THE MESSAGE OF L. V. KANTOROVICH

As was explicitly stated in Alfred Marshall's "Principles of Economics," this science leaves no room for long chains of deduction. At the same time, there is no gainsay in ascribing the beauty and power of mathematics to the axiomatic method that, in its most cherished although unattainable form, consists in deriving the sought truths via arbitrarily lengthy sequences of formal implications.

This conspicuous discrepancy between economists and mathematicians in mentality hinders their mutual understanding and cooperation. The resultant partitions in ratiocination, invisible but ubiquitous, isolate the economic community from its mathematical counterpart and vice versa.

It takes no pains whatsoever to entice an economist in making acquaintance with the original papers of a Nobel Prize Winner in his field. It is also simple to allure a mathematician by the authentic exposition of the Newton-Kantorovich method, the Hahn-Banach-Kantorovich theorem, the Kantorovich positive kernels, etc. The underlying explanation is straightforward and immediate: pros and fans are mad on their attaboys.

Were the recognition of this trite status quo sufficient, the elaboration of the Selected Works would be a banal sinecure. In point of fact, a trivial pursuit along the separation lines (though characteristic of linear programming) is in absolute contradistinction to Kantorovich's views on interaction between mathematics and economics. For, most of the precious gems constituting his legacy convey the message: "Mathematicians and Economists of the World, Unite !"

L. V. Kantorovich himself could participate only at the initial stages of planning and framing the present collection. At that time he had been doomed but was active even exuberant and full of productive ideas. Tortured by cancer in his last hospital, L. V. Kantorovich discussed the selection of works and the general principles of composition for the present publication.

It still gives me a blended feeling of great pleasure and deep sorrow to recall all the vivid conversations with Vsevolod, the son of L. V. Kantorovich, and Professor J. V. Romanovskiĭ, his son-in-law, constant participants. L. V. Kantorovich had suggested that two commentaries on the state of the art should be appended to every article chosen, one — by a modern authority in the respective subject and the other — by himself. His intention was to reconstruct the historical background and, moreover, to present his own outlook on the current state of affairs and vistas of the topic in question. He had also proposed that J. V. Romanovskiĭ edit the works on linear programming and related economic papers and Professor M. K. Gavurin together with me, the mathematical volume. It was understood from the very beginning that my duty would encompass theoretical subjects (set theory, functional analysis, etc.) and M. K. Gavurin would deal with the articles devoted to applied mathematics. We had begun fulfilling the scheme thoroughly but all agog with haste and fear. Our premonition was right: in two or three months L. V. Kantorovich passed away. Soon M.K. Gavurin was destined for the same...

Fortunately, foreseeing the inevitable and struggling to the bitter end, L. V. Kan-

torovich had succeeded in dictating a vast portion of his commentary that finally took the form of a report presented to the Moscow Mathematical Society. This report titled "My path in science" serves as Kantorovich's own introduction to the present edition.

At the final stage of composing the mathematical volume of the Selected Works, the decision was taken to divide it into two parts. The first is mainly devoted to early works on descriptive set theory and ordered vector spaces; the second comprises noticeable papers in applied functional analysis. To put it frankly, it is impossible to base the division on some solid but separated grounds, for the utmost intrinsic unity is characteristic of L. V. Kantorovich's contribution. Even now, although a half-century has already elapsed, new features are revealed demonstrating ingenious ideas deeply rooted in his discoveries. It is worth emphasizing that L. V. Kantorovich's research in set theory and functional analysis turns out to be linked up with the brand-new topics of logic and foundations such as Boolean-valued models and recursion theory.

I. M. Gelfand wittily pointed out that the best treatise on the Kantorovich articles should be composed of the articles themselves. As a matter of fact, the works of a scholar bear material witness to the substance of his contribution towards science. Greater deeds need less ado. With the observation in mind, all the introductory words and comments inserted in this volume are kept at a minimum, being intended only for clarifying and emphasizing a few relevant details.

Those who knew L. V. Kantorovich closely are perfectly aware that his message to future generations extends far beyond the above slogan, the present Selected Works and whatever forthcoming collections. The natural disgust at idolizing and worshipping would-be and genuine celebrities notwithstanding, we are impelled to concede that L. V. Kantorovich was a genius. All standard tests corroborate the assertion: Genius has two great ideas; Genius and Paradox are boon companions; Genius takes troubles constantly; etc.

L. V. Kantorovich's life was tightly woven into the motley tapestry of the tumultuous twentieth century and especially into the historic rise and fall of the Soviet Union. It needs a sharper pen to delineate all twists and turns of L. V. Kantorovich's unparalleled journey under the Sun. I can only invite the reader to learn more about this outstanding scholar and personality.

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