WELL-BEING ECONOMICS AND REGIONAL SCIENCE

Paul Dalziel
AERU, Lincoln University, Lincoln, New Zealand, 7647. Email: paul.dalziel@lincoln.ac.nz

ABSTRACT: In this Presidential Address delivered to the 35th ANZRSAI conference, the author recalls his introduction to regional science during his 1981 Masters' studies. He recalls New Zealand's economic reforms (1984-1994), using Census data to illustrate how central government policies caused considerable hardship in all of New Zealand's regions. He reflects on changes since 1999, especially after the introduction of the regional partnerships programme in 2000 and the passing of the Local Government Act in 2002. In that context, he comments on what is termed here as the McCann critique, which cautions against the policy use of constructs not amenable to formal empirical evaluation. The paper finishes with a recent contribution by the author on 'well-being economics'. It shows how the '*market* value-added' created by providers of goods and services in New Zealand's sport and outdoor recreation sector is outweighed by the '*personal* value-added' that New Zealanders create *for themselves* by participating in sport and outdoor recreation activities.

Keywords: Well-being; Local Government Act; value of sport and recreation; regional economic development policy; New Zealand.

1. INTRODUCTION

I am honoured to deliver this address at the end of my term as ANZRSAI President. I recently attended the North American meetings of Regional Science Association International where the 2011 NARSC President, Professor Gilles Duranton, explained that the only duty of NARSC Presidents during their year of service is to deliver a Presidential Address! We do things differently 'Down Under'. ANZRSAI offers many more opportunities for its President to make contributions to the well-being of the Association over twice as long a period. Nevertheless, I think it is valuable for a knowledge community like ours to ask its President at the end of his or her tenure to reflect on some important theme in our discipline.

The theme I have chosen is *well-being economics and regional science*. Well-being economics has been a unifying strand in my own research and I think will be one of the cornerstones of our discipline's future. The following section recalls my introduction to regional science during my Masters' study in 1981, exactly thirty years ago. I then recall how my research was strongly influenced by New Zealand's 1984-1994 decade of economic reforms, since those reforms caused considerable hardship in all of New Zealand's regions. There was a marked change in New Zealand's regional policy approach after 1999, especially with the introduction of the regional partnerships programme in 2000 and then the passing of the Local Government Act in 2002. I use that change as an opportunity to comment on what I have termed the McCann critique, which cautions against the use for policy of constructs not amenable to formal empirical evaluation (McCann, 2007). I finish with an illustration of the importance of well-being economics, drawing on a recent study that shows how the '*market* value-added' created by providers of goods and services in New Zealand's sport and outdoor recreation sector is outweighed by the '*personal* value-added' that New Zealanders create *for themselves* by participating in sport and outdoor recreation activities.

2. ECONOMICS OF LOCATION AT THE UNIVERSITY OF CANTERBURY IN 1981

In 1981 I enrolled as a Masters of Commerce candidate in the Department of Economics at the University of Canterbury. The programme at that time consisted of six papers, among which I included ECON 610: Economics of Location. I still have my lecture notes. Using exclusive language that was still commonplace in the Department at that time (the first female lecturer with tenure was not appointed until 1990; Tay, 2007, p. 69), the subject outline explained that the course was "designed to cover certain aspects of the relationship between man and his environment, with consideration being given to some of the more important topics in the fields of location theory and urban and regional economics." Adopting as the textbook the second edition of Edgar Hoover's (1975) *An Introduction to Regional Economics*, the syllabus was in five parts:

- An introduction motivating the study of regional economics, covering multivariate tools for separating regions;

- Regional growth, introducing shift-share analysis, input-output analysis, probabilistic models (e.g. Markoff processes);

- Domestic trade, including empirical evidence on the determinants of inter-regional trade (e.g. agglomeration economics), growth centres and central place theory;

- Regional (including urban) policy, covering policy objectives, market versus planning solutions, outcome evaluation and linear programming; and

- The frictions of distance, including gravity models, human migration and transport costs.

We know the old joke of a lecturer who goes in for the first lecture, says “good morning” and a student in the front row puts up a hand and asks “Will we need to know for the final exam that the morning is good?” I was that student! Thus, when the lecturer began by asking “what is a region?” I wrote down the first part of his answer without any hint of the intended irony: “A region is any area for which the research can get a grant.”

The lecturer was Peter Hampton, who had been in the Department since 1963 after completing his PhD at the University of Ottawa under Professor Jack Firestone (Tay, 2007, pp. 34-35). More than a decade before I met him, Hampton had published a broad ranging analysis of regional economic development in New Zealand in the *Journal of Regional Science*. He introduced his article with a comment that reflected his wider sense of humour but also tells us something about the debates in regional science in New Zealand at that time (Hampton, 1968, p. 41):

> Interest has recently been aroused in the pattern and cause of locational changes in New Zealand industry. This is partly because of a recent suggestion by the leader of the national opposition political party that the whole of the South Island, which comprises 56 per cent of the total land area, and has 30 per cent of the total population, may be regarded as a “depressed area” suitable for subsidy and other development incentives.

That interest had been sufficient for the Minister of Industries and Commerce to commission the New Zealand Institute of Economic Research to prepare a report on *Regional Development in New Zealand*. The report's conclusions were clear-cut (McDonald, 1969, p. 8):

> There does not appear to be a case at present for direct Government intervention to change the pattern of regional development. This pattern results largely from assessments by firms and individuals of their location preference, which cannot allow fully for the effect of their decisions on the community as a whole. However this pattern of development does not appear to be giving rise to excessive public authority or social costs.

In contrast, Hampton (1968, pp. 48-49) argued that the government was already involved in regional economic development policies in ways that were not necessarily benign:

> Successive governments, through the use of such devices as the issuance of import licences for producer goods and raw materials only to already locationally established industries, variations in roading and building expenditures on a regional basis, and subsidies to mining industries have pursued a policy of stabilizing industrial movement.
>
> … As suggested earlier, the government has the means to continue the implementation of a policy of counterbalancing the effects of deeper, underlying economic forces because of both the relatively easy transmission from area to area of the chief power source, hydro-electricity, and their complete control over the disbursement of foreign exchange. Both main political parties have pledged the continuance of such a policy.

In a prescient footnote, Peter pointed out that as a result of government policy "in 1963 seventeen motor vehicle assembly plants existed to serve a population of less than three million persons" (Hampton, 1968, fn. 3, p. 48).

Unwinding this and other poor policy would eventually have brutal impacts on the regions, but this was still two decades away.

By the time I was Peter's student in 1981, regional economic development policy of this type had reached a peak. The government led by Sir Robert Muldoon was returned to power by a single seat in that year's general election on a promise that it would "Think Big". Think Big was a programme of large construction projects in the energy sector: in particular the Petrocorp ammonia-urea plant at Kapuni, the synthetic fuel plant at Motonui, the expansion of the oil refinery at Marsden Point, the methanol plant at Waitara, the expansion of the steel mill at Glenbrook and the promise of an aluminium smelter at Aramoana (although this did not proceed). These projects were typically in marginal electorates and came to be regarded as exemplars of the cynical use of taxpayer funds to subsidise uneconomic investments in the name of regional development but motivated by political influence.

3. NEW ZEALAND'S PROGRAMME OF ECONOMIC REFORMS 1984-1994

After completing my Masters degree, I returned to the University of Canterbury to enrol in PhD thesis research on the economics of water storage (still one of the most pressing issues for economic development in Canterbury; see Whitehouse *et al*., 2008; Dalziel and Saunders, 2009). Accidents of timing and my location turned that research into a University of Otago degree awarded in 1985, but in the meantime there was a landslide change of government in the snap general election held in July 1984.

The reforming Labour government had no time for regional policies after the debacle of the Think Big projects. That antipathy was reinforced when it discovered that the costs of guarantees and loans made to implement Think Big, plus other loans extended to the meat and dairy producer boards, the Rural Bank and the Shipping Corporation, had resulted in an unfunded Crown liability of $7.2 billion (in 1986/87 prices) or 13 per cent of gross domestic product that year (Dalziel, 1999a, p. 125). Consequently, governments over the next decade focused on economic reforms to stabilise macroeconomic policies, to increase competition in domestic industries and to open up the economy to international market forces (Dalziel and Lattimore, 1996; Silverstone *et al*., 1996; Dalziel, 1998, 2002).

These reforms were comprehensive. In short order, interest rates were deregulated, international capital restrictions were removed, the currency was floated, most tax incentives and agricultural subsidies were phased out, import quotas were eliminated, and a timetable was set for reducing tariffs to zero by 2006. Price stability was made the sole objective of monetary policy and the government began privatising or commercialising its state-owned enterprises. In 1991, labour legislation moved from a union-based awards framework to an individual-based contracts system while social welfare income support entitlements were cut back. In 1994, the Fiscal Responsibility Act introduced a statutory requirement for a balanced or surplus budget 'on average, over a reasonable period of time'.

Policy advisors recognised that the short-term impact of these reforms would be a rise in unemployment, something that under previous governments would have been regarded as intolerable (EMG, 1989; Higgins, 1997). Figure 1 presents regional data showing Census employment trends for five and ten years after 1986. In the five years between 1986 and 1991, only Central Auckland, Wellington City and the Nelson and Marlborough regions experienced any employment growth; the remaining ten regions in Figure 1 all experienced falls in the number of people employed. Five years later, nine of these ten regions still had not caught up to their employment levels of 1986 (the exception was Canterbury).

I have recently described the impact of the reforms on workers and communities as 'brutal' (Dalziel, 2011b). Figure 1 is one of the key reasons I hold this view. A decade is a long time to have no job creation in a region. In the East Coast of the North Island, employment was still almost 20 per cent lower in 1996 than it had been *ten years earlier* in 1986. The reforms left scars across some of New Zealand's poorest urban and rural communities, with negative implications that continue to the present day (see also Morrison, 2001).

But what does a regional economist do when government policy has such negative impacts on the economic well-being of regions right across the country? In my case, it produced a research programme on macroeconomics (see, for example, Dalziel, 1990, 1991a, 1993, 1996, 2000 and 2001a) and a series of publications documenting the reform's consequences for economic well-being (Dalziel, 1991b, 1999b, 2001b, 2002; Boston and Dalziel, 1992; Boston, Dalziel and St. John, 1999).

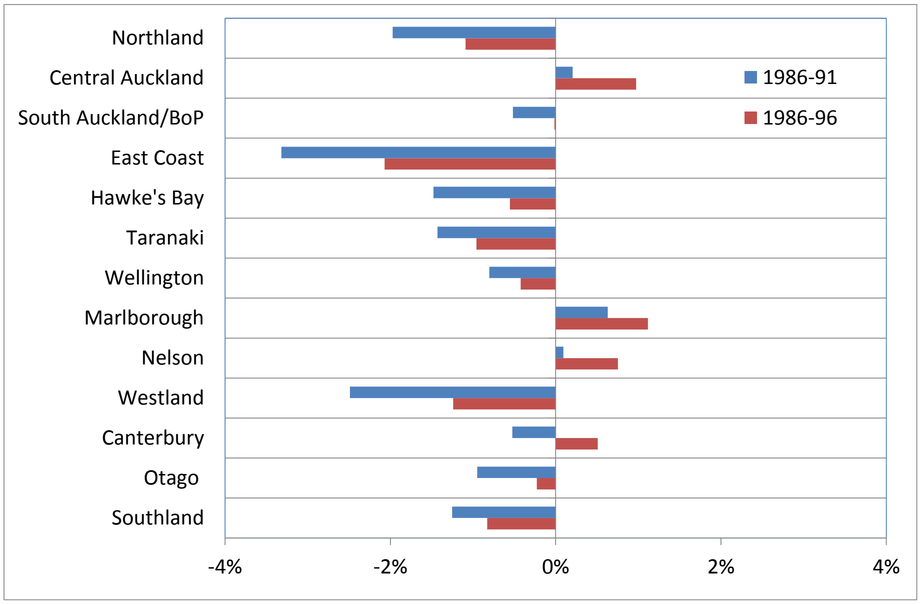

Figure 1. Annual Percentage Change in Census Employment Levels by Statistical Area, 1986-1991 and 1986-1996.
Notes: The Statistical Areas were defined by Statistics New Zealand, except that the graph separates Wellington City from the Wellington Statistical Area and it combines Nelson and Marlborough. BoP stands for Bay of Plenty.
Source: New Zealand Census of Population and Dwellings, 1986, 1991, 1996.

Following the end of the reforms in 1994, the government over the next five years sought to consolidate the benefits (middle income tax rates, for example, were reduced in 1996 and again in 1998) but still with no room for regional development policies. Instead, the aim was "to create an environment in which New Zealand firms, as well as the ordinary New Zealander, make the best decisions for themselves" (Peters, 1998, p. 5).

4. COMMUNITIES-LED REGIONAL POLICIES

Another change of government in November 1999 saw a marked change in this approach (Schöllmann and Dalziel, 2002; Dalziel, Greer and Saunders, 2003; Dalziel and Saunders, 2003 and 2005; Schöllmann and Nischalke, 2005; Dalziel, 2007). The Ministry of Commerce was rebranded as the Ministry of Economic Development and a new Crown entity was created to deliver industry and regional development programmes. The flagship of the new approach was the Regional Partnerships Programme (RPP), which was designed using principles of "endogenous regional development" highlighted in the OECD's Local Economic and Employment Development (LEED) programme (see especially OECD, 2001, summarised at www.oecd.org/dataoecd/51/42/1962067.pdf).

The Regional Partnerships Programme divided New Zealand into 26 regions, defined by officials after an open invitation for local organisations to nominate a suitable partnership for their region. Each RPP region was eligible to receive government funding to build up regional development capability, to prepare a regional economic development strategy and to have $2 million co-invested by the Crown in a major regional initiative every three years.

There was some arbitrariness in the definitions of the 26 RPP regions, as illustrated in Table 1. The territory of the Bay of Plenty Regional Council was divided into three RPP regions, for example, whereas the Canterbury Regional Council (with four times the land area and twice the population) was kept as one. Thus it came to pass that Peter Hampton was more accurate in 1981 than he had realised: in 2001 the definition of a RPP region was any area for which the government would give a grant!

Table 1. Comparison of the Bay of Plenty and Canterbury Regional Council Areas. Source: Dalziel (2007, p. 20); Dalziel and Saunders (2009, p. 1); Statistics New Zealand 2001 Census.

Regional Council	**Land Area**	**Population in 2001**	**No. of RPP Regions**
Bay of Plenty	12,000 km^2	239,412	3
Canterbury	48,000 km^2	481,431	1

The Regional Partnerships Programme was replaced in 2007/08 by a Regional Strategy Fund, which was itself phased out after another change of government in November 2009. A more enduring change was reform of the Local Government Act in 2002. Previous legislation had defined nine specific purposes for local government; in contrast, Section 10 of the new Act defines just two purposes, which are both very broad (Saunders and Dalziel, 2004 and 2010):

> (a) to enable democratic local decision-making and action by, and on behalf of, communities; and
> (b) to promote the social, economic, environmental, and cultural well-being of communities, in the present and for the future.

The communities-led approach in the Local Government Act 2001, which was also reflected in the former Regional Partnerships Programme, takes us a long way from the accepted framework for regional science I studied in 1981. It is no longer a question of assisting a well-resourced central government make sound decisions for the country's regions based on comprehensive data collection and sophisticated empirical analysis. Instead the engaged regional scientist is now asked to interact with regional bodies directly, to help them take democratically supported decisions that might reasonably be expected to promote the well-being of the region's communities.

All the plenary speakers at this conference will address the formidable challenges associated with this task and many of the contributed papers also report projects where regional scientists are aiming to help local communities that vary enormously in size and capability. Let me list the names of some of these communities to give you an idea of the diversity involved: King Island (population 1,700 in the middle of Bass Strait); the town of Rochester in Victoria (population 1,849); the City of Onkaparinga in the south of Adelaide; the Wandiwandian aboriginal people of the Yuin nation; the Cairns region in the far north of Queensland; Emerald, Dalby and St George in Queensland; Moree, Wee Waa and Warren in New South Wales; the south-west region of Victoria; the Northern Territory; Latrobe Valley; the Murray Darling Basin; the Surat Basin; the Flinders Ranges and Eyre Peninsula; Metropolitan Beijing in China; and the central areas of Kyoto, Seoul, and Florence.

It is not only the communities that are diverse; so too are the methods being used to generate ideas for improvements. The contributed papers at this conference include: a carbon neutral investment model for local government; the sustainable development platform model; the NEXIS model of urban adaptation; the community report card for building sustainable regional communities; the economic gardening entrepreneurial approach to economic development; the charette approach for addressing climate change; innovation indicator matrices used within a modified input-output approach; and the social entrepreneurship 4.0 model.

5. THE MCCANN CRITIQUE

In this context of this great diversity of communities and methods, I want to discuss what I term the McCann critique. Professor Philip McCann is Professor of Economic Geography at the University of Groningen in the Netherlands, Professor of Economics at the University of Waikato in New Zealand and Special Adviser to the European Commissioner for Regional Policy. He is a recognised international leader in regional science; in 2002, for example, the North American Regional Science Association honoured him with the Hewings Award for outstanding scholarship. In a recent special issue of *Regional Studies*, Professor McCann contributed an article on regional studies and regional science that deserves careful attention (an early discussion in a New Zealand context was by Perry, 2010). The article begins with the following summary statement (McCann, 2007, p. 1210):

> This paper will examine various issues relating to the identification, measurement and policy evaluation of urban and regional phenomena, which can lead to problems of analysis and interpretation. In particular, in many environments the importance of evidence-based policy design, analysis, and evaluation is increasing, and this paper will argue that, in such environments, there is no substitute for empirical work based on formal models. At the same time, the paper also argues that much of the current thinking regarding urban and regional issues is increasingly driven by concepts and constructs that do not lend themselves to empirical evaluation or evidence-based analysis.

McCann's article considers three major themes in regional policy over the last two decades: (i) clusters and industrial districts; (ii) social, cultural and creative capital; and (iii) regional innovation systems and learning regions. McCann provides persuasive evidence that (idem, p. 1215):

> … in none of these three cases has the nature of the relations within the systems ever been formally specified by the regional studies tradition. As such, while one hears of many anecdotal and case study examples of the types of relations that may operate in specific examples of each of these different characterizations, what has never been provided is a blueprint for which types of relations ought to be generally observable in all cases, and what types of relations will only operate in specific cases.

McCann treats the three themes with respect; indeed he argues that this type of conceptual thinking (which he calls "regional studies") has an important role to play, complementing the essential role for empirical work based on formal models (which he calls "regional science"). Nevertheless, the McCann critique is that "one cannot generalize on the basis of a few limited case-study observations, which themselves are not rigorously defined" so that "without any internal methodological consistency there is no real mechanism for moving from stylized discussions to specifically-targeted policies, or from policy-implementation to policy-evaluation" (idem, p. 1218). He concludes (ibid):

> As a consequence of this, unless one carefully considers the origins of different constructs, the outcome is all too likely to be both poor ex ante policy prescriptions and poor ex post policy evaluations.

I should acknowledge that my own work on regional development has made liberal use of McCann's three exemplar themes: cluster analysis (Saunders and Dalziel, 2003; Dalziel, Saunders and Taylor, 2005; Dalziel, Saunders and Zellman, 2006); social and cultural capital (Dalziel, Matunga and Saunders, 2006; Dalziel, Maclean and Saunders, 2009; Dalziel and Saunders, 2009); and regional innovation systems (Saunders and Dalziel, 2006; Dalziel, Saunders and Kaye-Blake, 2009). Faced with this personal history, how should I respond to McCann's thoughtful critique that "designing policies which are based on constructs amenable to formal empirical evaluation is *always required* for ensuring good policy" (McCann, 2007, p. 1209, emphasis added)?

Before I give my answer, let me state the obvious – this is not simply a personal issue. As I have just described, this conference is replete with invited and contributed papers that either advocate for changes to regional policies or report on research carried out with some regional community. I take for granted that the aim of the work in these papers is to help improve well-being, but in the absence of empirical testing, how do we know that the analysis and advice we offer will genuinely advance this goal?

History confirms this is a highly practical question. I have argued that regional policies in New Zealand during the 1960s and 1970s were poor and that the way those policies were unwound during the reforms of the 1980s and 1990s led to enduring distress in regional communities. Whether one thinks this was primarily due to the recklessness of the policies before 1984 or to the recklessness of the policies after 1984, the issue raised is the same – as a discipline how do we take care to ensure our policy advice, however well intentioned, does not end up harming the well-being of communities?

My answer to this question has two dimensions to it. The first dimension focuses on what counts as evidence for the validity or invalidity of any concept or theory. I agree wholeheartedly with Professor McCann that where scholars are able to draw strong conclusions based on sophisticated empirical work using rigorous formal models, that evidence carries enormous weight. No conceptual metaphor, no matter how clever, can survive decisive empirical tests demonstrating its invalidity.

I am also persuaded, however, by scholars such as Deirdre McCloskey (1994, 2002), Victoria Chick (1995, 1998), Sheila Dow (1996, 2007) and Tony Lawson (1997, 2009) that while empirical formalism is a powerful method that should be used when appropriate, there are other methods available for testing validity when a theory is not susceptible to empirical formalism. Dow (1996, p. 12), for example, refers to what she terms the Babylonian tradition (following Feynman, 1965) as an alternative:

> The alternative approach is to employ several strands of argument which have different starting points and which, in a

> successful theory, reinforce each other; any argument, therefore, does not stand or fall on the acceptability of any one set of axioms. Knowledge is generated by practical applications of theories as examples, using a variety of methods.

This is a close description of what often happens in regional scholarship. A new theory or concept begins to gain attention. At meetings like this one and in the pages of academic journals, researchers engage in reasoned debates about the evidence accumulating for and against the concept. This does not typically produce consensus, but validity is judged to be strong if the implications are generally supported by arguments produced from diverse starting points, while each study of a practical application helps to advance our knowledge about possible limitations on the extent of the concept's validity.

Note that this alternative test of validity places a heavy burden on individual scholars, who are required to exercise judgement about the weight of accumulating evidence across many available concepts to determine which concepts are most applicable to the situation of a community being studied or advised. In the absence of decisive empirical tests, there is no getting away from this burden; it can only be shared by participating in events like this one and by weighing up the arguments put forward by different points of views using different methods.

The second dimension of my answer returns to the main theme of my address: well-being economics and regional science. At the heart of well-being economics is the principle that the best judge of an individual's well-being is generally the individual himself or herself. In this, I am influenced by Professor Amartya Sen's scholarship on *Development as Freedom* (see, for example, Schischka, Dalziel and Saunders, 2008). Sen (1999, p. 11) argues that "with adequate social opportunities, individuals can effectively shape their own destiny and help each other [and] need not be seen primarily as passive recipients of the benefits of cunning development programs" (see also Alkire, 2002, and Nussbaum, 2011). Consequently, in Sen's famous formulation, the goal of development is "the expansion of the 'capabilities' of persons to lead the kinds of lives they value – and have reason to value'' (Sen, 1999, p. 18).

Within this framework, the work of regional studies scholars in developing conceptual metaphors and interpreting regional data can be very powerful in helping communities to imagine new possibilities for how they might lead the kinds of lives they value and have reason to value. In saying this, I am not thinking just of international figures such as Michael Porter or Richard Florida, but any scholar in any locality who prepares any report that helps decision-makers and community leaders "see" their region in a new way.

In 2003, for example, a colleague and I were commissioned to prepare a study on the "high tech sector" in Canterbury (Saunders and Dalziel, 2003). We interviewed 34 senior managers drawn from the region's largest electronics and software firms as well as from key public and private sector support agencies. Participants in those interviews spoke about why they were based in Canterbury, including many comments about the presence of other similar firms, the quality of their lifestyle in the region and the value of graduates and researchers from the region's tertiary institutions.

Thus when it came time to analyse the interview material, it made complete sense to use the metaphors of industry clusters, cultural capital and regional innovation systems, not because we were wedded to those concepts from overseas evidence, but because they resonated with the views expressed to us by leaders in our community. Further, in a good illustration of Sheila Dow's Babylonian approach, the different concepts and the different viewpoints reinforced each other in a way that not only built confidence in the sector but also helped key stakeholders see how their individual viewpoints were placed in a much larger picture. This had two consequences.

First, the report recommended that the region's universities and high tech enterprises collaborate to prepare a proposal for capital investment from the private sector and from the government's Partnerships for Excellence programme that would create a new facility for fostering better linkages between tertiary education institutions, industry, and business. This was done and the purpose-built state-of-the-art National ICT Innovation Institute was opened at the University of Canterbury on 23 April 2009.

Second, in the planning to rebuild the central business district after the 22 February 2011 earthquake, the Christchurch City Council has included provision for a new high-technology Enterprise Precinct and Innovation Campus (EPIC) in the south-east quarter. The Draft Central City Plan explains (Christchurch City Council, 2011, p. 112):

> The benefits of this development are twofold: in the first phase it protects existing businesses and employment and allows high-tech sectors to continue to grow. In the second phase it acts as a catalyst for high-growth potential businesses and presents an opportunity for Christchurch to position itself as the key high-tech employer in New Zealand.

Thus the high tech sector is now part of the Christchurch identity in a way that was not true ten years ago. Caroline Saunders and I did not *cause* that change, but we did make an important contribution. Our use of concepts and theories drawn from the regional studies discipline to express the views held by leaders in the community helped to shape the shared imaginative landscape of the sector. This illustrates the power of good regional analysis.

In summary the second dimension to my answer to the McCann critique is that validity is supported when concepts resonate with the experience and views of community decision-makers about how to promote well-being. This second dimension is supported by the recent emphasis in regional science on the importance of leadership and effective institutions in regional communities (see for example Stimson, Stough and Salazar, 2009, and Kroehn, Maude and Beer, 2010) and on the importance of creating and analysing measures of subjective well-being (see for example Kahneman and Krueger, 2006, and Morrison, 2011).

Bringing both dimensions together, the common element is "reasoned discussion": reasoned discussion with our peers in the community of regional scholars and reasoned discussion with the representatives of the communities who must ultimately decide where to invest their time and other resources. This is enormously challenging work, but for scholars who want to make a difference for regional communities it can also be enormously rewarding.

6. WELL-BEING ECONOMICS: AN ILLUSTRATION

I have suggested that at the heart of well-being economics is the principle that the best judge of an individual's well-being is generally the individual himself or herself. I want to finish this address with an illustration of the importance of this principle.

As commented in the previous section, the purposes of local government are very broad. They sanction, for example, the involvement of Councils in providing facilities for sport and recreation of their communities, including maintaining lakes, rivers, beaches, parks, camping grounds, sports fields, stadiums, swimming pools, recreation centres, gymnasiums, cycle ways, walkways, playgrounds, picnic areas and botanic gardens. Earlier this year, I was asked by Sport and Recreation New Zealand (SPARC) to analyse the economic and social benefits of the sport and recreation sector at the national level and at the level of regional councils.

At its simplest level, the economic value of any industrial sector is easily estimated. The boundaries of the sector must be defined, and then the System of National Accounts can be used to estimate the total "value added" by enterprises providing goods and services within the defined boundaries. Applying this technique for this project (the details are explained in Dalziel, 2011a), 17 sport and recreation industries were identified, which in 2008/09 were estimated to have contributed \$3.8 billion or 2.1 per cent of New Zealand's gross domestic product (GDP).

A broader analysis recognises that there are important economic activities strongly related to sport and recreation not included within the 17 identified industries. The report for SPARC measured the value added by (i) people working in sport and recreation occupations outside the 17 industries; (ii) investment by central government in sport and recreation education in schools; (iii) local government expenditure on new sport and recreation facilities; and (iv) the market value of volunteers working in sport and recreation clubs. These items raised the market value of the sector to \$5.2 billion or 2.8 per cent of GDP (extended to include the market value of volunteered work).

That estimate of 2.8 per cent of GDP indicates the importance of sport and recreation to the economic well-being of communities in New Zealand. But the report then went on to ask another question: what is the value *to the participants' personal well-being* to justify the time they spend in sport and recreation activities?

This question was answered using 'revealed preference' to value the opportunity cost of time spent in sport and recreation. Survey data suggests that an average New Zealand adult aged 25 to 34 spends about 146 hours per year engaged in sport and recreation. Assuming 8 hours per working day, this is equivalent to just over 18 working days. At the beginning of the year, such a person could have chosen to spend this time in a secondary job (or in a primary job if not currently employed). The fact that the person did not make that feasible choice, but chose instead to participate in sport and recreation, reveals that the person obtains more value from the sport and recreation than would have been obtained from the secondary job.

As well as time spent actively participating in sport and recreation activities, New Zealanders also spend time as volunteers for sports and recreation clubs and watching their children participate in organised sport. The same argument applies to this use of time; the person must obtain more value from these activities than would have been obtained from working in paid employment. Further, items such as transport costs, clothing costs and equipment costs are likely, on average, to be not significantly greater participating in sport than participating in employment. Thus it is reasonable to take the potential income earned in employment as a measure of the opportunity cost of time. To be conservative, the study used the statutory minimum wage ($12.75) to measure this potential income, even though most people earn a higher hourly rate than this figure.

The results are shown in Table 2, which summarises the total number of hours spent in sport and recreation in 2009, amounting to 544.9 million hours. The final column uses the statutory minimum wage to calculate the value of time associated with those activities. The largest value is the active participation of adults, calculated at $5.3 billion, followed by the watching of young people's active participation at $1.0 billion. The total value is $6.9 billion.

Table 2. Value of Time Spent in Sport Participation and Volunteering for Adults, 2009. Source: Dalziel (2011a, p. 96).

Activity	**Total Hours (millions)**	**Total Value ($ millions)**
Adult participation in sport and recreation	418.7	$5,338
Watching young people in organised sport	75.0	$956
Volunteering for sport and recreation clubs	51.3	$654
TOTAL	**544.9**	**$6,948**

The total of \$6.9 billion is a substantial figure. Recall that the study's estimate of the market value-added was \$5.2 billion. Thus the 'market value-added' created by providers of goods and services in New Zealand's sport and outdoor recreation sector is outweighed by the 'personal value-added' that New Zealanders create for themselves by participating in sport and outdoor recreation activities.

I think Professor McCann is correct when he says we do not understand this feature well. Participation in sport and recreation is an example of what we might term "social capital" and watching our children play sport may be part of what we consider "cultural capital". Scholars include indicators such as these as explanatory variables in models of regional economic development. The SPARC study, however, suggests that they are valued aspects of personal well-being in their own right; a major part of how regional communities create lives they collectively value and have reason to value.

Kia ora tātou katoa; may we all enjoy well-being.

REFERENCES

Alkire, S. (2002) *Valuing Freedoms: Sen's Capability Approach and Poverty Reduction*, Oxford University Press, Oxford.

Boston, J. and Dalziel, P., Eds (1992) *The Decent Society? Essays in Response to National's Economic and Social Policies*, Oxford University Press, Oxford.

Boston, J., Dalziel, P. and St. John, S., Eds (1999) *Redesigning the Welfare State in New Zealand: Problems, Policies and Prospects*, Oxford University Press, Melbourne.

Chick, V. (1995) Order out of chaos in economics? Some lessons from the philosophy of science. In S. C. Dow and J. Hillard (Eds) *Keynes, Knowledge and Uncertainty*, Edward Elgar, Aldershot, pp. 25-42.

Chick, V. (1998) On knowing one's place: The role of formalism in economics. *Economic Journal*, 108(451), pp. 1859-1869.

Christchurch City Council (2011) *Draft Central City Plan August 2011: Vol. 1*. Available at http://resources.ccc.govt.nz/files/AllCommsStuff/(2)DraftCentralCityPlanVolume1.pdf.

Dalziel, P. (1988) New Zealand. In C. E. Morrison and H. Soesastro (Eds) *Domestic Adjustments to Globalization*, Japan Center for International Exchange, Tokyo, pp. 103-134.

Dalziel, P. (1990) Market power, inflation and incomes policies. *Journal of Post Keynesian Economics*, 12(3), pp. 424-438.

Dalziel, P. (1991a) Theoretical approaches to monetary disinflation. *Journal of Economic Surveys*, 5(4), pp. 329-357.

Dalziel, P. (1991b) The rhetoric of Treasury: A review of the 1990 briefing papers. *New Zealand Economic Papers*, 25(2), pp. 259-274.

Dalziel, P. (1993) Classical and Keynesian unemployment in a simple AS-AD framework. *Australian Economic Papers*, 32(1), pp. 40-53.

Dalziel, P. (1996) The Keynesian multiplier, liquidity preference and endogenous money. *Journal of Post Keynesian Economics*, 18(3), pp. 311-331.

Dalziel, P. (1999a) Fiscal policy. In D. Milne and J. Savage (Eds) *Reporting Economics: A New Zealand Guide to Covering the Economy*, New Zealand Journalists Training Organisation, Wellington, pp. 125-37.

Dalziel, P. (1999b) Does Australia need a programme of New Zealand style economic reforms? *Journal of Economic and Social Policy*, 4(1), pp. 17-26.

Dalziel, P. (2000) A Post Keynesian theory of asset price inflation with endogenous money. *Journal of Post Keynesian Economics*, 22(2), pp. 227-245.

Dalziel, P. (2001a) *Money, Credit and Price Stability*, Routledge, London.

Dalziel, P. (2001b) A third way for New Zealand? In A. Giddens, Ed. *The Global Third Way Debate*, Polity Press, Cambridge, pp. 86-99.

Dalziel, P. (2002) New Zealand's economic reforms: An assessment. *Review of Political Economy*, 14(1), pp. 31-46.

Dalziel, P. (2007) Integrating employment, skills and economic development: New Zealand. Report prepared for the OECD LEED Programme, Department of Labour, Wellington, available at www.dol.govt.nz/publications/general/iesed/summary.asp.

Dalziel, P. (2011a) The economic and social value of sport and recreation to New Zealand. AERU Research Report 322 prepared for Sport and Recreation New Zealand, Lincoln University.

Dalziel, P. (2011b) Recreating full employment. The 2011 Bruce Jesson Memorial Lecture, Maidment Theatre, University of Auckland, 26 October, available at www.brucejesson.com/lectures.

Dalziel, P., Greer, G. and Saunders, C. (2003) Regional economic development planning: A study of its benefits and best practice. AERU report prepared for the Ministry of Economic Development, Wellington.

Dalziel, P. and Lattimore, R. (1996) *The New Zealand Macroeconomy: A Briefing on the Reforms*, Oxford University Press, Melbourne.

Dalziel, P., Matunga, H. and Saunders, C. (2006) Cultural well-being and local government: Lessons from New Zealand. *Australasian Journal of Regional Studies*, 12(3), pp. 267-280

Dalziel, P., Maclean, G. and Saunders, C. (2009) Economic policy and cultural well-being: The New Zealand experience. In Y. Marumo, N. Sajima and S. Lim (Eds) *The Roles of New Zealand and Japan in the Asia-Pacific: From Standpoints of Security, Economy and Cultural Exchanges*, Ronsosha Publishing House, Tokyo, pp. 139-170.

Dalziel, P. and Saunders, C. (2003) Regional economic development planning in New Zealand: Who owns it? *Australasian Journal of Regional Studies*, 9(3), pp. 259-279.

Dalziel, P. and Saunders, C. (2005) Regional partnerships for economic development. In J. Rowe (Ed) *Economic Development: The New Zealand Experience*, Ashgate, Aldershot, pp. 87-105.
Dalziel, P. and Saunders, C. (2009) Canterbury regional profile and economic outlook. AERU report prepared for Canterbury Economic Development Co, Timaru.
Dalziel, P., and Saunders, C. (2009b) Sustainable development and cultural capital. *Official Statistics Research Series*, 5, available at www.statisphere.govt.nz/official-statistics-research/series/volume-5-2009.aspx.
Dalziel, P., Saunders, C. and Kaye-Blake, W. (2009) The role of universities in theories of regional development. In J. Rowe (Ed) *Theories of Local Economic Development: Linking Theory to Practice*. Ashgate, Farnham, pp. 193-212.
Dalziel, P., Saunders, C. and Taylor, G. (2005) Forecast of skills demand in the high-tech sector in Canterbury. AERU Research Report 275, prepared for the ETITO ICT in Canterbury Growth Pilot funded by the Tertiary Education Commission.
Dalziel, P., Saunders, C. and Zellman, E. (2006) Forecast of skills demand in the high-tech sector in Canterbury: Phase two. AERU Research Report 288, prepared for the ETITO ICT in Canterbury Growth Pilot funded by the Tertiary Education Commission.
Dow, S. C. (1996) *The Methodology of Macroeconomic Thought*, Edward Elgar, Cheltenham.
Dow, S. C. (2007) Variety of methodological approach in economics. *Journal of Economic Surveys*, 21(3), pp. 447-19.
EMG (1989) *The Economy in Transition: Restructuring to 1989*, New Zealand Planning Council Economic Monitoring Group, Wellington.
Feynman, R. P. (1965) *The Character of Physical Law*, MIT Press, Cambridge MA.
Gratton, C. and Taylor, P. (2000) *Economics of Sport and Recreation*, Spon Press, London.
Higgins, J. (1997) No longer a burning social issue? Employment assistance policy and the closure of the unemployment debate in New Zealand. *Journal of Sociology*, 33(2), pp. 137-152.
Hampton, P. (1968) Regional economic development in New Zealand. *Journal of Regional Science*, 8(1), pp. 41-55.

Hoover, E. M. (1975) *An Introduction to Regional Economics*, Second Edition, Alfred A. Knopf, New York.

Kahneman, D. and Krueger, A. B. (2006) Developments in the measurement of subjective well-being. *Journal of Economic Perspectives*, 20(1), pp. 3-24.

Kroehn, M., Maude, A. and Beer, A. (2010) Leadership of place in the rural periphery: Lessons from Australia's agricultural margins. *Policy Studies*, 31(4), pp. 491-504. Reprinted in C. Collinge, J. Gibney and J. Mabey (Eds) *Leadership and Place*, Routlege, London, pp. 125-138.

Lawson, T. (1997) *Economics and Reality*, Routledge, London.

Lawson, T. (2009) On the nature and roles of formalism in economics: Reply to Geoffrey Hodgson. In E. Fullbrook (Ed) *Ontology and Economics: Tony Lawson and His Critics*, Routledge, London, pp. 189-231.

McCann, P. (2007) Observational equivalence? Regional studies and regional science. *Regional Studies*, 49(9), pp. 1209-1222.

McCloskey, D. N. (1994) *Knowledge and Persuasion in Economics*, Cambridge University Press, Cambridge.

McCloskey, D. N. (2002) You shouldn't want a realism if you have a rhetoric. In U. Mäki (Ed) *Fact and Fiction in Economics: Models, Realism and Social Construction*, Cambridge University Press, Cambridge, pp. 329-341.

Morrison, P. S. (2001) Employment. *Asia Pacific Viewpoint*, 42(1), pp. 85-106.

Morrison, P. S. (2011) Local expressions of subjective well-being: The New Zealand experience. *Regional Studies*, 45(8), pp. 1039-1058.

Nussbaum, M. C. (2011) *Creating Capabilities: The Human Development Approach*, Belknap Press of Harvard University Press, Cambridge MA.

OECD (2001) *Local Partnerships for Better Governance*, OECD, Paris.

Perry, M. (2010) Controversies in local economic development. *Local Economy*, 25(7), pp. 527-534.

Peters, Hon. W. (1988) *Budget Speech and Fiscal Strategy Report*, Parliamentary Document B.2, New Zealand Treasury, Wellington.

Saunders, C. and Dalziel, P. (2003) The high-tech sector in Canterbury: A study of its potential and constraints. AERU Research Report 260, prepared for New Zealand Trade and Enterprise, Lincoln University.

Saunders, C. and Dalziel, P. (2004) Economic well-being in regional economic development. *Australasian Journal of Regional Studies*, 10(3), pp. 355-366.

Saunders, C. and Dalziel, P. (2006) Identifying the way forward for high growth firms in the ICT sector. Report prepared for the HiGrowth Project Trust, Auckland.

Saunders, C. and Dalziel, P. (2010) Local planning for sustainable development: A small rural district case study from New Zealand. *Journal of Enterprising Communities*, 4(3), pp. 252-267.

Schischka, J., Dalziel, P. and Saunders, C. (2008) Applying Sen's capability approach to poverty alleviation programmes: Two case studies. *Journal of Human Development and Capabilities*, 9(2), pp. 229-246.

Schöllmann, A. and Dalziel, A. (2002) Rediscovering regions: Regional development from a central government policy perspective. Paper presented to the New Zealand Association of Economists annual conference, Wellington, 26-28 June.

Schöllmann, A. and Nischalke, T. (2005) Central government and regional development policy: Origins, lessons and future challenges. In J. Rowe (Ed) *Economic Development in New Zealand*, Ashgate, Aldershot, pp. 47-68.

Sen, A. K. (1999) *Development as Freedom*. Oxford University Press, Oxford.

Silverstone, B., Bollard, A. and Lattimore, R., Eds. (1996) *A Study of Economic Reform: The Case of New Zealand*, Elsevier, Amsterdam.

Statistics New Zealand (2007) *Non-profit Institutions Satellite Account: 2004*, Statistics New Zealand, Wellington.

Stimson, R. J. and Stough, R. R. with Salazar, M. (2009) *Leadership and Institutions in Regional Endogenous Development*. Edward Elgar, Cheltenham.

Tay, F. (2007) *125 Years of Economic Studies at Canterbury, New Zealand (1979-2003): A Brief Historical Sketch*, University of Canterbury, Christchurch.

Whitehouse, I., Pearce, A. and McFadden, G. (2008) Canterbury strategic water study (CSWS) stage 3: Multi-stakeholder evaluation of water storage options: Final report. Environment Canterbury, Christchurch.