

## NEW REGIONAL SCIENCE AND NEW ECONOMICS

**Roger Bolton**

Department of Economics, Williams College, Williamstown, MA 01267, USA.

**ABSTRACT** Many have called for a 'new' regional science. It is useful to note that there are valuable 'new' theories in economics, or least 'newer' than the economic models that many critics of the 'old' regional science seem to be criticising. One example is the microeconomic theory of household production, which can help us understand the 'sense of place' or sense of community, which is a real-world phenomenon that a new regional science should help us understand. Household production has a dual role: households help produce the sense of place or community, but at the same time households' value of place is an important input into their production of many other goods, such as security, education, and recreation. How households use their time is a crucial aspect of this dual role. This paper elaborates on various aspects of household production and suggests new emphases in regional science, which are similar to recent emphases in environmental economics.

### 1. INTRODUCTION

There is currently a good deal of soul searching and crisis desk management in regional science. Bailly and Coffey (1994), and the many responses to them in the same issue of *Papers in Regional Science*, are excellent starting points for any reader who has not yet been made aware of the debate; they cite much of the earlier literature. Jensen and I have joined in (Bolton and Jensen, forthcoming). One interesting aspect of the discussion, and the one which is the main concern of this paper, is a frequent, though certainly not universal, criticism of economics and economists for having a too strong, too narrow, too abstract view, and influence, in regional science.

We cannot dispute the charge that economists often miss the boat in their analysis of places, but I venture the thought that part of the problem is that many regional scientists concentrate on only a small part of what economics has to offer. One sees this in the kinds of economic theory that regional scientists use and also in the kinds of economic theory that critics of economics point to. To complete the picture, economists who are regional scientists often fail to reveal/advertise/demonstrate the many varieties of economic theory that can be brought to bear in analysis of places and spatial phenomena. It is often forgotten that modern economics pays attention to fairness, community, cooperation, and restraint from free riding, all of which are features of real places. It offers models of nonprofit organizations and government bureaucracies, both critical in real places. Environmental economics and the economics of the household are subfields that offer useful insights. In my opinion, regional science has lagged behind economics by not using the best tools that economics has to offer. In short, to put a twist on it, the problem is one of not using enough economics rather than using too much.

In using the phrases 'new regional science' and 'new economics' in the title, I really mean 'new' in the sense of 'different', and not in the sense of very recent intellectual developments. Neither the economics that we can draw on, nor the regional science that will benefit, is new in the temporal sense. What is needed, rather, is a new emphasis, a new selection from the theoretical tools available.

In this paper I will try to illustrate my point by showing how the microeconomic theory of household production, developed by many economists, can help us understand the 'sense of place'. This illustration is apt because, on the one hand, the theory of household production is a concept of newer, though certainly not new, economics, and on the other hand, the sense of place is one of the real-world phenomena that many critics feel a new regional science should take account of (Bolton and Jensen, forthcoming). The arguments here continue my earlier work on an economic interpretation of the concept of sense of place (Bolton 1989, 1992).

First, we need to define some terms. By the 'sense of place' I mean a combination of characteristics (many intangible) that increase a person's attachment to a place and influence their behaviour (in labour markets, retail markets, migration, political decision-making, and nonprofit activity). In the scholarly literature, which is primarily in geography, planning, and psychology, 'sense of place' seems to mean many different things. In my own work I try to stress from the very start the feelings of 'community'. The 'sense' is shaped by cooperation and community spirit, by feelings of trust, reciprocal obligation, and loyalty to other members of the community. Thus from the very start one must draw on a wider concept of economics than many economists traditionally have brought to their regional science and urban economics. My own concept of the sense of place perhaps is narrower than that of many geographers and other social scientists, because it concentrates attention on community. On the other hand, it is also broader, because it depends on a wide range of behaviour, not merely perception or attitudes. (The literature in geography is of course extensive; a few particularly useful items are Marsh, 1987; Tuan, 1974, 1977; and Relph, 1976.)

The theory of 'household production' is one in which the well-being of a household depends on various activities it engages in, and these activities are *simultaneously ones of production and consumption*. The household consumes things called 'commodities', and it produces them in the household; that is, household members accomplish the production. The theory distinguishes commodities, an unfortunate label, from 'consumer goods' in the usual sense. Commodities are things like nutrition, health, education, entertainment, recreation. Consumer goods, on the other hand, are chicken, beef, hospital stays, class credit hours, bus miles, skis and lift tickets, etc. The household cannot buy commodities in the market, but must produce them for itself, using as inputs consumer goods purchased in the market, the time of household members, and the services of various environmental goods such as clean air, clean water, and public capital (Becker, 1965, 1991; Michael and Becker, 1973; some related ideas are in Stigler and Becker, 1977).

Thus, in this approach the utility of the household does not depend directly on market goods, as in the more conventional text treatment, but rather on its own production. The household does buy things in the market, but it does so with a view to combining them with other inputs; some, like its own time, which it controls directly, and some, like environmental factors, which it controls only partially. The value of an

episode of the TV series *Middlemarch*, then, does not increase utility in itself but rather contributes to the production of entertainment and education and community. To do that, it must be combined with time to view it, and might also be combined with time to reread the book, the services of a VCR to shift the timing of viewing, and the time to discuss it with friends.

Household production complicates any economic analysis of places, because in addition to the incredible variety of preferences for commodities, variety we already ignore too often in regional science, we have in addition variety in households' production capabilities.

## 2. THE DUAL ROLE OF HOUSEHOLD PRODUCTION IN THE SENSE OF PLACE

Sense of place and household production are related. Sense of place is a critical part of the environment of a place, and therefore is an *input* into the household's production of many commodities that it values; security, education, recreation, meaningful work, friendship, environmental quality, management of consumption, management of memory. But there is more to the story: households help to *produce* the sense of place and each household's production of it has favourable externalities for other households. Since households' own activities help create and maintain the sense of community in a particular place, household production must be considered along with the many other processes that geographers and planners have long recognized as important. These will include individuals' acts of friendship, compassion, and conversation; nonprofit organizations' acts of public service and charity; governments' production of public goods like education, economic development planning, historic preservation, and environmental protection.

In short, household production has a dual role: it helps to *create* the sense of place but also *uses* the sense of place as an input. This dual role raises challenging but potentially rewarding complications for both geographical and economic theory and for the empirical analysis of real places (Bolton, 1992).

The notion of a sense of place helps extend and enrich the economic theory of household production, and the theory of household production helps increase our understanding of real places and the attachments people have to them. Research on the linkages between the two theoretical concepts should be a fruitful interdisciplinary project in the best traditions of regional science. Yet, as far as I can tell, neither economists nor geographers nor regional scientists have much recognized or exploited the links. Economists who have developed and applied the theory of household production have not paid much attention to how the sense of place or community affects household production, even though other economists have paid attention to community, particularly in work on public goods and 'free riding' or the lack of it. Geographers who have written about the sense of place have not paid much attention to how mundane household activities contribute to and also benefit from it, even though other geographers study household behaviour in labour markets and in migration, consumption, and travel.

### 3. VALUING THE SENSE OF PLACE

Collaboration between geographers and economists will benefit both camps. A careful analysis of household production and the sense of place may suggest ways in which we can value the sense of place, and take account of it in evaluating proposed policies to protect established places in the face of economic change that threatens the viability of communities. I have discussed some of the benefit-cost analysis issues elsewhere (Bolton, 1992; see also some early expression of the ideas in Rothenberg, 1967 and Bolton, 1971). The hard question is not whether the sense of place is valuable - almost everyone admits it is - but how valuable is it? Are people *willing to pay* enough to support a community in the face of market forces that would weaken or even destroy it? (Bolton, 1992)

While I cannot go into the benefit-cost issues here, the important thing for my present purpose is that a better understanding of how the sense of place is related to the day-to-day activities of households may help us to value the sense of place. Monetary valuation, however, should not be our sole or even primary goal; qualitative understanding of the sense of place is also important. Nor should the very instrumental view of the household's activities, implied by the household production model, be the sole theoretical approach to understanding why households behave as they do, how they benefit from the sense of place, and why they care deeply about it. Other approaches are also valuable and important. One interesting argument, for example, is the one by Miller that something like Habermas's "communicative action" is also essential in understanding real places (Miller, 1992).

### 4. THE HOUSEHOLD'S USE OF TIME

The theory of household production has the great merit of signalling the importance of how people spend their time. A strong sense of place both *requires time* and *saves time*. To produce a sense of place takes time, but a sense of place also allows households to *save* time in doing other things. The critical thing, then, is that a sense of place induces households to *reallocate* their time budgets. An empirical analysis of a sense of place will profit by looking closely at how households spend their time, and that insight can be added to insights gained from more traditional observations such as how they spend their money or draw maps of their neighbourhoods or how their children learn where things are.

Examples spring to mind:

- Households spend time in public activities like politics, the work of nonprofit organizations, and local schools (activities concerning children are critical in place building);
- Households assist other members of the community in emergencies and crises;
- Households attend ceremonies, tell stories of the past, brag about local sports teams;
- Households commute long distances to jobs or school far from home in order to remain living in a place even after economic decline reduces employment and school opportunities there (Marsh, 1987).

On the other hand, households *save time* by foregoing search. A commitment to place often leads people to forego search in consumer goods and labour markets. People

decide to patronize certain merchants in the community without doing careful comparison shopping, and, furthermore, they often do so even if reciprocity is delayed and highly uncertain. Merchants probably do reciprocate in some form or other, but not in any precise *quid pro quo* way, and in fact it is an interesting research question just how reciprocity occurs. Merchants are likely to restrain price gouging in times of shortage (Kahneman, Knetsch, and Thaler, 1986, 1987), but they probably also give special consideration to individual consumers when the latter's incomes or liquidity decline sharply. The general theory of protecting 'reputation' is relevant here (for a general discussion of reputation in retailing, see Bliss, 1988).

It costs households money to commit to local markets, but the commitment has time benefits and the benefits of enjoying the contribution to a place. The literature on search in local consumer goods markets, however, appears to focus on the tradeoffs between time and money on the one hand and product quality on the other, and appears to miss the important aspect of commitment to place.

The implication of these considerations is that an empirical analysis of a sense of place should collect information on how people spend their time. But it is not sufficient to collect data merely on hours and minutes, or on trips and searches. One must also capture the context of decisions. It would be useful to combine two approaches: (i) collecting data on use of time, and (ii) eliciting contingent valuations of community. The two types of data should complement each other. Data on how people actually spend time would help augment, and perhaps be a check on the validity of, people's estimates of willingness to pay money for community values (Bolton, 1994).

Contingent valuation (CV) methods are controversial. It would be an extension of an already controversial method to use CV to value the sense of place. Even controversial methods can, however, be useful. There is, for example, a recent serious proposal to use CV methods to find out what relatively wealthy people would be willing to pay to alleviate poverty in others (Haveman, 1994). If place is an important social phenomenon, even controversial methods need to be tested. One way to reduce the problems in CV methods is to ask respondents about their use of time in the same interview as one asks about willingness to pay money.

It goes without saying that one should also look for the more traditional evidence in the form of spatial wage and housing price differentials that reflect the amenity value of a strong sense of place. A willingness to use any or all of the three broad approaches, household production, contingent valuation and hedonic price analysis, would put the regional scientist squarely in the tradition of environmental economics. Unfortunately, detecting spatial price differentials due to something as qualitative as a sense of place is very difficult, which makes it all the more important to generate data on how households spend their time.

## 5. SIMILARITY TO METHODS IN ENVIRONMENTAL ECONOMICS

Applications of household production theory in environmental economics suggest ways in which household activities might reveal their valuation of a sense of place (Smith, 1991; Freeman, 1993, pp. 102-33). The key is that household production can be a substitute for or complement to a sense of community, just as it can be for environmental quality.

For example, households may spend money and time in 'defensive activity' to offset environmental deterioration. Examples of this are commuting longer distances to escape air pollution, air conditioning residences and cars, travelling to gain access to better recreation. Households substitute their own activity for local environmental quality in the production of commodities called 'health' or 'recreation.' In other places (ones away from the work site or primary residence) good environmental quality is complementary to households' own inputs into the production of health or recreation. If one makes appropriate assumptions about substitutability and complementarity, and if one has information on how households spend time and how they spend money on market goods, then one can come up with some useful conclusions on how they value environmental quality. The well-known 'travel cost method' to value recreation is based on such assumptions.

One should be able to extend these ideas to a sense of place. Two special cases are worth mentioning: 'strong substitutability' between a market good and the sense of place, and 'weak complementarity' between a market good and the sense of place. In the case of strong substitutability, people can spend time and buy market goods in order to compensate for declines in the quality of the environment, including the quality of the sense of place. Households spend time commuting and money on air conditioning to offset a decline in ambient air quality. Are there analogous activities as far as the sense of place is concerned? The question is an empirical one. Travel away from home to a community where the sense of place is stronger? Time spent in purely family activities, as opposed to public or community activities? If one can find good candidates, then marginal changes in time and money indicate the value of the loss that people feel when the sense of place declines.

In the case of weak complementarity, the household derives benefit from an environmental good only if it also spends time and/or money on some other good. That other good is essential for the environmental good to have any marginal use value. Travel to a distant recreational site is essential for the site to have any value. Are there analogous activities requiring time and money that are essential for the sense of place to have value? Participation in nonprofit activities or local government? Shopping in the local community?

One must remember that any such approach will get at only *use* values. The pure existence value is also important, just as in environmental applications (Bolton, 1992).

## 6. SPECIALIZATION BY HOUSEHOLDS AND WITHIN HOUSEHOLDS

The term 'household' should be interpreted broadly. Some households are single-person units, so that household production merely refers to the individual's activities. But economists see the theory of household production as especially helpful in explaining the division of labour and specialization within households. There is danger of stereotyping women's and men's roles, so one must handle the model with care. But it is useful to think about which members specialize in activities that help produce a sense of place, and how patterns of specialization vary from place to place and culture to culture.

Some geographers, for example, have described the crucial role of wives in certain working class localities, and how they bear the brunt of social contacts, public activity,

involvement in schools, and the like. Such a picture may also have been accurate in middle-income suburbs when fewer women were in the paid labour force, and indeed some have suggested that the increase in women's labour force participation has contributed to a decline in the sense of place. Although this seems worthy of consideration, women's labour force contacts and experiences can also have positive effects on the sense of place. Attention to household production must not blind us to the fact that workplaces are also critical settings where sense of place is produced and maintained. The work of Hanson and Pratt (1992), for example, has helped restore the balance of research in this respect.

There seems no ambiguity on the role of the elderly. One quickly grasps that the way they spend their time, and the way the community relies on them for story telling and for work in nonprofit and public organizations, represents specialization in place-building and maintenance. Some obvious explanations are low opportunity costs of time and the high productivity of their particular experience capital, but the details are worthy of research. There is ample research on how the elderly shop, migrate, vote, travel, recreate, but too little on how their day-to-day lives relate to the sense of place in their communities. One noteworthy behaviour is the migration of elderly when declining health increases the advantages of moving and reduces the advantages of staying. The value of a sense of family may come to exceed the sense of place in the present residence.

## 7. CONCLUSION

The household production model is an example of an important tool in economic theory that can benefit a broader, more real-world oriented regional science. The sense of place has a dual role: it is both an input into and an output of household production. Households reallocate their time as they come to appreciate a strong sense of place. How people spend their time matters for the sense of place; the sense of place matters for how people spend their time.

## REFERENCES

- Bailey, A. S. and Coffey, W.J. (1994) Regional science in crisis: a plea for a more open and relevant approach. *Papers in Regional Science*, 73(1), pp. 3-14.
- Becker, G. (1965) A theory of the allocation of time. *Economic Journal*, 75, pp. 493-517.
- Becker, G. (1991) *A Treatise on the Family*. Enlarged edition. Cambridge, Massachusetts: Harvard University Press.
- Bliss, C. (1988) A theory of retail pricing. *The Journal of Industrial Economics*, 36(4), pp. 375-91.
- Bloomquist, G., Berger, M. and Hoehn, J. (1988) New estimates of quality of life in urban areas. *American Economic Review*, 78(1), pp. 89-107.
- Bolton, R. (1971) Defence spending and policies for labour-surplus areas. In J. Kain and J. Meyer (eds), *Essays in Regional Economics*. Cambridge, Massachusetts: Harvard University Press, pp. 137-60.

- Bolton, R. (1989) An economic interpretation of a 'sense of place'. *Department of Economics Research Paper 130*, Williams College, Williamstown, Massachusetts.
- Bolton, R. (1992) 'Place prosperity' vs. 'People prosperity' revisited: an old issue with a new angle. *Urban Studies*, 29(2), pp. 185-203.
- Bolton, R. (1994) Household production and the sense of place. Paper presented at North American meeting of Regional Science Association International, Niagara Falls, Ontario.
- Bolton, R. and Jensen, R.C. (1995) Regional science and regional practice. *International Regional Science Review*, (forthcoming).
- Braden, J.B. and Kolstad, C.D. (eds.) (1991) *Measuring the Demand for Environmental Quality*. Amsterdam and New York: North-Holland.
- Freeman, A. M. III (1993) *The Measurement of Environmental and Resource Values: Theory and Methods*. Washington: Resources for the Future.
- Hanson, S. and Pratt, G. (1992) Dynamic dependencies: a geographic investigation of local labour markets. *Economic Geography*, 68(4), pp. 373-405.
- Haveman, R. (1994) Personal communication, January 1994.
- Kahneman, D., Knetsch, J. and Thaler, R. (1986) Fairness as a constraint on profit seeking: entitlements in the market. *American Economic Review*, 76(4), pp. 728-41.
- Kahneman, D., Knetsch, J. and Thaler, R. (1987) Fairness and the assumptions of economics. In R. Hogarth and M. Reder, (eds.), *Rational Choice: The Contrast between Economics and Psychology*. Chicago: University of Chicago Press, pp. 101-16.
- Marsh, B. (1987) Continuity and decline in the anthracite towns of Pennsylvania. *Annals of the Association of American Geographers*, 77(3), pp. 337-52.
- Michael, R., and Becker, G. (1973) On the new theory of consumer behaviour. *Swedish Journal of Economics*, 75, pp. 378-96.
- Miller, B. (1992) Collective action and rational choice: place, community, and the limits to individual self-interest. *Economic Geography*, 68(1), pp. 22-42.
- Rothenberg, J. (1967) *Economic Evaluation of Urban Renewal*. Washington: Brookings Institution.
- Smith, V.K. (1991) Household production functions and environmental benefit estimation. In J.B. Braden and C.D. Kolstad (eds.) *Measuring the Demand for Environmental Quality*. Amsterdam and New York: North-Holland. pp. 41-76.
- Stigler, G. and Becker, G. (1977) De gustibus non est disputandum. *American Economic Review*, 67(3), pp. 76-90.
- Relph, E. (1976) *Place and Placelessness*. London: Pion.
- Stover, M.E. and Leven, C.L. (1992) Methodological issues in the determination of the quality of life in urban areas. *Urban Studies*, 29(5), pp. 737-54.
- Tuan, Yi-Fu, (1974) *Topophilia*. Englewood Cliffs, New Jersey: Prentice-Hall.
- Tuan, Yi-Fu, (1977) *Space and Place*. Minneapolis, Minnesota: University of Minnesota Press.