

THE PROBLEM OF CONCEPT FORMATION IN VYGOTSKY †

NINO DAZZI *
ROMA

The aim of this short article is to make a critical analysis of the interaction between Western and soviet psychology as is set out in the work of L.S. Vygotsky (and some of his collaborators).

Without doubt Vygotsky has been widely confronted with the Western psychological tradition; one need only return to the persuasive "theoretical-critical" analyses which are widely scattered throughout the "Development of the superior psychic functions". Yet it is legitimate to wonder how deeply and how articulately this comparison has been made.

The lack of order in Vygotsky's work makes this task extremely difficult. His use of citation - the use he makes of the work he was consulting - is obscure and unrevealing. The editors of the English edition of "Thought and Language" have made a specific point of inserting, for example, in the bibliography, the work of Narcis Ach, "Die Begriffsbildung", on the grounds that Vygotsky analyses it explicitly, though without citing it. It has been possible to construct the appendix to the bibliography of "The development of the psychic functions" on the basis of the rather disorganized references which Vygotsky makes in the various parts of the text.

* NINO DAZZI : Via Lucio Afranio, 10; 00136 ROMA (ITALIA)

† Este trabajo estaba destinado al homenaje al profesor Josef Brozek, aparecido en el volumen "La Psicología en su Contexto Histórico", *Revista de Historia de la Psicología* , 1984, Vol 5, nums. 1-2.

One of the most homogeneous of Vygotsky's various essays, at least superficially, seems to be the chapter on concept formation in "Thought and Language". The correct procedure therefore seemed a parallel reading of Vygotsky's text with several fundamental texts explicitly cited by Vygotsky and dealing with psychological research on concept formation all within the span of the 1920's. The chapter on concept formation was chosen not only for its homogeneity and the complexity of its argument, but equally because there appears to be evidence of experimental studies undertaken by Vygotsky and, under his guidance, a group of pupils and collaborators, particularly Sakharov. (Incidentally, it should be noted that the English edition prefers to cite the experimental work of Vygotsky - Sakharov and the block test in the Hanfmann-Kasanin later version of the 1940's. The possible significance of this choice will be discussed later.)

It therefore seemed possible to proceed by comparing not only theoretical analyses but also theoretical positions incorporated in precise experimental praxes, thus giving the impression of a 'deeper' investigation in search of the 'hidden' Vygotsky whose high points emerged in the sparkling theoretical intuitions in the essay on "Development of the higher psychic functions". Furthermore the existence of a piece of Sakharov's writing, published in 1930 under the heading "O metodach isledovanija ponjatij", could form a useful link between Vygotskian theory and 'traditional' literature.

Obviously Vygotsky would have had to be more than familiar with the most important research done on concept formation, that of Ach, for example, contained in his important work of 1921 - "Begriffsbildung". This research had also inspired further research by Rimat, another of the scholars explicitly cited by Vygotsky. It should also be noted that a distinguished Soviet psychologist, the Georgian Uznadze, had trained from 1905 to 1909 at Wundt's school in Leipzig and was certainly very close to the Würzburg school; he was publishing his work in the important German psychology journals as well - " Psychologische Forschung ", in which he had published an essay on " Namengebung " in 1924, the " Zeitschrift für angewandte Psychologie ", in which he had published a long, well known article in 1926 on concept formation in the preschool age, and "Archiv für die gesamte Psychologie", which produced two of his other essays on the same topics in 1927 and 1929 respectively.

The degree thesis of the Shifs, which prompted Vygotsky towards the chapter on scientific concepts in "Thought and Language" which came after the one on concept formation, had Vygotsky as its proposer and Uznadze as its discussant.

In some ways Uznadze will always occupy an isolated though respectable position because of his geographical remoteness (Tibilisi) and his more direct links with the Western tradition; this much is clear from his pupil Natadze's report on the activity of the Georgian school of Psychology. Yet Uznadze might constitute

an intermediary. For if we go into greater detail and try to see what remains of Ach in Vygotsky's essay, we realize that there never seems to have been any precise confrontation.

Ach's essay, the 'Begriffsbildung' (see above) is a long and very articulate study which is extremely sophisticated from the standpoint of its experimental approach and theoretical commentary. (The conclusion of the essay, incidentally, opposes the Wundtian idea of the normal human adult mind, and advocates the fundamental importance of the moment of socialization as a necessary moment for the realization of fundamental aspects of psychic life - for example the acquisition of language.) Nor, strictly speaking, does the experimental method used for the study of concept formation belong to Ach but to Külpe, the head of the Würzburg School. It includes the problematic precedents of abstraction and generalization, which were still weighed down by heavy philosophical 'baggage', and consistently links the meaningless syllable to predetermined and specifically chosen objects. It also became a standard method for this type of research, as Grunbaum's famous 1908 investigation and Aveling's 1912 work on the universals demonstrate.

Yet Ach's is a particularly refined text. Obviously the use of the meaningless syllables instead of concrete wordnames is an application of Ebbinghaus's own outline to his research into memory, and is understood as having the same aim - namely to prevent the assimilation by the subject of known words, i.e. inserting them into complex and idiosyncratic associative networks, thus making it possible to make a study of conceptual elaboration in its 'pure' state and eliminating, though this is only partly true, any precious cognitive influence.

As well as using the link between meaningless syllables and geometric objects which differed from each other in form and colour, Ach also adopted a complex experiment based only on meaningless syllables, which made it very difficult for studied cognitive processes to take place, because it cut out any possible reference to any perceptive-motor development produced by previous experiments. Furthermore, in the last part of his experiment dealing with problems of generalization, Ach tried to overcome the problem of habitual laboratory research - the creation of artifacts - by adapting a concrete situation - a large store with a quantity of objects - to his experimental needs.

The conclusion of Ach's study is theoretically extremely complex. They obviously refer back to the main themes of his previous 'Würzburg' studies, for example the fundamental concept of the determining tendency, but it also tends to set out a psychological theory of meaning.

But in Sakharov's account of Ach's research, though he takes up his experimental technique almost to the letter, there is seemingly no trace of the detail or complexity of the theory. Instead Sakharov underlines the inadequacy of Ach's argument, which he says is based essentially on the concept of determining

tendency.

There seems to be necessary compulsion towards a rejection of the theoretical positions and the 'philosophy' of the Würzburg school and not so much towards a more direct confrontation. Vygotsky would express similar considerations in 'Thought and Language', even though he looks favourably on one of Ach's fundamental themes - functionality (1).

Nor does Uznadze's research, though mentioned, seem to receive any particular attention; rather it serves as a pretext for an explanation for the Vygotskian theory.

It has been stated that the experimental technique, which was to be taken up later by Hanfmann and Kasanin in their work on concept formation in schizophrenia, is the same as Ach's, though modified slightly as to the form and the geometric figures involved (compare for example the trapezoidal form). Yet in his theoretical commentary Vygotsky at a stroke transforms the situation, which was materially almost identical. (Sakharov had already made an earlier interpretation of Ach's experimental technique as a method of double stimulation, thus putting it in a rather different context). Ach's account requires a period of training, an "Einübungs" periode, in which the subject is made familiar with the material which will subsequently enable the experiment to take place; that is to say he becomes aware of labels (meaningless words) and objects, whereas in Vygotsky-Sakharov this awareness is gradually acquired in the course of the experiment, with a continuous restructuring of the task, a strong emphasis on the various stages and cognitive strategies used with the evolving stages of concept formation. (Note also that some of the subjects in Ach's experiment and all those in Uznadze's were children from 3 to 7 years old).

In addition it must be stressed that Vygotsky's main questions regarding concept formation converge on the absolutely central position of the linguistic moment, whereas in Ach (and in Uznadze) if a distinction of this type can be made, it is pure cognitive processes beyond their verbal expression that are at stake.

Thus Ach tries to disarticulate the cognitive process in order to individuate clearly its single moments - he speaks for example of the exclusion of the spontaneous "benennende Einstellung", the tendency to give a name which does not simply attach itself but which coalesces with the object as its constituent property in order to favour the different awareness of the conferring of a name as a purely conventional label - a provisional and unstable link with the object to reach at the end the highest and most complex level of scientific concepts.

Vygotsky's theory does not seem to be at all aimed in this direction. This is not the place for a detailed comparison between the various forms of regrouping classification proposed by Vygotsky and the 'Gruppierungs-Versuche' of Ach and Uznadze, who cites Ach on many occasions and seems to form a theoretical point of view to support strongly the single explanatory concept of 'determining tendency'. If a comparison were to be made there would naturally arise analogous positions

but also some areas of sharper originality on the part of Vygotsky.

And yet it is the special climate, the theoretical, almost ideological, atmosphere of the research which seems quite beyond comparison. The only possible author to whom such a comparison can be attempted is Heinz Werner and in particular his chapter on conceptual activity. Thus we realise that Vygotsky's theoretical work is strongly permeated by the genetic option and that of the various moments that Vygotsky continually refers to in 'Development of Psychic Functions' - the morphological - structural, the functional and the genetic - it is the latter that plays a truly decisive part.

This gives rise to the impression that the tradition which on the surface is more closely allied to Vygotsky's explanation in the chapter on concept formation (the cognitivist tradition of Ach - Ūznadze) is intricately connected or at least qualified by a tradition which is in many ways different - the tradition of genetic and development psychology, which can easily include aspects of animal psychology and abnormal psychology (just as Vygotsky often does in generically evolutionary theory). This evolutionary theory, as Werner states, has adapted smoothly to the new investigative terrain to which it is applied, the psychological one, and rejects outright the so-called law of biological recapitulation and its shrewd use of the framework of parallelism.

We are much closer to Vygotsky. The blatant discrepancies of certain passages on concept formation, certain pointed remarks about Levy-Bruhl and the anthropological theory, certain wide-ranging illustrations are more easily understood and throw light even on those elements that had been previously considered more original in Vygotsky's treatment. We can refer, for example, to the 'diffusive' complex, to the type of grouping, that is, in which objects are classified together not only on the grounds of continually changing characteristics - like for example the associative complex known as the 'chain complex' (a family resemblance, Wittgenstein would say) - but characteristics which are essentially 'absent', which cannot be perceived or extracted from the available material.

This 'diffusive' category, with its 'unstable' characteristics as opposed to the 'stability' of other concept-types, is an explicitly Wernerian category. What is more, Werner speaks of 'quasi-concepts', which, though it is an idea only partly overlapping with Vygotsky's, is still reminiscent of his 'pseudoconcepts'. However, the idea implicit in this notion of Vygotsky's is also derived from studies in evolutionary psychology, especially from the research tradition of Stern, Werner's teacher, with whom Vygotsky compares himself in another chapter of the book. A direct comparison with Piaget has not yet been attempted - at least the Piaget that Vygotsky knew - but it is supposed that apart from the egocentric language problem there might exist wide areas of comparability.

The argument of this article, that Vygotsky does not belong or ought not to be considered as belonging to the 'cognitivist' research tradition as originally exemplified by the Würzburg school, is strongly confirmed by the following fact:

Humphrey's treatment of 1951, a classic for the study of thought, which forges complex links between the Würzburg tradition and the anglosaxon tradition and between European, Grünbaum, Aveling, Ach, and the American, Hull (1920) and Smoke (1932), cites Vygotsky only once. He prefers -is this just for the sake of convenience? - to put forward the Hanfmann-Kasanin version of the experimental approach worked out under Sakharov's direction. He gives considerable space to Ach, and in particular to the "Begriffsbildung".

In the West, therefore, it would seem that it is the Hanfmann-Kasanin version -an undoubtedly interesting but somehow flat piece of research compared to the theoretical ideological premises of Vygotsky- which is to be considered more easily included in a homogeneous research tradition -the only scientifically reliable tradition to which Vygotsky is inevitably an outsider by comparison (2).

Moreover, Vygotsky is somehow an outsider precisely because of his great originality, which is nowhere to be found in the Western tradition, whose field of research closest to Vygotsky is without a shadow of doubt what is termed 'genetic psychology'. But in Vygotsky there is also the historical-cultural level, to which, from a methodological point of view, these morphological, functional and genetic aspects of investigation are applicable once more. And this outlook allows us to qualify differently even the arguments on socialization which are present in Vygotsky and are comparable to analogous treatments in Western psychology. This is also due to the very strong domination of the concept of language as an instrument, as a moment of mediation and as an interiorized praxis.

In other words it seems impossible, or perhaps only partially possible, to carry out the operation that was considered at the outset -namely a sharp comparison between a Vygotsky experimentally divided into component parts -to be compared one by one under separate thematic headings- and the findings of Western psychology.

This operation, which would certainly not have pleased Vygotsky, can be useful if it throws some light on the complex nature of Vygotsky's theorising, on its stratification, its incongruence and contradictions, on its sheer variety (consider the interest in Vygotsky's final phase, the problem of psychic functions, on which Lurija did considerable research, his pedagogical work, which is essential for an understanding of some of his conclusions which are so alien to the Western tradition, for example those concerning the intervention of the experimenter in favour of the subject -often a baby- during the experiments).

It may be concluded therefore that the idea which prompted this brief investigation is essentially false -the idea of a Vygotsky who, owing to his own originality, his creative passion, his tragic destiny, was often sketchy as far as experimentally-based rather than wide-ranging theoretical comparisons are aware of them, and who, if he had lived, would have promoted through his school a wide range of his own kind of experimental research.

Judging from the evidence, a different theory should be given credence : a

Vygotsky very busy in the applied field, and quietly intuitive in the theoretical sphere, though inclining towards large syntheses of philosophical content rather than precise experimental verification. It may also be added that the Soviet tradition which survived closest to him -that of Leontiev, Galperin, etc.- could not be completely faithful to his sweeping theories but was forced towards a certain levelling-off, and a recovery of other scientific traditions in the field of psychology (moving closer to physiological psychology, cybernetic models, and problem-solving in the Western sense). The only psychologist who seems to have been able to follow his own original path has been Lurija, but it must be remembered that his background was essentially different and, despite all potential criticism that could be levelled against him by Western neuropsychologists, he was a decided experimentalist.

NOTES

(1).- " Uznadze reveals that whereas completely formed concepts make their appearance relatively late, children begin to use words early and so stabilize a mutual comprehension with adults. He concludes therefore that words take on the function of concepts." (*Thought and Language* p.78)

" Since comprehension and communication tasks are essentially similar for the child and the adult, the child develops equivalent concept functions at a very early age, but the forms of thought that he adopts when performing these tasks are profoundly different from those of the adult in their composition, their mode of operation and their structure." (*Thought and Language* p. 78-79)

(2).- The argument put forward (only one citation of Vygotsky, exclusive attention paid to the work of Hanfmann-Kasanin), is not sufficient to prove the assumption that Vygotsky can not be assimilated to the cognitivist tradition. It could be used more plausibly as evidence for the west's scant knowledge on Vygotsky (the English translation of 'Thought and Language' was in fact made in 1964, yet Humphrey wrote his essay in 1951). Vygotsky's important article 'Thought in Schizophrenia' (*Archives of Neurology and Psychiatry*, 1934, pp. 1063-1077) had long been available.

SUMMARY

The author offers an analysis of some of Vygotsky's interactions with psychologists. Ach's influence (mainly through some of Sakharov's works) and Werner's one are examined. Vygotsky ought not to be included in the tradition of Würzburg School, but should be viewed as an applied-oriented person also inclined to great theoretical syntheses.

RESUMEN

El trabajo analiza algunas de las influencias de psicólogos occidentales (Ach, especialmente influyente a través de una obra de Sakharov, y Werner) sobre Vygotsky. Este aparece como una figura interesada en temas aplicados e inclinada a grandes síntesis teóricas, no reducible a la tradición de la escuela de Würzburg.

BIBLIOGRAFIA

- Ach N., *Über die Begriffsbildung*, Bamberg, Buchner, 1921.
- Aveling F., *On the consciousness of the universal and the individual: a contribution to the phenomenology of thought processes*, London, Mc Millan, 1912.
- Grünbaum A. A., *Ueber die Abstraktion der Gleichheit*, *Archiv für die gesamte Psychologie*, 1908, pp. 340-478.
- Hanfmann E. - Kasanin J., *Conceptual thinking in schizophrenia*, *Nervous and Mental Diseases Monographs*, 67, 1942.
- Hull C. L., *Quantitative aspects of the evolution of concepts*, *Psychological Monographs*, 1920.
- Humphrey G., *Thinking*, London, Methuen, 1951.
- Lurija A. R., *La storia sociale dei processi cognitivi*, Firenze, Giunti, 1976.
- Lurija A. R. - Leonitev A. N., *Le concezioni psicologiche di L. S. Vygotsky*, in Vygotsky L.S., *Lo sviluppo psichico del bambino*, Roma, Editori Riuniti, 1973.

- Natadze R. G., *Studi su problemi del pensiero e del linguaggio di psicologi della Repubblica Socialista Sovietica Georgiana*, in Veggetti M. S. (a cura di), *La formazione dei concetti*, Firenze, Giunti, 1977.
- Piaget J., *Le langage et la pensée chez l'enfant*, Neuchâtel - Paris, Delachaux et Niestlé, 1923.
- Piaget J., *Le jugement et le raisonnement chez l'enfant*, Neuchâtel - Paris, Delachaux et Niestlé, 1924.
- Piaget J., *La représentation du monde chez l'enfant*, Paris, F. Alcan, 1926.
- Piaget J., *La causalité physique chez l'enfant*, Paris, F. Alcan, 1927.
- Rimat F., *Intelligenzuntersuchungen anschliessend an die Ach'sche Suchmethode*, Göttingen, G. Calvoer, 1925.
- Ronco A., *La scuola di Würzburg*, Zürich, Pas-Verlag, 1963.
- Sacharov L., *O metodach issledovanija ponjatij*, *Psikologija*, I, 1930, pp. 3-33.
- Smoke K. L., *An objective study of concept formation*, Psychological Monographs, 1932.
- Vigotski L. S., *Pensiero e linguaggio*, Firenze, Giunti, 1966.
- Vigotski L. S., *Storia dello sviluppo delle funzioni psichiche superiori*, Firenze, Giunti, 1974.
- Vigotski L. S. *Storia dello sviluppo e della disintegrazione delle funzioni psichiche superiori*, in Mecacci L. (a cura di), *La psicologia sovietica 1917-1936*, Roma, Editori Riuniti, 1976.
- Uznadze D. N., *Die Begriffsbildung in vorschulpflichtigen Alter*, *Zeitschr. f. angew. Psychol.*, 34, 1929.
- Uznadze D. N., *Ein experimenteller Beitrag zum Problem der Namengebung*, *Psychol. Forschung*, vol. V, 1-2, 1924.
- Uznadze D. N., *Die Gruppenbildungsversuche bei vorschulpflichtigen*, *Arch. f. d. ges. Psychol.*, 73, 1929.
- Uznadze D. N., *Zum Problem der Bedeutungserfassung*, *Arch. f. d. ges.*

Psychol., 58, 1927.

Werner H., *Psicologia comparata dello sviluppo mentale*, Firenze, Giunti, 1970
(1^a ediz. tedesca 1926).

Willwoll A., *Begriffsbildung*, Lipsia, Hirzel, 1924.