MY DEVELOPMENT AND PROFESSIONAL LIFE AS AN APPLIED GEOGRAPHER

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I have been involved in geographical analysis and applications for over 40 years largely as a university professor, but with considerable involvement in empirical research and applications of that knowledge as both a consultant to practitioners and as the director or board member in various applications oriented organizations. The first part of the essay deals with the way I grew up and how I went through my training and education. This is very important because it underlies the motivation and the driving interest I have for work in applied geography and practical work as well as the more conceptual and theoretical work of a professor. The parts that follow are about my professional life and the continuous effort to move back and forth from theory to practice in my research, management, and advisory work. While this approach may seem a bit personally adulatory in places, this is not the intent as I use these examples to illustrate how applied work became and continues to be near the core of the work I do.

Born in Findlay, Ohio in 1940 I spent all my years up to college there. In fact, I was never outside the State of Ohio (or even its northern tier of counties) until I was 18.

Findlay was the county seat of Handcock County, and my father was the county engineer there from the time I was five until I was 13. During this period I spent a lot of time with my father visiting road construction bridge projects and even participating in snow plowing during weather emergencies. I had a considerable exposure to construction and emergency situations and came to believe that the role of adults was to carry out these vital functions of society. I also saw my father in a leadership role, and came to believe that while one was responsible for assuming productive roles in society, one was also responsible for having opinions and for providing direction for social processes.

When I was 13 my father left politics to start a concrete pipe factory (for sewers and drainage). The 'plant' was started with minimal financing and thus I was expected almost immediately to pitch in. I worked as a full time employee at the plant during the summers, on Saturdays, holidays, and when I was in high school I worked the night shift (it was possible to do this at that time because family members were exempt from many child labor laws). While this may seem a basis for a potentially unhappy childhood, it was just the opposite. I was fascinated with the production process, its equipment, and the processes that had to be coordinated to make a viable product. I even learned a good bit about the selling side of the industry, and the huge human energy that needed to be expended at the interface of the plant, and the public agencies and organizations that created demand for concrete pipe. The important part was that I learned how to operate almost all forms of equipment and infrastructure maintenance related skills (industrial electrical wiring, carpentry, water supply (wells and well digging), sewerage, welding, and equipment maintenance).

Perhaps the biggest frustration of the first one third of my life was college. Throughout most of my youth I had understood that I would go to Ohio State and become an engineer and play football. I lasted 3 days on the football team and one quarter in engineering—failing all of my courses. I discovered parties and play, much of which was quite limited in my first 18 years.

After several years in and out of college I became interested in learning. This all began partly as a matter of maturation I suppose, but I remember it as arising from fascination with a geography course I took in location theory. I was fascinated with the problem of explaining location behavior, the rigor of the theoretical framework, and the cases of actual location decision studied. This set my interest ever after on geography and the quantitative orientation that was emerging in the field at that time.

I immediately changed from a C student to an A student. However, my desire to go on to graduate study as a Ph.D. student was nearly blocked because of the poor academic record I had produced before my interest in geography. But the University of South Carolina saw something in the intensity of my interest and granted me admission as a Master's student with a teaching assistantship.

The Master's degree experience was eye opening. As this experience unfolded I eventually agreed to do my thesis on the evolution and diffusion of soybean cultivation in South Carolina. It was a thesis of applied research with many interviews of the farmers who grew soybeans and of the providers of services that supported soybean production—agronomists, seed scientists, processors, elevator operators, banks, and ports and exporters. It turned out

to be a fascinating experience and one that I learned a lot about the interface between practice and theory; as the thesis involved location analysis, diffusion modeling, spatial dynamics, and spatial bias (or auto correlation as it was beginning to be called at that time when the field of spatial econometrics was born).

I enrolled at Johns Hopkins University after my Masters. This department, while heavily invested in theoretical thinking on many dimensions such as mathematical modeling, philosophy, social justice, social and economic theory, and the physical sciences was also deeply involved in applied research and practice whether in work with the Geologic Survey and the U.S. Corps of Engineers on water or bio related projects, or with urban renewal work in Baltimore's inner city neighborhoods. In short, I enrolled in a program that was strong on theory but committed to practice.

My Ph.D. program was an extraordinary experience and it grounded me in theory and philosophy in ways that I had never expected or envisioned. This tempered my largely practical and applied orientation up to that point with an appreciation for the deductive and theoretical part of knowledge. Yet it did not wipe out my realistic life view and practical work ethic acquired during my childhood and earlier education experiences.

My first real academic job was as a research associate at Johns Hopkins University. It was essentially an extended 4-year post doctoral research position and entailed management and direction of a major research project funded by the National Institutes of Mental Health (NIMH). This project was initiated in response to a U.S. Housing and Urban Development (HUD) declaration of a model inner city design and redesign approach to improving community life in inner city neighborhoods. The inner parts of East Coast Cities have many neighborhoods that consist of row houses that in the 1800s were magnificent multi-storied structures with smaller carriage houses on rear alleys. Philadelphia officials decided to systematically level the interior parts of blocks where the deteriorating carriage houses were located, and construct parks for community support in the cleared spaces.

My project was to design research to validate (or reject) HUD's claim. The research took an environmental psychology approach. The research team systematically monitored behavior in open spaces in 30 neighborhoods that were to receive the interior block park treatment as part of urban renewal, as well as six other control blocks that would receive no design changes. Monitoring involved behavioral mapping, interviewing, time lapse photography, and observation of children playing games as a means to learn about their perception of the rules that bounded life in their neighborhood.

The results demonstrated that the interior block park model was problematic. Outdoor life in these neighborhoods was conducted on the street front and that this provided social control through eyes on the street and thus minimized crime and other negative behavior there. However, the new parks were in the rear, so in the majority of cases the parks quickly became behavioral sinks where undesirable behavior occurred, e.g., dope peddling, gang meetings, assaults, etc.

Following this the project design team decided that alternative strategies should be tested. This led to several street front models and a management model. The street front models involved narrowing the street and utilizing the space gained to create a park-like setting. The management approach involved hiring one of the neighborhood residents as a facilitator/manager for community activity. The street front model worked much better than the interior park because surveillance there created a degree of social control. Thus, the quality of community life was more positive in these areas than in the interior park blocks or the ones that had not been redesigned in any way. The management strategy did not work well. Unemployment rates were very high in these neighborhoods and thus the persons selected to be the managers for the project obtained employment when many other hopefuls did not. This created a huge barrier for the managers to successfully carry out their work.

The outcome of this inner city example was largely applied in nature but is of interest from a geographic perspective because micro geographic relations were at the foundation of the project and the results of the research. It is important to note that despite the applied and practical orientation of the project there were other products of the research that included significant methodological developments and new research tool development. So this case can be seen as applied in nature, but also contributing to more academic type products, including the full implementation of a quasi-experimental research design and evaluation protocols all complimented with new cognitive and observational methods.

I then took a position at the College of Charleston in South Carolina that entailed starting a Master's in Public Administration program (MPA), and building a regional economic development research center. The major demand for the MPA degree was from in-service pubic officials in the Charleston and coastal Carolina region, which meant as the program grew I soon knew many of those employed in management in the public sector, and this in turn led to a large number of funded projects of an applied research nature including strategy development, policy process planning, personnel system design and re-design, service delivery streamlining, etc. Substantial research projects evolved around various systemic problems in the region

such as coastal management and policy, waterfront land use planning and policy, and heritage and tourism management.

The research center conducted a variety of coastal management and policy research projects during this period. These included studies of the economic effects of beach renourishment, evaluation of hurricane evacuation and recovery, regional plan updates, industry development and maintenance, regional economic strategy plans, tourism and related development, and wetlands policy to name a few. Also, one study included constructing a multi-objective mathematical programming model for forecasting development of land use along the navigable waterways of the Charleston Metropolitan area (Stough & Whittington, 1985). The results of this study showed that there was a high probability of most development to occur on waterways that were adjacent to higher property value parcels but had minimum wetlands between the parcels and the open waterway. While this seems obvious in hind sight, it was a revelation to policy makers at that time (early 1980s). This project was of particular interest because it made both a contribution to policy but also pioneered a new optimization methodology for examining land use forecasting and thus planning.

Charleston in the late 1970s, was emerging as an attractive Sun Belt city that had heretofore not systematically planned for its development. At the same time it had been and was an innovator in the development of many heritage finance and management instruments that had been adopted and used as the foundation of national policy. Charleston at that time had more structures on the National Historic Record than any other urban region in the U.S.

All of this had made Charleston a growing tourist attraction with increasing management problems from crowds, quaint neighborhoods, late night tours, and even a company that conducted tours with its two double deck buses. Double deck busses in the narrow streets of Charleston put visitors nearly eye-to-eye with residents in their second story bedrooms. In short, there was considerable resident push back to the growing tourist trade in the city.

I was asked by the Mayor to provide research support for a Blue Ribbon Committee that was formed to examine the tourism management problem and recommend solutions. The work on this committee involved researching everything from past tourist levels and forecasting its tourism future to developing a set of standards on the size of buses that could be used for tours. In the end a new set of standards was adopted that struck a compromise. An interesting outcome of this research was a paper that I wrote with Mary Feldman (Stough & Feldman, 1982) that presented an evolutionary model of tourism attraction areas and the management elements needed to reinvent such regions as their infrastructure aged.

A final example from my South Carolina time involved a serious debate between Charleston County and the City of Charleston, over what then was called double taxation. The City claimed that its residents paid tax twice for support of basic services like police, fire, etc.—once to the City and again to the County but only received City provided services. Thus its residents were argued to be paying twice but receiving the service only once.

An advisory committee (including the Mayor and the Chair of the Board of Supervisors for the County) was established. The initial results showed that indeed residents of the City paid more taxes but received the same amount of services although a somewhat higher level or quality of service. In the final analysis this later factor was weighted into the difference estimates. I awoke the morning after the advisory committee had received the first draft of the report by dozens of calls from County representatives in Charleston, residents, TV stations, radio stations in reaction to a front page headline stating the study showed that City residents were overtaxed and that adjustments were recommended. One of the committee members had leaked the report.

I moved on to the School of Public and Environmental Affairs at Indiana University in 1983. There I taught courses in environmental science, planning, policy, and management. Also for the first time in my life I taught a large entry level course for freshmen and sophomores in public policy. Ironically during this period my research focused almost entirely on regional economic development issues.

The U.S. economy was in the throes of adjusting to de-industrialization that had arisen in the face of Japanese production methods, competition, and adjusting to the emerging era of globalization. Jobs and companies were migrating to other parts of the U.S. and overseas where labor and other costs were lower. There were few regions in the Mid West that were not preoccupied with creating development strategies to rebuild their economies. Much of my research in this period involved working with numerous metropolitan regions in building strategy to adjust to the impact of de-industrialization. This experience helped lay the foundation to the book I later wrote with Robert Stimson and Brian Roberts (both who had worked with similar problems in Australasia) entitled *Regional Economic Development: Analysis and Planning Strategy,* 2002.

A second interesting project during this time was one conducted for the Ivy Technical College of Indiana, a statewide network of community and technical colleges in Indiana. Ivy Tech had 25 main campuses and a myriad of branch campuses. Officials and community representatives were concerned with how best to deliver course work in a fair and accessible way to the community. This often led huge debates over whether to expand services at the

main campuses or to decentralize them to branch locations. Kingsley Haynes and I proposed using spatial interaction modeling to simulate outcomes from expanding services or offerings on the main campus or on a branch campus(es).

Since 1990 I have been a professor at George Mason University (GMU) in the School of Public Policy (SPP). Upon joining the SPP I was first asked to design and implant a center that would conduct research on the National Capital region economy.

Thus the Center for Regional Analysis was formed. It undertook studies on forecasting the regional economy and sectoral analyses that debunked the myth that the region was only a government services economy. One of its first reports showed that D.C. had one of the largest concentrations of technology workers in the U.S. The Center was quickly recognized as the leading research center on the Washington regional economy. In 1994, Dr. Stephen Fuller was hired to become Center director. He was at George Washington University at that time and had been researching the regional economy since the 1960s. He brought large and varied data sets with him that had not been available, and thus has since built the Center into one of the most successful of this type in the U.S.

In 1993, needing to find nearly $1 million to support our new Ph.D. program, we surveyed the federal research budget. One of the best targets we found was rapidly emerging research in the area of Intelligent Transportation Systems. We proposed research on the institutional barriers to the deployment of this new technology to the Federal Transit Administration (FTA) and received nearly $1 million.

The Federal Highway Administration (FHWA) was interested in similar work for roads and related surface transportation. The research team received $2 million the year after the FTA grant for similar work with FHWA. This led to an award of a grant to form a National University Transportation Center (UTC) to conduct research on ITS Implementation, again focusing on the institutional barriers (intergovernmental relations, values and culture, regulations, financing, public official perceptions, etc.) to adoption and use of this technology. It was for $2 million per year for seven years. This has in the last year been followed by a grant to form a second UTC in Transport and Regional Economic Development. I was involved in conducting some of the research and in the management of research by some 30 scholars at both GMU, and at the University of Virginia and Virginia Tech University.

In the late 1990s I was asked to head up the University's Enterprise Development center (the Mason Enterprise Center (MEC)). This center was totally applied and practical in focus. It provided counseling on business plan

development, financing, employee training, personnel systems, market research, technology assessment, and government contract procurement to potential and existing proprietors and small business owners. It also had a small technology oriented incubator. During the time I have directed the Center its responsibility has been expanded from a service area in Northern Virginia to the State of Virginia.

The MEC experience is by far the closest I have ever come to practice, as the MEC is all about providing assistance to business development and growth. Today the MEC employs over 150 and has a $6 million annual budget when all direct and matching funds are summed.

Despite the rather rapid growth of the MEC, I knew that for it to thrive there would need to be an affiliated research center and education programs other than the various internships that are run through the MEC. This led to several initiatives. First, a Center for Entrepreneurship and Public Policy (CEPP) was founded in 2004, to house the research function. It was clear we needed an internationally recognized scholar in this field to under gird its credibility, and in 2005, Dr. Zoltan Acs was hired to head this center. Since then it has received grants from the Kauffman Foundation and the Max Planck Institute to support doctoral level education and related research. Second, the center is now a full partner in the international research project GEM, which annually conducts the research and creates an entrepreneurship index for all countries in the world. In short, initial education programs are underway in the school, as well as research of considerable national and international important. While some of this is scholarly, much is shaded toward the practical and applied side of the interface between entrepreneurship and economic development.

So what can be said from some 40 years or so involvement in applied geography related efforts. First, one's early experiences probably contribute considerably to an appreciation for and ability to work effectively at the interface between applied work and theoretical or scholarly work, but only if along the way one is exposed to the extraordinary world of thought in both philosophy and theory, and across a relatively broad array of disciplines.

Second, one can have a fruitful career in academe where applied research is the driver of ones agenda. Extraordinary motivation derives from one's experience and the meanings that experience holds for action. I think that this may be at the key of deep and profound understanding of the world and things going on in it.

Third, working at the applied research and practice levels instills an awesome sense of responsibility as such research and practice obligates one

to clients and can raise the expectations of students, employees, and colleagues who participate in such endeavors.

Finally, my career as it relates to applied research has produced in me a profound sense of responsibility and has given me what at least some days seems like a deep understanding of both the worlds of action and reflection.

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