The following text was originally published in PROSPECTS: the quarterly review of comparative education (Paris, UNESCO: International Bureau of Education), vol. XXIV, no. 1/2, 1994, (89/90), p. 169-183.

MARIA MONTESSORI[1]

(1870-1952)

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The ongoing debate

The figure of Maria Montessori stands out above most of those who were involved in the New Education movement. Rarely have attempts been made to establish a set of educational precepts, which would have such universal validity as hers, and very few others had such a powerful influence on developments in the world as a whole. The all-embracing nature of her ideas is perhaps all the more astonishing in view of the fact that in the initial stages of her research she concentrated on work with very young children, and only later extended it to include older children and the family. She regarded infancy as the critical phase in the evolution of the individual, during which the groundwork for all subsequent development is laid, and hence ascribed universal validity to statements about this period of life. Montessori was also an exemplary figure in that she sought to establish a meeting ground of theory and practice in the form of the Children's Houses and her didactic materials. No other representatives of New Education put their theories into practice on the same scale; she initiated a varied programme on an international scale that remained without equal.

The truly remarkable thing is that the discussion surrounding her ideas is just as lively and full of controversy today as it was when they were first published. After 1909, when she first appeared in print (at the suggestion of her closest friends, Anna Maccheroni and Alice Franchetti), her works began to be translated into all of the major world languages. The spread of her ideas was aided by a series of stimulating and elegantly articulated lectures held in all parts of the world.

Today the struggle to understand this phenomenon—the relationship between theory and practice, individual and work, what was borrowed and what was original—is as intense as ever, as can be seen by the number of publications in the Federal Republic of Germany that have dealt with these questions in recent years (Böhm, 1991). A truly comprehensive assessment was made possible only by the re-issue of her complete works.

This continuing discussion is not motivated at all by a reverent desire to protect and preserve the past, but by a genuine spirit of inquiry. This is so for two reasons. First, the attraction of Montessori's personality, which has survived in her work and gives her ideas a special fascination; second, the intentions behind her work, which were to provide the education of children with a scientifically valid basis and to re-evaluate it constantly by means of practical experiments.

The key experience

Maria Montessori was born in 1870 in Chiaravalle near Ancona, Italy, and died in 1952 in Nordwijk, Netherlands. In 1896 she became the first woman in Italy to finish medical school with a study on neuropathology. For the following two years she worked as an assistant at the

Psychiatric Clinic of the University of Rome; among other things she was responsible for the care of mentally handicapped children. The time spent with these children and the experience of their still intact need and desire to play led her to investigate possibilities for educating them. She discovered the works of the French doctors Bourneville, Itard and Séguin, and of Pereira, a Spaniard who had lived in Paris and known Rousseau and Diderot. She was especially impressed by Itard, who had sought to civilize the wild boy found in the forests of Aveyron by stimulating and developing his senses, and by Itard's pupil, Edouard Séguin. On the whole she revealed little about her sources of inspiration, but in her writings she discussed in depth her efforts to come to terms with Séguin's works, especially with the book *Idiocy: and its Treatment by the Physiological Method*[2], which appeared after Séguin had emigrated to the United States and in which he described his method for the second time (Montessori, 1969, p. 29).

Inspired by her experiences with the children at the clinic, who had played with pieces of bread on the floor for lack of other toys and by the exercises for sharpening the sensory functions developed by Séguin, Maria Montessori decided to devote herself to educational problems. In 1900 and 1901 she had a position at the Scuola Magistrale Ortofrenica, an institute responsible for the training of teachers in schools for handicapped and mentally retarded children. After a study of education she became involved in the modernization of a Roman slum quarter, San Lorenzo, by assuming responsibility for the education of the children. Her answer to this situation of need was the establishment of a Children's House (Casa Dei Bambini), in which the children were to learn about the world and develop the ability to plan their own lives.

San Lorenzo was the beginning of a kind of renaissance movement that served to renew belief in the betterment of mankind by means of the education of children. Although Maria Montessori based her work on scientific principles, she nevertheless considered childhood to be a continuation of the act of creation. This combination of approaches is the truly fascinating aspect of her work: on the one hand she practised precise experiment and observation in the spirit of science, yet at the same time she regarded faith, hope and trust to be the most effective means of teaching children independence and self-confidence. The Children's Houses that were established in the following years became at times holy places to which educators made pilgrimages – always shining examples pointing towards the solution of educational problems.

Reflection and meditation played an important part both in her personal life and in her educational programme. Without getting involved with other approaches and having to submit to compromises, she was sure of her claim to represent the needs of all children, and knew how to put her message across in an intelligent, clear and determined manner. Despite the clarity of her diction, she was widely regarded as a kind of high priestess of the rights of children in an antagonistic world. Her individual fate surely contributed to the air of mystery surrounding her work—she gave birth to a son out of wedlock—although through her work she also found a way of resolving this problem in an exemplary fashion (Kramer, 1976, p. 88).

Those closest to Montessori—above all Anna Maccheroni and for a time Helen Parkhurst—were completely dedicated to the task at hand. Her son, and later her grandson, Mario Montessori, also committed themselves to this work. But their commitment had little to do with upholding family tradition; on the contrary, they were concerned with a much broader legacy, the 'education of human beings' (Montessori, 1977).

Montessori and the New Education

The work begun by Maria Montessori in San Lorenzo proved to be enormously successful. After being asked by Talamo, the director of the building firm, to establish a youth centre to get the children of working parents off the streets, she created the 'miracle of the new children',

who by means of their heightened child-like qualities, in turn favourably influenced their parents. The 'true child' was living proof of the ongoing process of creation, of rebirth and renewal: whoever was ready and able to think the matter through discovered its deeply religious significance.

Maria Montessori was a true proponent of New Education as an international movement. For her, reform was not merely a mechanical process of replacing old methods with supposedly better ones; she was much more concerned with a process more aptly described by the original meaning of *reformatio*: a remodelling and renewal of life.

It is not easy to determine Montessori's position in relation to the rest of the New Education. In contrast to most of the other approaches employed, she was very heavily influenced by Rousseau. Many passages of her books read like variations on themes by Rousseau, and her criticisms of the adult world, which in her opinion gives no consideration to children at all, are also reminiscent of his attitude. Her complaints about wet nurses and the straps, frames, protective helmets and baskets which were employed to teach children to walk too early were inspired by Rousseau, as was her resultant conclusion: 'It is essential to let nature have its on way as far as possible; the more freedom children are allowed to develop, the quicker and more perfectly they will attain higher forms and functions.''[7]

She definitely had not carried out a systematic study of Rousseau's works - but just as she adopted a great deal of the critical discussion of culture and society of her own day, she must have read at least some parts of *Émile*, above all the first book. Her attitude towards other educators involved in the New Education movement, such as Dewey, Kilpatrick, Decroly and Ferrière, is similarly difficult to ascertain. Although she met many of them in connection with her work in the New Education Fellowship, no real collaboration with them came about. The only ones she even mentioned in her own works were Washburne and Percy Nunn—the latter above all in connection with her concept of 'absorbent mind'.

Percy Nunn, at that time president of the English section of the New Education Fellowship, met her when she gave a series of lectures in London. His ideas of mneme and hormic theory, presented in his book *Education. Its Data and First Principles* (Nunn, 1920), helped her arrive at her view of the constructive function of the developing human mind, which determines the course of life in constant interaction with the environment and in so doing takes on a definite shape itself.

She was also inspired by Ovide Decroly. Their lives and work had much in common: they were almost the same age (Montessori was born in 1870, Decroly in 1871), both studied medicine and both established educational institutions in 1907, the Casa Dei Bambini in Rome and École pour la Vie par la Vie in Brussels. Since both of them were active members of the New Education Fellowship they met and had discussions many times. However, at the time of their meeting they had both already developed their concepts for the most part, so that the great similarity of their approaches was primarily due to their having both studied the works of Itard and Séguin.

The basic concept behind Montessori's educational work was that of providing children with a suitable environment in which to live and learn. The significant thing about her educational programme is that it gave equal emphasis to internal and external development, arranged so that they complemented one another. But the fact that external education was even given consideration, having been considered merely a consequence of the success of internal education by the idealistic schools of philosophy and education, bears witness to the scientific orientation of the programme. Here Séguin's influence must have been decisive, as well as that of Pereira, who had established the role of the senses in the development of the personality. The idea that it is possible to form and alter human beings exclusively by means of manipulating their sensory input, which Diderot discussed in his *Lettres sur les aveugles* and *Lettres sur les muets* and which inspired Rousseau's programme for training the senses, also played an

important part in Montessori's theories.

The truly original nature of Montessori's ideas can only be grasped if they are compared with the method developed by the Agazzi sisters. The work of Rosa and Carolina Agazzi was one of the most remarkable attempts to make progress in the education of young children. It is important to us today because it occurred within the same environment in which Montessori developed her ideas. As early as 1882 Rosa Agazzi and her sister took over a home (Il Nuovo Asilo) in Monpiano, Brescia, which is considered to be the first Children's House in Italy (Pasquali, 1903). Just as Montessori later did, Rosa Agazzi also sought to intensify and control the education of young children by means of altering their living environment (Agazzi, 1932).

Montessori introduced the education process by means of a set of standardized learning materials; Rosa Agazzi, on the other hand, insisted that objects collected by the children themselves carry out this function. In this way the objects were to be experienced more thoroughly and the process of abstraction only introduced after this first stage had been absolved. However, it would be incorrect to state that the difference between the two approaches was that the Agazzi sisters encouraged direct experience and Montessori abstraction; Montessori was also very much concerned with the experiential stage. She nevertheless placed greater emphasis on introducing the process of comparison and abstraction, which is of paramount importance for intellectual development, in a controlled and intelligently planned manner, so that it would not be left to chance.

Like other New Educators, Montessori was aware of the fact that it is necessary to take the inclinations and interests of the children themselves as the starting-point if the educational process is to remain relatively free of conflicts. But she also recognized that these inclinations and interests must be encouraged and deepened by means of exercises, and further that the success of this is dependent on awakening a feeling of responsibility in the children. This was her truly original contribution: she not only gave consideration to the inclinations and interests of the children, as was done by many New Educators who based their work solely on this principle, but also sought to encourage responsibility and self-discipline on the part of the children.

The Children's Houses

The Children's Houses were living environments specially adapted to children, in which they could grow and develop in keeping with their individual sense of responsibility. In the houses everything was adapted to the children and their specific attitudes and perspectives: cupboards, tables and chairs but also colour, sound and architecture. The children were expected to live and move in this environment in a responsible way and deal with the tasks of creating and keeping order so that they could ascend a kind of 'ladder' towards self-realization.

Freedom and discipline interacted, and the basic tenet was that neither one could be achieved without the other. Seen in this way, discipline was not something imposed from the outside but rather a challenge to become worthy of freedom. In this context Montessori wrote: 'We call someone disciplined if he is his own master and can therefore command himself to behave properly if a rule of life must be observed' (Montessori, 1969, p. 57).

The idea central to self-determination, namely that freedom is possible only if one submits to laws that one has discovered and decided upon oneself, which Rousseau formulated in terms of his *volonté générale*, was not expressly stated in her works. Around the turn of the century Italian philosophy was dominated by positivistic thought, to be sure, but idealistic and neo-Kantian tendencies were also represented by Alessandro Chiapelli, Bernardino Varisco and Benedetto Croce. It is not very likely that Montessori studied these philosophers to any great extent; nevertheless she had her children participate actively in the shaping of their living

environment as well as of its rules and principles of order, and in this way justice was thoroughly done to the idea of moral autonomy.

But Montessori went even further: she systematically developed the logical sequel of these ideas, namely their application and practice in real-life situations, an aspect which has often been passed over too lightly by educators. The programme she developed to do this involved 'exercises in daily living', or '*exercices de la vie pratique*', as she called them in the first of her lectures held in France (Montessori, 1976, p. 105). These included exercises in patience, exactness and repetition, all of which were intended to strengthen the powers of concentration. It was important that these exercises be done each day within the context of some real 'task' and not as mere games or busy work. They were rounded out by practice in being still and meditating, which formed the point of transition from 'external' to 'internal' education.

In her writings Montessori repeatedly stressed the importance of developing attitudes instead of just practical abilities; she wrote that practical work should result in an attitude by means of contemplation: 'disciplined behaviour becomes a basic attitude.'

For her this was the real task of the Children's Houses:

> The central feature of this development of the personality was free work that satisfies the natural needs of inner life. Therefore free *intellectual* work shows itself to be the basis of inner discipline. The principal achievement of the Children's Houses has been to instil discipline in the children (Montessori, 1976, p. 107).

This statement was then given force by a comparison with religious education:

> This reminds one of the advice given by the Catholic Church for maintaining intellectual and spiritual strength, i.e. after a period of 'inward concentration' one can attain to 'moral strength'. The moral personality must take its stabilizing strength from methodical 'meditation'; without this strength the 'inner being' remains scattered and unbalanced, is not its own master and cannot utilize its own powers for noble ends [Montessori, 1976, p. 104].

In common with Rousseau, Montessori considered 'help for the weak, the aged and the infirm' to be an important task to be carried out during the stage of personal development in which 'moral 'relationships' (Montessori, 1966, p. 33) define and mark the beginning of a new life as a moral individual. She thought that the proper time for this step was during adolescence, but in the Children's Houses it was prepared for in a number of different ways. The earliest activities engaged in by the children were thus of decisive importance morally and physically for their entire subsequent development.

The sensitive phase contained in early childhood is a unique opportunity to encourage positive development, which must be taken advantage of. Montessori considered social training to be an important part of this early phase since self-determination must take its orientation from others if the individual is to attain perfection as a social being. In the final chapter of her book *The Discovery of the Child* she described this process:

> No child is disturbed by what another may have attained; on the contrary, the triumph of one causes admiration and joy in the others, and they often imitate him full of goodwill. All of the children seem to be happy and contented doing 'what they can'; what the others do does not result in envy, embarrassing competition or vanity. A three-year-old can work peacefully next to a seven-year-old, and the younger child is content to be smaller than the older child, not envying him because of his greater size. They all grow in the midst of the most perfect peace [Montessori, 1969, p. 33].

The didactic materials were also intended to aid this growing in the most perfect peace in order to attain a highly developed sense of responsibility. Constituting a part of the 'prepared environment' in the Children's Houses, they were methodically planned and standardized so that a child who freely chose to occupy himself with one of them would enter into a predetermined situation and be forced unwittingly to deal with its intellectual purpose. The best

example of this is the cylinders of different lengths and sizes which were to be inserted into appropriate holes; only one solution was possible for each cylinder and the child could grasp the fact of an incorrect solution when the cylinder slipped off and could not be inserted.

The didactic materials

A basic principle of the didactic materials was that the activities should be methodically co-ordinated so that the children could easily judge the degree of their success while engaging in them. For instance, in one activity the children practised walking along large circles laid on the ground in a variety of interesting patterns. While doing so they were given a bowl to hold filled to the brim with blue or red ink; if it ran over then they could recognize in this way that their movements were not co-ordinated and graceful enough. In a similar way all of the bodily functions were consciously trained.

For each of the senses there was an exercise which could be made even more effective by eliminating other senses. For example, an exercise involving the identification of different kinds of wood by feeling their grain could be intensified by covering the eyes.

By being done and discussed together within the context of the group, the relevance of these exercises for the social aspects of the children's education was increased. Thus, the various activities were intended to interact, or, as Montessori expressed it, 'practical and social life must be profoundly combined in education'. [Montessori, 1972, p. 38].

If it was true of Helen Parkhurst, then it was doubly so of Maria Montessori, her teacher: she sought to develop the social aspects of education, although she gave her work a different emphasis than was to be found in certain sociologically based educational concepts which dealt with a different set of problems. This fact is mentioned in reply to those who one-sidedly dismiss the educational ideas of Helen Parkhurst and Maria Montessori as being hopelessly individualistic.

The didactic materials were to function 'like a ladder', as Montessori expressed it many times, which would allow the children to take the initiative themselves and progress towards self-realization. At the same time the materials were permeated with a particular spirit and intellectual attitude, which would be communicated to the children and mould them accordingly.

> Thus, the sensory materials should definitely be regarded as 'materialized abstraction' ... When the child is directly confronted with the materials he applies himself to them with that kind of earnest, concentrated attention which seems to draw the best out of his consciousness. It really seems as if the little ones were involved in doing the best work their minds are capable of: the materials open new doors to their understanding which otherwise would remain locked [(Montessori, 1969, p. 197-98).

Using this approach, the teacher can withdraw from the centre of the educational process and operate from its periphery. His most important task is to observe in a scientific manner and employ his intuition in discovering new possibilities and needs. The development of the children should be directed in a responsible way in keeping with the spirit of science.

The scientific basis of her work

Montessori was among the first to try and establish a true science of education. Her approach was to introduce the 'science of observation' (Montessori, 1976, p. 125). She demanded that the teachers and other persons engaged in education be given training in these methods and that the educational process itself be given a framework that would allow scientific controls and checks. 'The possibility of observing the mental development of children as natural phenomena and

under experimental conditions converts *the school itself* in activity, to a type of scientific environment devoted to the psychogenetic study of man' (Montessori, 1976, p. 120).

The basic art of precise observation, which had been acclaimed much earlier by Rousseau as the most important qualification for educators, includes precise perception and description. Montessori envisioned a 'new type of teacher': 'Instead of talking he must learn to be silent; instead of instructing he must observe; instead of presenting the proud dignity of one who desires to appear infallible he must don the robe of humility' (Montessori, 1976, p. 123). This kind of dedicated observation from a distance is not a natural ability; it must be learned,

> and this process is a true introduction to science. If something is not consciously *seen*, it is as if it had never existed. The *scientist's soul* is filled with passionate interest for that which he sees. When one has learned to see he begins to be interested. And this interest is the driving force behind the spirit of science. [Montessori, 1976, p. 125]

Montessori envisioned a procedure that today would be described as hermeneutic-empirical. Nevertheless she herself did not succeed in putting any of these ideas into practice at all thoroughly in her own work. Her experiments neither possessed a solid theoretical framework nor were they carried out and evaluated in a way that would allow them to be objectively confirmed. Her descriptions were not free of subjective impressions and her conclusions were often biased in her own favour or even dogmatically phrased.

Despite this she was extremely good at constructing educational situations, although they were often certainly more the expression of her inspiring personality than the result of careful thought and planning. Her observations were conducted in a careful manner and involved a number of scientific procedures for ensuring objectivity, but basically she was possessed of a very personal and unique talent for dealing with and interpreting educational processes.

Her descriptions of educational phenomena and the conclusions she drew from them should be understood in this light. A little girl who attempts to find the right hole for a peg forty-four times before happily turning her attention elsewhere is described; but neither her intellectual and social background nor her subsequent progress is mentioned. Montessori dealt in a similar way with all manner of phenomena, awakenings and 'explosions'. If she is judged by her own standards for scientific and theoretical work in education, even though they were formulated in a vague and generalized way, then she hardly passes the test. The success of her work was due to other factors: her humility and patience and her (often-mentioned) fascination with the wonder of life.

This imaginative ability, which goes above and beyond precise observation, is actually a philosophical way of life. Despite all her criticism of philosophy and philosophical education, she adopted the same attitude herself. In a passage discussing the necessity of training teachers in connection with practical educational experience, she wrote the following about students of biology and medicine and the role of the microscope: 'While engaged in observations with the aid of the microscope they felt that fascination towards the wonder of life growing within them which causes the mind to awaken and devote itself to the mysteries of life with passionate enthusiasm' (Montessori, 1976, p. 133).

It is important to consider Montessori's sensitive openness to the 'mysteries of life' alongside her basically scientific approach. Failing to take both aspects into account, one is bound to become entangled in contradictions and to continue the still-flourishing controversy as to the value and meaning of her work, although even if everything were taken into consideration all of the differences of opinion would hardly be resolved.

Some of Maria Montessori's statements and conclusions sound more like Pestalozzi in one of his philosophical moments than the objective analysis of a doctor of medicine. But it has been precisely her broad approach that has lent much of her writing prophetic force, although it

also tends towards ambiguity at times, and this accounts for her great popularity around the world, in India as much as in Europe. Her influence was greatest wherever she personally appeared and gave lectures and courses and gained a dedicated group of followers willing to experiment and continue the spirit of her work (Schultz-Benisch, 1962; Böhm, 1991, p. 15).

Perception

Maria Montessori not only worked out a systematic method for developing the perceptive faculties, but also evolved a theory of perception that has much in common with Pestalozzi's approach. Thus, in reference to the didactic materials, she warns that 'the attention of the children should not be chained to the objects in question after the delicate process of abstraction has begun' (Montessori, 1976, p. 80). She intended her didactic materials to be so constructed that they would point the way beyond the immediate situation at hand and promote abstraction. If these materials do not encourage generalization they could tie the children down to the earth with ''snares''. If this occurs then the child remains 'trapped within the realm of useless objects'.

Montessori wrote:

> In the world as a whole, more or less the same basic ideas repeat themselves again and again. For example, if the life of plants or insects is studied in nature, then an approximate idea of the life of plants and insects in the whole world is obtained. Nobody is familiar with *all* plants. It is enough to see one pine tree in order to imagine how all pine trees are (Montessori, 1976, p. 80).

Pursuing the same idea she wrote elsewhere: 'Is it necessary, when one is confronted with a river or a lake, to have seen all of the rivers and lakes in the world to know what it is?' The idea expressed here, as well as the way in which it is formulated, are in surprisingly close agreement with Pestalozzi. And just as he had, she warned against neglecting the forms of direct perception. 'No description, no picture, no book can replace the real life of trees in the context of all the life which surrounds them in the forest' (Montessori, 1966, p. 40).

She considered it of fundamental importance that 'the co-operation of inner attention' be obtained by the learner. For this reason she sought to structure the motivational basis of the didactic materials in such a way that they would make contact with the sphere of consciousness of the child. It is notable that Montessori explained this process in terms of an act of faith, a related process which, however, takes place on another level: 'It is not enough ... to *see in order to believe; one must believe in order to see*.' And elsewhere she wrote: 'It is in vain that one explains or *demonstrates* a fact, even if it is an extraordinary one, if there is no faith: the realization of truth is not made possible by evidence but by an act of faith' (Montessori, 1966, p. 216). There can be no doubt that she succeeded in linking this form of faith as inner knowledge and improved vision with her concept of science.

Self-realization through independent activity

One of the key concepts of Montessori's educational system is 'independent activity'. 'A person is what he is, not because of the teachers he has had, but as a result of that which he has done himself.' In another context she even introduced the idea of 'self-creation'. She applied this not only to sensory perception and the intellect but also to the co-ordination of all the facets of humanness involved in the development of the personality.

This process can only be successful if it takes place in freedom, whereby freedom is understood as going hand in hand with discipline and responsibility. Children possess an intuitive understanding of the forms of self-realization by means of independent activity.

Children seem to 'feel' their inner growth, to be conscious of the achievements that mark and define their growth. Outwardly they appear happier as they become aware that a process of growth towards something higher and greater has begun within them [Montessori, 1976, p. 92].

In most of the examples Montessori added in this context she spoke of the high degree of satisfaction shown by the children as a result of their independently achieved self-realization. She came to the conclusion that 'this growing self-awareness promotes maturity. Give a child a feeling of its own worth and it will feel free and no longer burdened by its work' (Montessori, 1966, p. 40).

Seen in this way, freedom must be first renounced and then won back gradually by means of self-realization. All individuals are dependent on one another and can therefore progress to self-realization only within the context of this interdependence. This process is accompanied by full awareness and requires that all of one's faculties be engaged, strengthening them at the same time. This self-realization ultimately leads to self-education—*autoeducatione*—which is the real goal. Therefore reflection, meditative concentration yet at the same time intense effort are indispensable when attempting to solve the problems posed by the didactic materials.

At this point we have already arrived at what Montessori meant by the 'absorbent mind', one of the key concepts of her educational system, alongside that of 'normalization'. In keeping with her medically oriented terminology she referred to children as 'intellectual embryos'. In this way she emphasized the fact that children are involved in a process of development, as well as the parallel nature of intellectual and physical development. From the beginning children are beings equipped with minds. Nevertheless, during the first stage of development following birth the physical aspect predominates, although these basic needs can only be properly satisfied if the intellectual being at their root is recognized and accepted. 'In other words children must be cared for right from birth, giving attention above all to the fact that they are beings with a mental life of their own' (Montessori, 1976, p. 61).

The education of children must be conducted in a balanced manner from the beginning; otherwise the first impressions will produce distorted or biased forms of understanding, expectations and behaviours which are then perpetuated. The first impressions are not only permanently engraved in the children's minds; developmental structures also develop as a result of them, patterns according to which all subsequent experiences are dealt with and assimilated.

Right from birth children are naturally open to the world. For this very reason they are also in constant danger of losing their way, unlike animals, which have such a store of instinctual responses that a proper course of development is ensured; on the other hand animals are not free, since freedom is not a natural state but a condition that must be attained. 'Unlike animals, human beings are not naturally programmed with any co-ordinated sets of movements. They must learn everything themselves: they have no goals given them, but must search for them' (Montessori, 1976, p. 82). In this respect there is some similarity between Montessori's ideas and modern anthropology. Her book *Anthropologia pedagogica* (1910) was the first of her works to be devoted to questions of this sort.

When she speaks of 'psycho-embryonic life' she is utilizing an analogy with the 'physical embryo' in order to emphasize that one's intellectual world must also be built up gradually by means of impressions and experiences. One's environmental organization as regards its educational function is therefore just as important as bodily nourishment is during the pre-natal phase.

The first task of education is to provide the child with an environment in which it is able to develop its natural functions. This does not mean that one should merely satisfy the child's needs and allow it to do what it likes; we must also be prepared to co-operate with a command of nature, with one of its laws, according to which development and growth proceed by means of interaction with the environment [Montessori, 1972, p. 82].

The ‘absorbent mind’ is at the same time ability and willingness to learn. It means that the mind is directed towards the events in the surrounding world and in phase with them, so that out of the existing great variety those aspects which prove to have educational value are different in each individual case: ‘...in all ways mental development is the first step in the adventure of life’ (Montessori, 1976, p. 69). The important thing is that the impressions received and mental openness match one another, so that the demands placed by the learning process correspond to the natural sensitivities and tendencies of each phase of development.

Closely related to these anthropological concepts is the idea of ‘sensitive phases’. The sensitive phases are periods of heightened receptivity in connection with learning by means of interaction with the environment. According to this theory there exist specific phases during which the child is naturally receptive to certain environmental influences; these he must make use of in order to master certain innate functions and achieve greater maturity. Thus there are sensitive phases for learning to speak, mastering social interactions, etc. If these phases are given proper consideration they can be exploited to promote periods of intense and efficient learning. If they are not taken advantage of then the opportunities are irretrievably lost.

The harmonious progress of inner and outer development can also result in increasing independence: ‘If no regressive syndromes manifest themselves the child will show tendencies that are clearly and energetically directed towards functional independence. ... Within each individual a vital force is active which directs him towards realization of self. Percy Nunn called this force *Horme*’ (Montessori, 1952, p. 77).

This is also the reason why Montessori expected so much from an educational reform in accordance with her ideas. For her the child was a promise and a starting-point for the education of the ‘new man’. Her expectations were so high that she genuinely expected salvation to come in that way. She also believed in renewal and the attainment of perfection:

> If salvation arrives then it will begin with the children, since the children are the creators of mankind. The children have been vested with unknown powers that could lead the way to a better future. If a genuine renewal is to be sought after at all, then the development of man’s potential must be the task of education [Montessori, 1952, p. 52].

This faith in man’s potential, which is increased by means of the ‘absorbent mind’ when the correct educational methods are employed, is one of the cornerstones of Montessori’s theory of education. The second important aspect is the attempt to mould this process in a spirit of scientific responsibility and to discover the weaknesses and turning points of human development in order to direct it better. The process is not conceived as being linear but rather dynamic, exploding with awakenings, enlightenments, transformations and creative syntheses which lift it up to new heights of evolution, the nature of which cannot even be guessed at. She wrote: ‘Development is a series of successive births’ (Montessori, 1952, p. 16)

In this sense her own life and the development of her ideas were dependent on encounters, inspirations and rebirths; encounters with others of like mind were often much more important than involvement with established theories. The great productivity of her work was in the last analysis due to the effects of the hormic principle in her life and thought. She sought to influence the world in a controlled way through the harmonious combination of theory and practice; she looked for the confirmation of her theories in practice and shaped her practice according to scientific principles, thus achieving perfection: that is why Maria Montessori’s educational concept has been so successful.

Notes

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1984. Honorary doctorate from Arisoteles University, Thessalonika (Greece), 1991. Author of several books on history and comparative education, including *Tradition and Reform of the University under an International Perspective* (1987) and *Vocational and General Education in Western Industrial Societies* (1988). Apart from English, his books have been translated into Greek, Italian, Japanese, and Korean.

2. This article is a translation of a chapter in my books *Die Reformpädagogik. Ursprung une Verlauf unter internationalem Aspekt*. Weinheim, 1991, 3rd ed., p. 225-241. *Die Reformpädagogik und ihre Perpektiven für eine Bildungsreform*. Donauwörth, 1991, p. 61-80.
3. Her relationship to her teacher Séguin is dealt with in depth in Kramer, R., *Maria Montessori. A Biography*. New York, 1976, as well as in Hellbrügge, *Unser Montessori-Modell*, München, 1977, p. 68ff and Böhm, *Maria Montessori. Hintergrund und Prinzipien ihres pädagogischen Denkens*, Bad Heilbrunn/ Obb. 1991.
4. This supposition would probably be supported by an investigation and publication of her correspondence, something that has not yet been done.
5. I have dealt with this matter in my article, Maria Montessori und die Progressive Education in den USA. In: Pehnke, A. (ed.), *Ein Plädoyer für unser reformpädagogisches Erbe*. Neuwied, 1992, p. 65-78. It has also been dealt with Böhm, op. cit., p. 86.

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