

Through Women's Eyes: A Gendered Research Agenda for Disaster Social Science

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Gender is a central organising principle in social life and hence in disaster-affected communities, yet gender issues are rarely examined by disaster scholars or practitioners. Building on findings from emerging and industrial nations, three key research directions are identified: How is gendered vulnerability to disaster constructed? How do gender relations shape the practice of disaster planning and response in households and organisations? How are gender relations affected over time by the social experience of disaster? The discussion suggests how analysis of the gendered terrain of disaster both develops disaster theory and fosters more equitable and effective disaster practice.

Key words: gender, gender and disaster research, disaster vulnerability, disaster theory.

To help answer Kenneth Hewitt's question 'disaster sociology for whom?' (1995), I advance a gendered research agenda constructed around three key issues: How is gendered vulnerability socially produced and maintained? How do gender relations shape disaster practice in organisations and households? How are gender relations affected, if at all, through the social experience of disaster? Social scientists investigating these topics can help provide more accurate and complete knowledge upon which equitable disaster preparation, response, recovery and mitigation strategies can be built.

Drawing on multidisciplinary gender scholarship together with feminist theory, I approach gender in disaster contexts through the material conditions of women's everyday lives, focusing on the situated knowledge of those outside the dominant power structures but assuming no unified identity or set of experiences (Smith, 1987; Collins, 1986; Harstock, 1985). Framing disaster issues 'through women's eyes' highlights new questions not arising from a disembodied disaster science.

My goal in this project is not to synthesise existing research findings (see Fothergill, 1996), identify new policy directions or conjure an exhaustive 'wish list' for researchers. Instead, I write about gender and disaster provocatively, hoping to demonstrate the significance of unasked questions for disaster social scientists, for practitioners whose own questions may be quite different and for disaster students new

to the field. In the following sections, I will draw on prior research to sketch out key issues and the range of research directions they imply, assuming the need for a broad range of theoretical approaches, diverse methods of enquiry and cross-cultural research settings. I also analyse gender relations as historical and cultural constructs within which gender is experienced relationally with race, class and other social relations of dominance.

Disaster social science to date has incompletely analysed gender and its relationships in the social experience of disaster, as many observers have noted (for example, Wiest et al., 1994; Bolin et al., forthcoming; Morrow and Enarson, 1994). A recent bibliographic review demonstrates that most researchers fail to analyse gender relations but simply introduce sex as a bipolar variable in such areas as risk awareness or post-disaster stress (Fothergill, 1996). Even in the highly gendered realm of family life, models of long-term family recovery incorporating class, ethnicity, age and other factors have not problematised gender (Bolin, 1982). Schroeder's (1987) analysis of class, caste and *purdah* during drought and famine; Vaughan's study of famine as a deeply gendered process (1987); and Ikeda's nuanced case study of gendered losses to Bangladesh cyclones (1995), among others, remind us how rarely we ask the right questions.

Typecast as hapless women awaiting strong-armed male rescuers, many women are in fact active disaster responders as well as particularly vulnerable to disaster impacts. Recent cross-cultural studies of what Mihir Bhatt has termed the 'gendered terrain of disaster' (1995) suggest the range of difference in women's and men's experience of disaster when women fight bushfires in Australia, respond to flooding in Scotland and Bangladesh and rebuild their communities in the wake of Mexican earthquakes, south Asian cyclones and major hurricanes in Florida (see case studies in Enarson and Morrow, forthcoming). Field reports from non-governmental relief and development organisations (NGOs) also indicate that gender relations are important on the ground, for example, in refugee housing (League of Red Cross and Red Crescent Societies, 1991), housing reconstruction after flooding (Duryog Nivaran, 1996), shelter from volcanic eruption (Delica, forthcoming) and emergency food relief (Begum, 1993; Khondker, 1996). Although theirs is one of the most 'excluded perspectives' in disaster theory and practice (Hewitt, 1995), women's narrative accounts of disaster — for example, songs of struggle during African famine (Vaughan, 1987) or the stories of Indian women living through drought (Intermediate Technology, 1997) — illustrate how women experience disaster through intersecting social relations of gender, race and class.

I draw on this rich body of scholarly investigation, field report and personal narrative to argue that disaster vulnerability, impact and recovery are as profoundly gendered as wives and husbands — hence we might speak of the 'his and hers' of disaster, as American sociologist Jessie Bernard did of marriage.

At present, women's lives are more visible, I suggest, in disaster writing and practice from poor and emerging nations than that emanating from wealthy industrial nations. To the degree that disasters are produced by unsustainable patterns of world development, women's lives are correspondingly more transparent in those developing nations most subject to increasing hazard and disaster (Anderson, 1994). This is reflected in the integration of gender issues into training materials for NGO relief and development staff (see Eade and Williams, 1995; Von Kotze and Holloway, 1996); the long-standing focus on gender relations in famine research (Vaughan, 1987; Downs et

al., 1991); Oxfam's publication on women and emergency in developing nations (Walker, 1995) and IDNDR gender-focused publications (for example, IDNDR's *Stop Disasters*, 1995); and the growing body of work on Bangladeshi women alone (Duryog Nivaran, 1996; Khondker, 1996; Begum, 1993; Ikeda, 1995; Hossain et al., 1992). While a symposium on women and disaster was conducted in Australia in 1994 and a recent European conference examined women's emergency medical needs, gender-focused projects are more common in emerging nations; these include workshops organised by the Disaster Mitigation Institute in India (Bhatt, 1995), by Duryog Nivaran in Pakistan (1996) and regional conferences on women and emergency management in Central America (Comisión Mujer, 1990) and the Caribbean (Antrobus et al., 1991).

The salience of gender issues in the developing world is a challenging starting-point for researchers writing from wealthier nations and guides this proposed agenda for international study of gender relations in disaster.

The social construction of gendered disaster vulnerability

In the litany of highly vulnerable populations, among the extremely poor, migrants and refugees, subordinated racial populations and the disabled or frail elderly, women are often included in their role as care givers, particularly as sole heads of low-income households. But exclusive categories of vulnerability — elderly or female, migrant or single mother — falsely de-gender intersecting identities and social relationships. Gendered vulnerability does not derive from a single factor, such as household headship or poverty, but reflects historically and culturally specific patterns of relations in social institutions, culture and personal lives. Intersecting with economic, racial and other inequalities, these relationships create hazardous social conditions placing different groups of women differently at risk when disastrous events unfold (Blaikie et al., 1994).

These specific conditions are as yet poorly understood, but clearly gendered vulnerability is rooted in the nexus of gender relations, global development and environmental or technological hazard (Anderson and Woodrow, 1989; Eade and Williams, 1995; Anderson, 1994; Blaikie et al., 1994; Varley, 1994). Gender and development researchers have amply documented that the gendered division of labour is a primary axis of social organisation; women's domestic responsibilities, productive labour and community roles place them at the centre, not the margins, of global development trends (Tinker, 1990; Momsen and Kinnaird, 1993; Harcourt, 1994; Turpin and Lorentzen, 1996). Disaster students can address this point by documenting, more precisely and in a wider range of settings, how women's lives have been made more disaster-prone through globalisation, environmental degradation, hyper-urbanisation and other massive structural forces.

Economic globalisation has an impact on communities and populations in gender-specific ways, affecting women as consumers, care givers, social service users and economic actors. Researchers have documented the losses to women, in particular, caught in the shift to part-time and contingent work, cutbacks in the public sector and in human and social services generally, exploitative working conditions in export manufacturing and tourism and the resurgence of home working (Bakker, 1994; Ward, 1990; Leacock and Safa, 1986).

Structural adjustment policies imposed on poor nations demonstrably affect women directly, reducing their standard of living and general health, intensifying paid and unpaid work-loads and undermining household security (Beneria and Feldman, 1992; Safa, 1995; Dalla Costa and Dalla Costa, 1995). The everyday lives of poor and low-income women reflect in stark relief their increasing economic insecurity, often exacerbated by their sole responsibility for maintaining families. Macro-economic trends suggest a future in which millions of women are increasingly vulnerable economically, lacking savings, capital, credit and other recovery resources when income, space, tools, equipment and opportunities are lost to flood waters or earthquake.

Understanding that women's vulnerability to disaster is deeply rooted in a gendered global economy, gender-focused researchers can help planners anticipate women's disaster needs in rich as well as poor nations by: documenting the gendered division of labour regionally in domestic, waged, agricultural and community sectors; analysing women's regional economic status historically and identifying contemporary patterns of work and employment; measuring and interpreting gender-specific routes in and out of poverty; documenting economic recovery resources and income-generating strategies available to differently situated women.

Urban settlement concentrates growing populations in vulnerable spaces, primed by development for building collapse, mud-slide, air pollution, exposure to toxic materials and other familiar and new hazards of urban life (Kreimer and Munasinghe, 1992). Feminist urban planners, historians and activists have demonstrated that urbanisation is also a highly gendered process (Dandekar, 1993; Eichler, 1995; Sweetman, 1996). While cities present opportunities to many women, daily life is a struggle for millions of women and children surviving on the fringes of the world's megacities in disaster-prone settlements (Moser, 1996).

Emergency managers need to understand more deeply how women and men use urban space and how spatially segregated cities are, not only by class and race, but also by gender. Both working-class and elite suburbs, for example, house women whose transport needs and options are very different from those of men. Urban women residing in informal settlements or public housing have unique needs in disaster contexts and are a significant enough group to engage in community-based mitigation (Enarson and Morrow, 1997; Leavitt, 1992). Urban streets are home to many girls engaged in prostitution for their survival as well as rising numbers of homeless women and children (Glasser, 1994), but their particular needs as urban residents before, during and after disaster have yet to be investigated. Metropolitan centres also hide significant concentrations of women migrants and refugees, many of whom are employed in underground sweatshops, home work or waged domestic work (Chaney and Castro, 1989; Boris and Prügl, 1996). While they may be invisible to disaster practitioners, their family and community roles are likely to be especially important in migrant communities facing crisis.

To document and address the diverse needs and resources of urban women more effectively, disaster social scientists can:

- document trends and patterns in women's migration to hazardous urban environments;
- investigate gender- and class-specific transport and housing resources in metropolitan regions; and

- contribute to social vulnerability mapping of targeted urban populations, for example new immigrant women or public housing residents.

Environmental feminists have already drawn attention to the gender politics of environmental degradation and protection (Turpin and Lorentzen, 1996; Mies and Shiva, 1993; Rodda, 1991). Increasingly, these patterns affect women's ability to provide for family members, undermining both the household and the community's capacity to sustain disaster. The material circumstances of everyday life as family providers and care givers, as well as their own reproductive roles, make women especially vulnerable to the health effects of environmental degradation: from catastrophic accidental radiation exposure to routine indoor air pollution (Steady, 1993; Cutter, 1995; Perminova, 1995).

As primary resource managers and food producers, rural women and their families are directly affected by environmental stress and crisis; deforestation, for example, adds to the long hours walked by girls and women to collect firewood each day in many parts of Africa (Williams, 1993). Patterns of female employment in developed and developing societies also produce additional hazardous conditions affecting women; — increasing use of toxic farm pesticides by agribusiness, for example, subjects migrant women in industrial societies to both poverty and pesticide exposure (Huerta, 1993).

Their intersecting responsibilities as income earners, food producers, consumers and family care givers make contaminated resources a pressing issue for women. Researchers also find women's environmental stewardship, their indigenous knowledge of local resources and their knowledge of family and community history to be significant assets when families and communities respond to degraded environments or environmental crisis. Women's environmental activism, for example, against mining and logging (Shiva, 1988; Agarwal, 1997; Women's Feature Service, 1992), against racially biased location of toxic waste (Brown and Ferguson, 1995), for improved urban water services (Bennett, 1995) and other issues, is an important history to bring to emergency managers planning for community response to environmental disaster.

To investigate specific environmental conditions placing women at risk in different contexts, disaster scholars should design comparative research to: document historical trends in gendered environmental vulnerability, for example, the impact of degraded resources on women's work, their relative exposure to environmental hazards and risky living conditions; provide qualitative portraits of women's traditional coping and recovery strategies as they respond to gradual or sudden environmental crisis; and investigate over time women's personal and organisational resources as change agents in affected communities, as well as barriers to their environmental activism.

Household size and structure and power relations in kinship and marriage also create risky living conditions for women, especially in contexts of divorce, desertion, widowhood and single mothering (Winchester, 1992; Downs et al., 1991; Wiest et al., 1994). The gender and kinship relationships which structure household food distribution explain the simple nutritional vulnerability of girls and women in the aftermath of disaster (Rivers, 1982). Increasing as a proportion of the world's households, though to varying degrees in different settings, women-headed households have been found to be at higher risk and to have distinct response and recovery

resources, as Wiest (forthcoming) documents in the case of single mothers who suffered from flooding in Bangladesh.

Responsibility towards children and other dependent household members is a significant aspect of women's disaster work (Morrow and Enarson, 1996; Enarson and Morrow, 1997) which has important implications for preparedness, evacuation and other key disaster decisions. Domestic violence is largely unexamined in disaster studies but field reports from evacuation shelters (Delica, forthcoming) and from battered women's shelters and responding agencies (Commission for the Prevention of Violence Against Women, 1989; Godino and Coble, 1995; Wilson et al., forthcoming) suggest that some women are at greater risk of male violence in the aftermath of disaster.

Equally, women living with disabilities tend to be more economically and socially marginalised than disabled men (Boylan, 1991) and women's life-expectancy rates expose them on balance more than men to the physical disabilities of advanced age. To the degree that populations age, then, they also become feminised; issues facing senior women, including rising poverty rates, are correspondingly more salient as populations age.

To target planning, response and recovery initiatives, disaster planners should assess the particular political, economic and historical factors shaping the lives of senior and disabled women, single mothers and women experiencing violence, among other key populations. Towards this end, students of disaster can:

- document regional marriage, divorce and inheritance patterns likely to affect women's vulnerability and capacity as well as the impact of family size and structure;
- contribute ethnographic portraits of women heading households in diverse conditions, analysing resources and coping strategies and structural forces affecting their economic and housing security;
- investigate patterns of gender violence and disaster-affected victim services; and
- undertake community studies assessing the specific vulnerability of senior and disabled women and their response capacities, focusing on those with particular linguistic, economic or health barriers.

A richer analysis of the specific conditions through which vulnerability is produced and experienced can advance both disaster theory and effective disaster response. The work ahead will help us link more explicitly the joined issues of gender equity and disaster mitigation through sustainable global and local development.

Gender relations in disaster practice

The 'his and hers' of disaster practice is a second area which promises to advance the important but uneven dialogue between practitioners and academics. In this section, I call for exploring practices previously taken for granted produced by gendered disaster organisations as well as household dynamics.

We need to understand better how and with what effect disaster organisations are gendered — as sociologists have so amply demonstrated organisational structure and process to be (Acker, 1991). As described by female emergency managers (Phillips, 1990; Wraith, 1996; Robertson, forthcoming), leading disaster agencies have been

shaped by an historically male workforce and work culture; are grounded in the male-oriented traditions of civil defence, the military and engineering; and reflect an over-reliance on technological solutions to human problems. This legacy is likely to have an impact on both the design and implementation of organised disaster response and women's experiences within public and private disaster groups and organisations.

Women in emergency management and relief agencies have articulated some of these effects. Relief workers in Bangladesh trying to get emergency food and clothing to women, for example, urge agencies to put more women in the field to circumvent cultural and other barriers to gender-fair assistance (Begum, 1993). Writing from the field, Myers (1994) proposed specific guidelines for integrating gender issues into the preparedness activities of disaster planning agencies. Australian practitioners have suggested that women responders need child-care services in the field (Dobson, 1994) and urged male responders to work more closely with women during debris removal (Fuller, 1994). Caribbean activists have called for across-the-board integration of women into all aspects of emergency management, at the community, technical, professional and political level, highlighting in particular their contribution as informal and formal health-care providers (Noel, 1995).

What conditions encourage or deter an organisational culture in which these calls will be heard or met? The experiences of international development agencies which have undertaken gender-sensitive training and other initiatives offer guidelines as well as cautionary notes to disaster agencies (Macdonald, 1994). Certainly, more research is needed on conditions facilitating traditional as well as innovative gender practices in cross-sectoral disaster organisations operating in diverse cultural, political and economic contexts.

Gendered lines of action shape the responses of women and men to disaster both within and outside formal response agencies. Reflecting their historical under-representation in emergency management agencies internationally (Gibbs, 1990), women tend to work outside formal disaster agencies; in the US, for example, they have been leaders in emergent groups responding to social needs (Neal and Phillips, 1990). While the evidence is mixed on gender patterns in disaster volunteerism, gender-stereotypical patterns appear to steer men more often to search-and-rescue and women to emergency provisioning (Wenger and James, 1994). Women's professions tend to place them in female-dominated sites at the centre of informal disaster response, such as child care, family services and mental health, suggesting a pattern of feminised disaster response which may limit male access to needed services (Fordham and Ketteridge, forthcoming). By the same token, male-dominated recovery groups seeing the disaster 'through the eyes of men' may fail to address the specific needs of women and their families. Thus, Miami women who organised a cross-cultural women's coalition in the wake of Hurricane Andrew challenged an élite male group distributing relief funds (Enarson and Morrow, forthcoming). The complex intersection of class, race and gender power shaping organisational interaction between relief workers and disaster victims is not well documented, but seems likely to affect agency services as well as the work experiences of voluntary or paid female responders.

The division of labour by gender indirectly sustains some aspects and forms of emergency management. The taken-for-granted presence of women care givers at home, for example, may facilitate male front-line responders' ability to prioritise work-place demands over family needs in crisis (Scanlon, 1997). But this backstage

support is likely to be less available with rising rates of female employment, especially when women work in disaster-responding professions exposing them to similar conflicts. Disaster planners may implicitly assume access to women's time and emotion for work as paid and unpaid informal care givers, much as they assume male physical strength, access to tools and home maintenance skills, but these are assumptions rarely articulated or empirically tested.

The tug of male 'mateship' appears to motivate volunteer responders in Australia (Moran et al., 1992) and may reinforce stereotyped response patterns. The male defence of valued response roles impinges on the range of disaster actions taken up by women. Confining women to backstage support roles while boys and men visibly fight danger may successfully contain women and reinforce male power, as Poiner argues in the case of Australian bush-fire (1990), but what is the larger social cost of exclusionary gender practice in hazard-prone communities?

Relief operations conforming to prevailing gender norms may in their routine practice further disempower women, for example, when cultural norms inhibit women from visibly accessing public relief (Hossain et al., 1992; Begum, 1993). While some women may be cynically presented to relief centres to exploit the female victim image and maximise benefits, researchers suggest that public shelters and relief centres in south Asia are generally less accessible to women than to men (Khondker, 1996; Hossain et al., 1992; Ikeda, 1995). Low-income women who head collective or multi-family households in Miami were found to be disadvantaged by agencies assuming one head of household at each address (Morrow and Enarson, 1996); in another US study, women-owned small businesses received disproportionately low government recovery loans (Nigg and Tierney, 1990). This gender bias also affects relief workers. Reports from participants in an American Red Cross programme indicate that some managers resist sending women on home visits for determining eligibility if the neighbourhood is deemed gender-inappropriate (Barnecut, forthcoming); women relief workers in Bangladesh reported similar constraints on their full participation (Hossain et al., 1992).

Gender-related issues arising in refugee camps may well be relevant in post-disaster shelter and temporary housing, including assuring women residents' personal safety, a strong voice in camp management and food distribution and appropriate health-care and counselling (League of Red Cross and Red Crescent Societies, 1991). In long-term 'temporary' shelters, they may also need such services as access to child care, transport to major work sites and affordable legal assistance. Little work is currently available on these and related gender issues in post-disaster housing. The decision of the NGO Pattan to work with community groups in Pakistan towards a policy of joint ownership in flood-replacement housing demonstrates how gender-fair relief practice can empower women and reduce their future disaster vulnerability (Bari, 1996).

Scholarly study of organised disaster response should include comparative and cross-sectoral research in these areas. Fruitful projects include:

- documenting whether, how and to what extent internal gender relations as well as culturally specific ones in disaster-beset areas affect organisational development, effectiveness and innovation in crisis;
- case studies of factors that facilitate or hinder gender bias and evaluation of change models addressing bias in organised relief and recovery services;

- qualitative and quantitative analysis of women's disaster careers in an era overly concerned with formal credentials, analysing patterns of segregation, integration or resegregation; and
- investigating gender-specific patterns of extra-organisational participation in community mitigation, informal response and community-based recovery initiatives.

Household dynamics afford another point of view on the gendered terrain of disaster. To the degree that the everyday practices of 'doing gender' mean that women and men perceive, experience, respond to and recover from disasters differently, both top-down and grass-roots models of disaster mitigation will reflect existing gender relations and hence gender power. All issues related to race, class and gender must be confronted in the project to build disaster-resilient communities in hazardous environments.

Gender-focused research can help explain why and how women and men make critical disaster decisions based on a model of disaster decision-makers as embodied actors interacting in gendered social contexts. Survey research findings suggest that gender influences but does not absolutely determine many dimensions of preparedness and response, for example risk assessment and evacuation decisions (Drabek, 1969; Scanlon, 1997), voluntary preparedness and post-disaster helping patterns (Wenger and James, 1994) and after-shock communication (O'Brien and Atchison, forthcoming). In the US, being old and poor appears to predict shelter use (Mileti et al., 1992); however, gender, marital status and family structure have not yet been examined though each seems likely to affect shelter use and hence be significant for planners and responders. Women are also an important target group as risk communicators, family health-care providers, neighbourhood preparedness participants and voluntary community responders after disaster. Researching gendered patterns of disaster communication in diverse cultural, political and economic settings can help practitioners to frame and target information for those most predisposed to listen.

Family structure and size, age and social class shape the severity and nature of women's post-disaster stress (Ollenburger and Tobin, forthcoming), although little is known about these patterns over time or in diverse contexts, or about the interaction of women's unpaid care giving with their professional roles as 'comprehensive responders' in schools, clinics, social service agencies or grass-roots organisations. Some evidence suggests that pre-disaster stress disorders and substance-abuse levels are high among male firefighters and paramedics likely to be called upon in disasters (Beaton and Murphy, 1996). We need to know more about pre-existing risk factors, about men's emotional and physical responses in intimate relations with women and children during disasters and about the emotional survival strategies different men may adopt in crisis and during long-term recovery.

More gender research is needed in this area, including:

- qualitative exploration of couple decision-making within and across households affected by disaster, for example, regarding risk assessment and preparedness, evacuation, structural and non-structural mitigation;
- evaluation studies of organisational models addressing gender-specific health needs of comprehensive and front-line responders;

- oral histories or narrative accounts of women's psychological and social experience of disaster, focusing on intersecting power relations in household and community.

That disaster practice at the organisational and household levels is shaped by gender relations in ways that matter is a subject for research. So, too, is the range of variation between 'his and her' disasters and the implications for survival and recovery. These issues must be investigated in the rich contexts in which they arise in diverse communities, across classes, cultures, generations, and all the other 'lines that divide.'

Gender and disaster: long-term effects

A third line of enquiry in a more gendered disaster social science explores how women's lives and relationships with men are altered through the personal and collective experience of disaster. Taking a long view of women, disaster and gender equality can help inform disaster mitigation and community development projects in affluent and poor societies alike.

At the heart of disaster mitigation and risk reduction is the global struggle towards more sustainable patterns of environmental, economic and human development. Because women are central actors in family and community life, gender equality and women's empowerment are, in turn, at the heart of the global project of sustainable development. In this sense, more egalitarian social relations enable societies to pursue more sustainable patterns of growth and development, and hence learn to live more securely with hazard and risk in safer environments. This was suggested by a recent comparative study of gender equity in two Salvadoran communities experiencing regular flooding (Maravilla, 1997), but needs further investigation.

Vulnerability analysis examines long-term and cumulative disaster losses which exacerbate inequality and magnify vulnerability, for example among low-income families struggling to recover before next year's flood. Vulnerability theorists have also examined how power relations are resisted and communities empowered; the collective resistance to proposed resettlement plans after a massive Peruvian earthquake and avalanche illustrates the point (Oliver-Smith, 1982). Contested gender power in disaster contexts must also be examined or remain an untold part of the story.

Some studies have documented survival strategies adopted by women in poor countries which transform their relations with men during crisis (see Jiggins, 1986). When drought forces new foods and strategies for survival, women's degree of control over land, supplies and time may be challenged by men with conflicting priorities, as, for instance, in women's struggle to retain income from informal beer brewing in Tanzania (Kerner and Cook, 1991). External migration for employment literally takes partners in different directions when cash income is essential for survival, often leaving women and children dependent upon uncertain male remittances.

Under what conditions and why are women in different societies left more economically dependent or insecure by disaster? Research on long-term disaster effects in households should address gender power in intimate relationships, including the effects on girls' and women's access to food and other key resources during crisis; households are not uniform units that can be assumed to distribute disaster risk or recovery assistance equitably, either in poor nations facing food crisis (Agarwal, 1990)

or wealthy cities like Miami (Morrow and Enarson, 1996; Enarson and Morrow, 1997).

How and with what effect on marital power are women's income-generating strategies reshaped by disaster? Gender, class and racial differences in post-disaster employment may leave women more economically dependent on men, formal disaster assistance and/or state support. When household income drops, girls may be more at risk than boys of losing critical opportunities for education and job training. In low-income households especially, women's post-disaster income is likely to be a significant recovery asset, or becomes a key asset when women take paid jobs to replace lost property or lost male income. To the degree that women's employment, self-employment or informal-sector work continues or expands in the wake of earthquake or flood, their relative marital power may also increase, although the ratio of male to female earnings remains a key factor (Hochschild, 1989; McClosky, 1996).

The lived experience of disaster seems likely to affect the intimate relations of women and men differently, and to varying degrees over time. Egalitarian couples in affluent Berkeley, California responding to destructive firestorms, for example, were found to revert to traditional gender patterns which disadvantaged women (Hoffman, forthcoming). Conversely, disasters make transgression possible, if only briefly. The constraints of *purdah*, for example, do appear to increase women's dependence on men for hazard warnings and may limit their mobility, but when survival depends on evacuation to shelter, barriers to mixed-sex interaction do not appear to be the critical factor increasing women's morbidity (Ikeda, 1995). Women living through disaster may interact unexpectedly with men in non-traditional ways and places, using new tools for home reconstruction, negotiating with relief agency staff or insurance agents, conducting search and rescue, or speaking out as emergent group leaders, neighbourhood activists, political leaders or emergency managers during relief and recovery. We do not yet ask whether, how or to what extent the social experience of disaster affects women's relationships with men, or gender relations more broadly, over the long term or consider the implications for vulnerability to future disasters.

Studying whether and how women in different life circumstances respond to hazards and participate in relief and reconstruction is an important line of enquiry. Older women transmit family, community and environmental knowledge to younger generations, which may be an especially important resource for indigenous and displaced communities affected by slow (Smith, 1992) or sudden-onset disaster. At the grass-roots women were found to be key players in community mobilisation around post-disaster housing following the 1985 Mexico City earthquake (Massolo and Schteingart, 1987), and have intervened for community recovery in subsequent earthquakes (Serrat Viña, forthcoming). Women working collaboratively around disaster relief issues may develop organising skills and speak collectively in disaster response and recovery. In the US, women tend to dominate community-based emergent groups, galvanised more by a conservative maternalism than feminist politics (Neal and Phillips, 1990), but have also demonstrated feminist leadership in recovery politics. The post-hurricane women's coalition in Miami, for example, had a riveting impact on women drawn into feminist organising for the first time and altered the political landscape in that city (Enarson and Morrow, forthcoming). But how long-lasting and how transforming are these experiences, for which women, and why?

A better understanding of the long-term impacts of disaster on gender equality and other social relations can guide proactive community organising around preparedness and mitigation. A gendered research agenda in this area would include:

- the longitudinal investigation of whether or how gender-specific disaster decisions affect gender equity in families and households;
- a comparative analysis at the community level of gender power as a factor in grass-roots disaster planning, response and mitigation; and
- an historical and comparative investigation of factors facilitating and hindering women's collective mobilisation around disaster issues.

Conclusions and possibilities

I have argued the case for new questions and new images of women and men in disaster contexts. For Andrew Maskrey, it may be that 'a new script for a new play' (Maskrey, 1994: 121) is needed. In this ambitious project, we can and should draw upon gender analysis and feminist research traditions.

We need to know more about how gender relations in disaster-prone communities are constructed historically and in relation to race and ethnicity, social class and other power domains. In light of their disproportionate losses (Rivers, 1982; Mushtaque et al., 1993; Ikeda, 1995), we particularly need better understanding about the lives of girls and women before, during and after disaster. Disaster theory and practice will benefit from scholarship which includes a gendered perspective on preparedness, relief, recovery and mitigation, taken up at the level of household dynamic but also in the context of organisational practice and macro-economic social forces. Specifically, a gendered social science will provide insight into how globalisation, urbanisation and environmental degradation affect women's disaster vulnerability in wealthy as well as poor nations; how gender relations in emergency management inform work-place cultures and routine work practices in ways that affect relief and recovery; and how the long-term process of recovery and community development are experienced 'through the eyes of women' and affect community resilience to disaster.

Gender-inclusive research across hazards, disciplinary boundaries, national borders and theoretical divides can help disaster agencies focus and target their efforts in an era of retrenchment and 'doing more with less'. But the knowledge-transfer process is neither apolitical nor disembodied, but part and parcel of social relations in the complex organisations and subcultures of disaster work and workers.

Material support for gendered disaster research, cross-national and cross-sectoral collaboration, networking of gender-focused researchers and institutions and political support from organisational élites are all necessary in the slow process of asking the right questions. Moving from knowledge to action entails a paradigmatic shift in the routine practice of disaster theory and practice, including new modes of enquiry, new driving questions and new players.

Gender relations clearly play a role in the political economy of disaster, organisational relief and response, community leadership and mobilisation, household preparation and family recovery and disaster survival strategies. Arguably, more equitable social relations also support the development of more democratic and participatory disaster-resilient communities. Disaster practitioners with new questions,

if not yet certain answers, about the gendered terrain of disaster can help communities live more safely with hazard, respond to crisis and reduce the impact of impending disasters. A new partnership of gender-focused researchers and disaster practitioners will inspire the lively re-framing of disaster thinking, policy and action needed to get there from here.

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