Lev Semyonovich Vygotsky
Russian Psychologist
1896 - 1934

Lev Vygotsky was a brilliant Russian scientist who tragically died of tuberculosis at the young age of 38. Despite the brevity of his career, his contributions reflect a rare brilliance. Working under difficult conditions due to the politics, economic environment, and social atmosphere of the post-revolution Soviet Union, in ten short years Vigotsky was able to construct an eloquent, detailed theory about the natural and historical-cultural development of the individual.

Becoming Known to the World

Vygotsky was a prolific author, leaving behind over 200 original works documenting his insightful theories and research. Many of these works, unpublished at the time of his death, remained forgotten outside of Vygotsky's scientific circle of colleagues and students, until well after his death. Vygotsky's ideas were revolutionary for the time and while colleagues and students embraced his work, they chose to advance it quietly after his death in order not to disrupt political expectations of the day. As the decades advanced, many of Vygotsky's works began to be shared among the broader Russian scientific community. Not until the 1960's, however, would substantive knowledge of Vygotsky and his work expand outside of Russia.

The first concept that became familiar to the West was Vygotsky's concept of *Proximal Development,* explained in the 1963 publication of "Thought and Language." Once published, this concept quickly gained Vygotsky world-wide recognition and acclaim and began to re-shape general teaching practice throughout the world. Other articles followed but were, sometimes, abridged or summarized, which led to misinterpretations of his ideas. As a result, only a small portion of his work found its way into Western thinking at this time. Between 1982 and 1984, a group of noted Russian theorists (including Luria and Leontyev) assembled and published (in Russian) a six volume, unabridged series of Vigotsky's original works, entitled "The Collected Works of Vygotsky." For the first time Vygotsky's original works could be reviewed and understood in complete context, making Vygotsky's brilliance clear to everyone outside his original circle of colleagues and students. Recognizing the scientific significance of Vygotsky's collected works, the Russian government agreed to authorize the translation of the full six volume set. The first translated volume became available in English in 1989, with the last finally available in 1999. It is through these original works that researchers around the world are just now beginning to understand and appreciate the significance of Vygotsky's revelations.

Most people familiar with Vygotsky (outside of Russia) still know him for his concept of Zone of Proximal Development. Only through a complete review of his collected works is it apparent that this represents just one thin slice of his larger body of work. Vygotsky also analyzed the origin of such complex mental functions as logical memory, active attention, will, speech, and thought. He sought to explain consciousness from the developmental point of view, which he pursued by tracing the higher mental functions back to their origin. He was one of the first psychologists in Russia to introduce the "developmental" method into the experimental study of these topics. He did not confine himself just to the study of theoretical problems, and devoted much of his work to the practical application of psychology.

A Scientific Approach: Natural~Cultural Psychology

Vygotsky sought to define a scientific psychology that bridged the two worlds of cognitive and behavioral psychology, a passion that was shared by Vygotsky's two closest colleagues Leontyev and Luria, along with

many young Russian psychologists of the day. Leontyev in his introduction to volume 3 of *The Collected Works of Psychology*, shares the basis for Vygotsky's "scientific psychology."

> "According to Vygotsky's idea, we must distinguish two levels in human mental processes: the first is mind left to itself; the second is mind (the mental process) armed with tools and auxiliary means …Vygotsky called the first level the level of 'natural' mental processes and the second level the level of 'cultural' mental processes. A 'cultural' process is a 'natural' process mediated by unique mental tools and auxiliary means (words, language, symbols)." (p. 17) "The hypothesis proposed by Vygotsky offered a new explanation for the problem of relation between the higher and the elementary mental functions. The lower, elementary mental functions he connected with the stage of natural mental processes and the higher with the stage of mediated, 'cultural' ones. Such an approach explained both the qualitative difference between the higher and elementary functions (it consisted in the mediation of the higher mental functions by 'tools') and the connection between them (the higher functions develop on the basis of the lower ones)" (p. 19)
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> Leontyev's complete forward entitled *On Vygotsky's Creative Development* can be accessed through the following link*:* http://www.marxists.org/archive/leontev/works/1979/vygotsky.htm

For Vygotsky, the *natural* process represents the physiological instinctual programs that exist in every human. Since these processes are programmed and present in everyone, they do not develop; they *emerge* and *mature* as brain development advances. The *cultural* process *develops* both on the basis of natural processes as they emerge, mature, and integrate, and on internal awareness as it develops in relationship to objects and people in the environment. Vygotsky indicated that as a child's innate natural processes emerge and mature, his internal awareness (or "I") creates an external reality (or "world view") unique to the period of transformation in which he is currently functioning. Vygotsky outlined a series of developmental crisis and transformation periods through which a child's natural processes mature and cultural processes develop. These periods, as outlined by Vigotsky in Volume 5 of *The Collected works of Vygotsky*, p. 196, include:

Crisis of the newborn
Infancy (two months to one year)
Crisis at age one
Early childhood (one to three years)
Crisis at age three
Preschool age (three to seven years)
Crisis at age thirteen
Age of puberty (fourteen to eighteen years)
Crisis at age seventeen

Vygotsky explained that the beginning of each of these periods is signaled by a significant shift in internal awareness, as natural maturational tools (i.e. pointing, crawling, walking, words, talking, etc.) allow a child to impact (or mediate) objects and people in his environment. When new tools emerge, they emerge in a non-directed fashion. When the natural tool first emerges, the child is unaware of the usefulness of the tool; it emerges without his conscious control as something that at first is just a new thing in the environment. Soon, however, the child begins to make simple connections to the tool's possible usefulness. Once discovered, the child explores and advances possible uses of the tool, while the tool itself matures. Throughout this process, the child's internal awareness (his "I") deepens each time the tool's utility broadens by shifting from an automatic, non-controlled, incidental occurrence to a directed, controlled understood use. At the moment the internal awareness deepens, the child's external reality (or "world view") correspondingly expands, resulting in a higher level of general cognition. (Volume 5, Collected Works, p. 147).

At the moment of birth, a newborn does not have a world view (Volume 5, Collected Works, p. 242). According to Vygotsky, world view only begins to evolve at the moment a newborn enters the world, through the automatic non-directed neurosensorimotor tools nature has biologically provided. While consciousness advances in the context of the cultural environment with an iterative reshaping of the "I" and "world view," underlying biological structures provide the neurosensorimotor mechanisms upon which the whole process depends.

Assuming a child enters the world without natural/biological abnormalities and his cultural development advances without undue environmental trauma or stress, his natural physiological processes mature, his interactions with the outside world qualitatively increase, his awareness deepens, and he advances through all the crisis and transition periods necessary to achieve the life potential.

The Zone of Proximal Development

Awareness of Vygotsky by the West first occurred in 1963 with a loosely translated publication titled *Thought and Language*. Of specific interest to readers of this book was Vygotky's theory of *Zone of Proximal Development (*ZPD). For this single theory, admiration of Vygotsky grew throughout the world as the ZPD theory was used to shape educational approaches still present today. In developing ZPD, Vygotsky was concerned that "research on the problem of instruction is usually limited to establishing the level of a child's mental development. The sole basis for determining this level of development are tasks that the child solves independently. This means we focus only on what the child has already mastered and knows today." (Vygotsky, Collected Works, Volume 1, p. 208) This does not reveal, however, how much the child is capable of learning, only the "actual" level of development to which he has matured. For an instructor to be of greatest value, it is more important he understand the abilities that "are in the process of maturing" or developing so that he can nurture the child to achieve his full potential. According to Vygotsky, the best way to determine potential is to first establish an understanding of a child's current mental age by using an age leveled assessment. The next step should then "determine how children will solve tasks meant for older children by assisting each child through demonstration, leading questions, and by introducing the initial elements of the task's solution." (Vygotsky collected Works, Volume 1, p. 209) If a child with a mental age of 8 with help or collaboration of an adult can solve problems characteristic of a twelve year old, his ZPD is 4 (12 – 8 = 4) This concept, when adequately applied allows instructors to nurture all concepts a child has the ability to master despite chronological age or grade level.

The true value of Vygotsky's ZPD lies not in teaching a specific subject area, or with instruction that occurs only in school, but in its application to conscious development in general. Knowledge advances first by an understanding that some element of a new concept has value, and therefore meaning to internal awareness ("I") – however small that connection might be. If an initial connection or awareness does not exist, by whatever means instruction might proceed, a child cannot move on to develop a concrete understanding of the concept and, in turn, will not be able to master or internalize that same concept for automatic application and eventual generalization. For concepts to advance, the potential for understanding must exist within a child's current ZPD. When the potential for understanding lies within a child's ZPD, concrete understanding can be nurtured, first through guided instruction, modeling, demonstration, application and practice, and then through the encouragement of independent unaided application and practice with minimal oversight, reminders or corrections, and finally to the level of unaided, independent, automatic mastery. A concept is internalized when its use is automatic and appropriately applied when required, without outside reminders or aids. When internalized, it becomes an internal tool of consciousness that, through ongoing conscious application, can be applied separately and in combination with all other pre-existing internalized concepts to advance general cognition.

The transformation periods and crises that Vygotsky outlined (discussed in previous section) represent zones of proximal maturation and development. The "crisis" is characterized by the new connection the child makes to his own potential, an internal awareness that this new tool might allow him to have a greater impact on his world. The "transformation period" characterized the concrete development and mastery of the new tool as the child learns how to use it to interact with and control the outside world. Practice, refinement and explorative use, mastery and internalization of the tool ready the child to advance to the next crisis, and allow the child to advance to higher and higher levels of conscious understanding within his internal psychological plane of development.

Natural-Cultural Development & The Abnormal Child

Vygotsky believed the basic constructs underlying the cognitive and psychological development of a normal child are the same as those guiding the development of a child with physiological, sensory or motor abnormalities. He further believed that cultural compensations could be created to offset barriers that may result from natural abnormalities. Through such compensations (i.e. Braille for the blind, sign language for the deaf, etc) cognition and social interactions can appear normal or even excel. The following series of comments shared by Vygotsky in Volume 2 of the collected works of Vigotsky further illustrate this perspective:

- A child whose development is impeded by a defect is not less developed than his peers; rather he has simply developed differently. (p. 30)
- Whatever the anticipated outcome…development complicated by a defect, represents a creative process of natural adaptation (physical and psychological). The creation and re-creation of a child's personality based on the restructuring of all the adaptive functions, and upon the formation of new processes – overarching, substituting, equalizing – generated by the handicap, creates new, roundabout paths for development. (p. 34)
- A child with a defect is not necessarily a defective child. The degree of his disability or normality depends on the outcome of his social adaptation. (p.37)
- Motor delay can occur independent of any mental disability. It may be absent in the case of mental retardation and may exist in the absence of a mental deficiency. In instances of combined motor and mental deficiencies, each form has its own dynamics…given the relative independence of the motor system form the higher mental functions and the fact that it is easily guided, it is often found to play a crucial role in compensating for mental defects and equalizing behavior. Therefore, when studying a child we must not only demand a twofold characterization (motor and mental) but must also establish the relation between the two spheres of development. Frequently this relation may be a result of compensation. (p. 39)

In the course of writing about natural abnormalities, Vygotsky went on to cite the miraculous case of Helen Keller. Had Anne Sullivan not used mediating tools (Braille, sign language, etc) to help her establish an internal awareness and external world-view, Helen's brilliance would not have been revealed, let alone developed and advanced. Most people would have continued to believe her sensory abnormalities were simply an outer reflection of an irreversible cognitive inability to learn. Vigotsky believed that at any given moment each one of us is filled with unrealized potential, upon which a wealth of creative resources can build, regardless of the presence of a handicap.

Notably, Vygotsky believed that natural maturation is programmed and present in all of our bodies, reflected by the universal nature in which these programs appear in all humans.

> "The most remarkable feature of the function of the central nervous system in infancy is that in the motor system of the child, during the first months of life, primitive motor reactions predominate, which are inhibited in adults and are apparent only under pathological conditions. Toward the end of the first year, there are still effective mechanisms that are proper to quadrupeds. Later the developing higher centers inhibit atavistic (primitive) movements, but in pathological conditions (organic and functional damage to the central nervous system) the inhibition may be released and these movements may appear even at a much later age." (Volume 5, Collected Works, p. 218)

Vigotsky went on to share three basic laws that guide nervous system development and help to explain the reappearance of primitive motor reactions (volume 5, Collected Works):

1. **Preservation of the lower centers in the form of separate stages.** The lower centers and arches, older in the history of development, when acting do not simply move to the side with the gradual formation of higher centers, but continue to work jointly as subordinate units under the direction of the higher centers that are younger in such a way that in an undamaged nervous system
   they cannot usually be detected separately.
2. **The upward transition of functions.** The subordinate centers do not maintain their initial type of functioning in the history of development, but pass a substantial part of their former functions upward to new centers that are constructed above them (Voster, M. Minkowski, et al.).
3. **Emancipation of lower centers.** If the higher center is functionally weak or separated from subordinate centers as a result of shock, illness, or damage, then the general function of the nervous apparatus does not simply stop, but is transferred to a

> subordinate unit which becomes independent and exhibits the still remaining elements of its old type of functioning…when the higher mental functions of purposeful will are disrupted, psychomotor methods of functioning that are lower from the point of view of developmental history, frequently appear and assume the control of behavior . . . This general neurobiological law can be formulated as follows: if within the psychomotor sphere, the action of higher units becomes functionally weak then the closest lower unit becomes independent with its own primitive laws." (Volume 5, Collected Works, p. 219)

Carl Ratner, Humboldt University, in the prologue to Volume five of the Complete Works of Vygotsky wrote:

> "The fundamental principle which drives Vygotsky's developmental psychology is the transition from "lower" psychobiological processes to "higher" conscious psychological functions. The former include reflexes, temperamental traits (likely the result of sensory integration issues) and spontaneous, rudimentary conscious processes. The latter include developed, voluntary, mental functions and associated personality characteristics. In Vygotsky's words, psychological development consists in 'the transition from direct, innate, natural forms and methods of behavior to mediate, artificial mental functions that develop in the process of cultural development.' " (p. 168)

Vygotsky's Natural~Cultural Psychology & the Masgutova Method

Dr. Masgutova Neurosensorimotor Reflex Integration (MNRI) Method, in its very construction, is founded on the Scientific Natural~Cultural Psychology established by Vygotsky. The restorative techniques Dr. Masgutova has developed, act to improve function at the natural biological level fundamental to shaping our internal and external psychology. According to Dr. Masgutova, the following aspects of Vygotsky theories have had the greatest influence on shaping the MNRI Method:

- The interrelationships between physiological reactions, emotional awareness and interactions, and cognitive advancement,
- The need for creating mediating tools or establishing compensatory bridges for sensory and motor challenged individuals to advance internal awareness, world-view and general cognition,
- The important role natural "play" serves in the development of internal awareness and advancement of cognition,
- The important role neurosensorimotor integration plays in facilitating the transition from *natural* involuntary and direct (non-intentional) processes to *cultural* voluntary and controlled (intentional) processes, and
- The important role motor system maturation and integration play in allowing challenged individuals to achieve their full potential

While many intervention programs have been created to directly address the *cultural* development of challenged individuals, few have been developed to facilitate the *natural* maturation of the physiological programs that are present in all of us. Dr. Masgutova, through a theoretically rich perspective, has put forth a set of tools, collectively known as the Masgutova Method, which in application demonstrates the important role *natural* maturation and integration play in achieving potential. A quick assessment of those who have benefited from her methods demonstrates that when primary motor reflex patterns are adequately integrated and underlying neurosensorimotor pathways are appropriately established, motor planning, communication, and cognition can flourish and behavior and emotion can shift to be more in line with social expectations that surround our cultural development.

Vygotsky's Significance Today

By all standards, access to the Collected Works of Vygotsky has energized a broad range of disciplines. The platform of maturation and development that Vygotsky set forth from 1924 – 1934 was truly ahead of its time. According to Alexander Luria, a noted neuropsychologist, colleague and friend of Vygotsky wrote:

> *"It is not an exaggeration to say that Vygotsky was a genius. Through more than five decades in science I never again met a person who even approached his clearness of mind, his ability to lay bare the essential structure of complex problems, his breadth of knowledge in many fields, and his ability to foresee the future development of his science."*

Philosopher S. Toulman has been acknowledged and praised for his characterization of Vygotsky as:

> "*The Mozart of Psychology.*"

And, finally, Robert Rieber and Aaron Carton Editors for Volume 6 of *The Collected Works of Vigotsky* shared:

Many readers perceive Vigotsky's works six decades after his death not only as current and modern but also as precursors of theorization and research to come . . .

Credits and Further Reading:

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