Since the theme of the conference is ‘Look It Up’, I want to begin with a short story related to the serendipitous joys of looking things up. This was something that happened to me in 1984 after I saw an exquisite and wonderful film called Paris, Texas by Wim Wenders. I wanted to look up where Paris, Texas was, so opened my new edition of The Times Comprehensive Atlas of the World. As I was looking down the columns, I noticed a great agglomeration under the ‘P-A ...’ of eighteen places in America all called Paradise and thought, ‘That is wonderful’. I immediately lost interest in where Paris, Texas was and switched three columns over to Paradise.

This was at a time when particular English magazine editors spent money like drunken sailors. I rang one almost immediately. I think he was at the Illustrated London News, a magazine which no longer exists presumably because they were spending money like drunken sailors, and told him, ‘This is Simon here in New York. I’ve just noticed that there are eighteen towns in America called Paradise’. I left it at that for a few seconds until he replied, ‘And I suppose you want to go and see them all and work out why they’re called Paradise and are they still Paradise?’ I said, ‘Yes, that’s the general idea.’ ‘It does sound a rather good story, doesn’t it?’ he said. ‘Why don’t you — how long do you think it will take?’ I said, ‘Oh, a couple of months’, and I got this assignment. I did indeed go to every single town in America called Paradise, beginning with the most easterly, Paradise, Florida, which is a retirement community, more a gateway to Paradise, I think, than Paradise itself.

Then there’s Paradise, Pennsylvania, in Amish country, and right next to the town of Intercourse, Pennsylvania. Of course, for a prurient British audience who believes the way to paradise is through intercourse, this was absolute perfection. It turned out that all but one of these Paradises had been ruined by one or other aspect of modern American life. That one was Paradise, Kansas, a small wheat-growing town about fifty miles northwest of Salina, Kansas, and therefore almost exactly in the centre of the continental or the contiguous forty-eight states, so it had great symbolism for me. There, as always, I turned up at the post office and said, ‘Hello. I’m an English journalist and I’m writing about all the towns in America called Paradise’. The postmaster, who was a woman, because postmasters in America can be of either gender and are still called postmasters, said, ‘Oh, you must in that case go and stay with the patriarchs of this town who are, believe it or not, John and Mary Angel’. If you look in the Paradise phone book, they’re still there. But the most marvellous moment, and one of the many reasons that made me fall in love with the United States, occurred after I’d been staying with John and Mary for a couple of days. They had a cherry tree down the bottom of the garden and I’d
expressed some fondness for cherries, so Mary baked me a pie. I think the moment when I really believed that I was going to be eternally fond of the United States was the evening that I sat on the terrace, eating cherry pie with the Angels in Paradise. Nothing can get much better than that.

What I thought I would do this evening was talk about structure in these narrative nonfiction books I have been writing recently. My earlier books, like *The Surgeon of Crowthorne* (1998); the book on William Smith called *The Map that Changed the World* (2001); and *The Man Who Loved China* (2008), about an extraordinary character, Joseph Needham, had relatively simple narrative structure because they are biographies. The chap is born, does something extraordinary and then dies. But I have found it interesting to take on bigger topics and these present organisational problems. I will talk specifically about the three most recent, the Atlantic Ocean, the United States and the book I am working on now, the Pacific Ocean, which are going to be a trilogy, I think. I will briefly sketch how I went about writing these, trying to put a massive amount of information into a moderately coherent structure. The challenge was to present all this information in a form that is accessible and interesting, and perhaps somewhat different from the way such books — textbooks anyway — are normally structured.

With the Atlantic, I proposed to my publisher that the Mediterranean is the inland sea of the classical world, the Atlantic the inland sea of today’s world and the Pacific the inland sea of tomorrow’s world. I was not interested in or competent enough to do the Mediterranean, but I lived in America, so why not do the Atlantic, so hugely important in the construction of America. So I spent, as I normally do in this kind of process, a year or a year and a half travelling all around the ocean and getting heaps of books and atlases and admiralty charts and things like that. Then, when I had assembled all this information, there was the question of how exactly to write the book. I have always maintained that there are three key elements to a readable, not necessarily successful, but a readable nonfiction book. The first, the most important thing, is the idea. The idea behind the book has a natural sort of primacy to it. Fine writing is great. It is nice if you can write beautifully, and you strive to do so, but it is not the second most important thing.

The second most important thing is, in my view, the structure. You can write lyrically about a brilliant idea but if the structure is all to breakfast time, people will go to sleep. It is rather like the famous Stephen Hawking book, *A Brief History of Time* (1998), where people put a dollar bill on page 53 because no one ever got that far as the book was so hopelessly organised. So I had to try and come up with a structure for the Atlantic and I didn’t really know how. One particular day I was flying from London back home to New York and reading an anthology of poetry compiled by David Owen, a former British foreign secretary, called *Seven Ages* (1992). He had organised all the poetry he had loved over his life according to the seven ages of man from Shakespeare’s *As You Like It* — ‘All the world’s a stage. And all the men and women merely players; They have their exits and their entrances, And one man in his time plays many parts’, the number of acts ‘being seven ages’. In a sort of epiphany on that plane journey, I thought that possibly could be the way to organise my book on the Atlantic Ocean. When I got back to New York and looked at all my notes, I found it would be possible. Taking those seven ages — the infant, the schoolboy, the lover, the soldier, the justice, the old man and return to childhood — it seemed legitimate to corral various bits of the Atlantic story into those seven categories. The infancy would be the geological infancy of the ocean; I would write about its creation and the moving of the continents and so forth. Schoolboy would involve the learning about the ocean via early expeditions like the Challenger expedition, to chart it and find out about it as a schoolchild would.

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Then there was the lover. The lover was more difficult because it was slightly out of order in what I wanted to do if I had thought about it in a different way. That was humankind’s romantic view of the Atlantic Ocean, the painting and the music and the architecture and so forth. I had to choose what I thought were architecturally emblematic cities that sat on the Atlantic, such as Rio and Cape Town and Liverpool. The most beautiful — to me the one that really represents man’s romantic attraction to the Atlantic Ocean writ in stone — is the capital of the island of Saint Helena where Napoleon was exiled, Jamestown, a wonderful seventeenth-century confection of exquisite buildings, all reflecting the ocean in which it lies.

The soldier was a great deal easier because that is all about the development of warfare and how wooden-hulled ships gave way to the great sea battles first staged in the Atlantic, and then all the other violent things there such as piracy and the slave trade. Then justice could be all about trade and the law of the sea and material like that. The old man; well the old man gets careless and doesn’t treat the sea properly, so it was pollution and overfishing and the degradation of the sea under man’s poor invigilation. Then, return to childhood is the sea striking back, so involves bad weather generation, rising sea levels, climate change and all of that. So the whole thing actually held together pretty well. When I advanced the idea to my editor he was somewhat taken aback. To look at the Atlantic Ocean through the prism of a Shakespearean play was a little bit eccentric, but mercifully the reviewers were kind.

This gave me some leeway, I thought, when I came to write the next book, the one on the United States. I had become an American citizen on 4 July 2011 on the afterdeck of the USS Constitution, a nice sort of homage to the Atlantic Ocean. So I thought, ‘Well, I’m in love with this country thanks to things like cherry pie and Paradise, Kansas, with the Angels. Let’s write a book about it.’ I did a lot of travelling and collected a lot of books, much as I had with Atlantic and, again, then had this challenge of how to organise the material. Initially, before the organisational structure came to mind, I had to decide what sort of book to write. One of the things I thought was, ‘I love railway trains’. So I did think of crossing America from coast to coast on what are called Class III railroads, the little mom and pop freight lines on which you can go from Maine to California. But my editor reasonably enough said that that would end up being a book more about trains than about America. Then I thought that what I really was interested in was this notion of unity. How had an immense continental entity like the United States, despite being a huge mongrel collection of every race and every language and every religious persuasion and every kind of view imaginable, managed to hold itself together since 1766, leaving aside the unpleasantness in the 1860s, in a way that most other great continental entities had not? Europe is a classic example. Not everyone uses the Euro, people jabber away in a variety of different languages, constantly having wars with each other, and to use an electric razor in Stockholm requires a different plug to the one used in Madrid.

So clearly Europe is not as united as it should be. Mother Russia is certainly not united. Canada has this great block of grumpy, or occasionally

(below)
Main Street in Jamestown, St Helena Island
PHOTO: DAVID STANLEY, Flickr <www.flickr.com/photos/davidstanleytravel/16212460138>, Creative Commons (CC BY 2.0) <creativecommons.org/licenses/by/2.0/>
grumpy, francophone people in the middle, endlessly threatening to split the country into three. Australia, of course, is a great success but has a much smaller population. China obviously is united only by force of arms or force of the state. How has America done it? I thought it would be fascinating to write a book about how the connective tissue was created to bind the country into one.

So I was in my study creating a list of all the people who I thought had been involved in a big or a less important or forgotten way to help to knit the country together. My wife came in one day and asked, ‘What are you doing?’ I read her the names of the forty or fifty people I had come across and she said, ‘Oh, so you’re writing a book about the men who united the states?’ I exclaimed, ‘My God, what a brilliant title. I mean, honestly, thank you darling. You’re so sweet.’ But she said, ‘You’re going to get a lot of flak of course because it’s only men.’ And indeed, to forestall any hostile questions, the story of the physical uniting of the states does only involve men. Really the only woman is Sacagawea, the Shoshone Indian guide who helped the Lewis and Clark Expedition, while Pocahontas makes a cameo appearance. Otherwise, in the physical uniting of the country, it is all men.

I kept assembling the list and eventually got to about 200 people. So then there was the question of how to organise all that. Obviously you could arrange them alphabetically but how boring would that be? You could do it chronologically but that would be incredibly complex because different achievements would appear in different eras. Then I was writing to a friend in Shanghai — I used to live in China for quite a long time — and we were talking about the elements of classical Chinese or Eastern civilisation. When you are in India there are four classical elements and as you go eastwards and cross the Mekong this generally becomes five.
In China they are nearly always the same five: wood, earth, water, fire and metal.

It suddenly seemed to me, in rather the same way as that epiphany I had on the transatlantic plane, that it would be possible to organise these 200 men with their various achievements along the lines of these five classical elements. I begin with the Louisiana Purchase in 1803 and Jefferson's decision to send Lewis out across America to see what he had just bought from the French. And it occurred to me that those early expeditions had a great deal to do with wood. Jefferson, for instance, was obsessed with many things, one of them being gardening and trees. He loved trees and four of those he planted himself were only felled in Monticello about three years ago. The legacy of his arboreal fascination is all around Monticello with its marvellous allées of oak and apple trees and all sorts of beautiful, beautiful trees.

So I imagined Jefferson sitting on the west terrace of Monticello looking over the gardens he has created; in front of him is this enormous wall about 2000-feet high of the eastern spurs of the Blue Ridge Mountains over which he has never travelled. He has been across the Atlantic — he has been to Paris — but he has never been west. He was fascinated by what might lie across the Blue Ridge Mountains and had just read, to his enormous irritation, a book published in London in 1802 by Alexander Mackenzie. He was the first man ever to cross the North American continent, who painted his name with a mixture of bear grease and vermilion powder on a rock outside what is now the town of Bella Coola in British Columbia. Jefferson writes in his diary about reading Mackenzie and feeling furious: ‘How dare a Canadian cross this continent — it’s an impertinence!’ So he calls in his secretary, Meriwether Lewis, and says, ‘Lewis, I want you to cross the country.’ Now everyone has completely forgotten Mackenzie and only remembers Lewis and Clark, the great expedition. Lewis left Jefferson’s magnificent garden, crossed the forests of the Blue Ridge, met his old friend Clark. They then sailed down the Ohio River, then up the Mississippi, turned left and went up the Missouri in wooden canoes. They built camps and surrounded them with wooden palisades and had wooden fires to keep out the animals and so forth. Wood is a constant feature of the earliest exploration of the United States. So it seemed reasonable to corral all that into a chapter under the heading of Wood.

Then Earth — well, once the topography of the country was established, as Lewis and Clark and other explorers did, where the Rockies were, where the Sierra were, where the great rivers and lakes were, then it was a question of what they’re made of and what was the underpinning. Where was the gold in Sutter’s Mill in California or the silver in Nevada, the farmlands in the Willamette Valley in Oregon? So the early geologists were hugely important, particularly those who worked in the west and lured, with stories of what they had found, settlers who went on the Mormon Trail, the Santa Fe Trail, the California Trail and populated the rest of America. I was a geologist at one time so this was relatively familiar territory. Incorporated into that section were the Four Great Surveys that discovered the Grand Canyon and Yellowstone. The most famous was the Fortieth Parallel Survey done by an extraordinary man called Clarence King, surveying the land between Sacramento and Cheyenne. So all of these people could be put under the category of Earth.

Then there was Water. Once again it seemed to work quite nicely because the early American settlers on the east coast ventured into the hinterland by going in canoes up the rivers, the Susquehanna and the James and the Potomac and the Hudson. After sixty or seventy miles of paddling, they would inevitably come to waterfalls and rapids where they would stop, because although they could carry their canoes...
it would take them a long time. So they built little settlements that eventually would become towns, such as Fredericksburg and Washington, D.C. and Richmond and, on the Hudson, Albany. Once they had settled there and decided they wanted to begin trading with the people further upstream, to get around the rapids they built little canals and became quite good at learning how to do this. They then started to build larger canals that would change the face of America forever. The first of the big ones was the Manchester Canal that came down from New Hampshire to make Boston the big mercantile capital that it became. The most important of all, the Erie Canal, was constructed in the 1820s and brought trade goods down from the Great Lakes to a stripling city that then became of course the mightiest of all, New York. The not particularly elegantly named Chicago Sanitary Canal was built initially to move Chicago’s sewage, that had been pumped eastwards into the lake and then in summer caused olfactory unpleasantness. So they decided to build a canal and send it westwards into the tributaries of the Mississippi. This linked Chicago via the Mississippi to the Gulf, which changed the character of both Chicago and the city of New Orleans at the southern end of the Mississippi. All of those stories could quite neatly go under Water.

Then Fire. It was all very well to conduct trade in the 1820s and 1830s by taking your goods on a canal behind a horse clip-clopping along, three or four miles an hour, pulling a barge. It was very economical, much better than it had been before, but then over in Scotland James Watt invented the steam engine. That technology was applied first to building steam-powered boats to go up the canals and the rivers, and then to power railway trains. Ultimately, different kinds of fire-breathing devices would be invented to power motor cars and aeroplanes. Faster — and of course America is all about speed — commerce relied initially, and probably still does to this day, on things related to fire. All of that could go under the category of Fire.

The final one, Metal, is self-explanatory when you think about it. The copper conducting wire of the telegraph and then the telephone; the distribution of electricity, and then radio and then television and then the internet.

So it all seemed quite neat and, mercifully, not only did these five categories allow me to fit the 200 or so names into them, but they were all in chronological order. Things related to Earth came after Wood, and things related to Metal came after Fire. I took the idea to my editor in New York and he gulped, much as he had done with the Atlantic, and said, ‘I just don’t know how Americans are going to like being seen through the prism of ancient Chinese philosophy but give it a whirl. Why not?’ So that is how I wrote the book and fortunately the critics liked it and it sold extremely well in America.

Now I am doing the book on the Pacific. The Pacific is very complicated. It is so big, of course; you could put all the continents into the Pacific, it is so gigantic and all encompassing. From my perspective — and I know I will get shouted at by people who go on about Polynesian navigation, which I actually do write about — its human history, from a Western point of view, is perhaps not as rich and interesting as the history which gave us John Cabot and Leif Erikson and Christopher Columbus. So I decided not to write a book about the Pacific that began at the year dot. I wanted to begin it later as I thought the most interesting aspect was the modern Pacific. Then I had to decide when to start the story and thought, ‘Well, postwar’. Perhaps with the surrender of the Japanese on the Missouri in September 1945, or perhaps the founding of the People’s Republic of China in October 1949? But then there was another marvellous sort of serendipitous moment. I am sure you all know that it is now unfashionable to talk about things happening AD and BC because we are not all Christians. There was an attempt to re-form BC by turning it into BCE, Before Christian Era or Before Common Era, but the scientific community didn’t much care for that either and came up with this notion of BP. You can talk about glaciation occurring 10,000 years BP, BP standing for Before Present. But the question...
was, when is Present? Well, Present was defined in 1965 by a group of radio-chemists who said that this was after 1 January 1950. Their reason for choosing that date was because before 1950 it was possible to conduct Carbon-14 dating tests that would be accurate. We knew how much Carbon-14 there was in the atmosphere. We knew it decayed — its half-life is 5730 years. So, knowing that baseline, it was possible to calculate the age of anything up to about 60,000 years. But after 1 January 1950 there was an enormous amount of atmospheric nuclear testing, most of it in the Pacific — the Americans on Bikini and Eniwetok, the British on Christmas island, the French on Mururoa, the British again in Woomera — so the Pacific was hugely polluted. Nuclear weapons, as well as producing Strontium-90 and radioactive iodine, also produce a gigantic amount of Carbon-14. Hence the baseline of Carbon-14 was tremendously distorted from 1950 onwards; to get accurate measurements of anything’s age you had to introduce a different algorithm almost every month because of the rate of nuclear testing. In the end they decided that dates should be counted backwards from 1 January 1950, so BP: Before Present or Before Physics or Before Purity was ended.

That became my starting point and I am now writing Chapter 4 of the book. What I decided to do was forget the seven ages of man, forget classical Chinese, and give it a somewhat more conventional structure. I made a big list of everything important and interesting that happened in the Pacific from 1950 to the present and selected what seemed to me the best twelve of them.

Chapter 1 was about an event — on 12 August 1955 electronics shops in Winnipeg and Minneapolis sold, for about US$45.00 each, a small box-type thing, the TR-55, the first ever transistor radio. And if you looked at the tuning dial, it said Tokyo Tsushin Kogyo: Tokyo Telecommunications Corporation. But if you looked above this, in tiny little letters was a newly invented word and that was Sony. It was the beginning of the Sony Corporation; an amazingly clever man — not Akio Morita, everyone knows him but he was a nice, flamboyant salesman — a technical guy called Masaru Ibuka invented the Walkman and the Trinitron. The whole universe of Japanese or Asian consumer electronics began at that moment in 1955. Obviously later it moved from Japan to Korea and has moved now from Korea to China, because Samsung is in trouble, but that was the beginning of a massive onrush of container ships going from Yokohama to Seattle and San Francisco.

In Chapter 2, I am talking about events that brought all sorts of people into what one might call a pan-Pacific communion. It also begins with a Japanese story, relating to the wartime internment of American citizens of Japanese origin and what happened to them afterwards. But I also include things like Evonne Goolagong’s appearance at Wimbledon when she beat Margaret Court in, I think it was 1971, and talk about the North American Indians taking over the island of Alcatraz.

Chapter 3 begins in 1959, 23 August I think, with the release in America of the movie, Gidget. This might seem trivial but actually it had an enormous economic effect in making surfing a worldwide phenomenon. Twenty million people now surf and it has become a gigantic industry. Although surfing started in Tahiti, and then became popular among the very socially stratified in Hawaii, not until Jack London wrote about it in 1906 did it start to be practised in Redondo Beach in California. It remained a rather marginal sport until Gidget and then the formation of The Beach Boys in 1961 made it hugely popular. So that seemed another Pacific phenomenon.

Then Chapter 4 will be about the capture of the USS Pueblo in 1968, one of those episodes which marks North Korea as being a perpetual irritant in the Pacific. After that I very much want to write about Australia and how she has become such an important regional power in the Pacific. I thought that the two events, both in the 1970s, that I would use were the opening of the
Sydney Opera House and the sacking of Gough Whitlam. So it moves on.

The last chapter will be about the **Hokule’a**, a 62-foot long Hawaiian *wa’a*, or canoe. It was built in the 1970s under the tutelage of a man called Mau Piailug who lived in Satawal in the Caroline Islands. He was the last surviving Polynesian who knew non-instrumental navigation, how to get from A to B by using only the stars, the feeling of the swirl, the migration of birds. They took **Hokule’a** from Maui to Tahiti, in 1972 I think, and now they have learned to do it so well that they set out in May 2014 to go completely around the world. There is a crew of about thirty on it, which is changed every few weeks. They just raised the north cape, that is Cape Reinga I think, of New Zealand about a week ago. I think they should reach Australia by Christmas. Then they are going across the Indian Ocean. They have not yet decided whether to try and go through Suez or to go around the Wild Coast and Cape of Good Hope. Then across the Atlantic, where presumably they will stop in Jamestown, my favourite city in Saint Helena, and head up to the Chesapeake to see President Obama. That is probably the only piece of good news he will have for a while — that his own people, Hawaiian people, are obviously incredibly clever and skilled in using an old form of navigation. So then they will go around Cape Horn and up across the Pacific back home to Hawai‘i. It will take about three and a half years. I urge you to go to the Polynesian Voyaging Society website and revel in the success of the wonderful young Hawaiian people who are doing this. And that is how this Pacific book — to be delivered by 31 March 2015 — will end.

Finally, I come to what I want to write about next, a history of precision. Precision I think is a fascinating aspect of modern human life. It really began in 1787 with a man called Henry Maudslay during the beginning of the Industrial Revolution. He produced what was, by the standards of his time anyway, the first piece of perfectly flat steel and a micrometre to measure its flatness, and then a perfectly spherical piece of steel. All that enabled the cutting of accurate gears and the making certain that the machinery of the Industrial Revolution was precise and efficient. That led to our current love affair with all things precise. Though I wonder, and I think the book will ruminate on this, whether our love affair with machines and precision is altogether a good thing. The Polynesians in their little canoe are demonstrating that it is possible to achieve things in a very imprecise, a heuristic way, if you like. So ultimately I want to ask in this book, and I have not even thought about the structure yet, whether societies that worship titanium are necessarily happier, more content and satisfactory societies, than societies that, say, worship bamboo. So that will be the next book. As you can see, one book tends to lead organically into another, but the key to making them readable is the structure — nice writing is obviously an ambition but the structure is hugely important.

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1. This is an edited transcript of a public lecture given by Simon Winchester as part of the Academy of the Humanities 45th Annual Symposium, Canberra, 20 November 2014. A video of the lecture can be accessed from the Academy’s website.