

Montessori and Imagination:
The Development of Imagination in the First Plane

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**Outline - Montessori and Imagination:
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- I. Introduction
 - A. Perception from professional community
 - 1. Developmental psychologist
 - 2. NAEYC “best practices”
 - B. Attitudes of primary teachers
 - C. Definition of pretend and imagination
 - D. Questions for consideration

- II. What is Imagination?
 - A. Etymology
 - B. Imagination from different perspectives
 - 1. Psychology
 - 2. Philosophy
 - 3. Neuroscience

- III. Montessori and the “Education of the Imagination”
 - A. Importance of chronological context
 - B. Societal perspective of imagination
 - 1. Froebel’s approach
 - 2. “Education of the imagination”
 - C. Credulity
 - D. Knowledge of the real world

- IV. The “Period of the Imagination”
 - A. 3-6 for the construction of imagination
 - B. Stages in development of imagination
 - 1. Birth to three
 - 2. Sensorial stage of imagination
 - 3. Problem solving and reasoning
 - 4. Imaginative construction
 - C. Balance of reality and imagination
 - 1. Abnormal development
 - 2. Scaffolding with materialized abstractions
 - 3. Environment balancing reality and imagination

- V. The Prepared Environment for Developing Imagination
 - A. Summary of research regarding development of imagination
 - B. The child in the prepared environment
 - C. The materials and activities
 - 1. Practical life
 - 2. Sensorial
 - 3. Language

- 4. Mathematics
- D. The prepared adult
 - 1. Knowledge
 - 2. Observation
- E. Free choice in the prepared environment
 - 1. Connection to “play”
 - 2. Essential elements of play
 - 3. Characteristics of play in the Montessori environment

VI. Conclusion

Introduction

If there is one hot button in the realm of Montessori myths and misunderstandings, it is the topic of imagination. The focus on reality-based experiences in Montessori environments has led to a widely accepted dismissal¹ summarized by this contemporary psychologist, ***“Although Montessori made important contributions to early childhood education and many of her ideas continue to be influential today, one of the major criticisms of her approach is the total focus on intellectual exercises and exclusion of imaginary play.”***² She continues, quoting an article about Montessori from the *New York Times Magazine* written in 1965, ***“Children in ‘pure’ Montessori schools are virtually restricted to materials she devised, which are intended to suppress fantasy and imaginative play. Children should not make believe, Montessori proclaimed; to encourage them along such lines is to encourage defects of character.”***³

Montessori’s reality-based approach to early childhood education also appears at odds with national standards for “best practice.” According to a statement of policy issued by the NAEYC, (National Association for the Education of Young Children,) “It is vital for early childhood settings to provide opportunities for sustained high-level play and for teachers to actively support children’s progress toward such play.”⁴

Whether we agree or disagree with these categorizations, the message heard is the message given. To some degree, we perpetuate these misunderstandings ourselves.

¹ In the introduction to *The Science Behind the Genius* (2005), Angelina Lillard writes, “For psychology researchers, attitudes toward Montessori are mixed: some know enough to appreciate it, others misunderstood a small aspect and dismiss the entire approach. Very few know more than a smidgen about it.” (p.viii) Paul Harris, eminent developmental psychologist, in an interview with the Harvard Graduate School of Education (2002) mentions Montessori in connection with outdated Piagetian thinking using “the stubborn auto-didactic model” and not the imagination. In a study assessing make-believe play and self-regulation, a Montessori classroom was used as a setting that “actively discouraged make-believe” (although the author stated that not all Montessori classrooms do) and when the children “lapsed into make-believe,” the “teachers often interrupted, drawing them back to workstation pursuits” (Berk, Mann, Ogan 2006, citing study by Krafft and Berk, 1998).

² Marjory Taylor, in her book, *Imaginary Companions and the Children Who Create Them*, p.53, (1999).

³ The *New York Magazine* article titled, “Let the Child Teach Himself” by R. Gross and B. Gross.

⁴ *Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8, Third Edition*, Carol Copple & Sue Bredekamp, eds. Copyright 2009 by the National Association for the Education of Young Children

Montessori discussions regarding imagination are largely contained to the second plane of development, the years from 6-12, where imagination is considered an essential tool of the mind used to explore history and the cosmos through storytelling, drama, and allegory. Any discussion of imagination for children under age 6 generally consists of differentiating between fantasy and imagination.

Many Montessori teachers are conflicted as to the role of imagination in the primary classroom. More than one teacher has confided, somewhat guiltily, that at one time or another she had told children not to “play” with particular materials, that they were for “working.” There is a fine line between meaningful exploration with the geometric solids and “playing with the blocks.” The elegant presentation of materials can easily slip from “This is *one* way to build the pink tower,” to “This is *the* way to build the pink tower.” When a child is walking around serving pieces of the trinomial cube as a “snack” for her friends, isn’t that a sign of a “deviation?” Even the children are absorbing negative attitudes regarding imaginative play in the classroom; during class, two children told another child (who was pretending to bake cookies with a measuring cup/spoon activity) “We aren’t allowed to pretend inside. We can only pretend on the playground.”⁵

Just what do we mean by “pretend?” The word “pretend” is commonly associated with “imagination.” Dictionary definitions of “imagine” (v. to form in the mind) and “pretend” (v. to use the imagination; or adj. existing in the imagination; make-believe) show this association, as do the nouns “pretense,” which refers to “make-believe, or things imagined,” and “imaginary play.”⁶ The association of pretend and imagination also extends to the professional research community. Developmental psychologist Paul Harris, identifies pretend play, or imaginary play, as one of the earliest and most obvious signs of the young child’s imagination (2000), making pretend play an indicator of

⁵ Personal communication- recently overheard while observing in an established, reputable Montessori classroom.

⁶ The word “fantasy,” which also appears in discussion and research literature regarding imagination, will not be used in this paper, as it implies a leave from reality. *"The poet is in command of his fantasy, while it is exactly the mark of the neurotic that he is possessed by his fantasy"* (Lionel Trilling, American literary critic).

imagination. Consequently, the conventional assumption is that if Montessori education does not include imaginary play, then it must not support the imagination.

So where does Montessori education stand? Does Montessori education really focus on intellectual development to the exclusion of the imagination? Is Montessori at odds with current “best practices” in early childhood education? What is imagination, what did Montessori really say about pretend play and the imagination, and does Montessori education support imagination during the early childhood years?

What is Imagination?

The imagination is a human capacity that allows us to transform what is, into what might be. The word “imagine” comes from the Latin *imaginari*, “to form a mental picture to oneself.” The etymology highlights several interesting points. First, imagination is a **mental** capacity; it is a power of the mind, an ability to move beyond what is sensorially present to an image, or combination of images, held solely in the mind. Second, to imagine involves a **picture**, a *vision*, from the Proto Indo European base *wied*, “to know, to see.” “To know” was the earliest meaning of the word “vision,” the meaning “sense of sight” came centuries later. And finally, **to oneself**, emphasizing that imagination exists privately within each of us.

In psychological terms, imagination has two functions, “reproductive” and “creative.”⁷ The reproductive imagination is the ability to picture things just as they are, making a true to reality representation or image of something. The reproductive imagination is sometimes referred to as “imagery” and is connected to memory. The creative imagination does not stop at merely a faithful representation of what already exists; the

⁷ From *The Elements of Psychology*, by David Jayne Hill (1888) “Imagination is the soul’s power to recombine representative ideas... But in addition to the revival and remembrance of past experiences, we have the power to take the individual elements thus reinstated in consciousness and combine them into new forms. This, and not the mere imaging of ideas, is the proper sphere of Imagination” (p.114). From Dictionary.com- “in psychology, the power of reproducing images stored in the memory under the suggestion of associated images (reproductive imagination) or of recombining former experiences in the creation of new images directed at a specific goal or aiding in the solution of problems (creative imagination).”

creative imagination recombines these images in the formation of new images or ideas. Both functions of the imagination, reproductive and creative, are based in reality because the images in the mind are based on the perceptions gathered by the senses from the real world.

Jacob Bronowski, author of *The Origins of Knowledge and Imagination*,⁸ was fascinated by the relationship between the senses, particularly vision, and imagination. From the scientific standpoint, vision is a mechanical means by which perceptions of the world reach us, but metaphorically, vision is the means by which we come to understand. He writes,

“We cannot separate the special importance of the visual apparatus of man from his unique ability to imagine, to make plans, and to do all the other things which are generally included in the catchall phrase, ‘free will.’ What we really mean by free will, of course, is the visualizing of alternatives and making a choice between them. In my view, which not everyone shares, the central problem of human consciousness depends on this ability to imagine.” (Bronowski, 1978, p.18).

Imagination can be discussed from a neuroscience perspective as well as from the psychological and philosophical angles. The images the mind uses in imagination begin with sensory perception, but how we *perceive* things is not simply the product of sensory input. The brain receives signals from the senses and interprets or explains the signals based on past experiences. In this way, the neural pathways of the brain develop based upon sensory experiences in the environment. Imagination and perception use the same neural circuits in the brain; but it is as if the imagination uses the circuits in reverse; taking what is already there and moving outward, reconstructing the pieces for a new

⁸ Jacob Bronowski was a mathematician and scientist. He wrote *The Origins of Knowledge and Imagination* in 1978, interweaving themes of philosophy, linguistics, ethnology and physics. He was particularly interested in the ideas of Immanuel Kant, who believed that ‘knowledge is based on the human senses.’

creation (Berns, 2008).⁹ This is another way to look at how the “true to reality” images from the reproductive imagination are the foundation for the creative imagination.

Neuroscientists have observed that while many neurons fire during a novel experience, with repetition, only a smaller subset of neurons process the stimulus. This makes the brain more efficient, using the brain’s capacity for categorization – “Oh! This is like the other thing,” but it also makes it very difficult to imagine a truly novel idea. In order to provoke the imagination, we need new experiences that will force the brain’s perceptual systems out of the standard patterns or categorizations (Berns, 2008). The brain’s response to novel stimulus suggests that there is a strong connection between exploration and imagination. Exploration stimulates the imagination, and since children’s minds develop through experimental exploration of their environment, exploring new possibilities is an essential element to how young children learn through imaginative play.

But imagination is not simply child’s play. Imagination is a creative ability at the heart of music, language, science, mathematics, and art. Imagination is the foresight of consequences, and the resourcefulness to face and resolve difficulties. Imagination is central to all human progress and invention. To imagine, is an individual’s own capacity to know and understand, to visualize something not present to the senses in physical reality. Imagination is the human capacity to change, to evolve, to adapt, and even to think.

Montessori and the “Education of the Imagination”

Montessori wrote a great deal about the imagination during the course of her lifetime. A chronological survey of the scope of Montessori’s writings shows considerable development in her thinking about the imagination from her early work in the 19-teens through the late 1940’s. It is important to remember that Montessori continued observing

⁹ Gregory Berns is a professor of Psychiatry and Behavior Sciences at Emory University and the Chair of Neuroeconomics. He is interested in how brain-imaging technologies can be used to study the neurobiology of human motivation and decision-making. His most recent book is *Iconoclast: A Neuroscientist Reveals How to Think Differently*.

and learning from the children during her entire career; her method was born and evolved entirely from what the children showed her. While many of her insights regarding imagination remain consistent throughout her lifetime, a random sampling of her writings seems to reveal disparate views. Taken out of context, these viewpoints contribute to the confusion and misinterpretation by contemporary psychologists and Montessori practitioners alike. A comprehensive study of Montessori and imagination must take into account the difference between Montessori's understanding of imagination at various points in time, and her strong views about "educating" the imagination primarily through fairy tales and pretend play.

In the California Lectures of 1915, Montessori describes the common belief at the time that ***"the little child is characterized by a vivid imagination and because of this a particular education should be brought to bear upon him in order to cultivate such a special gift of nature."***¹⁰ The "particular education" she spoke of was likely the fairy tales and teacher-directed fantasy play of Froebel's kindergarten, a popular early childhood approach at the time. Although Montessori and Froebel shared many common beliefs, Montessori did not support Froebel's approach to cultivating children's imagination.¹¹ Montessori believed Froebel's adult-directed block play could potentially confuse the young child's developing mental order, because it was not the child who initiated and directed the symbolic play, it was the adult.¹² We really don't know what the child understands or imagines when an *adult* determines what the block represents - this time a horse, next time a church steeple. It is the *adult* who is doing the imagining, not the *child*. Montessori did not believe that Froebel's method supported the child's spontaneous development of imagination. She questioned what exactly was being nurtured through an education whose aim was to help the child's mind develop through

¹⁰ Lecture- "Education in relation to the imagination of the little child." July 19, 1915, in San Diego. Published in *The California Lectures of Maria Montessori of 1915*.

¹¹ In the Introduction to *The Montessori Method* (1912) trans. Anne E. George, New York: Frederick Stokes Company, pp. xvii-xlii, Henry W. Holmes describes the similarities and differences between Froebel kindergarten and the Montessori system.

¹² Montessori, p. 42 in "Education in relation to the imagination of the little child." July 19, 1915, in San Diego. Published in *The California Lectures of Maria Montessori of 1915*.

adult-directed imaginary experiences.¹³ It was her criticism of this popular method of adult-directed education that likely sparked the misconception that Montessori education did not support the imagination.

Montessori was not immune to the pleasure that young children expressed during their own spontaneous play. She did not denounce *imaginary play*; she denounced the *education that denied the child anything more than pretend*. In 1918, in *The Advanced Montessori Method 1*, Montessori used an analogy of a hungry beggar pretending his bread was a delicious meal to describe the child who had only imaginary experiences.¹⁴ Although there is no reason to prevent the beggar from pretending his bread is more, it is not necessary to take away the meat of the more fortunate so that they may have the experience of pretending.¹⁵ There is no harm in pretending; the harm would be to deprive the child of real experiences in life in order to learn to use her imagination. Montessori illustrated this point by telling the story of a parent whose child constantly pretended to play the piano on the table; the parent was concerned that she would diminish her child's imagination if she gave her a real piano to learn music, thus depriving her child of an opportunity to pretend.¹⁶ Montessori believed that young children required more than only imaginary play to satisfy their developing mind and growing imagination.

Montessori recognized pretend play as an expression of an early stage in the development of imagination,¹⁷ but she did not see pretending as the ultimate purpose of the imagination. In 1918, she wrote, ***“And if some people remain permanently in a state of imagination in which unrealities predominate, our child, on the contrary, belongs to a people for whom the delights of the mind are to be found in great works of art and the***

¹³ Ibid.

¹⁴ Montessori, (1918), *The Advanced Montessori Method, Vol. 1*, “Imagination,” p. 198. “But this (pretend play) is not proof of imagination, it is proof of an unsatisfied desire; it is not an activity bound up with gifts of nature; it is a manifestation of conscious, sensitive poverty.” This statement refers to poverty of sensory experience, or sensorial education.

¹⁵ Montessori, (1918), *The Advanced Montessori Method, Vol. 1*, “Imagination,” p. 198.

¹⁶ Montessori, (1918), *The Advanced Montessori Method, Vol. 1*, “Imagination,” p. 199.

¹⁷ Montessori, (1918), *The Advanced Montessori Method, Vol. 1*, “Imagination,” p. 198: “A form of imagination supposed to be “proper” to childhood and almost universally recognized as creative imagination, is that spontaneous work of the infant mind by which children attribute desirable characteristics to objects which do not possess them.”

*civilizing constructions of science, and in those products of the higher imagination which represent the environment in which the intelligence of our child is destined to form itself.*¹⁸ The imagination represented a higher power of the human mind, destined for greatness; this was the power the child would grow into. Montessori's respect for the imagination was vastly different from the amusing "illusionary imagination" based on children's credulity. Children's credulity, their natural inclination to believe everything they are told, is often a source of amusement even to well-meaning adults, who view credulity as an expression of childhood innocence.

Montessori rallied against the pervasive societal attitudes of the time that relegated children to the realm of pretend and took advantage of their credulity. Many adults believed that encouraging children to believe in fantasies and accept them as real would nurture their imagination. Children believe in Santa or the Tooth Fairy because adults tell them these characters exist.¹⁹ While it is natural for young children to believe what adults tell them, belief is not imagination. Montessori questions, ***"But how can the imagination of children be developed by what is on the contrary, the fruit of our imagination? It is we who imagine, not they; they believe, they do not imagine."***²⁰ Montessori understood credulity to be neither the foundation nor the fruit of imagination. She believed that encouraging children's credulity would not develop their imagination; it would only give them one more obstacle to overcome.

Neither should adults prolong or encourage children's credulity merely because it is an amusing stage in childhood development. Comparing the development of imagination to the stages in the development of movement or language casts a different light on the seemingly innocuous tendency to prolong an immature stage in development. For example, even though adults may find a baby's crawling adorable, we don't encourage the baby to keep crawling instead of walking upright, simply because we may find

¹⁸ Montessori, (1918), *The Advanced Montessori Method, Vol. 1*, "Imagination," p. 197.

¹⁹ "While children as young as 3 understand the concept of what is real and what isn't, until they are about 7, they can be easily misled by adults' persuasive words, or by "evidence" (such as "seeing" Santa at the shopping mall) Wang, (2009).

²⁰ Montessori, (1918), *The Advanced Montessori Method, Vol. 1*, "Imagination," p. 200.

crawling a more endearing way of moving around. The baby's first words are of profound delight, but encouraging baby talk, mispronunciations and improper grammar do not support the development of mature language as well as correct modeling and rich vocabulary.²¹ The same is true for encouraging children's credulity. Montessori emphasized that ***"Education should not be directed to credulity but to intelligence. He who bases education on credulity builds upon sand."***²²

Montessori acknowledged the controversy surrounding her views on supporting the imagination in 1919, when she spoke to the *Child Study Society* on the topic: *Children's Imagination by Means of Fairy Tales*. Montessori joked with the crowd that this topic was dictated to her; she would not have dared to choose it herself and face the audience.²³ To her criticism of fairy tales, she answered, ***"When I have been so bold as to express my opinion of the value of the fairy tale, people have jumped to the conclusion that I was fiercely opposed to it. I do not really feel any such intense antagonism."***²⁴ Her point regarding fairy tales was simply, ***"Imagination really does not enter into the problem, because in telling fairy tales it is we (the adult) who do the imagining. The child only listens."***²⁵ During that speech Montessori told the listeners, ***"(The child) cannot distinguish well between the real and the imaginary, between things that are possible and things that are merely 'made up'."***²⁶ During this speech in 1919, Montessori was attempting once again to clarify her position regarding education based on cultivating credulity, instead of on reality.

²¹ Montessori, (1918), *The Advanced Montessori Method, Vol. 1*, "Imagination," p. 202.

²² Montessori, (1918), *The Advanced Montessori Method, Vol. 1*, "Imagination," p. 201.

²³ From the Times Educational Supplement, 1919, reprinted in AMI Communications, No. 2, 1975.

²⁴ "Times Education Supplement, 1919, reprinted in AMI communications, No. 2, 1975.

²⁵ "Times Education Supplement, 1919, reprinted in AMI communications, No. 2, 1975.

²⁶ Contemporary research on the development of imagination bears this out. The process of discerning what is real from what is imaginary, and from what is possible, and what is improbable is a lengthy one. While children as young as 18 months can begin to pretend, indicating through their actions a separation between real and pretend, the knowledge of what is real and what is imaginary doesn't develop until around age three. The distinction between what is actually real from what is not possible or probable is a more sophisticated understanding and appears from around age 5 and older (Wang, 2009).

When Montessori reiterated to that audience, ***“It is not necessary to withhold the unreal from him,”***²⁷ she made it clear that if we give children fairy tales, we must also give him the means by which to develop his critical faculties so that he could learn to discriminate for himself what is real and what was not. ***“The true basis of the imagination is reality, and its perception is related to exactness of observation. It is necessary to prepare children to perceive the things in their environment exactly, in order to secure for them the material required by the imagination. Intelligence, reasoning, and distinguishing one thing from another prepares a cement for imaginative constructions”***²⁸

Montessori understood that children need knowledge of the world of reality in order to go beyond reality through the power of the imagination. She published in 1918, (and even earlier in *Spontaneous Activity in Education*) ***“Imaginative creation is a construction firmly allied to reality; and the more it holds fast to the forms of the external created world, the loftier will the value of its internal creations be. Even in imagining an unreal and superhuman world, the imagination must be contained within the limits of reality.”***²⁹

Taken out of context, Montessori’s early remarks about pretend play and fairy tales could indicate that she believed they were inappropriate or even harmful for young children, or that she spoke out against the education of the imagination. Indeed, that is what many people believe, even today. However, Montessori did not object to pretend play or to fairy tales, she objected to pretend play and fairy tales as the exclusive method of educating children. Over a decade had passed since the “Miracle in San Lorenzo,” and Montessori had seen how hungry young children were for substantive means to develop their minds; given the choice, they preferred real, meaningful activities to toys.³⁰ She did not condemn toys; she simply observed that given the choice, the children preferred other

²⁷ Times Educational Supplement, 1919, reprinted in AMI Communications, No. 2, p. 12, 1975.

²⁸ Some words in this passage were omitted for clarity. Montessori (1918). *The Advanced Montessori Method vol. 1*, “Imagination,” p. 196.

²⁹ Some words in this passage were omitted for clarity. Montessori (1918). *The Advanced Montessori Method vol. 1*, “Imagination,” p. 191.

³⁰ Montessori, (1936) *The Secret of Childhood*, “What They Showed Me,” p. 128, Carter trans., 2006.

activities. Ironically, Montessori wrote in *The Secret of Childhood*, that although many visitors observed the children refusing sweets and toys, **“no one could have had such an extraordinary and fantastic idea as to assert: ‘Children should not play or eat sweets.’”**³¹

Montessori was advocating for the child to be given the utmost measure of respect, dignity, and support, for the tremendous task of building his mind and imagination. Montessori knew the intellect and the imagination were intrinsically bound. During a lecture in her 1946 teacher-training course, she told her students, **“All the intellect works like a form of imagination. All discoveries are the fruits of man’s imagination. Imagination is the real substance of our intelligence. All theory and all progress come from the mind’s capacity to reconstruct something”**³²

It is quite possible that teachers and parents have, over time, distorted the relationship Montessori saw between the intellect and the imagination, focusing on the intellectual results of her method and overlooking the imagination. But Montessori herself only grew in her conviction that the imagination was a critical construction in the first plane. Although her earlier work mentions little about the imagination directly, her later work conveys a great deal about the development of the imagination, and its significant place in the first plane is clear.

Imagination is a human capacity that manifests differently at different ages; imagination is not just a characteristic of the child in the second plane. While it is true Montessori considers the imagination an essential power for the child in the *second* plane of development, *the imagination must be developed in the first plane*, just as language and the ability to reason must be developed in the first plane in order to be used in the second plane. As Mario Montessori Jr. said, “Nothing comes out of the blue in a developmental

³¹ Montessori, (1936). *The Secret of Childhood*, “What They Showed Me,” p. 132, Carter trans., 1998.

³² Montessori, (1946). *The Child, Society, and the World*, p. 48.

process.”³³ Imagination must be constructed and developed in the *first plane* if it is to be used as a tool for exploration and learning in the *second plane*. Montessori’s later writings confirm and elaborate on this essential development of imagination during the first plane.

The “Period of the Imagination”

In a lecture on the imagination and intelligence in the 1946 training course in London, Montessori described the years “*between 3 and 6, especially towards 5,*” as “*the special period for the construction of the imagination. This is the period during which great power for man is built. That is why this period is not only called generally ‘the period of play’ but also the period of the imagination.*”³⁴ Montessori considered the years from 3-6 to be of special significance for the construction of the imagination; in fact, her description sounds strikingly similar to the “sensitive periods” identified for other significant constructions of the first plane.

Montessori saw that the young child’s imagination worked continuously during the first plane. From birth to three, the child unconsciously absorbs sensorial impressions from the world around him and from 3-6 constructs the ability to imagine – to “disconnect” from those sensorial experiences and physical events in the real world.³⁵ “*Imagination is the essence of the human mind which builds and constructs. Imagination does not develop from what the child hears, but from his own efforts in the natural world.*”³⁶

Montessori observed that the child constructs his imagination through his own efforts and experience, as a uniquely human aspect of his mind. “*Just as in the period of the absorbent mind the child studied the world sensorially and received impressions, so now he studies the world in another way and tries to reconstruct through experience he*

³³ Mario Montessori Jr. (1976) *Education for Human Development*, p. 64. See also the chapter “The Montessori Materials” for Mr. Montessori Jr.’s remarks about fantasy, imagination, and the materials for development.

³⁴ Montessori, (1946). Unpublished London Lecture #24, p. 95.

³⁵ Montessori’s concept of “creation” followed by “crystallization” can be compared to Leslie’s (1984, 2007) work explaining how very young children first create “primary representations” in their mind of how the world works, and then develop the ability to “decouple” the primary representations from the workings of their imagination.

³⁶ Montessori, (1946). Unpublished London Lecture #24, p. 97.

*has already had, things which he has never seen. Through this imaginative reconstruction the child makes his way for the first time in the world of real intelligence.*³⁷

Montessori discusses identifiable stages in the development of imagination. She describes one of the ways children ages 3 ½ and 4 show the power of their imagination is through their enjoyment of “tales of phantasy.” She reasoned that the fact these young children enjoy these stories so much shows that they have the inner mental ability to reconstruct tales that are outside the limits of their own personal experiences. The reason children this age love to hear stories over and over again is because this is their way of practicing the mental ability to imagine. Montessori likens this to their love of repeating a physical activity over and over for the joy of mastering a movement or series of movements.³⁸

Montessori considered this the “sensorial stage of the imagination.”³⁹ During this stage, the children practice their ability to construct a mental picture this is an “interior construction.” These interior constructions are built upon the knowledge the child has gathered from the real world. When we tell the story of the Three Bears, Montessori says, the children already have knowledge of bears, chairs, beds, bowls, and woods, and recombine these elements to create a story in their minds. This is what Montessori meant when she said that if we give stories to children, we must also make sure we give them the means to discern real from imaginary. Child can imagine the story in their minds because they already have real understanding of these elements from the physical world. These imaginary reconstructions are based on experiences the child has already had. Montessori called these “simple reconstructions.”⁴⁰

But simple reconstruction is not the only work of the imagination. Young children also have the ability to imagine things that are not conjured up by words in a story, or direct

³⁷ Montessori, (1946). Unpublished London Lecture #24, p. 96.

³⁸ Montessori, (1946). Unpublished London Lecture #24.

³⁹ Montessori, (1946). Unpublished London Lecture #24, p. 95.

⁴⁰ Montessori, (1946). Unpublished London Lecture #24.

experiences. Montessori observed that children under age 6 could use their imaginations and their growing reasoning abilities to solve problems. She saw how a child as young as 3 ½ was able to use the globe as an aid to his imagination in order to understand the problem of how one could travel around the world, or take many days to travel over the sea from Europe to America. When children used their imaginations to make their own discoveries and connections, she observed a “mental calmness” in them.⁴¹ It would seem that Montessori observed that meaningful work of the imagination offered the same satisfaction and peace that followed concentration on a physical activity. The same mental calmness that we often see following a physical activity such as table scrubbing also occurs when the children exercise their imagination.

In *The Absorbent Mind*, published in 1949, Montessori also wrote about the power of imagination in the first plane. ***“The child’s mind between three and six can not only see by intelligence the relations between things, but is has the higher power still of mentally imagining those things that are not directly visible.”***⁴² Montessori considered the power of abstract thought and imagination to go hand in hand; each played a mutual part in constructing the mind. Abstraction came from cultivating the ability to extract the essential, limited qualities of an object, and then the imagination could reassemble and rearrange those abstractions in an unlimited fashion. Order and exactness in mental images were the necessary structure that held abstraction and imagination together. She wrote about the significant structure of order and exactness in *The Secret of Childhood*, ***“It is important that the child would be able to preserve the images he is absorbing with a maximum of clarity; for it is through the clarity and brilliance of impression distinguishing one from the other, that the ego can build the mind.”***⁴³

Cultivating the imagination alone, without the structure of reality, order, and exactness of perceptions, would knock the balance of imagination and intellect out of sync. This is

⁴¹ Montessori, (1946) Unpublished London Lecture #24, p. 96. Also recounted in Montessori (1949) *The Absorbent Mind*, “Through Culture and Imagination,” p. 176, 9th ed. Kalakshetra.

⁴² Montessori (1949) *The Absorbent Mind*, “Through Culture and Imagination,” p. 176, 9th ed. Kalakshetra.

⁴³ Montessori, (1936). *The Secret of Childhood*, “The Unfolding Intelligence,” Carter trans. Orient-Longman ed. 1998.

what Montessori described as the “abnormal side of imagination and play.”⁴⁴ Psychoanalysts in Montessori’s time referred to this type of abnormal development as “psychological fugues,” evidenced by the child whose imagination, curiosity, and intelligence are directed towards the imaginary with no connection to reality.⁴⁵ This is the bright and vivacious child who cannot yet enjoy the trinomial cube on its own merits, but instead serves up the pieces as “snack” to her friends. Montessori found that such children were able to *elevate* their imagination when given the opportunity to attach their imagination to reality through activities in the Casa.⁴⁶ This recalls Montessori’s earlier convictions about education of the imagination; children need more than to play with (Froebel’s) bricks and fairy tales. She writes, “*We often forget that the imagination is a force for the discovery of truth.*”⁴⁷

Montessori wanted children to have something real in their hands to stimulate their imagination; this type of scaffolding would provide a temporary support linking the mind and imagination to the physical world. This was the idea behind her concept of the “materialized abstraction.” The materialized abstractions work in two directions, inward and outward. The child uses the material to focus on certain qualities, interrelationships, and to distinguish finer and finer distinctions, thus developing his inner mental life; then these new perspectives aid in his imaginative exploration of the outer world. Using materials and activities true to reality would lend greater strength to the child’s imagination, allowing for conscious elaboration, because children take their understanding of reality with them when they imagine.⁴⁸ Paul Harris, a developmental psychologist from Oxford, England (currently at the Harvard Graduate School of Education) writes, “*When pretend play does emerge, children draw to a remarkable*

⁴⁴ Montessori, (1936). *The Secret of Childhood*, “The Unfolding Intelligence,” Carter trans. Orient-Longman ed. 1998.

⁴⁵ See Montessori’s description of the child with an undisciplined imagination in *Creative Development I*, pp. 172-173.

⁴⁶ Montessori, (1936). *The Secret of Childhood*, “The Unfolding Intelligence,” p. 162, Carter trans. Orient-Longman ed. 1998.

⁴⁷ Montessori (1949) *The Absorbent Mind*, “Through Culture and Imagination,” p. 176-177, 9th ed. Kalakshetra.

⁴⁸ Mario Montessori Jr. *Education for Human Development*. See the chapter “The Montessori Materials.”

extent on the causal understanding of the physical and mental world that they have already built up during infancy” (Harris, 2000, p.6).

Montessori commented that *“play, imagination, and questions are features of this age”*⁴⁹ but parents and teachers often misunderstand how to support the child’s imagination. She asks, *“When all are agreed that the child loves to imagine, why do we give him only fairy tales and toys on which to practise this gift?”*⁵⁰ Our task, she said, was to *“prepare an environment which will allow the child to exercise his efforts and aid the development of his imaginative intelligence.”*⁵¹ This environment should offer the whole of life, not just fairy tales and manipulative toys, but a rich environment where the child can choose for himself what he needs for his full development; meaningful, effortful activities with which he can align his mental and physical energies. The same prepared environment that supports the child’s intellectual, social, and emotional development will also support the child’s developing imagination, as long as the adult does not become an obstacle by suppressing that imagination.

The Prepared Environment for Developing Imagination

When we look at the Montessori prepared environment through the lens of the developing imagination, we see opportunities for all of the significant elements identified by cognitive developmental psychologists in developing the imagination.⁵² A brief summary of the developmental course of imagination will highlight connections to experiences found in the Montessori prepared environment.

Infants begin by forming mental representations of the real world based on their experiences in the environment. These mental representations form the infant’s foundational knowledge about how the world works. With only a limited but functional repertoire of these representations in place, even very young children use their understanding of causal relationships to explore possibilities through pretend play.

⁴⁹ Montessori (1949) *The Absorbent Mind*, “Through Culture and Imagination,” p. 178, 9th ed. Kalakshetra.

⁵⁰ Montessori (1949) *The Absorbent Mind*, “Through Culture and Imagination,” p. 176, 9th ed. Kalakshetra.

⁵¹ Montessori, (1946) Unpublished London Lecture #24, p. 97.

⁵² See Andrews (2010) for a summary of the cognitive processes involved in the developing imagination.

Children stimulate their imagination through exploration, comparing and contrasting objects and relationships, and experimenting with different outcomes. Through an innate capacity influenced by their own experiences, children develop a “theory of mind,” an understanding of the beliefs, thoughts, and desires of themselves and others. Imagining different outcomes, or alternatives to reality, is known as “counterfactual thinking.” Counterfactual thinking appears very early in childhood and also plays a large role in how adults use their imagination. As Alison Gopnik (2009) summarizes, ***“Understanding the causal structure of the world and generating counterfactuals go hand in hand. In fact, knowledge is actually what gives imagination its power, what makes creativity possible.”***⁵³ Montessori identified this same relationship between knowledge and imagination. She wrote in 1915 that, ***“truth is the basis of every great artistic (and scientific) production of the imagination.”***⁵⁴

Nearly a century ago, Montessori knew that ***“Education must prepare the modern child for the renewed civilization of our day, this civilization which is based upon positive research of truth; that is, the child whose hand, whose eye, and whose ear are eager to grasp the truth with precision, and who becomes capable of mental concentration. Like the body which seeks the elements which satisfy its hunger, ... so the child nourishes himself with truth, organizing within himself the constructions of the imagination which create the beautiful and the good.”***⁵⁵

Where does the child build an understanding of causal relationships and explore different possibilities? Where does the child find the knowledge and truth that so nourishes his imaginative mind? Simply put, the Montessori prepared environment is the arena where Montessori’s theory of the developing imagination meets those of contemporary psychologists.

⁵³ Gopnik (2009) *The Philosophical Baby*, p. 46.

⁵⁴ Montessori, (1915) Education in relation to the imagination of the young child. Reprinted in *The Namta Journal*, Vol. 20, No.3, Summer 1995.

⁵⁵ Montessori, (1915) Education in relation to the imagination of the young child. Reprinted in *The Namta Journal*, Vol. 20, No.3, Summer 1995.

The prepared environment consists of three interdependent parts: the child, the materials and activities, and the adult. Looking at each of these elements with the development of imagination in mind, we first see the child. The child is who the child is. The child comes to us seeking the means to further develop his imagination. He has already begun this task, developing mental representations of the world and how it functions, and building intelligence and imagination together through his own experiences in his environment. It is commonly understood that babies the world over typically begin to pretend when they are 18-24 months old.⁵⁶ Most are experienced pretenders by the time they enter the Casa. As Montessori reminded us, their imaginations are working constantly, and this is the time to develop what has already been constructed. Our task is to put the child in connection with the materials and activities that will enable him to further develop his powers of imagination.

The materials and activities form the second element of the prepared environment. These are the means by which the child develops himself and integrates his physical and mental energies. These are the materials children all over the world chose over toys, and to the exclusion of other activities. These materials provide a stimulus, or prop, to the imagination, linking the child's mind to physical reality. Freely choosing these activities, the child will develop and refine his imagination, intellect, and integrate his physical body with his mind. Through the use of the materials and activities, children explore causal relationships between things and people, and experiment with different outcomes.

In practical life, as we see the child washing a table, pouring water, or measuring cornmeal, it is only natural that the child would be thinking of the waitress at the café who washed the table, or of pouring tea with Grandma, or making cookies with Daddy. The child's mental representations direct his actions; this is known as "embodied cognition."⁵⁷ The materials in his hands stimulate the child's imagination in the same way whether he is playing pretend or "working" with Montessori materials. The child using the measuring cups may pretend to be baking cookies; but this does not negate the

⁵⁶ Angeline Lillard, (2002), Pretend play and cognitive development. In *Blackwell's Handbook of Childhood Development*.

⁵⁷ Angeline Lillard, (2005). *The Science Behind the Genius*, p. 188.

coordination and concentration necessary to measure accurately. When children act out a grace and courtesy lesson, they are imagining an alternative possibility for a particular event. The children are practicing their counterfactual thinking. When we use a point of interest to challenge a child to scrub a table without any water dripping down the legs of the table, we are inviting the child to imagine himself performing this activity in a different way than he did in real life. What do you suppose is going on in the child's mind during the silence game? Perhaps he is imagining how quietly he will rise when he hears his name. Perhaps his mind is wandering, drifting to an activity planned for after school. Perhaps he is thinking about his lunch. The child's imagination works constantly, and practical life is filled with opportunities to exercise his imagination and connect it with reality.

In sensorial, the materials offer a different opportunity for the imagination. While the activities of practical life may provide opportunities to exercise the imagination, the sensorial materials are keys to release the child's imagination. The very fact of their limited nature encourages the child's imagination to go beyond the materials. The isolated qualities of the materials are *"like an alphabet for their exploration,"*⁵⁸ and through this exploration, *"the mind not only has the power to imagine, but it can also assemble and rearrange its mental content."*⁵⁹ The sensorial materials help the child to further refine his perceptions, and to create more precise abstractions, giving the child the finest tools possible for constructing his imagination and intelligence.

Even the pattern of activity within the sensorial materials supports the imagination. In the initial presentation, we introduce the child to how to handle and manipulate the material, and we demonstrate its particular purpose. Then we invite the child to explore. Controls of error help the child experiment with and evaluate different outcomes. Through matching, the child challenges his perceptions by comparing each item with the others and finding the one that is exactly the same. Through grading, the child explores the relationship between the items, refining his perceptions until they are fixed in his

⁵⁸ Montessori, (1946), *The Absorbent Mind*, "Through Culture and Imagination," p. 183

⁵⁹ Montessori, (1946), *The Absorbent Mind*, "Through Culture and Imagination," p. 183

imagination. Through variations, the child explores other combinations and relationships, using the materials as a visual expression of his imagination. The many sensorial games offer unlimited opportunities to connect the refined sensory perceptions held in his imagination to the outside world. Attaching language to the various experiences along the way gives the child the symbolic means to express an abstraction and affix a name to the workings of his imagination.

The child is never expected to merely copy and repeat the teacher's initial presentation. The importance Montessori placed on exploration with the materials is crystal clear in a story recounted in Kramer's biography of Montessori. According to the story, Dr Montessori was visiting classrooms in California in 1915. In one of the classrooms, she saw a child grading the red rods. When Montessori returned to the school a week later, she was dismayed to see that the child was still working with the rods in the same way—there was repetition, but no progress in the repetition. It was not the child's fault—Montessori criticized the teacher for limiting the child's creative potential.⁶⁰

The sensorial materials are designed to draw the child's imagination inward through more detailed perceptions, and then launch the child's imagination outward as he is able to recognize and see more and more in the real world. We *want* the child to discover that a rocket has the same shape as a cone upon a cylinder. We *want* the child to notice that the relative size of baby and mama is similar to the relative size of the smallest and largest knobbed cylinders. When the child walks his fingers up the brown stair, he is making the connection between the physical objects in front of him, and the stairs in his imagination. Observing children demonstrating these behaviors is an indicator of the imagination at work. The sensorial materials do not just ***“stimulate the imagination, but the mind itself seizes upon them, drawing therefrom its own syntheses.”***⁶¹

The language and mathematics areas are based upon the imagination, for they involve manipulation of abstract symbols and meanings not presenting the physical world. The

⁶⁰ Rita Kramer, (1976). *Maria Montessori: A Biography*, p. 215

⁶¹ Montessori, (1946). *The Absorbent Mind*, “Through Culture and Imagination,” p. 188

materials are a link between the imagination and the hand; they provide the physical expression of ideas held in the mind.

The ultimate aims of the language area are effective spoken communication, creative writing, and total reading, all of which are directly linked to the child's imagination. A child can communicate effectively when he has the words to express the thoughts and emotions in his mind. Creative writing gives the child the power to express the fruits of his imagination through written symbols. Total reading demonstrates that the child can imagine not only the events of a story, but also imagine the emotional content conveyed by the words and the particular style of the author. Closer examination of specific activities within the language area shows ample opportunity for role-play, drama, pretending, and imaginative play as the children interpret and act out written and spoken words, phrases, and sentences, listen to and interpret stories, songs, and poetry, and give voice to their own stories and songs. Every time the children listen to a story, write a phrase, or act out a sentence, they accept the invitation to take the perspective of another; they imagine the thoughts, feelings, and desires of someone else.

The work of imagination begun in the sensorial area is continued with the activities in the math area. Here, the child works first with very concrete materialized abstractions, as he explores the relationships between and among quantities and symbols, then gradually develops the ability to use both his reproductive and his creative imagination moving towards more symbolic materials. Eventually the child explores solely in his imagination, manipulating qualities and symbols by applying them to situations outside his direct experience. The activities in mathematics also provide opportunities for role-play and pretending. For example, the operations with golden beads are a direct invitation to take on a character or role and for a small group of children to work out the challenges of socio-dramatic pretend play.

It is clear that the child has the natural drive to develop his imagination, and the materials in the prepared environment have the potential to support this developing imagination. But neither the materials nor the child alone can fulfill the promise of the prepared

environment. There must be an insightful, observant adult to help connect the child to the materials and activities. This is where Montessori environments can fail to meet the child's needs in terms of his developing imagination. Looking to the child's activities with an eye for the developing imagination enables the Montessori adult to see signs of important mental processes instead of deviations or misbehavior. As we develop our abilities as teachers and observers, we are able to see more and more value and opportunity in the same materials. Montessori tells us, "*The mind, as it develops, sees more and more in the same object.*"⁶² This is as true for adults as it is for the children. We do not need a new curriculum or special materials for developing the imagination, we only need to expand our thinking about the materials we have and how they are used.

Supporting the child's developing imagination requires focus on two important abilities: First, a deep understanding of the purposes and opportunities available within each material in the environment, and second, regular and active observation. Remember that pretend play is one of the most obvious and visible signs of the imagination. When a child is pretending, an important mental process is acting. The adult's work is to connect the child with the most effective material to express and develop that working imagination. The child who was serving up the pieces of the trinomial cube was not connected with the right material for what his imagination was expressing. He would be better served by slicing a banana or helping to prepare snack for the class. On the other hand, the child who was pretending to bake cookies while using the measuring activity was perfectly within the structure and purpose of the activity; how could he *not* imagine baking cookies while holding a full measuring cup in his hand? However, sometimes it is not as clear what the child is expressing through his pretend play. What of the child who is making a train out of the brown stair, or building a castle with the cubes of the pink tower?

In order to determine if a material meets the child's needs, it is necessary to know more than merely the initial presentation of the material. The teacher must be able to extract the essential purpose of each material, understand the depth and breadth of what is

⁶² Montessori, (1939). *Creative Development in the Child, Vol. 1*, pp. 104-105.

possible within each material, and be humble enough to realize the child may discover something entirely new on his own. The adult should also observe the child's demeanor; are there signs of concentration or is he listless and ready for a change? By making a train of the brown stair is the child exploring relationships of two-dimensional change, or would a better match be looking at the "types of trains" vocabulary cards, or listening to a story or singing a song about trains? The answers are only found through observation and an open mind. However, if the teacher stops the child at the first sign of pretend play, she is thwarting an opportunity for discovery and development just as if she slapped the child's hand reaching out to touch a beautiful object. "Don't pretend!" is the mental equivalent to "don't touch!" The child will do what nature tells him he must; it is only the adult's response that makes the difference between construction and destruction.

Neither is it necessary to go to the other extreme; it is neither necessary nor helpful to "teach" the child what or how to imagine. Joyful learning comes when the child makes the discoveries himself. This principle underscores why we do not demonstrate every variation with the sensorial material, and it is why we do not dictate how the children are to use their imaginations. Our role is different; the Montessori adult is the ramp that launches and the scaffold that supports. She is sustained by the wisdom cultivated through knowledge and observation.

There is one additional element of the prepared environment that is significant to the developing imagination- free choice. In the Montessori prepared environment, children are free to choose what to do, where to do it, and they can do it as long as time and interest allows. Free choice is the element that connects the activities in a Montessori environment to research emphasizing the importance of play. In some cultural settings, play is the only time when children are permitted to choose what they do. Stuart Brown, in his book *Play: How it Shapes the Brain, Opens the Imagination, and Invigorates the Soul*, describes the voluntary nature of play as the essence of freedom. He explains when children voluntarily choose an activity they do so because of an inherent, personal

interest. He observes that during play, children become fully engaged, are fully in the moment, and experience what the psychologist Mihaly Csikszentmihaly calls “flow.”⁶³

Brown describes a wheel-shaped framework of play devised by Scott Eberle, an “intellectual historian of play and vice president for interpretation at the Strong National Museum of Play.”⁶⁴ Eberle’s framework involves **Anticipation**, wondering what will happen; **Surprise**, a discovery or change in perspective; **Pleasure**, a good feeling; **Understanding**, acquiring new knowledge or synthesis of ideas; **Strength**, mastery that comes from experience or practice; and **Poise**, grace, contentment, and a sense of balance. Both Brown and Eberle describe the elements of play in a strikingly similar way to the “normalizing” effects of a Montessori activity, freely chosen, done by the hands with real objects, accompanied by mental concentration.⁶⁵

Along with free choice, Angeline Lillard identifies several other similarities between play and Montessori activities.⁶⁶ According to Lillard, Montessori environments feature **child-sized materials that facilitate embodied cognition** (how the body’s activities shape the mind); they support **self-directed activity**; the activities are of **individual interest** with **intrinsic rewards**, and they take place within a **social** community of peers. These are the features of play that are important to cognitive and social development, and these features are incorporated into any typical Montessori setting.

Conclusion

Returning to the questions posed at the beginning of this paper, we can now address where Montessori education stands in the development of imagination. Montessori understood that the intellect and the imagination develop in harmony, both drawing from the child’s experimental exploration of his environment. The accumulating body of

⁶³ Brown, (2009) p. 18

⁶⁴ Brown, (2009) p. 19

⁶⁵ Brown, however, also describes the first quality of “play” is its apparent purposelessness. I don’t interpret this to mean he is saying only purposeless activities are considered “play,” but that he, like others, is baffled that play doesn’t appear to have any survival value. Montessori found, by contrast, that very similar results could be obtained through using activities that do have a specific value.

⁶⁶ Lillard, (2005). *The Science Behind the Genius*.

research in cognitive neuroscience and developmental psychology supports this understanding. Montessori's early work focused on attempts to convince society that children need more than only pretend play and fairy tales to exercise and develop their imagination, but she was not against pretend play and fairy tales as such. Montessori's later work emphasized the importance of developing the imagination in the first plane, when children are uniquely capable of such construction. The prepared environment is the ideal arena for developing imagination alongside the intellect, provided that the adult recognizes and supports external signs of the child's expanding imagination. While Montessori teachers do not specifically direct or teach pretend play, children will spontaneously express their imagination through use of the Montessori activities and materials. The adult must then determine if the material or activity is the best match for what the child is expressing, using observation and knowledge to redirect the child's energies if needed.

Although Montessori environments are reality-based, the essential elements of play are incorporated into both the manner and spirit with which the children interact with each other and their environment. The universal child and the standard Montessori materials are consistent the world over; the variable is the adult who connects the two. The Montessori adult is the decisive element; it is she who either creates an environment supporting the child's imagination, or one that suppresses and denies the child's imagination. Montessori's position is clear: ***“The power to imagine always exists, whether or not it has a solid basis on which to rest, and materials with which to build. But when it does not elaborate from reality and truth, instead of raising a divine structure, it compresses the intelligence and prevents the light from penetrating.”***⁶⁷

“Thus, we will help his intellect, to go on, to experiment, to acquire knowledge until he can more easily and more perfectly accomplish the effort of intellectual growth. He is destined, therefore, not to represent our inferior humanity, but to surpass us.”⁶⁸

⁶⁷ Some words in this passage were omitted for clarity. Montessori (1918) *The Advanced Montessori Method Vol. 1*. “Imagination,” p. 205.

⁶⁸ Montessori, (1915) Education in relation to the imagination of the young child. Reprinted in *The Namta Journal, Vol. 20, No.3, Summer 1995*.

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