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| **Ideas and Society Program:**  **Craig Hamilton** |
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| **Liz Connor** |
| Good evening and welcome everyone to this discussion between two of our most distinguished and esteemed commentators on the prospects for hope, following the Paris COP 21 agreement of 195 nations, to limit global warming to 2 degrees Celsius aspiring to 1.5 degrees.  My names Liz Connor and I'm a recent ARC Future Fellow at La Trobe University where I did my PhD, so I'm very happy to be here. At this timely discussion, because the dilemma we face tonight is that the latest findings announced by climate scientists this week, shows that the 2 degree target has already been breached across the Northern hemisphere, barely 3 months after the Paris talks closed. And that February was the hottest month on record, after January, which was also the hottest month by a wide margin, but February temperatures have just run away and that the Great Barrier Reef is undergoing a severe bleaching event among other fairly terrifying announcements.  Meanwhile, within barely a week of his return, our newly minted Prime Minister Malcolm Turnbull approved a second coal port terminal at Abbot Point, a month before during a tour of the Pacific Islands, of all places, Bill Shorten, our Opposition Leader declared Labour will continue coal mining. One hundred scientist positions have been slashed from the CSIRO. To me it seems Orwellian.  It is impossible to keep abreast of these revelations without feelings of vertiginous despair and brimming wrath. What are we supposed to do with this information? Is it prudent or burdensome to tell our children? How might we galvanise a city, a civil society response, between the twin paralysis of apocalyptic hopelessness, and false hope. There is much to consider tonight, not the least whether the tanking price of thermal coal will provide the market impetus for a rapid and urgent transition to renewables.  But perhaps the overriding question for tonight is, what are probabilities now for mitigation and adaptation and does the COP 21 agreement provide any kind of road map into these historically unprecedented circumstances?  Here on my right are two fellows who need no introduction but, for the sake of formalities:  Robert Manne is Emeritus Professor of Politics and the Vice-Chancellor's Fellow at La Trobe University. He is the author and editor of over twenty books and three quarterly essays, notably his *Left, Right, Left,* now the total of a blog devoted to political orienteering at *The Monthly* where he has acted as chairman of the editorial board. Twice voted Australia's leading public intellectual, Robert has rebutted both climate and stolen generation denialists unrelentingly.  Clive Hamilton is Professor of Public Ethics at the Centre for Applied Philosophy and Public Ethics at the Charles Sturt University in Canberra, an author of among 14 books; *Earthmasters, Requiem for a Species, Affluenza* and *Gross Fetish*. He founded and was executive director the aggressive think tank, The Australia Institute.  Perhaps one hope we can carry away from this evening is that Robert and Clive's books and essays, (and I pinched this idea from a review by Tim Flannery) "their books and essays are stacked on the prosecutors bench, when plaintiffs from the next generation file a class action law suit against the federal government for failing negligently to reduce emissions".  And before I hand over, I also want to acknowledge the Wurundjeri of the Kulin Nations as original custodians on the land on which we meet, but with particular emphasis tonight on the meaning of 'custodianship', and how indigenous knowledge such as oral histories, accounting for sea level rises 7,000 years ago can inform and be part of such discussion. Please join me in welcoming Robert Manne and Clive Hamilton. |
| **Professor Robert Manne** |
| Well, thank you very much Liz. I'll just say for people here, that Liz will come back on stage which is why there's a third chair and ask Clive and perhaps me, some questions about what we've said. So when Clive and I have finished our conversation Liz will return. It's great to have someone from La Trobe, someone with already a very distinguished academic career, introduce us tonight. And then of course there'll be time for questions from the floor which Liz will take.  So, it's a great pleasure for me to have convinced a good friend of mine, Clive Hamilton to come here tonight. Clive had a very important impact on me when, much too late in the piece I suddenly realised that climate change was an issue larger than any, any that I'd ever thought about. He's been following climate change for at least I'd say, 20 years or longer and he was my first choice when I was thinking about doing something after Paris, because there's no-one, literally no-one in Australia whose judgement and whose honesty I value more highly. So thank you for coming Clive.  I've got a series of questions, they're big questions, and the first one I want to ask is, a lot of people here will know, (not everyone) that at Mauna Loa observatory in Hawaii, each year for many, many years now, the level of carbon dioxide in the atmosphere is measured. And almost I think, without exception every year since the measurements began the level of carbon dioxide in the atmosphere has increased despite all the politics, despite all the efforts that have been made.  The first question I want to ask Clive to talk about, which is a very big question is, if this continues, if carbon dioxide continues to increase in the atmosphere alongside other greenhouse gases, give us a pen portrait of what's going to happen to our planet? |
| **Clive Hamilton** |
| Well, the particular increase in concentrations of carbon dioxide in the atmosphere grows a pace, in fact as you know it went up 3 parts per million last year, whereas for a long time it's been around about 2 parts per million, so from that point of view things are getting worse. And so if you look at the famous chart, the influence in concentrations of carbon dioxide in the atmosphere.  And for quite a long time in the science community and indeed in international negotiations, people talked about as co-targets for things to worry about were certain levels of parts per million, 350/400 which we've just gone through, and then future projections of 500/600 parts per million.  But more recently climate scientists have started to talk about the degrees of warming associated with concentrations of carbon dioxide in the atmosphere. And a lot of this I think, was driven by the decision by the EU several years ago to set a target, or 'guardrail' as it's known, to limiting warmth to 2 degrees. And that’s now very much what the global community has adopted and reaffirmed in Paris, although importantly, and we'll talk about this, Paris for the first time acknowledged the demand of the small island states, that an attempt be made to limit warming to 1.5 degrees.  The commitments that various countries had made leading into Paris, would if honoured, see warming limited to 3 degrees, if those commitments aren't honoured then we're perhaps looking at a world warming by 4 degrees. But when I talk in those terms of degrees, it's actually very misleading because the world, (even if it were committed and did all the actions it wanted to do) could not limit warming to 3 degrees. Because once you get beyond 2 degrees and possibly even at, (not possibly – but quite likely even at) 2 degrees of warming, you essentially lose control of the climate system.  Because the climate system will cross a number of tipping points and the ones most often mentioned the big tipping points are the melting of the Greenland Ice Sheet and the melting of the West Antarctic Ice Sheet, vast masses of ice, that once they start melting you can't stop them, and over centuries they will continue to melt until they're all gone.  And the melting of those ice sheets will have a profound impact on the climate and this is why climate change is, of course, profoundly unlike every other environmental issue that has come before. Because the greenhouse gases we put into the atmosphere now, particularly carbon dioxide, they stay there or at least they stay in the earth's system, they are mobilised in the earth's system, whether the carbon dioxide stays in the atmosphere or in the oceans, or possibly in the biosphere. And so if we go beyond 2 degrees and certainly if we go to 3 degrees, then we'll almost certainly go to 4 degrees and beyond and then we're kind of 'off the scale'. I mean some people say, "Wow you know in five hour's time it's going to be 4 degrees, what are you worried about?"  But in fact during the last ice age when New York was a mile under ice, the earth was 5 degrees cooler than it is now, or was a preindustrial levels, so these temperature changes represent a massive change in the climate system and therefore, the functioning of the earths system. That's why climate scientists are so anxious because we are losing control of the climate system. We're aiming to limit warming to 2 degrees, but there's good evidence that the warming's already at 1.6 degrees and we've probably locked in 2.4 degrees, so we really are in deep trouble.  And of course with those kinds of warmings 2.4 degrees, you get all that catalogue of catastrophes which will, in time, make large parts of the earth uninhabitable and all of the geopolitical consequences that would follow. |
| **Robert Manne** |
| Yes. And it's when I realised that I began to see that this is a problem that made all other problems seem small in scale. And when I think, we began to talk about this issue, you before me, but we were both believers in Kyoto as a road towards some possibility of coping with the problems you've just outlined. |
| **Clive Hamilton** |
| Yes. |
| **Robert Manne** |
| Very briefly, if you could say, what did Kyoto try to do? And I think you'd agree, why did it fail? |
| **Clive Hamilton** |
| Well, Kyoto was a protocol to the mother convention, the framework convention signed in 1992. Kyoto was a protocol to it in 1997, which was legally binding on all the signatories, or at least those countries that ratified it, and imposed a legally binding obligation on rich countries to reduce their greenhouse gas emissions by certain negotiated amounts. Or actually in Australia, allowed Australia to increase its greenhouse gas emissions, one of only two countries that managed to secure that.  Developing countries had other lesser obligations. The United States, because already then the Senate was stacked full of Conservatives, refused to ratify the convention which wasn't a great surprise, and then Australia too (the Howard government decided, I think it was in 2002), that although that government had agreed at Kyoto in 1997 to commit to it, decided to repudiate that. And those actions seriously undermined that Kyoto protocol.  The protocol did actually come into force it was Russia I think, had ratified and made an entry into force I think in 2005. But by then it was a dead duck. And there were a lot of reasons why it didn't work. But let me just make this comment, that certainly I've completely changed my understanding of international politics and what is possible under international law as a result of Kyoto and its failure to follow through with the, really quite bold and in a way utopian ambitions of that protocol.  And the years since, perhaps the early 2000's certainly the mid 2000's, have been a groping tool by the international community towards some other treaty, and so there was a major shift from legally binding obligations, to what is known and what is now embedded in the Paris Agreement as a *pledge and review system*. |
| **Robert Manne** |
| Now, what I'd like you to do, because not everyone here will know is, the Kyoto hope I think everyone would sort of agree, died at Copenhagen and Paris is a quite new Pledge and Review system, which you say…. |
| **Clive Hamilton** |
| Yes, |
| **Robert Manne** |
| …not everyone will know what's entailed in Pledge and Review, and the simple question I want to ask you is, what were the main decisions that made? I mean I won't forget the film of the audience including very significant figures, cheering when finally the agreement was made. |
| **Clive Hamilton** |
| In Paris, |
| **Robert Manne** |
| … in Paris. Not everyone knows what was agreed and if you could summarise what you think to be the most important agreements that were cheered by Al Gore and by Nicholas Stern and others. |
| **Clive Hamilton** |
| Well they not only cheered, they hugged each other and kissed each other it was extraordinary scenes, because the euphoria in the hall and thereafter and the contrast was very, very profound with… |
| **Robert Manne** |
| I was just going to say, you were there? |
| **Clive Hamilton** |
| I was there, but not in the hall I should say when the final gavel came down, it was official delegates only. But Copenhagen 2009 was when everything collapsed, it was a disaster from every point of view and everyone involved in climate change nationally and internationally, I think it's probably true to say, went into a very deep depression for some six or twelve months and gradually dragged themselves back and learned a lot of lessons about building consensus which the French followed through brilliantly in the lead up to the Paris negotiations.  And what died at Copenhagen finally was the idea that nations would commit themselves to reduce emissions in a way that was legally binding under international law. Everybody said, "that is not going to work", and I think for international legal scholars really changed the way they thought about it.  Instead a kind of weaker process, but nevertheless a more successful one was instituted, where each country would come to the negotiations as they did in Paris having made a pledge. That is, making their own assessment based on their national circumstances, as to what they believe they can do or are willing to do, over the next ten or fifteen years to reduce their greenhouse gas emissions.  And crucially, what happened in this process is that it wasn't just the rich countries that agreed to make a pledge, but in fact developing countries did too, and so they came to Paris and this is actually probably *the* *most* important reason for the success of the Paris conference. They came to the conference already having made their pledges, formally, officially, lodged them with the UN, 'this is what we're going to do'.  Just as an aside, this is quite an extraordinary event in itself, that 195 nations, pretty much every nation in the world, made a formal pledge in public, for its national plans to reduce its emissions and in fact transform its economies. Then what did happen as part of that process at Paris was an agreement on the review process, so the countries made their pledges and then they agreed (and this is legally binding in the Paris agreement), to come back in five years time with the review, and it's assumed stronger pledges to reduce their emissions in the future. |
| **Robert Manne** |
| Legally binding but unenforceable presumably? |
| **Clive Hamilton** |
| Well, I mean a lot of people say, 'this is a waste of time, it's legally binding in paper only, nothing can be done to enforce it', but this is international law. That's the case with every international law |
| **Robert Manne** |
| All international law is unenforceable? |
| **Clive Hamilton** |
| It's unenforceable. But that doesn't mean that it's powerless. |
| **Robert Manne** |
| No. No. |
| **Clive Hamilton** |
| And so, yes legally binding doesn't have the same force as passing a law in Australia and the police will come and nab you if you break the law, but nevertheless, there are certain aspects of the Paris Agreement which are legally binding. Although the pledged emission reductions are not. |
| **Robert Manne** |
| One of the things that interests me a lot about the Paris Agreement and in a way the response to Paris is, how different the responses of the people, I think both you and I have admired, how different their responses have been to the accord. One of the divisions that interests me a lot and in a way I think your writing is beginning to think about this division a bit inclusively, the division between the politically minded advocates like Al Gore, Nicholas Stern, Mary Robinson (who was in Melbourne a day or so ago) the politically minded advocates and the scientific advocates like, the most famous of all James Hansen, (formerly of NASA) but someone who had a big effect on you once, Kevin Anderson from the Tindall Centre.  They have taken, they are utterly pessimistic about the Paris Agreement whereas, I mentioned earlier, I saw Al Gore and Nicholas Stern together cheering as the gavel was going down. What's going on? I think most of us would respect greatly, you've been at the forefront of fighting in this campaign, this battle for the future of the earth. Why are they so divided do you think? And particularly, why the scientific as against the politically minded divide? |
| **Clive Hamilton** |
| Well, I don't think it's quite as blunt as that. What we saw, first of all virtually everyone involved in the international negotiations including the NGO's were euphoric about the outcome of Paris. They all believed that it was pretty much the best one could have hoped for, for an international negotiation, the 21st conference of the parties to the framework convention. And yet there were certain powerful voices, widely reported, who condemned it and they were in particular the two you mentioned, James Hansen and Kevin Anderson. Extremely eminent scientists. Kevin Anderson in particular has had a huge influence on me, it was his work who led directly, very directly, to me writing my book *Requiem for a Species*.  Kevin Anderson made the extraordinary statement 'that the Paris outcome was worse than Copenhagen' and Hansen was all over the newspapers saying, 'the agreement was a fraud, a fake, and worthless words'. I think what that reflects is a certain amount of political naivety on their part. The question is, what did you expect? I mean, and they actually expected that all of the negotiators from around the world, all of their supporters, their leaders and so on would come and say, 'science has spoken, we will mandate emission reduction paths for all countries and the world to meet the target of 2 degrees or preferably 1.5', well that was never going to happen. It couldn't happen.  And so rather than dividing between the politicians or the politically oriented and the scientists, I think you have to divide between, those who are politically savvy and those who really don't have a good understanding of how politics work and what to expect. And I would put Kevin Anderson and particularly Hansen in that category, I mean Hansen kinds of bangs the table and says 'the only answer is a compulsory, globally agreed, very stiff carbon tax – we must have it'. Well dream on. This is hard negotiations.  And so what we had was a fascinating side event, there is the official negotiations, this vast conference complex at Le Bourget on the outskirts of Paris and in addition to the official negotiations, equally interesting, was what happened outside the official negotiations, we'll talk about those I'm sure.  But one of the most fascinating events was what happened on the Friday before the gavel came down on the Saturday, actually the conference was due to end at midnight on Friday but they never do. And so what they do as midnight approaches, is that they order 'the clock be stopped' so they can carry on negotiating without breeching the midnight deadline, and so the gavel came down I think at two o'clock on Saturday. But on Friday as this tremendous excitement and tension was gathering, there was a draft agreement which turned out to be virtually the same as the final agreement, there was a side event held and it was for the scientists and it was packed, I mean you couldn't get in, the security guards stopped people getting in…. |
| **Robert Manne** |
| Just for scientists? |
| **Clive Hamilton** |
| …..just for scientists. And I'm just making a note from my notes, they had five of them lined up, extremely eminent, totally believable people – forget the science – have a big influence. Let me say (it wasn't quite like this), but on the left if you like, Kevin Anderson and Kevin was saying things like; 'this agreement has no teeth, it's worse than Copenhagen, we must have dramatic cuts now'.  Then in the middle we had John Schellnhuber, extremely eminent climate scientist, a German, extreme influence on Angela Merkel, highly regarded operator, player behind the scenes, he was saying, 'of course the current text is not strong enough but it will send a very strong message to business that the tables have been turned, or a turning point has arrived and things are going to change'.  And kind of nearby him you had Will Steffen, of course very eminent Australian scientist who said, 'the real work will now begin after Paris'. And then there was another expert from climate analytics. And over on the right, if you like there was Johan Rockstrom from the Stockholm Centre who took a very kind of optimistic view that, 'we can solve this problem, everything's going well', and so on. So here you had five scientists, very eminent, very well qualified, who took a range of views.  I would say that Schellnhuber and the couple around him including Will Steffen, had both an extremely solid understanding of the science, but also a good sense of what the politically possible was, they saw Paris as a very, very positive outcome. Whereas I think Kevin Anderson and James Hansen were demanding the impossible and therefore saying, 'this is a terrible agreement'. |
| **Robert Manne** |
| Yeah, I have a slightly different take on this, in that, one of the ways of looking at it is, to agree with you that Kevin Anderson and James Hansen are politically naïve, but because they're politically naïve they may be saying, 'what has to be done if the pen portrait you painted at the beginning is to be avoided and that those who are politically savvy, who understand it will never happen are also, as it were changing – not changing, but not fully allowing the science to dictate what they think must happen'. They realise it won't happen so they're finding ways of being optimistic. |
| **Clive Hamilton** |
| Well that's true and Kevin Anderson and James Hansen and one or two others have an extremely important role to play. They are the kind of…. |
| **Robert Manne** |
| He was also politically naïve in 2009 when he had the influence on you, don't you think? |
| **Clive Hamilton** |
| Well, I was reading his science, his science of carbon budgets and the way he presented the science had a huge impact because I, for the first time, fully understood the awful situation that we were now in, based on C02 emissions and where we are headed even on the most optimistic assumptions of where global politics might take us. |
| **Robert Manne** |
| If I can argue that the big question with your writing really is, you started writing from Paris *'The Conversation'*, the web site from the university, it's a very good web site, and there I was surprised to see a new Clive Hamilton who was reasonably optimistic about the future, after *Requiem for a Species* which was probably was a book that had a very large effect on many people including very eminent people because you faced, what was really a very dark future and you faced it more honestly than anyone else has.  But I was impressed with the arguments that you began to put in the conversation and I wonder if you could reprise them here and talk a little bit about the change in you in regard to this? |
| **Clive Hamilton** |
| Well first of all, I certainly haven't done any kind of *(unclear)* and my comments on what we are looking at down the track and the amount of warming and our inability to set the thermometer at 3 degrees or 2.5 degrees, because the earth's system will have crossed tipping points over which we have no control, they're just too big and too massive and they operate on a centuries time scale – a millennial time scale.  But, what I saw at Paris, and of course we all went there still with this dreadful shadow of Copenhagen hanging over us and the prospect of a catastrophic failure once more. What I saw at Paris was really something I didn't expect at all. I mean, one was the agreement itself, but what had a greater impression on me was what was happening outside of the official negotiations. In particular, what was happening amongst what are known as 'non-state activists' and they cover cities and NGO's and large organisations – non-commercial ones, and there there's are an amazing number of things that are happening.  Huge cities around the world taking on, let's face it most of the emission reduction is going to have to happen in cities, that's where the buildings are, that's where the transport is and so on. But in a way more impressive to me was, I'm a pretty close observer and quite a cynical one I have to say, of the business community. I mean, (I actually and I'm ashamed to admit it) ten or twelve years ago I believed, (half believed at least) that when BP rebranded itself as Beyond Petroleum, I thought this was something really important that did signal something extremely significant within the oil industry. What a fool I was. When BP started drilling the Arctic and buy up any oil well and gas facility it possibly could, it was a cynical, desperately cynical PR exercise by BP.  But what I saw at Le Bourget was really something quite different and that was, in a nutshell, let me try and paint a little picture. I went to another side event and it was packed, some 400 people, no-one could get in afterward, and the people up front like this although far more eminent were Mark Carney, the Governor of the Bank of England and Bloomberg, the New York billionaire and media magnate…. |
| **Robert Manne** |
| And almost president… he was thinking of running but has pulled out. |
| **Clive Hamilton** |
| So Mark Carney was there and he was talking about the way in which the central bankers of the world have a new worry. And that is that the switch to renewable energy and out of the traditional fossil fuel industries may well soon be so abrupt, there will be so many stranded assets and so much collapse in the value of massive corporations, certainly massive corporations around the world, that it will spark a global financial collapse. And so the G20 Finance Ministers had instructed Mark Carney who was the Chairperson of the Financial Stability Board (which brings together the central bankers around the world), to write a report on how to manage what he called, what Carney called, 'An ordered transition to a zero carbon economy'. And I thought wow, the central bankers are now involved and I looked around this room of some 400 and virtually all I could see was suits. And I had never seen anything like that at a conference of the parties before.  And this followed another very big event for institutional investors, and there we heard the managers, the CEO's and so on, of these massive investment, and they're not piddly green ethical investors. These are the big pension funds, these are the guys they don't talk in billions - they talk in trillions. And they're talking about how they are reorienting their investment, not tomorrow but over the next few years, towards renewable energy away from fossil fuels, they recognise the risk. It's not as though these guys and women in some cases, had some kind of ethical epiphany, you know looked into their grand-children's eyes and said, 'I've got to become a good person and get out of fossil fuels', they could see a hard business case for change.  And this shift in the, I don't call it the business community although it's that, but in the investor community has happened I'd say over the last twelve months. Something happened, there was some kind of turning point that happened. |
| **Robert Manne** |
| And yet, the fossil fuel companies kind of haven't realised it, because they go on. I read every day about their explorations and it's mentioned in the introduction that neither political party here has the gumption to talk about the end of coal. And there is drilling in the Arctic, Obama is slightly against it. This is one of the problems I have as a thinker, trying to work out what's going to happen to our planet. Is it so easy if you're an optimist or a pessimist to find evidence that suits your case?  The way I'd illustrated it is, in the last few days on the one hand, (the fact has already been mentioned but) there was a 3 parts per million increase in 2015, I read this morning just on the ABC website that the International Energy Agency says that in 2015 for the second year in a row there was a slight decoupling of the growth of emissions which were stable, from the growth of the economy which increased by 3%.  Here are two facts, pessimists would take one, optimists the other. But I think there are hundreds of relevant, important big relevant facts, and how does one, how does one…? Your judgement now, is on these meetings in Paris which I was very interested in hearing about and which have a strong effect on me, but there are other kinds of important facts. Like I read every morning about the work of the fossil fuel corporations and not one government has yet, as far as I can see, said to a fossil fuel corporation, "Stop, we won't allow you to explore or exploit the fossil fuel resources".  How does one form judgement when the possibility of pessimism or optimism is so omnipresent as it were? |
| **Clive Hamilton** |
| I think, this is why my view has shifted somewhat because, I think the world has changed and I think, you know at last after watching this and being engaged in it for 20 years, I get the sense that new possibilities have opened up. Obviously other things are happening as well, one of which, well two of the most important are the dramatic decline in… |
| **Robert Manne** |
| Fossils… |
| **Clive Hamilton** |
| …renewables, and the other is the extraordinary transformation of China's position and China in a way is, China is by far the most important player now. I mean they screwed the world at Copenhagen, now China is leading the world, I mean it's not quite as simple as that.  So we're in this kind of point of transition and we're going to have a whole lot of conflicting information, conflicting data which is very hard to sort through and frankly my mood changes every day, sometimes several times a day depending on what I've just read. For people who are really engaged in this, I think the only thing to do is to not 'cherry pick' or focus on particular facts because it's too hard, but to pick people you trust. People who have a really good solid understanding of the science, who are intimately engaged in this who also understand the politics of it and also understand the operations of business.  The people I read, I mean I read a lot of people, but the ones of whom I take the most notice of are people like Joe Romm at Climate Progress, Dave Roberts at Fox and Mark Hertsguaad at Nation. Three Americans but kind of at the heart of the beast, and these are three analysists who I find have a really fantastic grasp. They shift their views, particularly Dave Roberts who is a very honest person, who says, "I'm confused" and I like that, but my sense is, as someone who watches this closely is that, we've reached some kind of turning point and this gives in me a sense that it is possible, for the first time it is possible that we could limit warming say to 2.5 degrees if we're lucky.  In *Requiem of a Species* I said if we're lucky we will limit it to 4 degrees, but so much has happened in the last five years in the energy industries, and the last year or so in the investor community and in certain key political constituencies, notably China, that my view of where the world is going, or where the world could go, has changed quite markedly. |
| **Robert Manne** |
| Could we go briskly through a number of more concrete and obvious political problems facing the area? Perhaps at first I want to tackle something that you are interested in, and it's not I think discussed enough when climate change is discussed, which is population increase. We know that, well demographers tell us and I have to rely on them because it's something I know nothing about personally, they say that, 'by 2050 there'll be 2 billion extra human beings on Earth'. It's not a long time and that seems to me obviously will put a great pressure on energy.  That if the transition is not full by 2050 then you can just tell if coal and oil and gas are still being used, as it might very well be, there'll be a heck of a lot more coal and oil and gas needed to meet the needs. Particularly as the Industrial Revolution becomes more fully globalised, it's now, Asia's been transformed to a large extent, eventually I imagine Africa will feel the weight of the Industrial Revolution. The Industrial Revolution could almost be called thus far the Fossil Fuel Revolution. But what will 2 billion extra people do, do you think? |
| **Clive Hamilton** |
| There are certain African countries that are adopting a very progressive position. It's a bit like, you know how some developing countries are skipping the landlines and going straight to mobile phones. Well there are some African countries, (and not just African countries) that are going to skip the fossil fuel stage and go straight to renewable energy and are investing fairly heavily in it. It's not going to save us but in itself it's a very significant development.  One can only hope that India might start to go down that path, India's a complex and worrying circumstance. But on the population question, it really depends as I've always said, it's not the number of people (the number of people matters), but what matters more is how much they consume, the composition of what they consume and the emissions intensity of their consumption.  In a way the only hope with this extra 2 billion people on top of the 7 billion we have already, is that by that stage, certainly by 2050 there will be zero carbon energy systems around the world. Those 2 billion people will consume a lot of other resources, but with luck their greenhouse gas emissions will be very low. |
| **Robert Manne** |
| Let's hope. |
| **Clive Hamilton** |
| Yeah. |
| **Robert Manne** |
| Another question which I know both of us are very interested, a much more political question. We're at the moment watching what I regard as an utterly grotesque bid for the Republican Nomination in the US Presidency. Literally, I would fall off my chair if anything was said by one of the Republican candidates that made even minimal sense in the area of climate change. It's wall to wall denialism in the most important country in the world still, or the most powerful in one of the two political parties which will certainly control parts of Congress in the future and may even one day, produce the President.  How important is that as a fact in my pessimist/optimist story about what's going to prevail? And denial, people here might know that only a few days ago at the New South Wales Liberal Party Conference, two thirds demanded a debate about the science, and that's the most important state in our country and Liberal Party which is in government, which seems to have our Prime Minister by the short and curlies? How important is denialism in The States in particular? |
| **Clive Hamilton** |
| Well it has been vital, I mean vitally damaging for a very long time. I'd point out though that, throughout the '90's and early 2,000's denialism was a classically industry funded campaign like the tobacco campaign. It was created in the backrooms of PR companies, funded by fossil fuel companies. Prosecuted through well-funded right wing think tanks and conservative organisations and media outlets, and it only became a kind of mass-movement as it were, when that industry funded, particularly Exon funded, climate denial campaign was taken up by the Tea Party. So as late as 2010, Sarah Palin was saying, 'we should have an emissions trading system', so it's a very recent phenomenon.  But as you know, it's a cultural phenomenon, it's a marker of one's political and cultural position.  But what's happening, we could talk about that forever, but what's more interesting is the world is finding ways of going around it. It's there, it will dominant the US Senate or possibly even The House for a long time and it's a huge road-block, but as with all road-blocks people start to find a way around, it as Obama has using administrative action and the EPA.  Which, even in the United States there are Republican Governors in certain states who are strongly in favour of renewable energy. I mean, Texas for example, has a huge renewable energy industry. The renewable energy industries in the United States now are employing more people than the fossil fuel industries. So the politics of this, behind what the Republicans are doing is really changing I think, in quite a significant way and what we will see is, even some of the more hard line denialists in senior levels of the Republican Party, looking for ways to get out of this terrible kind of bind that they've gotten into and which has been so massively damaging. |
| **Robert Manne** |
| Another completely separate question that worries me is the Pledge and Review System of Paris which you talked about. I cannot believe that some nations will not just break their pledges, even though under law they have to in five years, as it were, talk about what they've done so far. It's inconceivable to me that everyone will meet their targets. And I've looked at some nations and what they've said they are going to do and what they're likely to do, is completely out of whack.  Turkey is one that I've looked at just by accident, I read something.  What happens when some, even some significant nations begin to show that the pledges they've made are not going to be held to? What should be done, what will be done do you think? Because that seems to me the main vulnerability of the Paris Agreement. |
| **Clive Hamilton** |
| Well, yes indeed and indeed Kyoto, I mean even under legally binding provisions of the Kyoto Protocol, when the United States refused to ratify and Australia refused to ratify and Canada actually withdrew after ratifying, there is no penalty and there aren't penalties in international law and that's not how it works, it works through international pressure.  I mean one of the brilliant pieces of diplomacy on the part of the French at Paris, was they broke with a long-standing tradition of these two week negotiations. They start and the officials have these negotiations which go on furiously and stressfully and so on and so forth, but the leaders turn up on the last day or maybe the last two days, the presidents and prime ministers fly in as they did at Copenhagen, and they're supposed to wrap everything up and sign an agreement. But what we saw happen at Copenhagen is, they turned up, there was no agreement, there was no time. The officials would leave all the important decisions and it collapsed.  Whereas what the French did, not only did they do a lot of pre-diplomacy, they asked all of the leaders to come on the first day, and all of the leaders came on the first day and every one of them had six minutes to make a statement. They actually had to have two plenaries, so that they could all get an opportunity to talk and every last one of them got up there and made grand statements about how committed they were, how this was important for the future of humanity and how their nation was committed to the process and so on.  And this sent a very strong message to the officials who then for the rest of the two weeks, negotiated. So I think this process, this pressure on nations to do the right thing is very, very strong. But, as I keep stressing more and more now, there's more going on. There's a massive transformation happening within the global community and the shift that's happened, and this applies in little old Australia, it's kind of awkward and embarrassing to come back to this country and realise just how disconnected we are from the global debate and what's going on.  In Australia we still have our major corporations saying, 'well we'll only respond when we have to'. Whereas more and more corporations, including fossil fuel corporations overseas, such as the European fossil fuel companies who are now calling for a global carbon tax are saying, 'we don't want to be forced to do what we want, we don't want to do, we want to be out there leading it because we can see that the world is changing'. And so I think there's just this momentum, that has now been set in train that will drive emission reductions in the future. |
| **Robert Manne** |
| No I'm going to be really unfair and ask you two simple questions about which you've written whole books, and it's unfair for you to have to speak succinctly about questions that have occupied a book. |
| **Clive Hamilton** |
| You're going to ask me about geoengineering aren't you? |
| **Robert Manne** |
| Yeah, I'm going to ask you about geoengineering. One of Clive's books is *Earthmasters* which is a critique, a very, on balance a very passionate critique of the dangers of geoengineering, in particular the putting of sulphur in the atmosphere to stop the sun's rays having the effect.  Could you, for this audience, just say why you're so worried, anxious, about the likelihood of geoengineering becoming more important, if Paris doesn't succeed? |
| **Clive Hamilton** |
| There were incidentally, the attempts behind the scenes to insert a kind of endorsement of geoengineering into the Paris agreement, attempts that had to be headed off. Let me try and be as concise as I can. There are a whole range of geoengineering techniques but the kind of headline one is as you mentioned, known as Sulphate Aerosol Spraying, it's known from studying volcanoes that if a large amount of particular matter, a very large amount, is put into the atmosphere, then the Earth cools, because less sunlight gets through to the surface of the Earth.  And so the proposal is to mimic a large volcanic eruption by sending up a fleet of planes and spraying in the stratosphere, a layer of sulphate aerosols that would coat the whole Earth and depending on its thickness, reduce the amount of solar radiation reaching the Earth and thereby cool the Earth. And it could be quite easily done, to cool the Earth by a degree – 2 degrees. You know you could basically have a global thermostat. It would work: it would be cheap: it could be done unilaterally. Do I need to go on about the kind of risks involved?  Of course, you're not dealing with climate change, you're dealing with one symptom that is global warming, does nothing for ocean acidification and other changes in the weather. As soon as you take away this sunshield then you get this massive spike of global warming which would be catastrophic and who knows what geopolitical circumstances might cause a nation, or group of nations to stop spraying the atmosphere. What if it has the kind of desired effects over China or the United States, but it stops the Indian monsoon; which some of the climate models say, so there's famine in India, as a result of China trying to protect itself? You can imagine the kind of geopolitical conflicts this might set up.  So it's the grandest promethean ambition that humanity ever had. To take control of the Earth's system through this relatively simple, rather crude, technological intervention. And so that, along with the serious risk that the appeal of this kind of geoengineering scheme, two political leaders such as Republicans in the United States: 'to avoid all of this government intervention, to destroy the American way of life and impose an impost on fossil fuel companies, the big government instead will go to geoengineering'.  And so there are so many risks and dangers associated with it, it’s the kind of approach that makes me very, very scared. |
| **Robert Manne** |
| Do you think its gaining momentum? |
| **Clive Hamilton** |
| There are a bunch of scientists and right wing think tanks who support the idea in the United States. The same right wind think tanks that have for years, denied that climate change exists, now saying, 'hey sulphate aerosol spraying is the kind of answer we think we can live with'. I know that in the back offices of Republicans on Capital Hill, they're talking seriously about geoengineering. I know that our own Environment Minister has privately said he likes the idea of geoengineering.  And basically it's kind of something that is going to be a solution to be put in the back pocket and pulled out when things get really bad and you can paint scenarios: China 2035, the weather's gone really bad – there's a terrible drought - famines threatened - huge social unrest - the grip of the Chinese Communist Party on power is seriously destabilised - lets engineer the climate - it's the only solution - we know it will cool the climate within a matter of months - it won't cost much - sure India might not like it, but it's this or nothing. I think that kind of scenario is not impossible. |
| **Robert Manne** |
| My final question then I have Liz to come up. For some reason, two ideas have always struck me as interesting about what might play a role in helping solve the crisis. One comes from the former head of Greenpeace, Paul Gilding, in a rather apocalyptic moment in one of his books, *The Great Disruption,* he says; "suddenly the penny will drop, there will be", this thing he calls "the great awakening", and the great awakening is essentially these suited men you talked about. "The great awakening will happen amongst the elite of the developed world, they'll suddenly see that without dramatic action, this generation will be responsible for the destruction of the one and only Earth we have." One idea.  The other idea comes from Naomi Klein who's only recently joined this issue, but has joined it with enormous vitality and effect and her idea is; the only thing that might save us, this virtual community across the globe she calls, *'Blockadia'* and this really is an entree to Liz who is not only a scholar but a climate activist, that the action, particularly of young people, fighting the corporations is; I think she would think her best hope.  Just a brief response to *The Great Awakening* by Paul Gilding or *Blockadia* by Naomi Klein? |
| **Clive Hamilton** |
| Well, my heart is with *Blockadia*, I think it has a certain kind of utopian element to it, particularly the appeal to indigenous people and I have a lot of problem with this. The indigenous people in their traditional ways are going to come out, they're going to be the ones who will save us, quite apart from 'sorry indigenous people, we screwed the world and now we want you to help us save it', and the kind of ethics of that.  But I'm also a little bit wary of talk about *The Great Awakening*, which has this kind of Tielhard de Chardin quality to it, or something like that.  But if *The Great Awakening* is interpreted in terms of the suits that I talked about, who turned up at Le Bourget in droves, because they came out of their glass offices in the city or in Wall Street or Shanghai and came to Paris for the first time and said; "this climate change problem is not a side issue that the green bonds will deal with, this actually affects our core business, we can now see, and I've only seen it I suggest in the last year or two at most, this is telling us something profound about how the world is changing and as investors we simply have to get on top of this". |
| **Robert Manne** |
| This is a sort of practical version of *Great Awakening?* |
| **Clive Hamilton** |
| It is, but I think the climate campaigners have been really fundamental in bringing about that shift because that had a very big impact, not only on technological development because some early tech people have seen the way the world is going, but also on the political process. And so the NGO's have fought the climate campaigners in all their various strikes, have fought a very long and mostly very dispiriting, but at times hopeful and effective campaign and the divestment campaign, which Bill McKibben has lead, has been an extremely important influence. The impact – the pressure on global banks not to fund fossil fuel developments have been highly effective, a long way to go but highly effective.  Let me just finish on this last point and that is about the Galilee Basin. It's almost inconceivable, that Australian Governments Federal and State, could at this time, still actively be encouraging the opening up of these vast new coalfields to development, I mean it's madness from every point of view. And if it does get closer to an actuality, if they start moving the bulldozers in to those coal mines first proposed particularly the Adani one, the Carmichael Mine in the Galilee Basin, I think what we'll see is the biggest, most passionate protest movement that has ever happened in Australia. (Applause). |
| **Liz Connor** |
| Right, can you hear me? I do enjoy joining the panel as an activist, I was in Paris as a Climate Guardian Angel and we were trying to use art and spectacle to circumvent the kind of rational blocks that seem to be in play in public perception around climate, so I have a big focus on public perception.  But I think out of everything you said, the thing that, before I open up to you all to ask more questions, the thing that I'm just wondering about is what is your response to the latest quite alarming spikes in temperature? Is it a temporary response to the Indonesian fires? It seems to be very confusing and very concerning that, not only was January the hottest month on record by a wide margin, but climate scientists are now saying things like; 'it's jaw dropping', they're tweeting things like, 'wow', they're not given to emotive expression and this seems to be a kind of new set of data before us that we need to respond to. How can you assimilate this with your understanding of how things are unfolding? |
| **Clive Hamilton** |
| It's very frightening what's happening. The Mauna Loa's emissions measures, concentration measures, the spike in global temperature which we've all experience in February is quite frightening and unusual and how do I respond? I'm extremely anxious that what we're going to see. I mean if you look at the temperature record over the last couple of hundred years, you'll see it's never smooth, and I am worried that the kind of hidden heat that we know is somewhere in the Earth's system, because concentrations have been increasing continually over the last fifteen, twenty, thirty years, that the kind of hidden heat that wasn't being manifested in the atmosphere is now starting to manifest itself, because it's come out of other parts of the Earth's system particularly the oceans.  Of course it's complicated, because we've had this very strong El Nino event, and so we've had warming plus El Nino which has given rise to this temperature spike. But you know, when I'm lying awake at night, what terrifies me is what we're seeing is a kind of the 'so called pause', came in a way at the worst possible time because it coincided with denialism and it gave them this veneer of credibility and now, it's no good us, 'now that the world system/the Earth system has gone crazy, well screw you - you were wrong all the time,' is no kind of any satisfaction.  So we have to live with it, we have to listen to what the climate scientists are saying, we have to hope that the messages of the Earth's system itself and the climate scientists will be able to reinforce this shift that's happened and hope that the turning point that I've identified, does result in a peak in global emissions and more particularly, no so much the peak, I'm more worried about the rate of decline thereafter. |
| **Liz Connor** |
| Ok, (Applause). Well, you beat me to the punch which is.  Thank you Robert for organising this really profound evening of catching up on this very confusing set of circumstances, you know geopolitical interactions with geomorphologies and it's extremely confusing, so it's wonderful to have Clive to clarify some of that for us tonight.  And rather cheekily as the Chair, I'm just going to finish with a note on *The Blockadia* and what you were saying about the indigenous, you know the cynicism around the indigenous stuff. There's a really remarkable coalition between indigenous and farmers and younger generations being involved and I will just take you up on that to finish. That last point, one of the points you made that, if the Carmichael Mine goes ahead, it will be a bigger galvanisation or mobilisation than possibly even the Franklin Dam… |
| **Clive Hamilton** |
| Yes I think so. |
| **Liz Connor** |
| And that's something to think about and if you're interested in getting involved I'd ring Friends of the Earth, they're very involved in organising these blockades. So on that note, thank you all for coming and welcome to the Anthropocene. (Applause) |
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