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CAN SUSTAINABLE DEVELOPMENT SUSTAIN US?

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Abstract

This paper presents a review of Disasters by Design,
the recent, influential second U.S. national assessment of
research on natural and technological hazards that takes
stock of the disciplinary knowledge and policy issues in
the field of disasters. It identifies four analytical
matters left unresolved in its central theme on the
importance of sustainable development for disaster
mitigation, having to do with the dual emphasis on the
local and on the global, cultural change, the implicit
assumptions that planners and social engineers know best,
and the consensual model of politics. It also identifies
some practical problems that the adoption of a sustainable
development framework advocated by the report may pose for
the specialty.

key words: sustainable development, disasters.

Can Sustainable Development Sustain us?

The recent (1999) publication of Disasters by Design, A Reassessment of Natural Hazards in the United States (Mileti, 1999), funded by the National Science Foundation, provides an excellent benchmark to understand advances in the study of disasters. It is an important book, a tour de force in disaster studies. It represents the work of scores of specialists in the sciences and engineering summarizing what is known about natural and technological hazards in the United States. The book inventories key information about what is known in the disaster/hazards studies area, identifies what is not known, and tells us what needs to be done to improve the safety of the people of the United States. Moreover, it recommends the adoption of the interpretive scheme and associated practices of sustainable development as the key to bring about effective disaster mitigation. Both emphases are done well, eliciting immediate attention from interested readers.

The call for a new national strategy to improve the means used to mitigate disaster effects, involving as it did the contribution of many sociologists and members of the International Research Committee on Disasters, is an important matter for disciplinary discussion. More often

than anyone would wish, what has been done in the past to minimize the effects of disasters and hazards has not worked as well as originally planned. The new strategy proposed, based on a sustainable development framework, is clearly useful in that, at the very least, it opens up a needed dialogue and forces a questioning of assumptions.

Disasters by Design is made up of nine chapters and three appendices (Appendix A contains an excellent list of recommendations about needed research in land use; engineering; predictions, forecasts and warnings; preparedness, response, recovery and reconstruction; insurance; economics; adoption and implementation). The third chapter, entitled "losses, costs, and impacts" document both the problems with the information gathering systems available today to keep count of the effects of hazards/disasters and the tremendous increase in such effects during the last 20 years or so (1975-1994). Despite the enormous national interest in the United States on minimizing the tremendous costs in lives and property, there is no satisfactory comprehensive accounting. This is due in large part to the peculiar record keeping of bureaucracies. A good example is Storm Data (published by the National Weather Service and the National Climate Data Center, which attributes losses in multi-hazard events to

the first hazard listed. Likewise, property claims service
data on insured losses establishes a minimum of $50,000 in
damage for inclusion in the statistical series. The
authors write:

Different agencies count losses in different ways.
Some estimates are based on economic models, others on
observers' reports. Some include estimates of indirect
losses such as lost business income while others do not;
still others use different combinations of these (Mileti,
1999, 69).

The figures presented in the chapter are staggering:
more than 24,000 killed by natural hazards during 1974-94,
for an average of 24 a week; dollar losses to property and
crops (1994 dollars standardized by the Consumer Price
Index) amounting between $230 billion and $1 trillion
dollars; and even more ominously, a huge exponential
increase in losses during the most recent 1988-94 period.

A very important and unique contribution of the
chapter is its attempt to disentangle from the very
unsatisfactory statistical series available, the costs of
droughts and dust storms, extreme cold, floods, fog, hail,
heat, hurricanes and tropical storms, ice, sleet, and snow,
lightning, snow avalanche, tornadoes, wildfires, high
winds, landslides, subsidence, expansive soils, and

tsunamis. It also apportions the losses by states.

Chapter 4 details what has become the standard way of thinking about hazards/disasters, namely the very useful notion that they and the losses they create are, in statistical terms, a higher order interactive effect and must be understood as the intersection, the inter-effect, of three major complex nonlinear systems: the earth's physical system (including atmosphere, biosphere, cryosphere, hydrosphere, lithosphere), the human system (including culture, social organization, population), and the built environment (building, roads, bridges, housing, public infrastructure). The chapter presents a lucid, elegant explanation of this master interpretative scheme, originally systematized by geographer Gilbert F. White and his colleagues and the foundation of very fruitful present-day multi-disciplinary collaborations in the study of hazards/disasters.

Chapter 5 reviews the largely U.S. and developed world-based literature on the adoption and implementation of mitigation measures by individuals, organizations, and governments. Available models of individual decision-making and adoption are briefly outlined (economic market, utility theory, heuristics, attitude, communication theory, habit, social expectation). The lack of knowledge of what

influences government decision-making is acknowledged, as
is the effect on the adoption of mitigation practices of
institutional factors, race, ethnicity, gender, social
bonds, economic and legal factors, and the characteristics
of warning messages and receivers. It is a social science
literature that is very imperfectly developed, partly due
to the lack of cross-cultural research that would increase
the generalizability of its knowledge base.

Chapter 6 shows how disaster mitigation is impacted by
land use planning and management, building codes and
standards, insurance, and prediction, forecasts and
warning. It is yet another very important contribution of
the book, for it gives in a short and easy to read text a
very tightly reasoned summary of the effects of these tools
and the reasons--most often produced by the very nature of
the structure of power distribution and exertion in
contemporary U.S. society—that they so often fail in
protecting lives and property. The chapter points out that
the U.S. does not have a comprehensive national warning
strategy. It also shows that the effectiveness of building
codes is often compromised by their poor enforcement,
partly the outcome of contending political forces and
chronic lack of resources for building code departments.
Particularly good is the section on insurance and its links

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to disaster mitigation, the social processes that impact the willingness of insurance companies to insure people against the effects of disasters, and the increasingly difficult political and economic contexts in which insurers operate. It also includes a summary of recent changes in the forecasts and warnings of floods, tornado, hurricane, drought, snow avalanche, wildfire, earthquakes, volcanoes, tsunamis, landslide, and technological hazards as well as an outline of a number of issues and policies on forecasts and warnings that crosscuts agent-specific hazards. To my mind this chapter is one of the most interesting and sobering parts of the monograph.

Chapter 7, on preparedness, response and recovery, reminds us that increasingly, definitions of disasters use a social constructivist conceptualization reminiscent of Herbert Blumer's symbolic interactionist views of social problems as collective behavior: disasters are what communities define as disasters, and are thus the outcome of social constructions. It is an excellent synthesis of what is known and a painful reminder of the many things that go unknown and under-researched at the present time. Thus, it outlines research on household preparedness and the importance of socioeconomic characteristics of households; the ways in which public information programs

can be made more effective to get people to adopt

preparedness measures; the factors that increase the

effectiveness of local recovery plans; the presence of

solidarity and group emergence in the immediate aftermath

of disasters. It also reminds us of the very scant

information available to date on how police and fire

departments prepare for disasters; the fact that very few

communities prepare for disasters; and the lack of research

on preparedness at the state and federal governmental

levels. One of the most interesting parts of the chapter

is its section on recovery, and its view that increasingly

recovery is seen as an opportunity for communities and

regions to correct mistakes in land use practices. The new

thinking emerging from the experiences of California with

recent earthquakes emphasizes pre-event planning for post-

event recovery.

Sustainable Development.

Apart from the many matters of facts and

interpretation in Disasters by Design, the book is tied

together by its recommendation that the U.S. should adopt

the interpretive scheme and associated practices of

sustainable development as the key to bring about effective

disaster mitigation. It is this claim that I find

troublesome and that is examined next.

In the mid 1990s the argument was made that the specialty area of hazards/disaster studies needed to join the sustainable development "movement": "although sustainable development is susceptible to a number of interpretations, the movement associated with sustainable development is important for the hazards community" (Mitchell, 1995). Five years later, this joining had occurred, as shown, for example, by the prominence in World Bank and United Nation programs, of the link between the International Decade for Natural Disaster Reduction and sustainable development (United Nations, 1997), as well as by the efforts of states, such as the German Foundation for International Development (1994) to link sustainability and disasters.

As in other specialties, in disaster/hazards studies the concept of sustainable development has been used to advance specific, often very laudable interests. Thus, a Latin American group of scholars and planners in the disaster area penned a "Miami Declaration on Disaster Reduction and Sustainable Development" at the conclusion of the Hemispheric Congress on Disaster Reduction and Sustainable Development (1997) at Florida International University. It declared that "disaster reduction and sustainable development (were) mutually supportive goals"

(2) even if it did not define the latter. An earlier
effort was the "Declaration of Barbados" at the Global
Conference on the Sustainable Development of Small Island
Developing States (1994). It used the concept of
sustainable development mostly rhetorically, in statements
such as that "all states should reduce and eliminate
unsustainable patterns of production and consumption," even
as it advanced the agenda of governments and their dire
need for resources, technology, know-how, and equitable and
non-discriminatory trading relationships with first world
states. One obvious objective in these and other efforts
of its kind is to try to obtain funding from sponsoring
agencies, and apparently the inclusion of the popular
concept of sustainable development helps.

In the disaster/hazards studies and management area,
most writings using the term sustainable development
advocate the reduction of vulnerability and the mitigation
of disaster effects (Bender, 1993; Munasinghe and Clarke,
1994), although it is seldom recognized that mitigation
does not always requires putting special attention to the
environment-disaster relationship (Bender, 1994). Thus, in
a very clear-headed exposition, Anderson (2000) identifies
patterns of development that impact the environment and
increase vulnerability to disaster. Boulle, Vrolijks and

Palm, (1997), in an article avowedly on sustainable urban development, describes the IDNDR strategies of vulnerability reduction, such as risk assessment, risk reduction, disaster impact assessment, land use planning, and quality of construction. Ericksen (1996) also entitles his article "Sustainable Management Strategies" but instead gives an interesting description of the adoption of non-structural measures of flood control in three countries and the relative effectiveness of different approaches in governmental regulations. Berke, Kartez and Wenger (1993) offer a very worthwhile model for understanding local disaster recovery efforts while presenting it as "achieving sustainable development." Similarly, Ezzy (1992) claims to write on "Is High Technology Sustainable?" but instead presents an interesting description of the requirements to introduce GIS technology to improve warnings in developing countries. All of these authors, and many others could be included in the list, mention sustainability but describe important mitigation programs even as they differ in their inclusion of environmental issues.

Perhaps the best example of how firmly entrenched is the relation between disaster and sustainable development is Disasters by Design. As mentioned previously, the concept of sustainable development plays an important part

in the claims the book makes (Mileti, 1999). Indeed, the new awareness about the importance of environmental matters reinforced in part by the book is such that it is difficult to conceive future work in the disaster area that could be completely devoid of such considerations. Its first chapter states that the nation "must shift to a policy of sustainable hazard mitigation, viewing both "as an integral part of a larger context" (Mileti, 1999, 2)". The context turns out to be American culture, as we will see later. It defines sustainability as the capacity of a locality to "tolerate and overcome damage, diminished productivity, and reduced quality of life from an extreme event without significant outside assistance" (ibid., 4). It states that disaster mitigation can be done in a sustainable way if it maintains and improves environmental quality, people's quality of life, local resilience, enhances local economies, creates inter and intra generational equity, and encourages and respects local decision-making and opinion. These tasks are then assigned to "sustainable hazard mitigation networks" made up of planners, resource managers, environmentalists, and other "local stakeholders."

These directives are reminiscent of some of the key ideas in the Brundtland Commission Report (see below). The

emphasis is not only or perhaps even primarily on the local

scene. Rather, we are told that the nation must adopt a

"revised framework that links natural hazards to their

global context." How to put the two emphases together,

localism and extra localism, in hazard mitigation is not

made clear. For example, while it is true that folk

knowledge, local disaster culture and volunteers are often-

time insufficiently appreciated assets in disaster

prevention and mitigation, the still unresolved question is

how to combine these local assets with increasingly

prevailingly bureaucratized and formalized approaches to

disaster mitigation.

The strong emphasis on the local community in some

respects is opposed to general social patterns in the US

that have persisted at least since the Civil War. As it is

generally understood, the logic of societal development in

the country particularly since the Civil War has been away

from localism and in the direction of facilitating national

integration, nation building, the emergence of state,

regional and continent-wide markets, the ascendance of the

federal government, indeed, at this late hour, the creation

of international economic, military, cultural and political

organizations. The assumption that the success of disaster

mitigation and sustainability is linked to communities'

self-sufficiencies may not be supported by this historical pattern. As importantly, it is unclear what makes this localism a more effective tool for carrying out disaster mitigation than regional, state, national and international interdependences.

The hoped-for transformation is expressed thus: "...reducing losses and disruption in the long term (will not succeed) until hazards mitigation is housed within a redesigned national culture that favors sustainable development and people are reorganized to support that cultural shift" (Mileti, 1999, 267). Again, clearly one of the important contributions of the book is its insistence on the need to think about the long- term effectiveness of various types of mitigation efforts. Nevertheless, even without a revised national culture a number of mitigation efforts have been successful. Indeed, the claim seems to be contradicted by some of the materials presented by the various committees authoring the chapters previously reviewed, for they show important, enduring advances in certain areas of mitigation.

The objection appears to be directed to hazard mitigation measures that increase future risks, as well as the individualism, emphasis on the short term, materialism, profit motive, and consumerism in our society (Mileti et

al., 1995). It is possible to deplore some of the manifestations of these patterns while being uncertain of the outcome if the injunction is that the specialty needs to change American culture to more effectively mitigate disaster effects, for it may lead to unproductive efforts to try to bring about such complex transformations. The majority of disaster/hazards scholars and planners are not experts in bringing about massive cultural change, nor would they be willing to sponsor such revolutionary and/or reform-oriented perspective.

Even if successful, organized attempts to change the culture in the absence of social and cultural support may reduce to domination by planners and social engineers. This is the case since the major shifts in societal norms and beliefs and a number of trends in the U.S. are not consistent with many ideas associated with sustainable development advanced in the book. It is difficult to see how changing the culture could occur otherwise if the expectation is that somehow it would be change from within. Rather, most likely it would be cultural change to facilitate the political domination of professionals and the ascendance of their views of risk and their opinion regarding what needs to be done to minimize it (see Douglas and Wildavsky, 1982).

Yet, social and planning sciences do not have the technology, theories, and measurements necessary to "solve" the constructed risk. They cannot predict the existence of social problems. Social problems generating views of environmental risks are not objective facts. In a view that is now dominant in studies of social problems, H. Blumer argued many years ago that the claim that the professionals "know best" is inadequate. Instead, problems and conceptions of risk are inter subjective and political in their very essence. More generally, even if trite, the future cannot be anticipated. Thus the paradox of a society that engenders change at a rate never before seen in world history and that cannot anticipate it. It is this paradox that creates the collective surge of sustainable development, a rapid shift in public opinion among professional publics that can be understood in part as a cultural reaction to the uncertainty.

The emphasis on sustainable development and the need for rapid social change it advocates necessitates spelling out an explicit model of the political process. For it cannot be assumed that politics would be straightforward such as that citizens are informed, public opinion is formed, a collective decision is reached that reflects this generalized consensus, and the polity acts to reflect the

views of the citizenry. Rather, many scholars describing

recent post World War II social change in the U.S.

political system emphasize its anomic nature, are critical

of capitalism, consumer society, the self-centered, other-

directed individual concerned with sensate pleasures and

consumption and alienated from politics, the rule of the

bureaucracy and its manipulation of political socialization

processes and outcomes, in sum, the increasing separation

between political power and the mass of the people.

For example, a recent, very important book by Sharon

Beder gives a detailed view of how local politics on

matters of the environment are often impacted by corporate

activities. Global Spin, The Corporate Assault on

Environmentalism (Vermont, Chelsea Green Publishing

Company, 1997) includes detailed documentation of the

ingenious strategies used by modern day corporations to

manipulate local political environments to enhance their

interests. The disaster-sustainable development discourse

is open to the same sort of manipulation. Thus, it is

necessary to spell out the model of politics supporting the

argument for sustainable development and which would point

out likely ways to bring about the desired change.

The evidence of manipulation by the U.S. government

comes in a publication of the U.S. Department of Energy

(Becker and Stauffer, 1994) entitled Rebuilding the Future.
A Guide to Sustainable Redevelopment of Disaster-Affected
Communities. The Guide is an unusually frank discussion by
officials of the DOE as to what is involved at the local
level to implement a sustainable urban redevelopment
project. The narrative refers to the local people as
"villagers" and caution about "(t)he human factor...Among
them are biases, misinformation, and the fear of the
unknown among the villagers...The community development
office attempted to dispel those biases based on erroneous
assumptions through education and public information. Those
that remained, based on values, tradition, or aesthetic
were folded insofar as possible (emphasis added) into the
planning of the new business district." We are furthermore
told that people asked "the wrong question" such as the
"emphasis by building owners on first costs over life cycle
costs. (They) tended to ask how much will it cost now
rather than how much will it save me in the long run?" The
guide goes on to describe other problems with villagers and
how to resolve them. One possible interpretation from
reading this guide is that the exercise of sustainable
community development is primarily one of public relations
by the DOE, with local people assumed to be passive and
encouraged to participate in very carefully planned and

circumscribed ways reflecting the options that are acceptable to the experts.

This element of manipulation and coercion is present at the international level as well. Smith (1997) shows that sustainable development is understood very differently in "north" and "south" countries. In the south problems of subsistence predominate. Most countries in the south do not have the freedom to worry about global environmental issues (Smith, 1997, 7). Instead, sustainable development is imposed on them by international development banks and other granting agencies (Ibid., 6, 7). Smith's thoughtful analysis confirms my sense that in some important respects sustainable development is an intellectual product of professionals in "north" countries, reflecting their ways of lives and ideologies. The enormity of this truth becomes clear when one travels to the slums of Asuncion or Montevideo, for example, and witnesses the poverty, the unemployment, the deterioration of urban infrastructure, the inability of local governments to provide basic urban services like garbage collection and drinking water and police protection. Here sustainable development's lofty claims and dreams of equity and nonviolence are foreign, hollow, and hypocritical, for the same north pushing sustainable development on the south also advances neo-

liberal economic policies and programs causing widespread
suffering. Rather than a decrease in vulnerability, what
seems to be going on is a rearrangement of risk at the
international level (Dynes, 1997). The post-1989 emphasis
on international market integration and specialization,
with its attendant impoverishments, exploitations, and
difficult social adjustments increases vulnerability to
disasters. It contradicts the hopes of the sustainable
development movement. Fantastically, both sets of ideas
come from the north.

The manipulation in fact has not brought about the
desired change. Gudynas (1990; see also Sabine, 1992;
Diaz, 1995), commenting on Latin America, writes that the
"environmental situation has not improved, and is in fact
worse in many respects…many Latin American governments
have…reproduced (the sustainability discourse) while
continuing with their exploitative tactics…The situation
remains unchanged."   Perhaps this is the case in part
because the unrealistic and diffuse emphases of the
sustainability argument do not encourage a clear accounting
of concrete development projects in the region, a
precondition emphasized by ECLAC (1991).

In another paper now in preparation I show that during
the late 1980s and 1990s a sudden, dramatic increase

followed by a sudden decline in the frequency of articles in various disciplines on the topic of sustainable development occurred. This variation was not associated with major scientific reformulations or breakthroughs in scientific theory or methods but rather with an important political event, the publication of the Brundtland Report. It was a symbolic, collective surge impacting various scientific communities. As in other events of its genre, the surge of sustainable development had historical precursors, was not completely novel, and gained quick acceptance after its adoption and sponsorship by a prestigious group, the Brundtland Commission (for a detailed review of the creation of the commission see Vaillancourt, 1995).

Using information from the library of the Natural Hazards Research and Applications Information Center of the University of Colorado at Boulder, Colorado, arguably the most complete collection of disaster-related materials in the world, it is possible to show that the frequency of articles on the disaster-sustainable development link experienced tremendous growth during the 1990s, reaching 32 publications in 1998, the latest year for which there is information. My guess is that in the specialty of disaster/hazards studies the popularity of the theme of

sustainable development has not yet reached its apogee, for
the recent publication of Disasters by Design (1999) will
most certainly strengthen it.

Despite this predicted growth in the popularity of the
term in the near term, the adoption of a sustainable
development framework may pose unintended problems for the
disaster/hazards research community. Some of the most
important of these effects may be:

*The confrontation of the sustainable development
approach with older, less environmentally oriented thinking
in the specialty leading to the tendency to discount the
real advances in disaster mitigation and planning that have
occurred on a whole host of matters, such as land use
planning, coastal erosion, evacuation planning, warnings,
wind-resistant buildings, disaster-resistant programs,
understanding of complex organizational reactions to
disasters.

*Utopianism, normative guidance, and ideological
commitments that would create unwelcome limitations to the
free conduct of inquiry and discord in the specialty.

*The insistence that certain types of environment-
related problems are paramount, which would conflict with
the real life problems faced by governments, both in the
"south" and in the "north."

*The grandiose emphases in the surge of sustainable development may have the paradoxical effect of diluting the urgent need to stay focused on specific environmental issues and their relation to disasters and hazards, such as planting trees and preserving forests in Central America to alleviate mudslides and floods.

*The exaggerated claims of professional expertise may bring discredit for the disaster professional involved in mitigation and management of disasters and hazards.

Conclusion.

The preceeding pages have identified four analytical matters left unresolved in the argument in favor of sustainable development. They are the dual emphasis on the local and on the global, how and why to bring about drastic cultural change, the implicit assumptions that planners and social engineers know best, and the consensual model of politics embedded in the argument. It also identifies some practical problems that the adoption of a sustainable development framework advocated by the report may pose for the specialty.

The fortuitous, timely publication of Disasters by Design made it relatively straightforward to document the extent to which the field of hazards/disasters is a vibrant area of research and application in which many sociologists

and members of the International Research Committee on Disasters actively participate. I hope to have shown some of the main themes in research and application in this specialty and the unknowns and continuing difficulties of protecting people and property against hazards, as well as the emerging controversy surrounding the use of sustainable development as an integrative conceptual scheme in the specialty.

Years ago, Theodor W. Adorno pointed out the disjuncture of theory and praxis in sociology, or the tendency for sociologists to exclude from their work an explicit emphasis on practical application. Disasters by Design demonstrates that this is not the case in the sociology of disasters, for in it very important theory driven work occur as attempts to resolve very critical, practical matters of public concern. This potential usefulness is very often validated and is one of the great blessings of working in the disaster studies area.

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