



Operations Research

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Editorial

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EDITORIAL

THOMAS L. MAGNANTI

This issue marks an important moment for operations research, both as a profession and as a journal. Let me take this occasion to share some views on the current state and future prospects of the field, and on the Journal's role as the namesake publication of the profession.

The death this past fall of Philip M. Morse, the father of operations research in the United States, deeply saddened our professional community. Professor Morse founded the Operations Research Society of America and was its first president. He also founded one of the first academic centers in the field, the Operations Research Center at MIT, and was a leader in a wide variety of research endeavors and administrative capacities, both as a physicist and as an operations researcher.

Professor Morse's achievements, and those of the profession that he helped found, deserve celebration. In the last four decades, operations researchers have developed such important areas of inquiry as mathematical programming, decision analysis, inventory control, production planning, and marketing and transportation science. We have joined with allied professions in nurturing the evolution of game theory, stochastic processes, applied statistics, reliability theory and several other specialties. Even as ORSA was born, operations research had become central to the transformation taking place in industrial engineering, and was becoming a disciplinary pillar of the emerging schools of business. Our presence in the academic world is now widespread. Universities in the United States and abroad teach and conduct inquiries in operations research in business schools and engineering schools, and in such far-ranging endeavors as agriculture, architecture, computer science, economics, mathematics, government studies and public policy. In the sheer range of its impact over the past 40 years, operations research has been matched by very few fields in the number and variety of specialties that it has engaged and informed.

We have also had an enormous impact on practice. In the business world, operations researchers have fundamentally affected the ways in which individuals

and organizations think about finance, marketing, logistics and manufacturing. We have also had a significant impact on public policy, and we have influenced technological advances and engineering design in fields as diverse as communications, computer networking, energy planning and natural resource management.

These are achievements we can point to with pride. We can also admire the foresight and dedication of those individuals who made them happen. This past year, in addition to Philip Morse, two other distinguished pioneers of the profession—Murray Geisler and Jacinto Steinhardt—died. Moving tributes by John Little and George Dantzig in *OR/MS Today* (Volume 12, No. 5) and by Joseph Engel in *Phalanx* (Volume 18, No. 2) describe these individuals and their many contributions, and highlight their importance in developing and nurturing the field. Their deaths remind us of a significant fact: operations research is no longer young. When ORSA was founded, in 1952, nearly all of today's members were attending school or were not yet born. (Even though Philip Morse was so important to operations research here at MIT, I had the pleasure of meeting him on only a few occasions.) Many of us in the profession are now in a position similar to second generation immigrants in a new country. Although we retain some knowledge of our heritage, we experience it largely vicariously. Our capacity to reinforce our early triumphs may depend upon our ability to keep in touch with our roots while looking ahead with the openness characteristic of our forefathers.

In the course of healthy introspection, we often overlook our many accomplishments, and neither we nor the rest of the world always recognize all that operations researchers have achieved. All of us need to work to improve our recognition by others and, it seems to me, to recapture our enthusiasm for the profession and its future. Rather than polarizing around practice or theory, we should treasure our ability to contribute so much to both domains, and recognize the ability of operations research theory and practice to enrich each other. We also need to respond to

changes in the world around us. Artificial intelligence, decision support systems, expert systems and the widespread availability of microcomputers and greatly increased computing power have generated excitement and opportunities. So has a heightened awareness of the challenges in manufacturing and the need for improved product quality. At the same time, the service sector continues to grow in importance. We undoubtedly can contribute much to these developments and can benefit by the possibilities that they offer.

The changes you see in this issue of the Journal are intended to respond to these challenges, and to fulfill the objectives expressed in my editorial of three years ago when we formed the present Editorial Board. *Operations Research* should be the centerpiece journal of the profession, one bringing together practice and theory. It should remain archival and scholarly, but should be readable. Although the technical content of every article need not be easily accessible to everyone, each reader should be able to understand the importance of the papers we publish; moreover, all our readers should find something of value in every issue.

We have broadened the content of the Journal to appeal to a large community of OR practitioners and researchers. "OR Practice," a series of applications-oriented papers, will be published as a regular feature. "OR Forum" will include a new series of columns, "Perspectives on . . .," to discuss trends, emerging lines of inquiry and future directions for the profession. These articles will be easily accessible to our readers and inform them of exciting new results.

A new opening section, "In This Issue," will preview the content of each issue, highlighting connections with OR, with topics arising in business and society, and with important research and application domains. This information will give our readers a better understanding of the Journal's overall purpose, of each paper's significance, and of the relevance of the Journal to practice and theory. The Journal will also include a "Contributors" section that provides biographical information about each author. This material will permit our authors to describe the impetus for their own work and the links between their article and their professional interests.

In addition, in response to current opportunities,

we are now working on two special issues: one on manufacturing, and another on decision support systems. We have also added a second Area Editor, Gabriel R. Bitran, in Production and Scheduling, Inventory, and Materials Management, to help us seek out more new material in manufacturing.

In concert with these changes in content and organization, we have also made the most major change in the format of the Journal since its inception in 1952. Our new dual column format, typeface, paper, and larger page size are all intended to improve the Journal's appearance and readability, and to take advantage of new printing technologies. In addition, in each issue, our new cover will feature a figure taken from a current article, and will, therefore, over time, illustrate the range of the Journal's coverage.

The continued success of the Journal and the profession it represents depends foremost on the sustained vitality and vision of the OR community. The Journal is committed to fostering these qualities and seeks your help. We are anxious to learn of your reactions to the Journal's new content and form, and we welcome both your contributions of subject matter and your advice on how to meet the challenges before us.

Some Special Thanks. Several individuals have contributed to the Journal's new content and format. Many members of our Editorial Board and leaders of the Society have lent their support. An *ad hoc* committee to review the Journal, chaired by William P. Pierskalla, suggested several of the changes we have adopted. Jan Karel Lenstra of our Editorial Board provided invaluable advice on typography and overall design. Virginia Tan, a highly respected graphic designer, is responsible for the new look and layout of the text, and Neal T. Jones of the Syene Press, New York City, designed the cover and synthesized the many design elements. Sally Waitkins, our Managing Editor, did a superb job of coordinating the project. The staff of Waverly Press, our printer, were helpful at every turn, and very graciously changed some of their operations to accommodate our desires. Each of these individuals has my most sincere gratitude; their professional efforts have made reviewing and modifying the Journal a most enjoyable experience.

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