

# **Spatial Analysis in Rural Sociology**

**Paul R. Voss**

**Department of Rural Sociology  
University of Wisconsin-Madison**

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# Main Points:

- Rural sociologists have always been interested in space
- Rural demography could easily be re-named “spatial demography”
- But... rural sociologists have been especially slow to incorporate recent spatial modeling developments into their research

# Sub-Points (Questions)

1. Early (accessible) literature alerting social scientists to the importance of space dates from, perhaps, the early 1960s. The formal *statistical literature* dates at least from the 1930s. So... ***why*** have these ideas (and the associated analytical tools) entered our own literature (and our analyses) so recently?

Otis Dudley Duncan, Ray P. Cuzzort,  
and Beverly Duncan. ***Statistical  
Geography: Problems in Analyzing  
Areal Data.*** (Glencoe, IL: The Free  
Press, 1961)

# Summary Slide

- Sub-Points (Questions)

# Sub-Points (Questions)

2. Can we identify some of the specific roadblocks that have slowed the diffusion of these ideas (and tools) into the discipline of Rural Sociology?

# Outline

- Comment on the status of “space & place” in Sociology & Rural Sociology
- Argue the situation is not as bleak as sometimes portrayed

“Recent years have seen a tremendous increase in the application of geographic information systems and spatial analysis in the social sciences....”

Luc Anselin

“Spatial effects in econometric practice in environmental and resource economics”

*American Journal of Agricultural Economics* 83(3), 2001 p. 705





**My Hero**

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# Outline

- “Space” in Sociology & Rural Sociology
- The situation is not as bad as sometimes portrayed
- Rumininate about why the diffusion of formal spatial econometric modeling is finding its way into Rural Sociological research sooo slooowly

# “Space” in Sociology

“[A full appreciation of space] remains peripheral to the sociology curriculum, reflecting its poorly specified place in sociological theory and research.... Sociology, despite its deep stake in understanding spatiality, has been inconsistent in its efforts to analyze this component of social life, and has made little forward progress in systematically incorporating it into its central projects.... Space and place are still struggling to find their voice in sociology.”

Ann R. Tickamyer

“Space matters! Spatial inequality  
in future sociology”

*Contemporary Sociology* (November, 2000) p. 1

# “Space” in Sociology

continued

“...[U]ntil relatively recently, sociologists studying stratification in the United States neglected and (to some degree) resisted consideration of space. Insofar as stratification is at the theoretical core of sociology, this fact ensured that the discipline itself would remain largely aspatial.”

Linda Lobao and Rogelio Saenz

“Spatial inequality and diversity  
as an emergent research area”

*Rural Sociology* 67(4),2002, p. 497

# “Space” in Sociology

continued

“Social historians study...phenomena which take place in geographical space, yet ‘space’ rarely enters historical discourse explicitly as an analytical construct. ...[I]t is unfortunate that almost all of our efforts have gone toward recognizing the significance of time, to the relative neglect of space.”

Glenn Deane, E.M. Beck & Stewart E. Tolnay

“Incorporating space into social histories: How spatial processes operate and how we observe them.”

*International Review of Social History* 43(1998) p. 57

# “Space” in Sociology

continued

“I am a victim, perhaps, of trained incompetence in a discipline that cultivates statistics and words as a means to grasp the social. Sociologists could become more adept with maps, floor plans, photographic images, bricks and mortar, landscapes and cityscapes, so that interpreting a street or forest becomes as routine and as informative as computing a chi-square.”

Thomas F. Gieryn

“A space for place in sociology”

*Annual Review of Sociology*, 2000, pp. 483-4

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# “Space” in Sociology

continued

“Sociological studies sensitive to the issue of place are rarely labeled thus, and at the same time there are far too many of them to fit in this review.”

Thomas F. Gieryn

“A space for place in sociology”

*Annual Review of Sociology*, 2000, pp. 483-4

# “Space” in *Rural Sociology*

**% of Articles Having a “Spatial” Orientation  
*Rural Sociology* 1936 - present**

<b>Vol. nos.</b>	<b>% w/ “spatial” orientation</b>
1-10	23
11-20	18
21-30	14
31-40	16
41-50	16
51-60	14
61-pres.	13



# “Space” in Sociology

continued

- Religious affiliation and church participation
- Migration analyses
- Settlement patterns
- Residential segregation
- Social & economic inequality
- Property tax structures & government expenditures
- Int'l politics, competition, exports & trade
- Election studies
- Land price variation; distance to market
- Epidemiology, health & disease
- Theory of competitive pricing
- Crime analyses
- Regional inequality
- Adoption – Diffusion models
- Community studies
- Human ecology; Urban sociology
- Environmental sociology
- Rural sociology

# In Summary...

- Some sociologists, appropriately, are calling for more attention in our science to issues of space & place.
- But, in so doing, they sometimes overstate their case and disregard the very long and rich tradition of theorizing and conceptualizing space & place as the settings for social action and interaction.
- Sociologists and Rural Sociologists, in particular, have long analyzed data aggregated to traditional spatial geographic units.
- Many of the critics mistake the slow adoption by our colleagues of formal spatial analytic modeling [true] with a general disregard for the importance of space in sociology [not true]

# Does it really matter?

## It matters!

“Although the literature is replete with documentation pointing out ***serious inferential consequences*** attributable to a disregarding of spatial dependence, overlooking or ignoring this latent dependence more often than not is what is done.”

Daniel A. Griffith

“Which spatial statistics techniques should be converted to GIS functions?”

M.M. Fischer & P. Nijkamp (eds.) *Geographic Information Systems, Spatial Modelling, and Policy Evaluation* (Springer, 1993), p. 7

# **So, how are we doing in Rural Sociology?**

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# AGRICULTURAL ECONOMICS



The Journal of the International  
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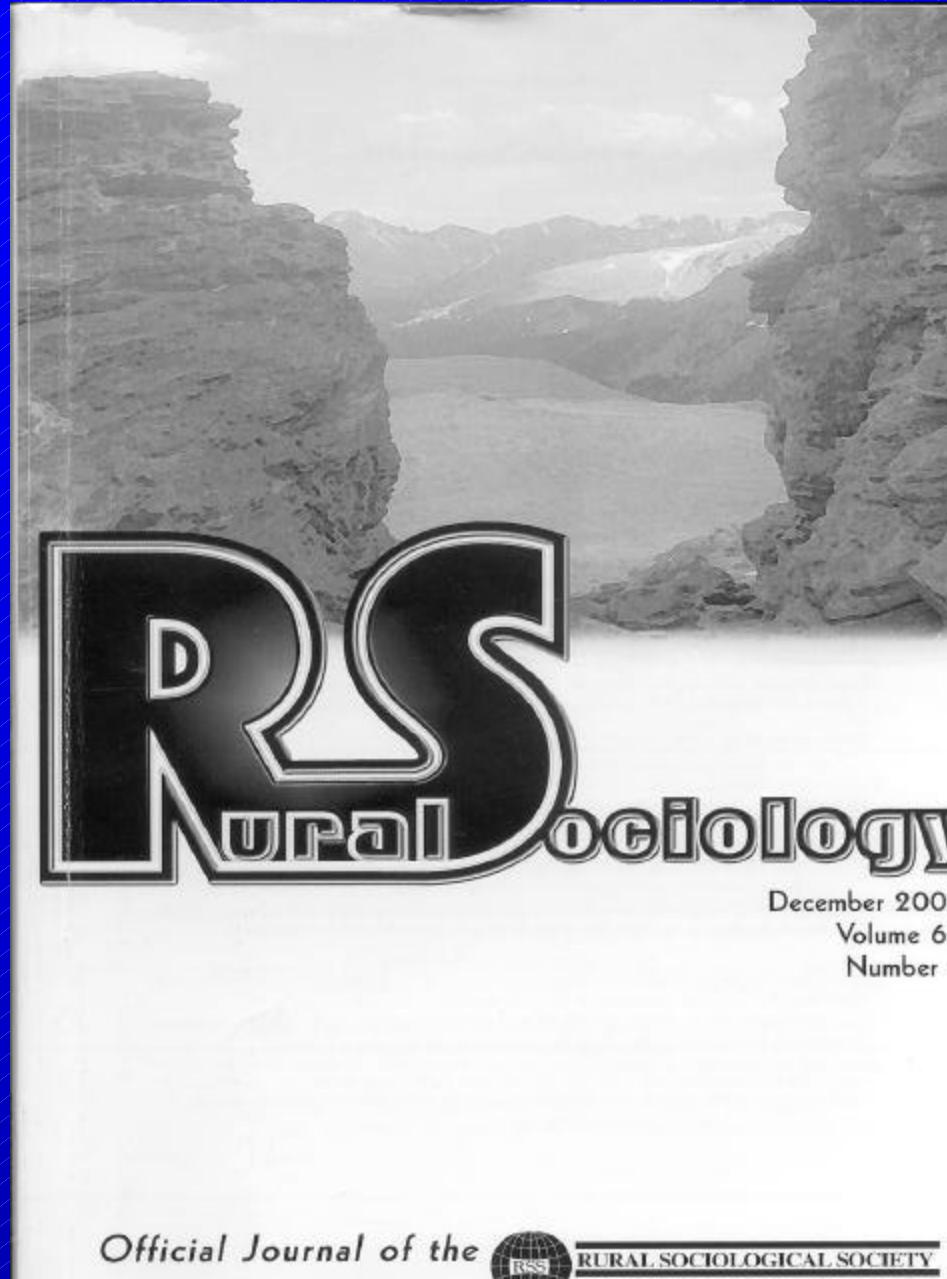
Special Issue

Spatial Analysis for Agricultural Economists:  
Concepts, Topics, Tools and Examples



Elsevier

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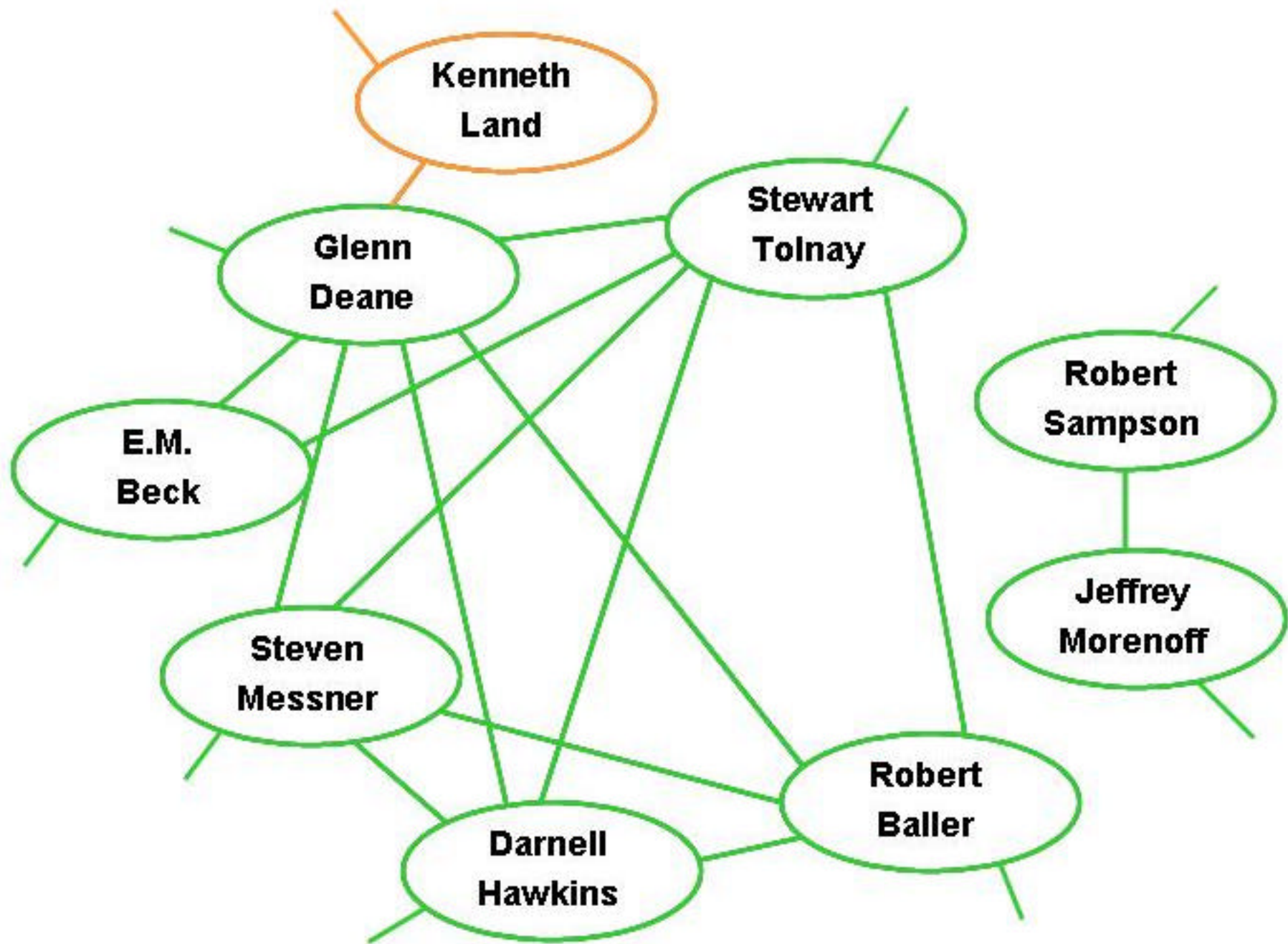
“One reviewer suggested that we should consider using a spatial effects model instead of the logistic regression results. The use of spatial regression models ... (e.g., Anselin 1988) ... do not include routines to estimate such models for either binary or count data ... (Anselin 1995) ... and does not appear to be a promising solution to this problem.”

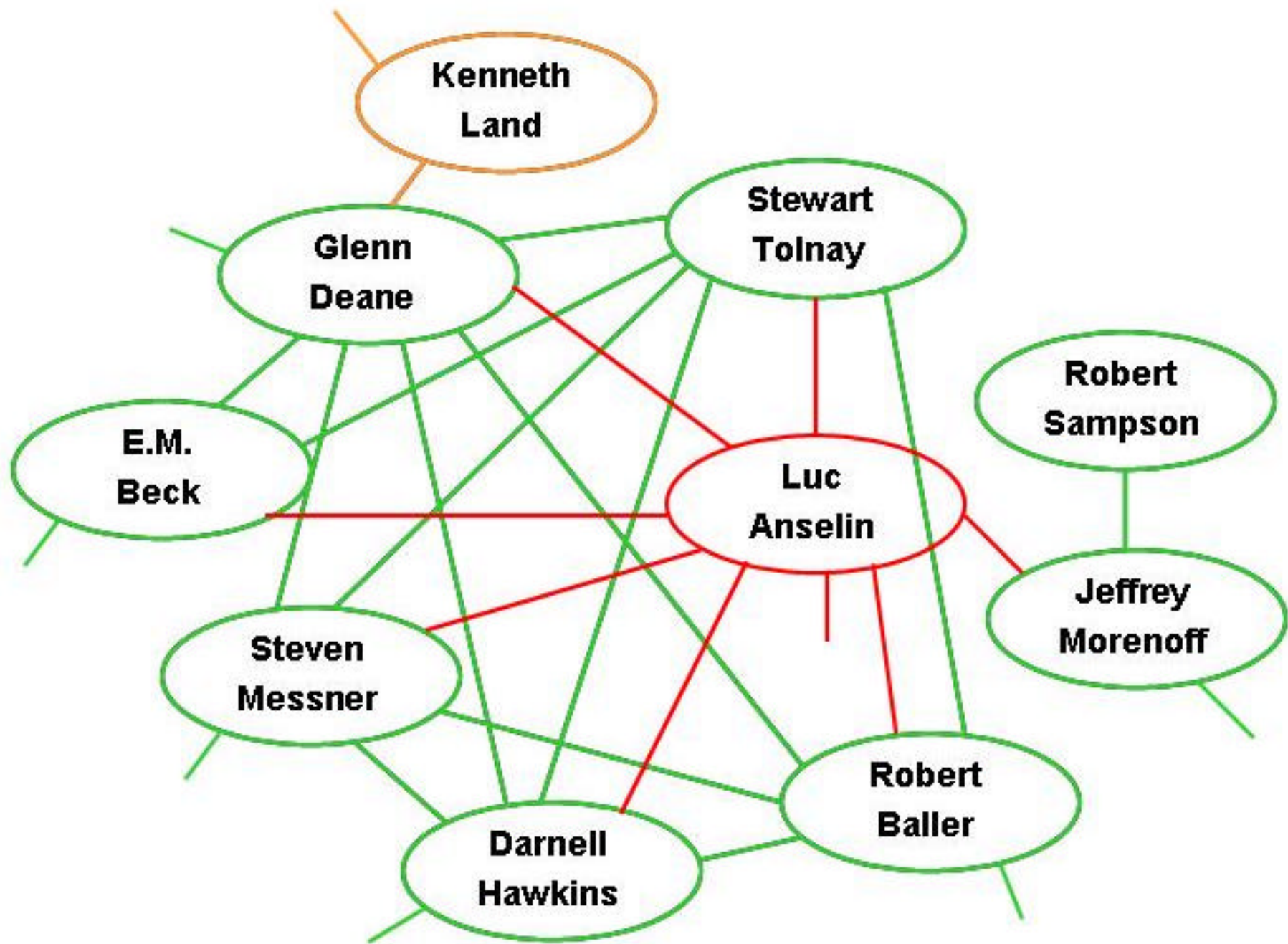
John P. Bartkowski, Frank M. Howell & Shu-Chuan Lai  
“Spatial variations in church burnings: The social ecology of victimized communities in the south.”  
*Rural Sociology* 67(4) (2002) footnote 2 p. 586-7

# Some American sociologists doing interesting spatial analyses... correctly

- Patrick Doreian
- Kenneth Land
- Glenn Deane
- Steven Messner
- Stewart Tolnay
- E.M. Beck
- Robert Sampson
- Jeffrey Morenoff
- Robert Baller
- Darnell Hawkins
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# Why has it taken so long for Rural Sociologists to adopt a formal spatial perspective and to begin using spatial econometric tools?

- Learning these tools is not easy

“Not surprisingly, most students find the study of statistics hard, and the study of spatial statistics very, very hard.”

Daniel A. Griffith and Carl G. Amrhein  
*Multivariate Statistical Analysis for Geographers*  
(Prentice Hall, 1997) p. 275

# Why has it taken so long for Rural Sociologists to adopt a spatial perspective and to begin using spatial econometric tools?

- Learning these tools is not easy
- Software to support such analysis has not been (easily) available
- The role of “space” in social processes needs a stronger theoretical interpretation
- Proper specification and estimation of empirical models needs much work
- Too much is arbitrary



# In conclusion...

- For Rural Sociologists, working with “space” in their research has always been interesting & challenging, but fresh challenges lie ahead and must be taken up
- Recent software developments are bringing important new capabilities in empirical modeling and estimating, leading to new insights about the role of space in human action & interaction
- Finally, when speaking & writing about the promise for fresh sociological insights that surely will come through new theoretical & empirical work on “space,” we need not diminish the traditions in Sociology and Rural Sociology that have long accorded importance to space & place

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