The Nuclear Cooperation Agreement Dataset:
Codebook

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Overview

The Nuclear Cooperation Agreement (NCA) dataset provides information about all types of nuclear assistance – including the civilian and military varieties – from 1945 to 2003. This codebook describes the variables contained in the dataset. More information about the procedures used to generate this dataset is available in Chapter 1 of Fuhrmann, Mathew. 2012. *Atomic Assistance: How "Atoms for Peace" Programs Cause Nuclear Insecurity.* Ithaca, NY: Cornell University Press.

The current version of the dataset is 2.0. This version updates information on a small number of agreements and provides a new variable ("nca type") that gives information about the type of nuclear assistance authorized by the treaty. An earlier version (1.0) of the dataset was used for the analyses conducted in Fuhrmann, Matthew. 2009. "Spreading Temptation: Proliferation and Peaceful Nuclear Cooperation Agreements," *International Security* 34 (1): 7-41; and Fuhrmann, Matthew. 2009. "Taking a Walk on the Supply Side: The Determinants of Civilian Nuclear Cooperation," *Journal of Conflict Resolution* 53 (2): 181-208.

Identifying Nuclear Cooperation Agreements

The NCA dataset is based on the 2003 version of James Keeley's list of bilateral civilian nuclear cooperation agreements.[1] It is important to note that the dataset contains 176 fewer agreements than appear on Keeley's list. I excluded agreements for several reasons, particularly if they dealt exclusively with nonproliferation assurances or seemed to be administrative in nature (see pp. 26-27 of *Atomic Assistance.*)

Unit of Observation

The unit of observation in the dataset is the "nuclear assistance dyad." Each observation represents a case where a nuclear supplier pledged to provide peaceful nuclear assistance to another country. Most nuclear cooperation agreements are bilateral. These deals can have one or two suppliers, depending on the nuclear capabilities of the state parties. If both participants in a bilateral agreement pledge to supply nuclear technology, materials, or know how, the agreement will be included twice in the dataset (each state will be included as a supplier and a recipient). Several nuclear cooperation agreements – particularly those signed by EURATOM, the European nuclear agency – contain multiple suppliers and recipients of peaceful nuclear assistance. When it comes to multilateral agreements, the dataset includes one observation for each nuclar assistance dyad that is part of the treaty. The number of observations in the dataset (3,152) is therefore greater than the number of nuclear cooperation agreements signed (about 1,500).

Variables

- *ccode1.* The Correlates of War country code for the supplier of nuclear assistance.

- *ccode2.* The Correlates of War country code for the recipient of nuclear assistance.

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[1]Keeley released a more updated version of his list in 2009.

- *country1.* The country name of the nuclear supplier.

- *country2.* The country name of the nuclear recipient.

- *year.* The year in which the treaty was signed.

- *nca.* A variable indicating whether the supplier pledged to provide nuclear assistance to the recipient by signing a nuclear cooperation agreement in a given year. It is coded 1 for all observations in the dataset.

- *nca type.* The areas of nuclear cooperation authorized by the treaty.

  1. Nuclear safety: Agreements that authorize cooperation in the field of nuclear safety.

  2. Intangibles: Treaties dealing primarily with cooperation in research and development or training.

  3. Nuclear materials: Deals pertaining to the transfer of nuclear materials, like uranium, heavy water, or plutonium.

  4. Research: Agreements that authorize cooperation in the development of a nuclear program for research. These treaties typically call for the export of research reactors, but may include other areas as well.

  5. Comprehensive power – restricted: Treaties that call for cooperation in the development of a nuclear program for electricity production. These deals prohibit enrichment and reprocessing assistance, making them stronger from a nonproliferation standpoint.

  6. Comprehensive power – unrestricted: Deals that place no explicit prohibitions on cooperation in enrichment and reprocessing technology.

  7. Military assistance: Agreements that authorize nuclear assistance explicitly to help the recipient build nuclear weapons. These deals could include any type of cooperation, as long as their purpose is for bomb development.