

Square Dancing with the Stars to Enhance Dynamic Hirschman Linkages?

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*Presidential Address—San Antonio, Texas, March 29, 2014
53rd Meetings of the Southern Regional Science Association:*

Square Dancing with the Stars to Enhance Dynamic Hirschman Linkages?*

Michael L. Lahr

Rutgers Economic Advisory Service, Rutgers, The State University of New Jersey, USA

Abstract: In this Presidential Address, the author takes the reader on a reconnaissance of his life and time as a regional scientist. He points out scenery he found scintillating along the way, hoping that some may pick up the banner and chew on a few of the ideas for a while. He suggests a revisit to Albert O. Hirschman's notion of key sectors and more empirical analysis related to Marcus Berliant's and Masahisa Fujita's notion of knowledge creation and transfer.

Keywords: central place theory, economic base, knowledge creation

JEL Codes: R0

1. INTRODUCTION

Admittedly the title of this paper is a curious one. But be aware: I am no Andy Isserman. I also am not about to take off on a diatribe about what we regional scientists should or should not be doing, or how we have been ineffective at some activity in which I believe we should be more engaged. Better yet, I am not about to educate you on whatever it is that I have been doing in regional science. Instead, I intend to take you on a reconnaissance of some topics in the field that I have encountered and found interesting over the course of my career. The path I have taken during my career may not be so short as some of you may think but it is longer than I would prefer to remember.¹ I hope those of you who may have a sense of my longevity in the field may be surprised to learn that most things that grab my attention are conceptual or theoretical and are only occasionally entrenched in matters pertaining strictly to interindustry analysis. For those not in the know, this is the dark corner of regional science in which I have reaped some statistically significant reputational effects.

* I acknowledge funding and space provided by Nanchang University in Jiangxi Province, China, to enable me to complete this piece. I thank Bob Douglas for preaching The Word and showing me The Way of the enlightened. I thank Ron Miller and Pete Blair for giving me all of the encouragement I needed over the years. I thank Ben Stevens and Masa Fujita for teaching me economics as a social science

Lahr is Research Professor and Associate Director of the Rutgers Economic Advisory Service in the Edward J. Bloustein School of Planning and Public Policy at Rutgers University, 33 Livingston Avenue, New Brunswick, NJ 08901-1982, USA. E-mail: lahr@rutgers.edu

¹ This is purposefully quasi-remiscent of the words of Bilbo Baggins (J. R. R. Tolkien, *The Lord of the Rings*) when he said "I don't know half of you half as well as I should like, and I like less than half of you, half as well as you deserve."

To start off, in my mind, I formally became a regional scientist when I was a freshman in college. I was drawn to it like a moth to a light bulb. It fused my interest in geography with my penchant for mathematical theory and numbers. The first regional science course I took, not surprisingly on a whim, started to explain some of the odd, broad set of socio-economic interactions of my family within the geography of my youth. This naturally includes what seemed to me at the time to be a quasi-random shopping behavior. The material in the class, which was developed in the context of American economic history, also helped me to understand why so many villages and hamlets existed in my home area. It provided structure to my family's bucolic lifestyle and compared it to the suburban Philadelphia lifestyle of my maternal cousins, not to mention the noisy city life of nearby Allentown. This one course presented all of the stuff that Dave McGranahan of the U.S. Department of Agriculture's Economic Research Service acknowledged in 1992 as core to my academic heritage. He'd asked something like, "Mike, we know and accept the models of von Thünen, Weber, Marshall, Shannon, and Christaller. But has there really been anything new in the world of regional science since 1970?" I also finally hope to answer David here.

2. THE PARTICULARITY

Only because we are not equally near to everything; only because everything does not rush in upon us at once; only because our world is restricted...can we, in our finiteness, endure at all. ... Space creates and protects us in this limitation. Particularity is the price of our existence.

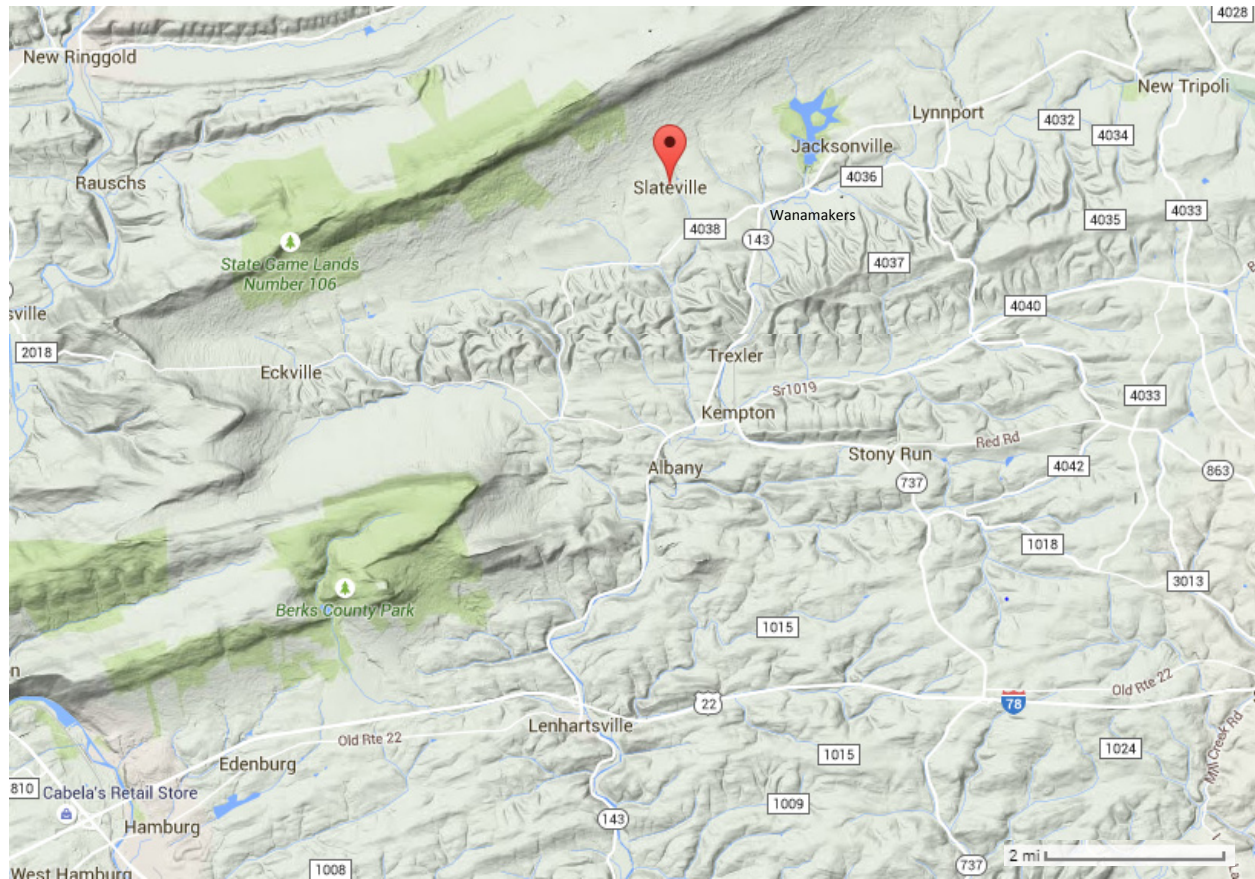
–August Lösch (1940, Epilogue)

My particularity at the start was the former hamlet of Slateville, which lies against the Blue Ridge of the Appalachian Mountains² in southeastern Pennsylvania. We lived in what had been a hotel circa 1876 (see Figure 1). It had a two-floor building adjoining it that I suspect was a boardinghouse when the open-pit slate mines (now a set of three ponds) had been actively quarried during summer months, for our home had just three bedrooms, one most assuredly the hotelier's. Our dining room undoubtedly was where the miners took their food and drink.

Figure 1. The first Lahr particularity



² This is the first major ridge in the area and is also known more formally to geologists and physical geographers as the Kittatinny Ridge, although I never heard the term bandied about through my teenage years.

Figure 2. The Christaller system near Slateville, Pennsylvania

Source: Google Maps

I can't say that Professor Bob Douglas's course in the Spring of 1975 ever provided me much insight into Slateville's existence (Slateville is about 80 miles north northwest of Philadelphia), but it did help me to understand why the butcher and grocer trucks that came to our home were from Lenhartsville, the closest town to our home (seven miles away) that sat an interchange to a nearby limited-access highway. We rarely drove westward toward Lenhartsville, except to enter that highway for lengthy road trips or to venture to Hamburg, a big town of 5,000 or so inhabitants where we generally shopped for clothes, visited Santa Claus, and went to Kaiser's Peanut Shop.³ Instead we traveled eastward far more often, mostly to the general store in Wanamakers: it was a mile's walk in the snow, a short 15-minute bicycle ride for a five-year old, and the place we went to for penny candy when returning from Sunday school in Jacksonville. It helped me to understand why our doctor, the Sinclair gas station, my brother's Cub Scout den, the local swimming pool (actually a large pond with a sandy bottom), and the only place we dined out (the Blue Ridge Inn) were a five-mile reach beyond Jacksonville in New Tripoli, which was basically where all of Lynn Township's public schools were located. Douglas's class even helped to explain why on Saturdays we sometimes took the long 20-mile

³ The peanut shop still exists but has moved a few miles north on state route 61 to the Schuylkill Water Gap in the village of Port Clinton. Its special wonder for children of all ages was (and still is) that it features candies and nuts of all sorts, both local and seemingly international.

ride basically south to Muhlenberg Plaza near Reading where I got to ride on the coin-operated horse in front of one of those new-fangled super markets or the 20-mile ride east to Hess's Department store in Allentown, where I could get a Yum-Yum Clown⁴ and afterward maybe go to a theater and see a Disney movie in color (my first was "Dumbo" in about 1960). This class even helped to explain to me why most trees along the somewhat broad trails, which we hiked as a family, were rather young (they were former logging roads). It made clear why the Schuylkill River had a canal that occasionally paralleled it, why the canal was replaced by railroads, why we rarely saw the rails being used, and why the roads on the north side of the ridge provided much rougher rides than those south of them (the north-side roads were populated by a plethora of trucks delivering anthracite coal for home use). It explained why so many of my Sunday school and little league compadres did not go to elementary school with me, and, even later, were enemies on a rival high school team (we had moved two miles west into a different county). But it didn't perfectly explain why my father—a purchasing agent of metals—at first commuted 15 miles to a job in Trexlertown and later almost 40 to a job in Pottstown. And Douglas's course most certainly did not tell me why we started to visit him there only on weekends after I turned five years old.

In the eye of my freshman mind, the geometry and math of *Regional Science 11: An Introduction to Regional Analysis* were simply fascinating! Bob Douglas, on the road toward his Ph.D. in economic history, was clearly influential in leading me into the wonderful world of regional science. His penchant for history provided the backdrop upon which regional science concepts were hung. British socio-political economy played into the rise of cities in the north and the long tenure of agrarianism in the South. Pennsylvania's Lancaster, Reading, Allentown, and Easton were equal-order central places in Philadelphia's Christaller system.⁵ Boston, Philadelphia, New York, Newport, and Charleston were backdrops for the agglomerative effects of commercial enterprises, transshipping, and post-revolutionary product dumping by Brits.⁶ New York City's economic surge in the wake of the Erie Canal was merely an economic realignment according to rules set out in von Thünen's (1826) *Isolated State*. Of course it threw New England land markets into turmoil and forced a choice of a westward march or training for a new occupation on the farmers there. Bob's story was that transportation enhanced the apparent productivity of farm labor by enabling it to exploit prime land. So he talked of the joint marginal value of labor in agriculture and transportation, and of how the shocks of lower transportation costs caused by America's transportation revolution meant less labor was needed to produce more food.⁷ This then caused urban-to-rural migration to begin apace feeding the industrialization of America beyond that enabled by the simultaneous waves of European immigration. Cleveland was a Weberian tale, Varignon frame and all, from the age of the Robber Barons—a backwash effect of the harmonistic rise of the Mellons, the Rockefellers, the Vanderbilts, and Carnegie's iron and steel industry in Pittsburgh.⁸ He touched on the repulsive forces of spatial competition and, hence the nature of market areas, hinting at their hyperbolic

⁴ Basically an upside-down ice cream cone in a dish with some flavored syrups making the smile and eyes and a maraschino cherry for a nose.

⁵ For more see Lemon (1976).

⁶ For more, see Walton and Sheppard (1979).

⁷ For a formal analysis of these thoughts, see Douglas and Smith (2001), although Douglas (1998) presented a version that was more readily understood.

⁸ For more, see Glaab and Brown (1967), although other American urban historians surely have covered this material as well.

geometry in competition using as an example, the monopolistic nature of historic basing-point pricing of cement (Federal Trade Commission, 1932). The basing point—Portland, Pennsylvania—was near my lone paternal cousin’s home in East Stroudsburg and not far from where, for a time, my siblings and I visited my dad and stepmother every other weekend and during each August (Martin’s Creek). We also touched for a time on Christaller’s (1933) tales of beer production and distribution in southern Germany. Bob’s lectures even explained the rise and fall of the anthracite coal industry, the product of which we’d used to heat our Slateville home; in writing a paper for the course, I was shocked to learn this smokeless fossil fuel was fairly unique to (and fairly depleted in) northeastern Pennsylvania. The surprise derives from my familiarity with the mineral as I used to play in the piles of the stuff in our cellar’s coal bin, looking for pieces bearing red and yellow lichens and then hoarding them like they were gold nuggets. Yet no soot was to be found on my hands...or face.

In a nutshell, for someone who had no predilection toward economics previously and whose interest in geography was limited to cartography, Bob made the subject matter more than just a little palatable. I was hooked! This is despite some of the more dreary work we did using shift-share and multiplier analysis. On the other hand, calculating the transportation model by hand using the northwest corner rule added some appeal.

The second Bob Douglas experience, *Regional Science 12: Urban Analysis*, piled on Alonso’s (1964) model, elements of regression analysis (estimating the weight of classmates based on just our heights and gender),⁹ city and tract-level demographic dynamics, concepts of poverty and discrimination, Zipf’s Law and a revisit to the Christaller (1933)/Lösch (1940) hierarchy of cities and their functions, and the use of gravity models to determine the best location for a new shopping center in Philadelphia’s New Jersey suburbs using tract-level Census data, and rough estimates of travel times. In my mind of 1977, Bob had intuitively, at least, unified Alonso (1964) and Christaller (1933) years before Fujita and Krugman (1995). In hindsight, we received a hands-on whirlwind tour of urban economics, economic geography, or whatever it is that you prefer to call it. I ate it up and wanted more!

Interestingly in these two courses we “dirty undies”¹⁰ did not need to worry about such mundane things as the names of founders of regional science concepts until we took more advanced courses—those with three digits. For me this began with *Regional Science 101: Methods of Regional Analysis* with Ronald E. Miller, although he too used such academic citational lingo rather sparingly in this the undergraduate version of his course. Ron spoke of Leontief (1941), Isard (1951), Moses (1952), Hirschman (1958), and Miernyk (1965), but talked more about how to hand calculate the multiplier effects of Tastykake and Pontillac production¹¹ (no gadgets and widgets here) using “nontrivial” arrays. In any case, he started with a matrix

⁹ [female=1, 0 otherwise] —the dummy variable was positive and statistically significant!

¹⁰ A term used by one of my professors, who shall remain nameless, when discussing undergraduates. In a university setting the alternative is a “gradual student”—a term used regularly by Benjamin H. Stevens. This is also someone who talked about going to Florida for Spring Training so he could “maximize beach inputs” too.

¹¹ Tastykake is a Philadelphia-based producer of snack cakes, like Drake’s, Little Debbie’s, or Hostess. I suppose my Professor Miller at least had, if he still does not since he departed Philadelphia for points west, a predilection for this brand of “goody.” Given the explicit use of the brand name Tastykake in his course, Ron’s nonparallel use of the compound car make “Pontillac” instead of “Pontiac” or “Cadillac” for a car produced in Detroit remains beyond my ken, I suppose it derives from my want of a Princeton degree. Some references to these producers remain in problem sets within Miller and Blair (1985, 2009) for which my classmates and I were clearly guinea pigs.

algebra tutorial and thereby helped me make sense of the multivariate calculus theory course that I was taking concurrently. This latter, in turn, helped me through more advanced courses on location theory, land use, and interregional development¹² with Masahisa Fujita in which we revisited in a mathematically formal way much of the material for which Bob Douglas had provided a basic intuition and understanding. My road to understanding Hamiltonians, bordered Hessians, and Jacobians was being paved. I wanted to integrate Palander (1935) with Hyson and Hyson (1959) to develop a theory of functional economic areas...something along the lines of Ralston and Barber (1984) meets Hatzipanayotou and Heffley (1991) and Douglas and Smith (2001) but with a twist, maybe some spatial price equilibrium modeling a la Harker (1984). While young cowboys may be “thinking about women and glasses of beer,”¹³ I see myself wistfully returning to such work while in my rocking chair. A five-year hiatus in a contract research firm along with a seven-page sketch proof¹⁴ by my good friend Yasushi Asami (now at the University of Tokyo) set my mind working on a somewhat different course for my dissertation work, however.

3. WORKING TOWARD HIRSCHMAN DYNAMICS

In the oral Presidential Address from which this paper derives, I jumped from the story of an awareness of my childhood home within a central place system to the elegance of the gravity model and how economic base theory forms much of our basic thinking in pragmatic aspects of economic development. The transition is fairly easy as central place theory more or less relies on both. In taking you on this reconnaissance, I have taken the opportunity to get into more detail about the core of Regional Science as envisioned by some of the field’s founders at the University of Pennsylvania, albeit indirectly through my late-teenage eyes.

3.1 The Gravity Model: Regional Science’s All-Purpose Tool

While I will not go deeper into it, the gravity model remains both mathematically and pragmatically elegant in my eyes. I love how within its construct either distance or travel time can proxy for one or myriads of omitted variables pertaining to imperfect information like different regulations and standards, the ability to obtain tacit signals, and language or cultural differences. This makes the model useful in describing all sorts of flows across space, e.g., commodity trade, migration, facility location, and the distribution of work and shopping trips. As a result, however, it lacks a formal mathematical economics foundation—that is, it is essentially a behavior model (see Sen and Smith, 1995). Perhaps more important to me is that the gravity model’s connection to a Lösch/Henderson (1985) spatial world is hard to ignore.

3.2 Economic Base Theory: The Workhorse

Economic base theory remains the workhorse of development economics. The theory is rather simple. In explaining it, some liken an economy to a household and then ask how a household can gain wealth without “exporting” its services to other agencies (households,

¹² Reading Henderson and Quandt’s (1971) *Microeconomics Theory: A Mathematical Approach* at home the summer prior helped a lot too, as it filled in a lot of material that failed to stick when I took *Economics I*.

¹³ Lyrics by James Taylor in “Sweet Baby James” © Sony/ATV Music Publishing LLC.

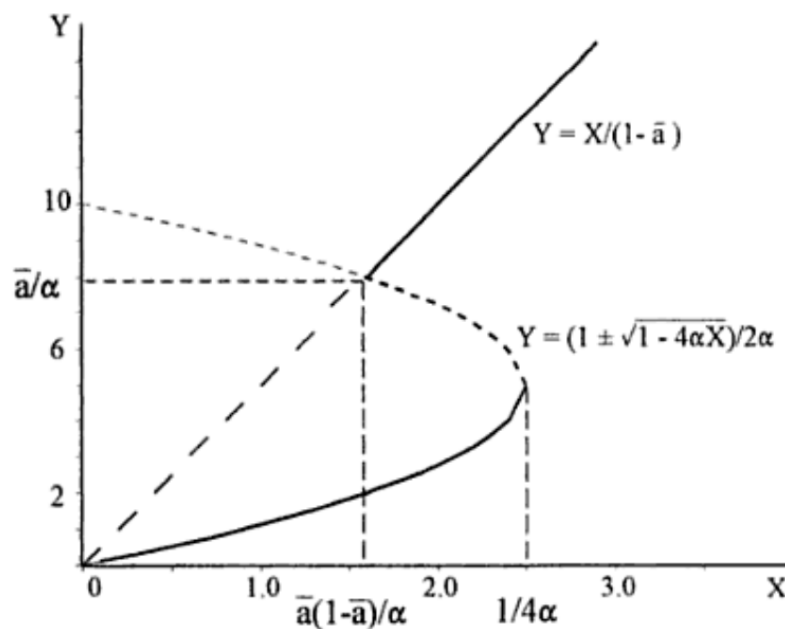
¹⁴ The proof in pre-Mathematica days was simply meant to show that there was a unique solution to the volume of the intersection of two similar cones, for which the height differential was directly proportional to the distance between their centroids.

business establishments, or institutions). Following the same fundamental logic, its proponents thus proclaim that an economy cannot improve itself without trade. Trade necessarily implies some sort of Ricardian comparative advantage, which for a household would be occupational specialization, aka a division of labor. And while Romer (1986) may have created excitement when he suggested endogenous increasing returns and growth are linked via some form of external economies, constant-returns Solow-type models, including Leontief's, are the mainstay of the field. It is the backbone of neoliberal policy, but extends its influence far beyond that aspect of political economy. Indeed, in forming his concept, Christaller (1933) assumed some production was being shipped, so did Launhardt (1885).

While it is a workhorse of development economics and its understanding is fundamental to much of my own work, I bring up the economic base theory for another reason. It pertains to the curious figure below (see Figure 3), which appeared in Fujita, Krugman, and Venables (1999). The authors present it with little fanfare but to me its implications are both interesting and potentially profound. I would certainly like to see more investigation into the matter, so I can get a better understanding of it. Thus I present it to you, the reader. It suggests that well-known technological relationship between the export base X and total regional production Y holds only after some minimum threshold value in the production of the X is attained (in Figure 3 that threshold value is $\bar{a}(1-\bar{a})/\alpha$, where $\bar{a}=.8$ and $\alpha=.1$). Before that threshold level of X is reached, some sort of apparent (frictional?) force disables the “known” technology from being used efficiently, so that Y is related to X only through α , the threshold-identifying factor, which in Figure 3 is represented as quadratic in form.

My intention is not to get the reader hung up in the precision of the mathematical relationships depicted in the Fujita, Krugman, and Venables (1999) figure, as elegant as the relationships may be. Rather it is what it and the authors are suggesting via use of this diagram.

Figure 3: Equilibria in the base-multiplier model



Source: Fujita, Krugman, and Venables (1999, Fig. 3.1)

First of all, they are hinting at the dynamics of an economy's relationship with its export base. They are showing that at lower levels of production in the export base, economies of scale and endogenous market size can lead to cumulative causation. They are suggesting that the dynamics of economies in which scale economies and market size interact and can result in discontinuous change. Cumulative processes may disengage after some production threshold in the economic base is crossed. And the dual equilibria over a certain range of the export base as shown in the figure suggest that an economy's vitality given a level of production in the economic base can be different when the base is in decline than from when it is growing.

This is all interesting stuff to me, and clearly relevant to those investigating cities in decline. But the authors leave us hanging. What is α , and how do we know it when we see it? How can we measure it? Might there really be some "law" that relates α to X and Y? I do not have the answers, just the questions. In any case, Figure 3 is a powerful diagram that raises several issues, the principles of which should be explored further.

3.3 Hirschman's Key Sectors: A Revisit to Intentioned Dynamics

So as I have related toward the end of Section 2, my ties to the apron strings to my Ph.D. advisor, Masa Fujita, were loosening. Moreover, I was working as a "graduate student reader" under Ron Miller who was the Managing Editor of the *Journal of Regional Science (JRS)*, which more or less began with me assisting in tasks related to its Silver Anniversary issue. Ben Stevens, who was in irregular contact with Ron since the Regional Science Research Institute (RSRI) owned the *JRS*, let it be known that he was seeking assistance to convert his FORTRAN-based regional input-output system for use on personal computers. I was pegged for the job and accepted it when offered.¹⁵

I mention all of this because I first became a student of input-output analysis under Ben.¹⁶ He was a pragmatic empiricist as much as, if not more than, he was a theoretician. This all appealed to someone seeking a shift in dissertation topic. Somewhere midstream in my year of tenure at RSRI I ran across the notions of target industry and key sector analyses.¹⁷ The latter is more or less a piece of the prior. In any case, key sector analysis had regained coinage in the literature of the time. The notion of key sector analysis had been sketched out in Hirschman (1958) who cited the interindustry linkage measures of Chenery and Watanabe (1958) and Rasmussen (1957). These measures are static concepts. Undoubtedly, *The Strategy for Economic Development* intended dynamic reflections since Hirschman focuses its theme on national development issues. To incorporate industry dynamics into the analysis, to date researchers have exclusively used industry forecasts, if at all. Hirschman had an excuse for not incorporating

¹⁵ Of course, there was much more to it than all of that. I was motivated to take the move because I had recently proposed to my bride, Martha, who agreed only if I would procure a full-time position. And while I cannot say why Ben hired me in June 1986, I can say that his willingness and ability to show me how to replace the water pump in Martha's Subaru when it broke down just 15 minutes from the home of RSRI at the Lily Pads Professional Center in Peace Dale, Rhode Island, was a definite deal clincher.

¹⁶ I had taken courses with both Ron Miller and Pete Blair. But they were undergraduate courses back in 1976-1977, so hence I had absorbed methodological skills but had not learned the methodological and theoretical contributions of salient literature in the field. This I started to do under Ben and later with Ron Miller, Janusz Szyrmer, and of course by now many, many others.

¹⁷ It was around mid-December 1986. I recall because we had written a proposal that RSRI was earmarked to win. We failed. But it was only because Ben had somehow misjudged the due date of the proposal. I was to deliver the report to Barnstable County on the morning of December 18. I discovered his error while perusing the Request for Proposal one last time at my home at 9 PM the night before, which was still my 31st birthday—coincidentally also the due date of the ten copies of the proposal that were seated next to me.

dynamics of linkages into his work since static linkage analysis was just getting a foothold at the time. This excuse does not play well for us, given the advent of the banks of uniform series of national tables now readily available to researchers worldwide.¹⁸

It should be clear that by juxtaposing the above with Figure 3.1 in Fujita, Krugman, and Venables (1999) I am calling for action. It is time to try to see what causes multiplier effects to grow and ebb. We have the tools and the inklings of some theory.

4. KNOWLEDGE SPILLOVERS: TO DANCE AMONG THE STARS

Berliant and Fujita (2008, 2009, 2010, 2012) have established that the heterogeneity of people in their state of knowledge is essential for cooperation. Moreover, they show that the very process of cooperative knowledge creation affects the heterogeneity of people through the accumulation of a common knowledge. By assuming agents begin with an equal level of knowledge, albeit heterogeneously, I have seen my professor Masahisa Fujita liken the process of knowledge accumulation to both a square dance and a lazy susan. In the former all square dancers start out equally talented and learn to dance better by do-si-do-ing, swinging, and promenading with different partners in hoe-down fashion. In the latter, all diners start out hungry but gain utility by trying more dishes via a partial spin of the lazy susan and tasting each dish before them in turn. Masa then humorously adds that some may even switch tables to taste more dishes. As may be obvious, I am convinced by the idea of the concept alone and have been preaching this using Jacobs's (1969) argument when presenting it to students for years. But evidence supporting the idea is starting to dribble in (Freeman and Huang, 2015; Vick, Seido Nagano, and Popadiuk, 2015). Indeed, in their abstract, Freeman and Huang (2015) write:

Using a measure of homophily for individual papers, we find that greater homophily is associated with publication in lower impact journals and with fewer citations, even holding fixed the authors' previous publishing performance. By contrast, papers with authors in more locations and with longer reference lists get published in higher impact journals and receive more citations than others. These findings suggest that diversity in inputs by author ethnicity, location, and references leads to greater contributions to science as measured by impact factors and citations.

For current-day academics, what better evidence is there than this for the verity of Berliant and Fujita's work?!!

To make things tractable, Berliant and Fujita assume quasi-equally endowed heterogeneous agents. Weakening this assumption, means working with "stars," and this would make the whole concept a bit more realistic. After all evidence suggests we are not all equally endowed with motivation, aptitude, or ability, all of which enable knowledge accumulation and dissemination. I, for one, could never have thrown a baseball anywhere near as well as either Steve Carlton or Roy Halladay. For certain, I know few can write as well as naturalist Aldo Leopold or turn a tale with the richness and depth of those by Wallace Stegner or J. R. R.

¹⁸ The World Input-Output Database (WIOD) is available at www.wiod.org with more information available via Timmers et al. (2015). Eora is available at <http://worldmrio.com/> with more information available at via Lenzen et al. (2013). Exiopol is available at Tukker et al. (2013). GTAP is available at <https://www.gtap.agecon.purdue.edu/> with more available in Andrews and Peters (2013). There are other sources as well, but these four have the most comprehensive world coverage.

Tolkien. I similarly suspect few have the talent to be Nobel Prize-winning economists. Still, by working with stars like these, people have been known to hone their abilities and make solid careers. Indeed, in *The New Geography of Jobs*, Moretti (2011) suggests that studies of the spatial distribution of patents show that others who co-author patents with high-patent authors also tend to produce more patents. Moreover, they are generally in close spatial proximity to the high-patent authors as suggested also by the work of Wanzenbock, Scherngell, and Brenner (2014).

So whether or not developing a formal model of square dancing with the stars is possible, empirical evidence suggests that it is beneficial, particularly with respect to positive knowledge spillover effects and in a regional development setting. Some of us suspected as much, after learning from some fairly spectacular life heroes and after rubbing shoulders with certain colleagues. Now armed with this understanding of knowledge creation and transfer, what can we do with it?

Here things get a bit tricky. Fortunately, implementing a policy to foster knowledge transfer and creation is unlike policies touted by Michael Porter (1996, 1998) who essentially believes localization economies can be created to develop competitive industry clusters (Porter, 1996, 1998). An attempt to create localization economies would, to me, be like chasing a mirage. It also would not be like pushing the arts by following Richard Florida (2002, 2005) who suggests that the industry causes rather than follows income growth. A policy like this would create positions like an endowed chair at a university, but in this case they might be paid for by some state or regional authority. Providing tax abatement to authors of successful patents would be a start. But regional economies benefit from innovative entrepreneurs, scholars, and business executives, as well. Devising instruments to attract (or retain) such knowledge-laden stars could be more effective than luring jobs regardless of their quality, which seems to be the *modus operandus* of state economic development agencies.

5. CONCLUSIONS

So you have accompanied me on a path from Slateville to Florida. In doing so, I have pointed out some ideas that captured my attention when I first blazed it: economic base and central place theories, the gravity model, and key sector identification. I did this hoping that my excitement might spill over to others and help reveal the potential effect upon unknowing students of this fundamental regional science material to lecturers. I further pointed out that we may still have some explaining to do when it comes to the theoretical tenets of the gravity model. I then displayed and tried to interpret the intriguing dual equilibria of the economic base model as postulated by Fujita, Krugman, and Venables (1999). While simplistic, the ideas in it could be an interesting area of much empirical study. From there I suggested that Albert O. Hirschman's concept of key sectors needs an empirical update, given the battery of intertemporal, interindustry databases now available to provide some evidence. Finally, I presented what I view as some very exciting work on the microeconomics of knowledge creation and transfer, as it related to intra-regional knowledge spillover effects and, hence, economic development. I wind up suggesting that regions ought to develop some innovative ways to attract and retain the stars.

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