "both the number of different subjects studied and the number of different teachers" (Montessori, First lecture), and therefore they also represent the amount of knowledge that is being offered to the individual. The subjects, the teachers, the amount of knowledge—all of this increases with the level of education (which means with the age of the individual), as we can see from the increase in the number of arrows. Then, the various lines

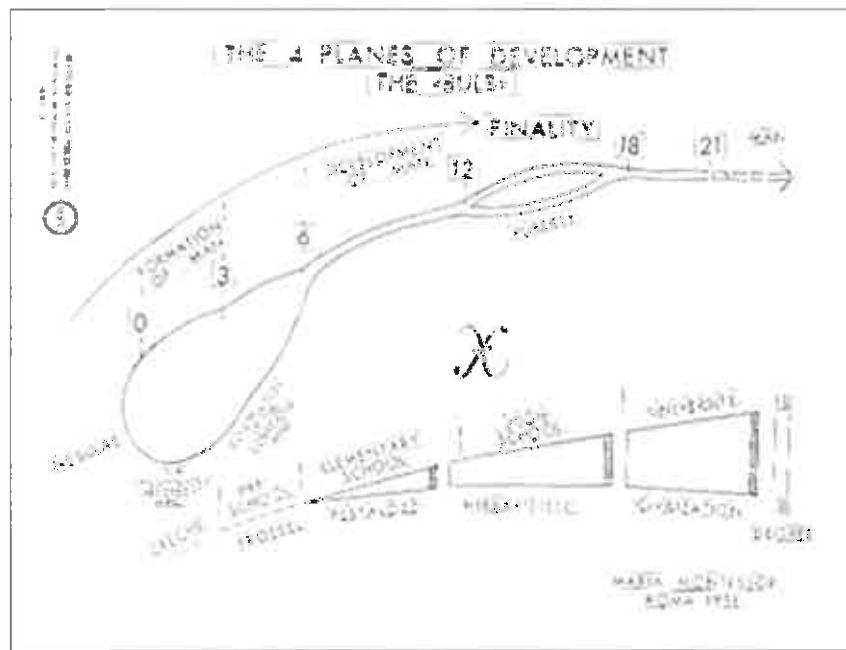


Figure 2. Chart 2, Rome, 1951.

found within the last section represent the various faculties of the university.

The underlying implication of this ever-expanding “educational field of action” is that intelligence and the capacity to learn steadily increase with the age of the individual: The older the individual, the more intelligent he is; the older the individual, the greater the capacity he has for learning. Thus, to judge from the educational provisions made by our society, life develops according to a single, great, linear plane—a view of development which stands in stark contrast to the four distinct and different planes of development indicated by Montessori herself.

But we have not yet finished with this drawing: There is this word *causality* contrasting with that of *finality* written above. In fact, all these little arrows are really arrows of causality, causality being nothing other than the underlying philosophy of traditional educa-

tion, traditional teaching, where the teacher is the “cause” and the educated child is the “effect” produced. What this means is that all abilities and qualities acquired by the individual during the course of development are the direct consequence of the knowledge and values transmitted by the adult or teacher. In other words, the child is only an “empty vessel” which has to be filled, a “blank page” or tablet to be written upon; the filling and the writing are done by the adult or teacher. Thus the adult is always the one who creates or molds the new being.

The contrast between Nature’s planes of development and what is, in effect, society’s single great plane of education is also brought out by Montessori’s use of color: The vivid colors of the top drawing provide a stark contrast to the utter grayness of the bottom drawing, a grayness which symbolizes the total uniformity and monotony of society’s concept and implementation of education.

All of this leads to the most extraordinary observation, as Montessori directly and indirectly points out. By the middle of the eighteenth century, no scientist or philosopher any longer believed in the idea of linear development during the prenatal period, in the idea that in the original cell there is a tiny, albeit invisible, completely formed human being (the *homunculus*), whose only development consists of growing in size. During this century, as a result of all the psychological and biological studies that have been undertaken, any idea of postnatal development taking a linear form has also been discarded. Only in the field of education do we find this old and superseded concept still dominant in a hidden way, which surely demonstrates a deep underlying conservatism in this field of human endeavor. Educational fashions come and go, educational reforms come and go, but they never achieve anything because they only touch the surface and never the core of the problem.

CHART 2: ROME, 1951

Let us now examine the second chart (Montessori, Second lecture), shown in Figure 2, which consists of the same two parts, insofar as the top drawing illustrates human development from birth to maturity

and the bottom drawing illustrates what society has to offer the developing individual.

I. The Bulb: Montessori's Organic Image of the Dynamism of Development

If we were, at first, surprised by the geometrical perfection of the first representation of the planes of development, we may be perfectly shocked by the contrast that the second representation presents. Utter irregularity and a total lack of symmetry over the four planes characterize the second drawing. This, together with the lavish use of the color green, gives us the impression of some strange growing thing, the product of Mother Nature in some strange flight of fancy. Curious bulges and swellings are followed by constricted, elongated sections that seem to have no substance whatsoever. Then the whole thing fades out to the right, with a series of dashes terminating in an arrow. The overall effect, after the symmetry of the first chart, is most interesting, and as we study the drawing in greater depth and detail, we understand clearly how Maria Montessori took care to distinguish the planes of development, not only two by two but also one by one.

First of all, our attention is immediately attracted by the two bulges and therefore to the planes of infancy and adolescence, while the other two almost seem to have disappeared into the background. Thus the two-by-two distinction is immediately achieved. But now Montessori goes further: The "creative periods" are also distinguished, the one from the other. The plane of infancy is given much greater bulk and volume, which makes it far more imposing and therefore much more important. That bulk and volume is also distributed so as to give more weight to the first three years of life. The difference between the two creative periods is reinforced by a different use of color: black and red for infancy, green with red along the center for adolescence. It is interesting also to note that, while infancy remains divided into the two sub-planes (zero to three and three to six), the plane of adolescence is now left undivided.

The "calm phases of uniform growth," childhood and maturity, are simply indicated by green lines, but even so, we find a difference between these two planes: The green line for childhood rises, while

that for maturity proceeds horizontally. This brings us to another observation about Montessori's second representation: The whole drawing is nothing other than a curve or arc of development, with sections which have been more or less elaborated according to the particular plane. When we see the drawing in this light, we realize that we have to pay attention to the curvature. The rise is very steep at the beginning with the first plane, more gradual for the second and third planes, and non-existent with the fourth. We can conclude that, as regards development, the plane of childhood is much more important than that of maturity. In fact, after twenty-one (the age of majority at the time),³ we have merely a dotted line, as though to indicate that development is over; and at twenty-four, we find an arrow, as though to indicate that life goes on in the same way, that is to say, in a direction and with an intensity and style already clearly established.

When we compare the two drawings of the planes of development, we see that the first one is more of an abstraction, an ideal representation of the pattern and rhythm of development. As we already know, Montessori called this particular drawing "the constructive rhythm of life," and rhythm and pattern are what this chart is clearly about.

The second drawing is more natural, more biological as an image, and therefore more reminiscent of a life process. Each plane is given its own distinct character (and this is truer to life); each plane merges gradually into the next (and this is what happens in life). Therefore, in the second drawing, we do not see the sharp points, the abrupt changes of direction, the sudden changes of color, that are to be found in the first. The second drawing has been called "the bulb"; the name obviously refers to a shape and to a phenomenon belonging to Nature. At the same time, the name carries a strong connotation of a source which is hidden in the depths of darkness and of growth which gradually emerges into the light. In fact, a bulb is a shoot which resembles a large bud. As such, it holds within itself all the parts that

³In both of Montessori's charts, the age of majority is indicated, that is to say when the individual becomes of full legal age. In the 1950 drawing this is indicated by means of the written word; in the 1951 drawing, "coming of age" is indicated by the drawing itself—where the stem of the plant ends, so to speak, and the dashes begin. In both cases, the age of majority coincides with twenty-one years of age. Under Italian law, in fact, full legal age was reduced to eighteen years only as of March, 1975.

will develop into a perfect individual but that remain hidden from sight, insofar as a bulb is typically subterranean. A bulb, in other words, encapsulates the power of growth, of expansion—that is to say, the irresistible force of life.

This leads us immediately to the idea of life as energy and to the idea of the child as the bearer of “precious energies that tend to manifest themselves with irrepressible force” (Montessori, Second lecture). Indeed, in the related text, Montessori speaks so often of energies that one can view the drawing as literally illustrating the energy and dynamism of growth and development. The initial shape and mass, the bulb itself, so to speak, can now be seen as representing all those energies that are found at the beginning of life and that are necessary for the formation of a human being.

Education, then, becomes a matter of helping these energies, for “the soul is not a stone for sculpting according to the artist’s talent, but is free energy whose expression and unfolding obeys its own inner laws” (Montessori, Second lecture).

Thus the two charts, the two drawings, do not contradict one another but actually complement each other; the different points of view that they incorporate are not mutually exclusive but mutually enriching. Consequently, our understanding of the four planes of development is enhanced if we examine both charts rather than one alone.

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In the end, however, the two drawings—whatever their similarities or differences may be—can only *represent* the four planes. Thus the two charts both explain and do not explain these phases of development, and to understand more, as we have already had occasion to note, it is necessary to refer to Montessori’s words, to what she said and to what she wrote.

The "Energies" of Infancy

In the lecture that Montessori gave with the help of this second chart (Second lecture), she says that in this drawing we first see a burning, fiery mass that gradually decreases in volume and narrows down to a different color (from red to green). The first part of this "mass" represents the initial sub-plane of infancy, the "period of the unconscious" which "holds within itself all the energies of Man and is therefore of an importance as great as the vastness of the mystery that surrounds it." To indicate the importance of this period on her drawing, Montessori has identified it by the simple yet momentous expression, the *Formation of Man*. "All the energies of Man" are also indicated on the drawing through the written word, by the term *nebulae*,⁴ which we find in correspondence with the moment of birth. The nebulae, then, stand for all those creative energies that lead the newborn child to actively absorb the environment and thereby to "create" himself as a human being, a being with all of the typically human characteristics. (We can also look on the nebulae as differentiated and specialized kinds or stages of the *horme*, the *horme* being nothing other than a life force or vital energy which manifests itself as an urge to purposive activity.) The absorption of the environment is reached through unconscious, active experience and, specifically, through the work of a mind so different to ours that Montessori calls it the *absorbent mind*. Thus, in *The Formation of Man*, Montessori writes:

It seems as if the absorbent mind acts in a like manner [to a camera]. There too the images must remain hidden in the darkness of the unconscious and have to be fixed by mysterious sensitivities whilst nothing yet appears outside. Only after this miraculous phenomenon has been accomplished will the creative acquisition be brought into the light of consciousness and there it remains indelible in all its particulars.

The second sub-plane emerges from, and is built upon, the first. This is the period when "the conscious is in the process of forming itself" and thus, in the drawing, Montessori identifies the second

⁴For *nebulae*, see also Montessori's books *The Absorbent Mind* and *The Formation of Man*; for the unconscious, subconscious, and conscious mind, apart from the previous books, see also *To Educate the Human Potential* and *Education for a New World*.

period (mainly colored red but already showing a transition to green) as the “construction of the conscious mind” (Second lecture).

The “Tranquility” of Childhood

At this point, that is around the age of six, there starts a new period of life. It is represented in our drawing by a simple line since this period of life (which ends around twelve years of age) is one of security and tranquility. The beginning of this period coincides with the age at which the child is normally admitted to school.

The “Ferment” of Adolescence

After the second plane, our drawing presents a swelling or bulge, which stands for the period of adolescence. At this point, the human psyche is all in a ferment, in a state of tumult. The life of the emotions rises up from the abyss and, with it, the most contrasting of emotions. These are often experienced simultaneously and therefore bring about a profound disequilibrium or instability. The body is also weaker and the tendency to fall ill increases. Meanwhile, the school bears down on the adolescent being with all the weight and pressure of the newly increased academic requirements. This is the period when juvenile delinquency may manifest itself.

The “Calm” of Maturity

Then, all of a sudden, the crisis is over and equilibrium is re-established. The storms of adolescence are followed by a calm, by a full control of all one’s energies, which is the result of the maturation that has been reached.

The Four Planes

In her drawing, Montessori identifies the whole span of time from six years to around twenty-one years of age as the *Development of Man*. Both the *Formation of Man* and the *Development of Man* together make up the long, single arrow Montessori has identified as *Finality*; both, in other words, follow the direction of finality. Then, the objective or goal of that process is simply indicated as *Man*, and Montessori shows that goal as being reached between the ages of twenty-one and twenty-four.

But what about that “man”? What kind of “man” is he? Not necessarily the kind of individual that he could have been or that we would wish him to be. In Montessori’s own words:

As soon as his university studies are over, the youth finds himself abandoned by the educational establishment, left to face life alone, and face life he must. But the education which he has received, based as it was upon repression, has already prevented him from forming his own character and now, all of a sudden, it has abandoned him. He finds himself lacking in all of those defenses which he was prevented from building by the very system that repressed him for the whole of his childhood and adolescence. Thus ... one finds young people who, after finishing their studies, turn to psychotherapy because they feel incapable of facing life, lacking as they do all necessary knowledge of themselves and of the society into which they were born. (Second lecture)

The crucial point here is the question of whether the education the individual experienced was based on the principle of repressing or that of respecting “the inner energies of the child.” As Montessori herself says: “Energies that are repressed lead to inferiority complexes, the weakening of personality, lack of responsibility, listlessness, timidity, a tendency to bullying and to violence. All these phenomena create human beings that are maimed from the psychological point of view” (Second lecture).

II. Society’s Single Fragmented Plane

In both charts, the structure of the bottom drawing is basically the same: In both we can see a great inclined plane, an “educational field of action,” which starts to expand from the age of six and keeps expanding until it comes to an abrupt end with the end of university education. Therefore, with the new chart we see the same basic linearity as before, the same basic organization of education. In connection with the first chart, Montessori explains that this “existing system of education is the result of regarding education from the point of view of society or social organization ... rather than from the point of view of the physical and psychological needs of human growth and development” (First lecture). This is the reason why “we find an educa-

tional void" for the first plane of development (First lecture), for those years that are so vital for the development of the human individual.

With the new chart, however, Montessori's bottom drawing indicates that some provision is made for the first plane of development; society has something to offer children during their early years of life. In fact, the importance of these early years is universally recognized nowadays, but in spite of this there is no universal provision of environments suitable for helping developing life during the first plane. What society has to offer here is more for the few rather than for the many; the state exerts control through legislation but leaves the provision mostly to the private sector.

Leaving aside now the same basic linearity, what is it that Montessori wants to highlight with the second chart? It is clear that she wishes to highlight the discontinuity and fragmentation characterizing the educational system. To emphasize this discontinuity, Montessori has explicitly identified and distinguished the various educational environments and stages of schooling: nursery, pre-school, elementary school, secondary school, university. Thus, in her 1951 lecture (Second lecture), Montessori says, "The school, as we see it in operation at present, is made up of so many periods, each of which exists for itself alone, unrelated to the others." In fact, in Montessori's drawing, we can see that the various institutional "blocks" or periods are not only clearly separated from one another, but actually have great spaces between them. Montessori goes on to say, "To pass from

one period to another, it is necessary to cross the void that separates them with the effort represented by an examination: those who cannot make that 'leap' go under and have to go back." As we can see in the drawing, Montessori represents and emphasizes each such examination by a thick black band which is found at the end of each cycle of education.

Anyone accustomed to thinking of education divided into its usual blocks and stages would ask the same question that Montessori poses: "What exactly then is this method which begins with newborn babies and extends to undergraduates?" This question is all the more legitimate because there is no other single "method" of education that is so all-embracing.

Discontinuity, however, is to be found not only in relation to the education provided by the state or public sector, but also in relation to the educational methods that have been devised and developed by various educators and that (at least in their day) came to constitute various types of “alternative” education. Therefore, Montessori has also identified various stages of education in association with some famous names: Froebel for the preschool, Pestalozzi for elementary school, Herbart for the secondary school. These are names of international renown in the history of education, and they are all names of educators who came well before Montessori: Johann Pestalozzi (1746-1827), the Swiss educational reformer; Johann Herbart (1776-1841), the German philosopher and educator; Friedrich Froebel (1782-1852), who was Pestalozzi’s pupil and destined to become yet another famous German educator. The names of Montessori’s famous contemporaries in the field of education, on the other hand, are not to be found in the drawing, but we can find them in her written works.

In The Formation of Man, Montessori writes:

... the Froebel method deals with children below school-going age only; that inspired by Pestalozzi refers only to elementary schools; the methods of Herbart are particularly concerned with the secondary school. Even with the most recent methods we see that the Decroly method is meant for the elementary schools, the Dalton Plan is meant above all for the secondary schools, and so on. Traditional methods have certainly been modified, but the teacher of one particular stage cannot teach other grades. No secondary school teacher is concerned about the methods employed in preschool, let alone about those employed in the crèches or day nurseries. Each stage is clearly defined and the methods, which are constantly on the increase nowadays, are always limited to one or another of these well-defined categories. The idea of secondary schools using the Froebel method is clearly nonsensical; advocating the use of nursery methods in universities would be even more so.

On the basis of other references and sources, we can add other names to that of Decroly for methods aimed at the primary or elementary schools: the Cousinet method, the Claparède method, etc. These

were new methods, part of all those new methods which, to use Montessori's words, "continue to crop up."

* * *

Montessori herself makes the strongest possible contrast between her approach to education and all other methods. She contrasts her approach not only with traditional education but also with the other experimental methods. She asserts that her approach is of universal validity since it applies to all the phases in the development of a human being. Thus, in *The Formation of Man*, Montessori writes: "Another strange fact about this method is that though originally intended and developed for preschool education, it has now infiltrated into the elementary schools and even into secondary schools...." And she continues: "But the method has also developed in the opposite direction, and has been applied to children under three years of age."

Anyone accustomed to thinking of education divided into its usual blocks and stages would ask the same question that Montessori poses: "What exactly then is this method which begins with newborn babies and extends to undergraduates?" (*The Formation of Man*). This question is all the more legitimate because there is no other single "method" of education that is so all-embracing.

A PRINCIPLE OF EDUCATION FOR ALL AGES

All of us, for the sake of convenience, use the expression *the Montessori Method*. However, Montessori herself explains that "if we were to eliminate not only the term 'method' but also its common conception, things would become much clearer. We must consider the human personality and not a method of education." She suggests that we should, instead, speak of "help given in order that the human personality may achieve its independence" or of "means offered to deliver the human personality from the oppression of age-old prejudices regarding education." Montessori sums up in this way: "The defense of the child, the scientific recognition of his nature, the social proclamation of his rights, must replace the piecemeal ways of conceiving education" (*The Formation of Man*).

In her 1951 lecture, Montessori expresses it thus:

No one believes that the forces within the child can act alone, such that the child can be abandoned to his own devices. Education has to furnish the help, the aides necessary for the child to use his energies. The task of education is that of creating an environment favorable from this point of view.... Therefore, when education is understood as help offered to life, that is to the manifestations of natural energies, the effect that is obtained is the strengthening of these energies. (Second lecture)

All of this contrasts with methods of traditional education which, as Montessori points out, “wish to impose a fixed stock of knowledge or ideas on the child, knowledge which is considered essential for development and has to be learned in a certain order and within predetermined time limits.” This traditional system of education, moreover, “is based on the principle that we have to put something into the child’s soul in order to obtain certain fixed results, and we want these exactly in proportion to what we have given. Thus, in the schools, the programs or curricula set limits on what the pupils ought to know” (Second lecture).

It was in reaction to the rigidity and repressiveness of traditional education and formal learning that there arose a new movement in education, a movement that was particularly active during the early part of this century and that led to all those new methods that, as Montessori put it, “continue to crop up” (*The Formation of Man*).

MARIA MONTESSORI AND PROGRESSIVE EDUCATION

During the two decades between the first publication of *The Montessori Method* (1909) and the founding of the Association Montessori Internationale (1929),⁵ Maria Montessori’s work encountered John Dewey’s American pedagogy and William Heard Kilpatrick’s realization of this (*Project-Method*, 1918); Carleton Washburne’s plan (*The*

⁵The name Association Montessori Internationale is clearly in the French language, and the initials AMI—as Montessori liked to recall—ought to be pronounced in the same way as the word *ami*, that is to say, “friend.” (That the name is in the French language is clear not only from the spelling of *internationale*, but also from the word order, since an authentically English rendition would give International

Philosophy of the Winnetka Curriculum, 1926); and those of two of Montessori's pupils: Makinden (*Individual Work System*) and Helen Parkhurst (*Education on the Dalton Plan*, 1927).

Above all, Maria Montessori's work encountered that of the Geneva group in the new education movement: Pierre Bovet; Adolphe Ferrière; Ovide Decroly (*La fonction de globalisation et l'enseignement*,

Montessori Association. Thus it is difficult to understand why the American branch office of AMI has been registered under the name of Association Montessori International/USA, where *international* has been given an English spelling but the word order is always French and not English at all. Depending on one's point of view, one can consider this "Frenglish," a linguistic pastiche, or an exotic variety of English.)

Maria Montessori had the idea of founding AMI in the great hall of Hamlet's castle. This castle of Shakespearean fame is none other than Kronborg Castle, in Elsinore, Denmark. She revealed her thoughts to her closest collaborators, in that same royal castle, on August 20, 1929.

The date coincided with the end of the First International Montessori Congress (which formed part of The World Congress for New Education, organized by the New Education Fellowship). AMI was formally or legally founded three years later, during the International Montessori Congress held in Nice. It seems to me that, with the legal founding of AMI, the Montessori movement presented the same "quasi-political" and "quasi-religious" characteristics that Erich Fromm describes in connection with the Psychoanalytic Movement. (The Psychoanalytic Movement was formalized by Freud around 1914 with the founding of the International Psychoanalytic Society.)

AMI came into existence so that Maria Montessori's original idea would not die, invalidated by compromises "that make it more acceptable and popular." *Illustrazione dei principi e della pratica del Metodo* ("Illustrating the Principles and Practice of the Method") was, in fact, the theme of the First International Montessori Congress.

In the three AMI statutes that have succeeded one another during the sixty-five years of AMI's existence (the second and the third date back to 1954 and 1985 respectively, following the death first of Maria Montessori and then of Mario M. Montessori, Sr.), the main aim has always been that of protecting, safeguarding, and maintaining the integrity of Dr. Montessori's idea of education. Mario M. Montessori, in his article "*Che cosa è l'AMI*" ("What Is AMI?"), published in the Italian Montessori Society's monthly review, explains the founding of the association in terms of the need to coordinate and discipline the many societies that came into being in various parts of the world. Each of these associations "tended to emphasize one or another aspect of the Montessori approach, thereby losing the complete vision of a new and revolutionary form of education. For example, some emphasized more the concept of freedom in education, others that of activity, or the utility of the material for teaching, etc. In accordance with these various ideas, school practice also came to be modified, either by imposing a timetable on the children for the various activities or by introducing other materials alongside the Montessori material, or by giving unlimited freedom to the children, or else the opposite, by subjecting them to a system of rigid obedience."

1929); Édouard Claparède (with “individualized” education, 1921); Roger Cousinet (with the teamwork method: *Une méthode de travail libre par groupes*, 1925); and Célestin Freinet (with the school printing press, *Imprimerie à l’école*, 1927). They are all Maria Montessori’s contemporaries, and among these exponents of the new movement there is also Jean Piaget, with his developmental or genetic approach to experimental psychology.

The new education movement or progressive education can be loosely identified with “activity” methods that promote “education through activity rather than formal learning.” From the 1920s, the movement is headed by the New Education Fellowship and by the International Bureau of Education (IBE) in Geneva, which become the point of reference for international research and documentation in the field of education.⁶

The Italian government did not join the IBE and thereby indirectly favored the dominating influence of the Geneva group of psychopedagogists, at the expense of Montessori and Montessori’s work.⁷

⁶The International Bureau of Education, founded in Geneva by Pierre Bovet and Adolphe Ferrière, had for its first director Bovet himself; the vice-directors were Ferrière and Elizabeth Rotten. The latter, a German Montessorian, would later become vice-president of the Swiss Montessori Association (with Piaget as president) and, from 1952 until her death, one of the vice-presidents of AMI. The International Bureau of Education, directed by Piaget as of 1929, took for its own aims those of the League of Nations: upholding peace and developing international cooperation.

⁷Because of the particular statutory regulations of the International Bureau of Education (which did not permit private individuals to participate), Maria Montessori was excluded from the IBE. Therefore, Montessori turned to the highest national authorities to ask for Italy to join the IBE. As evidence of this, we have a letter of Montessori’s (sorrowful in tone, and reproduced in *Il quaderno Montessori* 8.31-32, Autumn/Winter, 1991-92), dating back, in all probability, to 1931, and addressed, again in all probability, to E. Bodrero, who had just succeeded G. Gentile as president of the Italian Montessori Society. Montessori wanted to explain her method—“those educational and social ideas that have exerted a significant influence on the new schools and on the renewal of educational theory”—to the representatives of the nations belonging to the IBE. “Instead of others who speak [about the method] without the requisite authority,” Montessori wanted to be in a position to speak for herself. But Bodrero, a lecturer in the history of philosophy at the University of Padua and vice-president of the House of Deputies at the time, did not believe in the Montessori creed of the feasibility of peace. Indeed Bodrero, who was later to teach the history and doctrine of fascism, was clearly antagonistic to the Geneva circle of pacifists (and the IBE was also a driving force for peace), which he considered to be an offshoot

The Geneva group, intent as they were on putting forward their own methods, excluded Montessori more and more. The result was that of accentuating the misunderstanding between the mainstream of the new education and Montessori, who already felt that she was not listened to directly but only offstage, so to speak, through the voice of others.⁸

In *The Formation of Man*, Montessori writes, "Today there are many important currents and personalities in the field of education. There is the New Education Fellowship which wishes to promote harmony between and collaboration with the Montessori method and the other new methods...." In effect, the Geneva group was criticizing certain aspects of the Montessori approach, and Montessori was not willing to compromise.⁹ As far as she was concerned, selecting some aspects

of the League of Nations. (This same League of Nations would, in 1935, impose economic sanctions on Italy over the question of Ethiopia, and in 1939 Italy would withdraw from the League.) Nevertheless, in his role as president of the Italian Montessori Society and as a result of Maria Montessori's insistence, Bodrero was compelled to take action. In his unpublished letter of December 23, 1932, a letter addressed to Mussolini's private secretary but intended for Mussolini himself, Bodrero complained of, among other things, the fact that the Ministry of Education had always refused to join the IBE, and he urgently requested Italy's participation once again. In any case, the fascist government would never join. Nor could it, because its own philosophy of education was expressed through its own organizations: that of the Opera Nazionale Balilla and that of the militant Fascist Youth Groups.

⁸As one can read in the same letter cited in the preceding note.

⁹Two examples are the disagreements with Decroly and with Claparède, respectively. Montessori disagrees with Decroly over the teaching of reading and writing. Specifically, this means that she does not agree with the use of the "global" method in this context, a method which involves a purely "sight reading" approach. We can find evidence of this disagreement in a pamphlet of hers entitled *Introduzione ad un metodo per insegnare a leggere e a scrivere agli adulti* (*An Introduction to a Method for Teaching Reading and Writing to Adults*), published by the National Union for the Campaign Against Illiteracy, Rome, 1951. This contribution of Montessori's was later reprinted under a new title, "L'uomo dai due linguaggi" ("The Man of Two Languages"), in *Vita dell'infanzia* 12.5, May, 1963.

Montessori writes: "Decroly has tried to begin the teaching of written language by starting with whole words because they have a meaning. With this method known as the global method, one introduces a word, with all the alphabetical signs of which it is composed, as though it were a single sign, and one relates this global sign to the object or to the idea which it represents. But then what does that written word become if not a kind of hieroglyphic? And does this not mean returning to that ancient form of written language where ideas are represented by means of conventional drawings? And then the enormous value of the simple solution provided by the alphabet is completely ignored." In contrast, Montessori's initial approach to written language is purely phonic, and she even offers young elementary children "the story of the ox and the house," which is nothing other than the story of the invention and development of the alphabet. One of the aims

of the method and excluding others meant distorting the very nature of the method.¹⁰ The final result was that, as Montessori herself writes:

of this story is to show the children that, although pictograms and ideograms are fundamental steps in the development of written language, the invention of the alphabet has simplified it to the point where written language is within the reach of everyone. Moreover, as Montessori points out, this invention has not only simplified but has also humanized writing because the alphabet has connected written language directly with spoken language and made the former a complement of the latter.

Montessori disagrees with Claparède over the question of what should be included in school programs, and we can find evidence of this in two of her written works. In *The Formation of Man*, she writes: "Claparède, a great authority on pedagogical matters, described on behalf of the New Education Fellowship all the damage done to pupils by study in schools." And Montessori goes on to comment: "The new schools therefore tried to eliminate and withdraw from the curricula many subjects not considered necessary, e.g. geometry, grammar, and a great deal of mathematics, and substituted games and open-air life instead."

In *The Absorbent Mind*, Montessori writes: "The movement for New Education, so ardently championed by Claparède, undertook an inquiry into the number of subjects in the curriculum, and tried to reduce these so as to diminish mental fatigue. But this does not touch the problem of how pupils can acquire the riches of culture without becoming tired." For other references to Claparède, see also Montessori's *The Advanced Montessori Method*, Volume 1, *Spontaneous Activity in Education*.

¹⁰Thus she writes in *The Formation of Man*: "... 'gifts' of Froebel were mixed up with our scientific apparatus for mental development and the conclusion reached was that both contained some good parts, but that the alphabet, writing and mathematics should not be introduced into schools for very young children." And also in *The Formation of Man*: "The English nursery schools, for instance, are being compared to Montessori Schools. The toys used and the treatment of children in the former are being compared to the objects employed and the procedure adopted in the latter, in order to establish some sort of compromise between the two and make one method out of them.... While comparing the gifts of Froebel and our apparatus it has been pointed out that both are efficient and their conjoint use is advocated. There are only a few conflicting points, e.g. the question of fairy tales, play with sand, the exact use of the apparatus and certain other details about which much discussion is still going on. Also in primary schools, the methods of teaching reading, writing and arithmetic are still being discussed. There is much controversy over our insistence of teaching geometry and other advanced subjects at this early stage."

One can refer also to a private letter of Maria Montessori's, addressed to a "Carissima signorina" who can only be identified as one of Montessori's students from Rome. The contents, in any case, were meant to be passed on to the Hon. F. Orestano, vice-president of the Italian Montessori Society. The letter is dated December 6, 1932, and was sent from Barcelona, where Montessori was living at the time. (At the end of 1932, the Catalan city of Barcelona was troubled by antigovernment agitation instigated by anarchists and syndicalists. The disorders were such that the republican government was forced to concede autonomy to the region of Catalonia.) The tone of Montessori's letter is one of grief: "... unauthorized Montessori associations," she writes, "have appropriated the method, altering it by using the ideas of psychologists in the locality and also by combining it with other methods: that of Froebel, Decroly, Cousinet, etc....")

"The world of official education too put our work aside" (*The Formation of Man*).

NATURE AND SUPRANATURE

Let us observe the structure of "the bulb": It starts as an impressive mass, which gradually decreases and tapers right down to eventually end up as a series of dashes or points. The triangular structure we can see below is built, one might say, in the opposite sense: It starts from a point and gradually increases, expanding in thickness or volume. Clearly the two different structures illustrate two different processes, two different points of view. The first is that adopted by Nature for human development; the emphasis is found at the beginning of development, that is to say at birth and the first few years of life. The second is that adopted by our human society, that is to say by our supranature; the emphasis is found at the end of development, at the last stage of the individual's studies.

The two processes, development on the one hand and education as we find it implemented in our society on the other hand, therefore single out or emphasize the opposite extremes: the beginning and the end of development. These are very different times and kinds of construction. The first is for the construction of psychic and physical life and is therefore concerned with the interior dimension of the being; the second has to do with the building of a social and professional life and is therefore concerned with the exterior dimension of the individual.

This is why Montessori says that the "existing system of education is the result of regarding education from the point of view of society or social organization ... rather than from the point of view of the physical and psychological needs of human growth and development." If, instead, education is to be a "help to life," or "help given in order that the human personality may achieve its independence," then it must be based upon the physical and psychological needs of the human being during all the stages or planes of development (*The Formation of Man*).

Moreover, “the human personality is essentially one during the successive stages of development,” and therefore, it is the child who forms the adult man or woman. If we do not help the child, we have not helped that adult. Thus Montessori says: “In our most recent courses ... we call the child, ‘Man’” (*The Formation of Man*).

Montessori did not speak only in words; she also spoke in images, and she left us two images for the four planes of development: “the constructive rhythm” and “the bulb.”

MAN THE UNKNOWN

The letter *x* of the alphabet, when used in mathematics, means “an unknown.” This mathematical meaning has become part of the ordinary language in Italy and has given rise to expressions such as *a great X* (*una grossa X*) meaning “a great unknown.” It is in this sense that we should interpret the large and impressive *X* that Maria Montessori has drawn in the middle of her chart, between the drawing above and that below, between “nature” and “supranature.”

Thus, in *The Formation of Man*, we read, “This miracle of Nature—for the formation of the intelligence, of a human personality, is certainly a miracle”—is a field, so to speak, that “has hitherto been unexplored..., an unknown.” “We only know that in the human psyche, there exists an enigma, not yet touched upon by our interest.”¹¹ And in *The Absorbent Mind*, we find Montessori expressing the same idea in this way: “We know how to find pearls in the shells of oysters, gold in the mountains and coal in the bowels of the earth, but we are unaware of the spiritual germs, the creative nebulae, that the child hides in himself when he enters this world to renew mankind.”

¹¹And also in *The Formation of Man*, but from a different perspective: “The adult has always seen only himself in society and in its progress. The child has remained outside society—an unknown quantity in the equation of life!”

The X, in other words, represents "Man the Unknown."¹² The child, and therefore the adult that the child could become, is still an "unknown."

This is the reason why Montessori can say, "The education of our day is rich in methods, aims and social ends, but one must still say that it takes no account of life itself." If natural development and education are to be integrated and harmonized, education will have to be reformed in a truly fundamental way. As Montessori says, "...the reform of education..., a necessity of our times, must be built upon the scientific study of Man the Unknown" (*The Formation of Man*). Even knowledge alone is not enough; that knowledge has to become the very basis underlying education.

In *The Absorbent Mind*, Montessori writes, "The child is endowed with unknown powers which can guide us to a radiant future. If what we really want is a new world, then education must take as its aim the development of these hidden possibilities."

MONTESSORI SOURCES

On the subject of the planes of development, or the "seasons of developing life" and the provisions made by the system of education in relation to each of the planes, there is a visible thread connecting what Montessori writes in *The Formation of Man* and in *The Absorbent Mind* (both published for the first time in 1949), and what she says in her lectures in Perugia (1950) and those in Rome (1951). This close connection can be seen in time: All these sources relate to the three-year period 1949-1951. But this close connection is also revealed by the fact that one of these sources can reinforce or explain or complete the thinking expressed in another, as we have already had occasion to note. Above all, the importance of these particular "Montessori sources" is given by the fact that they all date to the last three years of Maria Montessori's life and therefore represent her latest thinking on the

¹²Alexis Carrel, French surgeon and physiologist (1873-1944), awarded the Nobel prize in physiology and medicine (1912), was author of *Man, the Unknown* (1935), a book that became very well known and was translated into various languages. Carrel mentions Montessori.

matter. One might almost say they represent a kind of distillation of her thinking, observation, and reflection over many, many years.

But Montessori did not speak only in words; she also spoke in images, and she left us two images for the four planes of development: “the constructive rhythm” and “the bulb.” These are images that serve to encapsulate Montessori’s view of development for us, that serve to give us a very general overall vision of the pattern and dynamism of development, that serve as a point of reference. Furthermore, since both of the charts also show the educational structures provided by society for the four planes, we can see how pertinent Montessori’s criticisms continue to be.

In any case, this last contribution of Montessori’s can still, more than forty years later, constitute a source of inspiration and stimulus for us in our work.

* * *

For lack of time, it was not possible to give the complete paper during the Study Conference. What has been reproduced here is the full (and also slightly revised) version of the text.

I wish to thank Baiba Krumins G. for her help in preparing this contribution.

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¹³The first English edition of *The Absorbent Mind* was published by The Theosophical Publishing House, India, in 1949. The manuscript dates back to 1948 and is actually a transcript of the lectures given for the Montessori course (for Children’s

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Montessori, Maria. First lecture (with illustrative chart), July 10, 1950. *Lectures for the [Italian] National Montessori Course*. Unpublished transcript, Perugia, Italy, 1950.¹⁴

Montessori, Maria. *The Formation of Man*. 1955. Adyar, Madras, India: The Theosophical Publishing House, 1962.

Montessori, Maria. "The Four Planes of Education." From lectures given in Edinburgh, 1938, and London, 1939. Ed. Mario M. Montessori. *AMI Communications* (1971, #4): 4-10.¹⁵

Montessori, Maria. *The Montessori Method: Scientific Pedagogy as Applied to Child Education in "The Children's Houses."* 1912. London: Heinemann, 1912.

Montessori, Maria. Second lecture (with illustrative chart), April 6, 1951. In *Lectures for the [Italian] National Montessori Course (for teachers specializing in Montessori education)*. Unpublished transcript, Rome, 1951.¹⁶

House) held in Ahmadabad (capital of the state of Gujarat), India, during the spring of that year. This Montessori course was the second one held in Ahmadabad. The first Ahmadabad course began in April, 1944, and it was during that period that Maria Montessori's internment in India came to an end. She returned to Europe in August, 1946, only to return to India in July of the following year.

¹⁴This course, held under the auspices of the International Centre for Pedagogical Studies of the Italian University for Foreigners, ended on September 9, 1950. The International Centre for Pedagogical Studies was in fact founded in 1950 for the purpose of promoting and propagating a deeper understanding of the educational problems and methods of the time, and Maria Montessori herself became the first president of the Centre.

¹⁵The Edinburgh lecture was given at the Seventh International Montessori Congress, titled "Education as a Help to Life," which was the last congress to be held before the outbreak of the Second World War.

Montessori, Maria. *Spontaneous Activity in Education*. 1916.
Trans. Florence Simmonds. New York: Schocken, 1965.
Vol. 1 of *The Advanced Montessori Method*. 2 vols.

Montessori, Mario M. "Che cosa è l'AMI [What Is AMI?]"
Vita dell'infanzia 10-11 (1952, October-November).



¹⁶Organized by the Opera Nazionale Montessori (the Italian Montessori society), under the presidency of Maria Jervolino de Unterrichter, the course was held from April 2 to June 30, 1951. The official inauguration took place on April 4 in the Sala Borromini of the Oratorio dei Filippini, with the presence of the Education Undersecretary Vischia, who was there to represent Gonella, the Minister of Education. Maria Montessori gave her lectures at the Palazzo Venezia while the methodology lectures, given by A.M. Maccheroni and by Mario M. Montessori (who was assisted by G. Sorge and F. Guidi) were held in the Montessori section of the public elementary school, U. Bartolomei, in via Asmara.