

Luria in Uzbekistan: The Vicissitudes of Cross-Cultural Neuropsychology

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If the material conditions of culture shape cognitive structures, as Luria and Vygotsky argued, the "extraordinarily deep and rapid restructuring of historical forms" (Luria, 1971, 265) in the Soviet Republics that followed the Bolshevik revolution of 1917 provided a natural laboratory to determine whether processes of modernization changed traditional ways of thinking. This was the purpose of Luria's 1931 expedition to the Soviet Republic of Uzbekistan in central Asia. Luria's initial reports attracted vitriolic criticism because he had allegedly belittled "primitive" Uzbeki culture. The lasting importance of the Uzbek expedition is its emphasis on culture as a determinant of cognitive processes that remains valid to the present: in 1984, Gilbert replicated Luria's field studies in South Africa with near-identical results. Yet current neuropsychology has been slow to recognize the need for culturally sensitive assessment.

KEY WORDS: Luria; Vygotsky; cross-cultural neuropsychology; South Africa.

INTRODUCTION

Luria's contribution to modern clinical neuropsychology is well known. His prodigious output of books, monographs, and articles (e.g., 1947/1970, 1962/1980, 1965, 1971, 1973, 1975a,b, 1976a,b,c, 1979; see also, Scheerer and Elliger, 1980, for a bibliography of Luria's foreign-language papers) laid the foundations of the discipline. What is less well known is that his 1931 Uzbek expedition pioneered the development of cross-cultural neuropsychology³—and the high price this early work exacted of Luria's career. This article sketches the intellectual background to the 1931 Uzbek expedition, describes its methods and findings in Uzbekistan and a virtually unknown replication in the 1980s in rural South Africa,

and finally discusses the vicissitudes of cross-cultural psychology in relation both to Luria and to contemporary neuropsychology.

Before the purpose and methods of the Uzbek expedition and its implications for modern cross-cultural neuropsychology are described, a digression is required. Like his mentor, Vygotsky, Luria believed that mind is the product of the material conditions of culture. The intellectual background that shaped this belief is a prerequisite for an understanding both of Luria's work in Uzbekistan and of the importance of Vygotsky's work, especially the notion of the zone of proximal development, to cross-cultural psychological assessment.

THE HISTORICAL DETERMINATION OF CONSCIOUSNESS

In 1924, the year after joining the staff of the Moscow Institute of Psychology, Luria met Lev Vygotsky (1896–1934), the most brilliant psychologist of his generation. Soon after, Vygotsky joined the staff of the Moscow Institute and became a formative influence in Luria's development as a psychologist. Luria (1979) wrote of him as follows:

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³An interesting question that lies outside the scope of this article is why this aspect of his work has remained relatively obscure. Part of the answer is that cross-culturalism has never seemed important to neuropsychologists, who have preferred to believe that this discipline, like its parent science of neurology, is governed by human universals that are unaffected by cultural variation (Nell, in press).

It is no 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. (p. 38)

Vygotsky's work has become the theoretical base for many psychologists and neuropsychologists, who see human development as a continuing process of change and growth rather than the achievement of a predetermined plateau (see "Buds, Flowers, Fruits" section, which follows). Vygotsky, in turn, had been profoundly influenced by Marx; Foucault (1980) reminds us that the power of Marxist thought is in its massive assimilation of historical processes rather than its economic theory. In essence, Marx took the view that thought is a product of the material conditions in which it develops. By acting on the external world through his labor, wrote Marx, man "at the same time changes his own nature. He develops his slumbering powers and compels them to act in obedience to his sway" (from Vol. 1 of *Capital*, 1867, cited in McLellan, 1980, p. 174). Labor is in turn carried out by the use of tools, which are a uniquely human aspect of the labor process: It is by study not of the tools themselves, "but how they are made, and by what instruments, that enables us to distinguish different economic epochs" (in McLellan, 1980, p. 176). Tools are internalized as ideas:

A spider conducts operations that resemble those of a weaver, and a bee puts to shame an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality. (McLellan, 1980, pp. 174-175)

The idea in the architect's mind is determined by the material characteristics of the culture in which he lives:

In acquiring new productive forces, men change their mode of production, and in changing their mode of production, . . . they change all their social relations. The windmill gives you society with the feudal lord; the steam-mill, society with the industrial capitalist. The same men who establish social relations in conformity with their material productivity also produce principles, ideas, and categories conforming to their social relations. (from *The Poverty of Philosophy*, 1847, cited in McLellan, 1980, p. 40)

This is a revolutionary idea, that the principal contents of cognition, its concepts and values, are the products of the material circumstances of life.

These ideas reemerge in psychologically elaborated form in Vygotsky's work. Kozulin (1984) comments that in Vygotsky's view, a psychological phenomenon could

"be comprehended only through a study of its origin and history" (p. 105). This study is necessarily of ontogenesis, that is, of individual development and especially the individual's acquisition of psychological tools fashioned by the society in which he or she lives. Vygotsky gives a zoological example: The whale described by appearance is a fish. This is a phenotypic analysis. By developmental study, that is, examination of its causal dynamic basis, this fish is shown to be "closer to a cow or a deer than a pike or a shark" (Vygotsky, 1978/1988, p. 62). Preeminent among these psychological tools fashioned by society is language:

The dialectical approach, while admitting the influence of nature on man, asserts that man, in turn, affects nature and creates through his changes in nature new natural conditions for his existence. . . . Human behavior comes to have that "transforming reaction on nature" which Engels attributed to tools. (Vygotsky, 1978/1988, pp. 60-61)

In a much-quoted passage from his unpublished notebooks, Vygotsky wrote:

The study of mind must be approached only after one has learned the whole of Marx's method. The whole of *Capital* is written according to the following method: Marx analyses a single living "cell" of capitalist society—for example the nature of value. Within this cell he discovers the structure of the entire system and all of its economic institutions. He says that to a layman this analysis may seem a murky tangle of tiny details. Indeed, there may be tiny details, but they are exactly those which are essential to "micro-anatomy." Anyone who could discover what a "psychological" cell is—the mechanism producing even a single response—will thereby find the key to psychology as a whole. (Vygotsky, 1978/1988, p. 8)

By this process, wrote Vygotsky, in a wonderfully evocative phrase, one can create one's own capital, playing here on the idea of intellectual capital in the sense of a valuable store of ideas and methods, and at the same time alluding to Marx's great work (there is a brilliant exploration of these themes in an essay by Black South African psychologist N. C. Manganyi: 1991, chap. 8).

It must be noted in passing that powerful demands for the qualitative analysis of test performance arise from Vygotsky's work. Giving a score is phenotypic, which makes of a whale a fish; describing its causal dynamic, in which the essence of the whale is contained, makes of the whale what it truly is. Qualitative analysis is thus ontogenetic in a Vygotskian sense. Again, Marx is helpful, remarking that "if the essence of artifacts coincided with the form of their manifestations, then every science would be superfluous" (cited without a source in Vygotsky, 1978/1988, p. 63). Today, nearly a century later, this observation is equally true of psychometrics: The score, that is

the outer appearance, is not the essence. The essence is ontogenetic—namely, the underlying construct.

BUDS, FLOWERS, FRUITS

This distinction between phenotypes and genotypes has a brilliant outcome in Vygotsky's treatment of a tension that has always plagued psychometrics, especially in non-Western settings: this is the tension between bud and flower, flower and fruit—in other words, between potential and performance.

In a 1926 paper,⁴ Vygotsky broke with three central tenets of the psychology of his time: (1) that IQ is immutable, (2) that learning necessarily trails behind development, and (3) that if a child's mental functions have not matured to the extent that he or she is capable of learning a particular subject, then no instruction will prove useful. He wrote, "Development or maturation is viewed as a precondition of learning, but never the result of it" (1978/1988, p. 80). Vygotsky went on to propose a radically new approach that distinguishes between the actual developmental level of the child and the level that is determined by intellectual testing.

The testing looks backward, argued Vygotsky, at development that has already been completed: This means that if a child barely misses an independent solution of a problem, for example, if he or she solves the problem after the teacher has initiated the solution, or after leading questions have been asked that indicate how the problem might be solved, the solution is not regarded as part of the child's mental development (1978/1988, p. 85). On the contrary, commented Vygotsky: "What children can do with the assistance of others might be in some sense even more indicative of their mental development than what they can do alone" (1978/1988, p. 80).

Vygotsky then defined his central developmental construct, the zone of proximal development (the ZOPED), as the distance between the child's actual developmental level during independent problem solving and the child's level of potential development revealed by problem solving under adult guidance or when he or she is working with more competent members of his or her age group. This notion of "distance" at once turns the examiner's attention from performance to potential, and from being to becoming. In a famous passage, he wrote:

The zone of proximal development defines those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow that are currently in an embryonic state. These functions could

be termed the "buds" or "flowers" of development rather than the "fruits" of development. (1978/1988, p. 86)

Few ideas have been as fertile in modern psychology. Cicerone and Tupper (1986) proposed an innovative adaptation of the ZOPED as a "Zone of Rehabilitation Potential" that has special relevance for metacognitive interventions with persons who are brain injured. Another example is Feuerstein's (1979, 1980; Feuerstein *et al.*, 1979) adaptation of Vygotsky's notion of mediated learning to assessment of learning potential, though, in a striking omission, he did not cite Vygotsky's work. Feuerstein argued that cognition can be modified, especially in apparently "retarded" adolescents who have developed in the context of sociocultural deprivation. Such deprivation results in a lack of "mediated learning experiences" (Feuerstein, 1979, p. 539), which occur when environmental events are "invested by specific meaning by mediating agents" such as parents or teachers. Through such mediated learning, continued Feuerstein, children acquire cognitive schemes through which their repertoire of intellectual functions is constantly modified.

The cognitive impairments that arise through such deprivation are deficiencies at the input phase that affect the quantity and quality of input data and arise through such problems as blurred and sweeping perception, impulsive and unsystematic exploratory behavior, impaired spatial and temporal concepts, imprecise and inaccurate data gathering, and the like. At the elaborational phase, the deficiencies impede efficient use of available data, for example, inadequate problem definition, difficulty in selecting relevant cues and disregarding the irrelevant, impaired strategies for hypothesis testing, and impaired planning. Output phase deficiencies give rise to inadequate communication of solutions and arise because of egocentric communication, trial-and-error responses, poor verbal skills, imprecise responses, and so forth (Feuerstein, 1979, pp. 61–87). The parallels between the consequences of "cultural deprivation" as described by Feuerstein and the consequences of neuropsychological impairment are striking.

The ZOPED in the Test Room

Building on the great wealth of South African cross-cultural data (e.g., Boeyens, 1989; Crawford-Nutt, 1976; Kendall *et al.*, 1988; Rogan and MacDonald, 1983; Taylor, 1994), we developed a Performance Probe Test Battery that set out to bring the ZOPED into the test administration procedure within the parameters of stable test administration. This is done through an extended practice procedure that incorporates a guided learning experience.

⁴Reprinted as chapter 6 of *Mind in Society* (Vygotsky, 1978/1988).

The practical application of this method is fully described elsewhere (Nell, in press, chap. 9; Nell and Taylor, 1992); the purpose of the extended practice is to bring subjects for whom testing is a new and often frightening experience to a point further up their personal learning curve and closer to their test performance asymptote (Nell *et al.*, 1995).

PSYCHOLOGICAL PROCESSES AS HISTORIC

Luria articulated Vygotsky's work with his own in two seminal articles. The first (1965) begins as follows:

Forty years ago, in the mid-twenties, a young Soviet psychologist—he was only 30 years old—L. S. Vygotsky began his visits to a neurological hospital, in the beginning as an observer and after that as an independent investigator. . . . He did not come to apply already known tests for proving diagnosis of brain injuries. His task was incomparably wider: In the analysis of focal brain damage he saw one of the basic ways of the analysis of the most important structure of psychological processes and a possible approach to the material substrata of complex psychic activity. (p. 387)

In a paper he completed 6 weeks before his death in 1934, Vygotsky wrote: "It seems to me that the problem with localization, as a general rule, includes all that is connected with the study of higher psychological functions and with the study of their disintegration" (in Luria, 1965, p. 387). But it was not the mindless locationism of faculty psychology or of the cortical mapmakers that Vygotsky had in mind. In *Development of Higher Psychological Functions* (1960), published in abbreviated form as "Problems of Method" in *Mind in Society* (Vygotsky, 1978/1988), Vygotsky argued that the "higher psychological functions" ought to have their own origin, which was located not "in the hidden properties of nervous tissue [but] outside the organism of the individual person, in objectively existing social history which is independent of the individual" (Luria, 1965, p. 388). These functions, such as imagination, thinking, emotion, and voluntary activity, were not isolated functions but rather complex functional systems, "formed in history and changing in the process of ontogenetic development" (Luria, 1965, p. 389). For humans, a new principle of localization is required, akin to the way a person ties a knot in a handkerchief as a reminder to carry out a particular action. The knot exists outside the brain but is used to tell the brain, by the mediation of this sign, what action to take:

Social history ties those knots which form definite cortical zones in new relations with each other. . . . The human cortex becomes, thanks to this principle, the organ of civilization, containing in itself unlimited possibilities and

not demanding creation of new morphological apparatus every time a demand is created in history for a new function. (Luria, 1965, p. 391)

In this light, neither the narrow localization of faculties nor conceptualization of the brain as a single mass of homogeneous tissue is appropriate, but rather "a system of highly differentiated zones of the cortex working together, accomplishing new tasks by means of new inter-areal relations" (Luria, 1965, p. 391), just as the acquisition of language changes the child's environment and thus the structure of consciousness. The importance of these formulations for Luria's work, especially his theory of dynamic localization through the concerted interaction of many different brain regions, is immediately apparent.

In a second major elaboration of Vygotsky's views, "Toward the Problem of the Historical Nature of Psychological Processes," Luria (1971) examined the implications of the way in which the higher processes that make the brain the organ of civilization are created, which, in Vygotsky's formulation, is social in origin, mediated in structure, and voluntarily directed (Luria, 1971, p. 261). This in turn suggests that cortical structures will be modified by individual maturation and, necessarily, by social structures.

The rapid social change that followed the Bolshevik Revolution of 1917 created a huge natural laboratory in the Soviet Union as the processes of modernization, and especially schooling, changed traditional ways of thinking.

THE UZBEK EXPEDITION

And so, in the spring of 1931, Luria and a group of colleagues from the Institute of Psychology in Moscow set off for the Soviet Republic of Uzbekistan in Central Asia, deep in the Muslim Near East, with the Caspian Sea to the west, Afghanistan to the south, and the Chinese border to the south and east. Collectivization propelled the villages and nomad camps of these areas from feudalism to a 20th-century organization of production in the space of a few months or years. Luria (1971) remarked that the "extraordinarily deep and rapid restructuring of historical forms" in the Soviet Republics "had never occurred before . . . in exactly the form experienced in the USSR" (p. 265). This bold statement gives rise to a degree of irony in today's readers. For cross-cultural psychologists, what matters is that although the course of modernization differs from one setting to another, the process of accelerated social change—bringing with it exposure to Western-style tests—has caused acute social disruption in all the developing countries.

The purpose of Luria's field study, which, like all his work, was meticulously planned and executed (though unpublished for 40 years) was to determine whether different groups of peasants, at different levels of modernization, performed simple intellectual tasks in different ways: Vygotsky's theory of cortical development by the "tying of knots" through the mediation of social experience predicted that the tasks would indeed be performed differently. The five subject groups identified by Luria were (1) *lchkari* women living in remote villages who were illiterate and not involved in modern social activities; (2) peasants in remote villages with "an individualistic economy"; (3) women who had attended short teaching courses but remained semiliterate; (4) officeholders in the collective system who were barely literate but engaged in planning production, organizing labor, and other activities that exposed them to new methods of problem solving; and (5) women students who had been admitted to a teachers' school but still had fairly low qualifications.

The tasks were embedded in a learning situation in which the investigators showed the subjects new ways of solving problems to see how these methods would be incorporated into the actual tasks. Luria (1976b) distinguished between two modes of generalization. One is graphic recall based on memories of how certain objects in the individual's personal experience relate to each other in day-to-day activities: For example, a triangle, a trapezoid, and a circle might be grouped together because they remind the individual of a cooking pot (trapezoid) on a hearth (circle) under a tree (triangle). The other generalization mode is abstract, developed under the influence of formal schooling and based on isolating common attributes so that each object is assigned to an abstract category, such as "utensils" or "implements," hence the term *categorical relationships*, which are distinct from graphic or concrete relationships.

The unsophisticated⁵ subjects were unable to form categories, but instead grouped objects in terms of their real life relations: For example, given a set of geometric shapes, they named them by their resemblance to everyday objects—a circle was called a plate; a triangle, a kettle stand; a broken circle, a bracelet; and so on—rather than grouping them by their form. Luria suggested the metaphor of a family for this kind of concrete classification, in which each member participates on an individual basis. On the other hand, subjects with some education and experience of modern methods readily made the transition to categorical relations or, in Luria's term, taxonomic thinking.

⁵A word derived from the Greek, meaning "uncontaminated by worldly wisdom," and strictly accurate here. However, as noted subsequently, Luria's belief that sophistication was qualitatively better than "primitivism" gave rise to a furor he had not anticipated.

A second type of categorization task allowed for the flexible use of classificatory schemes. Subjects were presented with four items (e.g., drawings of a hammer, a saw, a log, and an ax; or a tumbler, a saucepan, spectacles, and a bottle) and asked, "Which of these does not belong?" Given the first of these sets, an illiterate 30-year-old peasant said that they were all alike and all belonged: "See, if you're going to saw, you need a log, and if you have to split something, you need a hatchet. So they're all needed here." Told that someone else had picked the hammer, saw, and ax, and omitted the log, the subject responded, "Probably, he's got a lot of firewood, but if we'll be left without firewood, we won't be able to do anything. Even if we have tools, we still need wood." On the second set, he responded that the spectacles did not belong, but "Then again, they also fit in. If a person doesn't see too good, he has to put them on to eat dinner." Told of someone else who had omitted the saucepan, he responded, "Probably that kind of thinking runs in his blood." Luria noted that this kind of situational thinking—for example, that one needs the tumbler, saucepan, and bottle in the kitchen, and the spectacles to see better what one is cooking—was resistant to change, and the unsophisticated group consistently rejected the theoretical task in favor of the practical one: "Only classification based on practical experience struck them as proper or important" (Luria, 1979, pp. 69–71).

Classifications of groups of objects were based on practical experience and concrete operations, such as building a hut or damming a stream; syllogistic thinking was entirely absent. For example, subjects were presented with a major and a minor premise, as follows:

In the far north, where there is snow, all bears are white.
Novia Zemlya is in the far north.
What color are the bears in Novia Zemlya?

Subjects referred exclusively to their personal experience, failed to accept the premises as universals, but as particular statements to be judged in terms of experience, and failed to construct logical links between the premises. They might respond, "I've never been in the north and never seen bears," or "There are different kinds of bears. If one is born red, he will stay that way" (Luria, 1979, pp. 77–78). With the lucidity that was his remarkable gift, Luria (1979) concluded:

The processes of abstraction and generalization are not invariant at all stages of socioeconomic and cultural development. Rather, such processes are themselves products of the cultural environment. (p. 74)⁶

⁶For readers wanting more detail of the Uzbek expedition, Luria's most extensive account is in his 1976 book *Cognitive Development*, based on the Russian version published in 1974. Brief accounts of the expedition appear in Luria's 1979 autobiography and the 1971 article.

REPLICATION OF THE UZBEK STUDY IN KWA ZULU

In 1984, a South African psychologist, Andrew Gilbert, who was then director of the Institute for Social Research at the University of Zululand, undertook a replication⁷ of Luria's Uzbek study in rural Kwa Zulu, in South Africa's Natal province; to protect his subjects, he has not named the village.

Gilbert framed his study within an ideational definition of culture, which is seen not as complexes of concrete behavior patterns "but as a set of control mechanisms—plans, recipes, rules, institutions—for the governing of behavior" (Geertz, 1971, p. 44). Culture thus provides a link "between what men are intrinsically capable of becoming and what they actually, one by one, in fact become" (Geertz, 1971, p. 52). Gilbert integrated this semiotic understanding of culture with the process of social change, and thus with process rather than state, with becoming rather than being: The consequence is that culture cannot be reified as an immutable essence. Change is possible because men and women not only are the products of their culture, but also produce it, and the neuropsychologist can play a small role in this process by becoming a "cultural guide" (Gilbert, 1986, pp. 161–162).

Gilbert selected five groups of five subjects, all born and raised in the study area, and corresponding to the five types identified by Luria 50 years earlier in Uzbek: (1) The poor were subsistence farmers or casual laborers who had little formal education or city experience; (2) the farmers had no formal training in agriculture but produced at a higher level than that of subsistence farmers; (3) the entrepreneurs were shop owners and businessmen; (4) the community workers had no formal qualifications but were active in community-based projects; and (5) the professionals were teachers and nurses who had studied away from home and returned to the area as carriers of modernity. Regarding education, the five poor people had an average of 1 year's schooling (three had none), the farmers had just over 4 years, the entrepreneurs nearly 7, the community workers 8, and the professionals nearly 12 years of formal schooling.

Asked to group geometric forms, the poor subjects, as in Luria's study, "consistently classified the figures in a

concrete object-oriented manner" (Gilbert, 1986, p. 201), despite extensive prompting. Shown a square, a circle, and a triangle, one of this group, for example, said, "This is a plot of ground (square), this is the circle that is drawn when you start building a hut, and this (triangle) is the roof." In contrast to Luria's findings, the professionals did not as a matter of course use abstract categories, but, on occasions, concrete or graphical criteria and, at other times, geometric categories. In contrast to the poor, whose thinking was rigid and who refused to consider alternative classification methods, the professional group showed a consistent habitual response but, with prompting, moved flexibly to other methods of classification. The entrepreneurs showed similar flexibility, at times sorting in object-oriented terms, at times by graphic similarity, and sometimes by geometric category. The farmers, though they had less education and had spent far less time in cities than the entrepreneurs, showed a remarkably similar grouping style. One, with no education, flexibly used both geometric and graphic categories, showing a reflective and flexible style of thought.

On the categorization task, Gilbert's less educated subjects had difficulties that paralleled those that Luria had found in Uzbek. For example, one participant said that the log belonged equally well with the three other items because "One has to make a fire with this wood. Should it be taken out?" Another reasoned the same way, acknowledged on prompting that three of the items were metal, but at once reverted to a functional classification that included the wood because it was needed to make a fire. The professionals were sometimes able to think abstractly, but not habitually. Thus, one argued that the ax could be used on the log if you were building a house, but that the log could be excluded on the grounds that the other three items were made of iron. This subject then added on reflection, "The handle of the ax and the hammer are made from a log," reverting to situational thought despite having used a category.

The community workers closely resembled the professionals in their classification style. The farmers differed, because although they preferred situational groupings, they were, unlike the poor, prepared to agree to abstract categorizations without dismissing them as incorrect: This is surprising, said Gilbert, because the farmers had only marginally more education than that of the illiterate group.⁸

⁷Gilbert's theoretical structure and field study are more fully described in his doctoral dissertation (1986), which has not had journal or book publication, and will repay reading by those interested in the area of psychological assessment in developing-country settings. A related examination of cognitive change under the impact of modernization is Berry's (1988) study of the Cree people of James Bay in northern Quebec in the decade of the 1970s, when a hydroelectric plant was built in their territory.

⁸Gilbert's use of education as an index of cognitive development is open to the criticism made by Rogan and MacDonald (1983) of the terms *schooler-unschooler* as too broadly defined to constitute a useful variable. They write that the quality of education "differs enormously from one area to another" (p. 310); rather than asking how much schooling an individual has had, one needs to know its content and whether aspects that would contribute to cognitive development were present (for a fuller review of education quality, see Neil, in press, Ch. 6).

The entrepreneurs were all able to use abstract thought, though, paradoxically, the two best educated persons in this group veered between abstract and situational thinking, whereas the other three used categories spontaneously and consistently. An example of the former style is the participant who said that the saw and log go together because you cannot saw without a log, then, on prompting, added the ax to this group because they work together, and, finally, said that three of the items belonged together because all were made of steel. Thus, alternative groupings were supplied, some concrete-situational and the others categorical-abstract. Similarly, this subject excluded spectacles from the second group on the ground that "You can't put them in boiling water. . . They are specially designed for the eyes," but failed to identify the unifying category, "utensils," that would exclude the spectacles.

CULTURAL DIFFERENCE AND THE SUPPRESSION OF SCIENCE

In 1933, Luria published a preliminary article in the American journal *Science*, setting out the goals of the Uzbek expedition, but did not publish his findings. Soviet psychology was under political scrutiny, and Luria's initial reports had attracted vitriolic criticism. In her memoir of her father (see Kuzovleva précis in this issue), E. Luria recorded her father as saying, "I was accused of all mortal sins right down to racism, and I was forced to leave the Institute of Psychology" (cited in Jane Knox's introduction to Vygotsky and Luria, 1930/1993, p. 15). An amusing sidelight on the charged political atmosphere of the time—though it would have been anything but amusing to Luria—was that KGB agents were waiting on the platform of the Moscow train station for Luria on his return. This was because one of the first experiments that the research team carried out on arrival in Uzbekistan related to classic visual illusions in order to demonstrate that Gestalt principles were the consequence not of brain structure, but of culturally transmitted modes of perception. Luria was so excited by the preliminary results that he telegraphed Vygotsky to say, "The Uzbeks have no illusions!" (Luria, 1979, p. 213). The KGB, intercepting the telegram, read it to mean that the Uzbeks had no illusions about Soviet authority in that area (Knox, 1993, p. 14).

Kozulin (1984) writes as follows of the reception given to the Uzbek work:

Luria could hardly have imagined the bitter fate that awaited his studies. The Vygotsky-Luria theory of cultural development was already under fire because of its apparent resemblance to the "bourgeois speculations" of Emile Durkheim. Critics hastily accused Luria of insulting the national minorities of Soviet Asia whom he had

ostensibly depicted as an inferior race unable to behave reasonably. The results of the expedition were refused publication, and the very theme of cultural development was forbidden for the next 40 years. Only in 1974 did Luria manage to publish his materials and thus to state the problem once again. (p. 110)

After Vygotsky's death in 1934, and dismayed at the reception of his work by Russian academics, Luria returned to his medical studies: Perhaps he found these a safe haven from the stormy ideological seas on which psychology was adrift. In 1936, he enrolled as a full-time student at the First Moscow Medical School, where, because of his extensive previous coursework in medicine, he was able to graduate the following year. In 1938, he began a 2-year internship in neurology at N. N. Burdenko's Neurosurgical Institute, which he described as the most fruitful period of his life. In this period, his serious work in neuropsychology began.

Without the encouragement of his American biographer, Michael Cole, Luria might never have published the Uzbek data. An initial theoretical article on the historical nature of psychological processes appeared in the *International Journal of Psychology* in 1971, followed by the fuller 1974 account, published in English translation in 1976.

It is not difficult to understand what it was about the Uzbek expedition, conducted in the heady early years of a great social revolution, that proved unpalatable to Stalinist critics. L. Luria (in Knox, 1993) cited a 1934 review of the Uzbek expedition that appeared in the journal *The Book and the Proletarian Revolution*:

Instead of showing the process of development and the cultural growth of the workers in Uzbekistan, they search for justifications for their "cultural psychological theory" and "find" identical forms of thought in the adult Uzbek woman and a five-year-old child, dangling before us under the banner of science ideas, which are harmful to the cause of the national cultural construction of Uzbekistan. (p. 16)

Cole noted that Luria used the word *culture* in an evolutionary sense, which in turn implied that a qualitative difference would exist between "cultured" and "uncultured" persons: "Overall, his writings emphasized the 'improved' status of people following the advent of literacy and modern technology" (Cole in Luria, 1979, p. 214). Careful reading of Luria's account of the expedition shows that he had indeed fallen into the pseudoevolutionary trap that awaits incautious cross-cultural researchers at their first contact with people in a culture that differs radically from their own, who tend to attribute advancement to their own culture and primitivism to the other (as in Jung's account of his travels in East Africa: Nell, 1990). For decades, the Uzbek controversy obscured the psychologically crucial

issue that Vygotsky and Luria attempted to address, namely, how mental processes are shaped by sociocultural forms.

Gilbert's work had a less dramatic but parallel fate: It sank quietly into oblivion, ignored by the neuropsychologists and other students of cognitive processes who should be consulting it. Though we live in gentler times than those of Luria, and Gilbert's work has not been suppressed, its emphasis on culture and the impact of culture on cognition is out of tune with the universalism that psychology and neuropsychology have adopted as a defense against the excesses of "culturalism," some of which were reviewed earlier in this article. At the close of the 20th century, non-Western people have a critical awareness of the bitter fruits of colonial exploitation on which they and their children still choke. Angry memories of colonial arrogance are stirred by scientific or pseudoscientific exploration of differences between ethnic or national groups. Sensitive cross-cultural expertise in both psychology and neuropsychology remains the most powerful barrier to the tragedy of opportunity denied.

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