

An Interview with Dennis Rose for *Asymmetric Information*, no. 44, 2012, by Gary Hawke

Q: When did you become interested in economics?

A: Well, I first found out about economics when I failed sufficient units in my degree to need another subject. I started economics in my third year at university.

Q: Which university was that?

A: Canterbury University College. In my first year I failed mathematics, one of the prerequisites for economics. In my second year, I failed English II, because of Old English requirements, which completely foxed me. So by the third year, I was looking for something else, and I started economics and I took to it from the beginning.

Q: What had you done at school then?

A: Well, I attended the district high school in Southbridge, Canterbury - near Christchurch, where my father was the principal teacher, and spent the last two years of high school at Hastings High, where I stayed with my grandparents. My grandfather, who'd had a quite severe stroke, was a retired customs officer, and I'd stayed with them many times through my childhood, so I spent two years with them while the family was moving up to Wellington – there were housing problems.

(Q: Your father was transferred?)

A: My father was appointed to a new job, he was coming up to Wellington High – or Wellington Tech, as it then was – from the district high. At school, my main interests were geography and history. [Those] were the two subjects which most interested me. Also, English at Hastings High – Mr Matheson was a great enthusiast for the Romantic Movement poets, and I responded well to that. That was a very pleasant period. I went down to Canterbury because I was a theological student –

(Q: Ah yes, now I did know that, I'd forgotten...)

A: Yes, I went to College House, just alongside the University buildings that then were in central Christchurch, now the Arts Centre.

(Q: It was an Anglican Theological College?)

A: An Anglican Theological College, yes. I hadn't actually started lectures in theology, but I had the good fortune to have a good friend, Jim Thornton, who became a philosophy lecturer at Christchurch and with whom I discussed many issues. The Doctrine of the Atonement turned me out of the church. Basically, I could not make head or tail of the necessity or efficacy of crucifying one's own son as a way of cleansing the sins of mankind. It just blew me apart as I thought about it. Jim was later to leave the church and become a philosophy lecturer. So, in my third year, I was flitting out around Christchurch, and in that same year I started economics, and I quickly found that I was enjoying that. I was also doing political science at that stage, but political science did not carry on beyond stage II...

(Q: The economists were presumably Weststrate, Wolfgang Rosenberg and Alan Danks...?)

A: Yes they were the three major figures for me in economics. Weststrate was pretty much institutional economics. He started with Robinson Crusoe and worked his way onwards, ...

(Q: He was presumably writing *Types of Economies*...)

A: He was writing the *Portrait of a Modern Mixed Economy* The *Types of Economies* came later...¹ He would have been working on the *Portrait* at the time. His Stage I lectures were very much focused on the institutional frameworks of economics. Wolfgang Rosenberg was lecturing on Keynesian economics at stage II, and I also did development economics under him at the Masters level. I had a warm relationship with Wolfgang...

(Q: Yes, such a nice person...)

A: Yes, he was one of the lecturers who frequently mixed with students, turned up at meetings and invited people to his home. Alan Danks was the principal lecturer at the Masters stage. He was very much a Marshallian, marginal analysis, and he was masterly in terms of building up supply and demand schedules and following through into particular applications.

Q: What books did you use?

A: Well, we had Samuelson at Stage I and Hansen's *Business Cycles and National Income* at Stage II... I'm trying to think what was our main text at Masters level....

(Q: If you were using Marshall, you were probably using one of the English textbooks as well – Benham or Cairncross....)

A: No.

(Q: Did you look at Marshall's books themselves?)

A: When we talked I thought I bought my copy of Marshall's *Principles* later, but I find it was purchased in Christchurch so we will at least have referred to it. Other books dating from my master's year are; Meade *Planning and the Price Mechanism*, Tinbergen *The Dynamics of Business Cycles*, Hicks, *Value and Capital*, Robbins *The Nature and Significance of Economic Science*, Marsh *World Trade and Investment*, and Lewis *The Theory of Economic Growth*. . I was also influenced by David Fieldhouse, D.K. Fieldhouse, who was lecturing in history at stage II and offered a tutorial paper on the industrial revolution. That was an important bridge into economics because it was basically the human and social impact of the British industrial revolution. He was a great lecturer, and a wonderful tutorial taker.

(Q: He was good, yeah. He was at Oxford, that's where I got to know him. He was born in India. Yes.)

A: Yes. It's worth mentioning Neville Phillips, who was a Professor of History when I started, and I should also acknowledge, from the English department, Winston Rhodes and Lawrence Baigent, who were both considerably inspiring lecturers. I found them both very good. I would have happily gone on in English, were it not for Old English, which I just couldn't handle...

¹ Cornelis Weststrate *Portrait of a Modern Mixed Economy* (Wellington, New Zealand University Press, 1959 second edition 1966); *Types of economy : a comparative study of seven types of economic life* (Christchurch, University of Canterbury, 1963).

(Q: Who taught Old English at Canterbury at that stage?)

A: I think it was Winston Rhodes. Because I remember going to him during the course of the year and telling him I was finding it hopeless.. He wasn't much help on that front.

Q: So, did your family background predispose you to economics, or really was it the discovery at university?

A: My father was a long term Labour Party member, and he was the Labour Party candidate in 1946 and 1949, for the Ashburton electorate. In the '49 campaign in particular, I travelled with him around the Ashburton electorate in a small Fiat... visiting country farm houses, but, as the local party officials explained, there weren't many Labour supporters in their areas. So, I was certainly interested in politics and what was going on there. My grandfather was a customs officer. He'd been Collector of Customs in Napier, and as I say, he'd had a quite debilitating stroke, but he would occasionally wax eloquent on the opium wars which he held against the British government, very strongly.... Again, there was a political awareness which did touch into economics, I suppose, but I really didn't know what economics was about and hadn't heard of it until it kind of lifted itself up as a subject...

(Q: And it rescued you from Old English and mathematics...)

A: Yes.

Q: So you did an MCom...

A: No, I did an MA, and I left that year without doing a thesis. My NZIER motor industry study was accepted many years later as a thesis. Zyg Frankel told me that you were able to submit some other published work as a thesis, and so at this stage I did, because I'd just had a bare BA, and MA papers (overlapping voices)...

Q: And am I right in thinking that when you started looking around, you had a choice of employers? Those were the days when graduates chose their employers.

A: I'll tell you a story! Lisa, my late wife, was from Wellington, and up until the year between my papers and when I was going to go back and do my thesis, I'd always worked on building sites around town, and Lisa said "well, it would be better if you got a job closer to where I am, so that we could meet up". And so I said "yes okay, I will", so I went to the State Services Commission looking for vacation employment, and they said "well, there are several departments you could go to", and identified Industries & Commerce, Treasury (difficult to get into, but possible), the Reserve Bank, and Stats. And I said "which is closest?" (overlapping voices, laughing) And Stats was around on the Terrace, at the top of Mason's Lane opposite St Andrew's. And so I walked around there. At that stage I had also been contemplating looking for possible employment, and noticed somebody was advertising for a person to be doing some accounting work out in the Pacific Islands. I can't remember just what it was, but I mentioned it when I went into Stats, and the man who first saw me misunderstood what I was saying, I think. Anyway, he went off, and brought back John Kominik who was a dominant influence for several years. John was head of the National Accounts Branch, and he grabbed me as a vacation worker and set me working on an economic classification of the public

accounts, to fit within the national accounting framework as a sub account. And I took to them, and at the end of the holidays, decided I'd hang in there -. And so, I worked for several years, primarily on that, but also on the annual national accounts compilation, which was the base workload for the branch - which was quite small - and also on the inter-industry studies, which were being done from there and at that stage, were at the twelve industrial sector level

(Q: Which year was that? Was it '52 or...)

A: No, the 1952-53 Study had been published in early 1957. I joined Stats at the end of that year coinciding with the election of a Labour government under Walter Nash, the Nordmeyer period. At that stage we were working on the on the 1954-55 Study and I did the building/construction sector within that. But the main thing was the classification of the public accounts, and that came out as the Accounts of the Government Sector, I think, from '54/5 through to about '59/60.

Q: Lisa was a student at Canterbury?

A: Lisa was a student at Canterbury, yes. She...

(Q: Her family even then were in Wellington?)

A: They were living in Wellington. She had come down to Christchurch in her second year to study German and languages. That was the last two years that I was in Christchurch. She stayed on a further year at Training College, and then came up to Wellington and we were married at the end of 1958. Yes, the government accounts are an integral part of the national accounting framework but it's quite a big exercise to maintain. I certainly found it fascinating and it took me in through the national accounting manuals for guidance on principles. John Kominik had an amazing ability to pick up a problem of how we were going to classify something and to start, schematically, to set out the parties to a transaction and how we were going to classify their transactions within a summary account. I learnt lessons from that about accounting which have stayed with me and are very useful. It also gave me detailed knowledge for a time of the government accounts. After we'd done the government accounts, we set out to extend the analysis to cover the local bodies sector and that required us to access the data that was coming in from the local bodies, who were filling in returns. That was an eye opener about the nature of public administration because when we said we would like to modify the return to accommodate it to national accounting requirements, we were told "well, this form is only revised every so many years", so we'd have to wait, unless there was some other innovation such as changing the mechanical processing of the return. We also found that one of the barriers to change was that the Stats form matched the local accounting regulations administered by Internal Affairs. So we went to see them, and found that the intellectual authority for what they were doing was, in fact, the Stats form. There was a circularity about that and we never did make a lot of progress but it was educational. It was also, at Stats, that I came in contact with macroeconomics. John Baker was the government statistician, and a permanent member of the Official's Committee on Economic Policy, which was supported by a working party. He had difficulty staffing this working party, and somewhere, probably about my third year, he got me on some job, and then said "would you go to this

meeting?” And so for several years I became the departmental representative on that interdepartmental working party, which took me up, then, to the Official’s Committee and up to the Cabinet Economic Committee, and that over years, basically...

(Q: Was that about 1960?)

A: That’s about 1960, through to ’64.

(Q: So end of the Labour government, beginning of...)

A: End of the Labour government, yes, and particularly the Holyoake administration. John Marshall was chairman of the committee, and Holyoake was a member. Ted Greensmith would have been chair of the Official’s Committee and Jack Lewin was the Industries and Commerce person there. So, yes, that became a main part of my workload at Stats. I also in about 1962 succeeded Steve Kuzmicich as what they called Chief Research Officer, who had responsibility for the research and technical sections. The technical section was basically sample design work, and the research was index number construction and regression, and so on. I worked there for two years and then in ’64, went to Industries and Commerce.

(Q: Lewin worked that out...?)

A: Yes. Harry Holden, who was the working party representative from Industries and Commerce, and Jack Lewin was the normal Official’s Committee, and they sounded me out on whether I was up for a shift to Industries and Commerce. The first time I said “no”. The second time, I said “yes, okay, possibly”, and that became a bit of a battle because of the rules governing transfers between departments. At some point John Baker, said “well, look, I’m not going to stop you”, and agreed to my going.

(Q: Before you leave Stats... Technical stuff, were there mathematicians around at the time? Did you get involved in that?)

A: Yes, there were two... people who were there, a Ken Steel and a Brian Steele, one of them had an ‘e’ at the end and I’ve forgotten which. Colin Gillion was there briefly, and Des O’Dea was there at some point. On the index number side, there was a man we called Bowie, Beaumont, I don’t recall his given name. He had a quite severe stutter, but I really found him interesting because of his depth of knowledge and his feel for the heft of data, one way or another. I’d found this whilst preparing answers to questions asked of the Government Statistician as an expert witness at General Wage Order Hearings. I’d take something that I’d done to Bowie and he’d sit there and then he’d play the figures away around this problem, from outside the box, plug a few numbers up and connect them and see whether they seemed to come back into the same ballpark as I generated. And that was a very instructive exercise. At some point when I was in the Research Office, we had another gentleman, whose name I’ve forgotten, building up a dividend yield index. He was adamant that we needed to bring this forward from the base up to the present by the time consuming process of following every unit through. Steve, who was above me as an Assistant Government Statistician, thought he saw a shortcut and sent down a letter with index number formulations saying “why don’t we do this?” This

was the first time I'd really had to focus on index number theory so I sat down with Bowie who was, essentially, an intuitive man. I finally demonstrated to Steve's satisfaction that, no, there was no shortcut, we had to go the long way around. Bowie was relieved that I had confirmed his intuition.

(Q: Compared with the government stats now, it does sound a bit remote, doesn't it?)

A: It does, it does indeed. It was from there, by the way, that I did my first paper with the Economists' Association, which was on the government accounts. I think that was in 1961, I'm not sure.

(Q: It couldn't have been the Economists' Association, as early as that. It must have been the Illustrated New Zealand...)

A: No, I've got a copy of the paper at home, I'll find out what date was on it. Frank Holmes chaired me. On this occasion my memory serves me well, the paper is dated February 1961. In its early years the NZAE held two conferences each year. One in Wellington in February and then a mid-year residential conference at one of the university campuses, Lincoln and Massey originally. [NZAE originated in the late 1950s, some years before NZEP]

(Q: I didn't think the Economists' Association started as early as that, because I thought it was not all that long before the beginning of the New Zealand Economic Papers, and that, I'm pretty confident, is about 1965/66.)

A: That's about right. The first issues of NZEP were edited by Frank Holmes with Paul Hamer operating from NZIER as Business Manager. Volume 1 No. 2 is dated Autumn 1967.²

(Q: Yes.)

A: I'm also thinking the Economists' Association was functioning at that time because Tom Shand made some derogatory remarks about Wolfgang Rosenberg and Frank, as President, agreed to convey the Association's feeling on this matter

Q: And you put the emphasis on what you learnt at Stats, in terms of the transactions within the economy and how things were related to each other. That strikes you as a more significant lesson than the quality of data and reliability, validity and all of those standard things around statistical data?

A: No, I wouldn't say that. The quality of information and the meaning of data – have always been issues for me. In Stats when I was working on the building and construction sector, a couple of issues came up, which were interesting to me. One was that the – within sector transactions, building and construction purchases from other firms in building or construction, were a kind of undefined boundary, but clearly an important one because...

(Q: Yes, we often used to leave the diagonals blank...)

A: Sometimes they would be left blank, and other times not, yes. The issue didn't seem to be particularly material, but for me, it became important because we were aggregating government, local body, and private sector activities in building and construction, where there's a lot of sub-contracting

² My memory was fallible. NZAE dates from 1959, quite a long time before the first issues of *NZ Economic Papers*.

going on between them. At some point I put down together what I thought I knew, including what we knew about employment in the sector, and found some oddities, and I remember John Kominik saying “well this stuff’s coming from the Labour Department, they’re collecting these statistics. Go and have a talk to them”. So I set off round to the Labour Department statistics office, and they agreed to let me go through what they had for the year that we were looking at, and gave me a drawer out of a filing cabinet which had quite big cards in it, saying “all the blue ones are building and construction”. So I went up to North Cape and started, travelling south as it were, and the first blue card that I found was for an electric power authority in Auckland City. So I asked about this and they said “oh yes, well not all local bodies get a blue card”, which meant that the regularly reported statistic on local authority employment in building and construction did not come from a full census. . . So no, data quality has always been an issue....

(Q: Stayed with you ever since?)

A: Stayed with me ever since, yes. Indeed I made the point in a talk last week noting that, in principle, one sector’s record of assets is matched by another sector’s statement of liabilities”, and what’s more, the government statistician measures them both. But we know that much economic activity’s driven by different peoples perceptions of the value of those same assets and liabilities.

(Q: No, it’s there the whole way through, I think.)

Q: Okay, Industries and Commerce... so what did you actually do there?

A: Again, I was carrying forward in the interdepartmental working party world...

(Q: Still the Cabinet Committee, I think?)

A: Cabinet Committee, yes, but I’d changed departments. And again, that was at working party and official’s committee level and occasionally at the Cabinet Committee level – less so than from Stats because Jack Lewin was normally the man who would do that. So there was that round of activity. We also did a number of other exercises. There was a question of differential freight rates on the inter-island ferry, as a possible form of assistance to South Island manufacturers. Could it be justified?” ...

(Q: So regional developments...)

A: Regional development was a major concern at Industries and Commerce. At some point, the Canterbury manufacturers had been arguing for lowering of freight rates, and somebody pointed out that a general lowering of freight rates would also increase the advantage of Auckland, competing into their patch, and at that point they came up with the thought of a differential. Ivan Thomas, head or deputy-head of the railways department, as it then was, publicly advocated this. It was an interesting exercise, but it was also an interesting problem because it came onto our desk, Harry Holden and myself, from the Minister without any indication as to his thinking. We went through the various options and said “if you want this in any way, then you clearly need some research.” And I think that’s the way the Minister went. But it was interesting to me as an example of the...

(Q: Political economy of the day...)

A: Yes, and the political process of identifying an issue, “is this worth doing some work on, or not?” And it’s also about communication, you know, it’s come down as a letter without anyone further up the department or...

(Q: Any interdepartmental process. I mean an apology of the public service is that in the early 60s, everything was done intra-departmentally, and nobody ever consensused things until it got to the Ministers. But here, you’ve got a single Minister getting advice from a busy department on this issue. I mean, I think if you’d gone and talked to the Treasury, even in the early 60s, they’d have been fairly negative about the idea of, you know, differential freight rates...)

A: Sure, and that was the nature of the battle at that time, because there was a firm tension between Industries and Commerce and the Treasury on a wide range of policy issues. I got myself burned on that inter-departmental frontier over the issue of foreign investment. The National Party caucus had made some kind of statement, and I first heard of it at a working party meeting where Treasury was anxious to respond. I queried the need for speed and asked what we needed to do to get hold of the issue. Unbeknown to me, Bill Sutch, with whom I’d had no contact on this matter at all, had done a note to the Minister on the same subject, and Treasury thought that I’d set them up for a fall, so they convened a meeting of the working party without me. John Kominik told me about that so I went and saw Treasury and said “what’s happening?” and told them what my position was, but yeah, there was strong tension between those two departments at that point. Another issue, which I wasn’t directly involved on, was the cancellation of the Nelson cotton mill. Henry Lang and Jack Lewin were the government people who were handling this. But before that, while I was still at Stats, John Baker told me that the Nelson cotton mill’s was going to be an issue, and asked me to draw together what material I could. We went to an Official’s Committee meeting on Nelson cotton mill, at which, on opening, it was quite clear to me the majority of people were with Treasury in opposing the mill. Jack Lewin worked that table absolutely brilliantly, and by the end he had every member apart from Agriculture and Treasury signing up to his position. That was an eye-opener to me, in terms of ability to influence a committee but it was to no avail because the political tide was quite clearly set. At Industries and Commerce I was assistant economist, assistant to Harry Holden, who was the economist, and I had two branches under me. They each had about two or three staff, they were very small units. Mike Roberts, who became head of Tourism and died on Erebus, headed the external unit and was followed by Frances Lee. Derek Homewood was in there too, at some point. So they had an ongoing work programme around various issues. We had a hire-purchase inquiry at some point on some quite minor change in the hire-purchase law ...

(Q: Were you involved in NAFTA, at all, the New Zealand Australia Free Trade Area...?)

A: Yes, I was involved in NAFTA, in the sense that John Marshall, the responsible minister, was interested in Peter Elkan’s proposals for duty draw back. And that was worked up at working party level. I had...

(Q: Peter was at NZIER?)

A: Peter was at NZIER, yeah.

(Q: So he wasn't involved in the Official's process?)

A: Peter was at NZIER, and he'd done a paper on proposals for balanced trade.³ It was basically a stratification of the tariffs, saying that you would let the tariff come down providing you were getting something approximating balanced trade, area by area. And Marshall was attracted to that, and I looked over the mechanics of the proposal, which involved conditional drawback of customs duty, at working party level. Industries and Commerce was taking the lead and I was dealing with Peter. That was the first time that I'd really interacted with Peter in any significant way. Ken Durrant from Treasury and I went over to talk with the Australian officials on that, and that was the origins of what became Article 3.7 of NAFTA. The balanced trade type words are in there but it was far from the scheme that Peter was thinking about. So yes, I was involved in NAFTA on that. There was also perennial stuff relating to the European Economic Community, and Britain's potential entry. There was a separate external trade branch, of which Harry Clark was head, at that stage, sitting alongside Harry Holden with direct responsibility for that work but I did get involved to a degree. We also did, at that point, the *Maori in the New Zealand Economy*, which Graham Butterworth researched and wrote within the economic section. This is another example of the jobs that just came sailing in through the door. We had referred down to us a request from the New Zealand Maori Council for something on the New Zealand economy, and Harry and I basically said "alright, we'll get somebody working on that", and so Graham started work, and did that.

(Q: It was a good piece of work...)

A: Yes, it was.

(Q: Graham has a fairly jaundiced view of the fact that most libraries file it under Bill Sutch, but you certainly see it as Graham did it?)

A: Well Graham certainly did...

(Q: That would be Graham's view, by the way.)

A: Yes there was also an issue because my name appears in the report as supervisor and at some point I needed to clarify that it was indeed Graham's work. After my time at Industries and Commerce, I went up to a Maori Council meeting at Omahu, with Graham, and presented a paper on Maori and Regional Development. Many years later, when I joined the Planning Council, I was introduced to Graeme Latimer, a prominent Maori member of the Council, and he floored me totally by saying "we've never responded properly to the challenge that you delivered at Omahu." And I didn't know who he was. Lisa used to say I was socially dyslexic, and it's true to a degree. But, I'm stunned at the way in which the oral tradition of Maori carries forward... people have different memory bank systems...

(Q: What did he mean by 'a challenge'? The *Maori in the New Zealand economy* I don't see as a...)

³ Peter G. Elkan *Freer Trade With Australia: Why and How* (Wellington, NZIER 1965).

A: Well, I talked about regional development, basically.

(Q: Oh, okay, so you'd... It's the start of Bob Mahuta and iwi plans...)

A: I was hypothesising that if we could find ways of providing employment for young people within their home regions we'd be doing something good. So we were exploring what were the limits and what were the possibilities there?

(Q: So that's what 'challenge' means?)

A: Yep.

Q: How long did you stay at Industry and Trade?

A: It was Industries and Commerce when I went there...

(Q: And it became Trade and Industry...)

A: Yes. I was only there two years, so '64 through '66.

(Q: So, it may still have been Industry and Commerce then?)

A: It was. I was enjoying the work there when one of my staff said "I suppose you'll be applying for that job at the Institute?" I said "what job at the Institute?" They were advertising for a staff member and so I went and saw Jim Rowe...

(Q: He was the Director...)

A: He was the Director. He must have been just appointed, yes. He was looking for an editor of Quarterly Predictions. I wasn't so keen on editing Quarterly Predictions, but I'd been involved in short-term forecasting, including balance of payments forecasting, from both Stats and Industries and Commerce. And so I went up there to do that, and started work on the motor industry at that point.

(Q: When you say 'up there', where was it?... It's '66 we're talking about, are we?)

A: It was on the university site, Kelburn Parade?

(Q: You're still up on the University site?)

A: It was an old house there, yes. [now part of the site of the Von Zedlitz building]

(Q: That was its first site, in fact.)

A: Yes, that's right, its first site. Yes.

(Q: And this is still '66?)

A: It's '66, yes. Yes, I was interested in the motor industry as a case study of the problems of protected manufacturing development. There were obvious economies of scale which stood against operating such an industry in a small economy, but it employed a significant number of people, was long established, pre-dating tariff protection, and seemed a logical part of an industrialization strategy.

(Q: The Institute had already done work on it and it was Peter Lloyd⁴, or... Had Peter Lloyd already done things, and Steve Turnovsky

⁴ I was mistakenly thinking of Peter J. Lloyd *The economic development of the tourist industry in New Zealand* (Wellington, NZIER, 1964) and more accurately Stephen Turnovsky *The New Zealand automobile market, 1948-63 : an econometric case study of disequilibrium* (Wellington, NZIER, 1965)

A: Not at that stage.

(Q: That's later, is it?)

A: Yes. I worked over several years on that industry, visited all the plants, we got survey responses from them, all but one, I think. And basically came up with a tariff proposal that was sensitive to the level of local content. It was predicated on the thought that government should be extending a steady level of effective protection to that industry at a level consistent with some agreed national benchmark. The Canadian government had been developing similar kind of work, because their industry was sitting across the way, across the lake, from Detroit and required to compete with Detroit. There was a lot of work going on at that stage on measuring the effective rate of protection and on the role of protection within development policy. My paper explored tariff mechanisms that would deliver a constant level of effective protection at various levels of local content. That work was picked up by UNIDO, and I did a couple of jobs for them – somewhat difficult jobs, I must say – one was on low cost vehicle manufacturing in the Asian region, India, the Philippines, Indonesia – and they also got me into Peru to help design something, but that was totally akimbo, I think I was put on the ground about two years too late and without an adequate brief. While I was there, another part of the same Ministry that I was advising was negotiating with the Japanese, but I had no direct input to that.

(Q: What does UNIDO stand for?)

A: United Nations Industrial Development Organization.

(Q: And that's a branch of...?)

A: It's a separate UN entity based in Vienna. UNIDO had hoped the New Zealand government would host a conference on low cost vehicle manufacture. New Zealand declined, but the Australian government took it, and we had a conference in Melbourne on the basis of my background paper.. I must say it was amazing to see some of those industries. India, itself, was such an extraordinary display of the ongoing competition on the street between very elementary low cost vehicles and their modern equivalents ...

(Q: tuk-tuk

A: The Indians had built an industry using plant and equipment for old English and Italian cars and motor scooters but then extending activity all the way up to big diesel commercial vehicles, based on Mercedes, that they were actually selling into Africa ahead of Mercedes because they had better ability to cope with tropical dust and so on. So you had this wide technical range existing and developing within the industry, and yet they were all somehow filtering into their appropriate market niche. And that was interesting, because you had those same kind of hybrid vehicles, the Jeepny in the Philippines, which had been...

(Q: Still there!)

A: Still there, that's right, but they'd had their origins, you know, off the Jeep population which were left behind by the war.

(Q: Did you go from that position to the Director of the NZIER?)

A: I went to Director after Jim left, yes. Jim did one five year term, same as Conrad had, and I did my five years...

(Q: Was that the first you'd worked with people like J.T. Andrews and Gert Lau?)

A: Yes, I had first encountered Jim Andrews during a period when Jim was absent from the Institute... he was up in Fiji teaching in Suva for a while. (Q: Jim Rowe?)

A: Jim Rowe, yes I was acting Director during that time – and Jim Andrews was the Chairman and we met regularly so that he could sign the cheques. He was a marvellous person

(Q: He was certainly very keen on...)

A: I used to go up to his house deliver the cheques and talk about whatever was happening, and he obviously took a liking to me. And I certainly regarded him as a good man. He was Chairman at the point that I was appointed. Gert Lau I'd known for longer because he used to come into Stats, collecting data - overseas investment, was a hobby horse of his – and he used to come in to get data on the balance of payments and related...

(Q: He was running his own business consultancy...)

A: He was running his own business consultancy...

(Q: He must have been one of the very first consultancies. It was here in Wellington, was it?)

A: Yes. I think most of his work was in fact for Todds. I don't know what else he did. But he was an enthusiastic recipient of my motor industry study. I remember him ringing to tell me that I should tell Jim this was an example of what the Institute should do, that it was great work. He was personally very supportive of me. As to relationships with members, we saw a lot of them through interview situations on various things - the motor industry itself was one. But other exercises, one on manufacturers' export pricing which was a difficult thing in the end, also took me round a lot of companies. And then we ran seminars at various points, as a way of getting out and doing something – We ran seminars on worker participation in Auckland and industrial relations type things, on Retailing, Karen Vautier had completed her study in that area.

(Q: What did you do about Survey of Business Opinion?)

A: That was going when I arrived at NZIER. Bill Poole was doing that.

Q: And I was just thinking that was an obvious tool for interacting with members.)

A: Yes, that's right. That was a really good one. The Survey had started when I was in Industries and Commerce because I can recall conversations, "what were we to make of this?" It may even have been when I was at Stats...

(Q: I can't remember when you started.)

A: It's certainly early 60s that it started. I remember Fraser Jackson saying this was one of Conrad's great initiatives. He thought that it really did create some very useful long-term data series.

(Q: It's always had a high rating, but it's changed over the years because fiscal expertise has changed, but it's kept its sort of standing as an instrument... That was the first time you'd really engaged in management? Although obviously in the public service you'd been doing roles like supervising...)

A: Well, one had been taken out on various State Service Commission training courses. I remember a course for Chief Research Officers where they told us that whereas up to now we'd been doing research, now we were research managers. So it was a two or three day course on that. So yes, one had a level of exposure, but I never felt I made a good manager..

(Q: But at the Institute you were actually making sure there was a revenue stream was a different kind of activity...)

A: Well, that was...

(Q: You had a business manager there [at the Institute]?)

A: We had a Secretary, A. J McDonald, who managed the accounts and the office. The trustees took the main responsibility for ensuring the money was there. Gert Lau in particular, was the one who kept an eye on membership, and dealt with the perennial problem of takeovers, collapsing the number of members and their contributions – that was an issue. Other trustees were also in there. I was party at various points to discussions on finance. It was during Jim Rowe's term as Director that we first started to do some contract work, and at some point, I enunciated the principle that I thought we should be aiming for a three way revenue split, equal bundles of member contributions, contract revenue, and a government contribution. We'd had a significant government input originally, because they'd provided the house that we were in, and when we moved from the University campus, they cashed up that contribution. So they had put in a significant block of capital at that point. And I put a three-way funding proposition to the Trustees, instancing the level of state assistance to the DSIR research institutes. Henry Lang who was an ex-officio trustee, as Secretary to the Treasury – said "we'll look at this". He came back with a proposition that the Reserve Bank would make a contribution that was much smaller than a third, but would nonetheless, be a definite government sponsored contribution. So yes, I was involved in funding issues. I disliked the thought that if one relied too much on contract work the public good content of our work would be put at risk....

(Q: You actually ran that as a separate contract unit...)

A: There was a separate contract unit. Clive Vautier and then Colin Gillion managed that. And Kerry MacDonald came in during my period as Director. I always saw it was good to be engaged on issues that were perceived as problems by the people who were active out there in the real economy. That was a plus, but there was a danger that they'd be interested more in a PR thing, and I remember asking one firm "what is it that you're likely to know at the end of this that you don't already know now?". And they said "nothing". And I said "I don't see a research proposal here, "I don't think that's what you're looking for".

(Q: They went away...)

A: They went away. Private interest in the results of research can create a difficult boundary.

(Q: Yeah, the contract research unit did work which was confidential to the client, didn't it?)

A: Yes we did.

(Q: That was a line which Henry took very strongly at the Institute of Policy Studies. We would never do anything where we did not retain the right to publish in our own name and under our own responsibility, but it was our right to publish. And that, he thought, made a clear distinction, and we could not engage in contract research.)

A: Yes I did one job – sorry, I’m probably breaching confidence at this point, forecasting the demand for cement in New Zealand, and modelling the determinants of demand for cement. Now, you can say there’s a public interest in that, but there’s no getting past the fact that the commissioning party was interested in having better information than its main competitor and this in an industry where long term survival depends on maintaining legal rights of access to essential materials characterised by high transport costs. So I had no problem about the thought that some research results would be confidential to the client

(Q: There must have been some confidential research before you moved to the Planning Council, wasn’t there?... What did you do when you ceased to be Director of the NZIER?)

A: Yes, I spent five years self-employed. It was partly a rebalancing of lifestyles – to provide Lisa with an opportunity to get out into the workforce, so I was working from home and taking on responsibilities for a proportion of the cooking, and all the rest, including a more active role as a parent at Maturanga the co-operative school that my children attended. It was also in that period that I did the UNIDO jobs and also, with some time conflicts, a series of projects in the Pacific, including – the work that lead up to the South Pacific SPARTACA. I did the essential design work on that, and pre-sold it to the Australian bureaucracy – I regard that as one of my achievements. I remember going over to Canberra with my home typed bits of paper and walking across to whatever the building was near the lake, saying to myself “the test today is that at the end of the day, they’ll see you tomorrow”, and walking into a room with a vast table and a huge number of people. The turning point in that discussion was they were all feeling really, really sceptical – somebody said “there’s not a problem here, really” – and I had the case of the Samoan assembly of maternity bras at hand, which had involved discussion between the Prime Ministers of Australia, Samoa, and New Zealand, and I said “anything which requires case by case resolution involving the Prime Ministers of those countries is part of the problem” – components were coming from New Zealand for assembly in Samoa for export to Australia, and they were being blocked on entry to Australia, on a local content rule, which was resolved between the Prime Ministers. Basically what we designed, was one way open trade access to Australia and New Zealand, the dominant Trans-Tasman partners, from all the Pacific island countries, without any reciprocal expectation from them, which was the nature of the agreement which the Australians had concluded with Papua New Guinea and had got past GATT, as a GATT compliant free-trade area. They’d done that by the central device of listing as exceptions to the free trade rule, every single item in the Papua New Guinean tariff, which only took up about a couple of pages. There was possibly an element of trickery. It looked like a normal reciprocal free-trade agreement with a short list of

exceptions but was in fact a one-way concessional deal, similar as it happened to some contemporary EU Maghreb agreements

(Q: Who actually were you working for? Who were you consulting for?)

A: I was working with Ken Piddington and it was funded by the Commonwealth Secretariat. Earlier, by the way, when I was still at the Institute, I had drafted a paper for a Colombo Plan Conference on joint ventures and aid programmes. I chaired a group comprising Don Brash, Peter Ady from Oxford, Ashok Desai from the University of the South Pacific and Helen Oliver from the Institute. We were exploring the boundary between development aid programmes and commercial activity. Aid programmes tended to focus on public infrastructure, but if the aim of the intervention was to stimulate economic development you had to explore the commercial frontier.

(Q: And you put that together with that consortium when you were a self-employed consultant?)

A: No. That was back at the Institute. Foreign Affairs commissioned us to do that for the Colombo Plan Secretariat. So, back to the consultancy period: My work on regional issues in the Pacific Islands led in time to jobs for specific countries, including Papua New Guinea. I helped them prepare for one re-negotiation of their trade and commercial relations agreement with Australia. I also worked with the Fijian government, assisting Fred Sevele who became Prime Minister of Tonga, but was at that point an economist with the South Pacific Commission. We were working on commodity stabilisation schemes for the Fijian government., So yes, I got a raft of Pacific work – too much in fact because I was meant to be the anchor at home. That, and Lisa's wish to undertake more study precipitated my decision to seek a full-time paid job. But during that period, I also worked with the Arts Council. They had got me in originally to help them with some of their funding applications to Treasury, but that went on to a survey of arts institutions in New Zealand and a report on institutional funding policy, which I am told was dug out of the files recently.

(Q: Had you thought in this period of working with economics, or was it just you didn't want to waste your policy expertise and not any economic expertise?)

A: Well, they're all economic issues. No, I certainly saw myself as an economist. One was going with the issues that presented themselves...

(Q: Because you were going to the NZAE meetings and you talked about the Pacific in those Economists' meetings as I vaguely remember...)

A: This range of work shifted me away from macroeconomics. I felt a distinct detachment from my knowledge of the New Zealand macroeconomy from the time I left the Institute. I had had ten years editing Quarterly Predictions, and prior to that my public service work was very much around macroeconomics, so I felt that I had a fairly good handle on the New Zealand macroeconomy up until the point that I left the Institute, and then I saw myself working primarily on microeconomic issues, development economics and institutional issues. Arts Council funding one was one issue; "how does the Arts Council manage its relationship with its major institutional clients?" I'm very happy with what I did then. I was also involved with the railway unions ... I can't remember just what it was that

got me through the door there, but Ross Wilson was their legal person, and I helped them with the freight forwarding inquiry, which was a major issue for them. It arose around the fact that railways were selling out bulk access to their wagons rather than loading the wagons themselves. I had first encountered this at Industries and Commerce when I visited Pratt's Siding in Christchurch, which was a phenomenon of the time. Mr Pratt would have railway wagons shunted, and then he would pack them, accepting freight at railway rates, and they'd take them up to Auckland and unpack them. Implicitly, he made his money through better stacking and better use of staff.

(Q: That's how the road carrying industry worked in the days of licensing. I can remember Napier in the 50s, advertising they could freight overnight to Wellington, as though they could put in on their trucks and carry it to Wellington, when in fact, they'd put it on their trucks and carry it to the railway station, and trucks picked it up from the railway station in Wellington.)

A: Yes, so freight forwarding was an area of dispute between the railways union, and the railways department, as it was then. They felt they were losing out on what should have been their work. So I helped with that issue and they retained me again at the time of corporatization to help them with their submissions. So I spent quite a lot of time with them at one time assisting Mike Bungay in cross-examination. So interesting and entertaining times. I liked the people.

(Q: And then when you had to get a job back in Wellington, that's when you joined the Planning Council?)

A: Yes Peter Rankin approached me from the Planning Council...I had presented a NZAE paper with Ken Lowen on employment policy. We were arguing that New Zealand needed to pace the process of tariff reduction in a way which did not unnecessarily damage employment. And one was hoping one could manage the transition in a way that enabled the emerging growth centres to take up the slack. So, we had a strong employment concern Peter had come to a presentation, I think the Wellington Manufacturers Association, had invited me to speak, and Peter was there, and introduced himself. Subsequently the Planning Council asked me to peer review Eric Haywood, Peter's and Bryan Philpott's first exercise around the modelling systems that were used in what became the National Sectoral Programme. So I did that, and at some point said "I'm on the market",

(Q: Did this go back to Frank's time, or had Ian Douglas taken over as...)

A: No, Frank was Chairman.

(Q: At that time, I'd joined the Economic Monitoring Group and...)

A: That's a bit later, I think...

(Q: Not expecting to see you there...)

A: Yes Frank was Chairman at the time. Graham Ansell was Director. Frank and I had had contact over a very long period and we'd always been on good terms, but we were not soulmates. ..

(Q: You weren't a student of his?)

A: I wasn't a student of his and I saw him as coming from a somewhat different philosophical position. I had worked extensively with Frank from the Institute because we regularly did work with

the Monetary and Economic Council, and I used to do background pieces around the short term economic situation, but I was also involved in some others, the most important of which was the labour market report, where Frank acknowledged the contributions of Brian Brookes and myself. I think he took quiet pleasure in writing these two names into his transmittal report to Mr Muldoon. The paper explored institutional linkages in the labour market and the way in which demand pressures translated through into the inflationary process and employment. There was one chapter, which I had drafted, which I used to quote for years afterwards as the "Monetary and Economic Council's view on this matter

(Q: Had you worked with Bryan Philpott before?)

A: With Bryan I go a long way back. I had known him when he was at the Meat and Wool Board's Economic Service, and I had had contacts there from Stats. We were on one job for John Baker, there was a difference between measures of dairy farmers' income as surveyed by the NZ Dairy Board and by the Stats tax based survey of dairy farms. These differences were causing problems. On that I was dealing with Stan Revell. The Producer Board people were physically very close, working in Massey House - up above Parsons bookshop. So I certainly knew Bryan at that point and had socialized with him. And then, I think it was in 1968, Bryan Philpott delivered a paper up at Waikato, a modelling paper in which he claimed in passing that agriculture was employment intensive. I asked him about capital intensity (he confirmed that agriculture was capital intensive), and managed to flip an argument that opponents had been using against the manufacturing sector for a long time. So I said "what you seem to be saying is that you've got lower rates of return per unit of labour and per unit of capital in the agricultural than in the manufacturing sector. What do you make of that?" And Bryan floundered for a while. I remember afterwards meeting Peter Elkan, who said "that was lovely Dennis, the problem is, Bryan's data's wrong, it's not true." So, I knew Bryan from back then, and at the Planning Council, of course, we had a much closer working relationship. Bryan was always enormously supportive to me....

(Q: And Eric Haywood? The National Sectoral Programme was where I first came into contact with Eric. You presumably had known him from the Institute?)

A: Yes, at that stage he was working at the Reserve Bank. When I was at the Institute we used to lunch together occasionally because I'd picked up on his indicator work at the Reserve Bank

(Q: High income, high employment, high productivity economy, that's what I remember from the Planning Council days. Is that what you remember, or is there something else you remember the Planning Council differently?)

A: That was the focus, particularly in the end years but it developed out of continuing work on employment issues and the National Sectoral Programme, which was my stock-in-trade, and led to several reports around the structural development of the economy. The high income fully employed economy paper, was a thought piece, in a sense, a puffery almost, to try and distill what was possible in our new situation. To me, the loss of full employment was a major blow and a serious downside of

the reform process, which had been anticipated. Despite that likelihood I supported a steady lowering of protection. I hadn't engaged myself on a lot of the other reforms and a lot of them took me by surprise. The central issue was the loss of full employment which I think was damaging and still damages us. And so, at some point Peter Rankin had articulated the idea of "what do we need to do to get full employment?" and our first thought was "let's try and picture what a fully employed, high income society would be like". And I did various drafts, Judith Davy told me the first one was the best. But yes, trying to work out what a fully employed high income New Zealand economy would look like, is the challenge which still sits with us. Way back, when I was at the Institute, I'd done the Pacific Viewpoint paper, 'Manufacturing Development Policy in New Zealand 1958-68' in which, I'd articulated as clearly as I had until then, the New Zealand development problem, which I saw revolving around the natural advantage of our pastoral base. That sector underpinned New Zealand's high incomes, which flowed out from agriculture to the rest of the economy. The challenge for those who advocated manufacturing development, or indeed a broader population development for New Zealand, was to find equally rewarding activities alongside the pastoral sector whose comparative advantage was underpinned by a rent element.

(Q: You were always, from the beginning concerned with the national sectoral programme?)

A: My concern in coming to the Planning Council was basically around employment policy. I thought the situation was deteriorating...

(Q: And which year was this?)

A: That was 1980 or 1981. The invitation had come from the Council where Peter Rankin had got me to review the paper that Eric Haywood, he (Peter), and Bryan Philpott had put together. It was basically around forecasting the economy using Eric's little macro model, SD-Macro, linked up to Bryan's one, the Project on Economic Planning Victoria Model and its descendants. That was the beginning of that programme of linking up system dynamics modelling with Bryan Philpott's models, both the old linear programming model, Victoria, and the general equilibrium model, Julianne, developed by Adolf Stroombergen. That continued right through my period there, and indeed afterwards, up until the point where, in the 90s, from BERL, we prepared a set of labour market forecasts.

(Q: There was one other key figure who subsequently moved into business management in the university,

A: Dr. Bob Cavana

A: Yes, Bob had written a manual on system dynamics at the University of Bradford- there were two schools, one English and one American that had developed SD modelling systems, and Bob had written a small SD manual at Bradford. He was very interested to stay engaged. So that was the core team at NSP, with Adolf Stroombergen playing a major role in developing and running the CGE general equilibrium model. And so we went through several rounds of that, gathering in data across all the sectors of the economy building up the exogenous assumptions which had to be fed into the model,

running the models and then writing up the story line. That was very much around the planning of sectoral development. That had been a longstanding interest of mine, which goes right back to Industries and Commerce days, because it was the drawing of a balance, as I saw it then, between manufacturing and other emerging sectors on the one hand, as against the natural advantage of pastoral sectors. It's always seemed to me that the chief dilemma that New Zealand has faced is trying to extend the high income status which pastoral advantage brings to the nation across an expanding population base. That implied that you had to be growing other industries, and at that stage manufacturing was very much the one that was in the forefront because it had strong advocacy out of Industries and Commerce, and in development terms it seemed natural to continue...

(Q: How much did you pick up from the import substitution industrialization thesis from overseas? And how much was this a local development?)

A: It came to me originally as a local development. The key figures for me were John Baker, the Government Statistician, whose *War Economy* and strong advocacy of import licensing during the period that I was in the statistics department, was predicated basically on a closed or constrained frontier economy, with high demand, stimulating growth in general and particularly in manufacturing. John Baker had his version of that. Bill Sutch had a somewhat different version and Wolfgang Rosenberg another. Indeed it was, for a time at the core of official policy making. Henry Lang had done a paper with John Baker, I used to see Henry on the working party and officials committees – and we were going through the aftermath of the Nordmeyer budget and through into the early 60s, and that inter-sectoral play was always, always there.

(Q: What do you think was the difference between Bill Sutch and John Baker?)

A: It's not really clear to me what they... There was certainly a personality difference...

(Q: Oh yes, that's true.)

A: John Baker thought he would have done better, but Bill Sutch, was head of the relevant department and a much more active proponent of manufacturing development. He also had a much wider vision of the whole process of development with his emphasis on education and design. He was also a very persuasive public speaker and a visionary....

(Q: A lot of the design economy, and all of those sorts of...)

A: Yes, that's right. He had a vision of what the place was going to look like. He wasn't so much in on the mechanics of, as I saw it, of the kind of trade-offs that were going to have to be made at this point. If you were forcing growth alongside the pastoral sector, some difficult choices were going to have to be made. Jack Lewin saw that much more clearly, and Jack was the one who was the active party in the officials committee at that time. I remember Bill Sutch during some talk to the staff, about what it was that we wanted to do, saying "the problem is we keep on getting lumbered with jobs, put on us by Ministers. For example, we're required to run import licensing". I just found that extraordinary – import licensing was the key instrument that enabled the department to influence the

pattern of development. To put that down as something which had been unfairly put on us by Ministers seemed disingenuous, or worse.

(Q: I wonder, he probably did not want the routine work of import licensing? He would have wanted the design work?)

A: Yes, that may be. .

(Q: And Wolfie? Do you see Wolfie as distinct?)

A: Well, Wolfie had generated that series of books, “what everyone needs to know about’. He’d taken that phrase over from Alan Danks, who had used it in a book on Social Credit. In 1965 Wolf published “*What Every New Zealander Should Know About the Effects of Import Controls and Industrialisation in New Zealand*” and followed that up in 1968 with “*A Guidebook to New Zealand’s Future*” His later book, “*The Magic Square*”⁵, gets a couple of pages in the recent history of the Jewish community⁶ -, including photos of Wolf and the Magic Square (on the reverse of a photo of Karl Popper!) It was a response to Rogernomics, and it’s basically talking about the need to expand production, maintain employment, and control the balance of payments and inflation....

(Q: That must have been very late...)

A: That’s late. That’s 1986...

(Q: Because he certainly covers what everybody should know about full employment in the 60s...)

A: In the 60s, that’s right...

Wolfgang certainly had that vision of the high demand frontier constrained economy. There’s no question about that. That was in his mind. As to international stuff, there was the Latin American...

(Q: The import substitution...)

A: The import substitution thesis. I read quite a lot of that, partly under the stimulus of Peter Elkan, who played an interesting role in all this. The Institute published his *Meaning of Protection*, for which I wrote a foreword and, at Gert Lau’s suggestion, a layman’s summary of the argument. Peter had always seen a dilemma at the heart of the case for protection. There was a need to, get a big enough manufacturing sector to start to pick up some of the economies of scale, but he also saw economies of scale as coming from integration with the international economy, so that was actually an argument for high levels of imports as well. And also, coming from Hungary, he had an extraordinary ability to feel for market-based mechanisms which were constrained in some way or another. We talked earlier about his duty drawback arrangement with Australia, which was designed to open up segments of the tariff in a way which would stimulate more or less parallel value flows, so that within the textile industry, for example, both countries would know they were not losing out to the other, but they that were benefiting

⁵ *The magic square : what every New Zealander should know about Rogernomics and the alternatives* / W. Rosenberg ; introduction by Jim Anderton. (Christchurch, New Zealand Monthly Review Society, 1986. ISBN:0473003910)

⁶ The classic history is M.L. Goldman *History of the Jews in New Zealand* (Wellington, Reid, 1958) but I think the reference is to a more recent publication, perhaps Stephen Levine *The New Zealand Jewish Community* (Lanham, MD. Lexington, 1999). Leonard Bell and Dianna Morrow eds. “*Jewish Lives in New Zealand*”, Godwit, 2012

from specialization. He did one on wage setting within the inflationary period, an attempt to trim back negotiated individual industry wages to an acceptable norm by some formula, which all negotiators would know was going to bite. His *New Model Economy* is full of such devices – that’s what it’s about. ...

(Q: Did he keep in touch with other Hungarians? Did you ever hear him talk about Kornai *Overcentralization in economic administration*⁷⁸...)

A: No, I didn’t. . He went back to Hungary at one point. I certainly came across Kornai but I don’t recall that as coming from Peter. Kornai in fact was a quite major influence for me, his *Anti-equilibrium* ...

(Q: Oh, go on. Because before that he wrote the *Over-centralization in economic administration*, which was published in the 56 period, in Hungary, and it was... he had to rapidly rejuvenate himself... he ended up as the chief planner in Hungary...)

A: Yes, I always found him a very interesting writer, and I read extensively around his stuff over that period... also Prebisch and Balassa. Sutch certainly quoted Prebisch on occasion.

(Q: Did Sutch read him?)

A: I assume so. Whilst I was at the Institute, I wrote the *Pacific Viewpoint* article on manufacturing development that we discussed earlier. In 1970 I spoke at the AGM on ‘*Manufactured Exports, Import Substitution and Industrial Development*’ and then in 1973 we completed a contract research unit report on *Farming and Inflation* which Rory O’Malley, Colin Gillion and I did. The last chapter of that is an attempt to encapsulate, from the farmer’s perspective, the dilemmas that were flowing out from the New Zealand protected development model. So those issues had been with me long term, and one of the points of going to the Planning Council stemmed from my acknowledgment that the high demand protected economy had a limited shelf life and that we would benefit from managing the transition out as well as we could. It certainly was the core of what Peter had been doing...

(Q: Peter Elkan?)

A: Peter Elkan, that’s right. It was at that stage, with Ken Lowen, that I’d come up with the thought that New Zealand should be trying to phase down the protective structure, at a pace that was commensurate with the green growth. Not green in the modern sense, but the growth shoots of the emergent economy. And that gave me an interest in the sectoral programme. There was always a question as to how well one could actually model what was going on and how well that modelling connected with the kind of decisions that were going to have to be made by policy makers and then by people who were actually making things. Related issues were discussed in the overseas literature on the foreign exchange constrained economy, in which the achievable level of exports was a critical

⁷ Janos Kornai *Overcentralization in economic administration : a critical analysis based on experience in Hungarian light industry* / translated by John Knapp. (London: OUP, 1959)

⁸ Jonas Kornai *Anti-equilibrium. On economic systems theory and the tasks of research* (Amsterdam, North-Holland Pub. Co., 1971 [1972])

parameter. The achievable level of exports determined the attainable level of imports and you wanted to use those imports in ways that would maximize domestic added value. That gave you a policy interest in the composition of imports. As we move into the 80s the idea of the foreign exchange constraint as the fundamental driving force in this was lost in the wider arguments about institutional and policy flexibility including the role of floating exchange rates.

(Q: And the foreign exchange constraint... I'm trying to remember the name of the English economist, Kent at Canterbury, who developed that idea of the limits to growth being the rate of growth of exports divided by the income elasticity of imports... I can't think of his name.⁹)

A: I'm similarly losing on names, the Australian...

(Q: It's alright, let's come back to that...)

A: W.G. Salter did one paper. The other person I'm thinking of is Trevor Swan. Salter and Swan both wrote on problems of internal and external balance. Swan's ANZAAS paper '*Longer-Run Problems of the Balance of Payments*', which introduced the 'Swan diagram', is reprinted in Arndt and Corden's '*The Australian Economy*'.

A: So there's an Australian school there. Coming forward to the 80s, I remember sitting at the Planning Council and Conrad Blyth, who had been up to talk to somebody in Treasury, coming back to me and saying "Dennis, they don't believe there's a foreign exchange constraint!" Conrad was shaken by this. In my recent paper on interest rates I referred back to Treasury's judgement, in its 1984 Briefing Paper, that there isn't a foreign exchange constraint, there is no need to worry about the balance of payments, basically on the grounds of the consenting adults argument, that you've got to assume these people are making appropriate trade-offs, and why would you think that that would not lead to a satisfactory outcome? I argue now that our high ratio of net international liabilities suggests that New Zealand's external policy framework is delivering an unsatisfactory outcome, but just what it is that's causing the problem is not so clear but it is, I think still related to the fundamental problem of developing, alongside naturally advantaged resource based sectors, others, that are foot loose, but still choose to produce in New Zealand. At the moment, I'm seeing that as partly related to the problem of exchange rate fluctuations. I know we live in a world of floating rates... I know it's very difficult to do anything about this, but I'm hypnotized by things like the report earlier this year about the size of losses from a company, which I'm sure is operated intelligently and managing its risks as well as it can, and they're still getting hit by tens of millions in reported exchange losses, when their net tangible assets are only about \$60 million. So, these are big events, and it means that any foot loose industry is permanently at risk, and is under a constant temptation to offshore its operations in one way or another, so that I do think that we still have an unresolved development issue in New Zealand.

⁹ A.P. Thirlwall, now conveniently explored in "Balance of Payments Constrained Growth Models: History and Overview" *University of Kent School of Economics Discussion Papers*, KDPP 1111 (May 2011). But I was probably also confusing the title of John M. Letiche *Balance of Payments and Economic Growth* (New York: Harper, 1959),

(Q: Yeah, the key is the relative role of exchange rates and the roles of actual availability of different sorts of labour. Even in a world of fixed exchange rates, there's still going to be a temptation to offshore in some way.)

A: Sure. I'm not suggesting for a moment there are easy solutions.

Q: I was surprised when I went to Australia in 84, I had a period of leave at ANU, that nobody was talking about exports. The constraint on the economy which they turned to immediately was the real wage rate, and they were looking at similar issues, the balance... I think the balance was not between agriculture and manufacturing, but minerals and manufacturing. They were looking at the warranted rate against the actual rate, what's the feasible path for wage rates. What's the bargaining rate? And that was what they were putting in as the constraint on aggregate growth, where we would have been still thinking in terms of the foreign exchange constraint.

A: Yes, this has an interesting cross over for me, in that in 84, when there was an employment conference following the change of the government, I compiled a set of papers called 'Employment and the Economy', gathering together, in haste, a number of bits that I'd been working on. It included a reaction to Arthur Grimes' paper on the real wage, in which he argued that New Zealand's unemployment resulted from high real wages. I reviewed Geoff Bertram and Graham Wells' response to that claim and reported some work of mine looking at the path of real wages sector by sector. What that demonstrated, unsurprisingly but I thought nevertheless quite spectacularly, was the extent to which real product wages in the different sectors, were being driven apart by sectorally specific movements in input and product prices. This seemed to me to caution against thinking that it's an easy thing to do. You cannot simply adjust real wages. There isn't a real wage out there, what is there reflects the summation of a whole lot of sectors undergoing radically different experiences right before our eyes. Looking back over the previous ten years there had been huge differential movements in sectoral output and input prices. This created a dilemma for workers coming up to the bargaining table. What should be done? One needed to take account of industry circumstances but equally there are strong pressures towards equality of occupational rates across industry.

(Q: Yes, that was certainly one of the things which we talked about when we were writing *Labour Market Flexibility*, which I think was 86.)

A: Yes, but I'm not sure of the year

(Q: It was leading into the 87 Labour Relations Act, and all of that sort of stuff. That was one of the things which the Planning Council would do which didn't have a great deal of impact.)

A: Sure, yes.

(Q: One's got a biased view, having been there, but I certainly think that over those years we did a lot of useful work in the Planning Council, and that the tradition of having an outside body working their way through issues was very useful in terms of actually achieving understanding. That continues to really the end of the Planning Council, which more or less coincides with Mike Moore's attempt to create an Accord. You would have been involved in the 84 employment conference...)

A: No, I wasn't.

(Q: Oh, you wrote papers...)

A: Even to say that I wrote papers for it would be an exaggeration. We'd turned out a set of papers which we made sure got delivered to the conference, but I wasn't invited to take part. I presume the Chairman and the Director went, and possibly some others....

(Q: That'd be Ian Douglas?)

A: That'd be Ian Douglas and Peter Rankin.

(Q: Peter would have been Director at that point.)

A: So, I wasn't involved in that.... Ian Douglas took me along on one occasion to talk to some Ministers. I remember Richard Prebble coming. I'm not sure who else was in the room,... there weren't many, and Richard Prebble hardly stayed anyway. I got zero engagement, basically because we were going against the wind at that point. What I had been proposing presupposed the continuation of the kind of phase down of the protected frontier constrained society, and they were going for the big break basically, so I was just... not only superfluous to need there but ...

(Q: The only ally would have been David Caygill who was much more inclined to think in terms of a gradual approach. David and his marshmallow theory that you press on the chocolate and if it moves, you press a bit harder, and if it really moves, you pick it up and eat it, but if it resists, you leave it and go on to the next one. Which is how he really approached industry protection. But the mood outside had changed – the mood in industry had... fundamentally the Manufacturers Federation as it was had big corporations who had bought into CER and saw the future in terms of big corporations free of a lot of government controls and able look after themselves, and people who were still thinking in terms of manufacturing protection, people like Fred Turnovsky for example, found that they no longer had any influence.)

A: Yes, well I've got a story on Fred which goes directly to that. When I joined the Planning Council, they were still represented on the Manufacturing Development Council, one of the sector groups that had survived out of the National Development Conference. We were meeting around a strategy document, which like all strategy documents, had got itself into difficulty around the protected frontier and was looking for a form of words around the pace of tariff reduction that they could all sign up to. Roger Kerr was a member of that committee from Treasury, and I was appointed to a sub-group to try and come up with a suitable form of words, which, in the end was agreed around the table, and embodied in the report. The only press coverage that I remember that report being given, was something like a third of a page article the day before the report was to be released, saying 'manufacturing body tries to have it both ways'. I've always suspected Roger as being the man who had leaked and effectively undermined what had, I thought, been a genuinely fought and hard won compromise. Fred was angry at that.

(Q: That was in the period of the Labour government?)

A: No, this is actually...

(Q: It would be before 84. Yeah. It's in 80 to 84, somewhere in there.)

A: Over the years the consensus, such as it had been, entailed an acceptance that trade-offs were going to have to be made between people who were driving for rather different things. Most famously of course, in 68, they came out with resolution whatever it was...

(Q: 209A – National Development Conference 1969.)

A: Resolution 209A, that's right. That exemplified the spirit of the times, the issue kept on coming back – because it was difficult – but it was resolved in a form of words which echoed into practice. I remember that during the two years that I was at Industries and Commerce the question of incentives for increased exports came up. Harry Holden was my immediate boss. I worked on it with Stan Macleod from Treasury, and I got agreement on two important elements. Jack Lewin agreed that we were, in principle, prepared to accord the same level of assistance to a manufacturing exporter as we would, on the other side, be prepared to give to import substitution. Jack certainly bought into that. There was to be an equivalence of support and that also aligned with the thought that in time you'd be able to bring that level down. I got from Stan Macleod an agreement that some sum of money would be made available, subject to getting a sensible design. So, at that point, we had agreement from the two sides on a budget and a principle that should prove durable. As far as I was concerned, the moment when all this went seriously awry was under Muldoon, and in the, post the oil shock, or was it post the second one? I'm not sure. But the point is that they started payments in support of pastoral output...

(Q: the famous livestock retention...)

A: Yeah, those kind of... I'm not quite sure when that is? It's...

(Q: I think it must be post 79.)

A: 78 or 79. Subsidizing the pastoral sector meant to me that the whole mechanics of industry assistance policy had gone totally awry, because the implicit flow of subsidy was meant to be from pastoral sector rents, in support of the rest, until they could get up to the same level of economic efficiency. . That's how I saw it. Subsidizing the pastoral sector meant that either you got things totally out of kilter, or even more fundamentally just didn't understand what was happening.

(Q: The main thing in the 60s, the first export incentives were actually incremental incentives, tied to the increase in non-traditional exports)

A: Increase, that's right... You started to get some silly movement above some base..).

Q: Yes, anybody who'd read Kornai, would know that you'd start to get people calculating how much have I increased my exports this year? Because that will be the base from which my incentives will be calculated next year. So you actually start getting game playing going on there.

Muldoon actually agreed to the abolition of sectoral incentives at the time of devaluation in 1967, and his cabinet colleagues showed him the error of his ways and he then went back and told Treasury that was not what he'd ever intended, and that was absolute nonsense and they would be continuing them. Furthermore, they'd start to pay them related to total exports rather than the increase in exports. They

were still tied, if I remember right, to so-called new exports, so that the pastoral schemes could get in under the NSF, as we called them in those days, the non-solid fat products, but they couldn't get subsidies for butter and cheese and all of that, because of the mark-ups that were associated with them.

A: It would be interesting to revisit these issues and compare New Zealand's experience with the import substitution ideas of Prebisch, which were based on the idea of development, on the idea that you were developing faster growing sectors which were going to become the leading sectors for the economy. It doesn't seem to me that, even Bill Sutch really thought that manufacturing was going to overtake agriculture and become the leading sector. We were starting from where we were, building a more varied and greater range of employment opportunities alongside the efficient pastoral sector. That said, in the *Pacific Viewpoint* article, I've actually got manufacturing net output overtaking that of the pastoral sector by 1970.

(Q: Ah, you do ...)

A: But it was the dilemma of getting exports from a small industrial base.. The Prebisch type argument was informed by the examples of history, the UK, the US, Japan, Russia, had all gone through industrial revolutions. They are all big countries that remain dominant producers for themselves as well as for export. Their theory of the stages of development could almost have been run as a closed economy model. During the 1960s and 70s the World Bank put a lot of emphasis on export led development, originally very much around the spectacular examples of Hong Kong and Korea and, the early export breakouts from the developing world, as it then was. New Zealand's links out to the world were so strong that manufacturers were going to have to be able to foot it internationally, apart from those who were protected by distance and closeness to their final customers

(Q: And social policy? The other thing that the Planning Council was greatly exercised with was *From birth to death*, and eventually the Royal Commission on social policy. What did you think of what was going on in those sorts of areas?)

A: I had an interest in those areas but I wasn't particularly active. One early issue was equal pay, the gender and equality issue. I did a paper for an Industrial Relations Centre seminar on equal pay, back in 1970. The Labour Department had estimated what the cost of equal pay would be – by simply saying “well, if women are paid the same average rate as men, then it will go up by this amount”, and that gave them a pretty big number. I was concerned to take account of influences such as education attainments, length of career service, and so on. These implied that even if you got equality of rate job for job, you were going to get an average female rate that was actually below the average male rate, I was putting the difference at about 80, which turned out to be fairly accurate, but that was a major issue at that time. On redistributive policy, I was interested, but never got particularly involved. I thought full employment was the thing that you went for. To me that was the prime interest area, so that I didn't put in a lot of work on the ground that was being covered in the Royal Commission on social policy.

(Q: The Frank Castles thesis? The welfare workers, welfare state, did that really come to your attention much? Castles argued Australia and New Zealand were different in that we'd built our social security system on the basis of the court of arbitration rather than on the Inland Revenue Department. That accounts for quite a number of things – flat rates instead of income related, social security being the most obvious one.)

A: No, not a lot. As I mentioned earlier, John Baker used to give evidence to the Court of Arbitration, which played a key role in determining income shares in the frontier constrained economy. ...

(Q: It used to be headline news in the newspapers.)

A: Oh yes, it was major, story...

(Q: Cross examined by Fintan Patrick Walsh...)

A: Fintan Patrick Walsh would be there. Alex O'Shea from the farmers... There was the famous instance of the teapot. Bill Sutch was called as witness and O'Shea from Federated Farmers was cross examining. . He suddenly produced an imported teapot and contrasted its cost with that of one made in New Zealand and Bill Sutch was asked to explain the reason for the difference and justify why farmers should be required to pay more. The Court was a stage on which the sectoral players, farming and manufacturing played out their parts.

(Q: Change over time, do you actually look back on the 80s as a period in which thinking actually changed? Or was it just that the outcome of familiar ideas changed with different people?)

A: No, I think it evolved. Thinking changed a lot. We saw the breakdown of a collection of ideas which I still see as Keynesian, in terms of our understanding of how the economy worked, and the breakdown of the post-war consensus. It was partly around what governments can do. John Baker's *War Economy* is a very interesting read. Government was acting... basically playing a part in an international conflict of enormous proportions, it dominated everything. For a period of several years the government was, perforce, heavily involved on front after front, and by and large, it was pretty successful. That style of management persisted through into the 50s and 60s – the government was delivering full employment, it had taken that as part of its role and it was carrying forward doing things that were necessary, as it saw them. But the stresses and strains that developed were calling that into question, over a wide spectrum – I remember a conversation with Shirley Smith. She was saying “Denny, the longer I live, the less things I think a government can do”, which was really quite surprising coming from her, an admission that her faith in the ability of government to call the right shots was diminishing. And that was part of a much more general phenomenon. Rational expectations and the more general argument that in a basically atomistic economy the individual actors are making judgement calls in the light of what's relevant to them. For governments to try and do better than that, you have to justify why something else has to be done. And that's a fundamentally different perspective from where we had been, which started from a presumption that there were things that government was meant to be doing...

(Q: And we all agreed on them...)

A: We all agreed on them...

(Q: And governments could act on them...)

A: This was heading back towards the night-watchman state, with a set of minimum functions for the government. Now we never got there, but some people were strongly influenced by that ideal, and the policy fraternity in general was strongly influenced by the thought that you could usefully get to a much less regulated environment. Just a few days ago I read the Auditor General's report on the retail deposit guarantee in New Zealand. He notes that we were the only OECD country that didn't have one, operating on the belief that a light-handed regulatory framework meant that people could look after these things themselves. That reflects a pervasive view. I remember at one point, on a holiday 20 years ago, coming back past several of the central North Island railway stations, all in a serious state of decay. It reminded me of the changes that one had seen taking place in terms of the vast lengthening of the trains that were running, the fact that the guard's van had dropped off from the back, the front cab now only had one person sitting in it, one could see economies being won but were these being partly offset by lowering in safety standards or by lower standards of track maintenance, for example? I rang the Ministry of Transport to see whether they were the regulatory authority and whether they had data that might illuminate the tradeoffs underlying productivity change. The answers were "yes" and "no". Their responsibility was limited to ensuring that transport operators had an adequate safety framework, but we don't have any data That seemed to me to be symptomatic of huge change across the field over several decades. We're now on a swing back to a degree.

(Q: That's something which we could have been talking about... Australia and the UK and the US – you'd still see the same sort of processes taking place...)

A: Yes.

(Q: Was there anything unique about New Zealand, do you think?)

A: It was possibly unique in the speed with which we went for it under Rogernomics.. It was picked up and run pretty much to the hilt , it seems to me, so I would say yes, there was...

(Q: It was a bit of a response to Muldoon... the swinging of the pendulum after the...)

A: Yes.... I remember Rod Deane talking to the Economists' Association on that process, he was strongly supportive of the speed with which they were going, and reporting that Roger Douglas was a strong proponent of speed as the precondition of getting through before coalitions formed against you..

(Q: He knew about coalitions and...)

A: Yeah. So I think the speed...

(Q: But in fact, Roger Douglas...)

A:... The speed with which we went at it was faster than in the States or Australia, I think. I'm no expert on Australian history, but their use of things like the Tariff Commission, morphing into the Productivity Commission, they've got a long tradition of working at things bit by bit as they...

(Q: Are you saying that the Federal State, compared to the New Zealand state, does have some force... things could be done more quickly here, more... in Australia it was seen to put a block on...?)

A: Yes.

(Q: I think also the fact that Bob Hawke succeeded in developing somewhat similar policies alongside the Accord with unions and carried them with him for a number of years, made an enormous difference, both to appearances and to how things were on the ground....)

A: As pace, I think that if you are able to carry the main social partners forward together, you're fairly certain your policies will be durable. That said I've always been aware of a dilemma. If you see clearly where to go, there is a good case for saying get there fast. On the other hand, it is almost inevitably the case that if you do see fairly clearly where you're going, you're also going to see that there are people who are badly affected in the process, and you need to take the time which enables them to adjust and you to help them cope. So I am instinctively a gradualist in that. But I do see there must be some situations where you say "let's move fast" because a prolonged approach will just prolong the agony....

(Q: Yeah, I'm sometimes conjectured with the other thing which was different about New Zealand, was that we have always seen ourselves from the 1860s onwards, as a high income country, and regardless of that we needed the aim set higher by government, but that didn't matter. The notion that Britain and Europe should have higher incomes than New Zealand did not strike us as odd. The notion that Australia should have higher incomes, you know, for years we've worked on the assumption that the value of New Zealand pound is higher than Australian pound because we were richer, and then you started to see Singapore and Hong Kong overtake us. That was something which really drove the dissatisfaction with the protected economy and encouraged people to move more quickly. Does that seem plausible to you?)

A: I think that is plausible, yes but if you put New Zealand alongside the UK, which has also lagged somewhat my impression is that the contrast is not so sharp

(Q: Most purchasing power parity things have us falling. Most of them show a substantial gap in favour of Britain. But I mean, you treat these as a starting point for the discussion, really, because we know of all the difficulties with these income comparisons.)

A: Yes, but I do recall a number of times being surprised that the UK is down against, some of the other OECD economies. I don't have a reason why they should be ...

(Q: But there is a sense in which New Zealand does think comparatively and will do so in relation to China before long. New Zealand did sort of fall out of the top and fall into the bottom levels, and that's true with purchasing power parity or whatever.)

A: Well, the question is to what extent does that fall represent a failure of policy and...)

(Q: Yes.)

A: To what extent is it just something which was inescapable? That's the dilemma. I remember once, commenting on a paper that Brian Easton had given with a graph showing the post-war fall in New Zealand's relative position and saying, in one way the difficult numbers on that chart are actually at the beginning. What was it about New Zealand that was giving us incomes as good as that? Which

particular bit of our national virtue was being rewarded in this way? To me that goes back to the pastoral advantage, to agricultural rents that's no argument against saying that we should really be able to replicate those income standards away from that traditional base. That is the dilemma.

(Q: You mentioned last time your father was a Labour candidate in Ashburton in 46, 49. Am I right, in thinking I remember you as a fellow member of Socialist Forum...It was run by Conrad Bollinger with Hec McNeil and others and we used to meet in Conrad's house?)

A: Yes.

(Q: I ask because, I know that I've taken to inventing history, but I was pretty sure you were a member of it.)

A: Yes, I was a member.

Q: And, of course, I do remember you in the Vietnam years. When I was in the UK, you were still around, and you were particularly involved in the Peace Power and Politics Conference with Tony Ashendon and Co. in the year 67, 68 was it?

A: Okay, ... I went through university never linking up with the Socialist club, as I think it was called. Towards the end of my time at Canterbury it morphed into the 'Radical Club' and I was associated with that during my last year at Canterbury, but it was pretty moribund at that point.

(Q: (and you mentioned Winston Rhodes and Lawrence Baigent... they would have been...))

A: Yes... I'd become very involved in the nuclear disarmament issue at that stage. I did a think piece back in *Canta*, about 56, reacting to an interesting collection of statements by leading politicians from around the world. There was a Russian and he said "it doesn't matter how many bombs we can safely explode, they are necessary for our defence", and the Archbishop of Canterbury saying "I think these are necessary but thank God I don't have to make them" and something similar from some American. I wrote a piece, very angry at these idiocies, as I saw them. So I was strong on that issue and during my last year there... we had a students' general meeting, objecting to New Zealand's participation in the UK Christmas Island tests, but we lost the meeting. We were swamped by the engineers who uncharacteristically attended a student meeting in droves. I remember the head of the Students' Association announcing that Dennis had been a well respected member of the student body but that I was bringing the university into disrepute by suggesting that we didn't support the nation as it sought to be at parity with somebody else. So I had that background. I had met Conrad Bollinger through Marei Dronke, his wife to be, she was fellow student at Canterbury in English, History, Political Science and, for one year, Economics....

(Q: She was at Canterbury?)

A: She was at Canterbury, yes. We both studied under Neville Phillips in 1952. She had introduced me to Conrad on the train going down to a student tournament in Dunedin. When we came up to Wellington and married Lisa, the Bollingers were overseas. They wrote to advise us that they were coming back, and Lisa met them off the boat. My friendship with Marei was already established and developed with Conrad and between Lisa and Marei and Conrad, so we were close families. Conrad

started up Socialist Forum, which was critical to my development in a way, both personally and politically and yes economically. Two other members of Socialist Forum, who became lifetime friends, were Max Wilkinson and his partner Aileen Finucane. Max had shepherded a flock sheep up to China, to Rewi Alley's farm, in the late 1940s. I remember asking Conrad who this was, because I'd been attracted by what he'd said at one of the meetings. Conrad said "well he's probably going to be in trouble with some of his mates", Max being ex-CP. Max is still a close personal friend. We've got property together up in Reikorangi, a precipitous stretch, almost all of which is now under DOC covenant. His commitment to the ideal of a socialist society has always been strong and he has a great eye for seeing things as they actually are, in the capitalist world and as they were under "actually existing socialism". There were quite a few other influences from Socialist Forum, you'll remember, Keith Buchanan used to come, Harvey Franklin, there were various people who would come and talk on different issues. The membership included several notable trade union battlers from the left, Toby Hill, Chip and Rhona Bailey. Bert Roth, the labour historian and archivist, once quipped that Socialist Forum was a meeting place for ex-communists who couldn't get out of the habit of going to meetings.

(Q: I remember Hector McNeil.)

A: Hector McNeil, yeah.

(Q: And Nigel Taylor

A: Hector also introduced me to the New Zealand Council for Civil Liberties, where I acted as chairman for quite a few years with some very stimulating associates including Walter Scott and Shirley Smith. Those left leaning associations stimulated my interest in what was going on in our own economy, but also internationally, including the developing world and the East-European economies. The interest is always in people who are trying to get an appropriate resolution between market relations and the stream of social and political objectives that have to be mediated from the centre. So, for example I took an interest Branko Horvat's *The Political Economy of Socialism*, a Yugoslav economist who wrote on "actually existing socialism" advocating the decentralisation of power and decision making. Well functioning societies depend upon their critics

(Q: There's something there about the interest in economics and the interest in socialism, isn't there, that links all the market socialists in a way?)

A: Yes, that's right, but an interest in the problems under review should not be confined to socialists. I've never adopted that as a working label for myself, although I share many of those ideals. Accepting that the economy that I work in is essentially capitalist and is, to some degree open for change, for better or worse, the challenge is to identify issues on which I can make a difference. Right across the political spectrum and in every type of social system the balance has to be struck between the atomistic, usually market moderated, system that gives us our daily bread and the need for central coordination and decision in pursuit of collective goals.