

JEAN VAN HEIJENOORT (1912 – 1986)*

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Jean van Heijenoort was killed in tragic circumstances on March 29, 1986 during a brief visit to Mexico City. To most readers of this volume he was best known as a logician, philosopher, and editor and historian of mathematical logic. But he also had two other quite different careers to which he devoted a good part of his life and energy. In the years between 1932 and 1946 he was a full-time political activist committed to the ideals of Marxism as set forth by Leon Trotsky; and from 1940 until his death, he was an historian and archivist of political history.

Jean van Heijenoort was born in 1912, in Creil, France, in the region of the Oise River. His mother, Charlotte Hélène Baligny was, by all accounts, a remarkably intelligent and resourceful woman whose formal education had been cut short at age eleven when she was obliged to go to work as a domestic. His father Jean Théodore van Heijenoort, was an immigrant from Delft who came to the industrial area of Northern France looking for work and was hired as a design painter in the large safe factory in Creil.

Two events, one historical and one personal, had a profound effect upon van Heijenoort: the World War that began in 1914, not long after his second birthday, and his father's traumatic death right at the beginning of that war. All the experiences of his early years were colored by his having grown up in the immediate vicinity of the battlefields and bombing targets where dying was an everyday thing. His own father's death had an even more directly distressing effect on his emotional state.

Yet these adversities and sorrows did not seem to hamper young Jean's success as a student. In the provincial milieu where almost no one

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went beyond primary school, Jean was recognized as brilliant and encouraged by his teachers and his mother to continue his education. By winning a *bourse complète*, a full scholarship in the regional examinations, he was admitted to the district secondary school at Clermont-de-l'Oise.

After seven years as an *interne* there, enduring the discipline of boarding school life but also "absorbing knowledge", as he used to say, van Heijenoort finished with a double baccalaureate in mathematics and philosophy, a string of prizes for excellence, and a full scholarship, to the Lycée Saint-Louis in Paris.

At Saint-Louis, van Heijenoort was a member of *la classe des taupes*, the group of advanced mathematics students preparing for the École Normale Supérieure. At the same time he became deeply involved in Marxist politics and joined a small but very active Trotskyite organization, the Ligue Communiste. In June 1932, a leading member of the group asked him if he would be willing to go to Turkey to work as Trotsky's secretary, translator, and bodyguard. Trotsky had been in exile there since 1929; van Heijenoort had never met nor even seen him, but his commitment was already so deep that he did not hesitate to accept.

Thus, at the end of his two-year preparatory program at the Lycée, instead of taking entrance exams for the École Normale Supérieure, he left Paris and went to Prinkipo, an island in the Sea of Marmora. The choice, which in the climate of the mid-1980's may seem extreme, was less so in the early 1930's when there was an economic depression, a general feeling of turbulence and anxiety throughout Europe, and deep fears about Hitler's immanent take-over of Germany.

From 1932 until 1939, van Heijenoort lived, worked and traveled with Trotsky in Turkey, France, Norway and Mexico. Ten months before Trotsky's assassination, he left Mexico for the United States to be on his own for a while, but he was still fully committed to Marxism. In New York, he continued to work with the Trotskyite movement as International Secretary of the Fourth International until the end of World War II.

Then came the disillusionment. During the years following the war, for the reasons he gave in the afterword to *With Trotsky in Exile*, van Heijenoort went through the painful process of shedding the beliefs to which he had been so strongly committed. "By 1948," he wrote, "Bolshevik ideology was, for me, in ruins. I had to build another life".

The other life to which he devoted himself for the next forty years was mathematics and mathematical logic. He resumed his studies at New York University in 1945, did a thesis on differential geometry under J.J. Stoker, and was awarded a Ph.D. in 1949. He was then appointed as an Assistant Professor at NYU, where he remained for sixteen years, teaching mathematics and logic.

By the mid-1950's, van Heijenoort's interest had shifted away from classical mathematics, and he took up logic and the foundations of mathematics. He read widely and was largely self-taught in these areas, but he was for a time guided by G. Kreisel who became something of a mentor and also a close and lasting friend. His style, however, was always his own.

Between 1962 and 1964 he taught logic at Columbia University, and in 1965 he accepted the position of Professor in the Philosophy Department at Brandeis University. The move brought van Heijenoort into closer contact with the logicians in the Boston-Cambridge area, notably Burton Dreben, W.V. Quine and Judson Webb, some of whom he already knew from his work on the source book, *From Frege to Gödel*.

Unlike other apostate Marxists, van Heijenoort did not make a sharp turn to the political right. Although, on a personal level, he was decidedly uncommunicative about his past, he did not cut himself away from it. On the contrary, he felt a particular responsibility to transmit what he knew about the history of Trotsky's thought and activity. Without realizing it, he had begun his career as "archivist" when he joined Trotsky in Prinkipo and helped create the documents that would later be part of the great Trotsky collections at Harvard's Houghton Library and the Hoover Institution at Stanford. Among those in Trotsky's service, it was van Heijenoort who was most responsible for the files and most aware of their value to future historians. After Trotsky's death, he was retained by Harvard as a consultant, bibliographer, and expert in special acquisitions. More recently, in connection with the fortuitous discovery of letters and documents missing since the mid-1930's, van Heijenoort was called upon by Hoover to explain and "decode" the letters between Trotsky and his son, Lev Sedov.

Revolutionary history was only a small part of what van Heijenoort knew; he was well informed on all political subjects and movements, old and new. In the year before he died, he was reading Thucydides with great appreciation and planning an essay comparing Thucydides' view of history

with Trotsky's. Beyond politics, he read widely and was knowledgeable in many areas. He also had a strong interest in the visual arts and was very receptive to anything new or different. He loved movies and would talk about films at length.

The news of van Heijenoort's untimely death came as a terrible shock to his many friends and colleagues. He was esteemed as a gentle man of high integrity and deep loyalties, not given to personal revelation except to those closest to him. His wide range of interests and broad knowledge brought him into contact with people in many different fields, and although he described himself as shy, he was far from anti-social. He was always interested in meeting new people, as well as seeing old friends. Occasionally, he would shed his everyday reserve and become surprisingly expansive. It was always a treat to see him in that mood. He is and will continue to be deeply missed and mourned.

Jean van Heijenoort's most important scholarly contributions are in the history and philosophy of logic. In the historical work, as in the political and archival work mentioned above, his natural gifts as a linguist stood him in good stead. He had learned Latin, Greek and German in school and taught himself Russian before going to Turkey to work with Trotsky in 1932. Later, of course, he was to learn Spanish and English, as well as a smattering of other languages.

His major historical contribution is the source book in mathematical logic, *From Frege to Gödel* (published in 1967), of which he was the editor, on which he worked for the major part of a decade. The volume consists of a selection of important and representative articles, or extracts of such, in the period 1879-1931 (a crucial one for modern logic). All the foreign-language pieces are carefully translated into English, and for each article an introductory note provides information concerning its background, contents and further influences. In the translations van Heijenoort was assisted primarily by his friend and former student, S. Bauer-Mengelberg, while with the introductory notes he was assisted by his colleagues B. Dreben, C. Parsons, W.V. Quine and H. Wang.

The *Source Book* has attained the status of a classic. In the words of W.V. Quine, its publication "was second only to what [Alonzo] Church had contributed in molding the *Journal of Symbolic Logic*". Noted for its

impeccable scholarship, it has been of great value in making a body of primary material (formerly accessible only to specialists) available to a wide audience of both professionals and students in logic and neighboring fields.

In 1968, soon after the publication of the *Source Book*, van Heijenoort produced a French edition of the logical works of Jacques Herbrand. (An English edition was provided later by W. Goldfarb.) Van Heijenoort clearly had a special interest in and attachment to Herbrand; just the year before his death he became engaged in a new editorial project, under the sponsorship of the French government, to produce a complete edition of Herbrand's logical and mathematical work.

When, at the beginning of 1982, the time and circumstances seemed propitious to undertake a complete edition of the works of Kurt Gödel, van Heijenoort was enthusiastic about the project and agreed to assist as co-editor. In many respects the plan for this work took van Heijenoort's source book as a model, and his care and standards were exercised throughout. His meticulous attention to detail, although sometimes exasperating, also had many beneficial effects.

From 1982 on, van Heijenoort lived mainly at Stanford and during that period he was deeply engaged in the work on Volumes I and II of Gödel's works. (Volume I appeared before his death and Volume II appeared in 1990, though it was largely completed by 1986). Van Heijenoort had also begun work on some unpublished manuscripts of Gödel, intended for Volume III. Because of his special interest in Herbrand, he was particularly excited by the discovery in Gödel's *Nachlass* of the 1931 correspondence, long believed lost, between Herbrand and Gödel, an exchange that led to the fundamental notion of general recursive function.

Some of the papers and notes that van Heijenoort wrote over the years on logic and its philosophy have been reproduced in his *Selected Essays (1985)*; these are either directly historical or historically informed. Most interesting among the essays of the former kind is his lengthy paper on Herbrand's logical work. A recurrent theme in other papers is that of *logica utens* vs. *logica magna*, i.e. logic as a tool for use in various specific situations or structures (Schröder, Löwenheim, Hilbert, etc.) vs. logic as a universal all-encompassing system (Frege, Russell, etc.); van Heijenoort

allies himself with the former tendency and against the latter. An early expression of this is to be found in his paper *Logic as calculus and logic as language* (1967), and a more mature one in the paper *Absolutism and relativism in logic* (written in 1979 but first appearing in his *Selected Essays*). The more philosophical of his essays are concerned with such topics as Frege's notion of sense, the logical and philosophical problem of vagueness, and the relation of set-theoretical semantics to problems of natural language. Typically these papers are directed to a few significant points, but contain along the way many *aperçus*. The style is unhurried but succinct, precise but unfussy, clear and graceful; the point of view is definite, but the perspective is balanced. The reader who discovers these papers in the *Selected Essays* will become aware of a side of van Heijenoort and the value of his work for our subject that has not been sufficiently nor widely enough appreciated. These essays make abundantly evident his many excellent qualities which, in their combination, made him unique.

CURRICULUM VITAE

Jean van Heijenoort (July 23, 1912 – March 29, 1986)

1946	M.A. in mathematics, New York University.
1949	Ph.D. in mathematics, New York University.
1946 - 1965	Instructor, Assistant Professor, Associate Professor of Mathematics, New York University.
1962 - 1964	Visiting Professor of Philosophy, Columbia University.
1965 - 1977	Professor of Philosophy, Brandeis University.
1971	Visiting Professor of Philosophy, Stanford University (one term).
1977 - 1986	Emeritus Professor of Philosophy, Brandeis University.

Books and monographs.

Editor of *From Frege to Gödel: a source book in mathematical logic, 1879-1931*, Harvard University Press, 1967 (4th printing 1981).

Editor of *Jacques Herbrand, Écrits logiques*, Presses Universitaires de France, 1968.

Editor of *Frege and Gödel: two fundamental texts in mathematical logic*, Harvard University Press, 1970.

El desarrollo de la teoría de la cuantificación, National Autonomous University of Mexico, Mexico City, 1975.

With Trotsky in exile: from Prinkipo to Coyoacán, Harvard University Press, 1978.

Introduction à la sémantique des logiques non-classiques, Collection de l'École normale supérieure de jeune filles, No. 16, 1979.

Editor of *Léon et Natalie Trotsky, Correspondence 1933-1938*, Gallimard, Paris, 1980.

Hacia una explicación de las entidades lógicas, National Autonomous University of Mexico, Mexico City, 1984.

Selected essays, Bibliopolis, 1985.

Co-editor with Solomon Feferman, John W. Dawson, Jr., Stephen C. Kleene, Gregory H. Moore and Robert M. Solovay of *Kurt Gödel, Collected works, Volume I, Publications 1929-1936*, Oxford University Press, 1986, and *Volume II, Publications 1938-1974*, Oxford University Press, 1990.

Papers.

1952 On locally convex manifolds, *Communications of Pure and Applied Mathematics* 5, 223-242.

1967 Logic as calculus and logic as language, *Boston studies in the philosophy of science* 3, 440-446.

1974 Subject and predicate in Western logic, *Philosophy East and West* 24, 253-268.

1977 Set-theoretic semantics, in *Logic Colloquium '76*, R.O. Gandy and J.M.E. Hyland (eds.), North-Holland Publishing Co., 183-190.

1977a Sense in Frege, *Journal of philosophical logic* 6, 93-102.

1977b Frege on sense, *ibid.*, 103-108.

1982 L'oeuvre logique de Jacques Herbrand et son contexte historique, in *Proceedings of the Herbrand Symposium, Logic Colloquium '81*, J. Stern (ed.), North-Holland Publishing Co., 57-85.

1985 Frege and vagueness, in *Frege synthesized: Studies of the philosophical and foundational work of Gottlob Frege*, L. Haaparanta and J. Hintikka (eds.), D. Reidel Publishing Co., 31-45.

1985a Jacques Herbrand's work in logic in its historical context, English translation, with emendations of (1982), in *Selected essays*, J. van Heijenoort, Bibliopolis, 1985, 99-121.

1987 Système et métasystème chez Russell, in *Logic Colloquium '85*, The Paris Logic Group (eds.), North-Holland Publishing Co., 111-122.

Note. All of the above papers, except (1982) and (1987) are reproduced in the *Selected essays*; in addition, that volume contains seven other previously unpublished notes and essays.