

COMMENTARY • The Next Steps for
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Networks of Threats and Vulnerability:

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work's effects vary across time and space; and the capacity to promote change is distributed unequally among states and non-state actors.

Environmental security (ES) scholarship provides important theoretical and methodological underpinnings for the embryonic field examining these threat networks. ES literature introduced an interdisciplinary perspective into traditional security practice, promoted the incorporation of security issues into main-

programs, so that specialists in these areas can examine the security implications of their practices. For example, every doctor should understand how the country is likely to respond to a lethal epidemic or chemical release, and engineers should learn how to design buildings that are less vulnerable to attack. Network-based threat analysis could provide valuable input for financial risk assessments and investment decisions,⁷ and it could delineate the interdependence of internal and external national security problems for law enforcement and intelligence personnel.

Studying the dynamics of global networks: Examples

The interactive dynamics of networks—such as the environment, the market, and global terrorism—need to be analyzed via both quantitative and comparative case study methods, as in the following examples drawn from ES research in Nepal and Pakistan.⁸

In 1976 the Government of Nepal established the Koshi Tappu Wildlife Reserve in the eastern part of the country. This protected wetland, which became a Ramsar Wetland of International Importance⁹ in 1987, lies along a 24-kilometer section of the Koshi River in an area known as the Terai. A portion of the area downstream from the reserve was leased to India so it could develop a dam. Settlers moved to this region to relieve pressure on the Kathmandu Valley and create a Nepalese presence along the border with India. The settlers, who relied largely on fishing and gathering, were displaced by the reserve and the lease. Now, they must eke out an existence in a remote, resource-poor region, vulnerable to any sort of shortage.

For the past decade, Nepal has suffered a violent conflict between Maoist insurgents and the government. The Maoists are very active in the eastern part of the country, where they have promised to return the reserve's land to the local residents. This rhetoric has mobilized sympathy and support for the rebels. Some analysts consider the Maoists a terrorist group

that may be expanding its transnational links to left-wing groups in India, the Tamil Tigers in Sri Lanka, and other extremist groups in South Asia (South Asia Terrorism Portal, n.d.). Understanding the Maoists requires understanding the relationships among the world economy, which influences the Nepalese government's decisions, such as the lease to India; environmental stressors, like the migration from Kathmandu Valley and resource scarcity

Pakistan sought to gain control over its northern regions, the forests were largely ignored, but as their commercial value increased in the 1960s, they were leased to private contractors in return for generous royalty payments. When local people protested these terms, the government agreed to raise the community's share from 12 percent to 60 percent of the royalties. Unfortunately, due to widespread official corruption and the timber mafia's strong-arm tactics, local communities received very little as the forests were rapidly cleared in the 1970s.

In recent years, Islamic law has gained influence in Dir-Kohistan, especially among the Pathan and Gujar communities, which have adopted it in areas where they constitute a majority. Residents of Dir-Kohistan believe Islamic law is less biased than customary or statutory law and less prone to corruption. It is also more generous towards women, and thus appeals to the half of the population denied legal standing for centuries. From the perspective of many outsiders, the rise of Sharia law indicates a capitulation to Islamic extremism and creates a safe haven for Taliban and al Qaeda supporters. There is no doubt that this conflict-prone region includes some supporters of these transnational threat groups, but it is equally true that a combination of environmental scarcity, failed legal systems, and government corruption created conditions under which Islamic law became the only support system for many local residents. To successfully address threat and security issues in Dir-Kohistan, as much—if not more—attention should be given to improving sustainable livelihoods, education, and law enforcement, as to rounding up drug traffickers, offering bounties, and imposing sanctions. The security policymakers' knowledge of this region is not often based on the fine-grained field research undertaken by ES scholars. Following this trajectory might lead to more effective and less costly policies that undermine transnational terrorism by providing viable opportunities for sustainable employment and justice.

Lessons for Environmental Security

Since the mid-17th century, and especially since World War II, the field of security studies has been constructed to investigate and help resolve the problem of interstate war. Today, transnational threat networks present as great a challenge to national and human security as war, as ES researchers argued in the 1960s, 1970s, and 1980s.¹⁰ After a dramatic growth spurt in the 1990s, ES has produced a body of theoretical and methodological insights into the study of other network threats, as discussed above.¹¹

The study of network-based threats also offers lessons for environmental security. For example, a full analysis of a threat system like global terrorism will probably reveal connections between the network and global environmental processes, which may lead to ideas for viable interventions. In addition, the ES literature could close some of its internal gaps by engaging the broader security community on concepts such as threat, vulnerability, conflict, and cooperation.¹² ES researchers often resist responding to the extensive literature on conflict and cooperation, and reduce this complex world to a meta-variable (e.g., undifferentiated “social factors”) that affects the relationship between the environment and conflict. Thus, network-based threat analysis could provide ES researchers with a way to deepen their understanding of security theories.

Over the next 10 years, as the United States and many other countries struggle to come to terms with new threats and vulnerabilities, ES research could support the development of an emerging field that may transform our understanding of human and national security, while reaping its own beneficial insights into new networks of conflict and cooperation.

Notes

1. There is no consensus on the definition of “network” or how to distinguish it (if necessary) from “system.” Here, we use the term network in its most elemental sense: “an interconnected system of things or people” (retrieved on August 17, 2004, from Word



Net: <http://www.cogsci.princeton.edu/cgi-bin/webwn?stage=1&word=network>).

2. The United Nations (2004) has 191 members. The United States recognizes 192 states: UN members plus Taiwan (U.S. Department of State, 2004).

3. Partially inspired by England's violent civil wars, Hobbes envisioned the sovereign, territorially delimited state as the optimal arrangement for maximizing human security. Europe could escape the strangling grip of its royal families and the Catholic Church, Hobbes argued, only by centralizing political power



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