

Above all, development planners and practitioners must abandon their belief in the invincibility of Northern based technical expertise. This does not require the abandonment of technical assistance, or the rejection of technical transfers. But it does require a fundamental rethinking of modernisation, and development, and interrogation of scientific knowledge and its role in development, and in the case of women, a clear recognition of the patriarchal nature of much of western knowledge...Emancipatory development will only occur when development theorists and practitioners adopt a more inclusive approach to knowledge/expertise, a readiness and ability to 'hear' different voices/experiences, and the humility to recognise that established discourses and practices of development have often done more harm than good (Parpart, 2001: 240).

Fields of analysis often develop a convention for introducing their object. Such tropes come to seem too obvious and straightforward to question...the visual imagery of an opening paragraph can establish the entire relationship between the textual analysis and its object. Such relationships are never simple. Objects of analysis do not occur as natural phenomena, but are partly constructed by the discourse that describes them. The more natural the object appears, the less obvious the discursive construction will be (Mitchell, 1995: 130).

Official discourses – from the New World Order of Global Modelling to the 'technically necessary' conditionality of structural adjustment agreements – appear more and more as an expert culture, divorced from the practical moral concerns of daily life and major disputes in particular places. The hierarchy of this discourse ensures that mastery of technical metaphor paradoxically rules a debate that increasingly evokes populist images of participation and democracy for its legitimacy (Porter, 1995: 63).



Introduction

It is perhaps a banality to mention that as we enter a new century the mysteries of 'development', in both the political and economic senses of the concept, remain embedded in a complex web of language and social practice which seems to become denser by the day. What development means, how it takes place, who is involved, the possible angles and permutations to 'getting it done' become more intricate and wordy with each passing day. While the comfortable hierarchy of development expertise has led to a prioritisation of 'scientific' interpretations of development problems and crises, there is a burgeoning critical literature on what is wrong with mainstream approaches, both in academic and policy terms, and suggestions of alternative, emancipatory ways of thinking about developmental issues. Questions relating to understanding citizenship and participation are central to these attempts at reframing the development discourse, but unravelling the main themes and emphases of the discourse at the academic and policy level has tended to be a primary focus, with a nod to the need for much deeper conceptual and analytical reframing.

There is also an important sense in which critical understandings of citizenship and participation in developing contexts still have a great deal of analytical ground to cover, and that is with regard to the links between local and global dynamics of power and knowledge and the ways in which these are only partially covered by development discourses. Linkages to global security discourses remain poorly articulated and this has led to inadequately conceptualised notions of risk and insecurity. Either we have the landscape portrait, or we have minute scenic detail. Extremely rarely, if ever, do we have both.

This paper attempts, in a very preliminary way, to begin to discuss concepts central to the IDS DRC project on citizenship, science and risk by bringing together the different yet conceptually related literatures pertaining to security and development in the international relations context, with a view to examining discourses on the environment, especially as these pertain to power relations between global, national and local levels of governance.

My aim is not to provide an exhaustive overview of the two literatures on security and development, but to be rather more mod-



est and focus simply on how the literature on development and the literature on security (both alternative and mainstream) are framed with relation to understandings of risk and environmental ‘problems’ or ‘crises’ in the South, more particularly, in southern Africa. Put another way, how is ‘risk’ understood in international relations (IR), particularly with regard to the ways in which development approaches are assimilated into ‘new’ security literature?

As will be discussed, it is clear that in addition to disciplinary boundaries, issues of development and environmental risk in the South take place against a specific policy discourse backdrop, where, on one hand, participation is emphasised (i.e. the ever present refrain for the need for ‘democratic and representative participation in development discourses’), while, on the other hand, the scientific and technological knowledge frame within which most of the development programmes and projects pertaining to the environment find themselves privilege the role of the ‘expert’. It is this connection that brings the discourses on security, development and environmental risk together, albeit in ways that are not at first clear-cut. The work of Ulrich Beck, which forms part of the foundation for this project’s focus on citizenship, science and risk, is useful because it has opened the way for multi-disciplinary debate around the roles of ‘experts’ and ‘science’ in legitimating environmental risk at the expense of local participation and knowledge. How this relates to experiences of the South with regard to development and security (broadly conceptualised) becomes especially interesting when linked to critiques of Beck’s work, most notably by Brian Wynne. To what extent does this disjuncture share resonances with discourses in the South?

Participation, conceptually and practically, has become a vexed issue, and attempts at analysing participation run several risks depending on which disciplinary frame predominates. In IR literature ‘participation as panacea’ predominates, although this is rarely if ever connected to social relations and practices. In development literature there are (to caricature) two main tendencies, that is, to either overemphasise the relative benefits of participation, or to go the other way and stress how partisan and self-interested ‘democratic’ participation usually is. What is missing is a careful linkage of the multiple social relations which serve to support certain issues and interests rather than others, as well as a more globally linked appraisal of the “everyday sites of social resist-



ance” (Lefebvre, 1991) which occur in both the developed, and to a less visible extent, the developing world.

Over the short- to medium-term, the relationship between citizenship, science, participation and risk will be contextualised within the broader frame of southern African security and development discourses, with a view to examining, in particular, the area of water security in the region. As will be briefly discussed below, water is seen as a ‘national security and development problem’ in southern Africa, in spite of a plethora of regional community based approaches being promulgated by research and government institutions.

Development, security and the environment

Currently, critical discourses on environmental security tend to emphasise the necessity of moving away from the traditional focus on state level interactions, towards a more nuanced analysis which tries to take into account relations between the state and other institutions, as well as informal organisational arrangements (Eckersley, 1995; Keeley & Scoones, 1999, 2000; Derman, 2000; Mehta & Leach *et al*, 1999: 10, Dalby, 1998; Parpart, 2001). Such an analytical range challenges disciplinary boundaries very directly and with due necessity, since the global dimensions of environmental risk remain poorly articulated within both development and international relations literature. For example, it has been mentioned with rather monotonous regularity that the IR ‘discipline’ is still too state centred and analytically parochial (Thompson, 2000a). From within the IR discipline the need for greater reflection on research done in sociological, anthropological, geographical and environmental spheres has been articulated by critical approaches for more than a decade (Linklater, 1992; Booth, 1995). Particularly since the end of the Cold War, attempts have been made to reconcile ‘high’ and ‘low’ politics, due to the tendency most realist or neo-realist IR theorists have had of concerning themselves overly with military and strategic issues (high politics) when referring to state security, leaving the arena of ‘low’ politics to economists and development theorists. The security ‘black box’ is one which has a specific socio-spatial characteristic in traditional (realist) IR analysis: known as the billiard ball model of interstate political interaction, state to state interaction is seen to bear the ever present risk of interstate warfare. Relational



and structural power, distributed variously to states depending on size and geographical location, can enhance state security, as can alliances between differentially 'power endowed' states. Minimising the risk of war has been the preserve of the realist 'strategic studies' expert, skilled in the art of conflict and conflict avoidance. Risk, in this frame, is something the state is responsible for minimising, using the political tools at its disposal, including, somewhat paradoxically, the legitimate recourse to violence, or at least the threat thereof.

As the Porter quote at the beginning of this paper highlights, the development discourse as an area of 'low politics' is maintained by a different, yet interwoven web of power: the science of development economics as it is popularised by states and their attendant development 'experts'. Both 'high' and 'low' politics tend to reinforce mainstream policy emphases on the role of rational decision-making. Here the focus tends to be one the need for further advancements in science and technology to enhance both security and development, and a corresponding prioritisation of the role of state actors and international non-governmental organisations (INGOs), usually at the expense of emphasising local and regional community interests, needs and knowledge. Thus while the need for participatory democracy is perhaps the most vaunted policy prescription at state and international organisational level, the realm of both security and 'development' remain dominated by the power interests of dominant social forces at the level of the state and dominant international organisations (Cox, 1987, 1991). Nonetheless, "enhancing environmental security through 'good governance' and 'sustainable development practices'" is a clarion call of most international donors.

It is with regard to the above that the work of Ulrich Beck (1992, 1996) on risk and risk society is of some interest to examining issues of development, security and the environment in the South. As will be discussed in detail below, Beck's analysis of environmental risk takes the notion of risk back to *within* the modern industrialised state, where 'risks' taken by the state *itself*, or under its auspices, have exceeded 'insurability'. Importantly, instead of the realist 'state as protector' imagery, the state emerges as a fundamental part of creating insecurity. Equally importantly, the state in which 'risk society' emerges is an industrialised state. Thus 'risk' emerges as an intra-state, industrialised phenomenon, yet with definite global consequences with regard to what are perceived to be tolerable or



intolerable risks of industrialisation. The continuum between artificially constructed conceptual dichotomies (such as core/periphery; developed/underdeveloped – or undeveloped – and stability/threat), may perhaps, through Beck's interpretation of risk and environmental insecurity, be understood more comprehensively, as well the connection between states and societal insecurity. The long held claim of feminists, such as Peterson (1992), Tickner (1992) and Peterson & Runyan (1999) that the state 'as protector' is a masculinised, militarised notion that undermines societal security in very specifically gendered and racist ways, is also perhaps somewhat strengthened by Beck's notion of risk society, which becomes reflexive due to the lack of state 'protection'.

It is important at this point to re-emphasise that given the distinction between the realms of the political (and classical notions of security) and the economic (and notions of development), there is a parallel conceptual polarisation of understandings of risk, uncertainty, threats and crises. 'Risk' in mainstream IR theory, as mentioned earlier, would usually refer to political or military issues, and would be characterised as originating primarily outside state borders. Socio-economic risk, on the other hand, has tended to touch on the need for 'control' and 'order' in the international system, where the major risks and threats to the global economy were, until the beginning of the 1990s, the economic policies of communist states, and at present, of the 'developing' states of Africa and South East Asia (lately the former USSR and parts of Eastern Europe are also included in this category). Environmental risk is a relative newcomer to the international relations agenda, and one that, in spite of the high degree of publicity after the Rio Conference of 1992, is still considered to be a relatively specialised area of IR research, certainly one in which the notion of 'environmental risks' relative to the risks of international warfare is seen to be of far less immediate analytical and policy importance. The environment, and environmental security, currently filter into mainstream discourses on issues of global warming and ozone depletion, but equally visible is the plethora of 'expertise' on sustainable development and the 'threats' posed by the 'poor' development strategies of developing states. Donor funding for development projects thus usually comes with environmentally 'sustainable' caveats, whether or not these are contextually feasible (Crush, 1995).



It would seem clear that understanding global environmental risk outside of the framework of development and security discourses is nearly impossible. Yet as the very brief discussion above highlights, the discourses tend to remain analytically discreet. Even more problematically, policy-makers in the South tend to mimic the 'security' and development concerns of the North, as is discussed below. The extent to which industrialisation poses environmental threats is consequently transformed into a policy issue area in which other 'developmental questions' can overshadow the degree to which the state is complicit in over-extending the safety limits of development processes. The degree to which 'under-' or 'undeveloped' communities pose a safety risk to development processes (as well as their need to be 'included') allows democratic-speak to dilute the public policy arena on the environment. Security and development frequently become catchall concepts (with little explication as to specific meaning) to justify certain public policy practices and INGO interventions. Risk, then, both as a perception and a reality, is open to interpretation and can be used as a form of policy justification. This is quite clear if one examines the southern African policy discourse on water, security, development and the environment, which is discussed in the latter half of this paper with regard to case studies being conducted in southern Africa.

Security in International Relations: New understandings?

Since the 1980s, a vertical inclusion has occurred in IR of issues such as the environment, household socio-economic security (relating to sustainable livelihood indicators such as availability and access to food, water, health services, as well as income opportunities) and other previously 'developmental' areas. Two streams of broader security analysis are visible. The first, New Security, still prioritises the role of the state and examines add-on issue areas vertically, even while the notion of 'human emancipation' is also included as an ideological epithet. The second, Critical Security, is more eclectic theoretically, and focuses on bottom up global-local socio-spatial conceptualisations of human security, including a strong emphasis on disaggregating 'insecurity' in accordance with racial, class, gender and socio-spatial (urban/rural) patterns of differentia-



tion (Thompson & Leysens, 2000).

Strategic security purists would still argue that the military/political security of states is paramount, and that in the provision of protection from those 'outside' the state, the primary role of the state as security provider is met. Critical approaches from a range of theoretical perspectives continue to challenge this perspective, although it remains stubbornly resistant to change at the level of state policy. This tends to reinforce problems of levels of analysis compartmentalisation when discussing security in relation to any particular issue area.

Development as a concept remains analytically amorphous in both academic and policy literature on international security. Generally speaking, development only enters into debates within IR to the degree that it intersects with dominant understandings of the relationships between states, as well as the dominant patterns of norms, rules and decision-making procedures (regimes, which are approximately commensurate to entrenched patterns of behaviour that may have formal or informal institutional underpinnings). Development discourses remain the academic preserve of economists and development economists, and the socio-spatial terrain in which development takes place is circumscribed by the boundaries of the nation-state (Crush, 1995; Mehta & Leach, *et al*, 1999; Thompson, 1996, 2000a, 2000b).

Thus while academic notions of security are ostensibly changing, it appears that the dynamics of policy making remain very similar. The model of 'international security' is still one which pivots on the nation-state and national security, although 'new security' concerns are absorbed into military security policies in both the North and South. For example, with reference to 'changing notions of security', Jackie Selebi, Director-General of South African Foreign Affairs, quotes the *White Paper on South African Participation in Peace Missions*:

...regions, governments and communities have begun to challenge traditional concepts of security and to reconfigure the strategies required to deal with previously ignored sources of insecurity and instability. This process has typically involved the broadening of traditional concepts of security – hitherto limited largely to military dimensions – to include political, economic, social, cultural and personal security (Department of Foreign Affairs, 1999, cited in Selebi, 1999: 11).

Nonetheless, for all the above internationally derived policy po-



litical correctness, 'security' remains filtered through the central prism of sovereign political stability and national 'development' and the notion of environmental risk remains orientated within this framework. As Selebi makes clear:

Emphasising only the military dimensions of conflicts may result in the imperative to rush armies into every sub regional conflict. The political, social, cultural and environmental considerations of peacekeeping and peacemaking should be emphasised (Selebi, 1999: 11).

This point will be taken further below, specifically at the level of policy discourses on security in southern Africa, where the inclusion of environmental security will be shown to be little more than window dressing in most cases, as the dominant notion of security as pivoting on military policy remains well established in mainstream academic security research. Security and development as areas of research remain poorly integrated, and where the two do interconnect in mainstream discourse it tends to be where 'environmental risks' could lead to 'crises' which may cause conflict (i.e. the militarisation of socio-economic security and natural resources, as the discussion of the current water and conflict issue in southern Africa highlights). There is also little sign of more than a superficial engagement with the work of other research areas when it comes to understanding how international dynamics link up to local socio-economic realities.

Notions of 'risk' and 'security' in southern Africa are, in the above sense, analytically 'bounded' in terms of the self-same knowledge and socio-spatial delimitations which constrain IR and development analysis: that is, the very socio-spatial 'maps' by which areas of analysis are circumscribed, as mentioned by Mitchell above. Levels of analysis schemas become academic straight-jackets and 'expertise' or knowledge at one level is held to be sufficient for the denial of understanding about broader international, or *vice versa*, more local grassroots dynamics. Mehta & Leach *et al* (1999: 16), in their research on environment, risk and uncertainty, refer to the "messy middle" between formal and informal institutions, "...institutional arrangements may be highly contested and beset by ambiguity and open to interpretations". This messiness and ambiguity can be replicated at different levels, from the local to the global, and indeed,



trying to understand the ways in which power and interests are mediated at the different levels is a formidable task in any issue area. Referring to Cleaver's term, "institutional bricolage", Mehta & Leach *et al* (1999: 35) continue:

...clearly more research is required to understand the nature of this 'institutional chaos' or 'messiness' which is...not really messy or chaotic, but illustrates the complex ways in which practices, knowledge systems and priorities unfold.

Clearly, the 'messy middle' and specific global-local case study work are required to understand 'risk' and the environment in a more globally comprehensive way. In a sense mirroring the blind spots that occur in detailed locally based anthropological or sociological analysis (which tends to under-analyse the importance of global webs of power), IR literature remains poorly linked to local dynamics and realities. It is for this reason, among others, that questions of 'security' remain narrowly framed.

Risk, risk society, and North vs South

While the mainstream conceptualisation of risk in both development and security literature is quite narrow, efforts have been made in the IR discipline to provide more nuanced understandings. Critical security approaches, for example, would refer to 'risk' in more localised, gender, culture and racially differentiated socio-economic terms. Nonetheless, in mainstream international relations academic discourses, the actual role and relative power which societies manifest with respect to calculations of, or reflexivity towards, perceived environmental risk, is usually not theorised or analysed much at all. In a similar vein, mainstream development literature perceives risk in economic failure terms, and in terms of 'poverty indicators', thus largely removing power relations and community dynamics from the essential thrust of the development storyline. Alternative approaches, using a variety of theoretical and analytical methods, would tend to emphasise local participation, knowledge and interests more, but the notion of risk remains connected to the question of collective socio-economic needs and wants, the relative lack thereof in specific contexts, and the insecurities which ensue (leading to socio-



economic and environmental risk, which could be nationally or community based). Even in this frame the 'messy middle' is, locally nationally and globally, still quite poorly analysed, and, depending on the analytical approach, there is often a rather uncritical acceptance of the 'goodness' of local participation, regardless of the motivation of policy-makers driving such processes, or indeed of outcomes. 'Participation as a panacea' tends to predominate in IR analyses where there is often insufficient time or writing space to analyse local participation dynamics and problems.

As already mentioned, Ulrich Beck's work broadens the notion of 'threat' away from exterior 'aggressors' to interior actors and situations, which include, to a degree, the domain of civil society in both aggregated and disaggregated senses. Furthermore, Beck's work on the environment focuses on the northern context of industrialised societies that have extended themselves beyond the limits of 'insurability' with regard to environmental damage due to the advances of technology. Thus implicitly, if not explicitly, Beck's notion of risk challenges notions of risk in IR that see it as something that goes on beyond the boundaries of the nation-state. In addition, at the level of 'low politics', risks are not necessarily higher in the South than they are in the North, which is once again also contrary to mainstream IR thinking. According to Beck, the outcomes of scientific innovations in the North are also unsure, even while politicians reassure their societies that all is safe and well. As Beck (1996: 31) puts it:

The entry into risk society occurs at the moment when the hazards which are now decided and consequently produced by society undermine and/or cancel the established safety systems of the provident state's risk calculations. In contrast to early industrial risks, nuclear, chemical, ecological and genetic engineering risks (a) can be limited in terms of neither time nor place (b) are not accountable according to the established laws of causality, blame and liability, and (c) cannot be compensated or insured against. Or by reference to a single example: the injured of Chernobyl are not even all born yet (emphasis in original).

Beck (1996: 32) adds that, as a result, societies in the North have become reflexive, that is:



In the phase of risk society, recognition of the incalculability of the hazards produced by technical-industrial development compels self-reflection on the foundations of the social context and a review of prevailing conventions and 'principles' of rationality. In the self-conception of the risk society, society becomes reflexive (in the narrow sense of the word) – that is, becomes an issue and a problem in itself.

This reflexivity, Beck argues, can lead to societies reflecting on the rationality and instrumentality of 'scientific' calculations of immeasurable technological innovation which may lead to, or lead back to, reflections on 'modern' understandings of "whatever cannot be calculated, answered for, or easily comprehended". The unquestioned faith in the rationality of science is replaced with scepticism, in a similar way to how belief in magic and witchcraft withered initially with the ascendance of, and related belief in, the 'Truth' claims of modern science.

It is worth quoting at some length how Beck (1996: 34) envisages this essentially northern centred conceptualisation taking hold as a more global phenomenon:

It is not the looking, or looking away, which produces and accelerates the dynamic of world risk society. This 'mechanism' has its origin in the momentum of industry, which, alarmed at the 'side-effects' of hazards rescinds its own principles (of calculation)... What previously appeared as functional and rational now becomes and appears to be a threat to life, and therefore produces and legitimates dysfunctionality and irrationality. If in addition professional alternatives of self-control and self-legitimation arise and are propagated in contexts of activity, the institutions themselves open themselves to the political right down to their foundations, and become malleable, dependent on subjects and coalitions... Reflexive modernisation contains both elements: the reflex-like threat to industrial society's own foundations through a successful further modernisation which is blind to dangers, and the growth of awareness, the reflection on this situation... The difference between industrial and risk society is first of all a difference of knowledge – that is, of self-reflection on the dangers of developed industrial modernity.

It is important to note that Beck's society becomes reflexive automatically – as he puts it, "unreflectingly... on the basis of industrial



modernity's 'blindness to apocalypse'" (1996: 34), referring to Gunther Anders conceptualisation. While this reflexiveness is then in essence a knee jerk reaction, it leads to, or can lead to, reflection, which in turn may lead to new forms of action, political contestation and eventually, changed political processes and practices. It is plain to see, however, that the society to which Beck refers is at least a relatively democratic one, which has institutional channels of communication and the education and information at hand to have such visible (policy influencing) knee jerk reactions in the first place. In this sense 'risk society' in the sense that the societies in question are aware of what they are being exposed to environmentally, remains socio-spatially specific.

In contrast, societal knee jerk reactions in 'developing' states, even where visible, often do not eventually lead to 'changed political processes and practices' or at least not usually in a positive way – as environmental protests in South East Asia attest, for example – and in this sense Beck's conceptualisation of 'risk society' is not easily transferable to state-society dynamics relating to the introduction of technologies which may increase societal insecurity due to environmental impact in 'developing' state contexts. However, Beck's notion does re-direct insecurity to *within* the industrialised nation-state, that is, not as something external to the developed world, nor, in fact, external to state structures in the North. Very centrally, the limits of security provision on the part of the Western nation-state appears to be an integral part of the 'uninsurable risk' to which Beck's reflexive society is reacting.

Wynne (1996) also criticises the notion of 'reflexive society' by emphasising that industrial society was never that trusting of technology and the opinions of experts and their calculations of risk in the previous so-called modern phase. The grassroots or lay public dimension is excluded. Wynne, using a social constructivist approach, argues that it is Beck's use of a realist epistemology which:

...gives an unduly one dimensional understanding of the underlying dynamics of the nature of 'risk' in the risk society... There is never the slightest hint that there could, in the public realm, be the basis of alternative forms of public knowledge, and order, from those given in existing forms of instrumental expertise (Wynne, 1996: 46).



Beck's sociological realism, drawing on Giddens, refers to rational choice and emphasises publics exercising choice between recognised alternative explanations. Previous 'simple, modern' societies, in this frame, trusted the experts. Reflexive modern societies do not. Wynne's critique of the ways in which lay or grassroots communities have always been sceptical of expert opinion bears thinking through, because it is clear that the type of society to which Beck refers as 'reflexive' in regard to their knowledge of environmental risk, and their ability to react to bring about change, do not exist, as a general rule, in the context of many developing states. Even a state like South Africa, which displays significant 'modern' dimensions at the level of political institutionalisation and democratic procedures, as well as boasting a fairly respectable industrial base, does not, even at the level of superficial observation, have the necessary integration of rural communities in modern economic practices to merit Beck's categorisation of reflexive (Thompson, 2000a, 2000b, 2001). However, the degree of distrust in 'development expertise' is arguably significant, even among these communities, as analysts such as Ferguson (1990) and Crush (1995) have pointed out. This distrust of scientific knowledge has a great deal to do with the ways in which science as legitimate knowledge undermines the knowledge, customs and practices of local communities.

It could also be added that in one important sense, risk-awareness is shared between developed and developing states, that is, at the level of the impact of industrialisation, where this takes place in the South. The phenomenon of urbanisation as result of industrial development does usually lead to the reproduction of social forces where those who urbanise to find skilled or semi-skilled labour will be exposed to similar risks (if perhaps with a time-lag effect) to their industrialised counterparts. Similarly, health issues related to the twin processes of urbanisation and industrialisation (pollution and water security, for example) may lead to similarities of risk exposure with perhaps initial signs of similar public policies to reduce such risks. Whether these policies are donor or societally motivated would require specific attention from issue area to issue area.

The degree to which community based distrust in 'scientific-developmental expertise' is inspired by modern notions of rational choice of course bears interrogation, but it would seem that in gen-



eral a shared issue in both developed and developing contexts is the degree to which lay and expert knowledge speak past each other, both in terms of different frames of reference (such as the scientific versus the practice-derived and contextual), and the formal, guideline and rule-orientated perspective vs the flexible and informal, and so on. As Wynne (1996: 61) puts it:

The predominant perspectives on the risk society and the transformations of modernity... implicitly treat the non-expert world as epistemically vacuous.

And further:

...a crucial feature of the flexible and informal farming knowledge is that it cannot be codified (1996: 71).

Wynne takes pains to emphasise that lay knowledge should not be overly romanticised and seen as a binary opposite to expert knowledge. The point is, however, that non-expert customs and practices tend to disappear from sight in the analysis of modernisation and development practices, leading to, in Wynne's view, the equally vacuous, but nonetheless dominant, scientific rationality of Beck's risk society.

In relation to the above, it could perhaps be generalised that it appears as if lay knowledge *regardless* of socio-spatial context is undermined by the discipline of science and that this in turn leads to a distrust of 'blueprint scientific solutions' which do not take into account the local contexts and knowledges, where scientific and policy discourses on the environment meet with particular socio-economic dynamics. What remains interesting, in terms of contextually specific notions of risk, is that Beck's analysis underlines the potential risk related to expert science, as well as the ways in which this manifests itself within the context of the western state system. This establishes a clearer link between the developed state and critical analysis on the environment in the North, and the development critique of scientific expertise as it translates into sustainable development projects and programmes in the South.

However, arguably the absorption of lay knowledge in the South is even more unlikely, precisely because of the dominance of external expertise and their particular problematisation of poor (especially rural) communities and their negative impact on development (not to mention the environment).



In relation to the above, the role of the 'expert' in development remains the focus of debate and critique, as the quote by Parpart at the beginning of this paper also highlights. It would seem that, in Beck's analysis, the expert, together with the state, forms part of the risk to which society responds. However, as Ferguson, Crush, Watts, Porter and others have discussed, notions of development are socio-spatially constructed on notions of crisis and imminent disaster, where rural communities are often seen as part of the developmental 'problem'. As Crush *et al* point out (1995), in the scientific developmental frame, lay or grassroots knowledge can only figure in a primarily negative way, as part of the cause of the crisis, if not the cause. Cultural patterns and customs are similarly reified into a frame that requires expert knowledge to fix.

For example as Williams (1995: 164) mentions with relation to World Bank 'solutions' for Africa:

Successive World Bank reports...reduce African agricultural practices to two forms – slash and burn and nomadic live-stock raising. Once they were appropriate but, with rapid population growth, no more. The solution is with new technologies...There is no need to draw on the local knowledge and experience of farmers; enlightenment comes from above. Development also now has to be 'sustainable'. The World Bank...argues that subsidies for farm inputs needed in introducing intensive sustainable agricultural techniques may be necessary.

Williams (1995: 173) continues in the same vein:

Central to the World Bank's account of the 'crisis' in African agriculture is the diagnosis that a rising ratio of population to land brings about environmental degradation, a decline in per capita food production and a rising dependence on food imports. Statistical projections represent African countries as needing US and EEC (EU) grains to feed their people.

These negative patterns, and the 'solutions' and concomitant strategies as devised by development economist experts, are located within the nation-state context, which does not integrate internal and international factors in any coherent way. As Mitchell (1995: 147) puts it:

Portrayed as a free standing entity, rather than a particular position within a larger arrangement of transnational eco-



...economic and political forces, an individual nation-state appears to be a functional unit – something akin to a car, say, or a television set – that can be compared with and used as a model for improving other such units. This supposed comparability is emphasised by the annual volumes of statistics produced by the World Bank and other international development agencies. Economic features of one state appear to be neatly transferable to other states, ignoring their different position in larger economic and historical frameworks.

The socio-spatial modelling and mapping helps to reinforce subject-object, developed-developing dichotomies. As Watts (1995: 61) also emphasises:

...development as one face of modernity has always contained within it what Marshall Berman calls 'the tragedy of underdevelopment'...The modern (and developed) require the non-modern (and undeveloped).

Of course within the bounded entity of the state, traditional customs and practices, overlain with the 'consequences' of underdevelopment (such as overpopulation), enhance the passive and inherently negative interpretation of lay or grassroots knowledge, interests and practices (see also Cocks, 1989).

In contrast to the above, in Beck's conceptualisation of a reflexive, modern (or post-modern?) society, individual and community understandings of risk extend to societal understandings of their role in perpetuating the cycle of increasingly uninsurable environmental overstretch due to the hollow assurances of 'experts' and policy-makers, whose denial of dangers is confounded by environmental crises. This characterisation provides a potentially more positive and dynamic role to lay and grassroots publics and their interpretative skills and knowledge.

This contrasts conceptually with the contested, yet still policy predominant notion of rural communities as essentially recipients, dependents, vulnerable groups, and so on, whose role is to receive and absorb expertise rather than to be reflexive (or reflective). Society, in the mainstream development discourse context, is therefore also both part of the problem and solution, but in classically modern, binary and pejorative ways.

However, in Beck's risk society:



The political arises out of the growing awareness of the hazards dependent on decision-making, because at first property relations, social inequalities and the principles of the functioning of industrial society as a whole remain untouched by it. In this sense the theory of risk society is a political theory of knowledge of modernity becoming self-critical (1996: 34, emphasis in original).

The point which Beck underlines above is that through increased reflexivity societies may become more self-critical and thus open the way for transformation towards “a conflictual and self-critical risk society” (Beck, 1996: 35). Still, it would seem, at least at this historical juncture, that the type of societal dynamic to which Beck refers as reflexive is not really applicable to developing societies, not because communities necessarily lack alternative forms of knowledge, nor even that they are unaware of the risks which governments may be exposing them to through technological innovation, or more usually through accepting the detritus of unintended material consequences of ‘modernisation’ in the North by way of toxic waste that is unacceptable to northern societies. The reason the concept of risk society appears at least initially to have little explanatory reach is because the relative power, and therefore agency, of societies in developing contexts is usually much weaker due to a lack of institutional and informal mechanisms through which to exercise reflexivity (Cox, 1987, Strange, 1987, 1991, Thompson, 1996, 2000a, 2000b). Moreover, the power of the international development expert, in conjunction with the national government-based policy-maker, detracts very visibly from the ability of grassroots movements to be conflictual and self-critical in dynamic and visible ways.

Nonetheless, as Beck’s analysis also highlights, it is clear that the risks that industrialised states pose to their societies do not stop at state borders. Global environmental risk, which connects the developed to the developing in the global state system, begins to break down previously held analytical dichotomies. It is in this sense that Beck’s work is, to my mind, thought provoking. In relation to this last point, Mehta & Leach *et al* (1999: 9) state that:

Risk society... becomes relevant for rural livelihoods given that local-level uncertainties and perceptions of risk are increasingly interlocked with uncertainty on a global scale, driven by rapid environmental and technological change. Former



institutional frameworks for environmental management, and their assumed relationships between the state, scientific expertise and publics, are, it is implied, inadequate to comprehend or govern these interlocked processes. Thus major shifts in thinking about forms of governance are required.

Mehta & Leach *et al* (1999: 9) go on to point out that in development literature, environmental resource management is currently characterised by two contradictory processes: globalisation on one hand, and the call for more community based natural resource management (CBNRM), on the other. The 'push-pull' between the politically correct language of community inclusion, and the 'need' for 'globally sophisticated expertise', thus remains a central tension in current development policy debates. Furthermore, as Parpart (2001) points out, there is a strong tendency among the implementers of community based development policies to reify notions of community in such a way that community involvement is often little more than an endorsement strategy for predetermined policies.

It should be added that the above points tend to downplay the complexity of actor networks, coalitions and the agency that local communities in the South do exercise in relation to different environmental and other issues, as Mehta & Leach *et al* (1999), Holmes & Scoones (2000), and Keeley & Scoones (1999, 2000) point out. Nonetheless, it would appear that the agency of local communities, in southern Africa at least, is severely limited by ineffective local governments, poor integration and articulation of national and more local development strategies, and the ever-present conditionalities of international aid and donor agencies (Parpart, 2001). To try to probe the relation between risk, security, development and the environment a bit further, I wish to develop notions of risk framed in the South in relation to a specific environmental issue area – water resource management – to try to illustrate what risks are perceived as dominant, and by whom, as well as who reacts to perceived risks and in what ways. For this purpose I will examine the question by analysing the policy and academic frames of reference in the context of mainstream and alternative discourses on water, security and development, and try to link this up with more Northern based conceptions of risk and uncertainty, located within the conceptual framework outlined above.



Risk, uncertainty and water resource management

As the case of shared water resource management in the southern African region seems to attest – at least in terms of preliminary studies – the degree to which there is ‘institutional take-up’ of local concerns and interests is quite limited, and mostly partial and fragmented with regard to policy implementation, especially on the more ‘scientific’ aspects of water management, such as dam building and water offtake schemes.

For example, the Pungwe river basin offtake scheme, undertaken on behalf of the Zimbabwean government between 1996 and 2000, to supply water to the Zimbabwean city of Mutare, was planned in conjunction with Mozambique (and sponsored and subcontracted by SIDA) and has been executed with due ecological consideration. The final result is a quite spectacularly ecologically integrated installation that does not in any way detract from the pristine surroundings. However, the scheme may yet have unforeseeable consequences for users both upstream and downstream in terms of total amount of water available to small- and large-scale farmers, as well as to the city of Beira, and also in terms of salt intrusion at the river mouth in Beira. Factors like a new free export processing zone near Beira, and more intensive agricultural farming to be undertaken on the Mozambican side of the border, may not be adequately accounted for in the feasibility reports (interviews, ARA Centro, Beira, September 2000). Furthermore, while all the right ‘moves’ were made in terms of environmental impact and feasibility studies, it is clear that consulting with local communities was not seen as essential to the feasibility of the scheme. ‘Participation’ has been ensured in a post-hoc fashion through the establishment of the Pungwe sub-catchment council (which only became functional in January 2001). On the Mozambican side, participation is purportedly ensured by ARA-Centro, a regional body that forms part of the Mozambican water department (Van der Zaag, 2000; interviews, Mutare and Beira, 2000).

The way in which local ‘participation’ has evolved may well be as a result of discrepancies between rights discourses, on one hand (water as a right, the right to participate in water management), and neo-liberal economic discourses, on the other (water as an eco-



conomic good, necessary for economic growth) (Tapela 2001: 4). However, the evolution of these social relations shows the extent to which participation in environmental management issues does not necessarily occur as a result of the efforts of the local inhabitants themselves, but rather of either government or INGOs. Where local interests are represented, i.e. in the Pungwe sub-catchment council, or the Mutare ratepayers association (with regard to urban water supply and use), it is also clear that participation as a form of legitimation for policy processes is a fraught with power allegiances and alliances which overlap and intertwine the public realm to that of the local citizenry (Mukheli *et al*, 2001; Tapela, 2001; Dube & Swatuk, 2001). These allegiances and alliances have everything to do with water as an economic good, even while framed simultaneously within the discourse of water as a right. The necessity of water for development thus counterpoises the rights discourse in ways that allow for compromising the latter.

Furthermore, issues central to the offtake scheme, such as the need for extra water for the city of Mutare in the first place, seem to be argued on the basis of rather normative scientific 'facts'. Officials interviewed conveyed that the scheme was the "most efficient available" and that the all the necessary "scientific homework" had been done. However, a senior member of the local department of civil engineering in Mutare also indicated that the city now had "water to sell". In addition, he divulged that leaky pipes through the city allowed for annual water loss of up to 50%. The pipes have not been fixed even though they are quite obviously directly related to water shortages in the city. This example reinforces the critical security conclusion that the ends towards which 'scientific rationality of development' is put also thus seems more than casually related to normative national (state) and international policy interests.

This example also illustrates how local decision-making is filtered through a web of power dynamics, which include outside natural science experts whose knowledge may be used to ends they might otherwise not have condoned, for it is clear that the feasibility reports took into account the question of the amount of water offtake as central to their calculations. Since this is quite negligible, it would seem, in the absence of other political and future socio-economic development information, that the scheme should in principle not



be harmful, although it does not appear as if information about further development schemes and other 'water development' information, such as upgrading of the appalling water supply to Beira city, was figured into the report (see Magara & Tapfuma, 2000).

It appears that national policy-makers (supported by international donors) may use feasibility studies to justify decisions, whether or not there are additional aspects or issues that may impact on the 'facts' (see also Keeley & Scoones 1999, 2000b). Furthermore national issues may be prioritised over local, and indeed local government issues may also be prioritised over those of local communities. A further problem is the issue of community involvement where communities straddle national boundaries. Because institutional take-up tends to occur (if at all) within states, the dangers of transboundary communal issues not being addressed are high. The Pungwe may well offer important insights into this, as the effect of the offtake scheme are felt in drier years and communities upstream and downstream are affected. How these concerns are put forward and/or addressed remains to be seen, particularly in terms of currently constructed 'participatory' institutional mechanisms.

Lastly, and perhaps most importantly, the water offtake scheme has not improved the water security of the majority of Mutare's residents: the residents of Sakubva. Initially an area set aside for skilled black male labour during the apartheid years, Sakubva has grown phenomenally in size over the past two decades. Recent fieldwork has shown that the Pungwe scheme has made no difference to official water provision policies to this area. Most residents continue to live under appalling conditions of sanitation and access, despite the fortune spent on 'providing more water for the city of Mutare'. In this case the scientifically proven merit of the scheme for Mutare has to be seen against the backdrop of who benefits the most from the scheme and who does not, as well as whose security is enhanced. At this stage it seems obvious that the urban poor in both Beira and Mutare have little to gain in terms of their human security (measured in terms of basic sanitation, access to water etc.) over the medium-term. It has been shown in recent case study work in Sakubva that the scheme has made virtually no difference whatsoever to the quality of water supply services to the area, and wastage of water continues as previously. For example, taps run 24 hours a day, and leaks are seldom if ever attended to unless strikingly obvi-



ous. Disease as a result of poor sanitation continues (Mukheli *et al*, 2001; Tapela 2001; Dube & Swatuk, 2001). The risks faced by the residents of Sakubva, as in Beira, are intimately connected to public service delivery. The risks the scheme poses are thus most likely to be felt by poorer urban and rural producers up- and downstream and will presumably be mediated through 'participatory mechanisms' where the view of water as an economic good vies for precedence over water as a right.

Risk, the environment and conflict

The Pungwe catchment area and the water resources sharing scheme is interesting from another point of view, that is, in the light of the water wars hypothesis currently in vogue academically, which posits the danger of disputes over water rising due to increasing water scarcity in the southern African region (Turton *et al*, 2000a). This concept of the 'environment as the source of interstate risk' is simply a case of finding new wine for old bottles in the field of IR and strategic studies. The end of the Cold War having brought about a relative dearth of inter-state risks has, it seems, spanned an inordinate amount of interest in whether natural resources, particularly water, could be the cause of war. The concept of water wars has been brought into the IR discipline by Thomas Homer-Dixon. While Homer-Dixon's analysis encompasses other developing regions, his book *Ecoviolence* (co-edited with Jessica Blitt) focuses on five case studies: Chiapas, Gaza, South Africa, Pakistan and Rwanda. The chapter on South Africa shows a very strong leaning towards the 'population growth = scarce resources = conflict' hypothetical continuum, as the authors Homer-Dixon & Percival (1998: 139) make very clear in their conclusion:

If a successful transition (in South Africa) is to occur, national and local institutions must understand and break the links between environmental scarcity and conflict: they must redress the chronic and brutal structural scarcities impoverishing the black community; they must promote rapid, but sustainable, economic growth to absorb huge numbers of unemployed blacks in a still growing population; and they must preserve political channels for the peaceful expression of grievances.



As Swatuk & Vale (2000: 2) describe Homer-Dixon's successful 'marketing' of the environmental scarcity-conflict linkage:

Facilitating [the] rush towards resource capture is the work of Thomas Homer-Dixon and his small crew of acolytes operating out of their bunker at the Centre for Conflict Studies at the University of Toronto. 'Tad the doomsayer' as one Canadian magazine labelled him, has spent much of the last decade searching for the elusive link between environment and what he labels 'acute conflict' probability. ...Now Homer-Dixon has compiled his various research findings into a neat little book entitled Ecoviolence. Appropriately enough, there is a photograph of a waterfall set against a black background, the book's title dripping blood red beneath the white sparkling waters... To be fair, Tad says that the link is a tenuous one; that there may be more important factors – like debt and global economic downturn – in determining why states go to war... Unfortunately, no-one is listening to Tad's carefully worded caveats. In particular, intelligence communities, militaries and state ministries have latched onto the evocative image of the consequences of resource scarcity: a flood of ecological migrants heading your way.

The water scarcity and the imminent risk of conflict discourse is one that has been eagerly appropriated by certain researchers in southern Africa, and has led to a concomitant rise of interest in water resource management. For example the head of AWIRU – one of the new centres dedicated to more social science analysis of water and its potential role in raising the risks of regional 'conflict' – states that:

While water wars are unlikely to occur, social decay and political instability can well be expected to rise as water scarcity reaches debilitating proportions... 'Water Poverty' is a highly debilitating condition, where the absence of social capital will mean that the effects of water scarcity cannot be overcome. This condition will, in all probability, result in social instability, internal unrest and coups d'état (Turton, 2000a: 59).

It is clear that mainstream IR approaches tend to favour the view that water is a potential 'security threat'. The risk involved, therefore, is not so much related to the *environmental* consequences of poor water resource management policy, but to the *security* risk involved in not managing water properly. In this sense the analyti-



cal prioritisation is thus not at the level of community uses of water but at the level of state and inter-state water management practices. The 'risk' is 'dangerous' shortages of water, which may be overcome by 'rational government policy' which ensures 'Structurally Induced Relative Water Abundance' (or SIRWA). This approach is clearly based on neoliberal economic principles, which places a high degree of emphasis on the relationship between the state and national and international capital. Turton (2000a: 45) uses the concept of ingenuity (after Homer-Dixon) to describe how water shortages can be prevented by state-led policies that combine "financial resources, natural resources, institutional resources and intellectual resources all working together in some degree of harmony".

As I have mentioned elsewhere, the danger of the popularity of the above approach, besides its over-emphasis on state security rather than environmental risks, is that it tends to enforce state-centred analysis rather than regional community-local government-(I)NGO-national government-international-structure patterns flows of knowledge and power (Thompson, 2000a, 2000b). Because of the predominant focus on 'management and modelling', the technocratic approach to water as a natural resource tends to be over-emphasised while simultaneously under-emphasising the complex dynamics that occur in terms of the interplay of formal and informal institutions at a number of levels. The latter negative aspect of natural resource management analysis appears to be held in common by both mainstream academic and policy discourses. This is not, of course, to try to make the case that water scarcity is unlikely to lead to conflict, simply that focusing too narrowly on the conflict dimension tends to narrow the security focus back down to more conventional understandings, thus missing, for example, conflict avoidance strategies around water sharing and natural resource collaboration more generally. As Cleaver (1997), Mehta & Leach *et al* (1999), Moyo & Tevera (1999) and others have pointed out, conflict avoidance seems to be a very marked feature of water sharing in localised contexts. How to maintain and enhance conflict avoidance strategies might thus be a more constructive policy analysis point of departure. Instead, current dominant IR and development literature focus on projections and suggestions that *anticipate* conflict as an inherent feature of the water policy discourse.



It would seem that the conflict anticipation principle is one that is deeply embedded in mainstream security discourses, even while the concept of security is being ostensibly broadened. This is quite evident in the New Security academic approach that is unsurprisingly one that 'securocrats' in government find quite appealing. The strength of the new security approach for government policy is that the more dimensions of conflict become included, the wider the ambit of security 'problems' and 'dilemmas' can be stretched. For example, to refer once more to the paper written by (or on behalf of) the Director-General for Foreign Affairs, Jackie Selebi, the following is stated with regard to the new 'economic good' and resource based source of potential regional conflict:

There are also clear linkages between environmental security and the 'harder' aspects of state security, as illustrated by the issue of water scarcity. Following a major world-wide study on water resources, the UN published a report in 1996 entitled Water and population dynamics. The report predicts that water is likely to be the source of major conflicts in a number of water scarce regions of the world, including in Southern Africa around the Zambezi basin...It is not only the utilisation of water and fish that create conflict potential and contribute to poverty. All natural resources are potential sources of conflict (Selebi, 2000: 10).

The above statement makes the point on the linkage between security policy discourses and the environment very clearly, but is also illustrative of the ways in which academic and policy discourses are influenced by external agencies, particularly UN development agencies. Thus while the link between population densities and natural resource scarcities remains disputed – Timothy Mitchell quotes Susan George, stating “whenever you hear the word overpopulation you should reach, if not for your revolver, at least for your calculator”, (George, 1990: 18 in Mitchell, 1995: 131) – it is clear that the development 'problem' of too many people and not enough to go around is one which is reinforced by international policy experts and accepted relatively uncritically by policy-makers and the security establishment more generally. This tends to detract from the risks which governments themselves pose or condone by poorly thought through development strategies that place the broader fabric of regional society and the environment at risk. It also obscures



the extent to which global environmental risks affect socio-economic security across national boundaries, regions, continents and North-South divides in ways not captured by mainstream security and development discourses.

Concluding remarks concerning future research

It would seem that research on the dynamics of participation, risk and the environment in the southern African region should focus more closely on issues of community involvement, including very particularly issues of gender, control over natural resources, and the interrelationship between academic and policy discourses on natural resource management, to try to establish the power and knowledge dynamics surrounding participation and rights on the environment more clearly. While it appears that the genre of technocratic decision-making on 'natural resources' tends to establish 'participation of stakeholders' as a form of cooption and rubber stamping, there are likely to be more nuanced power dynamics at play between formal and informal institutions and actors at local, national, regional and international levels, as Cleaver (1997), Mehta & Leach *et al* (1999), Keeley & Scoones (2000), Holmes & Scoones (2000) and Derman (2000) point out. The question of control over environmental issues is also central to understanding the global-local nexus, as well as how discourses on the environment relate to those of security and development.

The ways in which science and the knowledge of experts intersects with national policies and international environmental and development discourses is arguably integral to understanding how citizenship, participation and environmental issue areas can better be understood. Threats, risks and uncertainties could thus be understood in the context of different actors priorities and contexts. As the discussion above already indicates in a very preliminary sort of way, it would appear that 'risk' and 'control' as defined by governments in the region tend to be influenced by current dominant discourses on the environment as the potential source of crisis either in terms of development (and especially economic growth) or security (particularly national security). Internal risks to societies, or regional risks caused by industrial pollutants and effluents, are far less conspicuous in regional government policy pronouncements. On the



other hand, environmental lobbying, and consciousness of environmental risk at the level of civil society more generally appears low (Moyo & Tevera, 1999). However, with the increasing attention to environmental issues taking place at both academic and policy levels, and particularly in terms of current critiques of mainstream environmental policies and discourses, there is perhaps more scope to try to analyse where future potential lies for altering the dynamics and discourses on participation, rights and the environment in ways which enhance human security in the region and elsewhere. Relatedly, perhaps further investigation of the ways in which notions of environmental 'risk' in the North articulate with 'development expertise' in the South may yield further contextually specific insights which may help to break down existing analytical dichotomies.

References

- Adams, W.M. 1995. Green development theory: Environmentalism and sustainable development, in J. Crush (ed), *The power of development*. London: Routledge.
- Ashton, P. 2000. Southern African water conflicts: Are they inevitable or preventable?, in H. Solomon & A. Turton (eds), *Water wars: Enduring myth or impending reality?* Africa Monograph Series, No. 2. Durban: ACCORD.
- Beck, U. 1992. *Risk society: Towards a new modernity*. London: Sage.
- Beck, U. 1996. Risk society and the provident state, in S. Lash, B. Szerszynski & B. Wynne (eds), *Risk, environment and modernity: Towards a new ecology*. London: Sage.
- Beck, U. Giddens, A. & Lash, S. 1994. *Reflexive modernisation: Politics tradition and aesthetics in the modern social order*. Cambridge: Polity Press.
- Booth, K. 1995. Dare not to know: International relations theory versus the future, in K. Booth & S. Smith (eds) *International relations theory today*. Oxford: Polity Press.
- Chenje, M. & Johnson, P. (eds), 1996. *Water in Southern Africa*. Maseru/Harare: SADC/IUCN/SARDC.
- Cleaver, F. 1997. *Gendered incentives and informal institutions: Women, men and the management of water*. Development and Project Planning Centre Discussion Paper series 2, No. 3. Bradford: University of Bradford.



- Cocks, J. 1987. *The oppositional imagination: Feminism, critique and political theory*. London: Routledge.
- Conca, K. 1998. Rethinking the ecology-sovereignty debate, in K. Conca, & G.D. Dabelko (eds), *Green planet blues: Environmental politics from Stockholm to Rio* Boulder: Westview. Second edition.
- Connelly, J. & Smith, G. 1999. *Politics and the environment: From theory to practice*. London: Routledge.
- Cox, R. 1987. *Production, power and world order*. New York: Columbia University Press.
- Cox, R. 1991. The global political economy and social choice, in D. Dracher & M. Gertler (eds), *The new era of global competition: State policy and market power*. Montreal: McGill-Queens University Press, reprinted in Cox, R. and Sinclair, T. (eds), 1996. *Approaches to world order*. London: Cambridge University Press.
- Crush, J. (ed). 1995. *The power of development*. London: Routledge.
- Dalby, S. 1998. Ecological metaphors of security: World politics in the biosphere. *Alternatives*, 23.
- Davies, M. & Niemann, M. 2000. 'Henri Lefebvre and global politics: Social spaces and everyday struggles', paper presented at the Annual Conference of the International Studies Association, Los Angeles, California, USA, March 14–18.
- Derman, B. 2000. Democratizing environmental use? Land and water in Southern Africa at the end of the century. *Land reform and agrarian change in Southern Africa*, PLAAS Occasional Paper Series, No. 13. Cape Town: Programme for Land and Agrarian Studies (PLAAS).
- Du Plessis, A. 2000. Charting the course of the water discourse through the fog of international relations theory, in H. Solomon & A. Turton (eds), *Water wars: Enduring myth or impending reality?* Africa Monograph Series, No. 2. Durban: ACCORD.
- Dube, D. & Swatuk, L. 2001. 'Stakeholder participation in the water management approach: A case study of the Save catchment, Zimbabwe', paper presented at the Second WARFSA/Waternet Symposium on Integrated Water Resources Management Theory, Practice, Cases, Cape Town, 30–31 October.
- Eckersley, R. 1990. *Environmentalism and political theory: Towards an ecocentric approach*. Berkeley: University of California.



- Escobar, A. 1995. Imagining a post-development era, in J. Crush (ed.), *The power of development*. London: Routledge.
- Ferguson, J. 1990. *The anti-politics machine : 'Development', depoliticisation and bureaucratic power in Lesotho*. Cambridge University Press: Cambridge.
- Fraser, N. and Nicholson, L.J. 1991. Social criticism without philosophy: An encounter between feminism and postmodernism, in L.J. Nicholson (ed), *Feminism/postmodernism*. London: Routledge.
- George, S. 1990. Conscience planétaire et trop nombreux pauvres, *Le Monde Diplomatique* 434: 18–19.
- Hajer, M. 1996. Ecological modernisation as cultural politics, in S. Lash, B. Szerszynski & B. Wynne (eds.) *Risk, environment and modernity: Towards a new ecology*. London: Sage.
- Holmes, T. & Scoones, I. 2000. *Participatory environmental policy processes: Experiences from North and South*. IDS Working Paper Series, No. 113. Sussex: IDS, University of Sussex.
- Homer-Dixon, T. & Blitt, J. (eds), 1998. *Ecoviolence: Links among population, environment and security*. Boston: Rowman and Littlefield.
- Johnson, S.H. 1999. *An ecofeminist critique of the International Economic Structure*, in M.K. Meyer & E. Prugl. (eds), *Gender politics in global governance*, Boulder: Rowman and Littlefield.
- Keeley, J. & Scoones, I. 2000. *Understanding environmental policy processes: A review*. IDS Working Paper Series, No. 89. Sussex: IDS, University of Sussex.
- Keeley, J. & Scoones, I. 2000. *Global science, global policy: Local to global policy processes for soils management in Africa*. IDS Working Paper Series, No. 115. Sussex: IDS, University of Sussex.
- Lash, S. Szerszynski, B. & Wynne, B. (eds) 1996. *Risk, environment and modernity: Towards a new ecology*. London: Sage.
- Lash, S. Szerszynski, B. & Wynne, B. 1996. Introduction: Ecology, realism and the social sciences, in S. Lash, B. Szerszynski & B. Wynne (eds.) *Risk, environment and modernity: Towards a new ecology*. London: Sage.
- Lefebvre, H. (1991). *Critique of everyday life*. London: Verso.
- Leysens A. & Thompson, L. 1995. The Asian example: What hope an African Tiger?, in G. Mills, A. Begg & A. Van Nieuwkerk, A.



- (eds), South Africa in the global economy. Johannesburg: SAIIA.
- Linklater, A. 1992. The question of the next stage in international relations theory: A critical theoretical point of view. *Millennium*, 2: 1.
- Magara, L. & Tapfuma, V. 2000. *Pungwe-Mutare Water Supply Project: Pungwe River hydrology impacts of water transfer*. Harare: Interconsult.
- Maguire, J. 1996. The tears inside the stone: Reflections on the ecology of fear, in S. Lash, B. Szerszynski & B. Wynne (eds), *Risk, environment and modernity: Towards a new ecology*. London: Sage.
- Marchand, M.H. & Parpart, J. (eds), 1995. *Feminism, postmodernism, development*. Routledge: London.
- Mehta, L. & Leach, M. et al. 1999. *Exploring understandings of institutions and uncertainty: New directions in natural resource management*. IDS Discussion Paper Series, No. 372. Sussex: IDS, University of Sussex.
- Meissner, R. 2000. Hydropolitical hotspots in Southern Africa: Will there be a water war? The case of the Kunene River, in H. Solomon & A. Turton (eds), *Water wars: Enduring myth or impending reality?* Africa Monograph Series, No. 2. Durban: ACCORD.
- Mitchell, T. 1995. The object of development: America's Egypt, in J. Crush, (ed), *The power of development*. London: Routledge.
- Moyo, S. & Tevera, D. 1999. 'Environmental trends and security in Southern Africa', paper presented at the Southern African Regional Institute for Policy Studies' Annual Colloquium on Peace and Security in Southern Africa, 26–30 September 1999, Harare Sheraton, Harare.
- Mukheli, A. Mosupye, G. & Swatuk, L. 2001. 'Is the Pungwe Water Supply Project a solution to water accessibility and sanitation problems for the households of Sakubva (Zimbabwe)?', paper presented at the Second WARFSA/Waternet Symposium on Integrated Water Resources Management Theory, Practice, Cases, Cape Town, 30–31 October.
- Nilsson, A. & Osborne, S. 1998. *Report on the drafting of terms of reference for the Pungue (Pungwe) River Basin Joint Integrated Water Resources Management Plan*, Harare: SIDA.



- Ohlsson, L. 1995. *Water and security in Southern Africa*. Publications on Water Resources, No. 1. Stockholm: Department for Natural Resources and the Environment.
- Parpart, J.L. 1995. Post-modernism, gender and development, in J. Crush (ed), *The power of development*. London: Routledge.
- Parpart, J.L. 2001. Rethinking participatory empowerment, gender and development: The PRA Approach, in J.L. Parpart, S. Rai, & K. Staidt (eds), *Rethinking empowerment*. London: Routledge (forthcoming).
- Peterson, V. 1992. Security and sovereign states, what is at stake in taking feminism seriously? in V. Peterson, (ed), *Gendered states, feminist (re)visions of international relations theory*. Boulder: Lynne Rienner.
- Peterson, S.V. & Runyan, A.S. 1999. 'The politics of resistance: Women as nonstate, antistate and transtate actors', in S.V. Peterson & A.S. Runyan (eds), *Global gender issues*. Boulder: Westview Press.
- Porter, D.J. 1995. Scenes from childhood: The homesickness of development discourses, in J. Crush (ed), *The power of development*. London: Routledge.
- Rudengren, J. Bullock, A. et al. 1997. 'Environmental security and water management in Southern Africa', consultancy report on a feasibility study for SIDA, Stockholm.
- SADC, 1998. *Regional human development report*. Harare: Sapes Books.
- Selebi, J. 2000. Building collaborative security in Southern Africa. *African Security Review* 8(5).
- Solomon, H. & Turton, A. (eds). 2000. *Water wars: Enduring myth or impending reality?* Africa Monograph Series, No. 2. Durban: ACCORD.
- Southern African Technical Advisory Committee (SATAC) of the Global Water Partnership. 2000. *Water for the 21st Century: Vision to action Southern Africa*. Harare: SADC.
- Stienstra, D. 1999. Of roots, leaves and trees: Gender, social movements and global governance, in M.K. Meyer & E. Prugl (eds), *Gender politics in global governance*. Boulder: Rowman and Littlefield.
- Strange, S. 1987. *States and markets: An introduction to international political economy*. London: Pinter Publishers.



- Strange, S. 1991. An eclectic approach, in C. Murphy & R. Tooze (eds). *The new international political economy*. Boulder: Lynne Rienner.
- Swatuk, L & Vale, P. 2000. Swimming upstream: Water and discourses of security, in *Security, ecology and community*, Working Paper Series, No. 2. Bellville: Centre for Southern African Studies, University of the Western Cape.
- Szerynski, B. 1996. On knowing what to do: Environmentalism and the modern problematic, in S. Lash, B. Szerynski, B. & B. Wynne (eds), *Risk, environment and modernity: Towards a new ecology*. London: Sage.
- Tapela, B. 2001. 'Gender and integrated water resources management in the Save Catchment Area in Zimbabwe', June/July, unpublished draft report.
- Tapela, B. & Mukheli, A. 2003 (forthcoming), Gender perspectives on integrated water resources management in the Save catchment area of Zimbabwe, in *Security, ecology and community*, Working Paper Series, Bellville: Centre for Southern African Studies, University of the Western Cape.
- Thomas, C. 1999. Where is the Third World now? *Review of International Studies*, 25, 225–244.
- Thompson, L. & Leysens, A. 2000. Changing notions of human security in the region? *Transformation*, 43.
- Thompson, L. & Swatuk, L. 2000. Gender and ecosystems: Reframing Southern African 'security'. *Security, ecology and community*, Working Paper Series, No. 1. Bellville: Centre for Southern African Studies, University of the Western Cape.
- Thompson, L. & Tapscott, C. 2000. Thinking beyond the discourse: Towards alternative approaches to development in Southern Africa, in L. Thompson (ed), *Development, democracy and aid*, CSAS Monograph Series, No. 1. Bellville: Centre for Southern African Studies, University of the Western Cape.
- Thompson, L. 1996. States and security: Emancipatory versus orthodox approaches. *Governance in Southern Africa*, Occasional Paper Series, No. 3. Bellville: School of Government, University of the Western Cape.
- Thompson, L. 1997. Is the dream dreaming us? Developing development discourse in Southern Africa. *Africanus*, 27(2).



- Thompson, L. 1998. *Feminism and security studies in southern Africa*. ISS Monograph series, No. 27. Pretoria: Institute for Security Studies.
- Thompson, L. (ed). 2000a. *Critical perspectives on security and sovereignty: Perspectives from the South*. Monograph Series, No. 2. Bellville: School of Government, University of the Western Cape.
- Thompson, L. 2000b. Why the words don't work: Evaluating emancipatory approaches to security and development in Southern Africa, in L. Thompson (ed), *Critical perspectives on security and sovereignty: Perspectives from the South*. Monograph Series, No. 2. Bellville: School of Government, University of the Western Cape.
- Thompson, L. 2001. *Conference report on African decentralisation and local government*. Bellville: School of Government, University of the Western Cape.
- Tickner, A. 1992. *Gender in international relations: Feminist perspectives on achieving global security*. New York: Columbia University Press.
- Tickner, J. A. 1997. 'You just don't understand': Troubled engagements between feminists and IR theorists. *International Studies Quarterly*, 41(4) 611–632.
- Tilly, C. 1985. War making and state making as organised crime, in P. Evans, B. Rueschemeyer & T. Skocpol (eds) *Bringing the state back in*. New York: Cambridge Press.
- Turton, A. 2000a. Water wars in Southern Africa: Challenging conventional wisdom, in H. Solomon & A. Turton (eds), *Water wars: Enduring myth or impending reality*. Africa Monograph Series, No. 2. Durban: ACCORD.
- Turton, A. 2000b. Water wars: Enduring myth or impending reality?, in H. Solomon & A. Turton (eds), *Water wars: Enduring myth or impending reality?* Africa Monograph Series, No. 2. Durban: ACCORD.
- Van der Zaag, P. 2000. 'Some basic information on the Pungwe Basin', unpublished report prepared for the South African Water Research Commission-sponsored project on contesting the water wars hypothesis.



- Walker, R.B.J. 1995. International relations and the concept of the political', in S. Smith & K. Booth (eds), *International relations theory today*. London: Polity Press.
- Watts, M. 1995. A new deal in emotions: Theory and practice and the crisis of development, in J. Crush (ed), *The power of development*. London: Routledge.
- Williams, G. 1995. Modernising Malthus: The World Bank, population control and the african environment, in J. Crush (ed), *The power of development*. London: Routledge.
- Wynne, B. 1996. May the sheep safely graze? A reflexive view of the expert-lay knowledge divide, in S. Lash, B. Szerszynski & B. Wynne (eds), *Risk, environment and modernity: Towards a new ecology*. London: Sage.
- Zanting, H. A. Macueve, C. & Novela, B. 1994. *Salt intrusion in the Pungue estuary*. Beira: Department of Hydrology.

Preliminary interviews

- P. Nyatoti, Chief Engineer, Department of Works, City of Mutare, June 2000.
- E. Marungu, Water Engineer, Department of Works, City of Mutare, June 2000.
- Dr. D. Maclean, Director, Health Department, City of Mutare, June 2000.
- A. Chirau, Environmental Health Officer, Sakubva Clinic, Health Department, City of Mutare, June 2000.
- T. Murinye, Provincial Water Engineer and Save Catchment Manager, City of Mutare, June 2000.
- T. Gondo. Extension Officer, Mutasa North, June 2000.
- C. Nbava. Mtarazi Irrigation Scheme, June 2000.
- Prof. Tagwira, Africa University, City of Mutare, September 2000.
- B. Novela, Arra (*Administration Sentral d'Agua: Sentrum*) Director, Beira, September 2000.
- P. da Silva, Director, *Agua de Mozambique*, September 2000.