

## **The Right to Doubt:**

### **Climate Change Scepticism and Asserted Rights to Private Property**

Many recent planning decisions are premised upon the scientific consensus that climate change is real, such as planned retreat of coastal settlements from the sea. Not all local residents accept forced relocation and some hold a radical form of rights-based belief that is hostile to government intervention into private arenas. This 'deontological libertarian' belief is related to a sceptical view of climate change science. This paper demonstrates the existence of this attitudinal linkage, based on an Australian survey. Climate scepticism is associated with the tendency to see private property rights as a fundamental entitlement and irredeemable in the prospect of forced retreat, regardless of compensation. The sceptical view has defensible normative elements constructed upon the framework of inviolable rights also underpinning recognised environmental and development imperatives. Appealing to absolute rights generally may be an effective way to approach the sceptical public. Rights offer a generalisable framework in which they can see how their non-sceptical counterparts are similarly situated despite expressing a different policy preference. Although consensus is not guaranteed, communication can proceed more easily by making a common ontological terrain explicit.

Keywords: climate adaptation, planned retreat, property rights, climate scepticism, climate change ethics.

## **1. Introduction**

Constitutions restrict the taking of private property for public purposes without the payment of compensation. Environmental legislation, however, may provide government the authority to enter the private sphere and regulate private property where overriding public interest is at stake. One example that has come to the forefront of climate adaptation debates is planned (or managed) retreat policies, which require coastal residents to move away from the sea when sea levels rise above a certain level (Cooper and McKenna 2008, Abel *et al.* 2011).

Most of the consequences of anthropogenic climate change are far-reaching and causality is hard to establish, and it is politically challenging to define whose interests count. The long timeframes and systemic uncertainties leave considerable room for reasonable doubts. As an adaptive response to climate change, planned retreat are therefore a highly contentious policy option (Hayward 2008). Affected property owners who find their property rights under threat are motivated to challenge the allegedly ambiguous rationale for compulsory relocation. These include informed individuals questioning the science of climate change (Alexander *et al.* 2012, Ryan *et al.* 2012).

Dismissing climate scepticism by asserting the authority of science has proven to be futile (Moser and Dilling 2011, Norgaard 2011). Inculcating fear of the impacts of climate change might even be counterproductive. Moser and Dilling (2011) suggest that climate change communicators should deploy carefully crafted messages that are culturally specific to, and whose sources are trusted by, their audience in order to engage them in constructive conversations. Dryzek (2010) goes further by arguing for the use of 'bridging rhetoric' to facilitate communication on climate change. This entails identifying and addressing the link between differing ideological preoccupations and cultural manifestations of climate change.

Climate change believers seem to have little to share with other members of the public who are sceptical toward climate change. Cooperation between these diverging groups, however, is necessary for broad-based concerted actions. Common

grounds for workable agreements do exist (Malone 2009, Dryzek and Lo forthcoming). Agyemen et al. (2007) argue that the key to motivating the unconcerned public is to shift climate change from a scientific-technical issue to one of human rights and justice. This paper takes this argument forward by suggesting that such a shift in framing is critical to approach and engage with the sceptical public. Climate scepticism cannot be reduced to an assessment of science (Hulme 2009), and can be more easily reached through various storylines featuring some sort of justice arguments. Arguments couched in terms of inviolable rights, for example, could provide an opportunity for (some) climate believers and sceptics to see each other's position in a more positive light, from which constructive conversations could proceed, even though they continue to disagree on whose rights merit priority. This requires demonstrating the systematic relationship between climate scepticism and defensible rights-based concerns. Such an approach varies from the common practice that seeks to de-legitimise opposing views.

This paper presents arguments for this approach and some evidence collected from a social survey conducted in Australia. Findings show that sceptical climate change beliefs are associated with a radical conception of private property rights. This lends empirical support to proposals for creative treatments that reduce climate scepticism to a judgement of moral merits. To start with, the next section outlines a cultural view of climate change. It is followed by a discussion about how those competing beliefs can be assembled under a rights framework<sup>1</sup> to help uncover common moral grounds. Research methods, by which supporting data were collected and analysed, are then introduced. The paper draws implications for climate change communication and governance.

## **2. A cultural conception of climate scepticism**

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<sup>1</sup> In this paper, 'rights' are related to both interests and morality. There are differences between the two forms, but they can be articulated in similar terms, as argued later in this paper.

While most environmental campaigns have a well-articulated moral basis, the case for climate scepticism is more contested. The latter is often understood as a social ill (Hamilton 2010, Washington and Cook 2011). Washington and Cook (2011, p. 154), for instance, describe it as 'a delusion that has become a pathology'. Their arguments are scientifically sound but miss the richness in the ways in which people engage in the physical world (climate) within constructed space (society). Risk perception has cultural and moral basis (Thompson and Rayner 1998). Individuals and societies attach a variety of cultural and ideological meanings to the climate (Hulme 2009). These meanings vary across time and place; they connote what we think the 'good life' should be, for which science can hardly tell right or wrong.

Mike Hulme (2009) offers a comprehensive cultural account of climate scepticism, persuading us to lend a sympathetic ear to those not attending to the recognised science of climate change. Hulme's analysis highlights the role of cultural trajectories and entrenched social norms, and is rooted in the cultural theory of risk, which suggests that individuals select aspects of information about risk to which they pay attention and respond, in accordance with their pre-existing cultural bias (Douglas and Wildavsky 1982, Wildavsky 1987). Individuals tend to ignore information or underestimate probabilities when the social networks or cultures in which they engage do not support or have their own ways to process such information (Renn 2011). Climate scepticism is found to be associated with a specific set of fundamental values and political ideologies (Poortinga *et al.* 2011, Whitmarsh 2011). These values and ideologies select a proprietary socio-cognitive strategy for interpreting messages about risks.

For example, some individuals conflate climate change with stratospheric ozone depletion because they are concerned about human insult to the atmosphere, rather than the atmosphere per se. As Thompson and Rayner (1998, p. 152) explain, 'the climate change issue is perceived as part of a wider problem concerning humankind's disturbed relationship with nature. In this sense, climate change and ozone depletion are the same thing'. Thus individuals merely respond to an abstract symbol, i.e. human damage on the environment. Climate change happens to be one of many items subsumed under that symbol.

In practice, many cultural and ideological symbols exist. Each of them recognises a particular way in which we understand our relationship with the natural and social worlds. Another example is 'progress', or views of development. As Hulme (2009, p. 251) argues, 'one of the reasons we disagree about climate change is because we understand development differently'. Anthropogenic climate change is an unintended consequence of continuing economic growth, which has benefited the present generations. Attempts to perpetuate economic prosperity, however, are called into question by the soaring GHG emissions levels. Our present lifestyle heavily depends on fossil fuel burning. Mitigating GHG emissions is then regarded as a challenge to our aspirations to maintain the cherished lifestyle or pursue a better one. We enjoy our way of living, but the knowledge that this comes into conflict with morality and that a change of lifestyle would be painful leads us to shut our ears to mitigate the disconcerting and embarrassing feeling (Norgaard, 2011). The more we are locked-in to the fossil fuel economy or construe material growth as glorious, the more likely we deny of anthropogenic climate change. Desire for progress discourages us from acknowledging the moral threat to it.

Dealing with climate change can be reconstructed as a cultural project. Hulme (2009) shows that climate is a carrier of an array of imaginations as to how social order should be established. He summarises these envisions as four 'myths' of climate change, which connote 'our lament for the past, our fear of the future, our desire for control, and our instinct for justice' (Hulme, 2009, p. 364). Disagreements between climate change beliefs are then construed as cultural and ideological conflicts between these contested envisions. Hulme (2009) suggests that we should recognise the co-existence of the multiple stories of climate change and approach them in creative and culturally sensitive ways in order to shed light on the ways forward. This endeavour begins with understanding people's responses to climate change as a projection of an idealised social order.

What aspects of the social order characterising climate scepticism should we address to give impetus to collective action? Dryzek and Lo (forthcoming) suggest that the key is to invoke shared terms of reference that allow different possibilities for interpretation. That is, aspects of a social order that are recognised by diverging

groups but are systematically linked to their competing views about climate change. On the issue of planned retreat, the deep-seated differences in the risk perception reflect variations in broader worldview (Alexander et al., 2011). However, Malone (2009) has shown that unexpected sites of agreement exist and lie in the moral framework by which action is evaluated. Sceptics may embrace a worldview that contains elements morally defensible in terms others could recognise. This idea is further explained in the following section with specific reference to planned retreat policies.

### **3. Linking conceptions of rights**

What are the moral elements underpinning climate change belief? Some scholars have raised questions about the scientific merits of rights-based approaches of climate ethics. In a review of neuroscience literature, Grasso (2013, p.389) concludes that climate ethics should be based on consequential rather than deontological approaches<sup>2</sup> because the latter ‘do not resonate with human morality, and ultimately cannot capture the inner moral nature of climate change’. The argument is that climate-related harm originates from impersonal moral violations and is likely to prompt consequentialist reasoning. However, the consequentialist approaches are more useful for understanding the average citizen than the radical minority engaging in non-organised climate activism and scepticism. Moreover, in practice, the distinction between ‘personal’ and ‘impersonal’ is not always clear. Highly vulnerable groups, such as the Inuit and Pacific small island communities, see climate change as a local and immediate threat to livelihood and even survival (Adger, 2004; Adger et al., 2011). Planned retreat in the context of climate change is an example.

Anticipated consequences of climate change include loss of housing in coastal settlements due to rising sea levels. Planned retreat from the sea is a suggested

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<sup>2</sup> According to Grasso (2013, p. 381-382), ‘deontology judges the morality of states of affairs on the basis of their conformity with a moral norm’.....whereas the consequentialist approach ‘holds that acts and/or intentions are morally relevant, i.e. right, wrong or indifferent, only in virtue of their consequences’.

adaptation option, but affected communities have expressed concerns about government's handling of property rights and compensation (Abel et al., 2011; Hayward, 2008). Ryan et al. (2012) find that members of community hesitate to invest in a house purchased with a forced retreat cause under conditions of sea level rise. It is worth noting that those who doubt that the sea levels are rising are particularly hostile to the retreat policy. These individuals, being sceptical toward climate change generally, tend to question that a fair and just scheme for governments to acquire property rights is ever possible (Ryan et al., 2012).

The tendency to believe that climate change legislations constitute a violation of private property rights captures the essence of libertarianism. Libertarians put the rights of private property owners at a premium and see the invasion of persons and property as unethical (Nozick 1974). According to this view, individuals should be free from the coercive power of government and that regulatory constraints on the use of privately owned land should be minimised. An absolutist version of this moral doctrine is known as 'deontological libertarianism', which holds that natural rights should be honoured as a fundamental morality and protected from violation *under any circumstances*.

Goodin (1992) contends that there is no necessary trade-off between property rights and preservation of the natural environment. Libertarianism is not completely at odds with environmental narratives (Sagoff 1992). Other forms of deontological doctrines have been extended to conceptions of public goods, such as the environment (Paavola 2007, O'Neil et al. 2008). 'Deontological environmentalism', as described by Spash (1997, p. 405), refers to the view that aspects of the environment have an absolute right to be protected, *regardless of possible consequences*.

Historically, the rights of individual sovereignty, later extended to the non-human world, received recognition in a larger societal process which witnessed the juridical construction of private property rights. David Harvey (2003) laments that manifestations of private property rights have perpetuated capital accumulation, which is deemed to be a source of social injustice and environmental damage. But a

regrettable reality is that some universal rights, such as the right to be treated with dignity and freedom of speech, are in practice derivatives of private property rights applying to one's own body - 'derivative rights' in Harvey's own words (Harvey 2003, p. 940). This suggests a common ontological ground on which the rights of individuals or non-human species to be protected from environmental damage or habitat loss can be articulated in terms that property rights advocates could respect.

For example, libertarians such as Shaw and Stroup (1992, cited in Sagoff, 1992, p. 226) agree that pollution 'is an invasion of person and property just as personal assault is'. Philosopher Mark Sagoff (1992, p. 227) therefore suggests that 'environmentalists could follow the lead of libertarians' by insisting that pollution should be treated as a tort. The libertarian view has also produced strong doctrines of animal rights when extended onto the terrain of rights accorded to all subjects of a life (Harvey 1996). Some aspects of environmental movement can be seen as ontologically congenial to libertarianism in terms of assigned primacy of rights. As pointed out by Sagoff (1992, p. 229), libertarians believe that the best way to preserve the environment is to protect property rights, whereas environmentalists might argue that the best way to protect rights is to preserve the environment. Both of them attend to concerns for absolute rights and agree on the *range* of policy choices, although they differ as to whose rights merit more attention.

Contemporary climate change debates feature such differing but mutually intelligible assertions of rights. Liberty and property are the most common objects to which conceptions of inviolable rights apply (Peterson and Liu 2008). These two attributes, broadly defined, have attracted attention from both sides of the debates. Climate change has been seen as a wrongdoing because it may contravene our constructed framework of human rights (Hulme 2009, Brandstedt and Bergman 2013). It may lead to premature death of individuals and the demise of entire nation-states. Accelerating sea level rises, for instance, may cause inundation of small island states and vanish their civilizations (Adger *et al.* 2011). As Adger (2004, p. 1714) argues, 'we should all have a right to keep cold'. Human contributions to climate change can be seen as constituting a violation of basic rights of life, liberty, security,



mobility and progeny declared universal by the United Nations in 1948 (Hulme, 2009). Climate change can be understood as a human rights issue.

Rights have also been used as a moral shield against unwelcome international climate change regulations. Major developing countries assert the right to development and improvement in the well-being of their citizens deprived of basic subsistence. This has been taken as a moral reason for continuing to produce 'survival emissions' (Agarwal and Narain 1991). The argument is entangled with an assertion of freedom from outside interference by the industrialised world, which demands further cuts on emissions while being historically responsible for creating the problem of climate change as well as the structural inequities between the global North and South (Ikeme 2003, Lo 2010). It is noteworthy that 'the right to development' is also recognised by the United Nations: 'the right of peoples and nations to permanent sovereignty over their natural wealth and resources must be exercised in the interest of their national development...' (Eckersley 2004, p. 221-222). In proposing a concept known as 'greenhouse development rights', Baer et al. (2009) define the right to development as an individual human right to a modest level of wellbeing. Ontologically this is not in remarkable departure from the sort of rights advocated by climate activists. Assertion of inviolable rights can reach both sides of the debates.

Such 'generalisable' moral ideals can facilitate communication in polarised debates on climate change (Lo *et al.* 2013). Effective communication is considered to be of critical importance to motivate joint efforts at dealing with climate change (Moser and Dilling, 2011). The key is how to generalise decisive elements of a discourse to its alternatives so that the otherwise blurred connection become discernible, without displacing each other's deep-seated values. Assertion of absolute rights is one example that could be couched in terms that both parties could comprehend and recognise, subject to nuanced interpretations, as suggested by Sagoff (1992, p. 229) above. Properly articulated, it can help environmentalists and sceptics see each other positively in their constructed worlds.

A critical task ahead is to characterise the ways in which rights-based arguments are embedded into societal responses to climate change, from which common grounds can be identified. A large body of research has ascertained their role in environmentalism (Spash 2006, O'Neil *et al.* 2008), and climate justice (Baer *et al.* 2009, Bell 2011). Yet there is a shortage of systematic evidence on the extent in which aspects of scepticism operate on a congenial ontological terrain. In other words, do climate sceptics hold any rights-based belief pertaining to climate change?

Initial evidence provided by Ryan *et al.* (2012) suggests that the issue of property rights warrants further exploration. In the light of their findings, the present research seeks to ascertain the relationship between climate scepticism and a moral equivalent of the 'right to development' that is relevant to individual context, i.e. individual rights to private property. The latter is couched in terms of deontological libertarianism to resonate to the concept of 'deontological environmentalism'. These competing theories share a deontological premise, and can potentially act as a rhetorical 'bridge' to facilitate communication (Dryzek 2010). Demonstrating the shared commitment to absolute rights is the first step towards finding ways to help environmentalists and climate change campaigners understand and persuade their sceptical counterparts. The next section describes the design of an empirical study which explored the rights elements of climate scepticism.

#### **4. Research method**

##### **4.1 Sampling sites**

This study is based on a telephone survey conducted in Queensland, Australia. Historically, Queensland has had a variable climate. Regional projections show the State facing growing risks from extreme weather events, thanks to anthropogenic climate change (Queensland Government, 2011). Acceleration of sea level rises is one of the adverse consequences of climate change. The rising global temperature increases the rate of ice loss from the dynamic of the Greenland and Antarctic icesheets and thermal expansion of ocean water. The resulting rises in sea levels are likely to increase the extent of coastal flood events and shoreline erosion in coastal

settlements. South East Queensland is a hotspot for weather extremes exacerbated by climate change (Department of Climate Change 2009). The current 1 in 100 year storm event is expected to occur more frequently in this region - every 14 years with a sea level rise of 0.8m (Queensland Government, 2011, p. 13). Consequently coastal settlements are exposed to higher risks of inundation and property damage.

Planned retreat has been proposed as a risk mitigation option for South East Queensland (Abel et al., 2011). It is considered to be less expensive, over the long term, than protective and accommodative strategies, such as building seawalls and elevating buildings. Abel et al. (2011) suggest that planned retreat may be the most appropriate policy response for low-lying coastal communities which cannot afford to invest in long-term protective or accommodative strategies to mitigate the risks of accelerated sea level rise. However, because planned retreat involves active government intervention and enormous costs, it has not received widespread support from local communities.

In the event of forced retreat from the sea, claims for compensation and relocation expenses are likely to put local councils under huge financial pressure. The enormous costs involved would be borne by the wider community and inevitably raise fairness concerns for non-coastal residents who, in effect, would have to pay for the investment decision of individual property owners (Cooper and McKenna, 2008). Legal consideration of planned retreat may increase market uncertainty and reduce land values for pre-existing communities. This has led to strong opposition from existing private property owners (Alexander et al., 2011; Hayward, 2008). Thus, the conditions upon which private property rights are redeemed are subject to intense disputes (Alexander et al., 2011; Ryan et al., 2012). The controversies are in part politically driven, because the retreat policy is premised upon evidence on climate change, which is itself a highly contentious concept within the Australian community (Hobson and Niemeyer 2011, Climate Institute 2012).

The survey was developed against this backdrop. Data were collected from the climate change 'hotspot' of South East Queensland, which is home to the majority of the State's population. Survey sites include the Gold Coast Council Region,

the Sunshine Coast Council Region, and the Greater Brisbane Region (i.e. Brisbane, Ipswich, Logan, Redland and Moreton Bay Council areas). According to the Australian Bureau of Statistics 2011 Census data, these regions altogether account for 64.3% of the total population of Queensland, or 13.0% of national population. Despite facing growing risks of extreme weathers, these regions recorded the largest population increases state-wide between 2003 and 2008 (Department of Climate Change, 2009). This raises their vulnerability to catastrophic flooding and cyclone events. The increasing likelihood of recurring natural disasters and their causal relationship with anthropogenic climate change have been taken into account in the design of the interview protocol, which is described in the next section.

## 4.2 Measures

The survey was based on a structured questionnaire designed to statistically examine the relationship between people's beliefs about climate change and property rights. A number of close-ended questions were included in the questionnaire, as described below.

In the survey the issue of property rights was introduced in the context of accelerated sea level rises. The following introductory text was read out to respondents for providing background information and explaining the idea of planned retreat as a possible response option:

*Scientists suggest that the sea level has been rising due to climate change. It is predicted that the sea level around Queensland may rise by about 0.8 metres by 2100 as a result of climate change. If this happens more settlements in Southeast Queensland will be subject to inundation on a more frequent basis. An option that is being considered is managed movement away from coastal settlements that are under threat. Residents would be evacuated and property rights may be renounced to leave spaces for building natural or artificial defences. In the context of sea level rise, which of the*

*following statements about private property rights most closely matches your views?*

In the above text the projection of sea level rise by 0.8 metres is a planning reference adopted by the State (Queensland Government, 2011, p. 13). Also, planned retreat is highly relevant to South East Queensland and its feasibility has been considered for the State (Abel et al., 2011), where the survey was administrated. Thus the content of the introductory text is authentic.

The handling of property rights proves to be a key concern for local residents. Previous research has suggested that prospects for compensation are central to local debates, and there are divisive opinions creating political obstacles to implementing a retreat policy (Hayward, 2008; Ryan et al., 2012). Immediately after listening to the introductory text, respondents were asked to define the nature of private property rights in this context. They responded to the following three statements and indicated the most agreed one (a null option 'None of these' was available but not read out):

1. Property rights are a fundamental right and cannot be renounced regardless of compensation
2. Property rights can be renounced if adequately compensated by government
3. Property rights can be renounced without compensation if owners have been informed of the risk before purchase

Statement 1 is characterised by the claimed indifference to personal economic consequences and represents a deontological commitment against any forced liquidation of privately owned properties. Ontologically it resembles the strong rights-based belief item tested by Spash (2006) for other environmental issues. The second statement involves a qualified concept of rights, which can be redeemed if compensation for affected property owners exceeds a certain level. This connotes a consequential belief as opposed to the deontological one. The third one denies the rights to private property if owners elect to bear the risk involved.

Climate change belief was gauged on both nominal and ordinal scales. Respondents were prompted if they believed that climate change is real or not. Positive response to this question brought them to three additional options (exclusive choice): 1) whether it is out of control, 2) new technology can fix it, and 3) it is a failure of political leadership. These items were formulated on the basis of Hobson and Niemeyer's (2011) interview-based analysis of climate change discourses in Australia. The survey statements correspond to the distinctive features of the four discourses identified by Hobson and Niemeyer (2011, p. 962). They were included to capture the most salient qualitative differences in climate change belief.

The ordinal scale offered quantitative strength for the measurement of climate change belief. Respondents were prompted to indicate the levels of agreement on five statements, which broadly fall into two categories. The first category, 'Fear and Trust', included three separate questions assessing the extent in which the problem of climate change is believed to be overstated and the authorities making such an (over)statement are trusted. In formulating these items, recent studies, such as Hobson and Niemeyer (2011), Poortinga et al. (2011) and Whitmarsh (2011), were consulted to ensure relevance and coherence. The second category, 'Adverse Impacts', contained two statements about human contributions to climate change and a possible consequence, i.e. more frequent and severe natural disasters. Validity of these two statements is backed by an official climate change report released by Queensland Government (Queensland Government, 2011).

Socio-economic information of the respondents was collected both at the beginning and the end of the interview. These included household size, gender, age, education, and household income. Reported household size was used for initial screening of respondents. Sampling procedures are introduced and explained in the following section.

#### 4.3 Sampling method

The main survey was administered by an established market research company in May 2012. Sample was selected using a random digit dialing approach for households with landlines, stratified by telephone exchange prefix. It was supplemented with 10%-15% of residential mobile phone numbers selected from the electronic white pages so that mobile numbers could be stratified by region (as these numbers have a residential address attached to them).

Quotas were used in the selection of household for interview. In order to obtain a representative sample of households, sample quotas were set by the number of people living in each household per region, based on the latest available census data (2006) at the time of research. The number of people in household was obtained from each contacted household who agreed to participate, and used for initial screening in accordance with the set quotas.

## **5. Results**

### **5.1 Sample characteristics**

A total of 501 individuals completed the questionnaire. Table 1 shows the socio-economic characteristics of the respondents, including household income, gender, age, education, and household size. About 31.1% of respondents had an annual household income below AUD50,000, 47.3% earned AUD50,000 – 150,000 a year, and 12.2% had more than AUD150,000<sup>3</sup>. Less than half (44%) of respondents were male. More than 70% of respondents aged above 45. Nearly 41% held a university degree or higher degree. Fewer households with only one person (18%) completed the survey than actually resident in the regions (22.2%, based on 2011 census data). About 37.9% of the households interviewed across the three regions consisted of two members only, higher than the regional estimate of 35.1%. Three-member households accounted for 17.4% of the sample, comparable to the census figure of

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<sup>3</sup> AUD/USD = 0.993, as of 16 May 2012. Source: U.S. Federal Reserve.

16.7%. Families with four members or more were over-represented in the survey by a small margin, i.e. 26.8% comparing to the regional estimate of 25.9%. The sampling method produced a generally representative sample in terms of household composition.

## 5.2 Asserted property rights

As shown in Table 2, the majority of respondents agreed that property rights can be renounced in the context of sea level rise. Half of them (49.9%) indicated the need for adequate compensation to affected homeowners. Others, representing 32.1% of the sample, agreed but qualified this claim by suggesting that compensation should depend on prior knowledge of risk. About 13% of respondents held a deontological position. They agreed that property rights are irredeemable, regardless of pecuniary compensation, in the prospect of planned retreat triggered by accelerated sea level rises. This group of people held a strong rights-based belief that can be couched in terms of deontological libertarianism in the present context.

## 5.3 Climate change beliefs

Total numbers of response for each category of climate change beliefs measured on the nominal scale are listed in Table 3. The most radical form of climate scepticism rejects the claim that climate change is real at all. A minority of respondents (13.4%) identified themselves as a radical sceptic, or trend sceptic (Poortinga et al., 2011). More than 70% believed that climate change is real. The sympathetic view is multifaceted and can be analytically further split into three items in terms of perceived nature of the problem of climate change (Hobson and Niemeyer, 2011). Some individuals were convinced that the problem is out of control, suggesting a sense of powerlessness; 35.5% of respondents described themselves as a member of this group, which is labelled as defeatism in Table 3. Another group expressed optimism towards technologies as a solution to the problem of climate change. About 20.6% of respondents fall into this category. A comparable number (19.4%)



was recorded for a politically oriented view of climate change, which is deemed to be driven by perceived failure of political leadership.

Descriptive statistics of the five climate change belief statements measured on the ordinal scale are presented in Table 4, including percentages, mean scores and standard deviations. The first statement about severity of climate change recorded a mean score of 3.04. A significant number of respondents (39.6%) believed (i.e. 'strongly agree' and 'somewhat agree') that the problem has been exaggerated, more than those who contested this statement (i.e. 'strongly disagree' and 'somewhat disagree') (37.0%). There is a sense of assurance among a significant minority of the general public. The comparable number of disagreeing responses, however, suggests polarization in public opinions.

Support to a conspiracy theory is deeply divided. The statement that the government has incentives to create fear yielded a relatively high mean score (2.87). Nearly half of the respondents (48.1%) found such a conspiracy theory unconvincing, but as much as 37.8% held suspicion of the government. The level of distrust in scientists is modest, as indicated by the mean score of 2.54 for the third statement listed in Table 4. Most of the respondents (52.7%) indicated confidence in scientists who claim that climate change is anthropogenic, but one-fourth (26.4%) expressed serious doubts. The above three variables formed the basis of the composite item labelled as 'Fear and Trust', which has a Cronback's alpha value of 0.71.

Polarisation is observed in the assessment of the relationship between human-induced climate change and natural disasters. About one-third (32.0%) of respondents believed that a causal relationship exists, but nearly half (49.3%) were unconvinced. Yet, respondents expressed little optimism in the stability of future climates. There was a general expectation among many of them (50.3%) that the intensity and frequency of natural disasters are increasing in Queensland. The composite item, 'Adverse Impacts', created by combining these two variables, yielded an alpha value of 0.63.

#### 5.4 Relationship between assertion of property rights and climate change beliefs

Statistical relationships between the variables discussed in Sections 5.2 and 5.3 are presented in Tables 5 and 6. The three groups of climate change believers (i.e. defeatism, technological optimism, and political failure) have no observable difference in belief about property rights and were therefore merged into one group (i.e. climate change is real). Results of a Chi-square test indicate that the merged group tended to be not supportive to the strong position on property rights (Table 5). On the other hand, climate sceptics were more likely to consider private property rights as irredeemable, regardless of compensation. Fewer sceptical individuals than theoretically expected would accept compensation as a condition for renouncing these rights. Strong rights-based belief is associated with denial of climate change.

The deontological position on property rights is also related to the two ordinal composite items of climate change beliefs. This is supported by the ANOVA results displayed in Table 6. Adherents of the deontological position tended to downplay the severity of climate change and expressed a lack of trust in authorities, as indicated by the significantly higher mean value of the 'Fear and Trust' variable. Furthermore, they were less likely to accept the science-based belief that climate change is a cause of more intense and frequent occurrence of natural disasters. This is reflected in the lower mean value of the 'Adverse Impacts' variable. Tables 5 and 6 consistently demonstrate that climate sceptics are more likely to be deontological libertarians.

### 6. Engaging the dissident? Scepticism linked to defensible rights

Planning decisions aimed at climate adaptation are premised upon the scientific consensus that climate change is real. Objection to this consensus is seen as a failure to understand scientific evidence and a troubling problem to tackle (Hamilton, 2010; Washington and Cook, 2011). The prominent sociologist Anthony Giddens (2012) even called for renewed 'assault' on the arguments of climate sceptics. In a similar vein, Hayward (2008) considers organised libertarian protest against planned retreat

to be an obstacle to climate adaptation and urges for rethinking the merits of democratic processes in which local property owners succeeded in challenging a planned retreat policy. As Dryzek and Stevenson (2011) point out, some observers have lost patience with inclusive, polycentric climate change politics.

Findings of the present research suggest that such libertarian protestors hold sceptical climate change beliefs. This may be particularly the case in Australia where there is a significant minority of climate-sceptical voters, and much of the population reside in coastal settlements and many are homeowners. In community engagement processes dealing with the controversial issue of planned retreat, there may be a tendency for the morality criteria of climate sceptics to be dismissed as irrational (Alexander et al., 2011). One example of these criteria is libertarian values, which underpin Hayward's (2008) concerns. Acceptance of the reality of climate change leads us to call such morality criteria into suspicion. One may argue, however, that the conviction that the libertarian belief is problematic because it threatens to undermine adaptation efforts is itself contested.

Attempts to de-legitimise sceptical climate change beliefs are likely to run into endless debates. Outright dismissal is possible on scientific grounds, but would not ease the tension if these beliefs are premised upon defensible cultural, ideological or ethical considerations. These beliefs may be driven by an intention to defend one's fundamental rights, a strong sense of private sovereignty perceived to be threatened by disputed climate change decisions. The present study has demonstrated this attitudinal linkage, and is broadly consistent with other studies which show that climate change denial is culturally and socially organised (Hulme, 2009; Norgaard, 2011). Although the failure to accept proven science is regrettable, the cultural reasons behind may be legitimate. There is a moral need for including the sceptical individuals and seriously considering their deeper concerns, even though the scientific case for displacing scepticism appears to be compelling.

This moral need is even stronger to the extent in which we embrace the principle of value pluralism. In fact, value pluralism is precisely the main argument raised by some environmentalists to justify serious consideration of absolute rights-

based beliefs about the environment (e.g. Spash, 1997, 2006; O'Neill et al., 2008). By the same principle, climate scepticism driven by another form of rights-based belief cannot be easily stripped off - at least not in moral terms - without running into self-contradiction. Multiple conceptions of climate justice exist and many can be couched in terms of rights. Some of them affirm continuing efforts on mitigating and adapting to climate change, whereas others call these efforts into doubt because of the costly compromises involved (e.g. the 'rights to development'). Both of these rights arguments are observed in the planned retreat debates. Cooper and McKenna (2008) present a case for the former, while the latter is evidenced by the present findings that asserted rights to property are linked to climate change denial. The demonstrated linkage puts the pluralistic environmentalist into a dilemma: there is little moral ground for rejecting, *a priori*, a morally defensible conception of values that contests affirmative climate change beliefs, while accepting another one that supports these beliefs. Otherwise the promise to respect different perspectives about climate change would become merely rhetoric.

The moral need for inclusion thus comes into conflict with the aim to tackle the climate change problem. Some public participatory processes prematurely downplay the disputed belief that climate change is not real or human induced. (Hobson and Niemeyer 2012, p. 409), for instance, promise an inclusive decision-making process, but a stated aim of their designed deliberative forum was 'to challenge climate scepticism'. Few et al. (2007) lament that public participatory processes predisposed to a set of 'required outcomes', such as displacing scepticism, create an 'illusion of inclusion'. They contend that it is untenable to circumvent reasonable opposition to the predefined objective of producing an anticipatory climate change adaptation strategy, while claiming to adhere to the principle of inclusion. Involving the public in decision making processes for planned retreat is likely to fall into this participatory 'trap'. Asserted absolute rights to private property (or land generally) can provide moral energy for rejecting or neglecting proven science when the otherwise would be seen as compromising these rights. This reluctance to believe may be socially pathological and a problem to tackle, but the cultural or ethical motives behind can be reasonable and eligible for inclusion. Given

the correlation between these two, characterising climate scepticism as a troubling problem to tackle is at odds with the pledge to respect dissidents in participatory processes.

Nonetheless the present findings offer insights into an alternative route to accommodate climate scepticism. Sceptical individuals are likely to hold deontological libertarian values. Fidelity to absolute rights-based beliefs is a common ground on which these individuals and deontological environmentalists could communicate their competing perspectives. On the issue of planned retreat, a rights-based framing could potentially reach both deontological sceptics and environmentalists, even though they might disagree with each other on whose rights merit primary consideration. Common appeal to rights are not a source of consensus, but could make 'meta-consensus' (Dryzek and Niemeyer 2006) possible, by which parties to dispute could see each other's policy choices within acceptable *range*. This situation is achievable in small-group deliberations. Lo et al. (2013) demonstrate this concept by presenting an example of a constructive dialogue, in which a rhetorical move appealing to trust brought sceptical deliberators and others to an initial agreement, without completely displacing their competing climate change beliefs. The disagreeing individuals continued to dispute whom to trust, but they could come to an agreement on a policy framework that is deemed to be able to address their differing trust concerns. This process involved a creative search for generalisable principle, such as trust. Rights may be another example and warrant further exploration.

Climate scepticism is ideologically motivated (Hulme, 2009; Whitmarsh, 2011). Exclusion of or any deliberate attempt to downplay scepticism might contradict the requirement of democratic inclusion to the extent that it is premised upon defensible moral considerations. Assaulting the dissident and dismissing their deeply entrenched beliefs impede social cooperation on climate adaptation. More appropriate is to treat the source of disagreement as a cultural alternative and identify creative ways for recognising that what the sceptics agree on is compatible with what we do. As far as climate adaptation is concerned, human and property rights can be articulated in terms that both parties could respect on ethical ground.

Although consensus is not guaranteed, communication can proceed more easily by making a common ontological terrain explicit.

## **7. Conclusions**

Planned relocation of human settlements as a response to accelerated sea level rises is informed by the science of climate change. Public concerns about renouncing property rights in the event of planned retreat have deontological elements linked to the moral judgement on the evidence on climate change. Individuals who are hostile to such government intervention tend to disregard this evidence. The hostility increases with climate scepticism. On the issue of planned retreat, people's attitude toward property rights is associated with their climate change belief.

Climate change communication can be construed as a cultural project. Homeowners' reluctance to accept planned retreat policy and the climate change narratives that support it may be culturally or ideologically reinforced. Their concerns about climate change reflect their intention to retain control over their acquired rights. Not necessarily scientifically sound, the sceptical view however may have a moral case to defend. It is akin to the 'rights to development' cited by developing countries in the sense that assessment of climate change is subject to cultural acceptance and social organisation. This facet of the sceptical view resists rationalistic, science-based persuasion.

Appealing to absolute rights generally may be an effective way to approach the sceptical public on the issue of planned retreat. Rights offer a generalisable ontological framework in which they can see how their non-sceptical counterparts are similarly situated despite expressing a different policy preference. There may not be agreement on whose rights merit primary consideration, but rights-based arguments for climate change actions can more easily reach those individuals who dispute over evidence on climate change.

## References:

- Abel, N., Gorrdard, R., Harman, B., Leitch, A., Langridge, J., Ryan, A. & Heyenga, S., 2011. Sea level rise, coastal development and planned retreat: Analytical framework, governance principles and an Australian case study. *Environmental Science and Policy*, 14 (3), 279-288.
- Adger, W.N., 2004. The right to keep cold. *Environment and Planning A*, 36 (10), 1711-1715.
- Adger, W.N., Barnett, J., Chapin, F.S. & Ellemor, H., 2011. This must be the place: Underrepresentation of identity and meaning in climate change decision-making. *Global Environmental Politics*, 11 (2), 1-25.
- Agarwal, A. & Narain, S., 1991. *Global warming in an unequal world: A case of environmentalism colonialism*. New Delhi.
- Agyeman, J., Doppelt, B., Lynn, K. & Hatic, H., 2007. The climate-justice link : Communicating risk with low-income and minority audiences *In Moser, S.C. & Dilling, L. eds. Creating a climate for change: Communicating climate change and facilitating social change* Cambridge: Cambridge University Press, 119-138.
- Alexander, K.S., Ryan, A. & Measham, T.G., 2012. Managed retreat of coastal communities: Understanding responses to projected sea level rise. *Journal of Environmental Planning and Management*, 55 (4), 409-433.
- Baer, P., Athanasiou, T., Kartha, S. & Kemp-Benedict, E., 2009. Greenhouse development rights: A proposal for a fair global climate treaty. *Ethics, Place & Environment*, 12 (3), 267-281.
- Bell, D., 2011. Climate duties, human rights and historical emissions *In Harris, P.G. ed. China's responsibility for climate change* Bristol: Policy Press.
- Brandstedt, E. & Bergman, A.-K., 2013. Climate rights: Feasible or not? *Environment Politics*, 22 (3), 394-409.
- Climate Institute, 2012. *Climate of the nation 2012: Australian attitudes on climate change*. Sydney.
- Cooper, J.a.G. & Mckenna, J., 2008. Social justice in coastal erosion management: The temporal and spatial dimensions. *Geoforum*, 39, 294 - 306.
- Department of Climate Change, 2009. *Climate change risks to Australia's coast: A first pass national assessment*. Canberra.
- Douglas, M. & Wildavsky, A., 1982. *Risk and culture : An essay on the selection of technical and environmental dangers* Berkeley: University of California Press.
- Dryzek, J.S., 2010. Rhetoric in democracy: A systemic appreciation. *Political Theory*, 38 (3), 319-339.
- Dryzek, J.S. & Lo, A.Y., forthcoming. Reason and rhetoric in climate communication. *Submitted to Environmental Politics*.
- Dryzek, J.S. & Niemeyer, S., 2006. Reconciling pluralism and consensus as political ideals. *American Journal of Political Science*, 50 (3), 634-649.
- Dryzek, J.S. & Stevenson, H., 2011. Global democracy and earth system governance. *Ecological Economics*, 70 (11), 1865-1874.
- Eckersley, R., 2004. *The green state : Rethinking democracy and sovereignty* Cambridge, Mass. : MIT Press.
- Few, R., Brown, K. & Tompkins, E.L., 2007. Public participation and climate change adaptation: Avoiding the illusion of inclusion. *Climate Policy*, 7, 46-59.
- Giddens, A. 2012. State of Humanity: Economic and Political Challenges. Plenary speech at the Planet Under Pressure Conference, 26 March 2012, London. Video recording available from <http://www.youtube.com/watch?v=yYoH1rSCPrc>. Accessed 1 March 2013.
- Goodin, R.E., 1992. *Green political theory* Cambridge: Polity.

- Grasso, M., 2013. Climate ethics: With a little help from moral cognitive neuroscience. *Environmental Politics*, 22 (3), 377-393.
- Hamilton, C., 2010. *Requiem for a species: Why we resist the truth about climate change* Crows Nest, N.S.W.: Allen & Unwin.
- Harvey, D., 1996. *Justice, nature, and the geography of difference* Cambridge, Mass.: Blackwell Publishers.
- Harvey, D., 2003. The right to the city. *International Journal of Urban and Regional Research*, 27 (4), 939 - 941.
- Hayward, B., 2008. 'Nowhere far from the sea': Political challenges of coastal adaptation to climate change in new zealand. *Political Science*, 60 (1), 47-59.
- Hobson, K. & Niemeyer, S., 2011. Public responses to climate change: The role of deliberation in building capacity for adaptive action. *Global Environmental Change*, 21 (3), 957-971.
- Hobson, K. & Niemeyer, S., 2012. "What sceptics believe": The effects of information and deliberation on climate change scepticism. *Public Understanding of Science*, 22(4), 396-412.
- Hulme, M., 2009. *Why we disagree about climate change* Cambridge: Cambridge University Press.
- Ikeme, J., 2003. Equity, environmental justice and sustainability: Incomplete approaches in climate change politics. *Global Environmental Change*, 13, 195-206.
- Lo, A.Y., 2010. Active conflict or passive coherence: The political economy of climate change in china. *Environmental Politics*, 19 (6), 1012-1017.
- Lo, A.Y., Alexander, K.S., Proctor, W. & Ryan, A., 2013. Reciprocity as deliberative capacity: Lessons from a citizens deliberation on carbon pricing mechanisms in australia. *Environment and Planning C: Government & Policy*.
- Malone, E.L., 2009. *Debating climate change : Pathways through argument to agreement* London: Earthscan.
- Moser, S.C. & Dilling, L., 2011. Communicating climate change: Closing the science-action gap In Dryzek, J.S., Norgaard, R.B. & Schlosberg, D. eds. *The oxford handbook of climate change and society*. Oxford: Oxford University Press.
- Norgaard, K.M., 2011. *Living in denial: Climate change, emotions, and everyday life* Cambridge, Mass: MIT Press
- Nozick, R., 1974. *Anarchy, state, and utopia* Oxford: Blackwell.
- O'neil, J., Holland, A. & Light, A., 2008. *Environmental values* London: Routledge.
- Paavola, J., 2007. Institutions and environmental governance: A reconceptualization. *Ecological Economics*, 63 (1), 93-103.
- Peterson, M.N. & Liu, J., 2008. Property rights and landscape planning in the intermountain west: The teton valley case. *Landscape and Urban Planning*, 86 (2), 126-133.
- Poortinga, W., Spence, A., Whitmarsh, L., Capstick, S. & Pidgeon, N.F., 2011. Uncertain climate: An investigation into public scepticism about anthropogenic climate change. *Global Environmental Change*, 21 (3), 1015-1024.
- Queensland Government, 2011. *Climate change: Adaptation for queensland issues paper*. Brisbane.
- Renn, O., 2011. The social amplification / attenuation of risk framework: Application to climate change. *Wiley Interdisciplinary Reviews: Climate Change*, 2, 154-169.
- Ryan, A., Gorddard, R., Abel, N., Leitch, A., Alexander, K. & Wise, R., 2012. *Perceptions of sea-level rise risk and the assessment of managed retreat policy: Results from an exploratory community survey in australia*. Canberra, 0364-152X.
- Sagoff, M., 1992. Free - market versus libertarian environmentalism. *Critical Review*, 6 (2-3), 211-230.
- Shaw, J.S. & Stroup, R.L., 1992. A skeptical twist. *EPA Journal*, 18 (4), 54.



- Spash, C.L., 2006. Non-economic motivation for contingent values: Rights and attitudinal beliefs in the willingness to pay for environmental improvements. *Land Economics*, 82 (4), 602-622.
- Thompson, M. & Rayner, S., 1998. Risk and governance part i: The discourses of climate change. *Government and Opposition*, 33 (2), 139-166.
- Washington, H. & Cook, J., 2011. *Climate change denial : Heads in the sand* London: Earthscan.
- Whitmarsh, L., 2011. Scepticism and uncertainty about climate change: Dimensions, determinants and change over time. *Global Environmental Change*, 21 (2), 690–700.
- Wildavsky, A., 1987. Choosing preferences by constructing institutions: A cultural theory of preference formation. *American Political Science Review*, 81 (1), 3-22.

Table 1 Percentage of respondents by gender, age, education, and household income

<b>Socio-economic characteristics</b>	<b>Category</b>	<b>Respondent (%)</b>
Gender	Male	44.3
	Female	55.7
Age	18 - 30	3.2
	31 - 45	23.2
	46 – 60	35.9
	Over 60	37.7
Highest level of education completed	No formal qualifications	7.8
	Year 10 or equivalent	12.0
	Year 12 or equivalent	18.0
	Trade / apprenticeship	4.2
	Certificate / diploma	17.2
	University degree	28.7
	Higher University degree	12.2
Total Annual Household Income	Under AUD50,000	31.1
	AUD50,000 - 100,000	27.7
	AUD100,001 - 150,000	19.6
	AUD150,001 or more	12.2
	Refused to answer	9.4
Household size (number of persons resident)	1	18.0
	2	37.9
	3	17.4
	4 or more	26.8

Table 2 Number of respondents by asserted property rights

Item	Survey statement	Frequency	Per cent
Rights irredeemable regardless of compensation	Property rights are a fundamental right and cannot be renounced regardless of compensation	65	13.0
Rights redeemable with compensation	Property rights can be renounced if adequately compensated by government	250	49.9
Rights redeemable without compensation	Property rights can be renounced without compensation if owners have been informed of the risk before purchase	161	32.1
None of these		25	5.0
Total		501	100

Table 3 Number of respondents on climate change beliefs on nominal scale

Item	Survey statement	Frequency	Per cent
Scepticism	Climate change is not real	67	13.4
Defeatism	Climate Change is real and it's out of our control	178	35.5
Technological Optimism	Climate Change is real but new technology can fix it	103	20.6
Political Failure	Climate Change is real and it's a failure of political leadership	97	19.4
None of these		56	11.2
Total		501	100

Table 4 Descriptive statistics for climate change beliefs on ordinal scale

Item	Survey statement	Agree (%) <sup>*</sup>	Neutral (%) <sup>#</sup>	Disagree (%) <sup>^</sup>	Mean	S.D.
Fear and Trust	We shouldn't panic as the severity of climate change has been exaggerated	39.6	23.6	37.0	3.04	1.42
	The federal government is just making money by creating fear of climate change	37.8	14.2	48.1	2.87	1.54
	I don't trust scientists who claim that climate change is caused by human activities	26.4	21.0	52.7	2.54	1.42
Adverse Impacts	I believe that human-induced climate change contributed to the occurrence of natural disaster, such as the 2011 Queensland floods	32.0	18.8	49.3	2.65	1.44
	I expect that natural disasters in Queensland will become more serious and frequent in the coming decades	50.3	25.5	24.2	2.54	1.42

Note: <sup>\*</sup> including 'Strongly agree' (5) and 'Somewhat agree' (4). <sup>#</sup> 'Neither agree nor disagree' (3). <sup>^</sup> including 'Strongly disagree' (2) and 'Somewhat disagree' (1). Row totals may exceed 100% due to rounding-up.

Table 5 Number of respondents on asserted property rights by climate change beliefs on dichotomous scale

Count (expected count in parentheses)				
	Rights irredeemable regardless of compensation	Rights redeemable with compensation	Rights redeemable without compensation	Total
Climate Change is real	50 (56.5)	224 (217.4)	140 (140.0)	414
Climate Change is not real	15 (8.5)	26 (32.6)	21 (21.0)	62
Total	65	250	161	476
$\chi^2 = 7.318, p < 0.05$				

Notes: The null option 'None of these' is omitted from this table.

Table 6 ANOVA table for asserted property rights and climate change beliefs on ordinal scale

		N	Mean	S.D.	F
Fear and Trust	Rights irredeemable regardless of compensation	65	9.55	3.708	7.690**
	Otherwise	436	8.28	3.417	
Adverse Impacts	Rights irredeemable regardless of compensation	65	5.23	2.350	9.216**
	Otherwise	436	6.17	2.329	

\*\* denotes significance at the 1% level