


# Social Science and Policy Factors Affecting Detector Design and Implementation – Year 2

Arnold Vedlitz, Ph.D., Eric Lindquist, Ph.D., Xinsheng Liu, Ph.D. , Katrina Mosher-Howe, Ph.D., Liu Shi, Ph.D., Charles Lindsey – Institute for Science, Technology and Public Policy, Texas A&M University  
Christopher Sprecher, Ph.D. – Department of Political Science, Texas A&M University

### Review of Nuclear Detection Programs


#### DOE's Megaports Initiative (2003)

- Works collaboratively with foreign partners to equip seaports with radiation detection equipment
- Has an international focus but began the process of implementing domestic detection programs



#### Findings

- Only 19 ports have agreed to implementation and few of these are considered high threat ports.
- Accurate reporting of alarms is undermined by bribed officials disabling equipment.
- Cost of hiring and training is too expensive for many nations and port operators.



#### DHS SAFE Ports Act (2006)

- Attempts to organize 80 federal agencies and 74 federal programs, including domestic aspects of the Megaports Initiative

#### Findings

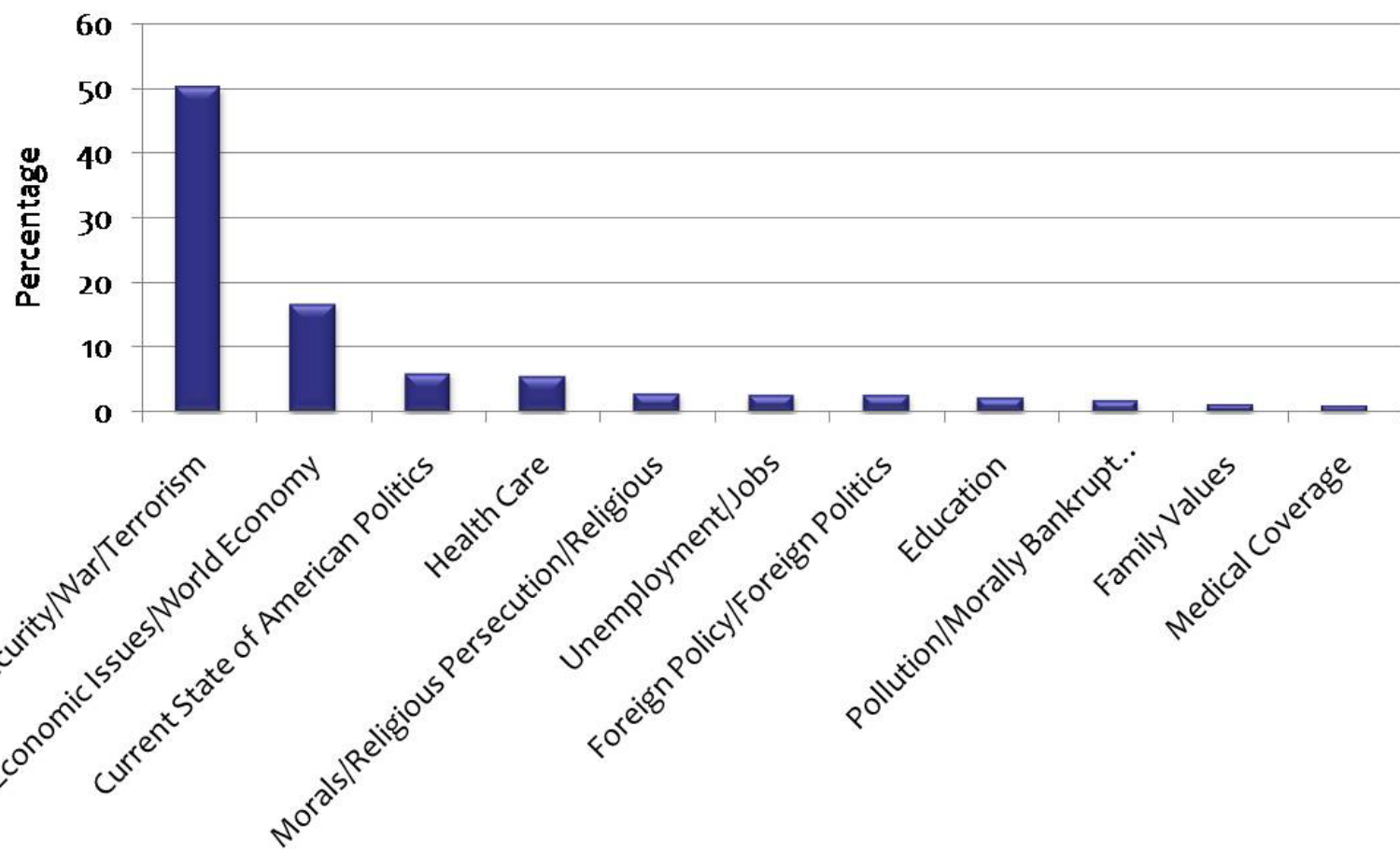
- Programs required upgrades for improving security and maintaining ports but many programs did not receive enough funding to fulfill these obligations.
- Local unions and port authorities have blocked implementation or installation of the detection equipment. In a number of cases the large number of false alarms have caused port authorities to simply turn off the equipment to avoid backing up regional rail systems.

Summary compiled from GAO reports and shipping industry and financial sector news articles.

### Public Opinion about Terrorism

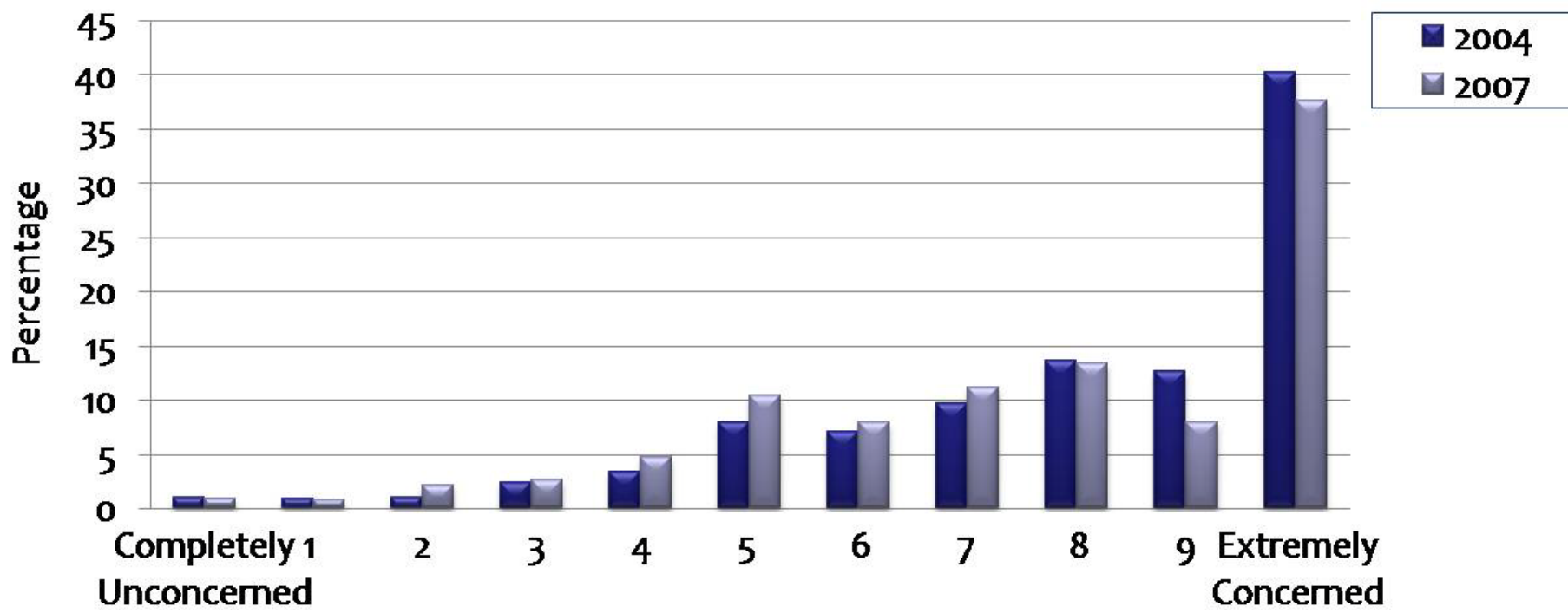
Measured the American public's perception of terrorism across 2 opinion surveys, conducted in 2004 and 2007.

In 2004, about 50% of respondents stated that the most important issue facing the nation was national security/war/terrorism.



Issue	Percentage
National Security/War/Terrorism	50%
Economic Issues/World Economy	18%
Current State of American Politics	7%
Health Care	6%
Morals/Religious Persecution/Religious	4%
Unemployment/Jobs	3%
Foreign Policy/Foreign Politics	3%
Education	2%
Pollution/Morally Bankrupt...	2%
Family Values	1%
Medical Coverage	1%

Concern about terrorism was slightly higher in 2004 than in 2007.



Level of Concern	2004 (%)	2007 (%)
Completely Unconcerned	1	1
1	1	1
2	2	2
3	3	3
4	4	4
5	8	10
6	8	8
7	10	11
8	14	14
9	13	8
Extremely Concerned	41	38

In general there are only slight differences across different demographic groups, with the following being more concerned about terrorism:

- Women
- People, 51 years and older
- People with a high school diploma or less education
- Politically conservative individuals

### Congressional Attention to Nuclear Terrorism

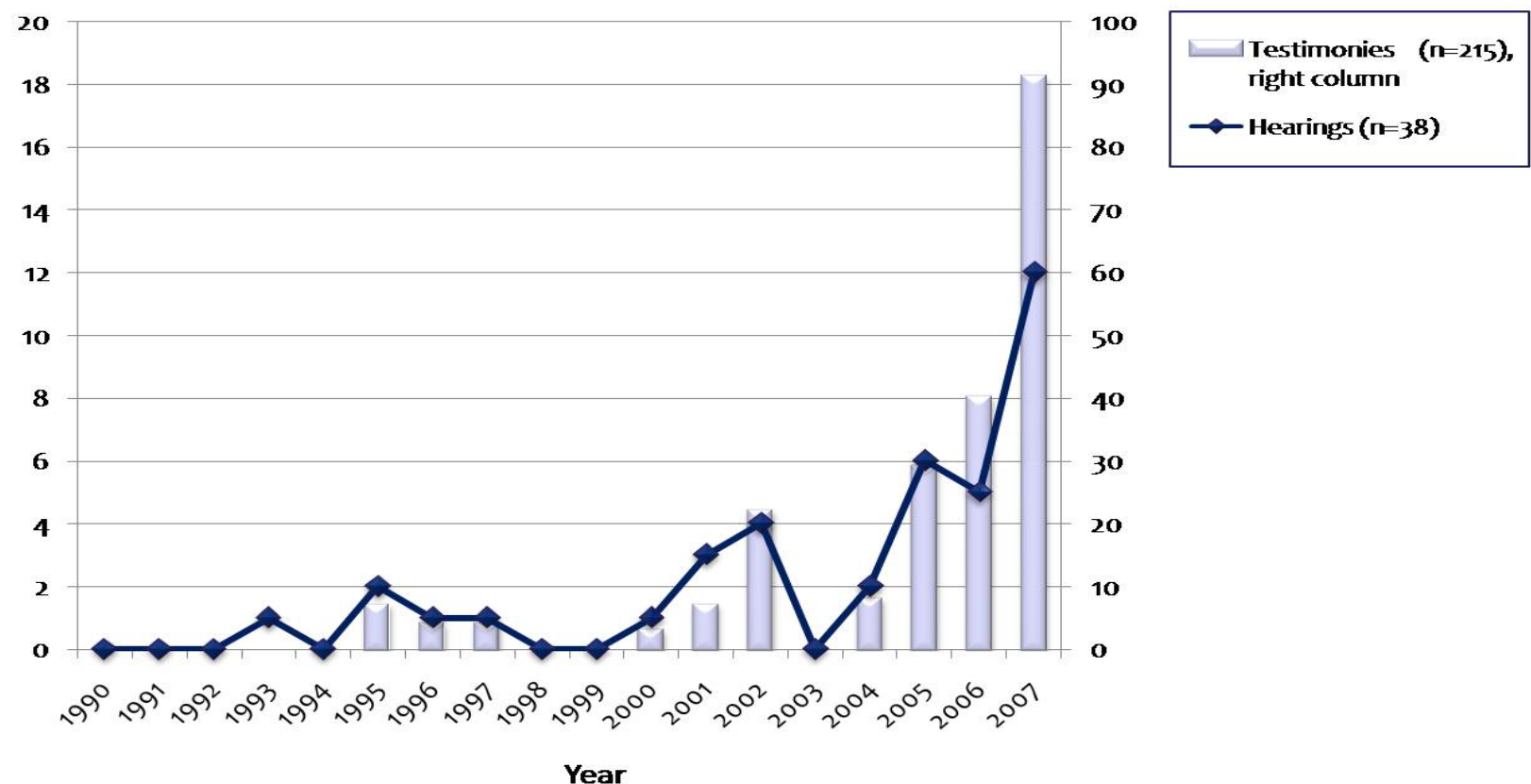
Examined congressional interests, activities, and major concerns in the development of national policies against nuclear terrorism from 1990 to 2007.

- Identified the key words to be used in search and retrieval of congressional documents from the Lexis-Nexis Congressional Publications
- Collected over 3,000 pages of congressional documents (including 38 hearings and 215 testimonies) from 1990 through 2007
- Coded records into our Congressional Dataset

#### Preliminary Findings

The number of congressional hearings on nuclear terrorism has surged since 2001 , in response to the 9/11 terrorist attacks.

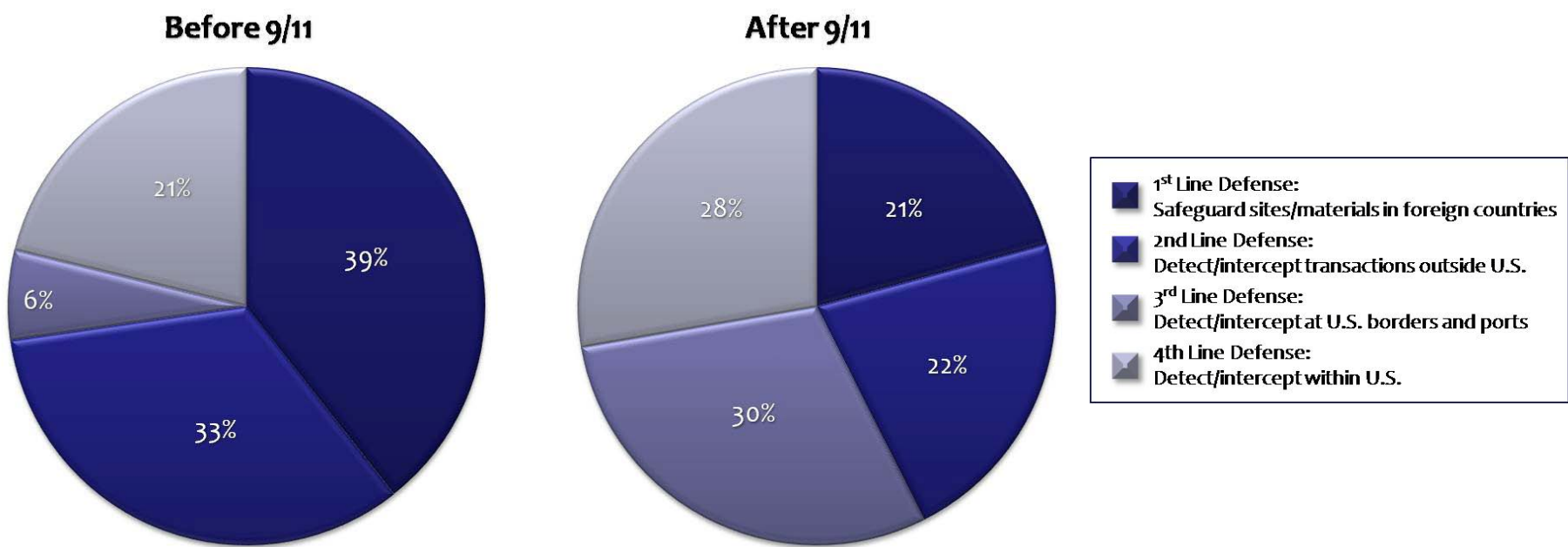
#### Congressional Hearings and Testimonies, 1990-2007



Year	Testimonies (n=215)	Hearings (n=38)
1990	0	0
1991	0	0
1992	0	0
1993	0	0
1994	0	0
1995	0	0
1996	0	0
1997	0	0
1998	0	0
1999	0	0
2000	0	0
2001	0	0
2002	0	0
2003	0	0
2004	0	0
2005	0	0
2006	0	0
2007	0	0

Congressional focus has also shifted from the 1<sup>st</sup> and 2<sup>nd</sup> to the 3<sup>rd</sup> and 4<sup>th</sup> Lines of Defense following 9/11.

#### Testimonies Focusing on Various Lines of Defense



Line of Defense	Before 9/11 (%)	After 9/11 (%)
1 <sup>st</sup> Line Defense: Safeguard sites/materials in foreign countries	21%	21%
2 <sup>nd</sup> Line Defense: Detect/intercept transactions outside U.S.	39%	22%
3 <sup>rd</sup> Line Defense: Detect/intercept at U.S. borders and ports	6%	30%
4 <sup>th</sup> Line Defense: Detect/intercept within U.S.	33%	28%

### International Concerns

How can the U.S. convince other states to allow establishment of HEU detectors in their ports of entry?



#### Approach:

Preventing HEU smuggling is an arms control issue. Researchers examined major nuclear arms control issues from 1950-2007. The U.S. can utilize a coercive strategy coupled with cooperative incentives to induce states to ratify arms control treaties, and conceivably to install HEU detectors in their ports of entry.

#### Methods:

The U.S. is assumed to use a two-stage approach in order to implement treaties on arms control. In the first stage they propose a treaty to another state. In the second stage the other state makes a decision on whether or not to ratify a treaty. Treaties examined in the initial analysis: NPT, the CTBT, SALT I, SALT II, INF, ABM, and the US-India nuclear agreement.

#### Initial Findings:

**In the first stage** (treaty proposal), the likelihood that the U.S. proposes a nuclear arms control treaty to another state increases under the following conditions:

- The state possess nuclear capabilities: weapons, nuclear plants, uranium deposits.
- The state has a high level of cooperation with the U.S.
- If a state is a democracy.

**In the second stage** (treaty ratification, the likelihood that the state ratifies a nuclear arms control treaty increases under the following conditions:

- The state is a nuclear state
- The state has greater economic ties with the US
- The state is a democracy

In sum, the US can get ratification of treaties if it's more cooperative with other states, and they share a number of ties. This ties in with the interdependence and globalization literatures that are common in policy circles now. It also points to future research ideas.