

Climate justice in the Australian City

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Abstract: Australian cities face several critical problems related to climate change and social/environmental equity. The emerging Australian scholarship on 'climate justice' helps to explain the inequitable impacts of climate change upon marginalised and disadvantaged communities (Fritz and Wiseman 2009; Moss 2009; Steele et al 2012). Vulnerable social groups will be hardest hit by climate change whether in poorer developing nations or in the cities of western societies like Australia. But urban research on the urban equity dimensions of climate change risk and adaptation policy and governance is profoundly underdeveloped in key areas where decisions affecting issues of urban quality, equity and justice are made (e.g. public infrastructure provision, regulation of private development, environmental management, location of services etc). In this paper we address critical gaps in existing research by taking a 'practice approach' to how we might better support climate justice at the metropolitan scale in Australia.

Introduction

Australian cities are not immune from the uneven impacts of climate change. They face several critical problems related to climate change and social/environmental equity, including: historical economic processes that spatially concentrate social vulnerabilities and exclusions within cities; and built environments which can exacerbate vulnerability to climate change impacts through poorly designed houses, poor access to green space, lack of public transportation, and exposure to risks posed by poor environmental quality (such as insect-borne diseases) and severe weather events. Australian cities are not immune from the uneven impacts of climate change.

Vulnerable social groups will be hardest hit by climate change whether in poorer developing nations or in the cities of western societies like Australia. But scholarship on the urban equity dimensions of climate change risk and adaptation policy is profoundly underdeveloped. There are a growing number of researchers calling for more research on adaptation and the need to analyse the underlying assumptions of adaptation approaches (Adger et al, 2007; Moser, 2010; Pahl-Wostl et al, 2012). In there is a serious deficiency in current urban responses to '*climate justice*' in Australian cities. Climate injustice occurs when the most socio-economically vulnerable and politically marginalized communities bear a disproportionate burden of climate change impacts (Bell, 2010; Goodman, 2009; Holifield et al., 2009; Wilson, et al., 2010). Climate justice research seeks to redress this problem.

This paper offers a preliminary view of a project critically analysing Climate Adaptation Strategies in Australia in which we take a 'practice approach' both to investigating what lies beneath the discourses of climate adaptation and also to understanding the potentials for actors at the local level to effect appropriate locally adaptive responses to change. We are especially interested in the nexus between environmental and social concerns, and in the potential of spatial planning as a site for action that brings these concerns together within a governance setting. Building on the work that we and others have done in relation to climate justice in Australian urban planning, we ask questions about how practices associated with climate adaptation policy responses shape lived outcomes. These questions include: which and whose concerns, knowledges, skills, tacit understandings, dominate action? Who benefits, and who and what get left behind? How do and might actors 'go round the back' of local institutions' mainstream approaches in search of social or environmental justice – and how might such practices be incorporated in climate adaptation governance processes at the metropolitan scale?

Climate justice as a concept

Widespread anthropogenic global environmental changes have come to be regarded as the age of the *Anthropocene*, an age in which humans and non-human ecologies and systems interrelate in complex assemblages. Climate change is an example (Hulme 2010): the IPCC (Intergovernmental Panel on Climate Change) has declared the case for anthropogenic climate change as 'unequivocal' (IPCC, 2007), and it is widely accepted that as an urban species human societies must adapt to it.

The impacts of climate change will disproportionately affect vulnerable and marginalised groups: low-income households; elderly or very young people; Indigenous people; transient, service-sector or seasonal workers; unemployed and homeless people; immigrant groups; renters; people with large families; mortgage-stressed households; car-dependent households; and sick people, among others (Sherrard and Tate, 2007). That is, some people are more 'vulnerable' than others. In particular the

capacity for climate change to compound existing vulnerabilities such as poverty, loss of biodiversity or degradation has been identified (O'Brien & Liechenko, 2000).

Previously, we have argued for the need for an engaged, robust and material understanding of *urban climate justice* in planning that recognises: that climate change is a crisis of society as well as environment, wherein the impacts are felt most by the most marginalised sectors of society (both human and non-human) – not only at the global scale, but at within cities and suburbs as well; that society, economy and nature are *all*, simultaneously, mutually and constantly, reconfigured by the ways that urban relations are played out; and that as a result we must better take into account the complex links between human society and the natural environment, currently locked into processes that remain hardwired to spatial, temporal and economic models of growth that are not equitable, not eco-sensitive – and not substantively oriented towards transitioning to low-carbon futures (Steele et al. 2012).

Climate justice acknowledges that in the face of potentially catastrophic climatic change, significant challenges have emerged that threaten the human world, the non-human world, sustainability and governance and decision-making more generally (Adger et. al. 2006). To this end Barnett (2006, p.115) identifies five key aspects to understanding climate justice: [i] the responsibility for climate change is not equally distributed; [ii] climate change will not affect all people equally with some people and groups more vulnerable; [iii] this vulnerability is determined by political-economic processes that benefit some more than others; [iv] climate change will compound under development because of the processes of disadvantage embedded within the (neo) liberal political-economic status quo; and [v] climate change policies may themselves create unfair outcomes by exacerbating, maintaining or ignoring existing and/ or future inequalities.

Yet the emergent climate justice agenda has barely started to penetrate political discourses surrounding cities - particularly within the developed country context. In highly urbanized countries like Australia for example the uneven impacts of the climate crisis will be felt most in the largest cities, where most of the countries' human populations reside. Within urban governance and planning frameworks closely linked to a neoliberal model of economic growth, making the necessary justice links between economic, social and ecological vulnerability remains on the margins. Even within particularly within the context of adaptation issues of climate justice barely register (MacCallum et al forthcoming).

The IPCC (2001) define adaptation as 'adjustment in natural or human systems in response to actual or expected climatic *stimuli* or their effects, which moderates harm or exploits beneficial opportunities. They further define six overlapping categories of adaptation: anticipatory, autonomous, planned, private, public and reactive. Approaches to adaptation range from strategies aimed at long-term planning for anticipated changes through short-term responses to already-apparent change to urgent coping strategies for extreme events and disasters such as flooding (Fussel, 2007; Ireland, 2010; Smit et al, 1999; Yamin et al, 2005). It may be a function of the style in which many such strategies are written, but they appear to overestimate institutions' knowledge of what should be done, when and how, with an over-reliance on a select few mainstream instruments. The innovativeness, diversity, local appropriateness and sometimes the spontaneity of community and NGO approaches tend to be undervalued or discounted (Ireland and McKinnon, 2013).

A number of researchers have also identified evaluation and monitoring of adaptation strategies as important elements of climate adaptation planning (UNDP 2007). Most work to date has largely centred on evaluating substantive content of adaptation strategies, especially risk assessments, while spatial planning-related content tends to be either passed over or confined to infrastructure provision and/or disaster response. Evaluation rarely examines or critiques relations between the upstream strategy-development processes that lead to such content (Preston et al, 2011) and social and environmental justice aspects of the Strategies.

Largely derived from fields of hazard management and engineering, there is now a recognised 'science of vulnerability', emphasising quantitative modelling (see, for example, Dwyer et al, 2004; King and MacGregor, 2000; Tait, 2012 amongst many others). Many commonly-used approaches are 'interesting for scientists but of low policy relevance' (Nelson et al, 2010: 13). Vulnerability is defined broadly by Ireland and McKinnon (2013: 2) as 'the function of exposure and sensitivity to certain

conditions'. Within this definition, pre-existing social, economic, political and environmental conditions become important structural contexts.

However, many empirical examples of modelling and/or mapping vulnerabilities have significant limitations – they do not reveal the institutional drivers of vulnerability, such as political conditions, local government policy, welfare and emergency services capabilities etc; they can do little to redress the problems identified; they are dominated by a preoccupation with biophysical processes; they can entrench technocratic proclivities; and they make a limited contribution to framing injustice. And they only reflect the original variables used to frame vulnerability (e.g. age, gender, income, disability, employment status, housing tenure, indigeneity etc). For these reasons, we urgently need new approaches: we need to re-engage with vulnerable groups who reside in hazardous places, and to critically examine whether vulnerabilities are assessed and addressed in a manner consistent with notions of justice (Houston 2008; Fritze & Wiseman 2009; Moss 2009).

Environmental justice has traditionally been applied to redressing the inequitable distribution of environmental goods (parks, good airflow etc.) and harms (pollution, poor sanitation, etc.) within places, and now has a climate change dimension (Byrne 2010; Houston 2008). But much of the current discourse on *climate* justice is conceived, organized and mobilized by activist/not-for profit community groups or the legal profession (Dryzek 2005). The former focus on the distributional injustices faced by the global south (i.e. developing nations), whilst the latter focuses on the substantive procedural injustices relating to issues of access and representation. The field has largely ignored the developed country context and the urban governance setting within it, allowing technical economic and scientific environmental – rather than justice – discourses to dominate debate and government guidance (see AGO, 2006, 2007). This is exemplified specifically in relation to the dominance of risk assessment in Australian local government climate adaptation plans which often focus on selected risks which can be easily quantified and predicted (MacCallum et al. forthcoming).

To this end, we regard climate justice slightly differently from the more global orientation of commentators such as Chatterton et al, who regard climate justice as focussing on 'the interrelationships between, and ... the root causes of, the social injustice, ecological destruction and economic domination perpetrated by the underlying logics of pro-growth capitalism' (2012: 5). We see climate justice concerns equally as complex *spatial* matters, reproduced at every scale from the global to the household/individual body. For example, urban (and suburban) policies and plans are embedded within and recontextualise internationalised agreements, discourses and practices which define and pursue economic growth in particular ways (cf. Wodak and Fairclough 2010 on higher education policy), and which have, as a direct consequence, often served to compound rather than improve conditions of poverty, homelessness, access to basic services, environmental risk and ecological integrity at the neighbourhood level (Liverman 2009; Walker 2009).

Many nationally institutionalised inequities are felt keenly at the level of personal and family identity, as associated discourses normalise particular types of bodies and relationships (Baldwin 2009). We also wish to treat human-nature relations in the Anthropocene as more intimate and intricate than suggested by the 'ecological destruction' formulation – climate justice is, in part, a matter of justice for non-human actants as well. As this suggests, in our reading climate justice has *both* material and discursive/cultural aspects, requiring an analysis that addresses the links between these two.

We believe, therefore, that it is vitally important to find new ways of speaking about climate change in its ecological, social and cultural dimensions, as an issue of *urban* justice (Shove & Walker 2007; Steele et al. 2012). While Cutter (1996; Cutter et al, 2008), Schlosberg (2007, 2012, 2013; Dryzek, Norgaard and Schlosberg, 2012) and others are developing place-based models, these tend to be at the regional or macro scale. However, there are important within-region and urban differences in specific issues that appear to be important drivers of climate change impacts and eco/socio/political and economic responses (Waite et al. 2006). In the remainder of this paper, we discuss what a 'practices approach' to urban climate justice offers planning at local scales. We argue that such an approach might productively reframe material discourses and performances of climate change impacts within an open and experimental framework that is attentive to residual and emergent injustice. Such a frame looks to who exceeds and who is excluded from more conventional approaches to climate change adaptation at the urban scale *and* how local planning might creatively respond to the 'more-than-human' justice dimensions of climate change within particular localities.

Climate justice in (critical) practice

Practices are sets of norms, conventions, ways of doing, know-how and requisite material arrays (Schatzki, 2001) – the modes of doing - embedded in ‘practice architectures’ (Kemmis et al, 2009: 2); ‘the cultural-discursive, material-economic and social-political orders and arrangements that prefigure and shape the conduct of practice’. These architectures shape the shared meanings of discursivities and materialities and the relationalities between elements which constitute practices such as spatial planning and policy-making. In turn, planning practices constitute and reproduce urban space, through and within which human and non-human actors (such as residents, housebuilders, consumers, markets, infrastructure providers etc) derive meaning, produce and consume. Actors are thus ‘carriers of practice’ (Reckwitz, 2002; Shove, 2010).

Regimes of practice are ‘programs of conduct which have both prescriptive effects regarding what is to be done ... and codifying effects regarding what is to be known’ (Foucault, 1991: 75). In the study of contemporary spatial planning for climate adaptation, ethnographic research of local adaptation strategy- or plan- making and implementation practice as a unit of enquiry can help to establish the relations between discourses, institutions and techniques of practice. Analysis of local authority climate adaptation plans offers insights into the logics of how spatial planners and other actors regard the city and its human and nonhuman inhabitants, together with the environmental, social, economic and political knowledges, models and assumptions they bring to bear on the issue: what Camic et al (2011) term ‘social knowledge’. Our concern is thus with making manifest what causes practitioners and other actors to think and act; ie with methodologies and knowledges.

Jones and Murphy (2010) identify four distinct strands of practice-oriented scholarship: institutional approaches, practice and governmentality, diverse economies and everyday practices, and relational perspectives. With regard to spatial planning, Healey’s (2008) work develops a relational institutional approach which is also sensitive to power relations, which has been further developed and applied by Van den Broeck and others (2010; Servillo and Van den Broeck 2012; Van den Broeck et al. 2013). Rather than focusing on institutions in planning, this approach means seeing spatial planning as an institutionalized practice. It involves examining how - at any given time - particular institutions may privilege (but not determine) some actants, some actions, some strategies etc. over others in ‘structurally inscribed strategic selectivities’ (Van den Broeck, et al. 2013) or ‘frames’ (Healey, 2008), and the ways - if any - in which actants take account of this differential privileging when choosing a course of action.

A practice approach can thus offer ‘an epistemological strategy able to interpret, interrogate, and reveal the formative complexity of socioeconomic phenomena through careful examinations of everyday activities’ (Jones and Murphy, 2010: 376), such as preparation and implementation of local authority Climate Adaptation Plans, and the ways in which citizens respond (or not) to similar challenges – as well as to the plans themselves. Our aim is to develop critical engagement with the practice architectures – the social, political, economic and environmental imaginaries, stories, ethics and norms - that configure practices of climate adaptation strategy development and implementation; interactions between institutions, people, places and environments; and how effective responses to global environmental change can be collectively imagined and practised in cities at the local scale. This is important for several reasons:

- By adapting the concept of climate justice to the metropolitan and local government scales, where spatial environmental governance decisions are routinely made (e.g. public infrastructure provision, regulation of private development, environmental management, location of service provision etc) the project addresses the critical gaps in detailed government guidance and in existing research. By identifying constraints and potentials for more contextually relevant responses to environmental change, and climate change in particular, the project will help to break the current impasse, in which climate change adaptation strategies largely remain unimplemented and unimplementable. This could involve a shift of emphasis from a goal- to a process-oriented approach to strategy making, permitting actors to discuss alternative policy instruments, appropriate to local situations.
- By broadening the scope for understanding and addressing environmental change at the local scale - for example to include ecological and social justice concerns, multi-scalar networks, etc - and by explicitly broadening the scope of responsibility to include non-institutional actors, the project will enable new, more integrated/holistic and socially innovative planning-related climate adaptation policies and practices .

- By focusing on spatial practice and the local scale, the project brings global environmental change into the realm of actors who can make a difference, and provides an antidote to disempowering discourses which alienate the problem from the everyday.

By using a retroductive approach, an evolving dialogue between empirical observations, practical experimentation and theoretical framing, to investigate the preparation and implementation practices of local Climate Adaptation plans is developed. A retroductive approach is based on the problematisation of a phenomenon (climate adaptation planning), which identifies 'a particular practice or set of practices which appear to constitute, influence, manifest and/or drive the phenomenon in question' (Jones and Murphy, 2010: 381).

The research frame develops Thévenot's (2001) identification of three pragmatic regimes of engagement - the regime of familiarity (eg tacit knowledge, collective learning processes), the regime of planned action (eg discursive, functional, regulatory practices) and the regime of justification (eg how practices structure and embody meanings and identities) – and his key questions of: which good or form of justice is engaged, with what evaluation?; which reality is engaged, with what capacity?; what is the format of relevant information?; which kind of agency is construed? To which we add: what practices are valorised/nonvalorised and with what impacts on which human and non-human actors?

Building on previous analyses of the textual *products* of planning – metropolitan planning strategies (MacCallum et al. 2011) and local government climate change responses from SEQ (MacCallum et al. forthcoming) we examine local practices for climate adaptation planning, using a matrix of indicators developed from Thévenot, Healey (2008) and Van den Broeck et al. (2013). Indicators include the plans' socio-spatial dimensions, intentions, consequences (to date), and their constituent factors, including the cognitive (manifest through discursivities and materialities), performative (eg technical devices), structural (eg logics, norms, rules etc) and power relations (see also Camic et al, 2011).

Analysis focuses on what kinds of epistemologies are reflected in how what counts as 'knowledge' is recognized, collected and utilised in the adaptation planning processes, the ways in which particular individual and collective actants¹ succeed or fail to imbue their values and interests into institutional frames; how institutional frames embody compromises between different values and interests and concomitant power relations and who dominates these compromises; how these structurally inscribed values and interests and concomitant power structures in turn inform the behaviour of different actants; and who benefits and /or loses from this . We are also interested in what kinds of (institutional) learning may (or may not) go on in adaptation planning processes and how far do they encourage (or inhibit) processes of creative discovery through which new policy frames can become recognised and adopted (Healey, 2008).

As Healey's (2008) empirical research indicates, the 'knowledge' which reframes a particular practice may well not be the product of expert or scientific knowledge production in formalised processes, but of social processes external to the accepted mainstream. In addition to investigating the practices of adaptation plan production, therefore, we pay particular attention to non-governmental practices, especially those practices whose potential to reshape urban planning norms and relations is enhanced by their innovative character and their position at the boundaries of local government – for example, those which achieve some level of acknowledgement within institutional circles (e.g. through media coverage or direct lobbying); those which create local planning 'issues' (such as street art, guerrilla gardening etc); those which address actants' needs in ways that fill gaps left by public institutions. Such practices can be described as 'socially innovative' (MacCallum et al. 2009; etc), in that the actions taken to address unmet needs also reconfigure eco-social relations and empower traditionally marginalised actants.

Australian cities and climate governance

As agencies of governance turn their attention to the potential impacts of climate change around Australia, government funding has been made available for work on climate adaptation. As Ireland and McKinnon (2013: 1) point out internationally, however:

...at its best adaptation is focused upon enhancing the adaptive capacity of communities who are facing increased uncertainties... At its worst, adaptation is merely the new catch phrase that is being applied to ... programs, whether they genuinely address climate change or not'.

¹ Actant as a compound noun for human and non-human actors.

Australian local government authorities' Climate Adaptation Strategies or Plans have become locked into a particular model of risk assessment, policy formulation, and technical response in how they respond to global environmental change – in particular climate change. As such, 'there is a tendency to rely on targeted programs, monitoring outcomes against predetermined targets' (Ireland and McKinnon, 2013: 8). We claim that this model actually constrains the ability of actors at the local level to respond in context-sensitive ways, because it straightjackets their thinking about alternative ways of doing things. The model also tends to exclude social and ecological concerns and impacts, potentially leading to inequitable outcomes.

There is no statutory requirement for local government authorities to produce Climate Adaptation Strategies or Plans, though they are encouraged by Federal and State organisations, and a number of financial and intellectual supports exist to this end. This has led to a rather 'patchy' uptake of the challenge at local government level, and also, it seems, a limited approach to dealing with the situated complexity of local issues.² Such Strategies as have been published tend to focus on risk assessment rather than adaptation. It is often assumed that operationalizing adaptation actions within a policy environment will benefit from formal definition of criteria for success, metrics for measuring that success and transparent reporting to stakeholders (Moser, 2010). This tends to imply the quantitative modelling and establishment of achievement indicators associated with risk assessments and modelling, which, as we indicate below, tend to be reductive in what they measure and exclusionary in their coverage.

In 2006, the Australian Greenhouse Office (AGO, now the Department of Climate Change and Energy Efficiency) released a guide outlining how government and business organisations can: identify risks associated with climate change impacts, focus on risks that require further attention and set up a process for ensuring that higher priority risks are managed effectively. This *Climate Change and Risk Management* guide (AGO, 2006), as we indicate, has had a major influence on local government Climate Adaptation planning procedures. However, Booth and Cox (2012) identify two problematic issues with its risk framework in practice. Results were found to be similar across many councils in Western Australia. This could be because the risks faced by the councils are the same, the same consultants prepared the risk assessments, or the instrument is too broad scale to be useful at local scale (see also MacCallum et al. forthcoming). Additionally, assessments target local government operational risks but it is actually a framework for broader strategic assessments and cannot deliver site-specific outputs. Again, this could be a problem caused by consultant misapplication of the instrument or of the instrument itself.

The following year, AGO produced specialised information aimed at local governments which recognises that local responses to climate change require a dual approach not only aimed at mitigation of greenhouse gas emissions, but importantly, also at adaptation: 'making adjustments to existing activities and practices so that vulnerability to potential impacts associated with climate change can be reduced or opportunities realised' (AGO, 2007: 9). The stated aim of AGO is 'to identify climate change adaptation actions for local government that produce benefits *other than those that are strictly tied to climate change* and in particular provide a *net economic, social or environmental benefit no matter what level of climate change occurs*' (2007, p. 14, emphasis added). The emphasis here is on producing benefits whether linked to climate change or otherwise, a framing that appears to have influenced some Councils to adopt a 'weak' ecological modernisation perspective that implicitly ignores the unevenness of climate change impacts across communities (MacCallum et al. forthcoming). The process, in line with the AGO's ongoing approach, is essentially that of risk assessment, which should follow the specific guidelines outlined in the Report.

Although the Report includes sections on infrastructure and property services, provision of recreational facilities, natural resource management and so on, these are not treated as planning related. With regard to local authorities' spatial planning functions, only development approval gains attention, although authorities are told to 'incorporate potential climate change adaptation actions into

² For example by 2011 less than 25% of Victorian local authorities had produced comprehensive strategies and only the Shire of Darebin (a Melbourne inner suburb noted for its multicultural, gentrifying population) has produced a strategy addressing issues of climate justice. MAV (2011) reported that in Victoria, 19 (of 79) local government authorities had prepared (through consultants) comprehensive Climate Adaptation Strategies.

strategic planning where appropriate' (AGO, 2007: 14). This is an extremely restrictive view of local planning functions.³

To support the implementation of these programs, the DCCEF's Local Adaptation Pathways Program (LAPP) provides funding to help councils undertake climate change risk assessments and develop action plans to prepare for the likely local impacts of climate change. Funding is only provided, however, if the proposed processes aligned with those outlined in AGO 2006. Approximately 90 Councils, many of these in groups, have been funded over two rounds – Round 1 (2008) largely funded projects in coastal urban areas, and Round 2 (2009) focused on rural and remote areas.

The Federal government also developed a National Climate Change Adaptation Framework (COAG, 2007) which outlined strategies to understand and manage climate change impacts in key sectors, including settlements, infrastructure and planning. The Framework proposed potential adaptation actions to be implemented over a five to seven year timeframe. A national implementation plan was to be developed in 2007, with biennial reporting and a review in 2011. However, these were not undertaken. Instead, a Select Council on Climate Change was announced in early 2011 with what is effectively a vague, national remit (DCCEF, 2012). In addition to the specific programs noted above, there currently exists a plethora of 'factsheets' and policy guidance from governance and other institutions exhorting climate adaptation at Federal and State scales (eg NCCARF, ACCARNSI, MAV, VLGA), but there remains an absence of an overarching policy framework. Local councils thus operate in something of a policy vacuum (Booth et al, 2011: 7). ACCARNSI research suggests that successful adaptation for cities will require medium-term structure plans and long-term strategic plans of 100 years plus (Booth et al, 2011: 7), which time-frame is so uncertain as to be impossible for spatial planners to contemplate with confidence.

The long time-frame also causes confusion for spatial planners as it contradicts national spatial planning policy reports which emphasise the need for certainty. The spatial planning reports call for cities to become more resilient by mitigating and adapting to climate change (National Urban Policy, 2011: 48). Planning processes in the National Policy are restricted to considerations of infrastructure provision and the operational needs of emergency management (p. 49). While the Position Paper *Adapting to Climate Change in Australia* (Department of Climate Change, 2010) absolved itself from considering spatial planning responsibilities by looking towards the COAG Reform Council's *Review of Capital City Strategic Planning Systems*, the Review (published in 2012) is an evaluation of how States' metropolitan plans meet nine generic criteria,⁴ and makes no concrete recommendations in this area.

Our collective recent research shows that, as suggested above, local governments' climate change adaptation responsibilities are often framed by technical discourses received from higher levels of government (Byrne et al., 2009; MacCallum et al. forthcoming; Steele and Gleeson, 2010a, 2010b; Houston, 2008), complicating, obscuring, and diluting local relevance and consequently the implementation of effective strategies. If climate change is perceived as a 'distant problem', someone else's responsibility or as 'too hard' to deal with, local decision-makers are unlikely to factor it into everyday decisions such as processing development applications or making local policy. Moreover, if local authorities develop their planning responses based on a 'template approach', as the first round of LAPP seemed to encourage, innovation can become stifled. In particular, as we have found in the past, this means that social objectives such as inclusion, justice and political engagement can be more or less ignored as tangential to the more obvious and 'central' environmental and economic impacts of climate change (MacCallum et al 2011; Steele et al 2012) – that is, social justice may be seen as a 'fuzzy' ideal and not a direct tangible outcome of decision-making. Consequently, there will be little hope of remedying climate change inequalities and their material consequences. This appears to us as a critically important gap – adaptation to a drastically altered future surely requires attention to how social relations will be affected, and efforts to ensure that past injustices are not made worse.

Justice, therefore, we argue remains a chronically 'underdeveloped area of Australian thinking about climate change' (Garnaut 2009: 1): climate change and eco-social justice appear almost to inhabit

³ And yet at the State level the same time, there is a high expectation – indeed a national requirement – that metropolitan plans will include strategies to address climate change adaptation (COAG 2009)

⁴ 'Climate change mitigation and adaptation' is one of nine 'nationally significant policy issues' listed under criterion 4.

discrete worlds within public discourse. There is a historical failure of Australian urban climate change responses to embrace eco-social justice concerns (Brotherhood of St Lawrence 2007) which requires urgent redress. Surveys of existing urban climate change policies and adaptation strategies tend to be international in scope (e.g. UNDP, 2007), though focused Australian research (e.g. Byrne et al. 2009; Smith et al, 2009; Booth et al, 2011; Booth and Cox, 2012; MAV, 2011; Preston et al, 2011) is increasing. Reports identify many technological and management 'solutions' to environmental, legal and financial risks, but few instances where governments have confronted the difficult challenges of enacting the major economic and lifestyle changes that are increasingly seen as necessary, not only by activists but also by the scientific establishment (Bulkeley 2001; Slocum 2004).

At all scales of action, we see few challenges to the status quo; rather, governments have tended to respond with public infrastructure and energy efficiency rebates, largely directed to wealthier neighbourhoods and households (Macintosh & Wilkinson, 2010). Further, as technocratic registers have dominated public discourse on the subject, alternative ways of knowing, such as indigenous, gendered, and eco-centric perspectives have effectively been excluded (Byrne *et al.* 2009; Houston 2008; MacCallum et al. 2011, forthcoming). In response, we need to develop and embed in our praxis a notion of the *climate-just city* (Steele et al. 2012).

Conclusion

The emerging Australian scholarship on 'climate justice' helps to explain the inequitable impacts of climate change upon marginalised and disadvantaged communities (Fritz and Wiseman 2009; Moss 2009; Steele et al 2012). While climate change is an increasingly mainstream concern for urban governance, recent research suggests that associated policies and strategies tend to focus almost exclusively on scientific and technical concerns (e.g. predicting sea level rise, managing legal liability), rather than on social and cultural consequences of climate change and, crucially, their implications for eco-social equity and justice (Byrne et al. 2009; Gleeson 2007).¹ A critical focus on urban governance and policy responses to climate change should, therefore, ask questions concerning: 'who dominates?' 'who benefits?', 'who is most impacted?', and 'who gets left behind?'

Changing practices will require changing the practice architectures. This will involve changes to subjectivations (how people regard each other), power relations and acceptance of other discourses, knowledges, performativities and so on which affect 'what is to be known' and 'what is to be done' (Houston et al. 2012). Such changes will require transition management, including guidance and so on. As urban researchers we are interested in adaptation planned through public Climate Adaptation Plans, but also in the adaptive responses (both planned and spontaneous) of citizens – especially of households and organisations who are developing collective actions that, in our view, challenge the stark dichotomy between public and private action. Through such engagement with practice, our critical praxis ambition is to go beyond analysis to identify positive, democratic, socially and environmentally just *alternative* practices and to examine their potentialities for upscaling and broader adaptation within the Australian urban governance setting.

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