Leonid Vitalyevich Kantorovich was an early twentieth century Soviet mathematician remembered for his economic work on optimizing the allocation of scarce resources. A Doctor of Mathematics by the age of eighteen, he soon became a professor and began contributing to the field of economics. His education had involved both theoretical and applied research, causing him to delve further into applied problems during his early career.

While working as a consultant at a laboratory, he was required to solve the economic problem of maximizing productivity through the distribution of raw materials. Through consideration of the restrictions, Kantorovich developed the basis of linear programming. He reduced the situation to maximizing a linear function on a convex polytope. Given some time, he noticed that his solution can be generally applied to many classes of problems. Despite his Soviet background, Kantorovich's economic views deviated from the orthodox Marxist norm as he demonstrated that economic allocation can be represented as a maximization problem. He famously wrote *The Best Use of Economic Resources*, in which he discussed the necessity of using prices to account for scarcity in efficient resource allocation. Kantorovich's contributions to optimization awarded him the Nobel Prize for Economics in 1975.

At the same time, American mathematician George B. Dantzig was developing a core algorithm which would lead to him being considered the inventor of linear programming. Even though it took Dantzig several years to receive his doctorate, during which he put his studies on hiatus to serve in the Air Force, he had solved notorious statistical problems as a graduate student. The year following his graduation, he famously developed the simplex method of optimization.

Interestingly, he contrived the term linear programming from a military term for plans and schedules. An unusual early instance in which Dantzig applied the simplex method was when he was thinking of how to eat an adequate diet at minimum cost. After spending time in corporate research, he took up teaching at Berkeley and wrote *Linear Programming and Extensions* in 1963.

For his research, Dantzig was awarded many honors, among which was the National Medal of Science and the Von Neumann Theory Prize in Operational Research, the latter being named after Hungarian polymath John Von Neumann. Neumann was in contact with Kantorovich during his study of partially-ordered spaces. Having developed Game Theory and known for introducing mathematical models in economics, he was also visited by Dantzig. Dantzig showed him the algebraic and geometric models of linear programming. Proposing that the linear programming problem was equivalent to Game Theory, he gave Dantzig the idea of duality and taught him about Farkas' Lemma.

Kantorovich, Von Neumann, and Dantzig are thought to be the founding fathers of the theory of linear programming. Given the immense applications in the fields of modern computing, this model has changed the use of mathematics in modern society.

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