

PERSPECTIVES



Climate Change in a New Democratic Age:
Why we need more, not less, democratic participation

Dr Randal G Stewart

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- Awareness of the importance of political nous in the public and private sector
- Enhancing public value as strategic focus in the public sector
- Improving citizen engagement and empowerment in the public sector and corporate social responsibility in the private sector
- Managing frameworks of performance information in the public and private sector
- Deepening the relationship between regulation and outcomes thinking in the public sector.

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Foreword

It is Sunday morning 27 October and I am writing these few words in the study of our Katoomba home. We woke this morning to the slight smell of smoke as to the north, west and east of us the fires are still eating their way through the world heritage lands and furious back-burning continues in the hope that the risks of the long hot summer ahead might be mitigated if not averted.

It has been an extraordinary twelve days in the Blue Mountains.

The folk up here are well used to fires and the old timers still talk of the Leura fire of '57 and the fires of '68. In my own time here I well recall the few days in the summer of '94 that I spent with our three young children (my wife was out of town at a family wedding) isolated by the fires that cut the Great Western Highway to the east and to the west of the town. This time was different.

The crisis hadn't subsided before a largely unedifying and self-serving exchange of fire opened between those who sought to establish a link between these events and climate change and those who claimed that fires are fires and we've always lived with them in Australia.

As I listened to these exchanges I had the benefit of having read the early drafts of the paper before you where its author, Dr Randal Stewart, illustrated the shortcomings of the public discourse around climate change policy to date by reference to the conflation of weather and climate. His point is a relatively simple one: they are different and while the science on the human impact of climate change is conclusive the link to weather (which may well prove true) is less developed and less conclusive. To give unsupportable weight to such claims at this stage undermines the strength of the evidence on the bigger picture and public confidence in assessing the need to act and the appropriate policy for doing so.

Dr Stewart's paper examines the role of three key groups in the climate change debate – scientists, economists, and the bureaucracy – as the lens through which to consider the capacity of democratic decision-making processes to establish effective climate change policy. While recognising the general frustration, he counters the view that democracy is floundering. His observation of the flaws to date, far from being deflating, give rise to a reasoned affirmation that 'democracy will save the planet' but only if we take it seriously.

In recommending Dr Stewart's paper to you I would also suggest that you might read it in conjunction with an earlier paper in this series *Democratic Challenges in Tackling Climate Change* by the Hon Dr Barry Jones [www.whitlam.org/the_program/perspectives].

The challenge is real and if we are to tackle climate change it will demand the creation of a common purpose. This can only be built on informed and responsible public discourse, inclusive processes and a keen understanding of the practical realities of converting good policy into effective action.

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Climate Change in a New Democratic Age:

Why we need more, not less, democratic participation

Introduction

The problem climate change creates for democratic decision-making.

In a democracy, we do not make decisions out of a barrel of a gun, as they do in some places. We make decisions in 'institutions'. Institutions are defined as '... the recurring patterns of behaviour which establish the rules, routines, procedures, conventions, roles, strategies, organisational forms and technologies around which political activity is constructed' (March and Olsen 1989:22). Therefore Institutions are formal and informal arrangements that organise decisions, decision-makers and those aiming to influence decisions.

In democracy, institutions are not immutable. They form, change and adjust to the context they are in. They do this through predictable sequencing patterns. Democracy and its institutions trend toward equilibrium but it is an equilibrium punctuated by institutional change ('punctuated equilibrium'). Institutions are democracy's way of solving collective action problems. The term 'Collective Action problem' describes a situation in which multiple individuals would all benefit from a certain action but this has an associated cost, making it implausible that any one individual will undertake to solve it alone. The rational choice is then to undertake it as a collective action the cost of which is shared. Such problems are the building blocks of institutions and they are solved or not, by politics! Politics is a dynamic process that frequently produces unintended consequences as different organising processes interact to create a path forward ('Path dependence'). In democracy, small contingent decisions at the beginning of a path can have large and long term consequences.

On 30th January, 2013 at 8.19am, respected Radio National broadcaster Fran Kelly interrupted Superintendent Darren Vatcher, Zone Manager for the Castlereagh region of the NSW Rural Fire Service, talking about the bushfires around Coonabarabran:

Fran Kelly: *"Do you think the weather is getting hotter, do you think the weather is changing?"*

Darren Vatcher: *"I wouldn't like to enter into the climate debate. Obviously that is a scientific debate that needs to be entered into by scientists and other parties!"*

This passing exchange highlights the problem climate change creates for democratic decision-making. In particular, how could an otherwise well informed commentator like Fran Kelly make the elementary mistake

of confusing weather and climate? Why does someone like Darren Vatcher feel it is not his place to comment on climate? Why has he removed himself from participation in this debate? So what exactly is the problem? Is it a failure of participation, that Fran and Darren have not been informed and helped to engage in democratic participation on climate change or is it a failure of democracy itself, indicating democracy cannot deal with big, long term and critical issues to do with human survival?

Gough and Shackley (2001) quoting Haas notes the constituency for climate change is unusual, calling it an 'epistemic' community. An epistemic community is described as a broad coalition of actors, including scientists, environmentalists, economists, public servants and politicians, who share a common interpretation of the science behind an environmental problem (which they find convincing) and the broad policy and political requirements in response. Scientific knowledge is the 'glue' that helps to keep these actors committed. Such a coalition could be strong, could fend off opponents and get good decisions achieved. However, it can also be weakened when, despite good and noble intent, those in the coalition see the future slipping away, are unable to rearrange, reconfigure and recombine institutions within democratic decision systems to save the planet.

The problem coalition members face is that science alone is not enough to succeed in influencing democratic decision-making! Trying to change decisions in a democracy requires a good understanding of democracy itself; how democratic institutions work, what is achievable or not, what has happened historically and how to reinforce and support coalition members before and after a change takes place.

Those supporting action on climate change are unlikely to hold as a coalition unless effort is expended on getting the sequencing and timing of the change exactly right. They will also need to sustain the change by creating the right incentives and distributional outcomes (increasing and/or diminishing returns to supporters) that will keep all members supporting the proposed direction forward (see Figure 1 for a model of institutional sequencing in democratic decision-making).

This paper will demonstrate how difficult it has been in Australia to get the sequencing and timing of climate change right. It will be shown that climate change political activity has attempted to maintain the coalition through four critical junctures in six years, but it has failed to put the right incentives and distributional outcomes in place. These four critical junctures are Critical Juncture # 1 –

Opposition Leader Kevin Rudd declares climate change the greatest moral challenge of our generation, Critical Juncture # 2 - Prime Minister Rudd abandons climate change releasing sceptics and deniers, Critical Juncture # 3 – Prime Minister Julia Gillard establishes the Multi-Party Climate Change Committee (MPCCC) and Critical Juncture # 4 – Carbon pricing legislation passes parliament. It will be shown that new institutions have been attempted at each of these critical junctures but emergent developmental pathways have broken down, coalitions have fractured and the change has been unsustainable.

In democracy, emergent institutional forms will be 'isomorphic', meaning they will be compatible with, resemble and will be similar to existing forms. 'Isomorphic' does not mean that institutions cannot change, they do; and it does not mean that radical institutional change cannot happen, it can! But it does mean that change has to be worked for and crafted out of existing democratic practices. It cannot simply be delivered based on evidence or hope. Few of the coalition members in climate change in the last six years have accepted this reality. It will be shown that 'scientists', having demonstrated that climate change is real have, logically, called for an institutional 'critical juncture', a change, a disruption in social, economic and political life to save the planet. They hope that a certain point in history or a contingent event will force a change in the prevailing institutional arrangements. Hope is not enough and has been forlorn – will always be forlorn in a democracy – leading the scientists, in frustration, to depart from the science and try, artificially, to create the desired 'critical juncture' by conflating extreme weather events with climate change. Science logic leads to an all or nothing approach; either you make the changes to what is needed or you do not! This has made them unreliable as part of the climate change coalition because they are generally non-responsive to developmental pathways that recombine incentives and distributional outcomes.

It will be shown that other members of the climate change coalition accepted the logic of the need for a 'critical juncture', but had their own problems. 'Economists' have played a major role in the climate change coalition in Australia, as they have internationally through the Stern Report (Stern, 2006). In Australia, an economist, Ross Garnaut, was commissioned (twice) by Government to write major reviews of climate change (Garnaut, 2008 and Garnaut, 2011). Economists bring to the coalition an acute and valuable sensitivity to the importance of scarcity and a methodology based on risk, risk of not responding, and risk of responding in certain ways. The trouble with this approach is it is too rational. It does not accommodate the lumbering, isomorphic institutional change that is a hallmark of democracy and it does not speak well to democratic politics and its frequent displays of irrationality. This has made economists extreme members of the climate change coalition asserting a textbook rationality removed from its democratic context.

The 'environmentalist' logic tends toward 'sustainability', hoping the evolutionary logic of ecosystem diversity can be applied to institutional forms. The trouble with this approach is that critical junctures and developmental paths are not law-like but subject to politics, and in the cut and thrust of democratic politics, the correct ('sustainable') change may not prevail. Environmentalists are responsive to the recombination of incentives and disincentives, but because they view existing institutions as unsustainable, they are agnostic about emergent forms that are isomorphic. This has made them unpredictable as members of a climate change coalition.

The members of the climate change coalition who come out of this analysis the best are the 'public sector managers'. 'Public servant' logic tends toward a free and fair exchange of views embracing political conflict over different ideas, which then may become a source of institutional change. The trouble with this approach is that public servants can be captured by the powerful. This happened initially, when the public servants, upon accepting the need for a critical juncture as proposed by the scientists, then adopted the combined logic of scientists and economists producing an unacceptable path forward, called the 'Carbon Pollution Reduction Scheme (CPRS)'. However, public servant logic helps them understand the requirements of democratic decision-making – sequencing, timing, incentive and distributional outcomes – better than other members of the climate change coalition, and they were eventually able to force the legislation of a carbon price.

Thus, it is shown, that scientists, economists and environmentalists failed to manage institutional change and sequencing of climate change decisions in democratic Australia. This failure helped sustain 'Sceptics', whose aim is to 'disrupt' attempts at sequencing and change using whatever means are at their disposal. The consequence is that climate change policy in Australia is still controversial and not achieved; a result caused by poor, inappropriate and inadequate participation in democratic decision-making, not by a failure of democracy itself.

The Science Case for Climate Change

Scientists argue that there is very little doubt about the answers to three big climate questions (Wigle, 2006):

- Is the climate getting warmer? (Yes)
- Are human activities responsible for global warming? (Almost certainly)
- What changes can we expect? (1.5 to 5.8C warming by 2100)

Global warming is the rise in the average temperature of Earth's atmosphere and oceans since the late 19th century and its projected continuation. Since the early 20th century, Earth's mean surface temperature has increased about 0.8C (1.4F), with about two thirds of the increase occurring since 1980. Global warming is an

aggregate term for changes occurring in the atmosphere and the oceans and ocean-atmosphere interactions. Most scientists study aspects of this interaction, such as temperature, sunspot activity, ocean currents, clouds and water vapour, storm activity, droughts and rain, permafrost, icecaps and polar sea-ice and greenhouse gases. It is the genius of science in recent years to find patterns that link findings from these separate inquiries to warn that the earth is warming.

The most famous aggregate evidence for global warming came in 1998 from Mann, Bradley and Hughes (Eggletton, 2013). Eggletton (2013) says, "They combined thermometer measurements taken since 1850 *with evidence from earlier times* (emphasis added) ... concluded that the past hundred years had been a century of remarkable warming". This is known as the 'hockey stick' because on a graph with '1000 years' on the x-axis and 'Northern Hemisphere anomaly (Centigrade) relative to 1961 to 1900' on the y-axis, there is a sharp increase in temperature from 1850. Indeed, Mann, Bradley and Hughes show the Earth had been cooling for 900 years, but in the 20th century began to rapidly warm. It is acknowledged that the further you go back in time the less reliable is each measure.

The climate system is ferociously complex, consisting as it does of many sub-systems from atmosphere, hydrosphere, cryosphere, land surface and biosphere, so the mono-factor (temperature variation) observation of the 'hockey stick' is not enough to provide scientific explanation. In 1988, a scientific body, the Intergovernmental Panel on Climate Change (IPCC), was established under the auspices of the United Nations to aggregate the consistent and alarming findings from many scientists on global warming and to reach an international consensus among scientists on global warming. The IPCC, in its many reports, has not only supported the trend to global warming identified in many sub-systems, but has concluded in its Fifth Report (Working Group, 2013) that greenhouse gases are the cause of global warming.

The most potent greenhouse gases are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). The argument that greenhouse gases are the cause of global warming is simple physics. If heat is being retained in the atmosphere, then it is because more heat is being radiated in or less heat is being radiated out. There is no evidence of increase heat radiated by the sun, although solar variation is not unimportant, but it is small (Pittock, 2009). In terms of heat radiating out, the analogy is with a greenhouse that seeks to retain heat by locking it in and minimising the loss through convection. In the earth's atmosphere, the heat should be radiated out but instead it can be absorbed (CO₂ alone can absorb between 9 – 26% of heat in the atmosphere) and radiated back to earth thus trapping heat in the atmosphere and raising temperatures on Earth. The higher the levels of CO₂, the most absorbent greenhouse gas, in the atmosphere the more absorption of heat will take place and the higher the Earth's temperature. This reasoning has been complemented by

measurements showing alarming increases in CO₂ in short periods from 313 parts per million (ppm) in 1960 to 389 ppm in 2010 and 400ppm on May 9 2013.

What are the effects and the causes of an increase in greenhouse gases, particularly CO₂? Effect is established by a combination of observation and modelling. Observation has its limits, it can show alarming increases in CO₂ in the atmosphere; it can show alarming decreases in sea ice, it can show increases in observed temperatures, but it cannot be done before records have been kept and there is no such thing as observations of the future. So observation alone cannot deliver system explanations of climate change that rest on multiple variables. By definition, observation provides an unreliable basis for long term explanations of climate change.

To do this, scientists turn to models. Climate Change models are a branch of fluid dynamics using mathematical equations developed as long ago as the 1920's. In the same way that early engineers wanted to know how a fluid in a system, say in an hydraulic braking system, would combine, change itself or change other agents under various system conditions such as temperature, movement, precipitation etc., so climate change modellers wish to know similar things about the climate system. Climate Change models can test what the likely effect of an increase in CO₂ can have on the earth's atmosphere and oceans and the interactions between them, and can then retroactively apply the model to the past to see if the model's findings predict observable patterns. The models do not assume the climate will warm due to increasing levels of greenhouse gases. Instead the models predict how greenhouse gases will interact with radiative transfer and other physical processes. One of the mathematical results of these complex equations is a prediction whether warming or cooling will occur. In all the modelling, warming occurs and this, with observable increases in temperature, is conclusive evidence that the emission of greenhouse gases is the cause of global warming.

But what is the cause of the increased emissions of greenhouse gases? Greenhouse gases are emitted from both natural and human processes. Scientists seeking cause again turn to a combination of observation and modelling. Observation shows a strong correlation between the increase in human emitted CO₂ and the increase in CO₂ in the atmosphere since the industrial revolution in 1850 (although in the case of methane gas, emissions have actually fallen). Scientists can use models to do a number of things including testing the climate system effect of increasing or decreasing natural and human generated emission and testing to see how effective the oceans can be in absorbing the increased human emissions. Observation and modelling suggest human generated emissions are a problem but as a cause the evidence is not conclusive.

Critical Juncture # 1 – Opposition Leader Kevin Rudd declares Climate Change the Greatest Moral Challenge of Our Generation

The problem of the narrative

The scientific modelling is compelling and the evidence alarming. On the prudential principle alone it demands a response. This is where the problems begin, when the science crosses into the democratic sphere of politics and public policy. The scientists do not simply want a response, they want a change! They want humans to stop doing what they are doing and do something different; they want the politics and policy decision system to design a disruption, a critical juncture, a new narrative challenging the status quo, building new institutions to create a new normal path to low emissions. Acceptance of the need for a critical juncture is widespread in Australia, adopted by a coalition of actors, including scientists, environmentalists, economists, public servants and politicians, who share a common interpretation of the science behind an environmental problem (which they find convincing) and the broad policy and political requirements to deliver a change.

By the time of the Federal election in Australia in November 2007, polling showed that Australians were the most concerned (76%) of all populations about the potential impact of climate change (Rootes, 2008). As far back as 2004, the (Labor) states and territories collaborated to form the National Emissions Task Force, to develop a detailed policy framework for a national cap and trade emissions trading scheme (ETS), although its final report was not published until December 2007 (National Emissions Trading Taskforce, 2006). The then (Liberal) federal government, led by Prime Minister John Howard, was slow to react to the issue. However, in December 2006, a joint government-business task force was established (Prime Ministerial Task Group on Emissions Trading, 2007), and proposed the introduction of an ETS (Taberner, 2011). The ETS was described as happening 'in the future', and though committed to the concept the Howard government displayed little enthusiasm. The Minister of Health, Tony Abbott, expressed the Government view in June 2007, when he said of climate change "It's a big issue, it's an important issue, and the government will be responding. But we won't be responding in ways which destroy our economy and we will make our decision once we've got the evidence in" (Australian Associated Press General News, 1 June 2007).

The then Opposition Labor leader, Kevin Rudd, was not waiting for the 'future', recognising, as scientists warned, that the whole point was that there may not be a future! In March 2007, he convened state premiers

and chief ministers to attend a 'National Climate Change Summit' and declared "Climate change is the greatest moral challenge of our generation". As Christine Jackman (2008:107) writes

Never mind that as Opposition leader he had no power to enact any of the ideas generated at the meeting; the images on the nightly news bulletins suggested that here was a leader who could work productively with the states and who was moving ahead on an issue that had become emblematic of the future

In 'owning' the issue the way he did, and in calling it the greatest moral challenge, Kevin Rudd accepted the scientists call for a disruption, a 'critical juncture' in a way that his opponents did not. But that small decision, to use 'morality' not 'science', had long term consequences for climate change in Australia.

Kevin Rudd became Prime Minister in November 2007 (Rootes, 2008) and immediately set about disrupting the status quo by setting up a new Department of Climate Change and preparing the way for new institutionalisation of greenhouse gas reduction. The problem was the narrative. Rudd accepted and understood the science but he was not helped by scientists themselves, who proved unreliable allies. He was dependent on support from the Greens in the Senate, but they voted against an ETS and his new Department of Climate Change, heavily populated with neoclassical economists from the Department of Treasury, at first took a doctrinaire, highly technocratic approach to climate change.

Scientists provide an unreliable narrative

The scientists betrayed their science, and fractured the 'epistemic' coalition by conflating weather with climate. Weather is basically the way the atmosphere is behaving, mainly with respect to its effects upon life and human activities. The difference between weather and climate is that weather consists of the short term (minutes to months) changes in the atmosphere. Most people think of weather in terms of temperature, humidity, precipitation, cloudiness, brightness, visibility, wind and atmosphere pressure, as in high and low pressure. Climate is the description of the long term pattern of weather in a particular area. Some scientists define climate as the average weather for a particular region and time period, usually 30 years (NASA 2013). Weather is studied through observation. In Australia, the Bureau of Meteorology can see a low or high pressure forming and can predict what the weather may be in the next day or week. The Bureau has observed a pattern in the Pacific, in two yearly rotations, of how ocean currents combine with trade winds to push warm or cool surface water around the region, causing extreme weather events such as drought or monsoon rains. These movements are known as El Nina and La Nino, and the pattern is called the El Nino Southern Oscillation (ENSO) (Eggleton 2013:41).

Eggleton (2013: 27) writes, "Since climate is the average of weather taken over the years whatever causes weather also causes climate". But it does not follow that climate change causes extreme weather events, such as Hurricane Katrina, as famously claimed by Al Gore. To show this, it would be necessary to show that greenhouse gases create extreme weather events that are not caused by El Niño or La Niña in our region. The IPCC, in a 2012 Special Report, states there is "low confidence" in attributing any changes in tropical cyclone activity to greenhouse gas emissions or anything else humanity has done (A. Field, C.B., V. Barros, T.F. Stocker, D.Gin, D.J.Dokken, K.L.Ebi, M.D. Mastrandrea, K.J. Mach, G.K. Plattner, S.K. Allen, M. Tignor, 2012:8).

Unfortunately, Australia's most prominent climate scientists have fallen into the trap in their public commentary of suggesting extreme weather events are caused by global warming (Australian 18 November, 2011 and many more). In their published work, scientists like Will Steffen, Lesley Hughes and David Karoly are more circumspect, Steffen (Steffen, 2011:4) writing

Such extreme weather events have occurred before the advent of human-induced climate change and the degree to which climate change affects risks associated with extreme events is a very active area of research

But Steffen, Hughes and Karoly, writing for the Climate Change Commission (Climate Commission, 2013:11), dismiss the question of 'cause', quoting Trenberth (2012), that "All extreme weather events are now influenced by climate change", but even Trenberth (2012:286) says "...The key point is that anthropogenic climate change effect (on extreme weather events) is not zero or negligible, nor is it large relative to the mean, but it is systematic".

The issue here is whether it is wise for scientists to embrace a narrative for the purpose of building public support that they know is not substantiated by the science. It is easy to understand the temptation, make a few gains, get attention for the issue etc., but not only does this create an unreliable narrative and raise questions of credibility, it weakens the effort of the epistemic coalition to hold together to build a new climate change institution.

Status quo disruption – establishment of Department of Climate Change (DCC)

When an issue like climate change crosses out of science and into the democratic sphere of politics and public policy, those that manage the sequencing and timing of the different patterns of interaction bear a huge responsibility. These managers are responsible for the coherence of the narrative; for the management of preferences, even though these are formed endogenously; for the disruption to the status quo; for the crucial sequencing through the critical juncture and the

application of democratic technologies, to the formation and path of the new institution and for managing investment in the new institution so it will be sustained (see Figure 1). For the creation of a new climate change institution, this management task falls to government, to politicians and public sector managers. In 2007, Prime Minister Rudd disrupted the status quo and organised these managers into a new department, the Department of Climate Change (DCC).

Action on climate change creates an uncertain future for vulnerable communities and industry sectors. Consequently, politicians and public sector managers must display 'adaptive capacity' (Jacobs & Leith, 2010) defined as "the preconditions necessary to enable adaptation, including social and physical elements, and the ability to mobilise these elements" through a complex sequencing process culminating in a new institution. Mainstreaming the new institution requires reciprocity and trust, co-management, stakeholder-led, social learning processes, particularly where Government proposes to take the role of intervener and rule setter.

Adaptive capacity is exactly what was not done in the first eighteen months of the new Department of Climate Change. The new secretary, Martin Parkinson, an economist from Treasury, described by 't Hart and Wanna (2010) as 'eminently qualified' for the role, hit the ground running. Tasked with building a new department from fragments of others working on carbon pollution, such as the incorporated Australian Greenhouse Office (AGO), and to build the Government's climate change policy framework, Parkinson recruited two able deputy secretaries, 41 year old Treasury official, Blair Comely, and former head of the AGO, diplomat, Howard Bamsey. Bamsey was to take care of the administrative side of the department and Parkinson and Comely were to manage the policy. Parkinson's vision was of DCC as a small, 225 staff, "boutique policy department" ('t Hart and Wanna 2010).

After eighteen months, Parkinson and Comely produced a 530 page Green Paper called the Carbon Pollution Reduction Scheme (CPRS) (Department of Climate Change, 2008). The CPRS advocated a market mechanism to reduce emissions. Building on earlier suggestions from the National Emissions Trading Taskforce (NETT) and Howard's Task Force and informed by the work of economist Ross Garnaut, acting as a special climate change adviser to the Government, the economists argued a cap and trade mechanism (called in Australia, an Emissions Trading Scheme or ETS) was the only way to reduce greenhouse gas emissions.

The CPRS fails in parliament

The Carbon Pollution Reduction Scheme legislation was presented to Parliament twice, and both times it failed in the Senate, on 13 August, 2009 and again on 2 December, 2009. Both times the Opposition and the Green Senators voted against the legislation. The second rejection took place amidst unprecedented turmoil

in Opposition ranks as the Leader of the Opposition, Malcolm Turnbull, was defeated on 1 December by challenger, Tony Abbott. Abbott led a revolt of opposition MPs and senators against the legislation and the agreement to support it, negotiated by Turnbull.

Lessons learned?

The failure of the emergent institutional form of the CPRS was at one level a failure of the epistemic coalition to hold together. The members could not agree on the narrative to present. The scientists successfully argued the case for climate change action using robust and rigorous scientific evidence, but when they crossed into the democratic sphere they failed to acknowledge the limits of their science and compounded the confusion by conflating extreme weather and climate change. The economists adopted an extreme position, arguing one narrative only (see Critical Juncture #2 below), failing also to acknowledge the limits of their economic analysis and the environmentalists, represented by the Greens Party, were unpredictable, voting against the CPRS. The public sector managers, aligned with the economists, abandoned their normal stance of adaptive capacity. The narrative was very confused and choices and paths not taken were never discussed or shared by members of the epistemic coalition.

At a deeper level though, this was a failure of participation in democracy. It is the form of participation adopted by members of the epistemic coalition that resulted in a failure to establish a new institution around the CPRS. Once the decision was made to abandon the status quo and throw out all previous institutional underpinnings, then the new institution could only succeed if it harvested broad support and/or offered all citizens increasing returns from the CPRS, not decreasing returns. But the CPRS was built on inflexible, manipulative, elitist arguments by scientists and economists, both brooking no challenge, hearing no objections and thus making it easy for Tony Abbott and others to claim most citizens would experience decreasing, not increasing, returns under a CPRS.

Prime Minister Kevin Rudd became a living monument to the failures of this first critical juncture. In the absence of a clear narrative, which he himself helped confuse through his small decision to link climate change to morality, Rudd suffered long term consequences. He found himself forced to thrash about with climate change, sometimes scientific, sometimes economic, and mostly moralistic at international and domestic level. As the CPRS was voted down for a second time, Rudd transferred his analysis from the 'morality' of reducing greenhouse gases to the 'morality' of getting the CPRS adopted. Frustrated and isolated in 2010, he declared action on climate change 'suspended' (The Australian April 28, 2010).

Critical Juncture # 2 – Prime Minister Rudd Abandons Climate Change Releasing Sceptics and Deniers

The problem of the path not taken

Demokratia is a messy system that, since the time of ancient Athens, "has resembled an experiment in puncturing common sense perceptions of the world". Keane (2009) continues, that Athenian democracy "highlighted the contingency of things, events, institutions, people and their beliefs" (Keane, 2009:51). As in Athens so in twenty-first century Australia where scientists, economists, environmentalists and others attempted to forge emergent institutions to reduce emissions. The CPRS failed, but this was not the end of the common sense view that the best way to do this was through a market mechanism in the form of an ETS. Indeed, so strongly held is this perception that many of those aiming to influence decisions refused to countenance any other path.

It is not wise to enter a democratic sphere of politics and policy, unwilling to listen to other views. Institutions in democracy represent shared understandings that affect the way the problems are perceived and solutions sought. Institutions solve these collective action problems. Institutions are informal, consisting of rules, roles and routines, not necessarily codified, around which collective (shared) norms are built. The failure to be inclusive, to be participatory in a democracy, reduces the success of establishing emergent institutions. Fragmented communities do not share collective norms, they do not share perceptions of problems in the same way and hence they can have enormous difficulty informing and defining for political actors what needs to be accomplished.

In 2010, when Prime Minister Rudd effectively abandoned action on climate change in hand to hand combat with an Opposition Leader whose reputation and power was based on opposition to an ETS, the world split into two bifurcated coalitions; the common sense "believers" armed with an ETS in some form and the "sceptics" who wanted a different emergent institution and the "deniers" who were simply spoilers. Or at least, this is how political actors came to see how what needed to be accomplished, was being defined. In this second attempt to establish an emergent institution to reduce emissions, it will be shown that the failure of economists and environmentalists to take a more participatory path doomed this bifurcation to continue to the present time.

Economists and the path not taken

Economists in Australia have approached the need to reduce greenhouse gas emissions using a market mechanism, called in Australia the ETS. Since Alfred Marshall in 1890, mainstream economics has been

focussed on price, outputs, and income distribution in markets through supply and demand and the hypothesized maximization of utility by income constrained individuals and cost constrained firms. In this neoclassical approach, human induced emissions of greenhouse gases are an externality, emitted into the atmosphere by individuals and firms without cost, but the resulting damages from climate change will be borne by a wide range of victims across time and space. An ETS aims to correct this market failure by making the value of social damages internal to the polluter's decisions (Spash and Lo, 2012:69)

The Green Paper on the (failed) Carbon Pollution Reduction Scheme describes how an ETS works:

Step 1: Significant emitters of greenhouse gases need to acquire a 'carbon pollution permit' for every tonne of greenhouse gas that they emit

Step 2: The quantity of emissions produced by firms will be monitored and audited

Step 3: At the end of each year, each liable firm would need to surrender a 'carbon pollution permit' for every tonne of emissions that they produced in that year.

The number of 'carbon pollution permits' issued by the Government in each year will be limited to the total carbon cap for the Australian economy

Step 4: Firms compete to purchase the number of 'carbon pollution permits' that they require. Firms that value carbon permits most highly will be prepared to pay most for them, either at auction, or on a secondary market. For other firms it will be cheaper to reduce emissions than to buy 'permits'

Certain categories of firms ('emissions intensive, trade exposed firms'- my addition) might receive some permits for free as a transitional assistance measure. These firms could use these or sell them (Department of Climate Change, 2008).

Clearly, a market-type mechanism is at work here with the buying and selling of 'permits' putting a price on carbon. The price can be determined "at auction, or on a secondary market", a floating price or can be fixed by Government.

The problem though, is that this market does not exist, so it has to be created. Like all markets, to work successfully an ETS requires numerous complimentary measures, authorised by Government, to work fairly and efficiently. For a start, Government needs to: set up a regulator to monitor and audit the quantity of emissions produced by firms; determine whether price will be fixed or floating and the likely impact on firms of this decision; compensate those individuals and firms that will be disadvantaged by the carbon price and who may choose to cease economic activity; determine what firms require free permits and administer those; administer the Renewable Energy Target to ensure adaptation proceeds and ensure compliance

with the scheme and that ultimately, greenhouse gas emissions actually do fall. In real life, setting up a carbon price and carbon market is not as straightforward as neoclassical economic theory propounds, and there is likely to be a disjuncture between the text book model of carbon pricing and the actual schemes that emerge as compromises under various lobbying and political pressures (Neil Perry & Twomey, 2007).

In Australia, a neoclassical economist, Ross Garnaut, was chosen to provide climate change advice to two Labor Prime Ministers; a 2008 Review for Prime Minister Rudd and an updated review for Prime Minister Gillard in 2011. A Professor of Economics at the Australian National University, Garnaut, in his twenties, was a brilliant whizz kid advising the fledgling new Government of Papua New Guinea on macroeconomic policy (the 'hard kina' strategy), minerals policy (the mineral stabilisation fund), then an adviser to Labor Prime Minister Hawke, Ambassador to China in the Hawke-Keating period, and agent provocateur and reviewer of Australia's role in the North East Asian ascendancy of the early 1990's. Garnaut's climate change reviews provided the rational justification for carbon price and carbon markets to cross over to the democratic sphere of politics and public policy.

In the 630 page first review he set out the principles to be adopted:

1. An ETS is preferred to a tax or a hybrid scheme
2. The ETS could have a transitional phase
3. Permits could be sold at low fixed price during the transition phase
4. Spreading the costs across the economy will be achieved by including as many sectors as possible.
5. Emissions should be sold by competitive auction, and not given away or 'grandfathered' to polluters
6. Low income households will need compensation
7. Areas that rely on coal-based power stations will need specific support
8. \$2 billion per year or 20% of the revenue raised from auctioning permits (whichever is greatest) should be allocated to low-emissions technology R&D (Garnaut, 2008).

These principles were remarkably little altered in the turbulent years after 2008. In 2011, when a carbon price was finally legislated, only point five, above, was not adopted. Garnaut's small decision to see his role in technocratic and rational terms had long term consequences contributing to a failure to agree the path to take on climate change in Australia.

Status quo disruption fails as economists refuse to question carbon price

Even within neoclassical economics, Garnaut's approach is considered rigid and inflexible. Ergas (2010) writes that Garnaut's institutional design was flawed from the beginning and criticises the very idea that there is a

solution, one best policy, which needs to be advocated and fought for without compromise. Ergas (2010:144) says there is only trade-offs, not solutions. In economic terms, Ergas argues that to approach politics and policy with one solution is a mistake, because no policy solution, including carbon pricing, can both remain flexible to changing needs and continue to allocate efficiently without opening up space for rent-seekers. Policy must be flexible; a process of negotiation and adjustment through trade-offs.

Ergas (2010: 144-162) tackles Garnaut's principles, the proposals for how revenues raised by the sale of permits would be used (Principles 5, 6, 7 and 8 above): the proposed governance arrangements for the emissions trading scheme (Principles 2, 3 and 4 above) to show the flaws in Garnaut's design. On the first, Ergas notes that these are revenue hypothecation measures that are poorly designed, specifically because "there is no sense in which the proposed charges are the 'tax price' (tax in 'Pigouvian' terms) of the outcomes being sought through the outlays" (Ergas, 2010:147). This criticism suggests, contrary to Garnaut, that there is no one best economic solution to climate change. Ergas is saying that under an ETS the outcome of emissions reduction cannot be costed (or guaranteed) through the use of the carbon price output (or outlay, as Ergas describes it). Ergas' (2010:147,148) next two points show how the Garnaut design opens the door for rent-seekers, because "there is no commitment to limit expenditures on those outcomes to the quantum of the revenue raised", and the bundling of compensation and its lack of transparency opens the door for rent-seekers. Ergas is just as critical of the complementary measures associated with the ETS, arguing that their faith in 'independence' is no guarantee that the agencies themselves won't turn into rent-seekers, assisting other rent-seekers in order to build a climate change empire for themselves (Ergas, 2010:159).

Ergas' analysis highlights that economists like Garnaut were never able to demonstrate that reductions in emissions would be as great as proposed, or that the ETS would deliver an alignment of (emissions reduction) outcome and (carbon price) output. Post Keynesians like Neil Perry, go further and argue flatly that "Australia's carbon pricing scheme protects the profits of polluters and as a consequence has a negligible impact on the carbon emissions emanating from Australian industries" (Perry, 2012:47).

Sceptics and deniers released

The inflexible, 'rational' approach, taken by economists like Garnaut, to strike a price on carbon at all costs, meant there were many policy options ignored, many paths not taken, many trade-offs rejected. The legacy has been a failure to educate other members of the epistemic coalition on the policy options and alternatives. Scientists have continued to treat science and policy separately; they are rigorous in their science and ideological in politics and policy. The Greens Party voted against the CPRS, arguing that the abandonment of the Garnaut concept

of auctioning permits, dropped in the CPRS, should be reinstated, an unpredictable commitment to neoclassical economics by them (Milne, 2009). Not all scientists and environmentalists believe the economists that there is only one right way to do emissions reduction, and as a consequence even within the epistemic coalition, sceptics have emerged.

Sceptics and deniers beyond the epistemic coalition have been released confusing and damaging action to reduce emissions. Some deniers criticise the science and science entities such as the IPCC and the Australian Academy of Science (Thomas 2012). Some challenge the science, some challenge the economics, some are nurtured by the media (Hamilton, 2010) and some found fertile ground in political parties in Australia. The deniers have traded on quite legitimate concerns that people have about the messages scientists and economists have delivered in the public domain and deniers have been nourished by the limited opportunities to participate in the climate change debate in Australia. If this process had been properly and democratically managed then the 'deniers' would have been denied the oxygen that allowed them to pollute the debate.

Lessons learned?

The inflexible approach taken by the economists in insisting on a carbon price can be justified as sticking rigidly to a conceptual framework that showed this was the fairest way to reduce carbon emissions. The problem was that Garnaut's definition of what is 'fair' was drawn from a textbook. The one price that the economists did not take much notice of was electricity prices (Garnaut's point eight above). Economists should have known about this, as it was prominent in commissioned papers prepared for Treasury modelling. Gerardi and Demaria (2008:7), from consulting company McLennen Magasarik Associates, advised Treasury that

Wholesale electricity prices to 2020 are expected to increase by around 50% for modest cuts in emissions to around 83% for the deepest cuts in emissions. At the retail level, prices are expected to increase by 23% to 38% in the period to 2020 and by 45% to 67% in the period after 2020.

What looked like fairness to the economists because a carbon price did not discriminate industry sectors, looked exactly like lack of fairness to many electricity consumers who were paying the price for action on climate change; in their view subsidising the profits of the big polluters. The point here is not that 'carbon pricing' is wrong but that the process by which it became 'the solution' needs to be challenged. Economists with a market focus, held as axiomatic that a market mechanism was best for reducing emissions. Scientists and environmentalists have been dragged into this analysis without a discussion of alternatives, not even those alternatives emerging from within economics itself. A small decision to do 'carbon price' no matter what, has had profound consequences for climate change in Australia.

Critical Juncture # 3 – Prime Minister Julia Gillard Establishes the Multi-Party Climate Change Committee

The problem of participation

Julia Gillard deposed Kevin Rudd on 24 June, 2010 to become Prime Minister. In August 2010 she fought an election and in September negotiated with The Greens and Independents to lead a minority government. Climate Change played a subdued role in the election (Rootes, 2010:414) but after the election Gillard's ALP signed a formal agreement with The Greens Party. They agreed to "...tackle climate change...(which) will require a price on carbon...(through) a well-resourced, climate change committee (composed) of experts, ALP, Greens, independent, Coalition parliamentarians"(Gillard, J., Swan, W., Brown, B., Milne, C., Bandt A., n.d.). A small decision later, to narrow formal membership of what became known as the Multi Party Climate Change Committee (MPCCC) to cross parliamentary party participation, had long term consequences for Julia Gillard, The Greens Party, the broader environmental movement and for the ability of the epistemic coalition to manage the multiple logics that are in play as a critical juncture is formed.

The Greens Party fails to adopt a network governance form of participation.

The environmental movement and The Greens Party are not synonymous. The environmental movement is a protest movement, led by charismatic actors focused on sustainability issues such as logging of forests, biodiversity and wildlife preservation. The environmental movement embraces unconventional forms of political participation and has strong appeal among younger, tertiary educated, secular, left of centre urban-based Australians (Tranter, 2011:81). The Greens Party represents the routinisation and institutionalisation of environmentalism into political party platforms and conventional parliamentary participation. The Greens Party policy focus is on pollution and waste. The confusion between the two arises because the first generation of Greens national leaders, Bob Brown and Christine Milne, began as activists.

By 27 September 2011, when the Prime Minister established the MPCCC, Greens parliamentarians had achieved substantial influence over executive government decision making. Senators Brown and Milne were members of the MPCCC and a new generation Greens Party member, Adam Bandt, elected to the House of Representatives seat of Melbourne just weeks before, attended MPCCC meetings as a member assisting the committee. Two other members of Parliament, Independents Rob Oakeshott and Tony Windsor were invited to join as well. The membership was rounded

out by the ALP including the Prime Minister as Chair and the Minister for Climate Change and Energy Efficiency, Greg Combet as co-Deputy Chair and the Parliamentary Secretary for Climate Change and Energy Efficiency, Mark Dreyfus, as a second member assisting the committee. Deputy Prime Minister, Wayne Swan was also a member. The MPCCC was advised by a panel of four independent experts: Professor Ross Garnaut, Professor Will Steffen, Rod Sims from the Business Council of Australia and Patricia Faulkner who had worked in the welfare sector. The Government invited two representatives from the Opposition, but they declined.

The Greens Party leaders, Brown and Milne, had long since committed to a carbon price arguing for more stringent measures and targets than the CPRS. They had moved beyond sustainability and activism to embrace a form of ecological modernisation (EM) (Curran, 2009). EM theory says that economic restructuring is necessary; but 'weak' EM favours cleaning up industry and making it more profitable, whereas 'strong' EM wants transformation of industry to stop burning fossil fuels (Curran, 2009:204). Brown favoured 'weak' EM, which is perfectly compatible with Garnaut's carbon price principles. Brown took the view that the role of the party was "self-evident attaining power by being elected, where possible into Government, in order to implement their policies"(Neighbour, 2012:28).

In adopting a narrow form of parliamentary cross party participation in the MPCCC, The Greens Party has severed its connection with the broader environmental movement, resulting in a fall in its electoral support in the 2013 election; has subjected its leadership to assault from the left and the right within the Party, contributing to the resignation of Bob Brown in April 2012 and provided unpredictable support to its allies in the MPCCC. Brown's 'weak' EM is supported by Sarah Hanson-Young (Australian Financial Review 27 September, 2013:7) and other new generation Greens who want a more professional political approach and attention to humanitarian and social issue such as asylum seekers and compensation for fire-fighters who contract cancer. However, within the parliamentary party there are deep divisions, 'weak' EM challenged by 'strong' EM from Christine Milne and Scott Ludlam and the New South Wales 'watermelons' (Green on the outside, red on the inside) against all the others (Neighbour, 2012). These divisions are replicated and exaggerated in the broader environmental movement.

The problem The Greens Party faced was the familiar problem of collective action. This could have been managed more successfully by broadening participation beyond the MPCCC, opening up discussion on emissions beyond price and industry needs and subjecting 'weak' EM to broader discussion, analysis and engagement. This approach is known as network governance and Bulkeley (2000) shows how it works in Australian climate change. The approach rests on storylines, negotiation, learning and building discourse coalitions through collaboration. Network governance does not involve sending experts

out to tell people what has already been decided, but to build them in as collaborators constructing the direction forward. Bulkeley (2000: 746) writes:

New storylines which link climate change, energy efficiency, and monetary savings have begun to form the basis of a new coalition, through which nascent attempts are being made to challenge the fossil-fuel basis of Australia's energy economy

Although, as shown in this paper, these words written in 2000 are slightly premature.

Status quo change – Public Sector managers rediscover adaptive capacity

The legislation that was finally passed to establish an ETS was the Clean Energy Bill 2011. The announcement was made on 24 February 2011 and the Bill was introduced in the House of Representatives in September 2011. On 12 October 2011 it passed the House of Representatives and the Senate on 8 November 2011, with Greens party support. The Bill proposed a three year fixed carbon price starting in the range \$20- \$30 per tonne carbon dioxide equivalent, rising at 4% in real terms, followed by a carbon trading scheme with a floating price. The new institution had finally made it through the critical juncture to become law.

In the process, the public sector managers had rediscovered their adaptive capacity and successfully steered the bills and the accompanying documentation, now called 'Clean Energy Futures', through the parliament. The Department had been made a separate portfolio agency, no longer a 'boutique' policy department, led since March 2011 by Blair Comley in a more inclusive, less doctrinaire way.

Lessons learned?

An institution can be either a formal or an informal entity, but both must process multiple logics if they are to be sustained. In Critical Juncture #3, a formal ETS was achieved by legislation. It is tempting to celebrate this as the success of a long struggle, but as this analysis shows, the epistemic coalition that fought so hard for it was anything but stable. The key question when an institution is finally established is who in society has an investment in it, in that they will realise increasing returns from its operation and hence work hard to sustain it? This is a question we turn to in the next section on Path Dependence.

Critical Juncture # 4 – Carbon Pricing Legislation Passes Parliament and... is repealed?

The problem of path dependence

The fixed price mechanism for carbon began on 1 July 2012 but just over twelve months later the 2013 election was held and Tony Abbott became Prime Minister, promising that his first act would be to repeal the Clean Energy Act.

Path dependence is what may or may not happen after a new institution emerges from a critical juncture. Schwartz (n.d.) shows that for a path to happen there must be an investment by people in the institution, so they can see increasing returns to themselves from sustaining the institution. Schwartz (n.d.) shows that the means of producing the new institution must be differentiated from the means of reproducing it. In other words, an institution born out of a multiparty parliamentary committee will need to be sustained out in the community if it is to succeed.

The epistemic coalition fails to consolidate path dependence for a carbon price

Three issues, never satisfactorily addressed by the epistemic coalition, are barriers to broader community support for an ETS as the institution for reducing emissions. The first is the weather! Is extreme weather caused by climate change or not? Was the drought of 2010 caused by climate change or not? Is my sweltering beach house unpleasant because of climate change or not? Unless the scientists can answer these questions in a way that is consistent with the science, there is a danger that the epistemic community will fragment and a policy response will fail.

The second is tax! Am I paying more for a good reason, am I paying more to achieve increasing returns on the liveability of the planet, or am I subsidising big polluters? Unless the economists can better explain that a fixed price is not a tax as Julia Gillard now regrets she did not do (Gillard, 2013), support will be limited.

The third is electricity prices! Should I think of these higher prices in terms of cleaning up the power industry and making it more modern or should I think of the industry as requiring fundamental transformation? Unless the environmentalists can answer these questions, support will be limited.

Starting over – The Direct Action approach to emissions reduction

The new Prime Minister, Tony Abbott, has an emissions reduction scheme he calls, 'Direct Action'. It is an approach based on fixing the amount of money spent on emissions reduction rather than fixing the amount of carbon dioxide released into the air. Direct Action does aim to reduce emissions. However, scientists, economists and environmentalists have been savage in their criticism (Lubcke, 2013).

Path dependence teaches us that what has happened before will influence 'Direct Action', as it attempts to form a new critical juncture and institutionalise a non-price approach to emissions reduction. Path dependence suggests 'Direct Action' will fail. Scientists, economists and environmentalists will need to step up to network governance; collaborating, explaining, negotiating, teaching and learning; addressing problems in the politics, in the policy, and in the community if this (last) chance to save the planet is to work.

Lessons Learned

Scientists, economists and environmentalists advocating a reduction in emissions in Australia have failed to understand people in the digital age. Today, the people are active participants in democracy, unthinkable in the Age of Representative Democracy just passed. John Keane (2009) calls it 'monitory democracy' by which he means "the rules of representation, democratic accountability and public participation are applied to a much wider range of settings than ever before" (Keane 2009: 690). Climate Change applies these rules to the role of experts such as scientists, economists and environmentalists and subjects their deliberations to unprecedented public scrutiny and even challenges what it means to be an 'expert'. This paper shows that scientists, economists and environmentalists have responded poorly to this new age of democracy. They have approached climate change politics and policy on a business as usual basis. They have treated the people not as self-regarding, curious, information rich, analysts like themselves but as interest groups. They have tried to manage the people through the politics of bluster and expertise, not by politics as network governance. They have not taken seriously people's ability to find things out for themselves and to analyse what is going on for and by them. The approach of business as usual applied to climate change has simply raised doubts that have not been addressed.

This lack of a commitment to broad participation has had the consequence of making a sustained institutional change impossible. This paper has demonstrated that, at every stage of the sequencing to a new institution, the epistemic coalition made catastrophic errors. The confused narrative at critical juncture #1, mostly caused by the scientists conflating climate and weather, weakened commitment to the collective norm of emissions reduction. The path not taken by economists at critical juncture #2

weakened the ability to disrupt the status quo and created a legacy of bifurcation that is with us today.

The misuse of the democratic technology of participation at critical juncture #3 by environmentalists doomed the legislated carbon price to repeal. The failure by all these coalition members at critical juncture #4, to properly calculate increasing and diminishing returns for people, both before and after repeal, means the inertia will continue.

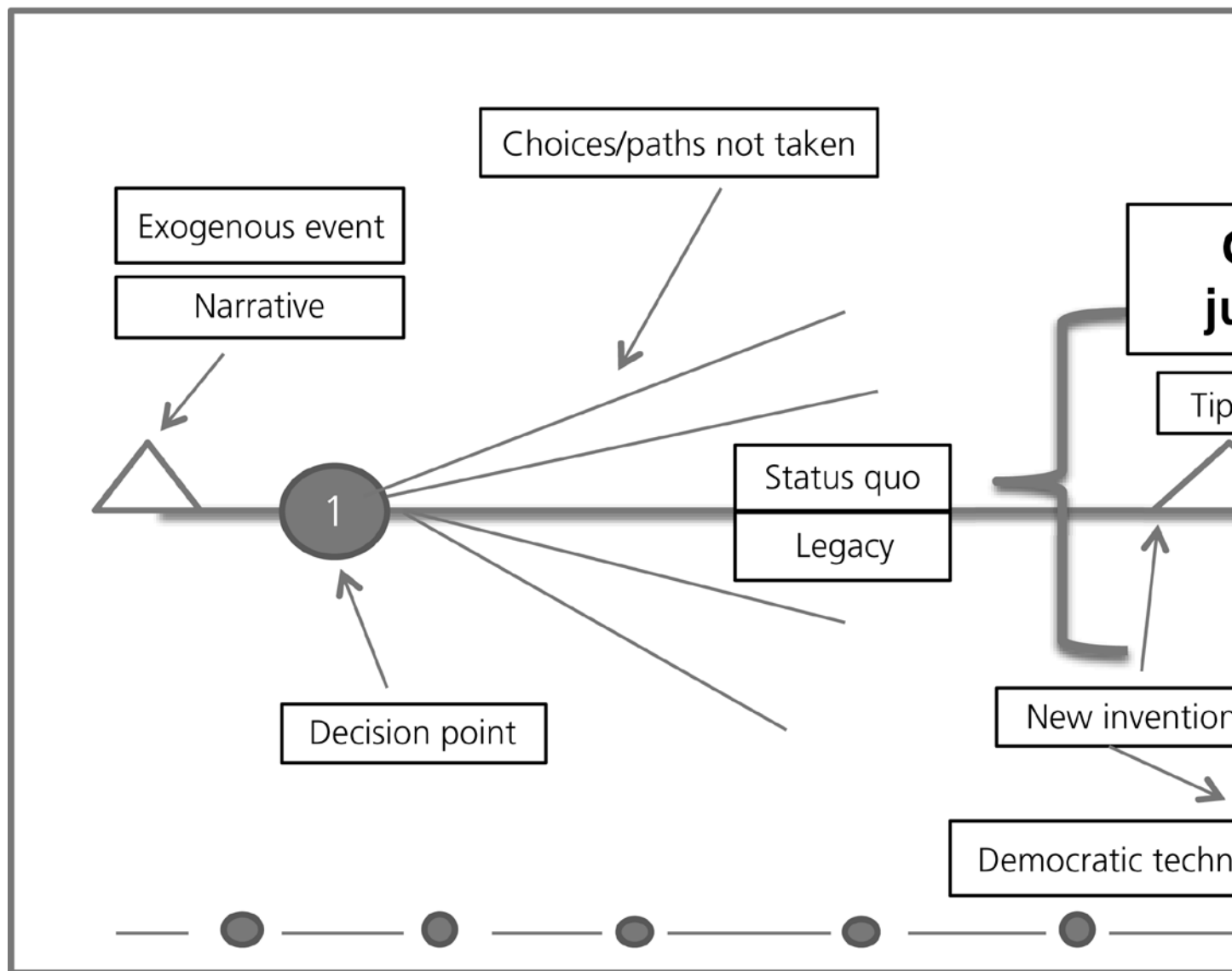
Democracy will save the planet but only if influential, well intended change agents take time to understand exactly how democracy works. The attitude of experts to democracy expressed by one scientist (Sydney Morning Herald, 17 June, 2013:9) when arguing that we should leave coal in the ground that

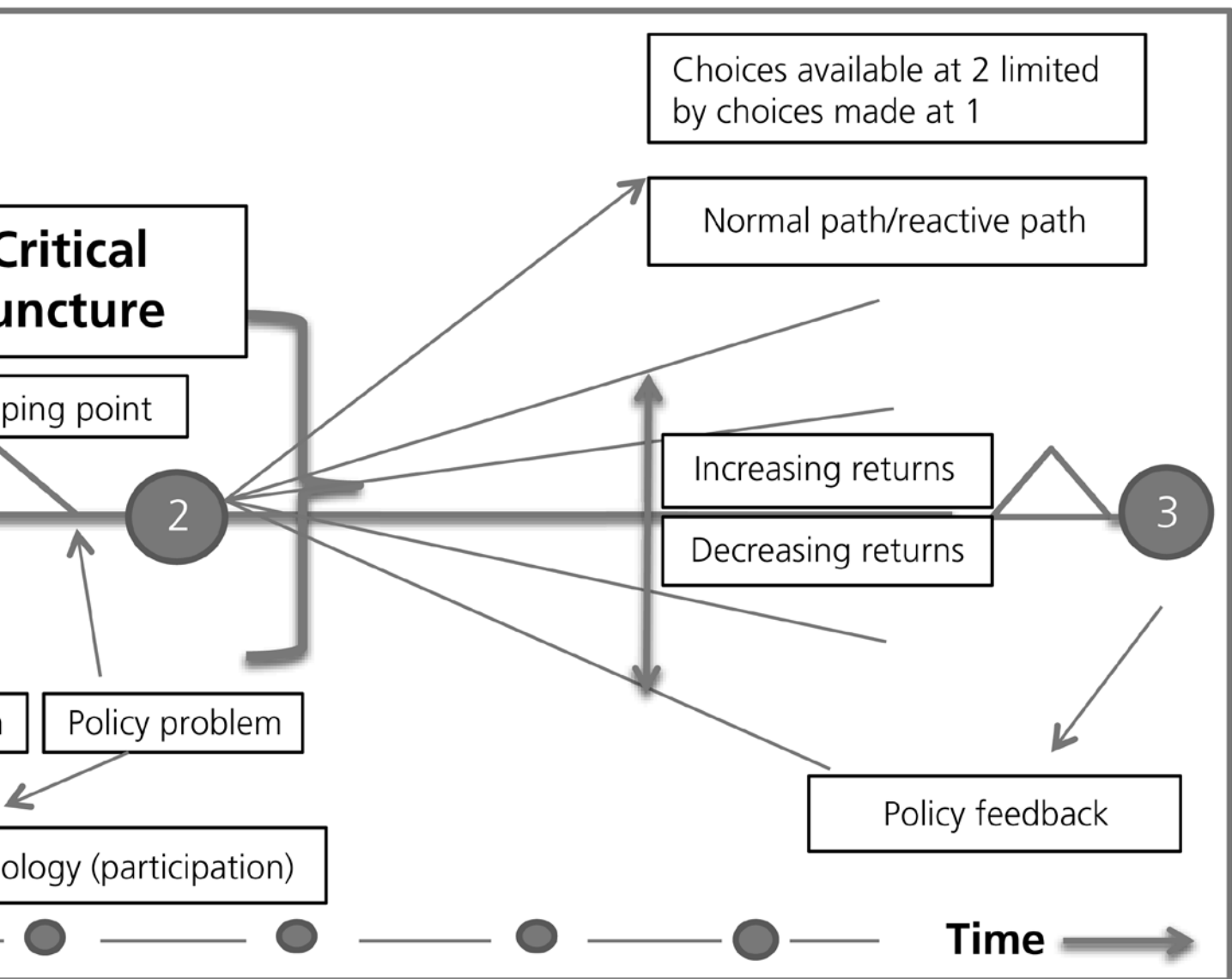
It isn't our job to reconcile the politics of this with the science; we are simply presenting the facts as we best know them

cannot continue.

Figure 1: A model of institutional sequencing –

(adapted from De Percy, M., 2012. *Connecting the Nation: An historical institutionalist explanation for divergent communications technology outcomes in Canada and Australia*. PhD thesis, Australian National University)

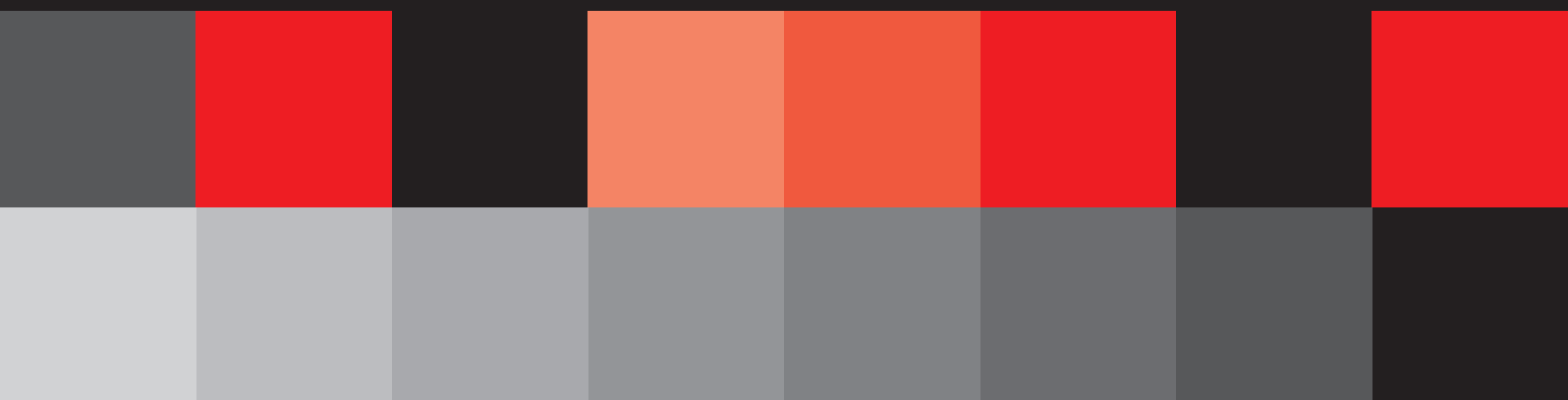




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