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Papers*

*Montessori's View of
Cosmic Education*

By Mary Hayes

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Montessori's View of Cosmic Education

Mary Hayes

Mary Hayes has been the General Secretary of AMI since September 2000. Before taking on that responsibility, she was, from 1990, the Director of Training for the AMI Elementary Course at the Montessori College in Dublin, Ireland. She was also, for some years, the acting Director of Training for the AMI Primary Course at the same college. Ms Hayes was Director of Training for the Elementary Montessori course held at the Toronto Montessori Institute, Canada, during the two academic years 1986-87 and 1987-88. Mary Hayes started her career in AMI in 1978 as a member of staff at the Montessori section of Sion Hill College in Dublin. She has considerable experience in the field of education, and holds both the 3-6 AMI Diploma (Dublin 1972) and 6-12 AMI Diploma (Bergamo 1974). After several years of teaching elementary classes, Ms. Hayes took the AMI Training of Trainers Programme at Sion Hill College and the Washington Montessori Institute. Apart from her work with students, she has contributed to the spread of Montessori through lectures and talks to parents and diploma holders. Mary Hayes is a member of the Pedagogical Committee, and an ex-officio, non-voting, member of the Sponsoring Committee and the MM 75 Fund.



I was first introduced to Montessori's Cosmic Education as a student of the 13th Elementary Course (1973 –1974) in Bergamo Italy by Camillo Grazzini and I should, therefore, like to dedicate this presentation to him, for I believe that if Camillo was still with us today he would be giving this talk. The brochure of this congress in fact, uses a quotation from Camillo which bears repeating here,

'It is this vision of an indivisible unity made up of energy, of sky, of rocks, of water, of life, of humans as adults and humans as children that lends a sense of the cosmic to Montessori's thinking. This cosmic sense pervades all of Montessori's work, both her thinking and her educational approach for all of the different planes and stages of development of the human being: from birth without violence to the Infant Community, to the Casa dei Bambini, to the elementary school, to the Erdkinder community for adolescents.

Quite clearly, then, this cosmic vision belongs by right to the whole of the Montessori movement: it is indeed the key which gives us a shared direction and a common goal in our work'.

'Maria Montessori's Cosmic Vision, Cosmic Plan and Cosmic Education' p 81 – 82 Conference Proceedings, Paris 2001

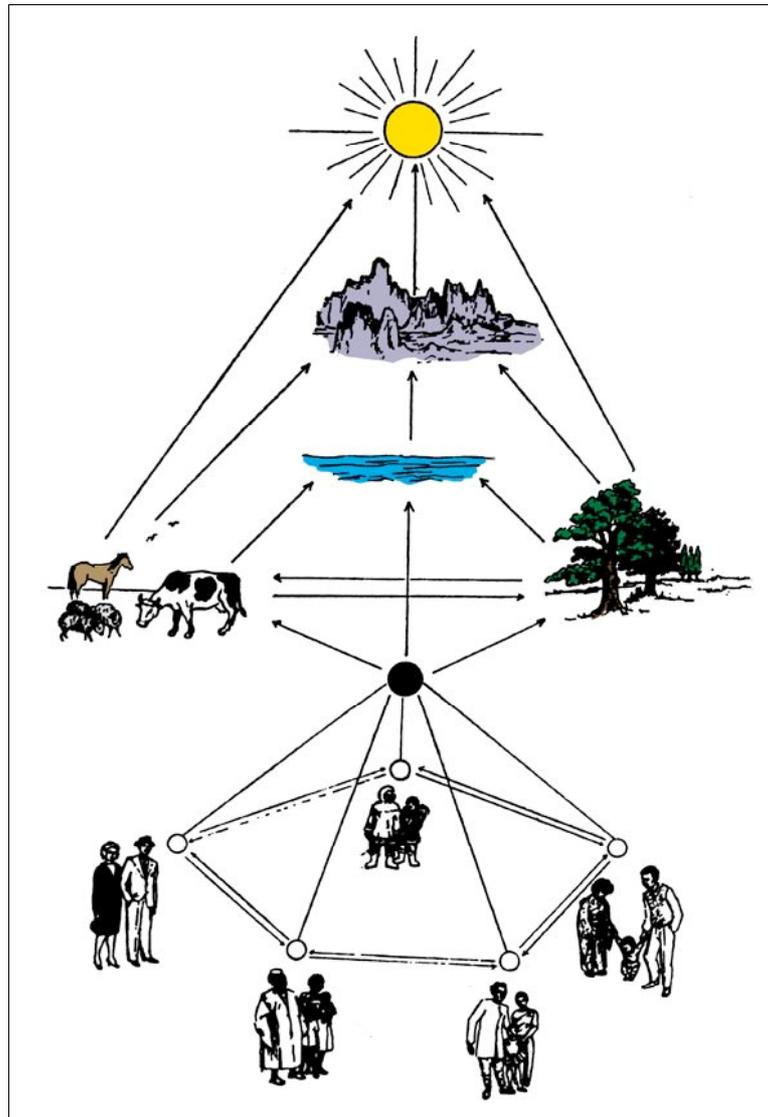
The planes of development mentioned in the quotation relate to Dr. Montessori's discovery of how natural development unfolds over the years from 0 to 24, and you will be hearing about the planes of development during these days. They were and continue to be a unique discovery of our educational work. They are fundamental and unchanging and therefore must be respected. I say fundamental as they determine our approach to education and therefore particularly to Cosmic Education. They are the first component in this determination of Montessori education.

The second component of Montessori's Cosmic Education is what Camillo referred to in the quotation, as the 'vision of an indivisible unity ...' this determines the Montessori view of the Universe. In her book 'To Educate the Human Potential' Chapter 1 'The six-year-old- confronted with the Cosmic Plan' Dr. Montessori describes it in this way,

'Since it has been seen to be necessary to give so much to the child, let us give him a vision of the whole universe. The universe is an imposing reality, and an answer to all questions. We shall walk together on this path of life, for all things are part of the universe, and are connected with each other to form one whole unity. This idea helps the mind of the child to become fixed, to stop wandering in an aimless quest for knowledge. He is satisfied, having found the universal centre of himself with all things'

(Clio 1989 p 5 – 6)

'Chart of Interdependency' from 'Human Tendencies and Montessori and Education' by M. M. Montessori (Revised Version 2003 p 5)



This is a graphic image of the unity to which we are referring. Here are depicted both the organic/living and inorganic/non-living agents of creation. We could think of this as cosmic organisation. Arrows indicate dependency, can you find the single independent element on the Chart?

In the Montessori Plan of Work for the child of the Second Plane of Development, the child from 6 to 12 years of age is led along the path of Cosmic Education in a multifaceted approach. There are the stories, often referred to as *Cosmic Tales/Fables*. They appeal to the power of the imagination of this child. The ideas they contain can be grasped by the imagination alone. In the Story of the Universe, the first great fable to be given to the children, the story takes them through the creation of the elements, which make up our world, the creation of these being possible because the particles of matter obeyed the laws that they were given, the fable ends in this way,

'Rocks, water, air – solids, liquids, gasses: each is what it is because of its degree of temperature'

Communications Christmas 1958 God who has no hands by M. M. Montessori

The children are given, in this simple statement two significant keys to the universe and the world in which we live. Notice, how clever this is, we do not tell them that the mountains, rivers, the

valleys and all those particulars of the planet were created. We are telling them about the scientific fact that all matter exists in three states and adding that there is a single effect or influence which causes these states of matter to be and/or to change and this is temperature.

Obedience to the laws of their nature is a significant characteristic of our work in presenting the cosmic ideas to the children. It was through this absolute obedience to the laws that the work of the inorganic and organic agents made order out of chaos. Amongst the laws we have discovered through our observation and knowledge of nature, is the fact that we know the water will flow downwards and sideways, the air when heated will rise, the rocks will be worn away to create soil for seeds to anchor themselves and grow, these are the chemical laws which govern the non-living agents of our environment. In the living/animate world, the plants and animals have been given biological laws, the plants will produce oxygen for animals and humans to breathe, some animals must live in water, some in complete darkness under the earth, some animals become food for other animals. The order and harmony of the universe will only be maintained through the correlation of the cosmic tasks of all the agents of creation.

Keys to knowledge are significant in our work with the children during both of the first two planes of development, keys open up possibilities for the child's own work and therefore they allow some change to take place within the child. Quoting Dr. Montessori in the booklet already referred to in relation to the Chart, Mario M. Montessori says

'They (children of the first plane) have already absorbed the immediate environment and the restricted society they and their families have dealings with. You must try to give the child what he now longs for: the understanding of the world, how it functions and how it affects the life and behaviour of humanity'
(p 2.)

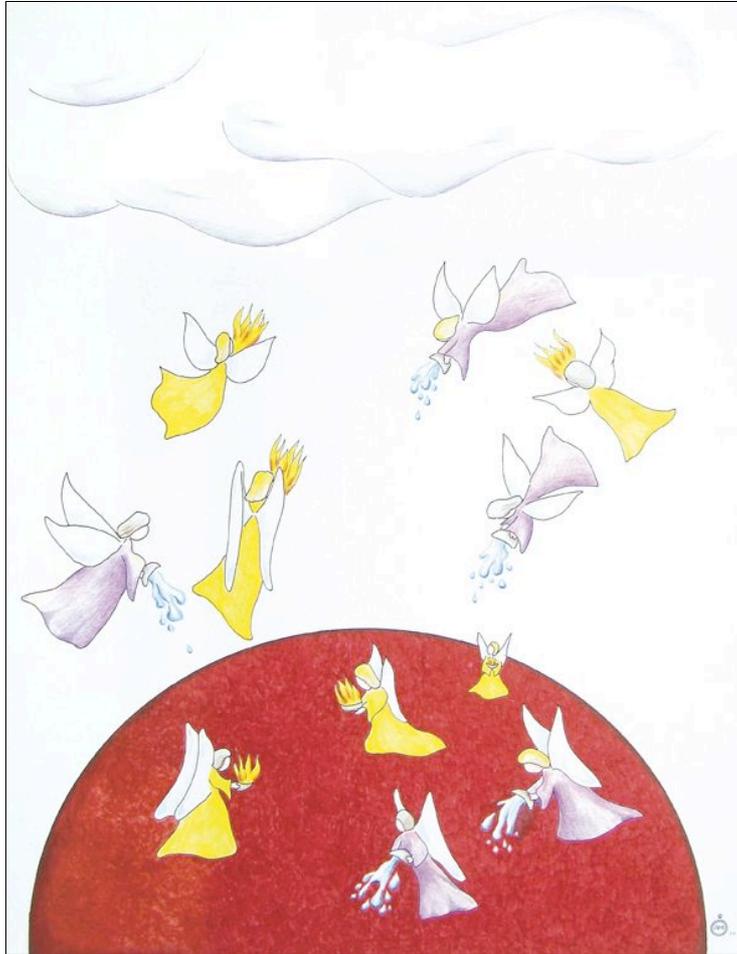
At the end of the story of the creation of the universe, an inanimate/inorganic environment has been prepared for what we call the coming of life. Life comes in answer to a need. This need is what I call one of the 'purifications'. You see there is in Montessori's Cosmic Education, the story of creation, the bringing into being of what did not exist before, this is one aspect of cosmic education and then there is, as it were, the 'house-keeping' or maintenance of that creation. Now today we are all very familiar with this, unfortunately in the negative, we know this as pollution. Montessori's Cosmic Education views it as a fact calling for service to be rendered. Service rendered to the environment, service rendered to life, service rendered to humanity. Service, not only rendered, but also received.

What has to be purified, the water and the air, the two environments of life. In our second Cosmic Fable, which we call 'Story of the Coming of Life' the water has become awash with what we know as calcium carbonates, this substance has come about through the wearing away of the rocks of the earth, can you imagine that rocks which to us appear hard and durable can be actually worn down to form a kind of chalky substance. Well this did happen in the story of the changes in the earth's surface and it came about through a period of continuous rain before the surface of the earth was covered with plants. I mentioned already that we present these ideas to the imagination of the child, imagination is the most significant characteristic of the mind of the child of the second plane of development, Maria Montessori regards it as of tremendous significance in relation to humanity, she says,

'Human consciousness comes into the world as a flaming ball of imagination. Everything invented by man, physical and or mental, is the fruit of someone's imagination' (To Educate the Human Potential Clio p 10)

The materials we use in presenting the cosmic ideas to children are of two kinds. One set of materials are called 'Impressionistic Charts' and as the name suggests they give an impression of a phenomenon which cannot be seen with the eyes but can only be grasped by the power of imagination. This is an example of such a chart

Chart 3a. (Geography Charts) This chart causes quite a stir when presented to students of our courses with the Story of Creation. The angels represent the movement of air, when it is hot it rises and then it becomes cold it falls back down to the earth. This is an impressionistic presentation of how the surface of the earth cooled and eventually a crust was formed, with the waters settling into the hollows.



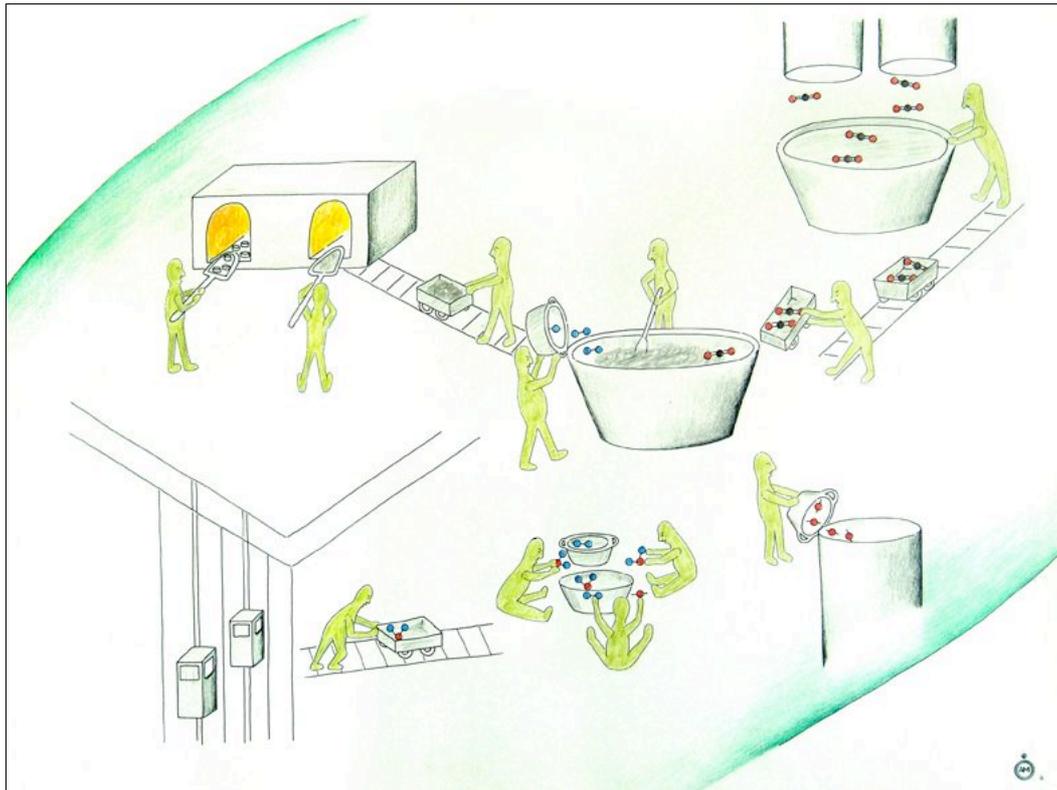
Maria Montessori found the idea of angels quite intriguing, as they are the only form of life represented in art with three pairs of limbs, besides arms and legs like us they also have wings!

Besides impressionistic charts we use experiments with the children, we show how even rocks can be worn away using a tiny piece of marble/aquarium stone, pour a little acid solution on it and 'low and behold' it begins to dissolve, yes, even rocks can be worn away over time. So the waters were clogged up with this dissolved substance and as I said already, life came in answer to this need. Tiny little creatures so minute we would not be able to see them came and they 'gobbled' up, as it were, this polluting substance. You see they needed it, they used it to make the harder parts of their bodies. And thus began the pageant of life, first the single-celled creatures appeared followed by those made up of many cells, then those creatures whose cells joined to form organs, thus becoming organisms, followed by the animals with the backbones, the fish, amphibians, reptiles, birds and mammals. Life experimented with forms and fashions

The first service that life rendered to the inanimate/inorganic environment was to create conditions in which the many and varied life forms could exist and satisfy their needs. First all life was in the water. Then soil/earth had to be created and the composition of the gases of the air had to be attended to and this was and is the work of plants. The appearance of the plants was also a pageant of life, there were the tiny microscopic ones, followed by the mosses, ferns, giants trees of the Carboniferous times, including the beautiful lepidodendron tree, meaning 'butterfly tree', (now extinct but contributing to the creation of coal deposits) and eventually came the flowering plants,

which Maria Montessori called the 'love plants' because of the special relationship between the insects and the flowers of these plants, the pollination 'experience'. Once again life comes in answer to a need, life is a cosmic agent, the need of the plants is for carbon dioxide to make food in the process of satisfying this need they purify the air and produce oxygen, as a service to all life.

Chart (Biology) Food Factory, another chart presenting the food making process in the plants in an imaginative way. We cannot see this process taking place in the leaf and therefore we show it in an imaginative way to the children. Of course we have included some scientific representations of the hydrogen and carbon dioxide in terms of the atoms of these elements. The chart is not explained to children, it is simply displayed while the teacher tells the story. Our approach is subtle.



Montessori's Cosmic Education, then is a vision of the unity of the cosmos. It includes both Cosmic Agents and Cosmic Tasks. In an article in *Communications 1973 2/3 'The Unconscious in History'*, Maria Montessori on p 10 speaks at length about the cosmic tasks and gives many examples of specific ones, then she says,

'Long and fascinating is the tale of the various cosmic tasks of living beings: ever busy each of them, ever hungry, ever eager to carry out their particular job, no matter how horrible it may appear to others whose instincts lead them to fulfil tasks opposite to theirs'

Cosmic Agents, perform functions, which render service to the whole of the cosmos. There is the unconscious and conscious service. As we understand it, we think that the plants and animals are not conscious of the service they render to the environment and to life. A dictionary may define conscious as aware of or sensitive to a fact, or aware of or sensitive to our own mental state. Mr Mario Montessori in his short article 'Cosmic Education' poses an interesting question for us. Having addressed the cosmic tasks of plants, insects, corals and others he writes,

'Supposing plants possessed consciousness, most certainly they would still not be aware that their task is to eliminate a poison and produce oxygen, which is the breath of life.'

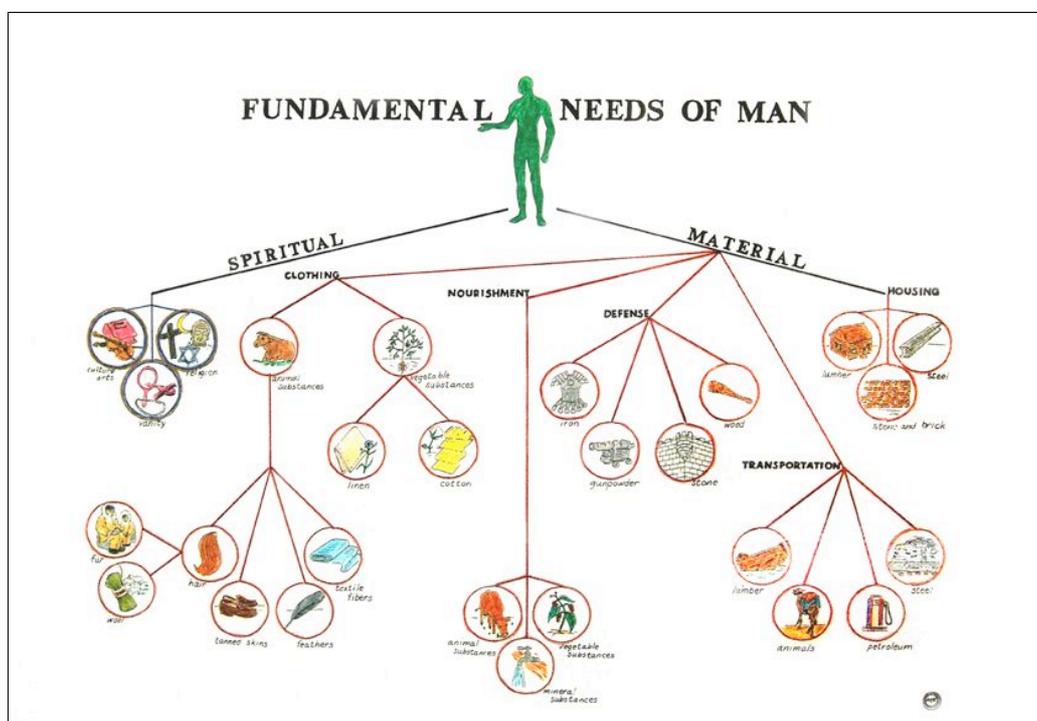
These are the primal forces, one might object; but man, endowed with his all-embracing intelligence, is he included in the same category? Is he also an agent of creation? And if so, is he also unconscious of his cosmic task? If one investigates, one comes to realise that had he been conscious of it from his first appearance on earth, human history would not have been the long path of work and suffering it has become' (p 2.)

Now, this is a most interesting concept which has not been to date explored in any real detailed way in Montessori circles, I think. The concept I refer to is the place of humanity in the cosmos. Humanity, is for Maria Montessori, at the centre of history, because we say history is the story of the human beings on the earth. Recall that when we looked at the Chart of Interdependency, there was a single solid/darkened circle connected by arrows to all the human groups. This circle represents what we call the 'supranatura/supranature' not as in the meaning of the word super, better than something else, but meaning a world superimposed on nature. But not dominating nature but a world which has been created by the work of humanity, the created world of humans. This contains all the creations of our species, both the material and the spiritual. The computer, the plough, the motorcar and the alphabet, our mathematical systems, our philosophies of life and so on and so forth.

The third Great Cosmic Fable which we offer to the child of the second plane is the Story of the Coming of the Human Beings, and in that very short story, it is short as it is just a beginning, we tell them about the gifts which the human beings were given – the mind that could think, the hands that could work and the heart that could love. These gifts, would enable the human being to make a life adapted to any part of the globe, from sunny Australia to the ice and snow of North America.

The Key for the children to the story of how the humans built societies, cultures, civilisations and nations is called 'Fundamental Needs of Human Beings'.

Chart of Fundamental Needs.



Fundamental Needs are twofold – Material and Spiritual. The circles representing the satisfaction of the material needs show usually the kinds of materials used to build our houses, to make our clothes and so forth. The circles related to the satisfaction of the spiritual, on the other hand, show the expressions of these need, that fact that the child can see, every day of his life and in his own

environment, evidence that human beings satisfied these needs, not just in our clothes, our adornments, our means of transport but also in our art galleries, our concerts and in our churches, mosques, synagogues and so forth.

This is not just a key to history for the children it offers to them what we call the 'concept' of history. Human beings have certain basic needs that must be satisfied, they also have been given inherent tendencies, these work together to facilitate us in satisfying our needs. On the first appearance of humanity on the earth the needs were satisfied from what they found around them in the immediate environment, berries, roots, plants, fish and other small animals. Through the reasoning mind, the power of imagination and the hands that could work human beings, over time, built an identifiable way of life which was composed of the two territories, material and spiritual. It might have been called Stone Age Culture, Aboriginal Culture, Roman or Greek Civilisations, or it might be the nation states of today. These realities are both past and present. In building our cultures and way of life, humanity has, in fact, developed the mind and therefore become more conscious. I think that Montessorians would consider history as the story of the growth of consciousness. I do not mean that the people who made history were conscious of what they were engaged in at the time but that we, looking back at history can become conscious of its implications.

In the article on 'The Unconscious in History' Maria Montessori discusses the idea of the cosmic task of humanity, of man as being a 'transforming agent' and of his work as being a 'transforming task', he is, she says 'the builder of a supra-nature' (p 14). I cannot give you the exact reference for this single sentence from the writings of Teilhard de Chardin, French priest, paleontologist, biologist and philosopher, he says 'man is not a figure in the landscape he is a shaper of the landscape' and this idea coincides with the Montessori thought 'builder of the supra-nature'.

The environment of modern people is this supra-nature and through it we have become much more closely connected with each other and with all of humanity. The fact that humanity is actually 'one organism, is perhaps the one fact of which humanity has been conscious', so Maria Montessori would concede this point.

In the article 'Supernature and Single Nation' which appears in Maria Montessori's book 'Education and Peace' (Clio p 98/99), she says,

All mankind forms a single organism, but man continues to live in an emotional world that is outdated. Humanity today forms a single, indivisible unit - a single nation.

This single nation has opened the whole world and brought all men together. The earth's riches now belong to all. The fear of poverty must disappear, but once free of this fear man must realise that riches must no longer be sought within or on the surface of the earth. The single treasure of man, the raw material that promises to yield man everything, is human intelligence, that inexhaustible treasure'.

Using her own prefix 'surpa' she maintains that ours is the 'supra-natural' humanity living in the 'supra-natural' world, which is the cause of all our problems, as we have lost the freedoms of the 'natural man'. That is a thought to consider.

Montessori's Cosmic Education is to help us in making a new step forward in our evolution. Life has evolved, it tends towards a finality. Finality, as understood, in a Montessori way, is the fact that everything tends towards a predetermined end, therefore cannot be produced by external circumstances, or caused to come into being by outside forces. So spontaneity is of the essence here. Put very simply and practically in relation to the development of the children, it is not the adult, or school which causes the child to develop but the inner drives and sensitive periods which create the human personality.

We must finish by speaking of the child, the adult may modify the environment but the child builds the adult and therefore is our hope for the future, each new child coming into the world brings a

new possibility of positive constructive powers. The child of the First Plane absorbs the environment unconsciously, he/she constructs builds himself/herself from what the environment contains. This environment must contain human values these will be absorbed into the very life of the child with the emotional sensitivity of that first plane. The single most important human value is respect for human dignity. In the Second Plane the child will reason about what has become a part of his life. These children cannot rid themselves of this, they can learn to understand it with the power of imagination and intelligence. They need the great and the good, they need moral values. The mind of the elementary child concerns itself with human behaviour, this is because the individual is building one of the single most important human characteristics, we call this the conscience, an inner sensibility which vibrates, a sense we have of what is right and what is wrong.

Montessori's Cosmic Education will help the child to become this kind of 'new adult' and I would like to finish as I started with a quotation from the Paris Congress 2001 from Camillo Grazzini

'Cosmic Education results in creative attempts to lead a new and different kind of human life, with responsible participation in all natural and human phenomena' (p 84)

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