

Sustainability Assessment and Urban Systems **By Peter Newman**

Comment by
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Preamble

The idea of 'sustainability assessment' signifies a further step in shifting the world from a crude growth economy to a sustainable economy. As I understand it, the 'economy' of a nation is the way in which a nation's society materially interacts with the natural environment. We do not want to sustain a form of economy that is catastrophically depleting the capacity of the planet to sustain life. 'Sustainability' signifies both a recognition that this has occurred, and a desire to transform the economy to allow it to flourish within its natural limits. Peter Newman is one of sustainability's pioneers and he has done much in Australia to promote the concept of urban sustainability within government. His paper is correspondingly important and deserves close and critical scrutiny so that the aims of sustainability assessment can be more successfully pursued.

The 'foundation principles' of the West Australian sustainability strategy enfold the many enlightened projects with which sustainability has become associated: the rights of future generations of humans, the intrinsic value of all life forms, reduction of the ecological footprint of urban development, fair distribution of resources, the preservation of heritage and culture, and application of the precautionary principle, all within a continually growing economy, and to be achieved with a fair and open process in which the public are consulted. This is a breathtakingly utopian agenda. All the better for that, perhaps, but we must go beyond visions of utopia and ask how it is to be achieved. There is a real danger that 'sustainability' could become no more than a rhetorical flourish concealing a damaging 'business as usual'. The twentieth century was littered with unachieved utopias. Sustainability is too important to become another one.

Newman discusses the sustainability assessment of 'complex and strategic projects', 'policies, programs and plans' and 'buildings and developments'. Let us first note a critically important feature of Newman's approach: its difference from environmental impact assessment. Whereas the latter is applied after a project has been developed, the former is designed to apply in the planning stage of the project (or policy, program or plan). Whereas the former derives from the 1960s discourse of environmental pollution, the latter derives from the discourse of global ecological sustainability. How then, is the sustainability agenda to be injected into public policy-making?

Complex and strategic projects

For complex and strategic projects in WA, Newman tells us, 'a series of background papers on contentious issues' was written. A working party was

set up to learn from the approach taken by 'Hammersley Iron'. A commitment to sustainability was generated. A commitment was made to set up a 'demonstration' project, namely the assessment of the Gorgon gas development project. But 'much greater emphasis had to be placed on the scoping stage of project assessment and on the final integration, if a sustainability approach was going to work'. Apparently the sustainability process did not quite work. Why not? By how much did it fail? What were the causes of failure? What criteria of success were applied?

Newman's discussion tells us little. Rather than state some questions, as he does, it would have been more instructive to learn about the barriers to sustainability encountered in this demonstration project. What in fact did the project demonstrate? Before the process is applied to another major project, it is surely essential first to find out what went wrong with the Gorgon assessment.

Policies, projects and plans

Coming to sustainability assessment of policies and plans, Newman brings 'indicators' and 'stories' out of the toolbox of sustainability assessment. I agree completely with him on the importance of indicators. As he points out, there are many instances of such indicators in use around the world and in Australia. Indicators should indicate how well targets have been achieved. Here I think it is important to distinguish between those things that can be measured and those that cannot. The word 'indicator' has little meaning if it does not refer to something that can sensibly be quantified or at least yields a yes/no answer to the question of whether something has occurred or not.

Indicators not only provide a measure of success, they also hold the proponent accountable. But they are not immune from 'spin'. For instance the UK Government's website on sustainable development contains 15 'headline indicators' (<http://www.sustainable-development.gov.uk/>). Many are laudable. But headline indicator number 11 (H 11) is 'road traffic'. Here the stated objective is to 'improve choice in transport, improve access to education, jobs, leisure and services'. Unfortunately it is almost impossible to measure an 'improvement in access'. Had the objective been to 'reduce road traffic', which arguably has much to do with sustainability, the objective would have been easily measured. The failure on that count, however, would have been rather too obvious for the political leadership to bear.

Newman also applauds the use of 'stories' in evaluation. Here I have much stronger doubts. Listening to people's stories enables one to gain a nuanced view of their experience. As a sociological inquiry this can be revealing. In 1983 Steve Mathews, Bruce Crawshaw and I conducted some research into the causes of youth homelessness in Melbourne's outer eastern suburbs (Low, Crawshaw and Mathews, 1984). Steve listened to and recorded the stories of a sample of young people about how they had become homeless. Their stories revealed a great variety of experience. Their needs were many. But many of these needs could not be met by government: a loving family and a safe home life, for example. Parents were by no means always to blame.

Homeless youth are often difficult and demanding people sometimes suffering from psychological trauma. But government cannot solve the psychological knots into which some families tie themselves. In the end the need that all the young people interviewed had in common was simple: a roof over their heads. The indicator is also simple: the number of homeless young people (however 'homeless may be defined'). Devising ways of providing accommodation for young people without the means to purchase it on the open market may be difficult in a world whose dominant ideology is 'the market right or wrong', but knowing the multiple causes of homelessness doesn't help because it is not in governments' power to act on most of these intimate causes. Even though the study was useful, the stories did not yield indicators.

More worrying is if planners themselves place more faith in stories than in facts. Newman writes, 'The global economy is making nation-state democracies impotent as it moves more and more to being a series of competing global cities'. That is a storyline that needs to be and has been challenged (Weiss, 1998; Taylor, 1999). Taylor argues that the empirical evidence for the global cities hypothesis is thin. Weiss argues that those who propose that states in the new global economy are powerless simply fail to recognise the sources of their still considerable power.

Newman quotes Sandercock (2003) with approval. But consider the following. Sandercock writes, 'My inner city neighbourhood in Melbourne, Australia, is unusual. In an otherwise predominantly suburban landscape it is notorious for its diversity — a diversity that embraces a wide range of incomes, age groups, and ethnicities; housing tenure types; an indigenous population; street sex workers, wannabe and on-the-way-to-being rock stars, and assorted other alternative lifestyle folks' (Sandercock, 2003: 145). She does not name the suburb in question but as a colleague of Sandercock while she was at the University of Melbourne I can make a well informed guess that it is St Kilda.

A look at the census figures mapped at census collection district level (ABS 1998, 2003) shows that St Kilda is less ethnically diverse than large tracts of Melbourne's 'suburban landscape'. On indicators such as 'born in Southern and Eastern Europe', 'born in South America or the Carribean', 'born in South East Asia', 'born in the Middle East or North Africa', 'Indigenous Australians' 'speaking Chinese language at home', 'not fluent in English', and 'recent arrivals', St Kilda does not rank particularly high. Whereas there are large areas of red on the map of metropolitan Melbourne in the outer East, North and West denoting the highest levels of these indicators of ethnic diversity. St Kilda, it is true, has been a locus of young street sex workers (some of them homeless), but the suburb is predominantly a high income area occupied by the professional and managerial socio-economic groups, and especially double income households with no children, in short creative people like Professor Sandercock.

Writing of the desires of the younger age group who allegedly move to places like St Kilda, (though in fact St Kilda does not have a particularly young age profile) Sandercock continues, 'This includes the desire to spend more time walking, cycling, and using public transport rather than sitting in cars, which

for some reflects a concern about sustainability issues' (Sandercock 2003: 147). But it appears that inner urban vehicle ownership is only slightly less than average. Moriarty (2002, Table 2, p. 237) shows that by 1996 per capita private vehicle ownership in inner Melbourne was 0.53 while the average for the metropolitan area was 0.58. In Perth per capita vehicle ownership was actually above the metropolitan average. Of course vehicle ownership is not the same as vehicle use. But, as Moriarty also points out, the use of cars to reach more distant destinations for recreational purposes (such as second homes) on a regular basis must also be counted¹. People living in St Kilda want their cars and their lifestyle — and who can blame them!

Discourse should be taken seriously. Maarten Hajer's analysis of the 'storylines' behind the domain of policy-making on acid rain in Europe enabled him to arrive at useful insights into the politics of 'ecological modernization' (Hajer, 1995). Analysis of the storylines embedded in policy documents concerning transport infrastructure planning has enabled us to gain some insight into why there is so much institutional resistance to change in the direction of a genuinely more sustainable transport policy (Low and Gleeson, 2001; Low, Gleeson and Rush, 2003). We would not want to claim, however, that analysis of policy discourse provides a full account of transport policy rigidities. Institutional structures and funding mechanisms, path dependencies of different kinds, the facts of policy life, are certainly just as much implicated.

Neither Newman nor Sandercock provide a coherent account of the different roles of quantitative and interpretive analysis in sustainability assessment. Quantitative analysis is unavoidable and absolutely necessary to discover what exists independently of the perspective of the analyst. Interpretive analysis is just as necessary to explore the reasons for things that happen. I do not see the value of trying to integrate these forms of analysis. On the contrary, they should be clearly distinguished. Stories are no substitute for facts and do not dispose of the need for facts. The existence of facts does not dispose of the need for new stories that may lead us to discover new facts.

Regional planning

When Newman comes to consider regional planning, his principal message is that the value of sustainability should be injected into planning at an early stage. It is impossible to tell from what he says how inventing fictional characters, telling presumably fictional stories about a region can help. Community visioning may well be useful, even essential in planning, but much more needs to be known about the specifics of the 'community visioning process' he alludes to for the Pilbara — in particular how this process yields indicators of sustainability and how the inevitable conflicts of interest among different groups in 'the community' are to be resolved.

'*Minimising*' a city's ecological footprint is not meaningful as a goal of sustainability. Minimising could still mean *increasing*. Whether the city is moving in the direction of sustainability (on any measure) depends on *reducing* that ecological footprint². As Herman Daly (1996) points out that is an economic question: the question of scale of the economy. We are entitled

to ask whether and how the city's footprint is being measured — ecological footprint analysis is a conceptually rigorous quantitative technique for measuring a city's overall requirement of land to support its total activity. A city's footprint has no necessary connection with its urban form or density. Ecological footprint is also not at all the same as the 'extended metabolism model' which readers can find outlined on page 3.5 of the first *State of the Environment Australia* Report (State of the Environment Advisory Council, 1996). The latter, at best, can be used to measure the resource efficiency of cities without reference to ecological limits.

The *BC Sprawl Report* (2004) cited by Newman is admirable in its transparency. It develops a series of quantitative indicators designed to compare municipalities on three counts: compact urban form, livability (sic) and economic vitality. We can see exactly what these terms mean to the authors of the report by looking at the indicators. 'Livability' for example comprises housing affordability, housing diversity, the amount of green space available, post-secondary educational opportunities available to residents, a number of features supposed to indicate the presence of the 'creative class' (art galleries, bookstores and speciality food shops) and older housing (pre-1946). The economic vitality set of indices contains a charming indicator called 'the Bohemian index': which records the 'potential critical mass of creative people who are a big attractor for the new economy industries' (p. 17).

We should of course consider the story this whole study is telling us about the 'new economy' which in global terms looks a lot like a luxury economy with a fair dose of conspicuous consumption. It is supported by factories in China and Mexico, and call centres in India, all places where labour is cheap and environmental regulation relaxed. How far have the goods in the speciality food stores travelled? I have an article from a newspaper that still occasionally indulges in investigative journalism, *The Guardian* (UK), which showed that a typical basket of food bought in an English supermarket had travelled over 160,000 kilometres³.

I suspect the storyline in the *BC Sprawl Report* is not unlike the storyline put out by Sandercock. We might want to consider how 'creative people' are being defined in this story. People only appear as 'creative' when they make a contribution to the 'new economy', as is made clear in the quotation from Martha Piper: 'what is now recognised is that "knowledge" on its own has very little use — that indeed we need people — people who can create the new knowledge and the products and services that flow from it — people who for want of a better term, are *creative*'⁴. Piper is president of the University of British Columbia. I find this statement worrying and I hope I do not need to spell out why.

Happily, however, there are no false claims in the *BC Sprawl Report* about ethnic diversity or sustainability — beyond the general proposition that a more compact urban form is 'environmentally sound'⁵. The Report within its own terms is useful, but it contributes nothing to our understanding of the ecological sustainability of the new economy lifestyle, nor does it claim to do

so. It actually throws into sharp relief the actual and conceptual gulf between 'livability' and 'sustainability'.

Buildings and developments

I would advocate more of a national emphasis than Newman does, and a stronger emphasis on evaluation of the performance of buildings. If there is to be building regulation for sustainability then it must be national in scope — though of course not uniform across all climatic regions. Reform of the Building Code of Australia must be a high priority. Regulation will not ensure world's best practice in green building design and operation but it must provide a detailed benchmark attainable by all sectors of the building industry. The Australian Greenhouse Office has called for mandatory incorporation into the BCA of minimum energy performance for all buildings. (www.greenhouse.gov.au/buildings/code.html).

Pushing the boundaries of sustainable building the Green Building Council of Australia deserves a mention. The council has developed rating tools ('Green Star', similar to LEED) for office buildings including interior fit-outs which so often escape assessment (www.gbcaus.org). The institutional divide between building developers and building occupiers creates barriers to sustainability. Of particular concern is the tendency for developers to minimise capital expenditure at the expense of medium term operating costs.

Giving a building stars may well push developers, builders and occupants towards less consumptive behaviour but it does not allow one to know anything specific about the actual performance of a building. I would have thought that transparent monitoring and reporting of performance against certain key indicators would be essential. Every building should be required to display publicly its green credentials against measurable criteria including, for example, its *per capita* and *per floorspace* contribution to greenhouse emissions.

The work of the States in developing demonstration projects and codes for the creation of a sustainable built environment is laudable. But these local initiatives need to take place against a backdrop of national action. In this regard there has been all too little interest shown by all major political parties. It is worth noting that the United Nations Environment Program will in 2005 be focusing attention on sustainable cities. The UN has invited members of the World Green Building Council to hold their annual congress in San Francisco on World Environment Day 2005 under the theme: 'Green Cities — Where The Future Lives'.

Is urban policy 'path dependent'?

At this point I would like to depart somewhat from Newman's text to raise an issue that I believe arises from his earlier work. The claim of 'path dependence' is that the supply of a particular kind of commodity arises as much from the determining force of chance events in the history of its production as from the exigencies of current demand. Brian Arthur, the

innovative American economist who originated the concept has argued that urban development is subject to path dependence. '[We] cannot explain the observed pattern of cities by economic determinism alone without reference to chance events, coincidences, and circumstances in the past. And without knowledge of chance events, coincidences, and circumstances yet to come, we cannot predict with accuracy the shape of urban systems in the future' (Arthur, 1988b: 96). Now the work of Newman and Kenworthy (1989) has led them to conclude that Australian cities exhibit a form of path dependence: their low density and sprawling urban form has made Australian cities 'car dependent'. This conclusion has in turn led to two further conclusions implied by some current urban policy (eg Melbourne 2030) that the authors may or may not have intended: i) that low density cities cannot be served effectively by public transport, ii) that any increase in use of public transport is dependent on increasing urban density and changing urban form: hence 'compact cities', 'transit cities' and the like.

A connection has been made between the path dependence of cities and the path dependence of urban policy. The path dependence of urban development stems from the physical sunk costs of buildings and infrastructure. It is true that urban policy is sometimes closely linked to material facts and technologies. In the case of transport systems, policy on the funding of infrastructure, for instance, results in a certain kind of transport system being constructed. A certain spatial deployment of roads and railways no doubt has a determining influence on the location of homes and firms if the latter are free to locate where they want, and if land prices are influenced by proximity and accessibility. So, under these conditions, which certainly prevail in most Australian cities, it seems reasonable to accept that urban development is dependent on transport systems, which are in turn dependent on infrastructure policy. But is the reverse true? Are transport systems dependent on the location and density of urban development? And is infrastructure policy dependent on the transport systems already in place?

I am sure that the reverse is not true. Transport systems can be changed to reduce car dependence just as much as urban density and form. This is certainly the implication of recent work in the Netherlands (Bertolini, forthcoming). Transport infrastructure policy follows its own kind of path. Nobel laureate Douglas North has pioneered the introduction of the concept of path dependence into institutional analysis. Denzau and North (1994: 4) divide the institutional field into two parts: 'Mental models are the internal representations that individual cognitive systems create to interpret the environment; the institutions are the external (to the mind) mechanisms individuals create to structure and order the environment'. So we have institutional rules — forms of organization, central-local relations, funding flows and structures — and mental models which are discursive explanations of problems and their solution. The path dependence of urban policy is both institutional and discursive.

Denzau and North regard institutions as *reflecting* mental models, the implication being that if the dominant model changes institutional change will follow:

The path-dependence of the institutional development process can be derived from the way cognition and institutions in societies evolve. Both usually evolve incrementally but the latter, institutions, clearly are a reflection of the evolving mental models (North and Denzau, 1994: 22).

In this respect it is interesting to think about the contrast in urban planning between Perth and Melbourne. In Perth, under the influence of Newman, there has been a real attempt at rational public transport planning even though new road construction continues largely unchecked. Stations along the recently completed northern suburbs rail line, for example, are served by feeder bus systems. But there appears to have been almost no attempt to develop these modal interchange points as places for intensified urban development. In Melbourne, on the other hand, there is a metropolitan plan to focus intensified urban development at almost any place that could possibly count as a transport node ('activity centres'), while rational transport planning seems to be almost completely absent. These differences appear to reflect different institutional paths.

Somehow rational land use planning has to be conducted sensitively in concert with rational transport planning to reduce car dependence. But a prior requirement is the integration of planning amongst public transport modes and between public transport and road planning.

Concluding remarks

What Newman is urging us to address is not simply the assessment of sustainability but the *planning* of sustainability. In conclusion, therefore, I would like to add a few cautionary notes about planning.

I am as much in favour of planning as Newman but I am not so sanguine as he appears to be. The process of planning is simple enough. It means deriving specific short term targets from long run goals based on community values. It involves the specification of strategies to achieve those targets and overcome social and institutional barriers (for instance the 'deeply entrenched silos of disciplines, professions and institutions' Newman mentions). Finally it means evaluating the success of such strategies against quantified indicators.

Planning may not be 'a foreign idea to the man or woman in the street' but it raises profound political problems when translated to the scale of societies. Three such problems are the problem of conflicting interest, the problem of expertise and the problem of participation. First, planning has to address the fact that people differ in the way they view the world and their own individual interest in it. If there is to be a plan these differences have to be resolved not merely papered over. Second, experts are needed to address the problems planning seeks to solve, but how can we trust what experts tell us? What if 'experts' disagree? What would be the basis of trust? The existence of disciplinary and institutional 'silos' reflects the way expertise is developed through specialisation. But such silos are organised around particular ways of defining and addressing problems. New approaches to problems suggest a

need not to abolish silos but to create new silos. Arguably networks may function to cross silo boundaries, but networks alone are unlikely to establish the depth of knowledge necessary to solve the difficult social and ecological problems we face today. Finally, democracy requires participation of the public, but how much, when and in what form? Democracy reflects the intrinsic value placed upon human life, but to reflect other values such as compassion and wisdom, democracy requires a compassionate and wise public, which in turn requires high quality education for all. A less anthropocentric perspective also requires that the interests of the 'more than human' world be somehow represented in present policy making. But how? There is no acceptable form of society in which these problems can be avoided.

This is not the place to address the above questions, but much of the literature of planning theory and political science over the last thirty years has brought them into focus. It is tempting in the face of political problems to say, 'planning is just too hard, leave it to the market'. But markets face similar profound problems, for instance of scale of the economy and distribution of the social product (Daly, 1996: 52 and *passim*). Like Newman I believe that learning better ways of planning is an absolutely essential task for the twenty first century. Like Newman I hold that fairness in the distribution of the abundance the environment affords will be the key issue: fairness amongst the Earth's peoples, between human generations, and amongst the Earth's species.

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¹ I hasten to add that I live in a rather homogeneous neighbourhood myself, Warrandyte on the Yarra, and commute by car to the University of Melbourne along the Eastern Freeway. I also like places like St Kilda. I do not deny that my own high consumption lifestyle is in conflict with the norms of sustainability. My lifestyle is very much part of the problem. My view is that while I try to reduce my environmental impact in certain ways, the best contribution I can make is to adopt a Kantian morality in supporting laws that apply equally to all.

² Also of course how fast a city is moving in the direction of sustainability is critically important.

³ *The Guardian*, 10 May 2003, p. 18.

⁴ *BC Sprawl Report, Economic Vitality and Livable Communities 2004*, Smart Growth BC, www.smartgrowth.bc.ca p. 3 citing a speech by Piper to the Vancouver Board of Trade, 23 September 2003)

⁵ Just for the record, right at the end of the report on page 73 there is the following statement: 'For all their limitations, quantitative indicators remain one of the few ways of tracking the progress of communities, and trying to understand the sources of success and failure. As governments begin collecting information that is more pertinent to smart growth and sustainability objectives — such as land use mix and annual vehicle miles travelled — it will be possible to provide a more complete picture of how trends are shaping up. Nonetheless, given the limitation of time and data sources, the set of indicators used here provides a good basis for bringing these relationships to light and establishing the ground for further investigation.' (*BC Sprawl Report, Economic Vitality and Livable Communities 2004*, Smart Growth BC, <www.smartgrowth.bc.ca>)