

# Nuclear Confrontations

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## Research Question

Do relations between countries change once a country has attained nuclear weapons? Specifically, whether Militarized Interstate Disputes (MIDs) have increased or decreased before and after the acquisition of nuclear weapons.

## Hypotheses

Three dominant schools of thought:

- Deterrence theory
- Stability-instability paradox
- Irrelevance

Of particular importance for this study is the stability-instability paradox, which posits that nuclear weapons increase stability at the nuclear level, but also increase lower-level conflict and instability (as demonstrated by the Cold War and the India-Pakistan conflict).

Each hypothesis (enumerated below) can be tested by looking at whether the relationship between nuclear weapons and MIDs is positive.

Hypothesis 1a: There will be fewer MIDs between two nuclear states. Due to the fear of nuclear war, no nuclear state would attack or provoke another.

Hypothesis 1b: Due to the fear of being annihilated, non-nuclear states will not initiate MIDs against nuclear powers.

Hypothesis 2a: More MIDs are likely between two nuclear powers. This is because each trusts the adversary to not escalate to nuclear levels.

Hypothesis 2b: Smaller states know that nuclear states cannot, in good conscience, retaliate using all the weapons at their disposal and so are not hesitant to attack their nuclear counterparts.

Hypothesis 2c: Nuclear powers know that non-nuclear states are likely to be intimidated by the weapons in their arsenal and so will not be afraid of by initiating MIDs against non-nuclear states.

Hypothesis 3: The same number of MIDs occurs in any given scenario with nuclear weapons as there would have been without them.

## Data and Methods

### Data

- Militarized Interstate Dispute data set from Correlates of War made into dyads by Senese and Vasquez (2005)
- Collected data set on when each country became nuclear.

### Method:

To these data, I add my own variables, “evernuc” to denote if a dyad is ever nuclear, and “whonuc” to see how many parties in the dyad possess nuclear weapons. I also created variables that account for rivalries, as defined by both Klein, Goertz, and Diehl and Thompson, for which the variables are called KGDRival and ThompRival respectively.

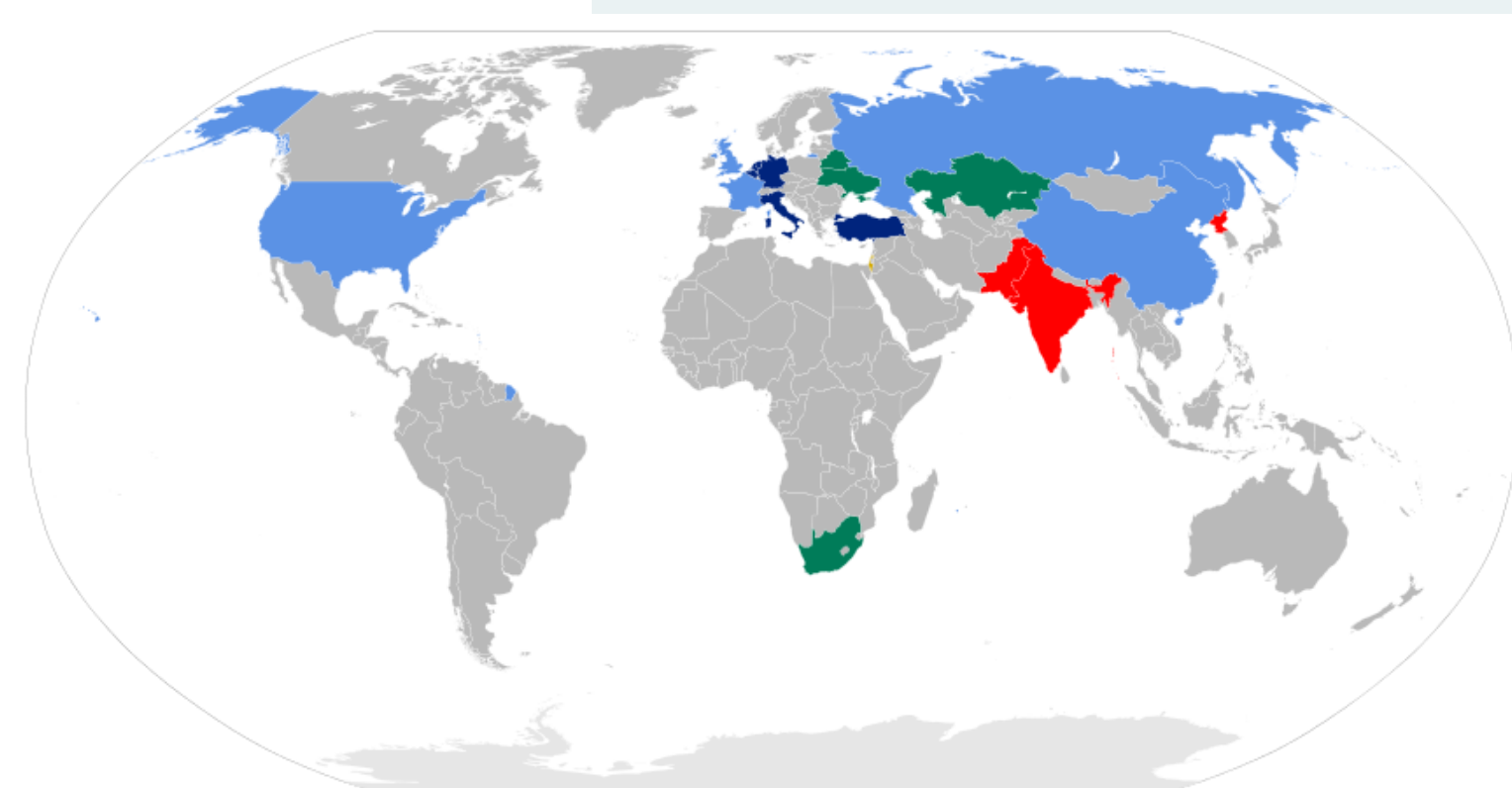
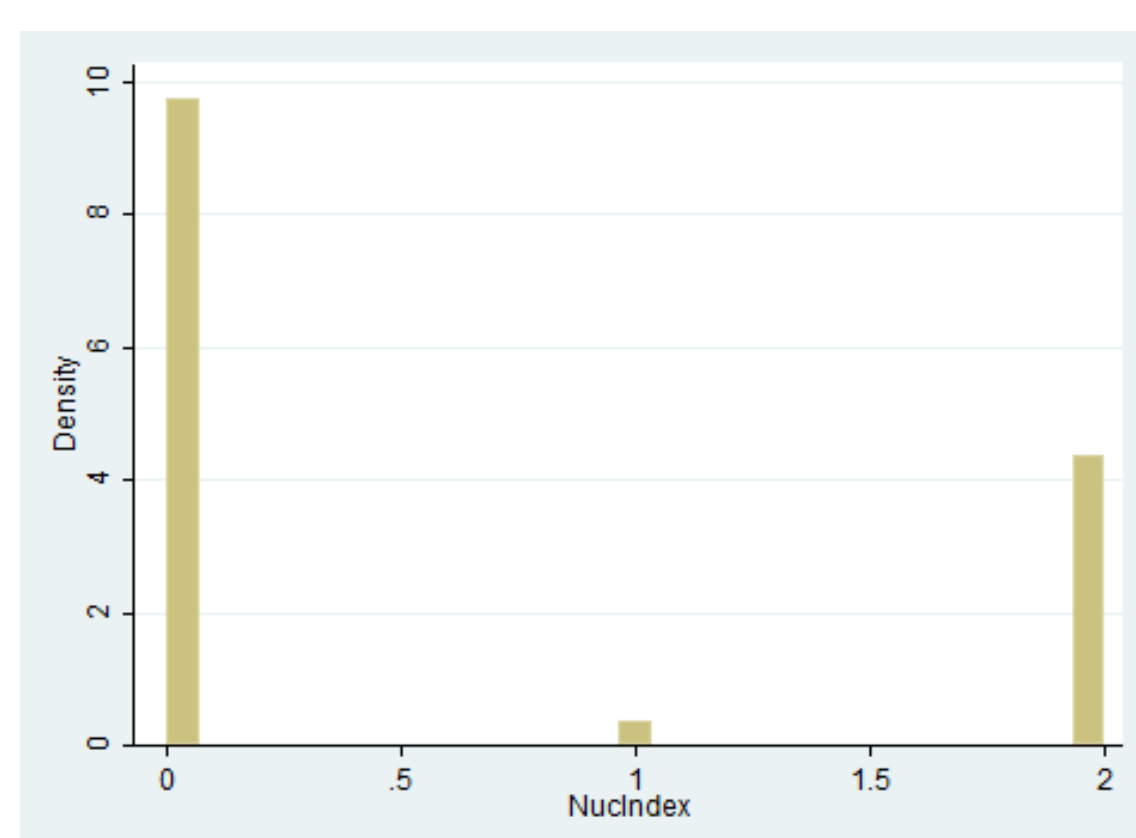
By researching when each country became nuclear, and calculating how long they have been nuclear, I was able to generate an index called “NuIndex” that is based on the length of a state being nuclear. Here, a dyad is coded as 1 if they have been nuclear for less than 25 years, 2 for more than 25, and 0 if there is no data.

I then looked at the 2x2 tables generated by the variable for MIDs with NuIndex, KGDRival, and ThompRival. Seeing a significant relationship in each case, I ran predicted probabilities.

State	USA	Russia	UK	France	China	India	Pakistan	Israel	South Africa
Year	1945	1949	1952	1960	1964	1974	1998	1971	1977

Table 1: showing when countries went nuclear

Graph 1: Histogram showing how many cases fall under each category for the variable “NuIndex”



Map displaying nuclear nations of the world, including NATO weapons-sharing states.

## Results

Immediate results show that while there is a significant relationship between the possession of nuclear weapons and the occurrence of MIDs, there is some tertiary factor involved. Hence, rivalries, as defined by both Thompson, and Klein, Goertz, and Diehl become important. We then see regardless of nuclear weapons, rivalries have a greater impact on MIDs.

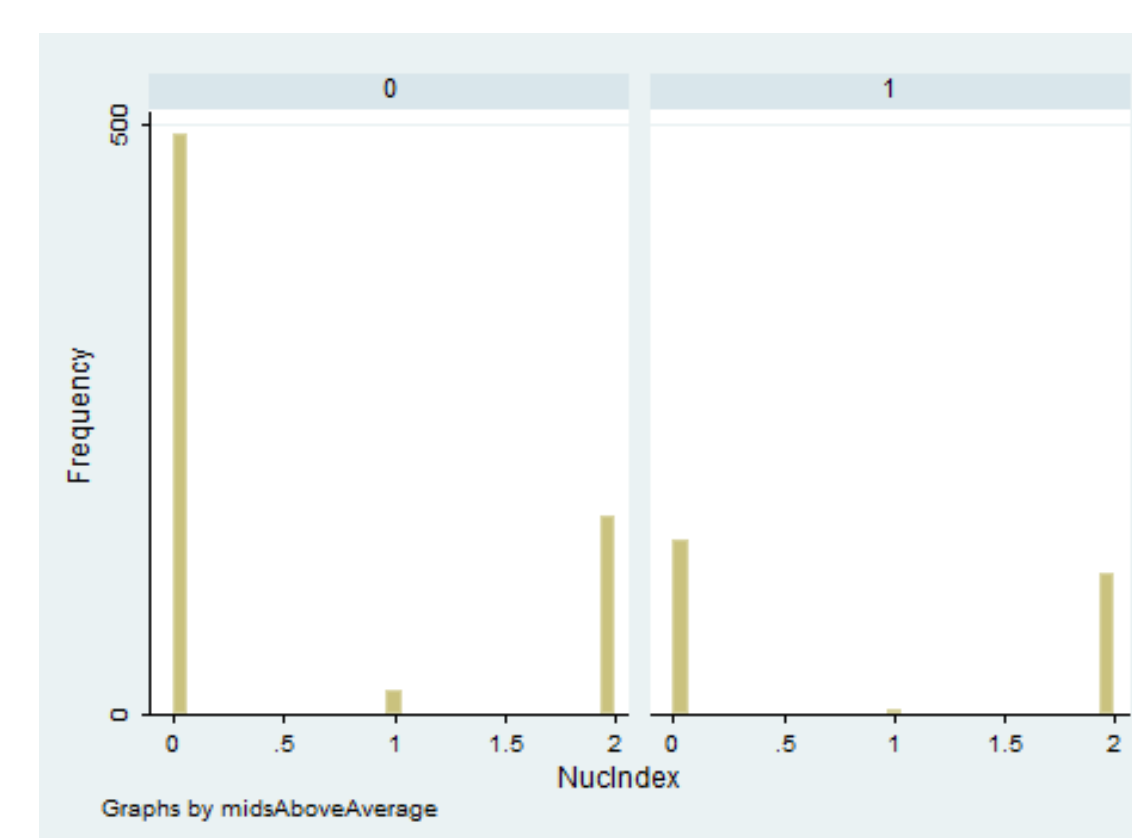
Hypothesis 1a: Is rejected as increased presence of nuclear weapons demonstrates increased predicted probability of more MIDs than average

Hypothesis 1b: Is rejected due to no indication that non-nuclear powers initiate fewer than average MIDs against nuclear powers.

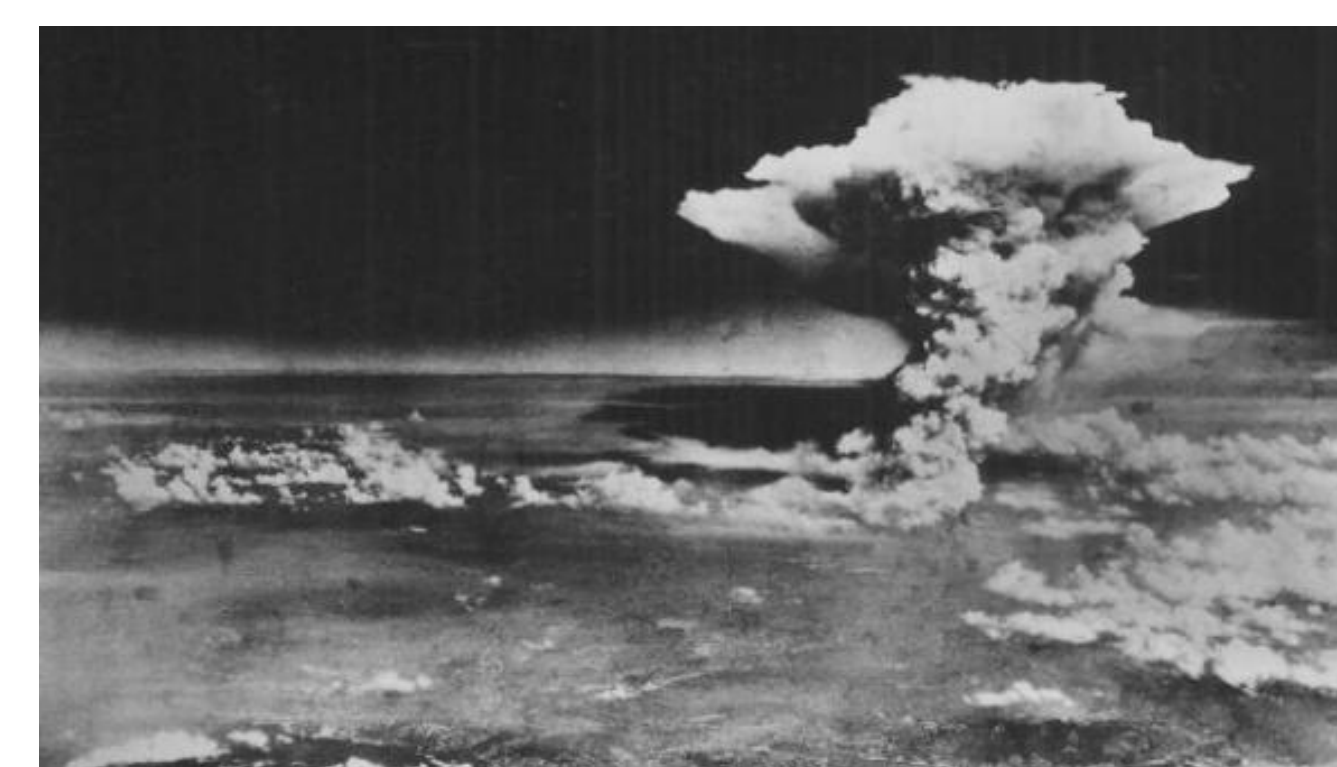
Hypothesis 2a: Is confirmed in the predicted probabilities as dyads that have a NuIndex of 2 are shown to have a consistently higher probability of MIDs. This is even more apparent when taking rivalries into consideration.

Model/Variable	Model 1 (NuIndex 0)	Model 2 (NuIndex 1)	Model 3 (NuIndex 2)
midsAboveAverage	.2268694 (.0163206)	.3084522 (.0154614)	.4058768 (.0292858)

Table 2: showing predicted probabilities for midsAboveAverage and NuIndex



Graph 2: Histograms showing the relationship between NuIndex and midsAboveAverage



Mushroom cloud over Hiroshima

Hypothesis 2b: Is rejected due to no indication that smaller states initiate lower than average MIDs against nuclear states.

Hypothesis 2c: Is rejected due to no indication that nuclear states initiate higher than average MIDs against non-nuclear states.

Hypothesis 3: Is rejected due to the indication that the possession of nuclear weapons exerts a significant amount of influence on whether a dyad will have more MIDs than average.

Hypothesis	1a	1b	2a	2b	2c	3
Confirmed/Rejected	Rejected	Rejected	Confirmed	Rejected	Rejected	Rejected

Table 3: showing whether hypotheses were confirmed or rejected

Based on the results above, I predict that hypothesis 2 is better and more accurate than hypotheses 1 and 3.

## Conclusions

The presence of nuclear weapons in a rivalry is not necessarily indicative of fewer Militarized Interstate Disputes, especially in cases where the dyad is a rivalry. In fact, in cases of rivalries, both states possessing nuclear weapons shows a significant increase in the probability of MIDs.

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