

**Bringing Children into Focus
on the Social Science Disaster Research Agenda**

William A. Anderson
National Research Council
National Academies
500 Fifth Street NW
Washington, DC, USA 20001
Telephone: 202-334-1523

Significant progress has been made in the social science disaster research field since its inception several decades ago. Despite the advances in knowledge, important areas of research have been seriously understudied, including the impact of hazards and disasters on children and youths. In this paper, it is argued that such knowledge is needed to deepen our understanding of the impacts of disasters on society and to provide a firmer basis for disaster management policy and practice. It is suggested that children should be brought into clearer focus in the disaster research field through studies, particularly those of a comparative nature, that consider (1) children's vulnerability and the outcomes they experience because of their youth, (2) actions taken by the adult society to reduce the vulnerability of children, and (3) actions children and youths undertake for themselves and others to reduce disaster impacts.

Introduction: Race, Gender and Age

If we conclude that the modern age of social science disaster research began with Samuel Prince's empirical study of the 1917 Halifax, Nova Scotia ship explosion (Prince 1920), then this era is over 80 years old. Since Prince's investigation, much progress has been made in the field. This is born out, for example, by the findings of what has come to be called the first assessment of natural hazards research (White and Haas 1975) and the second assessment (Mileti 1999).

In spite of the advances that have been made in the field over the years, important areas have received less attention than they

deserve. I would include in this category disaster studies focusing on racial and ethnic minorities, women, and children and youths. While minorities have not been entirely left off the disaster research agenda (Perry and Mushkatel 1986; Lindell and Perry 2004) and more attention is now being given to women (Morrow and Enarson 1996; Fothergill 1996) such groups have been greatly understudied. This absence of needed attention has implications for both theory and practice. For example, empirical knowledge on the behavior of the full range of groups in society vulnerable to hazards and disasters is necessary to develop robust theories and models. Also, understudied groups can become the underserved, particularly in highly diverse societies such as the United States. This can occur when mitigation and preparedness programs are designed without regard for group differences which could have been identified and highlighted through empirical research (Perry and Mushkatel 1986). Finally, more studies on women, minorities and children in disaster would shed light on the role of class, race, gender and age in society in addition to helping to understand the differential impacts of disasters and furthering more effective mitigation and preparedness decision making.

The Disaster Research Center (DRC) recently celebrated its 40th anniversary. This brings to mind the fact that the 1964 Alaska earthquake also occurred just over forty years ago. Following that earthquake, DRC conducted studies of its impacts in Anchorage, six other cities and towns, and in six villages comprised of indigenous Eskimos and Aleuts, including the fishing village of Ouzinki. This native community, which had a population of about 200 inhabitants, was struck by a tsunami after the earthquake. Interestingly enough, the following observation from the DRC study captures the involvement of native youths during the emergency:

Several young men and teen-age youths were on the dock immediately after the earthquake; one of them had been in Japan during a tsunami and when the bay began to churn, he knew what was coming. He took out one of the fishing boats and radioed back that the deep water was smooth. Other youths began taking boats out from the shallows. Gasoline from the ruptured line of a 10,000-gal dockside tank covered the bay,

and the boys towed gasoline-powered boats away from the danger area with a diesel craft before starting the motors. One to a boat, some without even a radio, they kept the vessels safely out in deep water in a lonely all-night vigil. Apparently the boys acted because they doubted that the fishermen would come to the boats. The crab season had just ended, the cannery was closed, and the men had begun an end-of-season celebration. (Norton and Haas 1970, p. 379)

The above paragraph offers a rare glimpse into the behavior of youths during times of disaster depicted in the disaster literature. This is true to such an extent that it can be argued that the documented recent advances in knowledge in the disaster research field include even less insight on children and adolescents than on women and minorities. For this reason, the focus of my remarks will be on children and youths.

The Missing Children

A simple question can be raised. Where are children and youths in social science disaster research? For example, little is said about children in the two assessment summary volumes referred to above, while Drabek's systematic survey of disaster research findings mainly refers to children in a mental health context (Drabek 1986), reflecting a dearth of information on the topic of children and disaster. Thus there is a serious need to find a place for children and youths on the disaster research agenda and to advance knowledge about this segment of the population. Such knowledge would provide a more complete understanding of the impact of hazards and disasters on society across the board and result in a firmer basis for policy and practice. Disaster social scientists should be more committed to determining the extent to which such social factors as age influence vulnerability and disaster outcomes.

Perhaps disaster research on children has lagged in part because of their status in society. There has been little push for it because children: (1) do not set the research agenda; (2) do not carry out research; and (3) are not in policy making or relevant professional

positions where they might see the need for such research and thereby become champions for it. Thus others have to champion their cause to get desired results. Indeed, there have been at least two sources of advocacy for including children on the disaster research agenda. Researchers who have focused on hazards and disasters in developing countries where children are thought to be particularly vulnerable (Chowdhury 1993) are one source. Another source is the group of researchers, including many from the U.S., who focus on gender and disasters and see the need to extend analysis on women to include children and youths (Anderson 2000). Both types of researchers, along with a number of practitioners, were brought together at the June 4-6, 2000 conference on "Reaching Women and Children in Disasters" that was organized by Florida International University and held in Miami Beach, Florida. As participants noted at the conference, studies of children as well as of women need to become much more commonplace in disaster research. With this in mind, I will discuss some of the issues involving children to which I think social scientists studying disasters should give more attention. To narrow my focus somewhat, I will not discuss disaster outcomes related to children that involve mental health issues, even though more research has been called for in that area as well (Drabek 1986).

The knowledge base on children and disasters is so thin that studies related to children in this context are needed across the entire mitigation, preparedness, and response and recovery spectrum. I would suggest that three areas or types of outcomes are particularly crucial to understand: (1) what disasters do to children and youths, (2) what is done on behalf of children to make them less vulnerable, and (3) what children do for themselves and others to reduce disaster impacts.

First of all, research is needed in these three areas that specifically target children and adolescent youths, such as case studies. Second, research is also needed that bring children and youths into better focus by their inclusion in broader investigations, such as can be done through surveys that lend themselves to demographic analysis. Even in cases where some research has already been done on the topics suggested here, much more is needed, including studies that

provide cross cultural insights. The disaster research community, then, should cast its net wider in order to include a younger catch.

The concept of social vulnerability is used increasingly by social scientists to explain that social factors combined with physical factors put people at risk from various types of disasters. Research has suggested that children are among the most socially vulnerable to the impacts of disaster (Hill and Cutter 2001; Heinz Center 2002), but many questions remain. Thus there is a real need for more research on the consequences of children's vulnerability to disaster, what I call type I outcomes, and actions taken to lessen it, whether it is carried out by others or children and youths themselves, what I call type II and type III outcomes respectively.

Type I Outcomes: What Disasters Do to Children

Health

Disasters, of course, cause casualties among the young as they do among the adult population. Yet additional research is needed to better understand the relative vulnerability of children and adults in terms of rates of injuries and fatalities caused by disasters of various types and what accounts for any differences documented. For example, the South Asia earthquake that struck parts of Pakistan, India and Afghanistan on October 8, 2005 took a heavy toll on children. Thousands lost their lives while attending schools in vulnerable buildings that collapsed.

Comparisons are also needed among children. Information should be sought, for example, on the relative vulnerability of children across income levels and ethnic and racial groups. For example, Hurricane Katrina, which struck Gulf Coast communities in the U.S. on August 29, 2005, raises the issue of the degree to which poor children, even in a developed country like the U.S., are more vulnerable to disaster because their families may not have the resources to live in safe neighborhoods or the means to evacuate out of harms way.

For the broadest understanding possible, studies should be conducted across many societies in order to determine the effects of such factors as cultural differences, living arrangements, and

building practices on children's vulnerability to disaster. Developing countries should be particularly included in this type of analysis. Previous research has suggested that this is the environment in which children, along with women, suffer disproportionate rates of casualties from disasters, whether they are caused by drought-induced famine or some other agent (Mileti 1999). For example, the December 26, 2004 Indian Ocean earthquake and tsunami resulted in the deaths of thousands of children as well as adults in several of the countries in the region, including Indonesia and Sri Lanka.

Education

Following disaster, the education of students can be suspended for significant periods of time due to damage to the transportation infrastructure and school buildings (Heinz Center, 2002). Also, in some cases undamaged school buildings are used for new purposes, such as public shelters or morgues. Furthermore, even when schools are reopened following disaster events some students may not return for a period of time for various reasons. Such discontinuities in the education of children need to be considered when the social and economic costs of disasters are assessed by disaster researchers. Research on these perturbations may help provide a fuller understanding of the impacts of disasters. Information would be useful on the reasons for school absences, the frequency and duration of school closures across types of disasters, how children and their families and communities cope with them, and the extent to which communities take such possibilities into account in their emergency planning.

Also important to study are the social and economic ramifications when communities absorb children in their schools who are disaster evacuees. Many communities throughout the U.S. accepted such children into their school systems after Hurricane Katrina struck the Gulf Coast in August 29, 2005, and many colleges and universities in communities not directly affected by the disaster admitted students whose institutions became inoperable because of the disaster. Social science analysis of such circumstances would provide needed insight on the social and economic costs of disasters as well as input for disaster planning for educational systems and institutions.

Employment

Children and youths are part of a society's workforce, particularly in developing countries and also increasingly in developed societies such as the U.S. In the U.S., where many teenagers are employed after school and on the weekends, their earnings may be used to primarily meet their individual needs. And in poor countries, even young children may be required to work in rural and urban areas alike to help support their families. Disasters disrupt economic activities in which both adults and children are engaged. While researchers might be inclined to determine the effects of such disruptions in the adult population, attention also needs to be given to the consequences of youth unemployment following disasters. Do unemployed youths seek alternative work in order to meet their own or their household's needs? Do they volunteer for other activities, including disaster-related ones? Do they respond by pursuing new or formerly overlooked educational opportunities? When major employers go out of business after a disaster, as happened in the case of a cannery in the Alaska native village referred to above, does this result in increased out migration by suddenly unemployed youths, especially if employment prospects were dim in a community to begin with? In other words, what are the socioeconomic consequences of disaster-generated youth unemployment?

Recovery

The foregoing issues lead to the question of recovery, a concept which has undergone considerable reexamination since the early work on the topic in the 1970s (Haas, Kates and Bowden 1977; Miles and Chang 2003). There is some uncertainty about what the recovery process involves and what actually constitutes a state of recovery. Research on children and youths might be helpful in furthering our understanding of this concept. For example, answers to the following research questions would be useful. How does the closure of businesses that employ children and youths influence family recovery? To what extent does having injured children and youths restored to health, back in school, and employed contribute to household and community-

wide recovery? To what degree can such positive developments serve as indicators of the kind of social change that is broadly defined as recovery? For example, in comparison with the first month after the March 27, 1964 Alaska earthquake, enrollment in the Anchorage schools was markedly higher by September 30, 1964, and enrollment figures a year later showed another influx of students (Kunreuther 1970). Did this signal that recovery from the earthquake was well underway in the community?

There is another line of research involving questions related to recovery that might also be worthwhile pursuing. For example, how do children perceive recovery? Is it when they return to school, their homes have been repaired or replaced, and their parents (or other significant others) have returned to their jobs or their places of business? Still another line of research might involve looking at recovery planning as it relates to children. For example, to what extent do schools participate in community-based disaster recovery planning, and when they do what is the level of student involvement in this process? Finally, what are the cross-cultural variations in the answers to the questions raised above?

Type II Outcomes: What Is Done on Behalf of Children

Societies vary in terms of what they can do and actually do to protect their children. Poor countries have less capacity to reduce the vulnerability of children. However, even with their greater resources, stakeholders in developed countries may not always make the right decisions while trying to reduce the vulnerability of children to various types of risks, including those posed by natural, technological and human-induced hazards.

Mitigation, Preparedness and Risk Communication

Mitigation and preparedness programs to reduce the vulnerability of children are fairly common in many countries. In the U.S., for example, the 1933 Long Beach, California earthquake resulted in the passage of the Field Act, which set the first minimum standards for making schools in California more seismically resistant (Olson

1998). In 1984, legislation was passed in California mandating school earthquake preparedness planning (Junn and Guerin 1996). At the national level in the U.S., leadership for the development of mitigation and preparedness activities for school-age children, teachers and parents is provided by the Department of Homeland Security's Federal Emergency Management Agency (FEMA) and other federal agencies. For example, FEMA offers resources for school disaster preparedness and information about mitigation strategies for children. Private sector organizations, including the Red Cross, are also heavily involved in providing disaster information and resources for children. The terrorist threat since the September 11, 2001 attacks has resulted in a significant expansion of such efforts by groups and organizations in the U.S.

The Internet is increasingly used as a key dissemination channel for information-based programs to reduce the vulnerability of children. Many organizations have relevant Web sites. For example, FEMA has its *FEMA for Kids* and the Department of Education has a site to help schools plan for various types of emergencies. This trend raises certain equity questions since all school-aged children do not have access to the Internet, reflecting the so called digital divide. In spite of such dilemmas, a new era of risk communication has been ushered in, and one of the key targets is children. This presents a real opportunity for social science disaster researchers to extend knowledge on the important topic of risk communication.

Such programs as mentioned above cry out for systematic evaluation by disaster researchers. First, except for some of the analysis done on earthquake mitigation and preparedness related to children (Olson 1998) not much is known about how many of these initiatives have come about. For example, what are the organizational politics involved in the adoption of particular mitigation, preparedness and risk communication initiatives, given the fact that organizations have to respond to competing demands for limited resources? It would seem to be particularly important for researchers to respond to opportunities to measure the level of preparedness in schools and child care institutions for different types of hazards, as Junn and Guerin (1996) did for child care centers facing the earthquake threat in California. Other questions

include: Are programs achieving their goals? What are their benefits and costs? In the case of risk communication initiatives, are they reaching their intended audience, and do they reflect how children, as opposed to adults, perceive and respond to risks? We just don't have good answers to these types of questions, and we should.

Another step the disaster research community should take is to systematically compare mitigation and risk communication efforts directed at children across societies. This would provide important understanding of the level of disaster protection that different societies have been able to obtain for children. Such studies would also provide needed information on the factors that facilitate and hinder the provision of disaster protection for children. Additionally, they might provide the basis for furthering the adoption and implementation of effective child-centered mitigation and preparedness models across societies.

Type III Outcomes: What Children do for Themselves and Others

Children and youths are not just passive in the face of disasters. They are not merely victims and dependent observers of the scene, having everything done for them both before and after an event. Even though lacking the authority of adults, children and adolescent youths can still take certain protective actions. However, what children and youths actually do with regards to reducing their disaster vulnerability and responding to disaster events begs for documentation.

Youth Subculture

Various cultural patterns—including attitudes, values and norms—emerge as groups in society adapt to challenges they face. Certain distinctive cultural patterns are associated with the young, particularly teenagers who share common interests and concerns and are increasingly connected through such communication channels as the mass media and the Internet. In recent years, the media has been a major source of reports on disasters and emergencies. For example, extensive media reporting was done on such events as the September 11, 2001 terrorist attacks in the U.S., the 2003 severe acute respiratory

syndrome (SARS) outbreak in Asia, the December 26, 2003 Iran earthquake, the December 26, 2004 Indian Ocean earthquake and tsunami disaster, Hurricane Katrina that made landfall on the U.S. Gulf Coast on August 29, 2005, followed the next month by Hurricane Rita, and the October 8, 2005 South Asia earthquake.

Two intriguing and interrelated questions worthy of attention by disaster researchers are: to what extent do such events, either experienced directly or through the media, increase risk awareness among the young, and do they make an imprint on youth culture, as reflected, for example, in shared attitudes and beliefs, disaster jokes and humor, and music and other art forms? Studies on such topics would be consistent with the recent call for more studies on disaster and popular culture (Webb, Wachtendorf, and Eyre 2000). Such research focusing on youths might be particularly fruitful because they are major contributors to popular culture.

Risk Communication

Since they live in a world of risks, children are risk communicators, something to which researchers should give more attention. Understanding how demographic factors impact risk communication is very important (Tierney, Lindell and Perry 2001). We need to determine risk communication patterns for younger as well as older persons. For example, how do children communicate to each other about disaster risks, and what is the nature of the information they exchange? What do they communicate to adults in their households, say parents or other significant others, about the risks from various hazards? Some organizations take the view that one of the main benefits of educating children about such issues as good health practices is that they in turn become agents of social change by educating their parents. The extent to which children and youths serve as risk communicators in this fashion needs to be documented.

Another important issue is that today's youths have access to communication technology, such as the Internet, GIS and cell phones, no other generation has had before. This raises another fascinating question. How is this technology affecting the role of youths in risk communication today and what might lie ahead in

the future in this regard? These issues need to be studied in order to advance knowledge and provide a firmer basis for policy makers and practitioners to develop effective risk communication strategies.

Mitigation and Preparedness

Children and youths can play an important role in mitigation and preparedness activities, say, for example, in the household and school, but it is not clear to what extent this happens and what the results are. Research suggests that the mere presence of children in the home is positively correlated with higher levels of earthquake preparedness (Turner, Nigg, and Heller-Paz 1986). But we need to take our understanding much further than this. For example, in what ways do families involve their children in household decision making related to mitigation and preparedness efforts for various types of hazards and what impact does this have on the level of disaster readiness eventually achieved and sustained in the household? As for schools, many such institutions in the U.S. and elsewhere are developing emergency plans in the face of the perceived increased threat from terrorism and other types of hazards. To what extent do schools include students in emergency preparedness planning decision making? What roles do they assign to students to carry out when emergency plans have to be implemented? What impacts do different degrees of student involvement in emergency planning have in eventual outcomes? Answers to such questions are well worth pursuing by the research community.

Response

While they are less likely to be involved in two of the four organizational types—established and expanding—which Dynes (1970) refers to in his typology, youths do become involved in disaster response. When they are on the scene of disasters, for example, youths, like adults, can play a role as informal first responders, or following Dynes' typology, as members of emergent groups, engaging in search and rescue, providing food to victims, and participating in other emergency activities (Wenger and James

1994). The earlier cited action taken by a group of youths in the native village in Alaska during the tsunami emergency is an example of this. Youths can also become involved in providing emergency services as members of what Dynes calls extending organizations, which are organizations, such as the Boy Scouts and Girl Scouts, that existed before an event for a particular purpose but suspend traditional activities to take on new disaster-related tasks during an emergency. Future disasters should provide opportunities for researchers to expand knowledge on the role of youths in disaster response. Comparative studies would be particularly insightful in that they would highlight cross societal variations.

Conclusion

I mentioned at the outset that the modern era of social science disaster research began over 80 years ago. Not unexpectedly, the field has undergone major changes over the years. In terms of its infrastructure, an array of social science disciplines is now involved in the field, with significant collaboration between them. Several outstanding social science disaster research centers now exist, providing needed research leadership and graduate education for the next generation of researchers. Also while greater diversity is obviously needed, particularly in terms of racial and ethnic minorities, more women are involved in the field than ever before.

The social science disaster research agenda has also changed over the years in response to societal needs, new opportunities, and insights from the research community (Mileti, 1999). For example, the topic of mitigation has a more prominent place on the research agenda than ever before. This is also true of gender studies. It is probably no accident that gender topics became more salient in the field of disaster research after a critical mass of outstanding women disaster researchers came on the scene, many of whom called for the inclusion of studies on women as well as men on the research agenda (Fothergill 1996; Morrow and Phillips 1999; Morrow and Enarson 1996).

Some of these same researchers, as well as others, have indicated that changing the disaster research agenda to reflect children's issues is also long overdue. In this paper, I have presented some

ideas on the direction this might take and the types of questions that the research community might pursue to advance knowledge and application in the field related to children. Children can be brought into clearer focus in the disaster research field through studies that consider (1) their vulnerability and the outcomes they experience because of their youth, (2) actions taken by the adult society to reduce the vulnerability of children, and (3) the role of children in hazard reduction and response and recovery activities. The more this is done on a cross-cultural basis, the greater the payoff. Another promising approach suggested by Junn and Guerin's (1996) work would be to conduct studies that compare successful programs to protect children from other risks, such as automobile passenger restraint seat laws for children, with those designed to protect them from such disasters as earthquakes. Studies on children, then, would deepen our understanding of disaster impacts as well as offer lessons for developing more effective programs to reduce disaster vulnerability among that segment of the population. This would be especially true if they included studies on both rapid onset events, typically carried out by the U.S. disaster research community, and slow onset disasters (Dynes, 2004; Kreps 2001; Quarantelli 1998).

Female disaster researchers, joined by sympathetic male colleagues, have taken the lead to push for the inclusion of gender studies on the disaster research agenda. Since we were all once children, we should be able to put issues related to children and youths on the disaster research agenda without a direct petition from them. As we make children more salient in the disaster research field, we improve our understanding of the consequences of hazards and disasters overall, as well as how to counteract them.

As a final note, the world is still trying to grasp the magnitude and significance of such recent disasters as the December 26, 2004 Indian Ocean earthquake and tsunami, the October 8, 2005 South Asia earthquake, and Hurricane Katrina which struck the U.S. on August 29, 2005. Seemingly underscoring what is discussed in this paper, scores of those who died, suffered, were displaced, and experienced other outcomes from these events, which were three of the greatest disasters in history in these regions, were children and youths. Research teams of social scientists as well as researchers

from other disciplines have already launched investigations, in some cases preliminary ones, on these event, with other studies planned by various groups. If researchers give the subject the attention it deserves, much can be learned about the outcomes of these disasters for children and youths, including knowledge of a comparative nature since so many societies were involved.

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