Professor James Scott's Lecture:
Monday 10 March 2008

Andrew Lyon:
For those of you who don't know me I'm Andrew Lyon and I'm from the International Futures Forum and it's my absolute pleasure to help the Centre for Population Health to organise its seminar series. This is the third lecture in the fourth series. So you are all very welcome and thanks for coming out on such a miserably wet day. I'm trying to grow webbed feet at the moment; I'll see how they get on. So thanks for that.

I'm absolutely delighted to be welcoming James C Scott to speak in this series. I've been trying for a few years to encourage Jim to come and he is finally able to arrive because he is spending his spring in Copenhagen. So it's great for me to be doing this.

He is Sterling Professor of Political Science at Yale University where he also directs the programme in Agrarian Studies and the main focus of his study over the years has been how subaltern people resist domination and he has published very widely on that. If you haven't caught up with any of his books I would really encourage to go and look at them just for the chapter headings themselves. The chapter headings are wonderful; they are usually Burmese proverbs and you can get along with those very well. My favourite happens to be "When the lord of the manor passes by the wise peasant bows deeply and farts silently". *[Laughter]* That happens to by my favourite, you might choose your own favourite!

He is here today to speak to us about his 1998 book which is called 'Seeing Like a State'. In a recent interview when he was asked how he came upon this idea he said that he simply stumbled upon the failure of development politics and he tried to understand the deeper causes of these failures. He said that essentially the State had to create a certain kind of society before it could then manipulate it, was essentially his starting point. So that's what he is coming to talk to us about today and the result of that endeavour on his part was 'Seeing Like a State: why certain schemes to improve the human condition have failed' and he is going to speak to us about that now. Jim Scott.

Professor James C Scott:
Thanks. *[Applause]*

Thank you Andrew for that generous introduction. I feel in this august hall that I should either be announcing a bequest to the poor of Glasgow or launching a new enterprise and I'm afraid I'm doing neither of those.

I thought it might be useful to begin by making a contrast that is important in my book between vernacular and official knowledge as two different, competing and sometimes cooperative know ledges. The simplest example I can offer is a homely example. I live in Connecticut in New England and I live in a town called Durham and there is a town named Gilford at the coast 17 miles away to the south. There's a road between Durham and Gilford and we in Durham call this road the Gilford Road because it tells us where we'll get to if we take it. The same road in Gilford is, as you can imagine, called the Durham Road because it tells them where they'll get to if they take this road. So it's worth noticing that this is a road already with two names depending on where you are sitting when you name it. There are also many other towns: Higganum, Haddam and so on, those towns have roads that lead to Durham they call those roads, of course, the Durham Road. So there are many Durham Roads and each of these roads has at least two names; one imagines that it hovers between these two existences in between. We are not, even in the slightest, confused about these roads. However, if, for example, you are in an automobile accident and you happen to be bleeding to death on the side of the road between Durham and Gilford and you call the ambulance service for the county and they ask you where you are, if you say I'm bleeding to death on the Durham Road or the Gilford Road they will ask you which Durham Road you happen to be talking about. This then becomes a matter of life and death.

So the state, in its wisdom, has named all the roads in Connecticut with a single number and this road is called Route 77 and it only makes sense on the basis of a map in which each road in the state has a unique number that's part of an infinite series in which it can never be confused with any other road.

Another example of vernacular knowledge may be familiar to some of you who went to a very bad movie called 'Witness' ten/fifteen years back staring Harrison Ford. It's a completely unmemorable movie but it is useful for illustrating a point that I also want to make. As you will recall there was a young Amish boy who witnessed a murder or a crime in a bus station and Harrison Ford is the detective who goes to this Amish community in order to find this boy. The point of my story is that traditional communities with vernacular knowledge are a very difficult nut to crack in terms of police work. Harrison Ford goes to this Amish community and what does he ask for first, but the telephone book. What is the telephone book, but a list of all the people who live in a locality, organised alphabetically with their address and the means of getting in touch with them, the phone number. The problem is, of course, that the Amish don't have telephones so at the first effort to use the instrument of police work the telephone book he is stymied. He therefore is in the hands of local trackers in the community – that happens to be the love interest in this bad movie – and the last name, he knows the last name of the boy who witnessed the crime. Let's say the name, to take a common Amish name, is Boop. It turns out that the Amish actually have relatively few last names to go around and there are forty or fifty families with the last name of Boop. The Amish are not confused about which Boop is which, but he is and the point of the story is that he only finds this boy by using a local tracker, by someone who knows the community intimately because otherwise he's completely lost.

It reminds us that, in a sense, the history of permanent patronymes as last names is, and has always been a state project. Until the 14th or 15th Century, even in Europe, no one had permanent patronymic last names. People were called after the old Scottish or Celtic fashion son of, son of, son of and the name changed every three generations. It was only because of inheritance, because of legal cases and because of formalised property relations that people came to have these stable identities that we now associate with partronymes. So at a certain point in history a name was frozen and became a patronym; John became John Field if he had a field that typified him in the village; another John became John Lake; other occupations defined were solidified at a certain point – John Miller, John Smith – and personal characteristics were also taken as last names – John Strong – and if they were lazy they got to be called John Doolittle.

These names in a sense froze at a certain point in history a kind of identity that was very important for legal identities and for the state, but which was not an identity for local people. There's a nice instance in Camden's Remains in which a Welshman appears before an English court in the 17th Century at the border, and he is asked what his name is and he answers in the old Welsh fashion, my name is Hugh Ap-Vaughan, Ap-Evan, Ap-Hugh, Ap-William and the judge says we're not having that in this court room thank you. And he happens to own a house that is called Moustenhouse and he becomes, for the purpose of the court case, Evan Mousten. This is not a name that means anything to him; it has been solidified in the court case. We can see this point at which last names are being created. The Turks only got last names in the 1920s, but because people didn't know one another's last names the telephone book began with first names until the 1950s. In Thailand, Thai's only got last names in the 1950s and the Bangkok phone book still begins with first names because one rarely knows even the last name of their best friend.

The same is true for land measurement. Traditional land measurements had nothing to do with acres or hectares. Traditional land measurements were made to be useful land measurements so that for an Irishman they would speak of a farm of two cows because what they were interested in is how much fodder the land would carry and whether it would support one, two or three or four cows. If the land was good, a farm of two cows would be quite small and if the land was poor, a farm of two cows would have to be a lot larger. So it wasn't interesting to them to know the number of acres in a farm, it was interesting to know what it could be used for. Telling an Irishman that he had a twenty-acre farm would be like telling a scholar that he had just inherited ten kilos of books; he would like to know which books they are and whether they're useful for any purpose.

I want to give you one other example of state knowledge that actually changes the world because that's actually what I want to talk more about. In 17th century France, the French absolutist kings decided that they would like to start taxing houses and they wanted to tax houses by their size, but they didn't want to go to the trouble of sending a tax assessor into the house to measure each room or, for that matter, to measure the circumference of the house. So they hit on a brilliant plan which was to count the number of windows and doors of the house and, at the beginning of the exercise, this was a perfect proxy for the size of the house. All you had to do was circumambulate the house and count the windows and doors and you had a perfect proxy for the size of the house. Well you can imagine what happened for the next 250 years, anyone building a house, anyone rebuilding a house made sure that they minimised the number of apertures that the house had and one imagines that French peasants and middle class choked to death for the next 250 years in an effort to minimise the tax that this originally clever and accurate observation had put in motion.

The last example that I want to give you that is meant to be a way of introducing the argument in the book is the example of scientific forestry, the invention of scientific forestry in the late 18th Century, invented in Saxony and Prussia. This was a massive effort to simplify the forest with a single purpose in mind, namely to increase the revenue of the princely kingdoms who were the owners of the forest. It was part of something called cameral science, which was to rationalise the finances of the princes' of central Europe at that time.

These princes' decided that they wished to maximise the annual income from their forests. Since the main product for the princes of this forest was timber and firewood, they wanted to maximise the annual yield of timber and firewood from these forests. The first thing to notice is that a lot of things about the forest now disappear. The use of the forest as fodder for animals, as grazing for animals, the use of thatch for roofs, the use of the forest for fence posts, for gathering nuts and berries, for medicinal plants, for the bark of trees in order to tan skins and make dyes, the use of sap for resins, for furniture wood, tools and, not to mention, other non-tree products – flowers, mosses, vines – and not to mention the other creatures of the forest – birds, reptiles, animals and insects. All of these disappeared in terms of the effort to make the forest yield what was most important and at the centre of the focus of the princely states of central Europe. And the way this was done actually, and the hero of scientific forestry if you like was Johan Gotlieb Beckmann, and what he did was the following… I'll stand up to do this. He conducted a census of the forest the way you would conduct a thorough census today. He selected what he thought was a representative sample of the whole forest, a small section that had a distribution of trees and soil classes that he thought were representative, according to the statistics of the time. He then trained thirty assistants who were taught to recognise different size classes of trees and they started each morning with a tray around their neck with five bins and in each of these bins were colour coded nails. Each of these colour coded nails corresponded to a different size class of tree. And they went then through the forest and at each tree, recognising its appropriate size, took out the appropriate nail, tapped it into the tree and continued. After thirty or forty days and because, of course, they started with a known number of nails in their tray to begin the day, you had a complete census of every tree in the whole forest by size class of trees.

Now it was a simple matter to start from this and make certain assumptions about the growth of trees, about the amount of timber and firewood that could be gotten from trees of a certain class, and it is from these maps that Beckmann invented that scientific forestry was devised. It allowed you to sit in your office with maps of the forest and to then plan a kind of exploitation of forest timber that would be rational and it would make it possible to maximise the revenue over time. It's the next step that's most important and that I want to emphasise. When they had cut the forest for the first time – and there's a picture of the original mixed forest, not a very good picture I'm afraid, taken from my book this morning thanks to Andrew... When the forest was cut for the first time they decided to clear-cut the forest with the idea that they would choose the most productive tree in order to replant the forest and thus began the monopoly of European forests of the Scotch Pine and the Norway Spruce. They happened at the time to be the most productive, fast growing, timber yielding trees and depending on whether it was sandy or non-sandy soil the Scotch Pine and the Norway Spruce took over European forests. And, of course, since they had clear-cut the forest, they planted all the new trees at exactly the same time and as long as they were planting them in place of the disorderly forest they decided to plant the trees in straight rows, more or less like military regiments.

So you had, as a result of species intervention, the creation of a forest that was a same-age forest, that was mono-cropped (just one type of tree) planted, of course, at the same time and it had uniform size in general of the girth of the tree and could therefore be felled at exactly one time. It, in a sense, created an administrative forest that was easy for a forester who was minimally trained in order to exploit. They had, in a sense, simplified the forest to make its management more easily conducted by foresters. Here it's worth showing, it's actually a rather beautiful picture and the visual order is an important aspect of it. Notice same age trees – these are Poplar trees in Tuscany – and the absolutely clear aisle, you can imagine the way in which it could be felled systematically starting at one end in the same direction.

It turned out that this system was a disaster for the forest but because the rotation of mature trees took about eighty years in those days, it wasn't until twenty years into the second rotation, that is to say after a hundred years, that people realised that the forest was not regenerating in the way they had expected and that it had regenerated the first time. It turned out as near as we can tell that the replanted forest had used the root channels of the first forest and, therefore, grew rather quickly, but it did not replace the soil capital of the mixed growth forest that it had replaced and therefore, in the second rotation it started to collapse. A hundred years however, is a long time and in that period this form of scientific forestry became the world standard, not just in Germany, but in France, in the United States. German foresters went to India to implement this, but they had started with, in a sense, very little knowledge about the long run ecology of forest health. The Germans then, you can imagine… Having created a single commodity forest, a mono-cropped forest – this is essentially the tree version if you like of a field of maze planted in straight rows – they also devastated the diversity of insects, of fauna, of birds and so on. As a result the Germans were the first to invent a new term which they invented around the turn of the 20th Century called 'waldsterben' or 'forest death' and 'forest restoration'. So they became the leaders of forest restoration in the world because they were the first people to destroy their own forests by scientific forestry.

Now, there are what we might call 'vernacular cities' and 'planned cities' and I want to make the argument that vernacular cities, and now that we are moving into the realm of social products, we can see that cities are in large part, or maybe in large part, a creation of the individual activities of thousands of people going about their regular business or they may be planned cities, planned from above by planners who are planning scientifically as the scientific foresters were planning. The first one to show you a picture of… This is, of course, an imaginative picture of Bruges in about the 16th Century. Now Bruges is a classical, traditional medieval or early medieval city and the reason it preserves its original form is because the canals that were the basis of it's commerce in linen silted up and the city essentially died as a centre of commerce and is kept as a kind of gem, if you like, of an early medieval city. It is rather like what you would see if you went to Damascus or Fez or an old Middle Eastern city and you can imagine that if the streets of Bruges are the formalisation of footpaths of an old village that grew to a small town – there was a cathedral square, there are

a few places that are, in a sense, planned by princes – but by in large what this city is, is the accumulation and formalisation of the tracings of paths as people went about their business, went about tilling their small fields, exchanging goods and so on. If you want to find someone in Bruges you had better have a good map or you had better have a local tracker and the same thing would be true for Fez or Damascus; you get lost very easily. The people in the city of Bruges they don't get lost, of course, because they've grown up there, it's their vernacular world, but for an outsider it's confusing and disorienting and you need help or you need a very effective map.

We'll move to a completely planned city, at least originally – Chicago. You can see that the city plan of Chicago, except for some Indian paths, everything that is not a straight line at right angles was an old Indian travelling or trading path. So Chicago was designed in the way that if you gave a rather dim-witted young boy or girl a ruler and a pencil and asked them to plan a city it's what they might have planned. Notice also that since many of these streets are named after presidents, if you know them in succession, and the streets that run in the other direction are numbered from one up into the two hundreds, if you can count, and if you know the US presidents you can find anyone in Chicago; it's not a tough job. It's as easy for someone outside of Chicago as it is for someone in Chicago and, of course, if you are the police this makes life easy as well. It's easy to find someone in Chicago and San Francisco, by the way, is an even better example. I don't have an image of it, but San Francisco of course, is a very hilly city and yet a grid of right angle streets was laid down across it making some streets almost impossible to climb or descend because of the steep pitch. Manhattan with which you'd perhaps be familiar is actually two cities. The Lower Manhattan, Greenwich Village and so on, is the old Dutch village and it therefore, is a very complicated cityscape. In fact Wall Street was the wall of the old Dutch village, now the centre of world capitalism, so it was, in fact, that's the limit if you like of the unplanned village that became Lower Manhattan. Above Lower Manhattan is planned Manhattan on the grid pattern and designed actually to be sold as packaged modules of the same size. So like Chicago the idea was to create packages of real estate that could be sold as homologous units that were all the same size.

The last image of a city that I'd like to show before I move elsewhere… this is actually Paris and the line around the circumference is in fact the limits of the old Paris and the only thing that is inside those limits is the rebuilt Paris that Baron Houseman rebuilt in the middle of the 19th Century. It was rebuilt for two reasons: it was rebuilt first of all to make the city healthier, to deliver good water, decent sewage, gas lighting and so on, but above all it was also designed to control Paris. Paris had experienced the revolution of 1789, the revolution of 1830, the revolution of 1848 and Louis Napoleon was determined that he would make Paris safe for princes and kings and against revolutionaries. And so the every boulevard that Houseman designed, the length of it was exactly tailored to how far a cannonball would carry if the troops assembled at one end of the street and no street could be longer than, if you like, the trajectory of the cannon shot to there. All the railroad lines that came in were meant to come in from the caserns or barracks of military troops so they could be delivered to downtown Paris. And, of course, large areas – Faubourg, Saint Antoine which was the revolutionary throughway of Paris – were completely, I was going to say bulldozed, but Houseman didn't have bulldozers, but he did the equivalent. It was torn down and those people were pushed out of the city. So Paris was a medieval city retrofitted if you like for control and for planning from above that both made the city healthier and also made it safer for the people who ran the city.

Now I want to move on to what I would call the most high modernist cities, the most planned cities by the most over-reaching architects and city planners of the 20th Century. The villain of my story, if you like, is Le Corbusier. The great thing about Le Corbusier is that he never got to build most of his cities. *[Laughter]* He had plans for St Petersburg, for Russia, for Algiers. He came when the Bolsheviks didn't want him, he came back later to Vichy, France and wanted Marshall Petain to allow him. So he had plans for rebuilding almost every city in the world and he never actually got to do one city from zero the way he had liked. However, it's worth showing you his plans and then to show you an effort to realise this plan, at least, in one setting. This is his plan for Paris. Need I say more? It's a city of five million, it's organised in huge blocks of apartments, all replicating one another. Also all streets at right angles. A Paris that is also functionally divided into residencies, commercial, entertainment so that every part of the city has its own special function and may not intrude that function on another part of the city. This, of course, thank God, remains just on paper.

The second city, another city that he planned, was Buenos Aires. His favourite view of it is the view from the sea and there were going to be huge, monstrous high rises that would define, if you like, the cityscape from the sea from a great distance of Buenos Aires and would be it's trademark, it's kind of logo. Notice, in this context, the way in which architects try to tend to work and the way in which Le Corbusier was an extreme version. That is, it's is very interesting to me that architects and city planners build models and the people who are making these decisions and are looking at a city are looking at the city from above as if they were in a helicopter or were God; a perspective from which no one actually experiences the city, by in large. So it's reduced to a miniature kind of toy the way in which I think we human beings tend to reduce things that they can't control or understand or are dangerous into toys, toy tanks, toy aeroplanes, doll houses, the way in which we practise this on things that are miniaturised and that we can manipulate and control and imagine that we have control over. Architects, in a sense, once they envision a city in this way – seen from above and from outside – the city takes on a kind of sculptural property, a kind of visual order that has no necessary relationship to the order that is experienced by people on the ground who live in the city. One imagines with contemporary software that it might be possible, actually, to design a city in which you started with street level experience and street level movement and how the world would look to those people and how they would navigate, but Le Corbusier preferred to take the, if you like, the largest, most distant view of the city in which it's architectural properties and properties as a model were most important.

This, a city, along Le Corbusier's lines was actually built and that is Brasilia, I'm going to show you some images of Brasilia. Also Chandigarh was built on Le Corbusier's principles and Le Corbusier actually had a hand in Chandigarh; he didn't have a hand in Brasilia, but the people who built Brasilia – De Costa and so on – worshiped at the temple of Le Corbusier and thought they were building a city that he would be proud of. I might add that they were actually… I think De Costa was a communist; they thought they were building a progressive, left-wing city that would be for the proletariat and for ordinary people. Brasilia was, of course, an effort to create a city in the wilderness to get Brazilians away from the sea coast to which they had clung for such a long time and it was designed to be an anti-Rio de Janeiro in almost every respect. Here is Rio. It would be more cluttered with people, but they decided to take this photo when the street scene wasn't crowded. This is a sort of typical old section of Rio. It's in a sense a picture of a street scene in Rio. In Brasilia that's what the street scene looked like: huge vistas in which a kind of individual human being is all but lost. This is an old residential area of Rio and people tended to think of the little squares in Rio as like a public meeting room. People would spend the evenings there and there would, of course, be food for sale; it's where you met ones neighbours and so on and it was, if you like, by standards of public sanitation engineers and people who liked clean, visually attractive cities, they would have found this rather messy, but it was a working and functional order that people in Rio tended to make their own and they loved it. The residencies in Brasilia, however**,** are stunning. It's called a super-quadra and there are something like forty or fifty of these built in Brasilia in which everyone lives and depending on the class of civil servant you are, the size of your apartment is slightly graded the way the office of some officer in the Pentagon would be slightly larger if they were of a higher rank. But these were, in a sense, the dwelling units.

This is the great public square in Sao Paulo during a large popular mass working class demonstration and it lent itself, if you like, for public demonstrations by masses of people many times both in Rio and Sao Paulo. This was replaced in Brasilia by, this is the Plaza of the Three Powers that is legislature, courts**,** and presidency and it's hard to convey the scale of this thing. That is the open area at the centre is far bigger than Tiananmen Square in Beijing, which is itself rather huge, and much, much bigger than Red Square in the Kremlin. That is, if you wanted to meet someone in the middle of the square it would be like meeting someone in the middle of the urban equivalent of the Gobi Desert and when you met them there wouldn't be any place to buy a cup of coffee anyway or a café in which you could settle down. So what was interesting about Brasilia is that it was, if you like, very carefully planned to segregate residence, work, commerce, entertainment, parks and the ceremonial or monumental centre of the city. And it was planned, if you like, for an abstract Brazilian citizen of so many square metres of living space, so much water for washing and for sewage, so much sunlight, so much park space. It was designed for a kind of abstract human being in which there was no reference in the architecture, no reference in the surroundings to the tastes and history and desires and habits of Brazilians. It was designed in a sense for a view from nowhere for an abstract citizen without a history, without taste and without a traditional culture.

There was, in fact, a clinical condition which psychiatrists treated in Brasilia called Brasilitus and because there was only home and work in Brazil and it was a deadening city for everybody who came from Sao Paulo or from Rio, the clinical condition of Brasilitus was invented to describe people who where clinically depressed from living in what they regarded as a kind of deprived human environment that didn't give them the colour, the conveniences, the contact that they had come to expect. It was, if you like, a beautiful plan and an abject human failure and the interesting thing, of course, is that the workers who came to build Brasilia, and who built it in record time, were expected to build it and then leave thank you very much and they in fact stayed and they created, if you like, an unplanned Brasilia and today you could argue that the planned Brasilia only works because the unplanned Brasilia that is now sixty or seventy per cent of Brasilia, actually provides the services, the conveniences, the food and all of the sort of petty bourgeois shops that there needs to be for a city to be even remotely satisfactory. So, if you like, in a sense, the popular changes in Brasilia have retrofitted it from below to make it a rather more successful city than it was at the beginning.

The great critic of Le Corbusier and a hero of mine is a woman named Jane Jacobs who wrote a book called 'The Death and Life of Great American Cities'. She was not trained as an architect, she was not trained as an urban planner and you could argue that had she been trained as an architect or an urban planner she could not have seen the things that she saw in how a city actually worked. Her book was published in 1961. Not so very long after that, in despair at American cities, she moved to Toronto which she thought was a city that worked a lot better. Her insights into city planning have become pretty much gospel for contemporary urban planners so what she said then is not longer revolutionary but at the time it was extremely revolutionary, at least as revolutionary as another book published at the same time called 'Silent Spring' by Rachael Carson. They were both of them people from outside the fraternity of urban planners or, if you like, people interested in industrial agriculture. She began at street level and she did a kind of everyday urban sociology. She asked herself 'where do people sit, where do they congregate, what do they like to see?' and, above all, she distinguished visual order from working order. She observed that the intestines of a rabbit look pretty disorderly but they're perfectly designed to accomplish the work that they have to do inside the gut of a rabbit and in the same way the city desk of a major urban newspaper usually looks like a mess visually, but it does its work about as well as any institution could do that work. So she was very careful always to distinguish what was successful both for the humans who were practising an activity and to distinguish that from what looked neat and orderly and provided a visual order from above.

She also asked practical questions like ‘how easy is it to get a cup of coffee, to buy a newspaper and so on in any particular neighbourhood?’ That is to say, she paid attention not to aesthetic order but to working order and she devised certain principles that she thought were the most satisfactory urban environments and she emphasised mixed use; that the most successful urban neighbourhoods, far from being functionally specific, were neighbourhoods in which the maximum number of mixed uses were combined, small shops, little workshops of small businesses, bars, cafes. The maximum number of mixed uses meant that there was all-day traffic at almost any time of the day or night. These areas tended to be desirable in terms of people wanting to live there because of the conveniences and the sense of neighbourhood. They were also the safest areas in the city. She had this expression called ‘eyes on the street’ – that people who lived there, and who were shopkeepers, and kept an eye after the neighbourhood; they were there all day long. If someone was in trouble and needed help they were likely to notice this and, therefore, you didn’t need a police presence in these areas to keep order. She observed also that the higher the police presence, the better the indication that actually this informal social order had already failed; that it was evidence of failure and not of safety.

She also noticed that this kind of sense of neighbourhood did not require people to be a community in the strong sense of community. That is, the neighbourhoods she observed that worked were neighbourhoods with mixed classes. The people would have very little to talk about perhaps with one another – different interests, different tastes – and yet they all knew one another by sight by acquaintances. She calls this ‘street acquaintance’ – people you now well enough to say **“**would you mind watching my bicycle while I buy a loaf of bread?**”**, ‘would you mind just keeping an eye on my handbag while I buy a piece of pie?’ or something like that. She understood that this kind of informal order can never be replicated by public service and by people who are paid to do it. She noticed little extraordinary things about in each block there tended to be a small shopkeeper who kept keys for people who were leaving for a few days and wanted their keys to be handed over to someone who was coming in to use their apartment overnight or for a few days. And every block seemed to have a small shopkeeper who did this. Now, she observed that you could not create a public agency that would do this, but it was in the interests of these small shopkeepers in order to keep their customers happy because they were there, they had long hours it was in their interest to do this small service as a way of, in a sense, increasing their custom and pleasing their clientele.

She understood the way in which a city worked because of a whole series of unmonitored, unpaid activities of these mixed use neighbourhoods that made them safe, desirable, attractive and vibrant and she also understood the way in which such neighbourhoods tend to inflate real estate prices over time so that people are driven out, whereas other areas become desirable. She saw this as something that was likely to change over time. I think her most important observation was that planners do not create communities – ever. The best they can hope to do is to discover working communities and to cherish them and abet them and not get in their way. She also had a concept called ‘un-slumming’: rather than moving people, it should be the absolute last resort to move people out of the neighbourhood. That as long as there was a decent labour market, as long as people can get credit to improve their houses, as long as they’re entitled to insurance and so on, that you could observe – and she observed this in several places – a process of which she called ‘un-slumming’ in which a place in Chicago called Back of the Yards, near the old stockyards was a good example. There were parts of Boston in which she observed this as well and she was always in favour of keeping the housing stock, keeping the neighbourhood and devising ways in order to recreate a community by providing the minimal conditions for its flourishing.

I try to develop in this book an idea of local knowledge and what it is and why it's different from the knowledge that comes to us from books, from planners, from formal, from systematic knowledge, from deductive knowledge, if you like. Although I try to not use unfamiliar terms, I borrowed the Greek word 'metis' to describe this local knowledge. Metis is the quality that Odysseus is always praised for having. At one level it's his capacity to improvise and get out of tough jams and it's usually translated as cunning. It's actually a very bad translation, I think. Cunning is part of it because Odysseus was certainly cunning and he was able to pull tricks on the Cyclops and so on, but a better understanding of this is the kind of knowledge borne of experience that can never be learned from a book. The example with which we are all familiar is riding a bicycle. You can't give someone a book that tells them exactly how to ride a bicycle, having them study it and pass a test and then get on a bicycle and ride it the first time. They have to feel the balance in their body; they have to practise it again and again. Fishing, flying a kite, in my case shearing sheep is something you can't learn except by doing it and getting better at it; in fact it's the way we all learn languages. Someone does not hand a child a book on grammar and teach them the principles of grammar and then ask them to form a good English sentence. They speak and what grammar is, is nothing but the rules that you can derive from successful speaking practise. It's, if you like, a subsidiary kind of knowledge.

The same is true, of course, for all kinds of people whom we depend on – emergency medical technicians in which they can learn some rules of thumb, but the experience is absolutely essential. The same for teamwork and basketball or football or dancing or competitive work like boxing as well where cunning does come in. In all of these things, to take the example of sailing, if you had to take a sail over dangerous waters and you had your choice between someone who had passed a PhD programme in sailing with flying colours and someone who had actually sailed for thirty years in many different weather conditions, you'd always take the person who had sailed for thirty years in different weather conditions. You would choose, in a sense, the practical experience that comes from having done the activity over a long period of time.

This art of the locality, if you like, is important in almost every activity. I'm a rather mediocre unsuccessful farmer and I bale hay every year and I have an old hay baler and I think of myself as the scientist of one hay baler, that is to say my particular hay baler has it's own peculiarities just like your car may have, especially if it's old and I recognise exactly that moment at which the mechanism that ties each bale together is about to break and the string is about to break. I'm the only person who can recognise this cry for help and therefore I don't let anyone else use this baler because I'm the only person who actually understands the small quirks of this baler. The same principle is at work in, if you like, sailing of large ships. If you're on the open sea and you, in a sense, can use the principles of navigation and compasses and sextants and so on in order to orient yourself, but when you come to a particular harbour all of these large ships take on a harbour pilot and this harbour pilot is, in a sense, the specialist in one harbour. They know the reefs, the currents, the tides, the traffic and so on and no deep blue sea sailor would fail to recognise the intelligence of handing over the ship to the care of someone who knew the local environment better than he did. And, of course, if we are talking about Marseille, the person who knows Marseille wouldn't do you any good in New York or wouldn't do you any good in Le Havre or in Glasgow. In a sense, it is a science of one harbour. Mark Twain wrote a book called 'Life on the Mississippi' and he became a river pilot and understood his section of the Mississippi brilliantly and was able to guide ships up and down that section of the Mississippi. But if you had taken Mark Twain to the Missouri River or you were taking him to the Hudson River he wouldn't have done you much good; he was a specialist in one local environment.

So close continuous experience and the scrutiny of the local environment represents knowledge of this kind and it would be a mistake, I think, to under-estimate the degree of accumulated knowledge that people have acquired without scientific training in many, many different fields. Seventy percent of the pharmacopoeia that we use today is in fact invented by traditional peoples from quinine and also… Their principle active ingredient was not understood by, if you like, pre-modern peoples, but they understood that it had an effect and they adopted it. The practise of vaccination was understood before Jenner invented modern vaccination. It was used in India to use the pus or the scabs from a moderate infection of smallpox. To use that then, to have people sniff or to scratch into their skin if there was an epidemic in order to protect them against a worse case of smallpox. And it worked, not brilliantly, not as good as modern vaccination, but it worked quite amazingly. The people understood during the black plague that you were… they didn't understand how the black plague worked, what it's vectors were, but they understood that you had better get out of the city with black plague and you were better if you were in the countryside and far away from the city. Thus, long before scientific knowledge about the plague and its vectors through fleas and rats was discovered, Oxford and Cambridge University had pest houses in the countryside to which they dispersed their students whenever the plague broke out.

I've tried to derive – I want to finish now – some, I think, rather unsatisfactory lessons because I think lessons are always likely to be abused, but in an effort to be mildly helpful I've tried to devise a few principles of those people who presume to intrude in other peoples' lives and plan things for them in one way or another.

The first principle, of course, implicit in my talk is that the experts are the people who live there and they're likely to know more about their condition than you are to know about their condition and, in addition, they're likely to have strong feelings and since you're working with them you better understand those feelings and that experience. You ought to assume that you're ignorant. One of the few pieces of intelligent health advice I've ever received from my university in its medical bulletin was, it said something like the following, it said according to current knowledge we know that the following vitamins and minerals are essential to your health. That's fair enough; anybody can do that. The next step I thought was brilliant. They said, this is what we've discovered in the last 25 years. Then they said we assume that in the next 25 years we will discover many other things that are absolutely essential to your health that we don't know anything about today. So the best advice we can give you is to eat the most varied diet of which you are capable with the idea that you will cover most of those ingredients. So its brilliance was to assume that they didn't have the last word in health and to assume that more things would be discovered and to, in a sense, provide for the fact that they may have over-looked many things and that a diverse and wider diet was probably a safer and more prudent choice than a narrow diet.

Another principle is to take small steps and see what happens with any intervention. The Japanese have a pattern of water control that adopts these principles. Japanese water engineers who want to redesign a stream or small river will live along that river for a year or two years just studying the water movement and different rain patterns and different times of the year and after two years or so they will make a small intervention, a little check dam, and then they'll watch for another month or two what the water does around that check dam and different circumstances after heavy rainfall, in a drought, and so on, and so on. So each of their interventions is meant to be an intervention that is reversible. That's the third principle: steps that are reversible that can be, if you like, cancelled without great damage are extremely important. One of the great early figures in ecology in America, Aldo Leopold, I thought put it brilliantly when he said that 'the first rule of intelligent tinkering is to keep all the parts'. In that sense, you know, any time you're dismantling a community, any time you're maybe being… you actually don't know what's essential and how many of us have ended up putting something together with a spare part left out that we don't know where it belongs.

So favouring reversibility, this is, in a sense, the humility, the refusal of Hubris that you know how things are going to work out. Plan on surprises; allow for the largest possible accommodation to the unforeseen. In terms of public housing, factory design, commercial building, that is to say, American urban planners designed what you would call council housing, I guess, with a certain assumption about what a standard family looked like, you know; father, mother and two children. Well this standard family doesn't exist any more. At least, it's not a majority any more; it's a minority of the total population. One imagines that when you're designing housing you want to design housing that can be organised in a way that it allows for partitions, walls to be easily shifted, to change the nature of the space, the structure of the space, to change its uses and so on, with the idea that you simply don't know in ten, fifteen, twenty, thirty years how a space will be used and what purposes it might be put to and, therefore, you might design it with a kind of openness and flexibility in mind.

A last story in terms of things that are kind of open to, if you like, improvisation. There's a wonderful story about a comparison of two children's playgrounds in Copenhagen, one of which is the standard playground that I grew up experiencing as a playground with swings and seesaws and what we call jungle gyms and so on and it's pretty clear what you're intended to do with these apparatuses by and large and people can improvise a bit, but they generally use these things for the purposes to which they were intended. In Copenhagen there happened to be a large city block that had been torn down and they knew that a new building was not going to be built there for four or five years and a series of people got together and had a brainstorm and they had the city bring in clean gravel and cover the whole site with sand and gravel. Then they decided to go buy hundreds of boards and hammers and nails and shovels and see what happened. Within three or four weeks this became the most popular playground in Copenhagen. Parents were driving their children from fifty or sixty miles away so that they could play here because it allowed, in a sense, the fullest reign of the children's imagination at play and it was, in a sense, open to the designs, imagination and plans of the children who used it. It eventually it collapsed, but was revived by the children themselves who ended up administrating it quite successfully.

And finally its worth imagining that those – actually, nothing new – those for whom you are planning will have the insight and experience to improve on your plans or perhaps if you consult them at the beginning, actually reject your plans and make sure that you make plans that are more in keeping with their desires and wishes.

Thank you.

[Applause]

Andrew Lyon:
Thank you very much for that. I enjoyed that.

We've gone a bit over time, but I hope you all agree that it was worth it. I sensed a debate building up that I hope we can continue. It just remains for me to thank James Scott for coming to speak to us and I hope you will join with me in doing that now.

[Applause]