

Introduction to the Special Issue on Disaster Risk Reduction in the Post 9-11 Security Environment

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Disaster impacts are on the rise worldwide, including unanticipated catastrophes as well as moderate-scale repetitive events. The central objective of this special issue is to highlight how effective, efficient and transparent group and decision negotiation processes can reduce disaster risk, thereby saving lives, reducing property losses, enhancing security, and increasing global and community resilience. The impact, extent, and frequency of natural, health-related, and human-induced disasters have risen dramatically in every decade since reliable records began around 1960 (DFID 2004). In 2007, a total of 960 disasters caused about 82 billion dollars in damage, affecting at least a quarter billion people, disproportionately affecting vulnerable communities in developing nations (Munich Re 2008). Natural disasters alone killed about 229,000 people in the first half of 2008, more than in all of 2004 when the December 26 Indian Ocean tsunami destroyed coastal communities in fourteen countries, from Somalia to Indonesia (Levy and Gopalakrishnan 2007).

This special issue addresses, comprehensively and in-depth, complex, self-organizing and ill-structured group decision and negotiation processes for managing the unexpected and cascading impacts of disasters that cross policy domains, geographic, political, and sectoral boundaries. An all-hazard approach is employed, considering health-related emergencies, natural disasters, system failures and the risk of terrorist attacks. Since the group decision and negotiation field draws on a diverse range of paradigms and influences, the six disaster risk reduction papers found herein

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include negotiation case histories, conceptual-theoretical investigations, policy perspectives, and risk analyses.

These group decision and negotiation focused papers serve to strengthen interdisciplinary linkages among the fields of group decision making, disaster planning, national security, and hazards mitigation. This special issue involves interdisciplinary, cross-boundary, and transnational papers that examine the causes and consequences of disasters, with a special emphasis on crafting comprehensive and integrated group decision and negotiation solutions to effectively address them. The papers investigate advances in group decision and negotiation knowledge as well as the opening of new research avenues for integrated disaster risk reduction research.

The first article, which is in two-parts, describes the theory and practice of drama theory for managing global environmental hazards, risks, and disasters. It is shown that drama theory 2 (dt.2) successfully models emotional responses that, throughout the course of a conflict, can lead to unanticipated reactions and improve strategic decision making for disaster risk reduction. This article is the result of a long and fulfilling collaboration with Nigel Howard, who published a seminal and timely two-part Drama Theory paper in the June, 1994 issue of this journal. Nigel recently received the 2007 Command and Control Research Program (CCRP) Enduring Achievement Award for group decision and negotiation research that directly contributed to the theoretical foundation of the papers in this special issue. We dedicate this issue to the memory of Nigel Howard, our dear friend and colleague.

In the next paper, D. Marc Kilgour and Jason Levy put forth a model of bargaining over hazardous waste cleanup. Specifically, pollution clean-up costs are allocated to two parties suspected of contaminating the environment. The situation in which two parties reach a negotiated settlement is compared with the situation in which bargaining fails and cost allocation is carried out by the government. The results are applied to negotiation processes used in environmental cleanups performed under the *Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund)*.

Next, Loehman discusses voluntary cost-sharing as a paradigm for ameliorating pollution and reducing environmental risk: polluters and sufferers can choose to share the costs of pollution abatement and participate together in reducing pollution. A nitrogen pollution case study is used to demonstrate that a preferred outcome can be obtained with cost sharing among polluters and consumers as compared to a "Polluter Pays" outcome.

In the subsequent paper, Li et al. describe the theory and practice of using the Graph Model for Conflict Resolution (GMCR) II for national security and energy security. GMCR papers have been presented at each of the previous eight GDN conferences. It is shown that GMCR II constitutes a valuable and original decision support tool to analyze strategic homeland security and emergency preparedness problems. They examine complex group decision and negotiation processes to reduce disaster risk and conclude that energy source diversity has become a fundamental principle of both energy security and national security in the United States. The decision of whether or not to approve a new power plant facility in the United States is examined.

In the final paper, Corsair and co-authors investigate multi-criteria decision analysis (MCDA) methods in order to improve restoration decision making by quantifying

non-economic objectives, communicating tradeoffs, facilitating consistent and explicit valuation, and focusing negotiation on ultimate objectives. With application to two environmental case studies they show how MCDA can assist group decision making and negotiation support.

We would like to express our appreciation to the 11 authors of the 6 papers and to the anonymous referees whose careful and timely reviews helped to sharpen the ideas found in them. The devastation caused by Hurricane Katrina shows that traditional plans and policies for reducing disaster risk are inadequate and that decision makers must redouble their efforts to help communities benefit from advances in group decision and negotiation processes in order to enhance disaster resilience and resistance. In summary, this special issue provides a collection of creative and effective group decision and negotiation processes to help policy makers prevent, prepare for, respond to, and recover from, natural, man-made, and health-related disasters.

Finally, we thank Melvin Shakun, a magnanimous gentleman and pioneering GDN scholar, for encouraging us to bring this timely and important special issue into fruition. Mel has provided decades of dynamic and inspirational leadership for the global Group Decision and Negotiation community. This special issue would not have been possible without his guidance and support.

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