

REGIONAL SCIENCE AND REGIONAL PRACTICE IN AUSTRALIA: A REVIEW AND COMMENT

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ABSTRACT The first regional science conference in Australia was held in 1976, almost twenty years ago. The international regional science community is currently undergoing an introspective review of its directions and values. This paper attempts a review and evaluation of the progress and achievements of the regional science community in Australia. This evaluation considers the general questions of contributions to regional policy, the analytical/modelling orientation of regional science, and the so-called academic-practitioner debate. The picture which emerges is one of considerable achievement, with a number of important gaps and professional issues to be resolved.

1. INTRODUCTION

Recent years have seen most professions and professional groups experiencing, voluntarily or involuntarily, some reappraisal of their role and status in society, some reassessment of their responsibilities, and some re-focussing of their future roles in a changing society. Indeed there appears to be a ground-swell of rationalisation, introspection and negotiation, which has left few professional groups unaffected and unaltered in some way.

The international regional science 'profession' or community has been part of this general reflection on professional roles. Observers have offered critical comment from time to time since the inception of regional science. The last few years, however, have seen many authors contribute to a major retrospective assessment of the international profession, its preoccupations and directions. This re-visiting of roles and responsibilities is timely and healthy as regional science reaches a state of full maturity in an international context.

This paper attempts a brief review and reassessment of regional science in Australia, where sufficient years have passed since the first conference held in 1976, to encourage some professional introspection. Public introspection is both healthy and perilous. It is healthy in that it invites debate, and debate should promote mutual understanding and co-operation. It is perilous in that review comment at a quite general level inevitably does an injustice to the volumes of detailed research which has occurred in this country. This, however, is the risk which all reviewers and reviewees face.

Section 2 of the paper will briefly visit the literature arising from the reassessment of the international regional science profession; it will attempt to provide a consensus from this extensive debate, and in particular to identify the main elements of this debate. Section 3 of the paper will address the Australian regional science 'profession' or

professional group, and attempt to identify those elements of relevance to the Australian context.

As a review of regional science professionalism *per se*, the paper does not discuss in detail the state of Australian regional policy, the state of regional analysis, modelling or local economic development, except insofar as these are related holistically to the regional science community as a whole. The paper avoids specific issues in order to gain the larger perspective.

2. THE INTERNATIONAL SCENE

It is probably in the nature of review processes and reviewers that attention is drawn to the perceived negatives and shortcomings of the reviewees, rather than the strengths and achievements which could be demonstrated. So it is with the reviews of the international regional science scene, where the recognition of the very substantial achievements of the profession appears to be somewhat casually dismissed in order to highlight the perceived negatives. This paper also follows this trend with a reluctance born of necessity. This section attempts to present a summary of views of regional science from the international literature in the form of a number of quotations and brief comments.

2.1 The Science of Space-Economy and Space-Society

Referring to the origins of regional science, Isard (1979) described the intent of the founders "to bring together what knowledge and methodology had been accumulated in the several social science and professional fields ... to find a way to attack regional problems more effectively". Isard (1960) saw regional science as an interdisciplinary field that examines the locational dimensions of all human activity. Chinitz (1971) perceived regional science at the higher analytical and evaluation level, reflecting the general view of regional science as the science of the space-economy and space-society, writing "it is our business to explain and predict the geographical distribution of population and economic activity ... (and) to evaluate these happenings".

Regional science was clearly seen by the founders, and has generally continued in this tradition, as "a body of theory, concepts, knowledge and methodology for the study of spatial situations, policies and problems at a higher professional level" (Jensen, 1991), serving the scholars and higher-level planners, rather than the practitioners of regional development. It has passed through several stages in an evolution to the present state. For example by 1974, Funck (1975) was able to identify three overlapping stages in this evolution (Bolton and Jensen, 1994): (i) the period of classical regional science of the 1950's and 1960's which saw the development of descriptive and analytical tools and models¹, (ii) the 1960's and early 1970's which gave the development of 'operations-research-type regional science', when the universal surge of interest in operations research became evident in the regional science community, and (iii) the 1970's, the period of the 'new regional science' concerned with the objective systems of regional

¹ This was termed by Funck (1975) as the period of "art for arts' sake" in regional science.

policy and planning issues. To these Bolton and Jensen (1994) added (iv), the 1980's as the decade of the explosion of phenomenology in regional science, the stage of empirical and information overload, where the challenge will be to search for new generalisations and themes in spatial relations.

Since the early beginnings of regional science, we have seen the regional science international community grow in size and diversity, with increasing numbers of meetings and publication venues and in an apparent state of improving health. Yet recent years have also seen increased introspection and soul-searching about the directions of regional science, suggestions of a crisis in regional science, and suggestions for new directions and solutions. These can best be summarised in terms of the Vining (1988) analogy, comparing the subject of the (regional) science with the subject of the (regional) practice. In other words, is regional science providing a suitable scientific base for the practitioners of regionalism? Or is regional science simply operating in the interests of regional scientists, with their own agendas, and their own personal directions?

This is a fascinating and a complex question, and like all complex questions has numerous answers, dependent on the perspective of the respondent. We can all observe and verify the subject of (regional) science as it has developed through the decades and the Funck-Bolton-Jensen stages of its existence; this is evident in the many metres of library space occupied by the regional science literature. What is not so obvious and very much a matter of opinion is defining what is, or should be, the subject of the (regional) practice. A review of the main criticisms of regional science shows that many are dissatisfied with the subject of the science, but for many different and undefined reasons. We consider some of the opinions expressed and any implied subject-of-the-practice inherent in these opinions.

A recent issue of *Papers in Regional Science* (Volume 73, 1994) contained a major paper by geographers Bailly and Coffey (1994a) suggesting a crisis in regional science, and a number of comments from other observers. Bailly and Coffey suggest that this 'crisis' derives from a lack of relevance, an "increasing internal malaise due to a lack of emphasis on practical issues, and a corresponding lack of recognition in policy circles", and from concentrating on the narrower perspective of the space-economy rather than the wider perspective of the space-society. It is difficult to distinguish in the Bailly and Coffey paper any real definition of the subject of the practice of regional science, except perhaps a relevance to real-world problems and to policy-making generally. This is interesting in the light of the earlier observations by Breheny (1984) of the "deep ignorance" among regional scientists of the policy-making process, and his suggestion that regional scientists often go through the motions of policy-making relevance to give some credibility to their work, and the suggestion by Jensen (1991) that we believe that policy-makers are listening to us, when in fact they are mostly not listening.

Bailly and Coffey offer a set of "orienteeing principles" for increasing the relevance of regional science, which can be summarised as integrating basic and applied work, providing more recognition to the human dimension in models and theories, and considering space and time in research and models. These are hardly new suggestions, but supported by Gibson (1994) who argues that the agendas of regional scientists are becoming less client-driven as the profession has developed and that this must be reversed. Plane (1994) recognises no particular subject of the practice of regional

science, but observes an increasing and impending maturity in the discipline as the economists and geographers gain mutual understanding.

Stough (1994) argues the irony in the situation that "at the time when regions are becoming so important ... the theoretical and practical base of the field (regional science) seems to be sedimenting around a rather narrow body of theory", and that at a time when developments and experiments in regionalism are occurring around the world, the regional science literature has virtually nothing to say on these issues. He argues (with others) the need to move from the currently positivist paradigm to a more constructionist perspective like that which has emerged in most of the other social sciences. Anas (1994) argues that regional science has underemphasised its mainstay of human behaviour in space, and that a new regional science of *spaciology* is required. Vickerman (1994) argues that regional science, in its current state, has relevance to the practical world and will continue to do so.

In their concluding thoughts of the comments of other observers, Bailly and Coffey (1994b) note the low level of concern, despite the recognition of fundamental problems in regional science, with the question of relevance. Indeed, the collective writings of these senior regional scientists identify no real common thread, except that more 'relevance' is required. If we ask the question "more relevance to what?", they presumably mean relevant to the subject of the practice, and since none of these writers really defines this, there is no consensus, but merely a probable majority opinion implicitly defining the subject of the practice of regional science as lying in the policy direction. This is a disappointing conclusion, and not one which provides a firm base of intellectual leadership for a discussion of the regional science scene in Australia. This is in contrast to the explicit claim by Jensen (1991) that one important part of the subject of the practice in regional science was the regional development practitioner, concerned with the pragmatic issues of regional development. It is interesting to note that no such claim has been made in the U.S. which is generally regarded as the country with the most well-developed regional development practitioner professional groups.

So the discussion so far at the international level has little in the way of substance, except that it identifies a feeling by some commentators that some aspects of regional science are perceived to lack relevance to some undefined subject of the practice of regionalism. This is hardly a path-breaking conclusion, but it does point to the difference in the possible interpretations of the subject of the practice of regionalism, or 'practical' regional science. From the comments of the observers, we can distil three interpretations of the subject of the practice, namely:

- (a) regional *policy-making*, taken to include the processes of policy formulation and the administration of regional/urban policy,
- (b) regional/urban *analysis* for the design of infrastructure systems, the monitoring of spatial distributions and the development of regional/urban planning systems, and
- (c) the functions of the regional development *practitioner* at the 'sharp end' of regionalism, and generally unfamiliar with the subject of the (regional) science.

One's interpretation of the relevance of regional science will depend on which one or more of these one sees as the practice of regional science. We address these three *policy-analysis-practitioner* interpretations in our following discussions of the regional science community in Australia.

2.2 Professionalism and Leadership in Regional Science

Reference has often been made to regional science as a 'profession' or as a professional group. In fact, most of those who have claimed some allegiance to regional science, both at the international level and at the national level in Australia, would have a primary allegiance to an established and formally-recognised discipline, such as economics, geography, planning, regional practitioner, sociology and so on. Indeed most would appear to practice their primary professions within that professional group, and to be regional scientists as a convenient add-on, to establish contact with the multi-disciplinary community with a common interest in regional-urban-spatial matters.

If we attempt to define a regional science profession or professional group in Australia, we need to ask whether it is a different profession to the more conventional professions which have a common core of basic knowledge and are discipline-based, or whether is simply an auxiliary discipline for other sciences (Nijkamp, 1994). Does the reason for the existence of regional science lie almost wholly in its core function of facilitating the common interests of professionals from a number of disciplines with interests in regional-urban-spatial matters, of multi-disciplinary activity, and of creating a mutual understanding among all interested parties? Should all discipline-based functions be carried out by discipline-based groups which by their nature tend to be inward-looking and self-serving?

Many observers of the regional science scene would respond negatively to these questions. They would argue (with Nijkamp, 1994) that regional science should be the science of space, in both a behavioural and a policy sense, and that it must be sufficiently equipped in terms of *applicable and sophisticated research tools and techniques* to perform this function. Indeed, most observers would recognise that the conventional disciplines in regional science have failed to include adequately the spatial dimension of their discipline, with the possible exception of geography². Indeed, again with the possible exception of geography, regional science tends not to serve the interests of individual disciplinary groups well.

It appears therefore that in assessing the performance of regional science in Australia, we need to address these two functions: (i) The extent to which regional science has served as an auxiliary discipline in which interdisciplinary interaction has been facilitated, and the extent to which this interaction has led to mutual benefit and development of the groups involved. The market (i.e. the membership and meeting attendance) will be one measure of this, but is an unreliable indicator given the change in the composition of the regional science professional group in Australia in the two decades of its existence. (ii) The provision of the home for space-science in the nation.

Those who have sought to influence the direction of the disciplines have found this to be a difficult task: the variety of interests and self-interests in any discipline usually means that individuals are normally acting in their own interests and seldom in the

² Plane (1994) argues, for example, that economics is an overly disciplined discipline which can often provide a severely limiting paradigm, and that geography is largely an undisciplined one, which promotes eclecticism as a virtue and is attracted to regional science by the rigour of its scientific scholarship.

interests of the discipline as a whole. Those seeking to influence the direction of regional science face a much more daunting task because the group is much more diverse and are usually seeking from regional science something which their own discipline does not offer, namely the 'comradeship' of common interests the regional-urban-spatial matters.³

3. FOCUS ON REGIONAL SCIENCE IN AUSTRALIA

The membership of the regional science group in Australia, as represented by membership of the Australian and New Zealand Regional Science Association (ANZRSA), appears to have varied annually, mostly within the range of 125-175, with probably an equal, if not larger, number of 'adherents' with occasional membership dependent on conference attendance, and on phases of the individual's professional cycle. The relatively small number in the group is both an advantage and a disadvantage. It is an advantage in that personal networks form more readily, function more efficiently and have a longer life. It is a disadvantage in that the group has access to a more limited range of expertise in most areas of operation, and faces the increased risk of operating in professional isolation from the rest of the world.

The senior author of this paper drew attention an early stage in the life of the regional science group in Australia (Jensen, 1978) to the increasingly widening gap between the mathematical modellers of the day and the practitioners of the time, the latter being the more basic analysts of regional-urban phenomena. The increasing number of participating groups in regional science today presents a far more complex picture. We can identify some salient features of the regional science professional group in Australia in the form of a number of points drawn from personal impressions rather than from any form of hard data.

3.1 Establishment of an *Analysis Mode*

The Australian regional science group was born in a fairly pragmatic manner and has maintained a more applied mode than that which generally describes the international regional science community. In contrast to the so-called Isard-effect which influenced the direction of development of regional science in many countries in the world⁴, regional science here was, within limits, home-grown. The early progress in regional science was primarily in the regional *analysis* mode, as researchers became familiar mainly with the techniques of analysis developed overseas and applied these techniques in the local context. The function of early ANZRSA regional science

³ This suggests that the three first-order (and eight second-order) orienting principles suggested by Bailly and Coffey (1994) will not form an effective marshalling emblem to rally the regional science troops towards greater things.

⁴ The influence of Walter Isard on the direction of the development of regional science is well-known and does not need to be described in detail here. On one hand, Isard itemised and formalised many of the tools of analysis used in applied regional science, and in so doing, gave the early regional scientists a formal box of tools for analytical work. On the other hand, Isard led the profession in many theoretical developments and influenced the profession towards a higher theoretical orientation, rather than a practitioner orientation.

meetings was simply to identify those in the nation with regional/urban/spatial interests and to provide an interdisciplinary forum.⁵

3.2 Achievements of the *Analysis Mode*

Early activity set the scene which has been maintained in Australia. These 'new' technologies arrived in a nation which was virtually virgin territory in terms of regional/urban analysis, and in which the basic spatial relationships had not been analysed and indeed were barely understood. The maintenance of this type of basic regional/urban analysis throughout the ensuing years has led to two important achievements: (i) We now have a reasonably sound understanding of the regional/urban relations in the nation. While there remain still some fundamental gaps in our knowledge of the space-economy and space-society (e.g. in regional public finance, regional disparities in welfare, processes of regional growth and decline), our knowledge has accumulated to the extent that we have an appreciation of most regional relationships and problems, and we can be confident in this understanding. (ii) The knowledge gained from this continued analytical work has enhanced the awareness of regional issues beyond the regional science group to the point where the regional implications enter into the debates on a widening number of issues. Apart from the apparently cyclical nature of government interest in regionalism⁶, the increased general interest in regional issues in public debate is noticeable.

The greater part of the regional *analysis* in Australia has been undertaken in universities by academics, mainly in geography and economics. For the geography group, the move to regional science was probably quite a natural movement into a space-related community; for economists, this often involved a move away from the conventional and traditional areas of economic research, which, given the very conservative nature of the profession, involved risk.

3.3 Theoretical and Conceptual Development

This pre-occupation with regional analysis has tended to divert interest in Australia (even in the universities) away from both theoretical and conceptual development in regional science. Australian regional science has contributed very modestly to the international literature in regional-spatial theory and to the development of new concepts in regionalism. This is not surprising, given the limited size of the regional science community in Australia and the still-evident pressures to undertake basic empirical work on the regional/urban framework in the country.

It does mean, however, that we have tended to apply empirical analyses within a current international regional science paradigm, rather than develop a native paradigm. One could argue that Australian regional empirical research has reflected the

⁵ Certainly this function has been adequately served by the ANZRSA since its inception as the only venue of this nature.

⁶ The cyclical nature of government interest in regionalism has been noted by Hurley (1993) and Morrisey and Mathisen (1993).

international regional science community to a large extent, rather than addressing the higher priority Australian regional-spatial issues. For example, the process of the redistribution of regional economic activity and population in Australia, involving regional economic competition, growth and decline as well as the changing nature of the regional urban hierarchy has not been addressed in sufficient depth, despite the prominence of these phenomena in an understanding of the regional policy debate.

3.4 The Academic-Practitioner Debate

There is a need to address the so-called academic-practitioner relationship in Australia which has created so much debate, particularly in recent years. Depending on the point of view, this debate has been either a source of mutually-beneficial creative tension or series of unhelpful criticisms springing from professional myopia and indicating a lack of understanding of the potential for mutual gain. We seek to gain a reasonable perspective on this debate.

We need to realise, however, that both the terms 'academic' and 'practitioner' have many shades of meaning, and that any debate will not be productive unless there is agreement on terms. It has already been established that academic researchers involved in regional science in Australia are oriented towards the pragmatic end of the academic spectrum; in fact it would be difficult to identify any regional science academic group in the world which is more applied and pragmatic than the Australian group. On the surface therefore, it seems more than passing strange that there should be perceived to be unmanageable distances between the academic and practitioner groups in Australia.

The term 'practitioner' in this country seems to be used collectively to include a variety of individuals, including the regional development practitioner actually located in a community and directly involved in regional development work, the individual involved in larger regional development organisations, the bureaucrat with an interest in community-based regional development, the local politician supporting the activities of local practitioners, and even academics with a direct involvement/interest in this work.

This practitioner group has been welcomed into the regional science movement in Australia, and indeed is now perceived by some of the more-academically-inclined to be the dominant group, to the point of astonishing a visitor to the ANZRSA conference in 1994 (Hill, 1994). Why is it that the distance between the (probably) most pragmatically-oriented academic group of regional scientists in the world and the practitioner group is still perceived to be so wide that the twain seem destined to follow different and conflicting paths into the future? Can we not define the subject of the practice of regional science and regionalism in Australia so that the pragmatic academic and the practitioner groups have a higher level of positive synergy in their interactions?

Some comments follow on the roles of the groups concerned with regionalism in the nation, including the academics, practitioners, and government, with the suggestion that the territoriality of each group has impeded progress towards a more mature practice of regionalism in Australia.

The role of the academic in regional practice has, with some noticeable exceptions, been an interesting one. As mentioned above, the academics have, through extensive empirical research, allowed the creation of a general understanding of regional relations in the nation, and this has been an invaluable contribution. They have not yet, however,

recognised the empirical knowledge base required for effective practitioner operations. Some very large gaps exist in quite basic data which is in common use in practitioner groups in the United States, for example in the central place functions of urban centres at different points in the urban hierarchy, the threshold levels for these functions, and for multiple levels of these functions. If the work of the academic is to be more relevant to the practice of regionalism, the academic needs to identify these gaps in basic information and undertake the necessary research.

One of the clearly identified gaps in practitioner activity in Australia, in comparison with, say the U.S., is the apparent reluctance of the practitioner to undertake basic monitoring and analysis at the local level, i.e. basic population analysis, economic activity, employment, social indicators and so on. This arises largely from less-developed analytical skills, from a lower level of familiarity with data sources and from a lower level of appreciation of the potential value of basic analysis in the local planning process. The academics, with a more disciplined background to these procedures, have not provided the leadership by either undertaking these analyses for practitioners or by developing simple but effective processes which the practitioner could follow. This in effect means presenting academic disciplines to practitioners in a relevant-now form. Some progress has been made on this front in the area of community economic analysis, but the scope of the work needs to be widened. It is not sufficient for academics to embrace the practitioner world; they have access to a heritage of disciplinary knowledge which is of enormous potential use to practitioners if packaged in the appropriate form.

Another major function of the academic groups everywhere has been to take a broader perspective, to observe and comment on the 'big picture', and to exercise influence in the professional improvement of the discipline. In Australia, academics have accepted this responsibility to a limited extent. They have provided much of the initiative, for example in the establishment and accreditation of a professional regional development practitioner group, and indeed have shown a stronger strategic interest in this aspect than the practitioner group itself. The academics have provided some comment on regional policy developments in Australia, but insufficient to provide an overall appreciation of the regional policy status of the nation as a whole. This can at best be described as an uncoordinated series of measures by state and federal governments. One of the disadvantages of a small regional science community is the reluctance of academics to review and evaluate the state of regional policy and policy developments in the nation.

The emergence of the regional development practitioner group as an active part of the regional science group is a unique and major achievement in this country; in the United States the two groups are scarcely aware of the existence of the other. The establishment and maintenance of this practitioner group as a recognised professional group depends, however, on two factors, namely (i) the establishment of a professional training and accreditation process, and (ii) the ability of the group to establish processes for continuous professional improvement. The first of these (i), has been a long-recognised need. The Queensland government through the Department of Business, Industry and Regional Development (DBIRD), has taken the first vital steps leading to the recognition of skills development programs and some universities are already providing tertiary programs. There is still, however, some distance to travel before a full accreditation and registration program is in place.

The second of these (ii) has been a more difficult concept to achieve. While *Regional Policy and Practice* and the *ANZRSA Newsletter* have provided extremely valuable functions to the practitioner (and others), they tend to be news-oriented rather than skills-oriented in the sense of a professional journal. Every professional group, in the interests of improved professional practice, requires a systematic presentation of current and innovative practice and a venue for the accumulation of knowledge and experience. The common observation of the unwillingness of regional development practitioners to record and publish their activities remains relevant; there is therefore the real risk that the potential of the experiences and experiments of the practitioners will not be fully exploited as a source of mutual learning and support.

A further important function of developing professionalism is occasional review and evaluation of professional practice, in terms of standards of professionalism and best-practice. The regional development practitioner group in Australia has reached the level of evolution where consideration of such a review could be timely. On first reaction at least, the practitioner groups in Australia would appear to exploit the advantages offered by simple analytical techniques rather less than their United States counterparts.

The role of government in regional development practice in Australia has always been a question of considerable debate and frustration. It has always been assumed that the constitutional arrangements have ensured that primary responsibility for regional policy and regional development has rested with the states. The states have developed a considerable variety of policies and frameworks for regional development, including for example a (large) regional development board approach in New South Wales, development commissions in Western Australia, and a virtually small-community-based approach in Queensland.

The role of the Commonwealth in regional development has been quite reserved since the heady days of the 1970s, and consisted mainly of a small number of short-term programs directed primarily towards larger urban areas. It remains to be seen whether the recent Commonwealth initiative establishing Regional Economic Development Organisations (REDOs) is simply another program of an ephemeral nature.

Three points seem to emerge from observation of the role of government in regional planning in Australia. The *first* point is the continuing reluctance of government generally to recognise fully its central role in regional development. Referring to state governments, "the potential strength of government lies in its ability to design and develop a state-wide regional development structure which is adequately funded, with contributions from both government and community sources, which is community based with government administrative support, and which is professionally operated with government professional support. This leadership role by government is necessary to ensure uniformly high levels of professional regional development across the state, and recognition of regional development as a professional activity." (Jensen, 1992). Certainly since this statement was written, some progress has been made by state governments, although the substance of the statement remains valid.

This point is effectively emphasised by McGruvie and Taylor (1994); "From experience to date, it is suggested that an over-emphasis on short-term project funding and segregating community and economic development can result in reducing RDO (Regional Development Organisation) effectiveness and the loss of the professional skill base required for the long term viability of this initiative", and "a high component of

short term funding results in an over focus on high profile short term projects which do not necessarily address the longer term strategic needs of the community", and "better funding mechanisms need to be put in place to provide sustainable career paths for Economic Development Officers so that the best skills are attracted to this role. This process need not cost any more public agency funding, but could be largely achieved through the rearrangement of existing public agency funding commitments".

A *second* obvious point is that the sustained inability of the Commonwealth and the states to co-operate in establishing a long-term structure for regional development in the nation, or even a long-term concept of regional development. This inability, which unfortunately seems to reflect the norm in federal-state relations in Australia, has been to the lasting detriment of regional development in the nation, and stands in stark contrast to the example of cooperative achievement in regional development between the federal and state (and county) government in the United States.

A *third* point refers to the different concepts of community which are inherent in the different approaches to regional development which appear throughout the nation. Some states, through regional development boards and commissions and clearly the Commonwealth through the REDO concept, place a priority on what could be termed large-region bodies as the source of regional development initiatives. Others, notably Queensland, seem to indicate at least an implied preference for a small-region approach: more a local development organisation or small-community approach. The significance of this large-community - small-community difference is much more than semantic. It raises the question of the different requirements for effective regional development through the two different systems. The large-region approach presumably implies a professional development group with a range of expertise at the regional level, while the small-region approach presumably requires a general practitioner at the local level, with professional support at a higher level, possibly on the 'hub and spoke' principle⁷.

3.5 On Economics and Regional Science

At the international level (Isserman, 1994; Plane, 1994), economics is the dominant 'home discipline' of regional science. A glance through the ANZRSA membership directory suggests that this would probably also be the case in Australia among those with clearly-defined disciplinary connections, but at the same time the total membership list would probably be dominated by the practitioner group, defined as those with an interest primarily in the practice of regional development.

It is not possible in this brief section to do justice to an evaluation of the contribution of economics to regional science in Australia; rather, a less rigorous approach will be taken by offering a few summary observations for consideration and debate. The *first* refers to the dominance of the economics contribution to regional science in this country by economic modelling. Those individual economists with interests in regional science have often come from the modelling groups in economics; indeed there has been a conscious movement to facilitate the regional science conferences as the primary venue for regional modelling in Australia. One down-side of

⁷ The need for recognition of these two levels was stressed by Powell (1990).

this development has been the unfortunate tendency for the non-economists to gain the impression that economics *is* modelling, and that modelling *is* economics, and that modelling is a pastime reserved for the academic. Indeed, some practitioners have been overheard to say that all modelling is academic and therefore by definition irrelevant. This is probably the price we have to pay for such an active regional modelling group in Australia.

The *second* observation is the corollary of the first. Economists in regional science in Australia, because of the modelling dominance, have not really established the significance of the spatial economic dimension in regional practice in this country. One would assume that the responsibility of the economics profession in regional science would be to provide this spatial economic dimension of the operation of regional markets and of the economic forces behind the spatial phenomena of the nation, i.e. an awareness of the significance of the space-economy of the nation. It is our belief that this aspect of economics has not been developed satisfactorily in Australia.

A *third* observation follows from these. The economics profession has access to an impressive array of tools of analysis which have been developed primarily for the analysis of the 'large' dimension in the nation, i.e. the large firm, the larger-scale industry, the state or national economy. For a number of reasons, some of which have been mentioned above, the 'small' dimension in economics has been largely ignored. This small dimension includes the small firm, the local industry and the local economy. As another paper in this issue comments (Bolton, 1995), rather than the perceived notion by some that economics and economic analysis is overkill at the regional practitioner level, there is a strong case for saying that there is not enough economics. It is a matter of redirecting and reapplying more traditional economic concepts and analysis to the local, community and even household level. Certainly, the emergence of community economic analysis as a field of interest is beginning to address this problem, but very few runs are so far on the board in this matter.

4. CONCLUSIONS

Let us return briefly to the *policy-analysis-practitioner* interpretations of the subject of the practice of regional science, developed in Section 2, for a summary view of the status and relevance of the regional science group in Australia. We address these issues in turn.

Doubtless the formation of regional policy at the state and federal level has been influenced by individuals with regional science affiliations, and doubtless some of the credit for the steadily improving state of regional policy is due to this group. However, in one important respect, the performance of the regional science group has been disappointing. It has not provided a comprehensive discussion and evaluation of current regional policy in Australia, at either a state or national level. The profession has acted largely as policy-takers, rather than as commentators or critics, which is one of the

primary professional responsibilities of any group.⁸ It is, for example, probably true to claim that one of the most-read and most-influential papers in recent years on rural/regional policy in Australia was written by two visitors to Australia (Sher and Sher, 1994) and published overseas.

The important contribution of the analytical dimension to the understanding of regional matters in Australia has been established. The main remaining gaps in this area are to be found in some basic areas of understanding such as regional/urban structure and in the applications of analytical techniques at the small-economy level.

The regional practitioner group in Australia continues to grow from strength to strength. The main limitation on the viability of this group in the future will be professional recognition, and this in turn is inevitably related to training and accreditation processes. Professional recognition will require also recognition by the group of best-practice standards and the need for a sustained process of professional improvement.

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⁸ Some welcome exceptions to this generalisation occur, e.g. Sorensen, (1994), Murphy and Walker (undated), Murphy (1994), and very recently the contributors to the final issue of the *Australian Journal of Regional Studies* (December 1994).

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