Case Studies in State-level, Horizontal Proliferation

Iran (IRI)
North Korea (DPRK)

Jim Walsh, MIT, 4/4/22
Broader themes

- The arc (phases) and artifact of nuclear history
- The relationship b/t sci/tech and the state
- The ideas in our heads
- The centrality of politics
- Behavior in past decades not for condescension but guide to the future
- Prospects for human survival
This Talk

• Defining proliferation
• Horizontal proliferation over time
• Contemporary cases
  • Iran
  • North Korea
• What do the cases suggest?
I. Defining proliferation

What is nuclear proliferation?

[You’re supposed to raise your hand and offer a candidate answer.]
I. Defining proliferation

What is your ranked list of nuclear or proliferation threats today?

[More raised hands, please.]
I. Defining Proliferation:

1. State Proliferation – How many countries
   # of states with 1 or more nuclear weapons
   State going from 0-1 nuclear weapon
     Typically defined by a nuclear weapons test
     But not always with a test, e.g., Israel
   Intermediate stages from 0-1
     Latency
     Breakout: enough fissile material for 1 device
     Weaponization – Testing – Deployable force

2. State Proliferation – How many NW
   Quantity
     More than 1 up to 45k (1986 Soviet peak)
     More than minimum deterrent (SSS)
   Types of nuclear weapons deployed
     Tactical vs strategic
     Land, sea, air, space
   Capabilities of nuclear weapons deployed
     Killing power per weapon
     “Modernization”

3. Non-state proliferation
1. Defining Proliferation:

The absurdly biased, actual way we think and talk about proliferation

I. Defining Proliferation:
The absurdly biased, actual way we think and talk about proliferation

1st Place State Proliferation – Horizontal

Quantity: More than 1 up to 45k (1986 Soviet peak)

Capabilities of nuclear weapons deployed:
- Killing power per weapon
- "Modernization"
- Tactical vs strategic
- Land, sea, air, space

II. Non-state (Horizontal and Vertical)

- Intermediate stages from 0-1
- Weaponization – Testing – Deployable force
- Breakout: enough fissile material for 1 device
- State going from 0-1 nuclear weapon

Also Ran: State Proliferation – Vertical

# of new NWS

Distant 2nd Non-state (Horizontal and vertical?)
Horizontal proliferation over time

State Horizontal Proliferation, 1945-2019
The American academic study of nuclear proliferation

- Causes: Why do states seek NW? Why are proliferants successful?
- Consequences: What are the effects of owning nuclear weapons on the likelihood of inter-state conflict, bargaining power, crisis behavior, etc.
- How do states manage nuclear weapons: extended deterrence, interaction between conventional and nuclear, C3I, etc.
- Projections of future proliferation, risk minimization

Methodological challenges:
selection on DV, small # of observations, limited data on state decision-making, etc.
QUESTIONS?
II. The Islamic Republic of Iran

- Iran 101
- Nuclear program
- Iran view of US
- US view of Iran
- What does the Iranian case tell us about proliferation?
Walsh & Iran

- 5 trips to Iran, multiple Track IIs
- 20+ hours w/ Pres. Ahmadinejad, 20+ w/ Pres. Rouhani
- Met with hundreds of Iranian officials and including Foreign Ministers, Ambs to UN, Head of Expediency Council, Senior clerics, Nuclear negotiators
- Held by security forces; subjected to attempted deportation
Iran 101: Geography
Post-revolutionary Foreign Policy

- **Religion/Ideology**
  - Islam/Shi’ism
  - Anti-imperialism/revolution
- **National Interest**
  - Security (Internal & External)
  - Oil
- **Psychology**
  - Pride (and humiliation)
  - Exceptionalism
- **Domestic politics**
Iran’s Nuclear Program
History & Status

Nuclear Program

- Weapons program under the Shah in mid-70’s
- “Structured” weapons program in late 90s
- Halted program in 2003
- Built 19k centrifuges (operated 9k); Enriched to 20%
- Has one operating NPP (fuel supplied by Russia)
- Announced plans for more NPP
“Iran has the ...capacity to eventually produce nuclear weapons, making the central issue its political will to do so. ...We assess Iran is keeping open the option to develop nuclear weapons, ...should it choose to do so. We do not know, however, if Iran will eventually decide to build nuclear weapons.”

DNI, 1/12
Why a nuclear weapons program?

- Security: defense/balancing against Iraq, Israel, KSA, etc.
- Psychological: how see self, spite
- Prestige: how other states see you, member of the club
- Domestic: domestic politics, organizational politics (?)
- Benefits weighed against costs = policy of latency
Iran Nuclear Agreement

- Strongest multi-lateral nonprolif agreement in history
- Iran was in compliance: IAEA, State, ODNI, Israel, etc.
- US pulls out; pursues “max pressure,” punishes those that stay in agreement
- Iran stays in a year, then begins series of reversible defects from obligations
- New govs elected in Iran & US; New negotiations unsuccessful to date
**US not about nuclear, about regime change**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>1953</td>
<td>Overthrow Iran’s government</td>
</tr>
<tr>
<td>1960s-70s</td>
<td>Shah nuc prog; Blind eye to Israel</td>
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<tr>
<td>1980-88</td>
<td>Iran-Iraq War, use of CW</td>
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<tr>
<td>1988</td>
<td>US shoots down Iran civ flight 655</td>
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<tr>
<td>1990s</td>
<td>US oppose Bushehr nuc plant</td>
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<tr>
<td>2000s</td>
<td>Iraq War 2.0: sanctions then attack</td>
</tr>
<tr>
<td>2012</td>
<td>US delists MEK</td>
</tr>
<tr>
<td>2017</td>
<td>US w/draws JCPOA, max pressure strategy</td>
</tr>
<tr>
<td>2017</td>
<td>Assassination of Solemani</td>
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</tbody>
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US statements: Mixed messages on regime change, “All options”
## US Complaints about Iran: Events

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<th>Event</th>
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<tbody>
<tr>
<td>1979</td>
<td>Hostage crisis/Death to America</td>
</tr>
<tr>
<td>1983</td>
<td>Beirut bombings</td>
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<tr>
<td></td>
<td>Support for Hizbollah/Hamas</td>
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<tr>
<td>1996</td>
<td>Khobar Towers</td>
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<tr>
<td>2000’s</td>
<td>Nuclear subterfuge</td>
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<tr>
<td>2007</td>
<td>Attacks on US forces in Iraq</td>
</tr>
<tr>
<td>2008</td>
<td>Plot re: Saudi Amb in US</td>
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US Claims about Iran

1. Largest state sponsor of terror
2. An existential threat to the region
3. Iran’s objective: destroy Israel
4. Has a NW program
5. “Tentacles” in Syria, Iraq, Lebanon, Yemen
6. Will cheat on nuclear agreement
7. Worst human rights abuser
8. 1 protest away from collapse

Each claim is closer to a falsehood than the truth
What does the Iranian case tell us about proliferation?

• As regards Iran, it’s not about nuclear weapons
• The US Anti-JCPOA forces, KSA, and Israel cared less about nuclear weapons than they did Iran
• In the US, was about US domestic politics, the organizational metastasization of sanctions, and Cold War hubris
• Compellence is really, really hard

US policy alternated b/t being about NW and being about bi-lateral relations
QUESTIONS?
Walsh & the DPRK

- Numerous Track 1.5 meetings
- Traveled to NK for discussions on nuclear issues
- Engagement w/ S Korean, Chinese, Japanese, US officials
- Co-authored study on DPRK sanctions; study on lessons of JCPOA for DPRK
The Democratic People’s Republic of Korea

• DPRK 101
• Nuclear and missile programs
• What does the North Korean case tell us about proliferation?
### DPRK 101: The Basics

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<tr>
<th></th>
<th>DPRK</th>
<th>US</th>
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<tbody>
<tr>
<td>Size</td>
<td>MS</td>
<td>US</td>
</tr>
<tr>
<td>GDP</td>
<td>$40b</td>
<td>$18t</td>
</tr>
<tr>
<td>Mil $</td>
<td>$8-13b</td>
<td>$726b*</td>
</tr>
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2015 numbers  

* DOD + NNSA
1989: Collapse of USSR
--Security implications
--Econ implications

Rise of S Korea & US

Political defection of PRC, Russia

History vis-à-vis the Great Powers
DPRK nuclear program

- Interest in 1960s
- Technology from Sovs, China, Pakistan
- 1989 Collapse of the Soviet Union
- Mid-1990s: Crisis with IAEA leading to Agreed Framework
- 2003: Agreed Framework collapses
- 2006: 1st nuclear test
Nuclear/Missile Tests

1. 2006
2. 2009
3. 2013
4. 2016
5. 2016
6. 2017

Missile tests
Nuclear tests

Nuclear arsenal: 40 (est.)
Fraction of total: .004

Agreed Framework

1st N Test
China’s Puzzle

- China has little love for DPRK
  - Makes look weak
  - Strengthens hawks in SK/Japan
  - Draws US deeper in region

- Not want DPRK collapse
  - No failed NWS/war on its border
  - Threatens China’s #1 national interest
  - Not want US forces on its border

- China policy: denuclearization

- How squeeze & reassure at same time?
What does DPRK tell us about proliferation

- If determined, even if poor and underdeveloped, can acquire NW if willing to pay the cost
- There are outliers in state behavior/our generalizations are not 100% true
- If the US has 1500 NWs, it frets about its deterrence posture. If N Korea has 1 NW, they enjoy full deterrence benefits.
- Relative benefits of top-down vs bottom up negotiation approached
- If you sanction or deny states, they aren’t going to just sit there
- Compellence is really, really hard
What do these cases suggest about nuclear proliferation?

- The pathology of extended disputes
- Missed opportunities for negotiated settlements
- Agreements can be successful; Agreements can fall apart
- When destroy agreements, things get worse; hard to recreate
- Dominance of sanctions and coercion frame in US policy
- Domestic politics sometimes more important than nuc risk
- Leverage useful until you overplay your hand
- Great powers almost always overplay their hand
Comparing IRI and DPRK