Book Reviews

Genetic Approach

Thought and Language. Lev Semenovich Vygotskii. Translated from the Russian and edited by Eugenia Hanfmann and Gertrude Vakar. M.I.T. Press and Wiley, New York, 1962. xxi + 168 pp. $4.95.

This is a remarkable book. Not the least remarkable thing about it is that it still retains freshness and interest today, more than a quarter of a century after it was written. Its young, Russian author still seems ingenious and persuasive; its arguments still have relevance for the psychological enterprise. The book—a summary statement of Vygotsky's (1896–1934) psychology—was written in haste during his final illness. It appeared posthumously in Moscow in 1934, was suppressed in 1936, then was revived in 1956. English-speaking psychologists knew it existed, of course—some of Vygotsky's techniques have been widely used as clinical tests and fragments of the book had even been translated into English—but we could not appreciate its full force and originality until now.

The relation between thought and language is one of the most difficult, yet one of the most fruitful and important, topics in modern science. The issue has long been kept alive in American psychology by the repeated attempts of behaviorists, from Watson to Skinner, to reduce all thinking to behavior in general, and to speech in particular. In anthropology and linguistics the Whorf-Sapir hypothesis of linguistic relativity—that your whole conception of reality is relative to the semantic and syntactic dimensions of the language you speak—has been equally hotly debated. And, of course, from Frege and Russell to Wittgenstein and Ryle, the relation of thought to language has been a major theme of 20th century philosophy.

Vygotsky's approach to the problem is genetic. How, he asks, does a linguistic unit develop into a functionally integrated and indissoluble union of sound and meaning? He reviews the work of Jean Piaget and William Stern on the development of children's language. Piaget's early conception of an egocentric function for the child's language, prior to the age of five or six, is reinterpreted by Vygotsky as basically sociocentric; the monologues of a young child are the first manifestations of symbolic thought processes, before the processes are finally suppressed and converted into inner speech. Stern's personalistic psychology is judged incapable of explaining the essentially social nature of language and of the intellectual processes based in language. Vygotsky's own interpretation of the development of thought from social intercourse through personal monologues to private, inner speech is cleverly buttressed by anecdote, by logical and rhetorical arguments, by literary quotations from Tolstoy and Mark Twain, by appeal to authorities both scientific and philosophical, by linguistic analysis, by every kind of evidence and argument that a resourceful and well-educated man might bring to bear on such a topic, but most convincingly by his own studies of young children and of the social factors that control their apparently egocentric monologues.

Somewhat more familiar to American psychologists, no doubt, will be the fifth chapter, "An experimental study of concept formation," for Vygotsky's methods of studying concept formation have been used by Hanfmann and Kasanin in their well-known studies of conceptual thinking in schizophrenia. Vygotsky, however, was primarily interested in the way children form concepts and in the progressive changes in their concept-forming capacities and strategies. The familiar technique thus takes on new interest when it is seen in this context of concern for the genesis of thought and language.

The translators admit they have taken certain liberties with Vygotsky's original text; they eliminated much polemical and repetitious material, added some references to the technical literature, and tried to simplify and clarify his involved style. Without reading the Russian text one cannot comment on the accuracy of their work, but one can certainly express appreciation for the clear and readable English text they produced. One suspects we have here the rare case of a book that gained something in translation.

In any case, the mind of a profound and thoughtful psychologist shows clearly through the translation. Vygotsky was neither a slavish follower of Pavlov and Bekhterev, dedicated to the materialism and reflexology that dominated Russian psychology at that time, nor an angry young rebel, seeking mentalistic arguments at the opposite extreme. "Vygotsky is an original," says J. S. Bruner in a short biographical introduction. "He transcends, as a theorist of the nature of man, the ideological rifts that divide our world so deeply today." It is good to meet such a man, even if only in the pages of a book. And it is good to think his work will now be better known to the English-speaking public.

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On Reprinting

Genetic Mechanisms in Human Disease: Chromosomal Aberrations. M. F. A. Montague, Ed. Thomas, Springfield, Ill., 1961. xviii + 592 pp. Illus. $19.50.

Only in the last few years has the development of appropriate methods made it possible to examine, in some detail, the chromosomes of cells of human beings. Since 1956 a cascade of papers has all but drowned the casual reader, and they must have revealed, even to the initiated, that many more questions were being raised than answered. The time will soon come, if it is not already here, when a synthesis will be required, a sorting out of available facts, so that new workers can see what the problems are, those not actively engaged in the field can see how it bears on their own work, and even those very close to the field can see where they are going.

In his introduction, the editor, Ashley Montague, states that the book's purpose is to introduce the interested reader to a field that opens up "a com-

pletely new approach to the diagnosis and investigation of many disorders and diseases. . . ." It is his hope that "the book will be found useful by all who are interested in human development." The editor's way of doing this was to gather up 55 previously published papers (by 112 contributors) and to bind these papers, without editorial comment, into an expensive, hard-cover book. The papers themselves vary a good deal in content, literary quality, and usefulness to the student; but a critical review should be concerned not with the quality of the papers themselves but with their usefulness in the context of this book.

It must be said that a patient reader will find here a comprehensive view of this rapidly developing area of human biology. But the editor gives him no help, and the reader might save himself the price of the book by examining back issues of *Lancet* from which 30 of the 55 papers are reprinted. It is difficult to see why some of the papers were included, or what motivated their exact arrangement in the volume. That is, the development of the theme is neither precisely historical nor precisely categorical. If it were historical, Barr's papers, dealing with sex chromatin, should have been placed ahead of those in which the chromosomes were examined. Instead, they appear as papers 13 to 16. If, on the other hand, the arrangement were categorical, one would expect papers 20, 39, 44, and 47 to appear together, since they all deal with patients having XXX chromosome complements. Other papers that deal with a single topic are also scattered through the book, sacrificing, needlessly, the opportunity to provide an arrangement that allows studying the various conditions together, to one that represents the order in which the papers were originally published.

Two of the papers, not including those of Barr which discuss the nuclear chromatin bodies, contain no mention of chromosomal studies at all. Why were they included? Some of the papers are preliminary reports, and quite a few have addenda. This is suggestive of the rapidity with which change occurs in this field, and this, in turn, suggests that some of the papers represent the fluid state of thought at the time they were originally published, rather than a mature judgment made possible only by the passage of time and the accumulation of fact. What this book needs is a paragraph or two accompanying each paper, which gives the reason for including the paper, places it in the context of the development of the field, emphasizes which paths proved to be productive and which did not, brings out the impact of chromosomal aberrations on human biology, and provides the bewildered reader with guidance. If this had been done, the book would probably have been smaller and less expensive, and certainly much more illuminating.

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Cowherd to Ornithologist

Alexander Wilson, Naturalist and Pioneer. Robert Cantwell. Lippincott, Philadelphia, Pa., 1961. 319 pp. Illus. $15.

Robert Cantwell's attractive book holds an enlightening account of the conditions of Scottish life, and of the beliefs held by the society, into which Alexander Wilson was born. I confess I was a little eager to arrive at the parts actually concerned with Wilson, but the preliminary matter about corrupt conditions in Paisley assist the reader to a better understanding of Wilson's life.

The young boy, Alexander, motherless at 10 years, was thrust out to be a cowherd when his father promptly remarried. Young Wilson spent three years roaming the fields and watching the cattle, completely without further opportunity to go to school.

We next see him back in Paisley as a weaver's apprentice, bound at service for another three years, during which he became fascinated with the Scottish poets and embittered by the frightful labor conditions. Wilson was fond of pranks and rhymes, and amused the other boys by reciting poetry to the rhythm of his loom, or he wrote satirical rhymes and take-offs about the townspeople in authority, whom he did not like. His poetry improved but became more bold as he grew older, until the famous piece, *The Shark or Lang Mills Detected,* put him in prison for libelous conduct.

The author skillfully portrays his understanding of this strange talented personality, starved for education and sympathetic friends.

Out of jail, and, for a final gesture, required to burn his poem on the steps of the Tolbooth, Wilson thought only of going to America. He became a peddler and saved every sixpence toward this end. A successful poem which he wrote, "Watty and Meg," was so good it was credited to Robert Burns, the idol of Scotland. This blow to Wilson's pride no doubt helped him to "make it" to America.

The account of Wilson's American experience is remarkably full but not without error in some areas, where Cantwell becomes a little too sure, for lack of correct information, and fails to give credit to his sources. For example, the statement regarding "the occasional scarlet ibis" sent to Wilson by Stephen Elliot seems very doubtful since this species is not yet accepted on the Georgia List of Birds.

There is also a little misinterpretation in the author's account of John Abbot. If Stephen Elliot is one of Cantwell's sources, it seems that his name and the titles of the publications or manuscripts used should be given.

Alexander Wilson, Naturalist and Pioneer is a mine of information, and although it is a beautiful book, it is oversized to the point of inconvenience. Any serious student of Wilson will most certainly want to own this book, preferably in a smaller format, and he will be eager for the source material. A more complete bibliography would make the book much more useful and footnotes through the text would be a boon to scholars.

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Optical Masers

Advances in Quantum Electronics. J. R. Singer, Ed. Columbia University Press, New York, 1961. xvii + 641 pp. Illus. $15.

Once again the Office of Naval Research is to be commended for sponsoring a conference on quantum electronics (the second conference) and for supporting publication of the papers presented. The new and exciting development that took place in the months before this meeting was the optical maser, and many papers are devoted to experimental and theoretical description of this device. In his opening paper, Charles Townes suggests several new fundamental experiments made possible by the optical maser. Several papers