A Cultural-Historical Approach to Neuro-Psychological Treatment: Understanding Latino and other Non-Dominant Groups.

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> It seems surprising that the science of psychology has avoided the idea that many mental processes are social and historical in origin, or that important manifestations of human consciousness have been directly shaped by the basic practices of human activity and the actual forms of culture. (A.R Luria, 1976, pp.3)

Almost everyone would agree that the translation of Luria's extensive work, originally published in Russian and mostly restricted in the West, became a key cornerstone for the subsequent development of neuropsychology. Based on his intersystemic functional model, new principles of cognitive rehabilitation with the brain injured population were developed and enriched by Luria and his coworkers over approximately fifty years. As a result of the cognitive revolution that took place during the seventies, clinical psychologists began to change their outlook, particularly in the area of analysis and interpretation of quantitative results obtained from psychometric data (Golden & Moses, 1984). Rather than conforming to the medical model, they took a different route, shifting towards the discovery of underlying internal processes and attempting to develop a qualitatively different approach to the treatment of various behavioral disorders (Foster, 2002; Gauggel, 1997). Subsequently, Luria's systemic view of cognitive processes and his qualitative approach to the analysis of cognitive impairment was accepted enthusiastically by many American neuroscientists (Goldberg & Bougakov, 2009).

The Lurian influence on American Neuropsychology is two fold. On one hand, during the eighties, Golden (1984) and his associates ventured to take Luria's examination techniques, previously translated and adapted by Christensen (1975), to establish statistical parameters among a variety of brain injured patients (Golden,1980;Cristensen,1975). In fact by overlooking Luria's early criticism of psychometrics, Golden grouped his basic assessment techniques in a psychometric battery (Golden & Moses, 1984). The Luria Nebraska Neuropsychological battery (LNNB) evolved as the counterpart to The Halstead-Reitan Battery.According to Golden (1984) and his followers, the LNNB, not only provided sufficient statistical power, but contrary to the Halstead Reitan,it may also provide the clinician with valuable data to enhance a qualitative interpretation of functional units.

According to Golden, this approach may help analyze and interpret cognitive deficits preserving Luria's major premises (Golden & Moses, 1984). Nevertheless, this assumption is still very far from the scientific truth. Golden has been widely critized by those who believe that data quantification distorts Luria's conceptualizations considerably (Christensen, 1975).

Concomitantly to Golden's contribution to neuropsychological assessment, Solhberg and his associates implemented a set of cognitive systems to help brain injury patients restore their cognitive deficits (Sohlberg & Mateer, 1989). By utilizing the major postulates and contributions made by the Luri-

an school, Sohlberg and Mateer were able to implement operational concepts such as plasticity, systemic reintegration of impaired functions, and the creation of cognitive programs to restore functional units at a maximum potential (Sohlberg & Mateer, 1989).

Despite Luria's major contributions in cultural-historical theory, its main relevance remains overlooked, particularly, when it comes to the analysis and interpretation of clinical data in patients from multicultural contexts. A main problem is fitting theories and methods with populations with different cultural histories (Portes, 1990; 1996). However, rather than analyzing the relationship between culture and the development of dysfunctional behavior, most behavioral and cognitive models view psychopathology (e.g. anxiety) as a universal construct. Although some psychological problems appear to have a strong biological component, their development, manifestation, assessment, and treatment are context-bound. .

One of the major contributions made by A.R Luria and his disciples dealt precisely with the social formation of all higher order psychological functions and dysfunctions (Luria, 1980). Following this line of thought, cultural-historical psychotherapy and neurorehabilitation assesses psychological dysfunctions without taking them apart from the patient's social historical context. Understanding the relationship between social mediators (e.g. language, social symbols, cultural customs, etc) and psychopathology is of paramount importance for case conceptualization and treatment planning.

The Problem

In the West the origins of psychotherapy and rehabilitation had a different historical root. At the end of the nineteenth century, as electronic equipment replaced steamed based machinery, there was an increase in the overproduction of means and a subsequent profitable investment for certain social groups. At that time, psychotherapy was just seen as an unscientific, speculative approach to the treatment of deep seated intra-psychic problems. Its major source of influence was the classic Freudian analytic view which emphasized primarily in the liberation of sexual energy as its major therapeutic goal (Parker, 1999).

As industrial societies became more sophisticated and the division of labor strengthened, the need to refine psychometric tools to differentiate different social groups based on their abilities, traits, and potentialities emerged (Portes, 1996). To help adjust injured and emotionally unstable patients to the demands of the social system, there was a need to seek for a more efficacious way of treating mental illnesses in a manner that was more time and cost effective to the private health industry.

After World War II, the acceptance of behaviorism as the leading school of thought in most western countries played a striking role in increasing the use of the operational methods of assessment, behavioral change, and therapeutic outcomes (Eysenck, 1973). A reductionist stimuli-response (S-R) model influenced a variety of areas such as: program evaluation, psychiatric medication management, therapy evaluation, assessment scales, treatment planning, and therapy efficacy (Eysenck, 1973).

During the seventies, the cognitivism was introduced to most behavioral psychologists in the clinical field. Far from helping patients become liberated from social alienation and repression, the main therapeutic goal was to decrease emotional disturbance trough the use of empirically proven behavioral and cognitive techniques (Eysenck, 1973;Parker,1999).

Since social events and scientific discoveries are mostly causally related, they are connected to the historical context from which they originated. For example, during the seventies, community mental health services were created and funded by the U.S Federal Government. At first, the initiative was seen as an attempt to de-institutionalize psychiatric facilities and also to make treatment more accessible to the low income and low-middle income classes (e.g. African Americans, Latino, and other minorities among them).

As a clinician practicing both psychotherapy and neuropsychological rehabilitation in various clinical settings, I had the opportunity to observe the constant implementation of this reductionist approach to clinical rehabilitation of patients from the non dominant culture. It was often observed that patients from different cultural minorities (e.g. Latino, African Americans, Asian etc) were evaluated and treated with similar psychometric and therapeutic tools when compared to patients from the mainstream culture (e.g. Anglo Saxon). The social factors were only described as part of the demographic characteristics but never analyzed deeply in understanding various individual-context dynamics.

Another example where the most common medical problems associated with work related accidents can be noted concern spinal cord and brain injuries in the field of rehabilitation. (Ashley, 2004). Often and shortly after patients are discharged from acute hospital care, they are referred by the worker compensation insurance company to a rehabilitation setting in order to be involved in a time/cost effective, goal oriented treatment (pain management or head injury rehabilitation). The major treatment goal is to help patients decrease pain, increase memory and attention, increase ambulation, physical strength, appropriate speech, decrease depression associated with disability, etc. However, most Latino patients are discharged from various programs (e.g. pain management, head injury, etc.) without having even achieved basic therapeutic goals. Upon discharge, they continue to show severe neurological and orthopedic symptoms which make their return to work very difficult.During my consulting work with various rehabilitation centers, I frequently find that patients either do not adjust to the program regulation (e.g. missed sessions, passive attitude, lack of motivation, refusal to be assessed, etc.) or they do not fully understand the guidelines. The majority of Latino and African Americans are labeled as “pain magnifiers” or “malingerers” who are solely seeking for financial compensation by taking advantages of the system (Dergan, 1997). The Anglo Saxon patients who do not make progress are also discharged back to work. They are generally labeled differently (e.g. uncooperative, negative, or attention seekers). There is also abundant evidence that during the intake, no significant effort is made to understand the cultural-historical context of participating patients. There was no documentation as to how chronic pain interacted with previously learned cultural symbols, word meanings, and general attitudes towards physical impairment commonly manifested by specific non-dominant groups.

The above examples demonstrate that, by failing to understand physical pain in humans as a complex functional unit derived from a historical social formation, therapists deal with clinical problems by having as their main goal the attenuation of symptoms without analyzing the specific mediators pertaining to cultural and individual parameters. Their psychological reports do not generally describe how cultural artifacts from a specific non dominant group mediated the therapeutic process (e.g. cultural perception of pain; the role played by family members in the rehabilitation process, the concept of becoming disabled and unable to provide, etc.)

In conclusion, the major pitfall in the rehabilitation process with patients who are treated for head trauma after a work-related accident lies in the ethnocentric tendency to treat them with techniques designed for the dominant population. As a result, most African Americans, Asian, and Latino patients do not benefit as well nor understand the therapeutic process, resulting in a much slower progress and therapeutic resistance (Dergan, 1997).

By overlooking cultural-historical factors, clinicians have the tendency to minimize the role played by the acquisition of values and social perceptions pertaining an specific ethnic group. This wrongful approach appears to be the major limitation when rehabilitating patients in various clinical settings in the United States and elsewhere based on experiences with my peers. Therefore, the analysis of cultural-historical complexities is crucial to understand individual pathology and rehabilitation. In the next sections, I will analyze the contributions made by Luria and his school in order to understand the multifunctional treatment of neuropsychological and psychological dysfunctions within a cultural-historical framework (Luria, 1973:Jantzen, 2004).

A Cultural Historical Perspective

Historical Foundations

As Hegel (1969) and Marx (1959) proposed, the historical analysis of social formations is of paramount importance to discover the driving forces formed in each stage of social development. As these social forces are driven permanently by internal and external opposing elements, they inevitably form critical contradictions that, in turn, lead to qualitative changes in the social system. Thus, through sophisticated social activity, speech and thought became the most complex culturally mediated processes accounting for the origin and development of the individual psychological structure (Wallon, 1937; Marx, 1959; Hegel, 1969 ;Luria, 1973;Vygostky, 1978).

I believe that this premise is essential and a stepping stone to understand subsequent development in psychology. As with most of the humanistic sciences of the post romantic period, psychology emerged as an academic, sophisticated field of knowledge linked to philosophy. Later on, as the development of the industrial society progressed and the need to understand the complexities of human behavior was created, the mental processes began to be understood more objectively, and psychology became an independent field (Gauggel, 1997).

Historically, there was an attempt to explain human behavior within a more complex perspective linking basic processes to higher psychological functions (Wundt,

1921;Cole, 2003). In fact, Wundt proposed the creation of two psychologies: one experimentally oriented to explain scientifically basic psychological functions (e.g. sensations and perceptions mostly related to the immediate experience) and the second brand, which he called *volkerpsychologie.* He stated that *Volkerpsychologie* could not be studied experimentally because it would transcend the principles of individual consciousness. Its major goal was to study higher psychological functions in a descriptive way, taking into account elements of cultural variations, linguistics, religious values, etc. He strongly believed that the two psychologies were supplemental to each other and that, through a synthesis of their respective insights, a holistic analysis could be achieved(Wundt,1921; Cole, 1996).

Dewey (1938/1963) revived most of the Wundtian principles pertaining to the second psychology, particularly when studying cultural differences among ethnic groups. In both Germany and France the second psychology also influenced the emergence of the Gestalt theory and Durkheim's social theory. Unfortunately, in most texts of general psychology, Wundt's contribution is primarily linked to his early experiments in which he studied introspection.

Following the contribution made by German scholars, new initiatives emerged to explain human behavior within the cause and effect paradigm. Freud's major contribution was seen as the first attempt to understand, holistically, the structure of the human mind. However, apart from its controversial reductionist view (e.g. pansexualism, the emphasis on instinctual forces, etc); one of the major limitations of Freudian psychoanalysis was the lack of understanding of complex social factors and, the differences among cultures in the origin of complex psychopathology (Wallon, 1984). His views were later on criticized and opposed by a number of scholars such as Adler and Jung (Oberst&Stewart, 2003).

This set of historical changes in the study of complex psychological processes emerged precisely when Europe was going trough a critical period of political uprisings. It was indeed, this political transformation that led to drastic changes on the philosophy of science during the first decades of the Soviet Revolution. Debates among soviet intellectuals were frequently carried out at different levels (Blunden, 2009). The main issue seemed to be the need to understand man as a social entity determined by his material needs but without depriving him from the right of freedom and social justice.

In psychology, a wave of new young scientists, influenced by European schools of thought, proposed the creation of a Marxist psychology. There was a constant search to find a theory that could conceptualize man, following the new parameters of the revolution. At that time, Bechterev's concept of reflex was linked to Pavlov's discovery of the conditioned reflex paradigm helping crystallize the Leninist theory of reflex as a subjective, sensorial category of the external world. As a result, Soviet scholars viewed psychological science as being akin to behaviorism (Blunden, 2009; Cole, 1978; Wallon, 1937).

Despite the official's attempt to explain social consciousness as a reflected, subjective activity and to use the principles of conditioning to explain the material basic unity of the psyche, many young psychologists including Lev Vygotsky, used these principles, not as a major foundation, but as an step-

ping stone for the upcoming creation of a sophisticated psychological theory (Vygostky, 1978).

At this level, Vygostky finds conditioning as a useful scientific explanation. Nevertheless, his conception of the human mind goes far beyond this point (Vygostky, 1978). He and his coworkers proposed that the relationship between the newborn and his/her external world is not as simple as conveying different factors in a linear fashion. On the contrary, by going through different stages, the psychological activity is hierarchically developed and formed by the dialectical interaction between social activity,culturally mediated artifacts and the development of higher cerebral structures . The end result is the acquisition of human consciousness as a subjective reflex of external reality. At first, by using primitive tools to modify and establish of communication, a child becomes a unique subjective reflection of his social world. Later on, by separating himself from the syncretism created by attachments with affectionate figures, he becomes a very independent, active part of his own social transformation. Lastly, by becoming socially conscious and capable of internalizing his plans and intentions, modifying them internally, and changing the contingencies of his social system, he becomes free to create his own destiny through social activity (Voyat, 1984; Wallon, 1984; Vygostky, 1978). This premise is based on the principles of dialectical materialism and has strongly influenced the ulterior development of the cultural-historical psychology (Ratner, 1991; Cole, 1996).

Luria's major goal lied in the analysis and explanation of more sophisticated internal psychological processes such as: memory and the structure of conscious processes in pathological states. At first, He tried to explain the dialectical interaction between psychological structures using psychoanalysis as a major reference (Luria, 1979; Cole, 1996; Jentzen, 2004). Later on, as a result of major political contradictions affecting Soviet science, he focused on the analysis and interpretation of cognitive deficiencies as a result of cerebral insult, subsequently formulating his main contribution in the neuropsychology of higher psychological processes (Luria, 1973; Luria, 1979).

Vygotsky proposed a qualitatively different methodology based on the concept of units of analysis. Rather than targeting on isolated elements of the psychological structure, he proposed that the major objective of a scientific psychological theory was the objective analysis on the relationship between thought and speech (Vygostky, 1978). These ideas were manifested in his historical manuscript published in 1929 known as "The crisis of Psychology" (Blunden, 2009). In that classical work, he concluded that solving this problem would lead to the scientific explanation of human consciousness as a material category. Later, Leontiev (1978) focused on the development of a social activity theory to explain how the mental processes permanently change as the result of social formation and how this permanent dialectical interaction forms the essence of social consciousness, human motivation, and the use of problem-solving activity to attain specific goals (Leontiev, 1978; Luria, 1979).

Ever since that time, the *troika* developed various methods to prove the validity of the artifact-mediated activity as the central key to the formation of higher psychological processes (Vygosyky, 1978; Blunden, 2009; Ratner, 1991). This new era in the scientific development of psychology was soon

darkened by the Soviet censorship. In 1929, Leontiev was forced to leave Krupskaya academy as a result of his "refusal" to accept a psychological theory solely based on the reflexology as the unique, scientific explanation of psychological processes (Luria, 1979; Blunden, 2009).

In 1931, Luria and Vygotsky's famous expedition in Uzbekistan investigated how formal education affected the cognitive development of peasants living in remote areas. Following unique historical contextual situations, they carried out a sophisticated cultural-historical experiment on the relationship between artifact-mediated activity and differences in cognitive development (Luria, 1979; Cole, 1978).

Most likely as way of circumventing a direct confrontation with the government, Luria, who had already obtained a degree in Psychology, decided to go back to medicine. Ironically the patriotic war which took place in the Soviet Union following the Nazi occupation, served as an opportunity for him to work closely with soldiers who came back from the front with different kinds of cerebral traumatic injuries(Luria,1979).

Since Luria viewed psychological processes as complex units of socially-mediated activity originated in historically determined social relationships, he devoted most of his scientific work discovering the organization of such complex functional units and their underlying complex physiological mechanisms. By analyzing different clusters of psychological disturbances, he identified complex physiological mechanisms which took part holistically in the development of higher psychological processes.

As a result, he developed the foundations for his three-level intersystem neuropsychological model. His major contributions in the field of neuropsychology (e.g. aphasia, memory disturbance, and rehabilitation) derived from his systematic analysis and interpretation of a variety of cognitive impairment (Luria, 1979; Luria, 1973).

By viewing the organization of functional zones in the cerebral cortex, not as a passive entity, but rather as a direct context-specific cultural-historical neuronal circuit, Luria's contribution opened the path to the creation of a sophisticated psychological theory of man (Vygostky, 1978; Luria, 1973).

The Lurian Contribution to Modern Neuropsychology and Clinical Psychology

During the latter part of the nineteen century, irreconcilable and opposite views such as Cartesian dualism, mechanical materialism, and subjective idealism underlined the basic foundations of psychology. However, the scientific development of disciplines such as medicine, physiology, and biology created the need to understand the mechanisms underlying both simple and complex behaviors within the scope of traditional science (Wallon, 1937). During this time, neurology and other disciplines became interested in the localization of specific anatomical centers in the human brain to explain psychological processes (Wallon, 1937). Inspired by Gall's attempt to create phrenology of psychological faculties, the concept of cortical "maps" gained momentum but was rapidly forgotten. There were other attempts to identify specific cortical areas responsible for both simple and complex cognitive and

motor behaviors. The discoveries made by Broca and Wernicke on specific centers underlying sophisticated mechanisms of both motor and sensorial speech were considered of paramount importance for the discovery of complex mental functions as a direct result of the work of specific cortical areas (Luria, 1973).

However years later, due to the failure to localize anatomical centers of complex psychological activities, other views flourished opposing the attempts to connect specific areas in the cortex and complex psychological functions. One of the greatest opponents to this localization "quest" was the British neurologist Jackson(1874) who proposed that complex mental processes should be approached by analyzing the way they are hierarchically constructed rather than by analyzing isolated cortical areas(Jackson,1874). Misunderstanding Jackson's critics to the localization, many scientists opted for rethinking Cartesian dualism and agreed with the old hypothesis that spiritual systems transcend the physiological structure of the human mind. (Luria, 1973).

Taking Jackson's views into consideration, Luria stated that a function is not the result of a single, isolated cortical area, as proposed by the localizationists. On the contrary, following Anokhin's model of functional systems, he proposed that functional cortical units involve different components, and according to the complexity of a specific internal activity, they participate in a hierarchically organized fashion, on the elaboration of complex psychological programs (Luria, 1973; Jentzen, 2004). These programs are used by man to assimilate, modify, anticipate, and create new external systems through social activity (Anojin, 1963; Luria, 1973; Leontiev, 1978).). Influenced by Vygostky's concept of the *analysis into units*, he proposed that in order to attain this higher organizational task; the cerebral activity is functionally and permanently interconnected to its inseparable component: social history. The cultural artifacts, learned through the history of civilization and then assimilated through ontogenesis, are pivotal in order to understand the interconnectivity of different cortical zones in both simple and complex psychological activity (Vygostky, 1973; Luria, 1973; Ratner, 2002).

The significance of Luria's work transcended his contribution in the field of clinical assessment and neurorehabilitation. Luria understood neuropsychology as the branch of science, which would serve as the framework for the subsequent development of a sophisticated psychological theory of man (Luria, 1980). By following this principle for many decades, first as a psychologist in a defectology institute, and then as a medical doctor working with war veterans, he discovered, through years of arduous scientific work, the basic mechanisms underlying complex psychological activity (Luria, 1979).

During most of his life, Luria emphasized on the creation of a psychological system capable of explaining mental processes without reducing the human mind to its parts. By taking advantage of the socio-historical conditions of his time, he developed, through neuropsychology as a discipline, the keys for the understanding of the complexities of psychological activity. A thorough detailed analysis of Luria's work is beyond the scope of this chapter. Therefore, I will only outline his major contributions.

Since the very beginning, Luria proposed that the human brain is composed of three blocks or functional zones, differentiated by their hierarchical organization, their neuroanatomical structures, and their specific functions. Since the brain works as a complex holistic system, all of these functional units are necessary when sophisticated psychological activity is performed (Luria, 1980).

The first system is known as the unit for regulation of general physiological activity. Its neuroanatomical structure is composed of the reticular ascending system (RAS). Its major function is displayed by its role played in the awakening states and also in maintaining attenuated cortical tone while context-specific cerebral activity takes place. (Luria, 1973).

Luria's major assertion has been vastly demonstrated by scientific evidence. For example: clinical observations conducted with patients exhibiting a lowered cortical tone due to pathological states showed an interesting clinical picture. Despite their intact specific gnostic abilities, they could not maintain appropriate levels of activation while a specific cognitive task was performed. This dysfunction usually breaks the *law of strength* as proposed by Pavlov (1927) and creates a dysfunctional lower cortical state which interferes with appropriate levels of cognitive-emotional processing (Luria, 1973; Fuster, 2002; Prigatano, 2009).

The second unit is known to play a crucial role in the sensorial analysis, interpretation, and storing of incoming external stimuli. Its neuroanatomical structure lies in the posterior area of the cerebral cortex which involves the occipital (visual processing), the parietal (general sensorial), and the temporal (auditory) cortex (Luria, 1973).

Contrary to the gradual process of activation and deactivation carried out by the first functional unit, the second functional zone is modality-specific and operates in a hierarchical fashion. Input from the outside world is analyzed by a primary layer of neurons (layer IV), then synthesized by associative neurons (later III and II) and lastly, the information from various functional systems is overlapped by the tertiary associative zone (associative layers located on the boundaries of the occipital, parietal, and temporal zones) (Luria, 1973).

The two major features of this second functional zone lay in the principle of modal organization and interhemispheric specialization. At this level of organization, the human brain is highly distinguished from inferior mammals by means of social historical mediated activity (mostly of semantic origin) (Luria, 1973).

The third functional zone is considered the major achievement of social evolution. It is the unit for programming, regulating, and verifying mental programs as they dynamically participate in social activity (Luria, 1973). Its neuroanatomical structure lies in the frontal portion of the cortex (anterior to the posteromedial sylvan fissure). The major role of this third system is to react actively to external stimuli, by modifying internal programs intentionally directing words, images, sensations, and emotions to goal oriented activity. The major primary projection outlet for this unit is the voluntary motor activity which interconnects, through an efferent input, to different lower components of the motor system (Luria, 1973).

As a result of social history, the anterior zone of the human cortex evolved as a qualitatively unique system. Its sophisticated development was dialectically determined by the interconnectivity between the manufacturing of social artifacts and the development of sophisticated biological and physiological systems. Therefore, by comparing different sophisticated clusters of information, verifying their relevance, monitoring its intensity, and creating qualitatively new mental and emotional strategies, the third unit is considered the realm of human consciousness (Vygotsky, 1978; Luria, 1973; Jantzen,2004).

A Clinical Analysis and Interpretation of Psychological Disorders

The following case presentations illustrate the need for a reformulation based on a Lurian-based perspective, one that will end this chapter.

Case 1:

Manuel R is a 72 year old Mexican male who is a resident of Miami-Dade and illegally immigrated to the State of Florida 20 years ago, where he has survived as a tomato picker ever since. He lives in a small farm in the outskirts of Homestead, Miami Dade with his family. In October of 2009, due to severe memory loss, slurred speech, and spatial disorientation. He was admitted to Central Hospital (neurological unit). Results from the MRI of the Brain without contrast indicated enlargement of ventricles consistent with his age but did not indicate any pathological state. The psychiatric evaluation was positive for dementia, Alzheimer's type. As a result, Seraquel 100mg, Lexapro 10mg and Aricept 10mg were prescribed by the staff psychiatrist. Neuropsychological testing was also indicative of dementia with primary dysfunctions on verbal memory, attention, concentration, and poor levels of basic alertness. According to the recommendation made by the staff, the patient was in a critical stage (dementia) with only limited potential for recovery. They suggested that Manuel should be referred to a closed, supervised environment and that his family should be prepared for an unavoidable gradual deterioration of higher psychological functions. They were informed that at the stage he was in, Manuel would never recover. Far from understanding this concept, relatives became very upset. They refused to accept these assertions and insisted that they were going to take Manuel back home. The staff suggested that cognitive retraining, physical, and speech therapies should be provided at least 3 times per week in an inpatient setting. Despite this recommendation, Manuel was taken home by his relatives. Subsequently, treatment was rendered on ambulatory basis.

Review of the clinical chart indicated that Manuel was provided with cognitive rehabilitation. It consisted of six sessions of verbal memorization with familiar cues and also double-cognitive training using retrieval. For evaluative purposes, both the Rey Verbal-auditory test and the de Prose memory test from the Memory Assessment Scale (MAS) were used. These exams were administered twice, prior and post treatment, and Manuel's scores prior to the treatment fell within 3% percentile (severe impairment) on

both the Rey Verbal scale and the Prose memory exam. At the end of the 6th session, the neuropsychologist from Central Hospital indicated that patient did not meet the criteria for further cognitive training. This decision was made based on the patient's poor progress upon the retrieval of these 2 scales. According to the written report, at the time of his discharge from the retraining program, Manuel's scores maintained the same level of impairment (3% percentile). His condition remained the same.

A few weeks later, a family member contacted me at the mental health unit at the University hospital for a second opinion on Manuel's condition. After reviewing extensive documentation, it was concluded that Manuel was very unfamiliar to techniques provided by the rehabilitation team at Baptist. During my first session with Manuel, I conducted a syndromic analysis in order to determine what culturally based artifacts should be added to the new rehabilitation plan. It was decided that due to his lack of cultural knowledge on the verbal cues presented during both procedures, Manuel was not responding adequately to the treatment. It was also concluded that regardless of his memory deficit, he possessed an adequate level of general alertness and his executive functions were still intact. It was also noticed that most of the words and expressions used during the rehabilitation lacked cultural meaning to Manuel. Subsequently, the list of words was changed arbitrarily by using a vocabulary well known to the Mexican culture. The story from the MAS (Memory Assessment Scale) was also arbitrarily changed to include culturally sensitive artifacts for the Mexican culture.

Intriguingly, after 6 sessions of this cultural mediated procedure, Manuel was able to answer almost 90% of the questions adequately. Furthermore, he was able to generalize memory retraining to real life situations and reported a considerable improvement. At an emotional level, according to the Geriatric Depression Scale (GDS), he felt motivated and did not report symptoms of depression any longer. A neuropsychological evaluation (Post training) was conducted using the same procedures that were used on the previous evaluation conducted at Central Hospital of Miami. Results indicated that Manuel had improved by almost 50% in both verbal memory and general emotional functioning.

Three months later, during a follow up session, it was found that Manuel was living independently and did not need any extra help from any relative. He was highly motivated to continue on his own with memory exercising. Self motivation was validated by his social competence and mastering of compensatory memory programs.

This case study clearly shows how the clinician's lack of knowledge of the cultural artifacts involved in the patient's pathology may affect negatively any effort to work with specific ethnic groups effectively. As shown in this case study, the importance of identifying and selecting culturally mediated artifacts for cognitive recovery emphasizes on the learning of new compensatory cognitive-emotional units to help patients assimilate and reprocess their needs and motives through social activity. Since Manuel preserved his ability to generate planning, to initiate, and internalize (the third Functional unit), he was able to learn compensatory strategies thorough self motivation. As Luria stated:

> This active process of restoration of a function naturally demands great will power from the patient, and diligent, steadfast work. It is quite obvious, therefore, that the preservation of a steadfast and intensive motivation, stabilizing the patient's inclination to work on the compensation of his defect, is an essential condition of the successful restoration of a disturbed function. (1943, p 232).

After all, it is not about making a psychometric exam or a therapeutic tool more sensitive to cultural variations. It is rather about determining how artifacts from a given cultural minority, assisted by clinical methods, can be used for recovery. Thus the goal of cultural-historical clinical interventions goes far beyond statistically designed instruments and techniques.

Case 2:

Juan T. is a 27 year old, Nicaraguan male, referred to me by the civil Judge in charge of his workmen's compensation case. Juan was involved in a job related accident in which, as a result of electrocution, he fell approximately 10 feet to the pavement, injuring his lower back, neck, and both lower extremities. As part of his WC (workmen's compensation) treatment plan, he was referred to see a clinical psychologist for severe depression and anxiety.

After having treated Juan for 12weeks, the psychologist concluded that Juan had regained control of his life and that he did not have any major emotional problems. As a result, although WC continued providing him with medical assistance, they cut his benefits pertaining to mental health. Juan T. disagreed with his psychologist and stated that he fell coerced by him to go back to work. He stated that far from being emotionally ready, he was feeling worse, had problems with his family, and felt constantly anxious, hopeless, and inept.

Clinical documents sent by the treating psychologist were reviewed. In fact, results from the MMPI-2 were indicative of a "faking bad" response pattern. It also showed that Juan had responded with a randomized "true or false" pattern. On the McGill pain questionnaire (MPQ), the psychologist interpreted that Juan was a pain magnifier trying to obtain secondary gains through his complaints. The psychologist also referred to the inconsistencies in his statements and concluded that there could be a strong possibility of malingering.

During our first session, Juan T. was freely allowed to ventilate his anger towards the system, the legal case, the insensitivity of those who were in charge of his case, etc. He revealed that he was raised in a small village near the city of Leon, Nicaragua. His parents were peasants working on the country side. He also stated that, because of financial limitations, his education was limited to elementary school. When asked about his cultural concept of pain and medical illnesses, he indicated that he strongly believed that when people get sick, they must be helped by all family members (close and extended) who take turns not to leave the sick one alone. In fact, he had to go back to his country 5 years ago to help his youngest brother recover from a car accident. He also stated that, because of this situation, he lost his job in Miami. During the session, he also vocalized how he and his family felt

abandoned by the system and how lawyers and paralegals think that he is abusing the system.

After having researched cultural attitude towards physical illness in the country side of Nicaragua, I came to the conclusion that Juan T's attitude towards psychological assessment and treatment can be seen as "crying for help". He felt abandoned by his employer and felt hopeless, suffering from severe lower back pain and physical limitations. On the other hand, he thought that his employer, lawyers, and doctors would not believe him. This situation led him to exaggerate a bit his responses towards his illness to obtain the attention he was *culturally suppose* to have when a member from his ethnic group was seriously ill. Subsequently, by establishing an interpersonal alliance, psychological therapy was set to validate his complaints. He didn't feel any longer coerced and threatened. His wife and three children were also brought to therapy. Following the Lurian model, psychotherapy was geared towards increasing self regulation through both emotional and cognitive processes. Thus he regained *self internalization* as a primary source of self reinforcement and positive self appraisal.

Contrary to what the WC lawyer would have expected, in only a few sessions of culturally mediated psychotherapy, Juan T. regained emotional control of his life, continued making medical progress, and finally regained useful employment. The judge was convinced by the new clinical evidence that the testing originally administered did not reflect objectively the cause of Juan T.'s emotional disturbance. He also legitimized the cultural-historical interpretation of Juan's clinical complaints. In a 6 month follow up session, it was found that although still complaining of moderate pain, Juan is working full time, and carrying out his job duties.

Recommendations and Conclusions

In analyzing the above clinical cases by succumbing their views to the guidelines stipulated by the dominant culture, most clinicians rely solely on the interpretation of psychometric results and the standard use of therapeutic strategies. As a result, interventions are very limited at best. These lack the proper understanding of complex functional systems (e.g. the relationship between clinical signs and social attitudes, language, family values, specific ethnic cognitive development, etc…) underlying overt pathological signs. Unfortunately, this situation prevails among the majority of clinicians dealing with patients from various ethnic minorities frequently leading to a simplistic and erroneous interpretation of their psychological dysfunctions. In sum, even though the works of Luria and Vygostky in particular have impacted some areas of psychology in the United States during the last two decades, few attempts have been documented to analyze psychopathology within the scope of the cultural-historical-activity theory (Portes, 1999). Following the model developed by A.R. Luria and a cultural-historical based psychotherapy and neurorehabilitation model can be proposed without decomposing the social nature of a patient's own subjectivity (e.g. the dynamics of his social activity, the social formation of his consciousness, his physiological activity, etc.

First, to begin to solve the social situation facing clients from non-dominant and immigrant minorities, a critical analysis must be conducted to refurbish the basic foundations of applied branches of psychology. This will help deconstruct a reductionist view of the mind, opening the key for the construction of a broader cultural-historical-activity approach. This model shall approach psychological activity as a sophisticated entity regulated by the permanent dialectical interaction between an individual's internal mental system and one's socially mediated experiences. Patients will no longer be seen as just "being appropriate for specific techniques", but rather as unique entities, mediated by social artifacts from both, their own ethnic group and the mainstream culture (Ratner, 2002).

The origin of dysfunctional behavior arises when the demands of the external group can not be adequately assimilated and reprocessed by the individual's internal mental structure. By creating a constant interactive negative loop, different levels of pathophysiological states may intercalate with an altered conscious activity, forming a biphasic dysfunctional category (cognitive-emotional). The constant dialectics of this pathological entity will result in an alienated cognitive-emotional state, preventing the individual from objectively analyzing, reprocessing, and searching for new strategies to solve the problem.

When helping patients from the non dominant culture, the major goal of cultural-historical therapy should be focused on helping them increase appropriate assimilation and reprocessing of culturally mediated artifacts from the mainstream culture, without abdicating the ones from their own ethnic group. On the contrary, by no means does this process imply that the objective of these therapeutic interventions is for social re-adaptation. This would result in social alienation with the mainstream culture.

Thus, the therapeutic process must enhance the learning of qualitatively new cognitive-emotional strategies in order to assure adequate coping with context-specific problems (e.g. depression, pain management, anxiety, head injury, etc). Since it is of paramount importance to go from the concrete analysis towards a more complex identification of different levels of impairment, Luria's assessment methods are crucial to understand the genesis of the various psychopathologies caused by physical trauma (e.g. head injury), marital conflicts, drug abuse, eating disorders, and personality disorders. In regards to this concept, he wrote:

> The symptom of a disturbance of praxis (apraxia) is an assign of a local brain lesion; however, by itself this symptom tells nothing about any specific localization of the focus causing its appearance. Voluntary movement constitutes a complex functional system incorporating a number of conditions or factors dependent upon the concerted working of a whole group of cortical zones and sub cortical structures, each of which makes its own contribution to the performance of the movement and supplies its own factor to its structure. (1973, pp. 37-38).

By following this line of thought, it may be concluded that symptoms, when only superficially analyzed (overt behavioral system, statistically based hypothesis, etc.), are only reflecting the surface of a pathological entity usually misleading the subsequent process of clinical treatment. Therefore, when

analyzing specific cognitive and emotional disturbance with various multi-ethnic population, a syndromic analysis will lead us to the question as to how the specific pathology reflects his own socio-bio-psychological entity (Jentzen, 2004).

By identifying and analyzing objectively how different functional systems interact to form a complex pathological activity, a clinician will be in a position of making appropriate interpretation as to how specifically context - related functional systems are disturbed and, how they can be restored by clinical intervention. For example, when evaluating an adult who suffers from attention deficit disorder, we must first analyze how symptoms such as: wandering off, forgetfulness, low academic achievement are all interconnected and affecting his/her social activity, self appraisal, emotionalility, and self motivation.

Unfortunately, the political prevalence of social dominant groups controlled by powerful institutions, exert coercion to both the educational and mental health services (Parker, 1999). As a result, the provision of clinical services conforms to the norms imposed by the social establishment. By adjusting statistical norms and parameters from the mainstream culture, and turning them into *socially sensitive* instruments, clinicians usually feel that they provide an efficient therapeutic service. Nevertheless, by limiting their intervention just to the effects of specific techniques and neglecting the impact that social mediators have on psychopathology, they fail to provide patients from non dominant cultures with adequate tools to attain valuable therapeutic changes.

In sum, although Luria's major premises were mostly derived from his work with cerebrally impaired patients, the essence of his contribution goes beyond the scope of neuropsychology. Luria's major legacy to the present and future of cultural-historical psychotherapy and neurorehabilitation can be regarded as two fold:

1) By understanding that social history and its complexities are the dynamic force underlying psychological processes, Luria proposed a cultural-historical analysis of higher psychological functions as a way to establish the foundation for a true scientific rehabilitation of complex cognitive-emotional disturbances within different populations. This concept originally developed by Vygostky is the key for understanding how specific disturbed psychological processes are the result of a multiple overlapping between faulty social activity, poor problem solving strategies, dysfunctional physiological activity systems, and social rejection from dominant groups.

2) By conceptualizing psychological processes from a three level-based functional model, Luria presented a very sophisticated view of higher psychological functions. This model is valid to explain the overlapping between different pathological functional systems. For example, in the second case presented it was clearly seen how the external acceptance of the patient's socially mediated attitude towards his illness (second functional unit) played a crucial role during his reprocessing (through self internalization and self motivation: the third functional unit). In fact, by actively learning to solve medical issues, through different therapeutic techniques (e.g. pain management, relaxation, cognitive restructuring, interpersonal dynamics; e.g., those first and second functional units), he regained both emotional and cognitive

endurance. No longer did he feel exploited and coerced by the dominant system but rather he felt motivated to direct his social activity to fulfill his own needs.

Due to global financial conditions, the turning of the 21 century has witnessed drastic political changes worldwide. As a result, there has been an increased influx of immigrants to the Unites States (mostly from Latin American countries). As the number of immigrants increase, there is more potential for social and emotional dysfunction, physical injury, and a subsequent need for rehabilitation services and counseling (Portes, Nixon and Sandhu, 2008). By understanding the cultural-historical nature of human psychopathology and its role in rehabilitation, the ideas discussed in this chapter have proposed an alternative to current treatment guidelines for the Latino and other ethnic minorities in the United States.

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