

The Development of Imagination and the Role of Pretend Play

*"We often forget that the imagination is a force for the discovery of truth."*¹

-Dr. Maria Montessori

The emphasis on "play-based" curricula for early childhood education, contrasting with the reality-based experiences in Montessori environments, has led to the widely accepted dismissal² 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."***³ 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."***⁴

To some degree, Montessori professionals perpetuate these misunderstandings themselves; discussion of imagination is largely confined to the elementary age, and many 3-6 teachers are themselves conflicted and confused about imagination, fantasy, and pretend play in the classroom. It is important for Montessori educators to understand how the imagination develops in the first plane of development and why children pretend. This knowledge enables teachers to observe accurately and constructively, communicate effectively with parents, and fully support the development of imagination during the years from birth to six.

The word "imagine" comes from the Latin *imaginari*, "to form a mental picture unto oneself." The study of imagination overlaps with anthropology, psychology, philosophy, and neuroscience, with each discipline contributing to a greater understanding of how imagination develops.

¹Montessori, *The Absorbent Mind*, "Through Culture and Imagination," p. 176-177, 9th ed. Kalakshetra, (1949).

² 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" rather than 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).

³ Marjory Taylor, in her book, *Imaginary Companions and the Children Who Create Them*, p.53, (1999).

⁴ The New York Magazine article titled, "Let the Child Teach Himself" by R. Gross and B. Gross.

Anthropologists note a significant shift in human intelligence with the appearance of symbolic art and burial rituals, conjuring up an imaginary world different from the present reality. Developmental psychologist Paul Harris, one of the leaders in the study of imagination, takes an ontogenetic view of human imagination; the development of imagination in one child's life reflects the development of imagination in the entirety of human history. He believes that the capacity to imagine emerges very early in childhood and lasts a lifetime. According to Harris, and many others, pretending appears to be innate; it is evidence of a biological, cognitive process at work, and it manifests universally in children according to their physical and cultural context.⁵

From a psychological perspective, imagination has two functions, "reproductive" and "creative."⁶ 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 recombines these images in the formation of new images or ideas. Both functions of the imagination, reproductive and creative, are based in reality because images in the mind are based on the perceptions gathered by the senses from the real world.

Philosopher Jacob Bronowski was fascinated by the relationship of the senses, particularly vision, to imagination. He writes that the ability to imagine, visualizing alternative outcomes and making a choice between them, is a central issue in human consciousness.⁷

Neuroscientists have observed that while many neurons fire during a novel experience, with repetition, only a smaller subset of neurons process the stimulus. 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.⁸ 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.

Each of these disciplines provides a key to understanding imagination, but how does imagination develop? Well, imagination is based on children's foundational knowledge about the world. In very general terms, the infant's developing mind has "systems" to organize and process the characteristics and properties of objects and situations in order to construct an

⁵ Paul Harris, *The Work of Imagination*, (2000).

⁶ 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)."

⁷ 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.'

⁸ 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*.

understanding of the real world. This is the human mind's natural drive to seek out patterns and put new information into context with previous experiences. This is similar to what Montessori referred to as, "The Mathematical Mind" - ordering and classifying information.

The infant begins with "object representation." Object representation refers to how infants acquire knowledge- as "representations" held in the mind. When infants observe an event, the "object-representation system" in their developing brain takes in information about the properties of the objects for purposes of recognition and categorization. Other developing systems, such as the "physical-reasoning system," can use that information to interpret and predict outcomes. This helps the infant learn how objects behave and react. The infant's representational knowledge provides a causal framework for understanding new information and placing it in context with existing information. Over time, infant's initial representations gradually become richer and more detailed as they identify new variables in a predictable pattern, and encounter events that do not conform to their expectations.

Current research shows that when children pretend, they draw on the causal framework of understanding that they have built up during infancy. This is in stark contrast to the outdated theories of Freud and Piaget, who believed that even while pretending, babies and young children could not tell the difference between imagination and reality. Piaget considered pretend play to be a primitive phase of maladaptive behavior that would be outgrown as the older child replaced this early cognitive process with a more objective approach.⁹

Recently, developmental and cognitive scientists have found that because pretending appears to be a universal characteristic of early childhood, there must be a biological function to pretending, and we should consider why pretending is beneficial, instead of thinking of it as a "maladaptive tendency." Pretend play is *not* a maladaptive expression of imagination. In fact, it is the *absence* of early pretend play that may be maladaptive, as indicated by studies linking autism spectrum disorders with the absence or deficit of imaginative play.¹⁰

Because children draw upon their own understanding of the real world when they pretend, they are not for a moment confused during pretend play. Even a very young child can pretend to wash Dolly's hands with a block of wood, but when his own hands are dirty he knows just where the real soap is and is not confused; he does not get the block of wood to wash his own dirty hands. This is because the child has first hand sensory knowledge of soap, dirty hands, and washing.

However, when children do not have first hand sensory knowledge of a situation, they generally look to their parents for confirmation of what is real and what is not. When parents support and encourage their children to believe in pretend (such as telling that Santa is real, or taking children to the shopping mall to visit Santa), *children will believe*.¹¹ Furthermore, depending on

⁹ Paul Harris, *The Work of Imagination*, (2000).

¹⁰ Simon Baron-Cohen, The biology of imagination. *Entelechy Journal*, No. 9, summer/fall 2007. (2007). Also in Paul Harris, *The Work of Imagination*, (2000).

¹¹ Marjory Taylor, *Imaginary Companions and the Children Who Create Them*, (1999).

the extent of the deception, the child's own sensory knowledge may appear to support this belief, for example, the child believes in Santa because he has seen Santa with his own eyes at the shopping mall.

Unreal events depicted in storybooks can also confuse young children. When shown pictures of anthropomorphized rabbits sweeping and baking, and real-life pictures of mother birds feeding their young, 3 year-olds were not able to discriminate well between which one was "real" and which one was "pretend."¹² This suggests young children are unclear about pretend and unreal situations when their direct sensory information conflicts with reality. For example, when they *see* a picture or TV image, they are more likely to think it is "real."¹³ By the age of 5, children were better able to make this distinction, as well as between fantasy and reality when shown pictures of events that could happen "in real life," or "in a dream."

In some ways, it is easier to understand how infants and young children learn about what is real and what is pretend in the *physical world*, than it is to understand how they learn about these differences in the mental or *psychological world*. But the psychological and physical worlds intersect whenever we imagine "what if," "how come," or "she thinks." At a very young age, children begin to develop "theory of mind," the understanding that the contents of one's own mind are different than the contents of someone else's mind.

Theory of mind is fundamental to imagining another's point of view, or thinking about how someone else might respond to a situation. A very obvious example of this appears when children listen to a story; they readily shift their perspective to the point of view of the different characters. This ability continues well into adulthood; every time we read a novel, biography, or historical narrative we accept the invitation to view the world from another perspective. Understanding of others' minds links the imagination to the development of social cognition and empathy.

How children think about mental states, both their own and others, and knowing the difference between what is "real" and what is "in the mind," are central to developing imaginative thinking. Contemporary science regarding young children, imagination, and learning indicates that the abilities that infants and young children use to learn about the physical and mental world, are the very same abilities that allow them to "change the world" and imagine alternate realities and possibilities that don't yet exist. As children learn about the real world, their brains create causal maps of how the world works; these idea maps enable children to imagine new possibilities and imaginary worlds that differ from reality.¹⁴

Exploring alternate possibilities of reality is a profound and pervasive human activity, referred to as "counterfactual thinking," or thinking about the facts "counter" to reality. Humans use counterfactual thinking every day, throughout the day. Every decision we make, every time we consider hypothetical possibilities and imagined outcomes, we are using counterfactual

¹² Ibid.

¹³ Ibid.

¹⁴ Alison Gopnik, *The philosophical baby*. New York: Farrar, Straus and Giroux, (2009).

thinking. Emotions ranging from anxiety and regret, to satisfaction and accomplishment, come from considering what might happen, what might have been, and the risk of making a decision and acting on it. Counterfactual thinking involves temporarily suspending reality, understanding causal relationships, and considering other points of view and the effects of our actions. In short, counterfactual thinking is the human imagination at work.

In summary, the development of the imagination begins with the representations of the real world that form infant foundational knowledge about how the world works. With a limited but functional repertoire of these representations in place, even very young children use their understanding of causal regularities to explore possibilities in a make-believe world. This is not an immature stage that children grow out of, but the entry into the uniquely human, life-long capacity to imagine alternatives to reality. As Alison Gopnik writes, *“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.”*¹⁵

The imaginary worlds of pretend play are just as important for young children as the real world. It is not that young children can’t tell the difference between real and imaginary, they simply enjoy both. The advantages of childhood protect children from adult responsibilities and demands, giving children the time and space to exercise their developing imagination and freely explore alternatives to reality, without fear of making mistakes.

The responsibility for educators lies in understanding the processes inherent in the development of imagination, the relationship between imagination and pretend, and the significance of supporting this developmental process. Imagination relies on a solid foundation of real-life experiences, accompanied by ample opportunity for exploration and experimentation- this *includes* exploration and experimentation through pretending or imagining alternative outcomes.

It is neither necessary nor helpful to “teach” the child what or how to imagine. The child constructs his imagination through his own efforts and experience, as a uniquely human aspect of his mind. Joyful learning comes when children makes discoveries and connections themselves. This principle underscores why Montessori teachers should not demonstrate every variation with the sensorial material, and it is also why we should not dictate how children are to use their imaginations. Instead, Montessori advises adults to *“prepare an environment which will allow the child to exercise his efforts and aid the development of his imaginative intelligence.”*¹⁶

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 of, “don’t touch!” The child will do

¹⁵ Alison Gopnik, *The philosophical baby*. New York: Farrar, Straus and Giroux, (2009).

¹⁶ Montessori, Unpublished London Lecture #24, (1946).

what nature tells him he must; whether it is touching or pretending - it is only the adult's response that makes the difference between construction and destruction.

Dr. Montessori herself was never opposed to pretend play.¹⁷ However, she rallied against the pervasive societal attitudes of her time that relegated children solely to the realm of pretend and took advantage of their credulity. Throughout her lifetime she wrote beautifully and extensively about the imagination, and what she wrote aligns perfectly with contemporary research, showing once again, Dr. Maria Montessori was a woman ahead of her time.

In 1918, *"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"*¹⁸

In 1946, *"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."*¹⁹

In 1949, *"The child's mind between three and six can not only see by intelligence the relations between things, but has the higher power still of mentally imagining those things that are not directly visible."*²⁰

In 1918, *"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."*²¹

In 1915, *"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."*²²

In 1949, *"We often forget that the imagination is a force for the discovery of truth."*²³

¹⁷ Sarah Werner Andrews, "Montessori and Imagination," a comprehensive and chronological examination of Montessori's writings about imagination and pretend.

¹⁸ Some words in this passage were omitted for clarity. Montessori (1918). *The Advanced Montessori Method vol. 1*, "Imagination," p. 196.

¹⁹ Montessori, Unpublished London Lecture #24, (1946).

²⁰ Montessori *The Absorbent Mind*, "Through Culture and Imagination," p. 176, 9th ed. Kalakshetra, (1949).

²¹ Some words in this passage were omitted for clarity. Montessori, *The Advanced Montessori Method Vol. 1*. "Imagination," p. 205, (1918).

²² Montessori, Education in relation to the imagination of the young child. Reprinted in *The Namta Journal, Vol. 20, No.3, Summer 1995*, (1915).

²³ Montessori, *The Absorbent Mind*, "Through Culture and Imagination," p. 176-177, 9th ed. Kalakshetra, (1949).