Methods of Interregional and Regional Analysis, edited by Walter Isard, Iwan Azis, Matthew Drennan, Ronald Miller, Sidney Saltzman, and Erik Thorbecke. 1998. Aldershot, U.K. and Brookfield, Vermont: Ashgate. 490+xxiii. $29.95 (paper).

Regional scientists may remember the 1980s comedy trilogy by Universal Studies, *Back to the Future*, which featured Marty Mcfly, a naïve happy-go-lucky teenager, and his travelling companion, Doctor Emmett Lanthrop Brown, a wild-eyed inventor who wanted to create something that can benefit society and who had spent most of his life building a contraption that could do the impossible. Doc Brown's creation was a fusion driven, "flux capaciter" that was housed in a Delorean sportcar and transported its occupants backward and forward in time. The duo used it to careen into the past (1956), a relatively simple age, and into the future (2015), an era filled with high tech gizmos such as hovering skateboards, hydration ovens, voice-controlled tv-sets, and self-lacing shoes.

Readers of Walter Isard's new book *Methods of Interregional and Regional Analysis* may sometimes get the sensation they are stepping into a regional science time machine with Doc Brown. Professor Isard is regional science's brainiest guy. He invented the field, scrapped together the Regional Science Association from interdisciplinary parts in 1954, and continues to tinker away at regional models well into his golden years. Therefore, if anyone knows from whence the field came and where it will go, it is he. Like Doc Brown's flux capacitor, the current *Methods* constantly points backward and forward in time. In the introduction, Isard alludes to the relatively simple age of the 1950s when methods focused on single regions, were sometimes strongly descriptive, and were often hindered by computational costs. The future, he argues, will be characterized by computerized, multiregional, complex simulation models that endeavor to unravel the complex tapestry of interregional interconnectedness. Doc Brown's "fusion" was the stuff that powered the flux capacitor, but Professor Isard's "fusion" is the glue that melds together the best features of each of

the major regional science methods into one Mother-of-all-Models. Finally, Isard too is involved in a grand project to create something of lasting value to mankind. Regional science is not just an enterprise that allows researchers to make a quick commercial buck by selling expertise to firms and policymakers but rather a body of knowledge that will be instrumental in reconciling parties and making peace. It provides the tools needed to analyze complex social processes, measure the stakes of competing interests, and resolve conflicts that inevitably arise over the allocation of scarce resources.

In a way, *Methods* could be viewed as an addition to Isard's own classic trilogy, *Location and Space Economy, General Theory*, and *Methods of Regional Analysis,* but it is probably better represented as an updated *Methods of Regional Analysis*. Like the original, it is a multiauthored work. This time around the contributors are Cornell and University of Pennsylvania-based researchers, including Iwan J. Azis, Matthew Drennan, Ronald Miller, Sidney Saltzman, and Erik Thorbecke. It is much shorter than the original *Methods* (490 versus 784 pages), describes techniques that were unknown when the original was written, and omits the more basic methods covered in the original (see table 1 for a summary of the similarities and differences in topic coverage). In the interests of space, the voluminous endnotes customary of Isardian prose are scaled back a bit in this edition and chapters remaining from the original are truncated.

Although the book is about regional science methods, readers should be forewarned that they are likely to be disappointed if they are looking for a primer on regional planning methods. A few chapters are written in a cookbook expository style that would satisfy practitioners. However, the emphasis is squarely on complex, expensive, integrated, interregional models of which few practical, working applications currently exist and the details on how one might build such models from scratch consequently often remain to be worked out by succeeding generations.

Table 1. Regional Science Methods then and now.

Method covered	1960	1998
Population projections	Yes	No
Migration models	Yes	No
Economic base models	Yes	No
Income accounts	Yes	No
Comparative cost analysis	Yes	Yes
Mathematical Programming	Yes	Yes
Gravity Models	Yes	Yes
Input-Output	Yes	Yes
Econometric modelling	No	Yes
Social Accounting Matrices	No	Yes
Computable General Equilibrium	No	Yes
Microsimulation	No	Yes
Geographical Information Systems	No	Yes
Fusion/synthesis	Yes	Yes

Three of the book's chapters, "locations analysis for industry and service trades" (chapter 2), "programming and urban complex analysis," (chapter 5), and "gravity and spatial interaction

models" (chapter 6), are drawn substantially from the earlier edition. They are, largely, abbreviated treatments of the earlier book with some new material concerning recent methodological innovations such as constrained gravity models. Many of the tables and charts are reproduced from the earlier book and citations generally harken back to the 1950s, good indications that the areas have remained relatively dormant during the past forty years.

The longest chapter (chapter 3), spanning some 93 pages, covers input-output modeling. Written by Ronald Miller, the chapter covers much of the same terrain as *Input Output Analysis: Foundations and Extensions*, a book that he co-authored with Peter Blair, but manages to do so in only a fraction of the space. A comparison of the original *Methods* with the new version confirms the rapid progress made in the field. The original contains a mainly verbal description of input-output and constantly reminds readers of the methodological and data limitations that hinder regional modelling. The new chapter formalizes input-output operations via matrix algebra, describes the numerous non-survey and partial survey methods available to sidestep data problems, and discusses commercial software products available. Thanks to these developments, regional input-output models can be created for small areas with relative ease.

Another major chapter (chapter 4) by Mathew Drennan recounts the ways in which econometrics are used in regional science. The presentation is similar to a standard econometrics theory textbook. It describes the classical linear model, outlines violations of the classical linear model, and presents diagnostic tools and corrective procedures for dealing with these violations. Although the presentation includes cogent examples of how econometric diagnostics are applied to specify regional models, the particular methodological contributions of regional scientists are not elaborated upon. Innovations in the areas of simultaneous equation econometric models of state and local economies and spatial econometrics, in particular, receive only a couple of pages of attention.

The remainder of the book is devoted to methods that have been utilized in national-level studies but only infrequently in a regional setting. Therefore, the regional science literature is quite sparse and relatively new. Thorbecke provides a thorough discussion of Social Accounting Matrices (SAMs) in chapter 7 and details on how to build regional and interregional ones. However, given the daunting data requirements, it is not surprising that "very few integrated interregional SAMs have been built so far." (p. 297) The next chapter (8) on Computable General Equilibrium (CGE) modelling is much less a description of how CGE models work than it is a discussion of how space and distance might be introduced in a way to reveal the limitations of conventional international trade theory. Chapter nine, on "interregional spatial microsimulation," describes some relatively new household microsimulation models introduced in a recent monograph of the European Research in Regional Science series. However, it stops shy of commenting on the whole panoply of new methods that can be used in the computer simulation of societies (e.g., artificial neural networks, cellular automata, expert systems, genetic algorithms, artificial intelligence) and are likely to engage the attentions of regional scientists in the coming decades.

In the concluding chapter 10 ("New Channels of Synthesis"), readers learn to what purpose the various models and methods are to be used, and it is not for such mundane tasks as small area planning. Rather, the various methods are to be combined or fused into one mega-model that combines the best features of each method and permits socioeconomic impacts to be traced throughout a system. But, even this task is ancillary to an ultimate purpose, gaining insight into how exogenous events affect the shares that regions, industries, and individuals receive. Thus, the book concludes with an introduction to Conflict Management Procedures (CMPs) and a subtle pitch for Peace Science, Professor Isard's other great love, and one which has engaged much of his attention during the past 30 years.

The research agenda that Professor Isard lays out is a challenging one. Even with the considerable computational enhancements that have accompanied the "computer revolution," mega-models cost mega-bucks and involve mega-time. Therefore, it seems unlikely that the superlative methodological fusion that Professor Isard envisions will be achievable by, say, 2015 when Doc Brown was said to be zooming around in his levitating Delorean time machine. Though one can point to models that combine two and perhaps three of the models in rudimentary ways (REMI, for instance, is an input-output, econometric model with some CGE features), the work is formidable.

So, what in finale can be said about the new *Methods* and how should it be used? Although Regional Science is bursting at the seams with journals and edited volumes of proceedings and papers, only occasionally does anyone take the time to systematize and catalog the accomplishments of the discipline in book form and make them accessible to the next generation of scholars. One senses that there is a huge pent-up demand for such things, particularly current books that can serve as core textbooks for graduate-level courses in regional analysis. The layout, coverage, and content of the new *Methods* is very appealing. Although it bears the imprint of a first edition book (partly due to some rushed copyediting by the publisher), it is one that regional scientists will want to have on their bookshelves for reference purposes and use in the classroom. Perhaps, its greatest value though lies in what it can do for the young Marty McFlys who are still undecided what the regional science discipline has to offer them. The book does more than merely catalog past accomplishments. It steers a visionary path into the future and identifies some exciting methodological developments that remain to be done over the coming decades. As is always the case when Professor Isard is behind the wheel, new discoveries can be made by dropping comfortably into the passenger seat, leaning towards the driver, and asking "Tell me Doctor. Where are we going this time?"

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