

## The Sensitive Periods

### Introduction

Today we will examine the second of the unique Powers which Dr. Montessori identified in the First Plane of Development. She called this second power “The Sensitive Periods”. As with “The Absorbent Mind”, the identification of the Sensitive Periods is **a fundamental Montessori discovery** – a significant and original contribution to the understanding of early childhood development. This discovery **emerged** from the observation of children all over the world, interpreted in the light of Montessori’s intuitive insights and her contemporary scientific knowledge. The Sensitive Periods, then, are yet another **universal** human characteristic, a phenomenon of development exhibited by all children regardless of their era or culture.

With this examination of the Sensitive Periods we will also complete our picture of the mechanisms of self-construction in the First Plane of Development. So let’s look for a moment at the pieces of that picture already in place.

We started with the **Human Tendencies** – universal, innate human traits which guide human development and motivate human behavior, already present at birth, and active throughout life. Next, we examined the four stages or **Planes of Development** – each with its particular tasks, needs, and creations – which result in the construction of an individual human adult. Then we narrowed our focus to the First Plane of Development: a stage of extraordinary creative activity guided by two additional powers which are active only during this First Plane – **The Absorbent Mind**, the special mentality present as a motivating and creative power throughout the First Plane of Development; and now, **The Sensitive Periods**, which we will recognize as very specific powers present only for certain times and for limited purposes during the First Plane, after which they disappear.<sup>1</sup>

<sup>1</sup> As with the Absorbent Mind, the 20<sup>th</sup> century provided increasing recognition of what Montessori termed “Sensitive Periods” during the formative stage of human development. In 1950, Norbert Wiener was able to suggest their existence as an extrapolation of language development: “... **what evidence there is goes to show that there is a critical period during which speech is most readily learned; and that if this period is passed over without contact with one’s fellow human beings of whatever sort they may be, the learning of language becomes limited, slow, and highly imperfect. ... This is probably true of most other abilities which we consider to be natural skills ... (such as, movement, visual development, etc.)**”, in *The Human Use of Human Beings: Cybernetics and Society*, Boston: Houghton Mifflin, 1950. Evidence multiplied during the second half of the century, expanding our picture of early brain development. See, for example, Ronald Kotulak *Inside the Brain: Revolutionary Discoveries of How the Mind Works*, Kansas City: Andrews & McMeel, 1996, p. 7: “**Information flows easily into the brain through ‘windows’ that are open for only a short duration. These windows of development occur in phases from birth to age 12 when the brain is most actively learning from its environment. It is during this period and especially the first three years that the foundations for thinking, language, vision, attitude, aptitudes and other characteristics are laid down. Then the windows close, and much of the fundamental architecture of the brain is complete.**” Richard Restak offered a description of what could be happening at the cellular level during these “critical periods” or “windows of opportunity”: “... **the brain literally creates itself during our earliest development. At various times in the developmental process from fetus to newborn to infant, nerve cells migrate, many die off, and many others stick to one another and send out processes whereby neuronal connections are formed and re-formed. This orchestration depends upon sensitivities on the part of the developing brain to place (the effect of other cells in the immediate area), time (the brain develops in designated stages, and if development is thwarted the brain often cannot later compensate), and the chemical and electrical activity of neighboring neurons.**” in *Brainscapes: An Introduction to What Neuroscience Has Learned about the Structure, Function, and Abilities of the Brain*. New York: Hyperion, 1995, pp. 93-94.

We have already seen that for Montessori, **growth from conception to adulthood** is not a vague “progressive accumulation of material”; nor an “inherent hereditary necessity”, shaped by our genes towards a limited set of pre-determined characteristics. Rather, she saw growth as “... **a process meticulously guided by transient instincts which give an acute sensibility and an impulse towards specific forms of activity ...**”. Furthermore, these acute sensibilities and specific forms of activity “**often differ very plainly from the activities of the individual in the adult state**”.<sup>2</sup>

**How have we seen this already?** Well, in all of the Planes of Development, we see different and specific, attractions to certain activities and experiences which ebb and flow as necessary developmental learning is accomplished: we saw, for example, that in the Second Plane of Development, the Human Tendencies of Abstraction and Imagination take on an intense developmental power or significance. Similarly, in the Third Plane, there is the new attraction to explore interpersonal human relationships; which contrasts with the Second Plane child’s intense interest in the dynamics of life in a fixed social group with definite rules, roles, and expectations.

Such powers, attractions, and motivations are not “willed” in a conscious or adult sense. They emerge naturally, spontaneously and unconsciously; and they are universally exhibited – they are the **psychological equivalent of such physiological phenomena** of growth as the pre-determined appearance and disappearance of the teeth during childhood.

These psychological powers guiding growth and development can be assisted, thwarted, or obstructed; but **their appearance cannot be controlled from outside the individual** who experiences them. And certainly, these transient and variable sensibilities, powers, and attractions can be very different from the manifestations of normal, conscious adult behavior.

**Among these “transient instincts”,** meticulously guiding growth, we found a unique unconscious mentality present only during the First Plane of Development – the Absorbent Mind: a power for growth, self-construction, and adaptation which is present at birth and then disappears by age six. The particular powers which we will call **Sensitive Periods** are also found only in the First Plane of Development. They **appear at birth for very specific developmental purposes, and disappear during the First Plane according to their own developmental time tables.**

These Sensitive Periods are **unique**, even among the many temporary powers and sensibilities which emerge and subside throughout the Four Planes of Development. They guide the formation of very specific sensibilities and characteristics. In particular, we will be thinking of Sensitive Periods as those sensitivities in human development that are unique to the First Plane of Development.

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<sup>2</sup> [The Secret of Childhood](#), pp. 35; 211

## Definition and Description of Sensitive Periods

We can define Sensitive Periods as:

**Laws of development that provide an inner guide leading to the attainment of specific sensibilities or characteristics**

According to this definition, Sensitive Periods **guide formations or characteristics which are essential to human psychic life and which can only be created during the First Plane of Development**. We will **identify four Sensitive Periods**.<sup>3</sup> They can be **summarized** according to their essential formations (or **outcomes**), as follows:

- Sensitive Period for **Order (birth through age 4 ½)**  
Guides the formation of mental structures necessary for the emergence of human intelligence; and organizes the child's experience to provide the foundation for all aspects of the child's adaptation to his time and place
- Sensitive Period for **Coordination of Movement (birth through age 4 ½ / 5)**  
Guides the formation of physical movement of the body and the hand, movement which is directed purposefully by the Mind (specifically, by the mental power known as the Will)
- Sensitive Period for **Development & Refinement of Sensory Perception (birth through age 4 ½)**  
Guides continual development and refinement of perception through the five senses (touch, smell, taste, hearing, and vision or sight) leading to: first, the classification of sensory impressions; and, second, the formation of abstractions for sensory experience (memory).
- Sensitive Period for **Language (birth through age 6)**  
Guides the formation of the specific human language (or languages) used for spoken communication in the child's environment

The work of these four Sensitive Periods occurs during **specific, parallel age-spans** in the First Plane of Development. Each Sensitive Period has very clear developmental goals – very **specific and essential formations** (see appended Outlines for each Sensitive Period). The degree to which a child attains these essential, developmental formations of being human will influence all of his future development in a fundamental way. In fact, all future development will be contingent upon these creations and the quality of their attainment.

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<sup>3</sup> There has been some debate as to the number of Sensitive Periods and more than four have, at times, been identified. For example, a fifth sensitive period is sometimes named, focusing on Socialization or Social Relations. See Constance Corbett, "Sensitive Periods", AMI COMMUNICATIONS #2-3, 1995, pp. 38-45. These aspects of social development seem, however, to be more related to the constructive work of adaptation accomplished by the Absorbent Mind. See, for example, Chapters 22 & 23 in *The Absorbent Mind*, (1949) Claude A. Claremont, trans. New York: Dell Publishing, 1967.

### Origins of the Term

The Dutch biologist and geneticist, **Hugo DeVries (1848-1935)**, first identified and named Sensitive Periods in 1902, through his study of insects. In *The Secret Of Childhood*, Montessori cites DeVries' example of a Sensitive Period in the caterpillar of the Porthesia butterfly. Here is Montessori's description:

**(The caterpillar) must feed on very tender leaves, and yet the butterfly lays its eggs in the most hidden fork of the branch, near the trunk of the tree. Who will show the little caterpillars hidden there, the moment they leave the egg, that the tender leaves they need are to be found at the extreme tip of the branch, in the light? Now the caterpillar is strongly sensible to light; light attracts it, summons it as by an irresistible voice, fascinates it, and the caterpillar goes wriggling towards where the light is brightest, till it reaches the tip of the branch, and thus finds itself, famished for food, among the budding leaves that can give it nourishment. It is a strange fact that when the caterpillar has passed through its first stage and is full grown, it can eat other food, and then loses its sensibility to light. This has been proved in scientific laboratories where there are neither trees nor leaves but only the caterpillar and the light.** <sup>4</sup>

Montessori observed that very young children also exhibit such **irresistible attractions** to particular activities or objects in their environment. She further recognized that through these irresistible activities or objects, growth and development – self-construction – occur. As with the caterpillar, so also for children: these attractions appear for a set time and a definite, pre-determined purpose, then disappear.

Montessori found that the facts of Sensitive Periods in other life forms can guide our understanding of these observable phenomena in human children. She writes:

**The great difference lies between an animating impulse leading to the performance of wonderful, staggering actions, and an indifference that brings blindness and inaptitude. The adult can do nothing from the outside that will affect these different states.** <sup>5</sup>

We can **summarize** Sensitive Periods as follows:

- The Sensitive Periods are **exclusive to the first Plane of Development**: their work is directed towards the fundamental Self-Construction of the Psychic Being (or individual personality). <sup>6</sup>
- Sensitive Periods are **unconscious powers for growth**.

<sup>4</sup> Maria Montessori. *The Secret Of Childhood*. (1936) Barbara Barclay Carter, trans. Hyderabad: Orient Longman LTD, 1978, p. 35

<sup>5</sup> *The Secret Of Childhood*, p. 36

<sup>6</sup> Sensitivities and Powers which motivate growth and development in subsequent planes will build upon this foundation of self-construction as accomplished in the first plane. In later planes, there is a severe limit in the capacity to re-mediate missing pieces or incomplete constructions intended through the activity of Sensitive Periods in the first plane: the earlier the intended construction, the more irremediable; and such remediation as is possible, will require deliberate, conscious effort. The "second chance" offered in the second, conscious phase of the Absorbent Mind (c. age 3-6) might also be the "last chance" for the earliest constructions motivated by the Sensitive Periods.

- Sensitive Periods guide **psychological development** – psychological development which is manifested through physical development as well.
- While present, they are **intransigent, purposeful, and particular**. They work in accordance with an **inner guidance** which is **inaccessible to external motivations**. As unconscious, internal guides, they **direct the child's attention** towards specific aspects of the environment and towards specific circumstances which are favorable for self-construction; and they **motivate activity** which will result in the necessary psychological formations.
- The Sensitive Periods are **transitory** – appearing and disappearing at predictable times and in predictable sequences. Once a Sensitive Period has ended, once the window of opportunity closes, opportunities for the unconscious self-construction it offers also end.
- Sensitive Periods make particular **use** of the **totality images** taken in by the Absorbent Mind. [These images have been absorbed under the guidance of the *Horme*, and particularly through the specialized motivations of the various *Nebulae*.] One might think of these absorbed totality images as a large box of photographs mixed and stored somewhat at random. Each Sensitive Period selects those totality images (particular photographs) which are relevant to its developmental goals; the activity motivated by the Sensitive Period then **organizes** these images (as one might organize the photographs into books according to specific categories or topics), **thereby creating** a new psychological structure in the emergent conscious mind.

### Pattern of a Sensitive Period at Work

The four Sensitive Periods function **simultaneously** and **parallel** to each other. As can be seen, their work is far from random. The child moves from one to the other, according to **inner directives** which are immune to outside influence. We shall see that there are very **specific sequences** within each Sensitive Period, guiding the child to incremental acquisitions; in this way, creations build one upon another in a specific order. Once in place, specific creations made possible through one particular Sensitive Period may be employed in later constructive work. There are **recognizable patterns** to the work of a Sensitive Period:

#### Psychic Work Precedes Activity

When we examined The Absorbent Mind, we saw that in human development psychic work precedes any expression of that psychic work through activity: hidden mental work occurs unnoticed, followed by overt expressions made possible by the interior constructions. This same pattern is seen with The Sensitive Periods, leaving an impression of activity which ebbs and flows throughout the time of a Sensitive Period's constructive work: **"The facts of creation and conservation remain hidden"**, Montessori writes; **"no one notices the imperceptible outward signs of the creative working of life ..."**<sup>7</sup>

<sup>7</sup> The Secret of Childhood, p. 41

### Motives of Activity Are Selected

As we know, totality images from the environment are constantly being absorbed, and stored in the unconscious memory (or Mneme) by The Absorbent Mind. A Sensitive Period **purposefully focuses on just those totality images** which are **relevant to its particular psychic work**. In this way, certain objects or circumstances in the child's environment are selected for the child's activity. Montessori writes that **"... development takes place by means of the outer world"**. This outer world – the environment – provides the necessary means of psychic life, **"... just as the body, by eating and breathing, takes from its outer environment the necessary means of physical life"**.<sup>8</sup>

Once the items of the environment have been selected, they serve as **Motives of Activity**: motivations to act in such a way as to accomplish the specific constructive work. Once they are selected, **growth and development will depend upon** these particular, selected items, or similar items – similar motives of activity – being available. Montessori describes this as a life **"... spontaneously evolving at the expense of its outer environment"**; and she notes the mystery which lies at the heart of this phenomenon: **"In these sensitive relations between the child and his environment lies the key to the mysterious recess in which the spiritual embryo achieves the miracles of growth"**.<sup>9</sup>

### The Sensitivity Fades & Disappears

As in the example of the caterpillar and the light, the specific sensitivity is of a particular duration. Each Sensitive Period has its own psychic timer, counting down irrevocably. While it is present, its chosen objects are as essential to the child's psychic existence as food and air are to his physical existence. But when this sensitivity fades – as it will, according to its own inner timetable – these objects and experiences cease to be motives of activity; and they leave the child uninterested and indifferent. It is very important to remember that adults can do nothing to change these cycles of interest and dis-interest.

Ideally, a particular, vital sensitivity fades when the particular characteristic which was its goal has been sufficiently formed. This then initiates another period of hidden, inner work, drawing the child's unconscious attention to other objects, to other motives of activity for self-construction.

If, however, there is insufficient nourishment in the outer environment – if proper objects or circumstances are not available – then the sensitivity fades with its work undone. Similarly, if this work is thwarted or obstructed, it might shut down prematurely, with its creative purpose unfulfilled or stunted. In both circumstances, resulting defects or deformations will remain, indelible, for the rest of this individual's life. In the case of the Sensitive Periods, such a situation is irremediable: Montessori states categorically: **"If the baby has not been able to work in accordance with the guidance of its sensitive period, it has lost its chance of a natural conquest and has lost it forever."**<sup>10</sup>

<sup>8</sup> The Secret Of Childhood, p. 37

<sup>9</sup> The Secret Of Childhood, pp. 44; 38

<sup>10</sup> The Secret Of Childhood, p. 39. Montessori elaborates (p. 40) that, as long as **"... the conditions of the outer environment correspond sufficiently to the child's inner needs"**, this psychic activity occurs **"quietly and imperceptibly"**. Yet these **"marvelous activities"** leave **"indelible traces, by which the man will be the greater, and which give him the higher characteristics that will accompany him all his life."**

### Observable Characteristics of Sensitive Periods

From our list of the four Sensitive Periods in Human development, we can see that they guide four very different aspects of essential Self-Construction. There are, however, **certain observable characteristics** which all of the Sensitive Periods exhibit **once a Motive of Activity has been selected**. These observable characteristics of a Sensitive Period at work are:

#### A Well-Defined Activity

There will be, first of all, a well-defined activity. This is the activity performed through the selected objects or experiences in the environment (the Motives of Activity). Such well-defined activities can often be very subtle: for **example**, under the guidance of the Sensitive Period for Language, a 4 month old child will actively watch the mouth of a human who is speaking. Or, the well-defined activity can be very obvious – such as a child of 18 months, under the guidance of the Sensitive Period for Movement, climbing a set of stairs encountered during a walk. In both instances, this well-defined activity occurs only during a specific developmental moment. The speaker's mouth was not such a focus of interest earlier in the child's life, nor will it be later. Similarly, earlier in the child's conquest of locomotion, he will pass by the stairs, as if not noticing them at all; while at a later stage of gross motor control, they will cease to be of such intense interest, important only as the means to enter or leave someplace else. For the prime developmental moment, however, it is seemingly impossible to pass a staircase by – as anyone who has taken an urban walk with this age child can attest.

#### An Irresistible Urge with Passionate Interest

We have already hinted at the second characteristic of a Sensitive Period: there is an **unconscious**, irresistible urge toward this particular well-defined activity. While engaged in this activity, there is complete indifference towards other objects or activities which are equally available in the environment – as is obvious to anyone who has tried to distract a child away from such an activity; and if the child is momentarily distracted, he returns to the activity as soon as possible – like iron filings to a magnet.

The child's engagement in this activity can only be described as one of passionate interest.

Montessori writes:

**“The child makes a number of acquisitions during the sensitive periods, which place him in relation to the outer world in an exceptionally intense manner. Then all is easy; all is eagerness and life, every effort is an increase of power. ... When some of these psychic passions die away, other flames are kindled and so infancy passes from conquest to conquest, in a continuous vital vibrancy, which we have called its joy and simplicity. It is through this lovely flame that burns without consuming that the work of creating the mental world of man takes place.”**<sup>11</sup>

#### Repetition of the Activity

<sup>11</sup> [The Secret of Childhood](#), pp. 36-37

A fourth observable characteristic is repetition of this activity. This repetition can be observed in the moment – as successive repetitions in one setting; or, as repetitions with the same or similar objects over a span of days, or possibly weeks.

#### **Closure: A Restful & Tranquil State at the Finish**

When the child is able to live in harmony with this inner guidance – this “joy and simplicity” – we can observe a characteristic manner as the cycle of this well-defined activity is completed: a state of calm, of restful tranquility, of serenity, and of joy.

Although often difficult to discern, the aware and informed adult can observe, respect, and facilitate the child’s work when he is acting according to the unconscious guidance of a Sensitive Period. This knowledge and awareness forms the basis for education which is intended as a help to life.

#### **The Role of Sensitive Periods in Self-Construction**

Now, let’s look more closely at **how the Sensitive Periods fit into our big picture** of growth and development. We have several layers of motivation at work – Human Tendencies throughout life; and here in the First Plane of Development, The Absorbent Mind and Sensitive Periods. We already know a lot about the Absorbent Mind – its extraordinary work as both a motivating power and as a creative power, guiding in its two phases the formation of the psychic being. What is the **relation**, however, **among these three** – The Human Tendencies, The Absorbent Mind, and The Sensitive Periods?

First, we can look at our list of Human Tendencies. Some Human Tendencies are profoundly reflected in the characteristic activity of Sensitive Periods: in particular, **concentration-repetition-self perfection** with increasing **exactness and precision** can be immediately recognized when a child is irresistibly engaged with a motive of activity.

For other Human Tendencies, however, we can see that although these are operative at birth, the child’s capacity to realize or actualize these Human Tendencies is limited by his inert, dependent, unformed state – his existence as a psychic-spiritual embryo still in the process of primary formation. We could say that the **full realization of the Human Tendencies must await the creation, development, and refinement of the psychic organs necessary to carry them out**. To extend Montessori’s **analogy** of the physical body seeking nourishment from its environment: the proper nourishment of an omnivorous human must await the development of the organs of digestion; in the same way, the Human Tendencies await fully functioning psychic organs – here are some examples:

- The Sensitive Period for Order constructs internal mental order with which to **organize** the information gained through experience (Human Tendency for Order)
- The Sensitive Period for Movement constructs capacities for coordinated movement necessary to fully **explore** the environment (Human Tendency for Exploration)

- The Sensitive Period for Development and Refinement of Sensory Impressions constructs refined and reliable sensory impressions which are the foundation for accurate, detailed and reliable **abstractions** (Human Tendency for Abstraction and Imagination)
- The Sensitive Period for Language constructs full spoken language to channel human **communication**. (Human Tendency for Communication)

As we have seen, none of these capacities exist at birth: they are created and integrated as part of the formation of a human being during the First Plane of Development. This is what it means that the constructions guided by the Sensitive Periods are essential and fundamental aspects of the psychic being; and that future development is contingent upon these prior formations.

This is a good time to re-visit Montessori's **charts depicting the Four Planes** – particularly the first chart, which illustrates the Planes in terms of **"The Constructive Rhythm of Life"**. We see on this chart a highly stylized and geometric representation, with its lines alternately diverging and merging with the line of life. These lines create enclosed triangles – depicting an orderly rhythm as each stage of life opens to new experiences and acquisitions, then closes, preparing for a new stage to follow; this, in contrast to the Bulb chart and its graphic depiction of the dynamic energy of growth and development. Specifically, this first chart shows (in Camillo Grazzini's description), **"... the vital role of the sensitive periods or sensitivities which, as they change their nature from one phase to another, determine the characteristics of each and every phase. The sensitivities pertinent to a particular phase appear, increase, reach a maximum, and then decline; new sensitivities appear, reach a maximum and decline to give way to yet other, new sensitivities; and so on. It is these sensitivities, then, that guide development and determine its rhythm"**.<sup>12</sup>

In her description of the Absorbent Mind, Montessori described the nebulae as specialized and differentiated aspects of the Horme, the Motivating Power of the Absorbent Mind; the Nebulae **direct the child's psychic attention** to specific images available in the environment which are necessary for self-construction and adaptation, for growth and development. Perhaps we can see the **Sensitive Periods**, in turn, as **specialized aspects of the Creative Power** of the Absorbent Mind: for certain essential formations during the First Plane of Development, the constructive activity of the Absorbent Mind is specifically guided and organized by The Sensitive Periods. During the first sub-plane in particular, The Sensitive Periods, organize the indiscriminate totality images stored in the Absorbent Mind. Through their cycles of activity, in strict sequence, key components of the intelligence – of psychic life – are constructed: mental organs created separately, just as the organs of the body were constructed separately in utero.<sup>13</sup> These key psychic organs are created through the powers of the Sensitive Periods for Order; Movement; Development & Refinement of Sensory Perceptions; and Language.

<sup>12</sup> Camillo Grazzini. "The Four Planes of Development", *The Child, The Family, The Future*. Proceedings, AMI International Study Conference, July 1994. AMI/USA: 1995, p. 118.

<sup>13</sup> Maria Montessori. *The Absorbent Mind*, p. 165: **"In this psycho-embryonic period various powers develop separately and independently of one another; for example, language, arm movements and leg movements. Certain sensory powers also take shape. And this is what reminds us of the prenatal period, when the physical organs are developing each on its own account, regardless of the others. For, in this psycho-embryonic period we see the mental powers of control coming into existence separately."**

As these separate organs are created during the first three years of life, the structure of the child's mental life is itself transformed. This is **manifested in the child's activity in two ways:**

- As **successive conquests of independence**
- As the **emergent consciousness which characterizes the developmental work of the second sub-plane**, when these separate creations are developed and integrated into the unity of the emergent personality

Within their allotted time spans, the Sensitive Periods both contribute to, and also partake of, the two-part process which we describe as the two phases of the Absorbent Mind: unconscious creation followed by conscious development. All of this self-construction, and particularly the creation of the psychic organs by the Sensitive Periods, is essential to the functioning of an integrated personality, able to act for the rest of his life in accordance with the motivations of the Human Tendencies.

Here is Montessori's summary for the First Plane of Development:

**... we may say that man is born with a vital force (horme) already present in the general structure of the absorbent mind, with its specializations and differentiations which we have described under the heading of "nebulae". This structure alters during infancy under the direction of what we have called (following De Vries) the sensitive periods. Growth and psychic development are therefore guided by: the absorbent mind, the nebulae and the sensitive periods, with their respective mechanisms. It is these that are hereditary and characteristic of the human species.** <sup>14</sup>

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<sup>14</sup> The Absorbent Mind, pp. 95-96

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