Essay Review

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Human Development

Exploring the Relationship between Brain and Culture

Essay Review of *The Autobiography of Alexander Luria: A Dialogue with the Making of Mind* by Michael Cole, Karl Levitin and Alexander Luria[1]

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The *Autobiography of Alexander Luria* is a relatively short and immensely readable book. In it, Luria recounts the various phases of his career and, in this process, provides a valuable overview of the major themes in Soviet psychology during the first two thirds of the 20th century. In 1923, at the age of 21, Luria was appointed to the Moscow Institute of Psychology and between then and his death in 1977 he conducted research that included what he called 'experimental psychoanalysis' based on the work of Freud and Jung, which led to an early model of a lie detector, his cross-cultural fieldwork in Central Asia as well as his seminal work in what came to be known as neuropsychology. For those who read the original version of Luria's autobiography, published in 1979, this apparent eclecticism must have seemed puzzling. Indeed, the shifting topics in his work, particularly given his lack of explanation for the changes, may well have led some to overlook the sustained theoretical orientation underpinning these different projects. As a result, many readers may have undervalued Luria's importance as one of the leading psychologists of the 20th century.

By providing a new edition of the original autobiography, amplified by chapters on the historical, social and personal contexts of Luria's career, and including video-recorded interviews with colleagues and well-known scholars who worked with him, Cole and Levitin have given us a much more rounded view of Luria the man. They also offer us a more thorough understanding of Luria's indomitable courage in pursuing his commitment to the new, comprehensive approach to human psychological processes, developed with Vygotsky, in the political climate of the Stalinist years and beyond. As they explain, Luria was several times forced to abandon his projects because of political persecution. What is so remarkable, however, is the way in which he managed to turn the sidesteps that he was forced to take into opportunities to further his abiding concern in developing the new psychology.

[1] With an accompanying DVD Archive. Mahwah, NJ: Erlbaum Associates, 2005.

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Concluding the brief account of his early years in Moscow, Luria wrote: 'In [1924] I met Lev Semionovitch Vygotsky. This event was the turning point in my life as well as of my colleagues in Soviet psychology.' And the next chapter begins: 'It is no exaggeration to say that Vygotsky was a genius' (pp. 37–38). Written some 50 years later, these two sentences make clear how important were the years of collaboration prior to Vygotsky's premature death in 1934, during which, together with Leontiev, they attempted to respond to 'the crisis in psychology'. In doing so, Vygotsky, Leontiev and Luria laid the foundations of cultural, historical, instrumental psychology, which attempts to describe and explain 'the general mechanism by which society and social history mold the structure of those forms of activity that distinguish man from his animal neighbors' (p. 44). As he writes on page 51: 'My own work was permanently changed by my association with Vygotsky', which he attributed to the latter's

> … insistence that psychological research should never be limited to sophisticated speculation and laboratory models divorced from the real world. The central problems of human existence as it is experienced in school, at work, or in the clinic all served as the contexts within which Vygotsky struggled to formulate a new kind of psychology (pp. 52–53).

Indeed, as Luria suggests in several places, each of the different foci of his work enabled him to pursue a different facet of the overall program that was inspired by Vygotsky's theoretical writings and the empirical research he carried out with his students. But, in attributing the intellectual leadership of this program entirely to Vygotsky, Luria was too modest. Vygotsky may have been the most dynamic member of the 'troika' during his lifetime, but it was Luria who was instrumental in sustaining and developing the program of research after Vygotsky's death. Furthermore, it was in large part due to Luria's consistent promotion of Vygotsky's work that Vygotsky's ideas and written artifacts survived suppression and resurfaced to inspire scholars in the USSR and abroad from the 1950s onwards [Goldberg, 1990].

In this brief essay, it is impossible to do justice to Luria's many contributions to the fields in which he conducted research, and so I shall comment only on the two for which he is best known – the cross-cultural work in Central Asia and his foundational work in relating psychological processes to the functioning of the brain. Underlying both of these projects was the attempt to further explain the relationship between mind and society, central to which, the editors state:

> was the idea that human psychological processes are unique in that the biological functioning of the human brain depends crucially upon immersion in human culture – the circuits of the human brain develop through their interaction with a culturally organized environment, without which the brain can neither develop nor function normally (p. viii).

The purpose of the cross-cultural study was to test one of the central arguments of the theory that Vygotsky and his colleagues were developing. Their premise was that social history is embodied in the daily activities of a society which, as a result, influence the modes of cognitive functioning of the individual members of that society. This being so, one could predict that members of societies that engaged in very different activities would differ in the basic categories that they used to construe their experience and perhaps also in the basic intellectual operations that they performed on the information available to them. In the early 1930s, relevant data to corroborate such an argumentation were practically nonexistent. To find such corrobo-

rative evidence, Luria took advantage of the social and economic changes taking place in the remote rural regions of the USSR to conduct a natural experiment. In collaboration with Vygotsky, Luria planned and carried out two expeditions to gather data in Uzbekistan and Khirgizia; unfortunately Vygotsky was not able to take part in the fieldwork.

In the chapter entitled 'Cultural differences in thinking', Luria explains how subjects were selected from 5 different social groups, ranging from uneducated peasants to female students preparing to be teachers. 'Thus we could observe both underdeveloped nonliterate groups living in villages and groups already involved in modern life' (p. 61). The assumption was that those who were participating in the new socialist economy and had received some minimal level of schooling would differ radically from the rural peasants in the content and form of their thinking. To test this hypothesis, Luria and his assistants used a variety of tasks, which included naming geometrical figures, categorizing and grouping named objects, and drawing conclusions from syllogisms. Care was taken to establish good rapport before introducing the tasks, which were conducted in a conversational style, sometimes individually and sometimes in small groups. When an answer had been given, the interviewer followed up in a 'clinical' manner in order to discover the basis on which the decision had been made. In his [1968] report of this research, Luria gives many examples of these conversations.

As anticipated, there was a significant difference in the ways in which his subjects responded. As he wrote, 'when our subjects had acquired some education and had participated in collective discussions of vital social issues, they readily made the transition to abstract thinking' (p. 73). However, when Luria tried to report this study, his findings were rejected by the Soviet regime on the grounds that he was implying that his nonliterate subjects were less than completely civilized. As a result, this work only saw the light of day more than 30 years later. His research approach was also subsequently criticized by cross-cultural psychologists because the tasks he used were not grounded in the practical activity systems of the cultural groups he studied [Cole, 1988]. Nevertheless, the findings did go a considerable way toward supporting the initial hypothesis: since higher mental functions have their origin in the activities of particular cultures, they therefore differ according to the culture to which individuals belong [Cole, 1990].

The years that followed the research in Central Asia were extremely difficult for Luria: his own work proved unacceptable and the new psychology, developed in conjunction with Vygotsky, was banned as 'idealistic' (not sufficiently materialist). It was in this context that Luria decided to take a degree in medicine and embark on the work that made him famous – the study of the relationship between brain function and cognitive activity. While his involvement in this new area of research was prompted in part by the start of the Second World War, in which many Soviet soldiers needed rehabilitation following severe brain injuries, Luria's interest in the relationship between the brain and the mind went back to the work with young children and aphasics that he had done in the late 1920s with Vygotsky [Vygotsky, 1934]. This work was based on the assumption that higher mental functions were mediated by cultural systems of signs, and most particularly linguistic signs, which were appropriated from interpersonal interaction in the course of jointly undertaken cultural activities. Indeed, it was precisely this hypothesis that Luria had attempted to test from another angle in his aborted cross-cultural work.

Luria's approach to neuropsychology was unique at the time. His immediate task was to diagnose and provide rehabilitation for soldiers with brain lesions but, while he was certainly fully committed to his patients, his ultimate goal was to create a theoretical model of the normally functioning brain. This model was based on two key assumptions. First, influenced by Bernshtein [1966], he rejected the then current search for localized intellectual functions; instead, he conceptualized intellectual processes in terms of functional systems, which he described as a 'working constellation of activities with a corresponding working constellation of zones of the brain that support the activities' (p. 141). Second, he attributed a preeminent role to semiotic mediation, particularly linguistic signs, in the formation of representational and self-regulatory systems. Also key to his approach was his development and use of ingenious diagnostic procedures that both assisted him in treating his patients and enabled him to build up empirical evidence for the development of his theoretical model. As Goldberg [1990] comments, Luria's approach to diagnosis constituted 'a matrix, a logic of examination which … offers an extremely systematic internal organization and dimensionalization of cognition, because it is rooted in a cohesive brain-behavioral model' (p. 8).

Two chapters in the *Autobiography* (chapters 8 and 9) provide an excellent overview of this final phase of Luria's career, in which he made seminal contributions to neuropsychology. As in the earlier chapters, Luria includes many interesting examples of particular cases and explains how the cases assisted him in refining his theory. From 1947 to his death in 1977, he published several more specialized reports in English as well as an overall summary, *The Working Brain: An Introduction to Neuropsychology* [1973]. In the latter, Luria provides a succinct account of his understanding of how thinking of a problem-solving kind proceeds. This is presented as occurring in four stages:

1 Thinking occurs only when the subject is confronted by *a situation for which he has no ready-made solution*. That is, the origin of thought is always the presence of a task that is given under *certain conditions,* which he must first investigate in order to discover the path leading to an adequate solution.
2 The next stage is not an attempt to respond suitably, but the *restraining* of impulsive responses, the *investigation of the conditions* of the problem.
3 Then follows the *selection of one from a number of possible alternatives* and the creation of a *general plan (scheme) for the performance* of the task.
4 This leads to choosing the appropriate *methods* and considering which *operations* will be adequate for putting the general scheme of the solution into effect [Luria, 1973, pp. 327–328, emphases in the original].

Completing the account, Luria continues: 'These operations are most frequently the use of suitable ready-made algorithms (linguistic, logical, numerical) which have evolved in the course of social history' (p. 328). What is striking about this passage is that it clearly shows how Luria's study of brain functioning connects with and gives 'material' substance to the early theorizing of the 'troika' and its development by Vygotsky in the final chapter of *Thought and Speech* [1934/1987] and by Leontiev [1978, 1981] in the formulation of activity theory.

The final chapter of the *Autobiography* is intriguingly entitled 'Romantic science'. Here, Luria returns to the conflict between the 'classical'. nomothetic, approach to science and the 'romantic', ideographic, approach. This was the conflict that had presented itself as the 'crisis of psychology', the resolution of which was a

major goal in the early collaboration with Vygotsky and Leontiev. Looking back over his career, he argues that, in his emphasis on clinical analysis, 'my approach has been as much that of the classical scholar as the romantic one... When done properly, observation accomplishes the classical aim of explaining facts, while not losing sight of the romantic aim of preserving the manifold richness of the subject' (p. 178). It was this ability to synthesize the two approaches that enabled Luria to make such a major contribution to the development of the new field of neuropsychology and, in his long career, to unite the complementary facets of the new, cultural, historical, instrumental psychology.

Thanks to Cole and Levitin, we now have a richer view of Luria's struggle to find ways of continuing to develop the new psychology 'in complex times [when] many fools abound' and of his 'combination of intelligence and goodness' as a scientist, mentor, husband and father. But in his own part of this new edition, it is Luria's unassuming modesty that is most evident. Looking back over his life, Luria concludes:

> There is no subject with exceptional abilities – I have none. Nor is there a specific capacity or a specific disaster. But there is the atmosphere of a life, beginning at that unique time which was the start of the Revolution. There is a period of exploration, the meeting with a genius and falling under his influence, and the series of deeds that a scholar could accomplish during a rather long life (p. 188).

Personally, I prefer Toulmin's evaluation, as quoted by Cole and Levitin: Luria was 'possibly the finest all-round psychologist of the century... Luria was Beethoven to Vygotsky, and Vygotsky can be seen as the Mozart of psychology' (p. 261).

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