"It seems to me that we have been wrong to discard Montessori altogether . . . ," said Nadezhda Konstantinovna Krupskaia at a Moscow gathering of teachers of zero-level groups in 1931. It is worth recalling that Nadezhda Konstantinovna more than once drew the attention of preschool upbringing theoreticians and practitioners to the necessity of making a critical study of the pedagogical views and pedagogical experience of Froebel and Montessori. It was indisputable that they were engaged in "arch-bourgeois preschool upbringing"; nevertheless, it would be worthwhile to "borrow those things that are useful to us." But what is "useful to us" in the theory and practice of Montessori? This is the question that we will attempt to answer.

It would be erroneous to approach the evaluation of the pedagogical heritage of any particular educator purely from a hackneyed angle and demand an unambiguous answer. Any "measurement" needs to be made on the basis of several parameters—namely, the worldview orientation of pedagogical views, the natural-scientific validity of the conception, the psychological-pedagogical architectonics of the theory, and the practical significance of the methodology. The methodological
principle of differentiated unity in a historical-pedagogical analysis provides an approach to determination of the increment of pedagogical knowledge and examination of any particular thinker's contribution to pedagogical science. Given this condition, the names of Froebel and Montessori, Decroly and Kergomar, Oberlin and Wilderspin, and many other theoreticians and practitioners who laid the foundations of the theory of preschool upbringing will never, as Krupskaia put it, be "washed away." To restore the names that have been "washed away" by time and "buried" by the authoritative opinion of pedagogical "oracles," to find rational grains of pedagogical theory in pedagogical systems, and to gather them together in the storehouse of human wisdom—these constitute the difficult task facing the historian of pedagogy.

And so, let us get acquainted with the theory and practice of preschool upbringing of the Italian physician and educator Maria Montessori (1870–1952), the first woman in Italy to earn the degree of doctor of medicine. While working as an assistant physician in a university psychiatric clinic, she became interested in children suffering from mental retardation, and she made use of long-forgotten methods of treatment that had been proposed fifty years before by Séguin (let us recall that Séguin argued that the education of the feeble-minded involves the pedagogical treatment of children with physical and mental handicaps, with the purpose of fostering the motor and sensory development and intellectual and moral shaping of the individual). Unlike Séguin, however, Montessori arrived at the conclusion that mental backwardness in children requires not so much medical treatment as upbringing. For this reason, she spent two years running a school for the "pedagogical treatment" of handicapped children, and she herself worked on their instruction and upbringing for twelve hours every day. As a result of her persistent efforts, mentally underdeveloped and untrained children passed the examination to enroll in city schools with better marks than did normal children who had attended ordinary schools. This "miracle" was repeated several times.
Montessori accounted for her successful work by the fact that the children she trained traveled a different path of spiritual and intellectual development than those who had attended public schools. In Montessori's asylum, the children's psychological development was stimulated by the use of a specially developed methodology, while normal children in public schools were stuffed with cramming, formalism, and dogmatism.

After leaving her work in the asylum, Montessori studied philosophy and psychology in Rome; she became fascinated with experimental child psychology and studied the organization of instruction and upbringing in primary schools. At the suggestion of the Low-Rent Apartments Society, she opened a Children's Home in one of the poorest districts of Rome; it was a preschool institution for workers' children and represented partly a kindergarten and partly a primary school. Montessori was to describe her two years of work experience later on in her book, *Children's Home: A Method of Scientific Pedagogy* (1912). The book became popular in many countries of the world, including Russia. In the final years of her life, Montessori directed UNESCO's Institute of Pedagogy in Hamburg.

Before discussing the organization and methodology of the preschool upbringing that was developed by Maria Montessori, let us characterize her worldview positions.

**Philosophical-pedagogical views**

If we were to say that, in terms of her philosophical views, Montessori was a subjective idealist, this does not answer the question of what she viewed as the essence of the human personality. Obviously, it is necessary to add that Montessori was an advocate of the theory of vitalism, the fundamental idea of which was the acknowledgment of an immutable life force. At the same time, because she was a natural experimental scientist (Montessori was a doctor of medical sciences and a professor of anthropology and hygiene), she advocated the experimental method of doing research on problems of instruction and up-
Montessori was convinced that this was the most reliable way to come to understand the "life force." However, her claim that it is not we but rather Nature the Creator that shapes the soul of a child is erroneous, for the simple reason that nature shapes people but not the human personality. As a social formation, the personality is shaped by the child's parents and upbringers, the adults around him, and social conditions. What nature creates is the organism (the human organism!). Without the influence of parents and upbringers, without interaction with people, without human society—that is, without assimilation of the social program, the child will not become a personality, a thinking human being. Montessori herself understood this, for she cautioned that the child's "freedom," his free development, should not mean neglect. Quite the contrary, in fact. She wrote that the correct understanding of freedom puts children's real needs in place of our fantasies and leads to genuine and effective concern for the child, for his development and upbringing.

How did Montessori interpret freedom of the personality? In her essay, "Self-Upbringing and Self-Instruction," she remarks that to be free means not only to have the appropriate knowledge necessary to distinguish the false from the true, but also to know how to understand the social value of both; it incorporates the "internal shaping that makes a human being free, regardless of any 'social rights,' which only constitute the outward winning of freedom." This treatment of the freedom of the individual as being divorced from the individual's social rights, the interpretation of freedom as an internally untrammeled state, is just an example of bourgeois-liberal word games about freedom in an unfree bourgeois society. In this regard, Montessori's views really are arch-bourgeois. In sociopolitical terms, this treatment of freedom of the individual cannot stand up to criticism. However, from the psychological-pedagogical point of view, the idea of freedom in upbringing has a grain of "rationality." The thesis that "the more freely the child develops, the more rapidly and more perfectly his body
and higher functions will attain their fullest development” is in tune with modern scientific ideas concerning the necessary objective conditions for the child's effective development and upbringing. Montessori treated this idea as the principle of the naturalness of the development of the vital powers and abilities with which nature endowed the child. In accordance with this principle, she demanded that the child be respected, that he be looked upon as a person, though not yet fully formed. In her interpretation, children are workers who are fashioning themselves into people, engaged in the complicated and difficult job of self-upbringing and self-instruction, of shaping their personalities with the help of adults. It would be wrong to say that Montessori was the first to express this idea, but she voiced this “new word” more loudly and clearly than other educators who urged that the child be respected personally and brought up in accordance with his individual and age-related characteristics. We might add that Montessori advocated this idea on the basis of her personal experience, on the basis of experimental data.

Nevertheless, we cannot agree with Montessori's assertion that we are no more capable of creating a person’s inner qualities than we are capable of creating the outward forms of his body, that “the creative forces of nature govern everything.” Quite out of tune with modern scientific ideas, moreover, is her claim that “the individual/personality becomes perfected in the same way as does the head, the nose, and the ears, developing in accordance with internal forces.” The wrongness of these propositions lies in their equating the development of the human being and the development of the personality. Montessori fails to distinguish these concepts, and making them synonyms has resulted in erroneous propositions of a pedagogical nature.

Montessori’s sociopolitical views are far from the idea of a revolutionary transformation of society. It is not active revolutionary struggle that she calls for, but rather a “cleansing” of society from the filth of the present. This methodological premise determines the goals of upbringing: educating human beings who are capable of observing and distinguishing good from evil,
of being self-directed, active, temperate, and disciplined.

The accomplishment of the goals of upbringing and the normal physical, spiritual, and intellectual development of the child require more than nourishment and good hygiene; they require something no less important—"the joy of living, of spiritual and intellectual freedom and nourishment" (emphasis mine—A.P.). This is a totally necessary objective condition, without which there can be no successful development and upbringing of the child in psychological-pedagogical terms. "It is just as essential to take care of mental hygiene," Montessori writes, "as it is to take care of the hygienic needs of physical education." It is just one thought, one idea, yet it is so fundamental that without it, the entire edifice of pedagogical theory falls apart. In disclosing the content of this "formula," Montessori insisted that facilities where children were gathered must not be oppressive because of restricted space and being cluttered with furniture. Simplicity and esthetics, harmonious lines and colorful design—everything must exert a positive effect on the children's perceptive souls. On the basis of these principles, Montessori worked out the psychological-pedagogical foundations of a methodology of intensive spiritual and intellectual development and upbringing of children of preschool age.

Development of the methodology of sensory gymnastics

On the plane of the psychological substantiation of the shaping of the individual, Montessori assigned a special role to the "hygiene of thinking," which she called the "key" that reveals the secrets of the shaping of the human personality, an effective means of "internal construction" of a person's psychology. (It would be wrong, of course, to exaggerate the role of thinking within the complicated system of internal and external factors of the shaping of the individual, just as it would be wrong to underrate its importance.) Without touching upon the definition of thinking as "the aggregate of activities of a reflective, associative, and reproductive character," we will comment that the
stages of its development have been correctly stated because without an accumulation of facts, without the ability to distinguish them, there can be no intellectual structures. Without sensory gymnastics, of course, there can be no initial exercises of the intellect. In exactly the same way, any exercise (thinking operations) without concrete facts, without real knowledge, will never be anything but mere "self-exercise." To put it another way, it is impossible to teach the child how to think correctly unless he himself does exercises in correct thinking. For these purposes there has to be a system of sensory exercises, a system (yes, a system!) of sensory gymnastics. What does this mean?

The ability to make distinctions is a characteristic feature of thinking. To make distinctions entails grouping. Hence, sensory exercises are exercises in making distinctions and classifications. Size, shape, texture, weight, temperature, taste, sound, color—the child needs to be taught to distinguish all of these. "The processes of making distinctions, grouping, and defining external objects on the basis of a firm procedure that has been established in the mind," Montessori writes, "are what constitute thinking, and, along with that, a certain degree of culture." Consequently, in order to teach a child to think it is necessary to teach him to compare and group things correctly—that is, to make correct distinctions. In turn, children acquire the ability to make correct distinctions only by means of sensory gymnastics—that is, through a system of exercises to develop the sensory organs. Montessori describes in detail a methodology for the development of the tactile sense, the stereognostic sense, the baric sense, the chromatic sense, the sense of sight, sound, and others. For the development of the tactile sense, for example, she utilized a little wooden board divided into two squares. One of them had a smooth, polished surface, while the other had emery paper glued onto it (six bands of differing roughness, from coarse to satiny). To develop the children's sense of touch was to teach them to "see with their hands."

To develop the children's sense of sight, Montessori instructed them to compare and contrast objects of differing
shapes, such as bars, little blocks, cylinders, and sticks. But the use of the visual receptor involved more than that. It fostered the development of the chromatic sense (the visual perception of colors). In the Children's Home, the children learned to distinguish between eight colors, with eight tones each (sixty-four color patches were provided). Montessori also worked out detailed exercises in sound recognition. For example, playing the silence game [molchanka] (listening carefully to the ticking of a clock, the buzzing of a bumblebee, and the whining of a mosquito) was designed to develop the sense of hearing. Nor did she forget the development of a sense of rhythm. Marching to the beat of music, tempo speeded up and slowed down, loud and soft—all of these were designed to serve the general idea of the comprehensive sensory development of the children.

For purposes of developing the children's stereognostic sense, Montessori made use of wooden bricks and blocks, marbles, beans, peas, grains of oats, rye, and wheat, little stones, and cardboard circles. She worked out a very simple but effective methodology: the children learned to determine what kind of wood little boards were made out of—spruce, alder, ash, or mahogany—according to their weight (each one was 8 centimeters long, 6 centimeters wide, and 1.5 centimeters thick).

The length of the present article does not permit a detailed account of the methodology for developing particular senses, but one thing is clear. One of Montessori's pedagogical discoveries is that she demonstrated experimentally the necessity of children's comprehensive sensory development for their spiritual and intellectual coming into being.

**The didactic material in the Children's Home**

Montessori was severely critical of the way instruction was organized in the public schools, where the teacher "pounded his own knowledge into the students' heads," which moreover required "complete immobility," forcing children to pay attention through the use of rewards and punishments. A school of
this kind, by enslaving the students' spirit, provided no space for the free manifestation of powers and abilities endowed by nature. Montessori believed that for her purposes, "the external material of development must correspond to the child's psychological needs, which constitutes something like a rung on a ladder that helps the child to climb upward."

Montessori was also critically disposed toward Froebel's "gifts," but she did make successful, practical use of colored pictures and clay in her upbringing work. Most important, however, were the didactic tools she developed herself. Proceeding on the idea that the didactic material should be a stimulus to self-development, she experimentally verified the pedagogical effectiveness of the didactic material that she had created.

Based on her methodology, a number of objects were made (little boards, blocks, cylinders, and disks) out of different kinds of material for the development of the senses of touch, weight, size, sight, hearing, rhythm, and so on. For example, the child might be called upon to insert bars and cylinders of different sizes into the appropriate spaces, or to determine by touch alone—with his eyes blindfolded—the properties and configuration of some material, to say what the object was made of, and what kind of object it was. "At all times, the child himself sees and corrects his mistakes, which forces him to compare the cylinders among themselves and focus his attention on the difference in sizes. It is this kind of comparison that constitutes the psychosensory exercise."

Of considerable practical interest are Montessori's judgments concerning the content and methods of instruction. In regard to the effectiveness of methods of instruction, she demanded conciseness, simplicity, and objectivity when explaining new material. "The better we are able to cut out unnecessary words," Montessori remarked, "the more perfect and complete the lesson will be." This is not a new discovery in pedagogy. J. A. Komenskii, as we know, substantiated a system of didactic principles. What Montessori succeeded in doing was to apply them to the instruction of preschool-age children.
"Exercises in everyday life" constitute, essentially, a realization of the upbringing function of labor with respect to taking care of oneself. Let us recall that in the Children's Home, the children washed themselves, dressed themselves, combed their own hair, put their own things in order, tidied up their rooms, set the table, washed the dishes, and so on. They were not playing at labor but rather getting used to working to the extent of their powers and capabilities. This is why they took good care of their things and were well coordinated and disciplined. One may object to Montessori's use of gymnastics as useful movements (buttoning and unbuttoning, tying and untying, dressing and undressing, sweeping the courtyard, and so on). But this does, however, make sense that is accessible to children's understanding, the obvious practical usefulness of labor gymnastics. It is quite another matter to say that "useful movements" should be selected in such a manner that they exert no less a developmental effect than gymnastic exercises. Montessori believed that manual labor is an important means of upbringing for children aged five and six. In her practice, she taught children how to make pottery and to build walls out of small bricks. It was her opinion that this kind of methodology does most to foster the urges and abilities of older children.

While making pottery fosters the development of children's creative abilities, farm work develops their powers of observation and shapes their senses. It has been long known that communion with nature and the world of plants and animals awakens one's most beautiful feelings. Montessori asserted, quite reasonably, that the best way to reinforce a child's physical and mental powers is to "immerse him in nature." She was referring not solely to upbringer in the out-of-doors, but to getting children accustomed "to farm work, to raising plants and animals, and, consequently, to the aware observation of nature." In the Children's Home, the children raised flowers and tended chickens and rabbits. Taking care of animals and plants, Montessori believed, translated into concern for others, which helps the child grasp his mother's and teacher's concern for him.
Moral upbringing

This is an issue that is especially complex in theoretical and practical terms. Like many other progressive educators of the past, Montessori believed that the development of the moral sense must serve as the basis for moral upbringing. By that she meant a sense of sympathy for people, empathy for their joys and sorrows. A person cannot become moral solely through memorizing rules of morality; it is essential to manifest the moral sense in an active manner. The child must encounter love, attention, and kind treatment. On the other hand, he ought not to be caressed inordinately, because he does not always need caresses any more than he needs food at any given moment. Caresses should serve as the spiritual and intellectual nourishment, Montessori wrote, for which the child experiences a need.

Montessori's idea regarding children's "keenness" seems rather curious. Every upbringer has noticed, she remarked, that children who have played to their heart's content will declare that they are tired of playing, that they feel like "doing something," that they "feel like reading," and so on. It is this "feel like" that constitutes the "litmus paper" of their sensitivity to their inner needs. For example, the newly awakened desire for knowledge must be supported by positive external influences and transformed into a cognitive need, as a personal quality.

A preschooler's actions are frequently impulsive, Montessori wrote, and it is the task of upbringing to transform these actions into willed, goal-directed, deliberate behavior. "When the child begins to respect the efforts of others," we read in the book Self-Upbringing and Self-Education, "he will not grab something he desires out of his classmate's hands but will wait patiently until it is his turn. When he begins to move around without annoying his classmates, without stepping on their toes, without tipping tables over, only then does the child begin to organize his will and bring his impulses and inhibiting elements into mutual balance. This is how the beginnings of habits of social
living are formed. It is impossible to achieve results like these by keeping children in a state of immobility.” How is the desired quality to be inculcated? Montessori’s answer is original: Inculcating the will requires inculcating constancy and decisiveness. And decisiveness comes about as a result of choice. The problem, again, is that choice is the result of internal effort, thinking, a struggle of motives. This mechanism becomes perfected in the process of exercising the will, and life itself provides the exercises. This scheme of logical structures is not objectionable, but it is far from being a methodology. Flexibility of will has yet to take its place in this scheme. It must be shaped in a collective of children by means of continual exercises in the sphere of everyday life. Only through the process of interaction and joint activities will children master the social norms of behavior that have been evolved by society and make the social experience something that is their own. Here is what Montessori wrote in this regard: “To develop mechanisms of will it is not enough merely to listen to what has to be done; it is not enough merely to be given the rules of behavior and a list of ‘rights and duties’ in order to acquire graceful movements. If that were so, it would only be necessary to explain to the student, very precisely, all the movements of the hand necessary to play the piano, and he would immediately be able to play a Beethoven sonata. In all these accomplishments, meanwhile, the essential factor is a certain kind of ‘shaping,’ and it takes exercise to reinforce and establish the attainment of will.”

In Montessori’s system, moral upbringing is built upon the development and inculcation of the senses, on the connection of sensory and mental training, on the unity of inculcation of habits and will, and, finally, on the unity of instruction and upbringing along with self-instruction and self-upbringing.

In the Montessori system of upbringing, rewards and punishments have been abolished. She believed that rewards are somehow an insult to human dignity. The only measure of punishment recognized was the method of isolating the guilty party from the children’s collective, but in such a manner that
he could see what his classmates were doing. The child, naturally, suffers from his isolation. The teacher's attentiveness to him, as if he were sick, does not eradicate his attachment to her; quite the contrary, it stimulates obedience and discipline.

One may agree or disagree with Maria Montessori's opinion that children in school are constrained by rewards and punishments that deform their spirit. However, we cannot dismiss these upbringing methods out of hand. The fact that the methods need to be improved, because children will always be children and will need the pedagogical guidance and influence of adults, is one thing. Children's upbringing is another. It needs to be free of formalism and dogmatism, free of routine and of petty tutelage from various authorities. The teacher's and upbringer's activities must not be constrained by bureaucratic directives. Nevertheless, social upbringing cannot be accomplished without a certain amount of regulation, any more than we can get by without traffic rules. Naturally, there will be fewer "violations of the rules" if the teacher is fit for his job and works creatively.

As children's instruction and upbringing are organized in the Montessori system, the upbringer serves as the supervisor of their life activities. However, it is not a passive but a pedagogically active force in its true essence. On the one hand, Montessori insisted on the training of creatively thinking upbringers capable of thinking scientifically and following the child's personality in the process of its shaping. On the other hand, the practical teacher-upbringer must possess perfect pedagogical expertise, like any other specialist.

Montessori shared Séguin's idea that the teacher must be beautiful not only in spiritual and intellectual terms but also outwardly, having a pleasant voice, being concerned about his appearance, so as to gain his students' affection. If he does not possess graceful gestures and tones of voice, he will not be able to win the children's mind, heart, and spirit. The teacher must certainly be authoritative and beloved, able to convey joy in interaction. These are truths that are not subject to doubt today.
In conclusion, let us note that attitudes toward the pedagogical ideas and experience of Maria Montessori have not been uniform either in Russian or foreign pedagogy. Thus, E. N. Vodovozova and E. I. Tikheeva, in their critical assessment of the upbringing practice in the Children's Home, pointed out shortcomings such as the absence of free, living speech and free collective games. Even they, however, were nevertheless forced to acknowledge the achievements of the Italian scholar. Vodovozova wrote that “Montessori alone has the distinct honor of having opened a new era in primary education, the kind that liberates children from a multitude of burdensome difficulties and wasted time in writing exercises.” Other educators (T. L. Sukhotina, Iu. I. Fausek) in general saw the positive aspects of Montessori's theory and practice. The truth lies somewhere in the middle. In Montessori's system, much belongs to history. “But in any case,” Fausek wrote, “this system merits the deepest attention, the most careful study and broad experimentation, because everything that Montessori has said and done is alive with such talent, such warmth, such love, and I dare to say such delight in the human soul, that you can't help being carried away and inspired with the same faith in the future of humankind that she herself possesses.”

Time is an objective judge. The initial enthusiasm and quick-tempered critical opinions concerning Montessori’s pedagogical legacy have given way to calm, comprehensive analysis. Let us say again today, in the words of N. K. Krupskaia, “We need to study critically the experience of both Froebel and Montessori . . .,” because it is impossible to develop a theory of pedagogy without knowledge of the history of pedagogical thought.

Selected by Anthony Jones
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