

Research Reports and Briefs

Comparative Perceptions of Risk From Nuclear Testing in Kazakhstan: Preliminary Results and Proposed Research

Cynthia Werner, Assistant Professor, Department of Anthropology, Texas A&M University, Texas, USA, werner@neo.tamu.edu; **Kathleen Purvis**, Assistant Professor, Joint Science Department, Claremont Colleges, California, USA, kpurvis@jsd.claremont.edu; and **Nurlan Ibraev**, Director of the "Densauliq" State Agency for Health Care, East-Kazakhstan Province, Kazakhstan, baklanova@ustk.kz

Between 1949 and 1989, approximately 470 nuclear tests were conducted at the Semipalatinsk Nuclear Test Site in Kazakhstan. At least one million people were exposed to significant doses of radiation as a result. The test site, also known as the Polygon, is a 19,000 square kilometer tract of land situated about 150 km west of Semipalatinsk, a city of approximately 400,000 residents. A number of smaller towns and villages are situated even closer to the test site. Studies comparing the health problems experienced by populations living near the Polygon with those experienced by control populations indicate that the populations near the test site have experienced higher rates of cancers (including leukemia), benign thyroid abnormalities, psychological problems and birth abnormalities (Gusev 1998; Peterson 1998). Despite new information about the nuclear tests and the dangers of radiation, many individuals have continued to live in areas near the former test site where they are exposed to chronic low dose radiation, and some individuals engage in high-risk activities, such as mining copper from the former test site.

Our collaborative research project compares the ways that four social groups (Kazakh villagers, Russian villagers, local research scientists, and local health care workers) perceive the risk from radiation exposure. This study also identifies the factors that influence each group's risk perceptions and suggests how different perceptions of risk can affect individual decision-making. This research report provides background information on our research team and on the research site and a brief summary of our preliminary findings in Kazakhstan.

Background

This is an international collaborative research project that involves the combined efforts of a

cultural anthropologist (Werner), an environmental chemist (Purvis), and an oncologist (Ibraev). Preliminary research for this project was conducted in Kazakhstan during the summers of 2000 and 2001. Further research will be conducted during the summers of 2003 and 2004, with funding from the National Science Foundation and the National Council for Eurasian and East European Research.

Information about the Soviet nuclear testing program was highly classified until the *glasnost* years in the late 1980s. Thus, villagers who lived as close as 40 kilometers from the test site and occasionally herded their animals on the test site were never informed of the risks associated with the tests. Before each test, the Soviet military consistently warned the local citizens that there would be an "explosion," yet they only evacuated local residents for temporary periods during the largest atmospheric tests. Today, the villagers talk about how they never knew that the atmospheric explosions that many enjoyed watching, almost like a firework display, were poisoning their bodies and endangering their health. Not knowing the risks, villagers occasionally entered the irradiated Polygon territory to herd their sheep, to sneak into the closed city of Kurchatov, and to steal objects that the Soviet military left behind.

Soviet leaders knew that the tests had harmful effects on human health but the Soviet government silenced medical doctors who were responsible for gathering and reporting statistics on illnesses and causes of death. Cancer diagnoses were seriously underreported because they could only be made by doctors in Almaty or Moscow. Soviet leaders also used villagers as guinea pigs to monitor the effects of radiation on human subjects. Beginning in 1961 many of the villagers were treated in a "secret clinic" in Semipalatinsk, known as Brucellosis

Dispensary Number Four. Signs on the building described the clinic as a center for treating animal-borne diseases, yet those who worked inside knew that the clinic was a highly classified research clinic for studying the impact of radiation exposure on human bodies. Military personnel would routinely visit the villages, and offer rides to any villagers who sought medical care. At the time the villagers felt privileged to have this opportunity, because they felt the clinic offered exceptional care. In exchange for this care, they unknowingly became the subjects of scientific research on the effects of radiation. One of the former directors of the dispensary today admits that "the role of the facility was not to assist radiation victims, but to observe them and write reports for Moscow." It is difficult to assess the actual quality of care because most of the research data collected by Dispensary Number Four was either destroyed or taken away to Russia.

The villagers' trust in the government was shattered in the late 1980s. Inspired by *glasnost* policies, the Kazakh writer Olzhas Suleimenov founded the Nevada-Semipalatinsk Movement in 1989. Although the closing of the test site in 1991 was a great victory for the people who live near the test site, the Cold War has not really ended for these people. They still live in an area that is contaminated by radioactive fallout and their bodies are still suffering from years of chronic, low-dose radiation. Many scientists believe that the current levels of radiation exposure still present health risks to individuals living near the test site. In the post-Soviet period poverty and poor nutrition complicate the wellbeing and health care of these villagers.

Preliminary findings in context

Studies of risk perception demonstrate that specialists and non-specialists do not always agree on the risks associated with certain hazards and technologies (Slovic, Fischhoff, and Lichtenstein 1979) and show that risk perceptions are heightened among laypersons when a particular technology or hazard is perceived to be involuntary, uncontrollable, dreaded, unknown, and potentially catastrophic (Slovic 2001).

Existing studies of risk in other cultures clearly demonstrate that economic and technological risk is socially and culturally constructed (Bujra 2000; Cashdan 1990; Douglas and Wildavsky 1982; Weber and Hsee 1999). Studies of risk in non-Western cultures suggest that the very concept of risk is more developed in "modern" societies, where

scientific rather than religious or superstitious explanations are used to explain unfortunate or unplanned events (Beck 1992; Beck 1999; Giddens 1998; Douglas and Wildavsky 1982). Although cultural differences have been acknowledged as a significant factor in shaping risk perception (Renn and Rohrman 2000), there is a significant need to fill the gap in the literature when it comes to risk perception regarding nuclear energy and radiation exposure. Do the theories about risk perception in Western societies apply to a non-Western setting where traditional healing practices combined with Islamic (and Russian Orthodox) religious beliefs might play an important role in shaping local attitudes towards health and risk?

Rural Kazakhs and rural Russians are both literate and educated, yet their worldview is different from the respondents in previous risk studies. Shaped by personal experience and information from the popular press, Kazakh and Russian villagers who live near the test site have constructed their own perception of how nuclear testing has affected their health and environment. Based on preliminary interviews we know that perceptions of risk towards radiation vary within the villages. On the one hand, some of the villagers we spoke to claim that they are not at all worried about radiation exposure from the water they drink or the food they consume. They believe that the harmful effects of radiation do not exist anymore, since the last nuclear test was conducted over a decade ago. Some villagers even pursue "risky" behaviors, such as mining copper cables from the former test site. On the other hand, we spoke to several villagers who are very concerned that they are still being exposed to harmful levels of radiation. These villagers express a general sense of hopelessness and despair. Due to economic conditions they simply cannot afford to move to another region or to buy "safe" water and food. We do not yet know why villagers have varying perceptions of risk. Our survey research will examine whether ethnicity, gender, education or age can help explain the variation.

Previous studies argue that non-specialists perceive greater risks than "experts" because they do not fully understand the science of nuclear energy. The risk literature also suggests that expert views vary depending on their scientific field. Our study considers two groups of experts: local research scientists (including those who work at the former test site and the former secret laboratory) and health care workers (including doctors, nurses and hospital administrators) who treat the "victims" of nuclear

testing. Our survey research will demonstrate whether a similar dichotomy between experts' perceptions and laypersons' perceptions exists in Kazakhstan. Based on preliminary interviews we expect this to be the case. For instance, in one interview, a nuclear scientist working in Kurchatov mentioned that he and his colleagues were exposed to radiation throughout the testing period, but do not think of themselves as victims. He believes that diet, rather than radiation exposure, plays the greater role in explaining the poor health of villagers. Although his views are shared by other nuclear scientists, they are not shared by health care workers. All of the health care workers we interviewed have a fairly high perception of risk from radiation exposure. They are certain that the high rate of cancer in the villages surrounding the Polygon can be explained by radiation exposure. Unlike the villagers, however, they realize that radiation exposure is not the only factor that affects the health of villagers.

In addition to testing hypotheses based on findings in risk studies, we plan to analyze existing environmental data collected by the Kazakhstan Research Institute of Radiation Ecology and Medicine both during and after the nuclear testing period. We also plan to analyze health statistics on the incidence of cancer and heart disease in the two test villages as well as one control village (Zharbulak). This research will add a longitudinal component to a previous study (conducted by Ibraev) on the incidences of cancer and heart disease in Semipalatinsk province. Both data sets will be useful for putting the perceptions of risk in perspective.

A final objective of this study is to examine the ways in which risk perceptions affect choices made by individual villagers. These choices involve certain activities and behaviors that could limit exposure to radiation and/or improve individual and family health. The study assumes that there will be some variation among villagers regarding the perception of risk from radiation exposure. Additional survey questions and qualitative interviews will be used to get at these questions.

References

Beck, Ulrich

1992 [1986] *Risk Society: Towards a New Modernity*. London: Sage Publications.

1999 *World Risk Society*. New York: Blackwell Publishers.

Bujra, Janet

2000 "Risk and trust: Unsafe sex, gender and AIDS in Tanzania." In: *Risk Revisited*. Pat Caplan, ed., pp. 59-84. London: Pluto Press.

Carlsen, Tina, Leif Petersen, Brant Ulsh, Cynthia Werner, Kathleen Purvis, and Anna Sharber

2001 "Radionuclide contamination at Kazakhstan's Semipalatinsk test site: Implications on human and ecological health," *Human and Ecological Risk Assessment*, 7(4): 943-955.

Cashdan, Elizabeth, ed.

1990 *Risk and Uncertainty in Tribal and Peasant Economies*. Boulder: Westview Press.

Douglas, Mary, and Aaron Wildavsky

1982 *Risk and Culture: An Essay on the Selection of Environmental and Technological Dangers*. Berkeley: University of California Press.

Giddens, Anthony

1998 *Modernity and Self-Identity: Self and Society in the Late Modern Age*. Cambridge: Polity Press.

Gusev, B., R. Rosenson, and Zh. Abylkassimova

1998 "The Semipalatinsk nuclear test site: a first analysis of solid cancer incidence (selected sites) due to test-related radiation," *Radiation and Environmental Biophysics*, 37: 209-214.

Peterson, Leif, Zhaksibay Zhumadilov, Sunil Kripalani, Yuri Progulo, Thomas Wheeler, Boris Gusev, Ridha Arem, Sergei Yonov, and Armin Weinberg

1998 "Diagnosis of benign and malignant thyroid disease in the East Kazakhstan Region of the Republic of Kazakhstan: A case review of pathological findings for 2525 patients," *Cancer Research Therapy and Control*, 5: 307-312.

Renn, Ortwin, and Bernd Rohrmann

2000 "Cross-cultural risk perception research: state and challenges," In: *Cross-Cultural Risk Perception: A Survey of Empirical Studies*. Ortwin Renn and Bernd Rohrmann, eds., pp. 211-233. Boston: Kluwer Academic Publishers.

Slovic, Paul

2001 "Introduction and overview," In: *The Perception of Risk*. Paul Slovic, ed., pp. xxi-xxxvii. London: Earthscan Publications.

Slovic, Paul, Baruch Fischhoff, and Sarah Lichtenstein

1979 "Rating the risks," *Environment*, 21(3): 14-20, 36-39.

Weber, Elke, and Christopher Hsee

1999 "Models and mosaics: Investigating cross-cultural differences in risk perception and risk preference," *Psychonomic Bulletin and Review*, 6(4): 611-617.

Interviewing NGO Leaders in Bishkek

Sada Aksartova, Ph.D. Candidate, Department of Sociology, Princeton University, Princeton, N.J., USA, sada@princeton.edu

I have recently returned from a research trip for my dissertation comparing US civil society assistance in Russia and Kyrgyzstan. My field work was supported by the International Research and Exchanges Board (IREX), as well as the MacArthur Foundation and Princeton University's Center for International Studies. The dissertation, titled "Civil Society from Abroad: Western Donors in the Former Soviet Union," examines cultural and organizational dimensions of the interaction between US donors and recipient NGOs in Russia and Kyrgyzstan. A significant portion of my empirical evidence comes from in-depth interviews with representatives of donor and recipient organizations. To conduct the interviews I spent 4.5 months in Moscow and one month in Bishkek. In this report I will discuss some of the problems I confronted doing this kind of research in Bishkek and their broader implications.

At first I found it far easier to work in Bishkek than in Moscow. For one thing, Bishkek is a much smaller city. Although the donor presence is large relative to the size of the city and of the country, it is not too big numerically and I quickly understood what key organizations and people I should contact. People were for the most part very open to my inquiries and could usually find a time to meet with me the same or next day when I called to introduce myself and request a meeting (which almost never happened in Moscow). That said, in Bishkek I observed a pattern that had not manifested itself to the same degree in Moscow: local NGO leaders were far more apprehensive about meeting with me than were representatives of the donor community, who were mostly but not exclusively Westerners.

Several prominent activists repeatedly declined my requests for interviews, usually citing hectic schedules and pressing deadlines. I initially took these explanations at face value and began to wonder if these were in fact the real reasons only

after I had heard them several times. Like anyone else in my position, I accepted that some people I wanted to interview were not interested in meeting and speaking with a researcher. At the same time, I began asking myself whether this unwillingness represented something that I, as a researcher, needed to understand. Just at the moment when these thoughts started taking shape in my mind I had a fortuitous encounter with a respondent who was willing to address these issues head-on and without my asking. It had taken several phone calls to arrange the meeting, and when we met the respondent opened the conversation by informing me that she (most NGO leaders are women) had no interest whatsoever in talking to me; that the meeting took place only because of my doggedness; that she had talked to many a researcher in the previous ten years and nothing useful for her work ever came out of those conversations; and that she was no longer willing to pour her heart out to visitors and spend hours explaining to them the basic facts about Kyrgyzstan's political life and society. Surprising as it may sound, after this opening salvo we actually had a very interesting and informative conversation about Kyrgyzstan's NGOs and politics.

I feel immensely grateful to this person for putting these issues on the table. The conversation opened my eyes to a certain perception of Western researchers that exists in Kyrgyzstan's NGO community and helped me formulate questions that I could pursue in subsequent interviews. When I raised this subject with other respondents, several were ready to discuss it. Their very readiness and thoughtful arguments were, in my view, a strong indication that this issue is a "social fact" of which Western researchers need to be cognizant.

According to my interlocutors, there is a fairly common concern among local NGO leaders that Western researchers come to interview them with