

# South Asia Under the Shadow of Nuclear Weapons



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# The Puzzle

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# Outline

- Basics of Deterrence Theory
- Basics of Nuclear Weapons
- The Nuclearization of South Asia
- The Consequences of Nuclearization in South Asia
- How Long can this Precarious Balance of Terror Last?

# Deterrence Theory

- Deterrence: Preservation of the status quo by threatening unacceptable costs to an opponent if they do X.
- Two Types of Deterrence
  - Deterrence by Punishment
  - Deterrence by Denial

# Deterrence Theory

- Three requirements (aka the Three C's):
  - Capability
  - Credibility
  - Communication

# Nuclear Weapons & Deterrence

- Nuclear weapons fundamentally different?
  - Explosive yields
  - Missile age
  - Psychological impact

# Nuclear Weapons



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# Basics of Nuclear Weapons

- Fission weapons (5-40kT)
  - U-235 (enriched uranium)
  - Pu-239 (plutonium from reprocessing)
- Boosted Fission weapons ( $\sim 200$ kT)
  - Fission weapon plus Tritium/Deuterium gas (or Li-D)
- Fusion weapons (Megaton yields)
  - Fission primary to ignite a fusion secondary (D-T)

# Operationalizing Nuclear Weapons: Nuclear Posture

- How many and what type?
- How to deliver them?
  - Aircraft
  - Ballistic Missiles (Land based & Sea-based)
  - Cruise Missiles
- How to manage them?

# Operationalizing Nuclear Weapons: Nuclear Posture

- Deterring what?
  - Deter nuclear use and coercion? **Assured Retaliation**
    - Mostly deterrence by punishment
  - Deter conventional aggression? **First-use**
    - Can be deterrence by punishment or denial

# The Nuclearization of South Asia



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# India through 1974

- India's Security Environment
  - 1962 War
  - Chinese nuclear tests
  - Persistent wars with Pakistan, despite conventional superiority
- India's Civilian Nuclear Program
  - CANDU 40 MW reactor 1954
  - Reprocessing facility 1964

# India through 1974

- Peaceful Nuclear Explosion 1974
  - General security environment
  - Domestic political explanation
  - Power of scientific bureaucracy
- Nuclear hedging

# Pakistan 1971-1980s

- Pakistan's Security Environment
  - Impact of 1971 War
  - “We will eat grass or leaves, or even go hungry. But we will get [a Bomb] of our own” (Bhutto 1965)
  - January 1972, Bhutto authorizes nuclear weapons program
- Pakistan's Nuclear Program
  - Yes we Khan (URENCO)
  - Uranium enrichment: The ‘goat shed’ at Kahuta
  - U.S. role in Afghanistan

# Pakistan Late-1980s

- Slow March to Nuclearization
  - 1983 Chinese assistance (CHIC-4 design; 50kg HEU?)
  - 1986: US convinced Pakistan is nuclear-capable but perhaps not nuclear-weapons state (‘two screwdriver turns’ away)
  - March 1987: Zia claims Pakistan has capability to make a bomb
  - 1988: Congressman Solarz quips Pakistan has a ‘Saturday night special’ capability: ambiguous but effective

# India 1974-1989

- Dormancy: 1974-1989
- Covert Weaponization: 1988-1989
  - Rajiv Gandhi brings program out of dormancy
  - Weapons designs, miniaturization, production capability developed
  - Delivery capabilities developed/tested

# India 1990s

- March to Overt Weaponization
  - December 1995: Rao (INC) on brink of test
  - March 1996: BJP aborts test
  - May 1998: BJP returns to office, tests 5 fission devices at Pokhran
    - Several plausible explanations (security, domestic politics, status)

# India 1998-present

- India's Nuclear Posture: Assured Retaliation
  - Civilian custody of nuclear weapons
    - DAE
    - DRDO
    - SFC
  - Deterring nuclear use against Indian cities: Deterrence by Punishment
  - No First Use

# Pakistan 1998-present

- Steady expansion
  - Uranium Enrichment
  - Plutonium production and reprocessing goes online
  - Delivery capabilities bought from China and North Korea (M-11, M-18, No-Dong)
- Overt Nuclearization
  - Indian tests left Pakistan with no option in May 1998

# Pakistan 1998-present

- Pakistan's Nuclear Posture: First Use
  - Military custody of nuclear weapons
  - Asymmetric escalation of conflict to deter Indian conventional power: Deterrence by Denial
  - Development of 'battlefield' nuclear weapons: NASR, Ra'ad, Babur

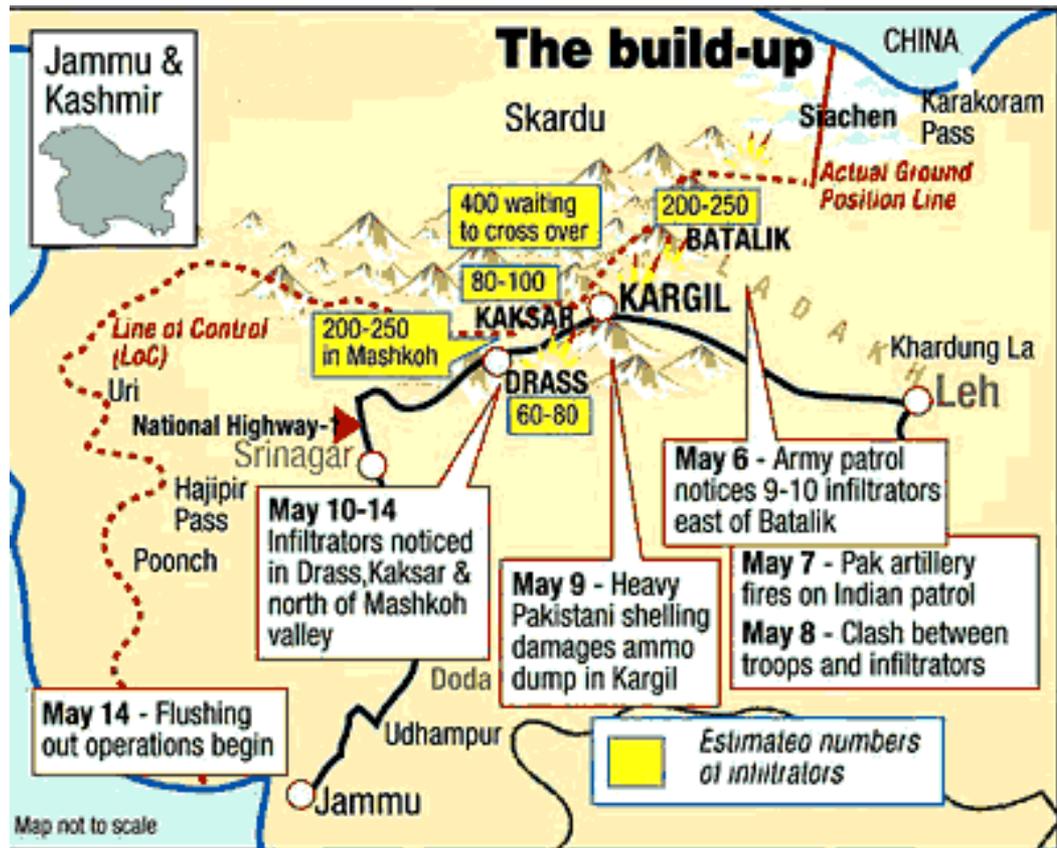
# Consequences of Nuclearization: Phase I (Covert Nuclear Period 1986-1998)

- Conventional Wisdom: MAD is stabilizing
  - Hefty Assumptions
- South Asia different from Cold War
- Effect on Crisis Outbreak
  - Pakistan slightly emboldened to support proxy forces
  - India undeterred and has preventive war incentives
- Two Militarized Crises in this period
  - Brasstacks 1986-1987
  - Kashmir Compound Crisis 1990

# Consequences of Nuclearization: Phase II (Overt Nuclear Period 1998-2009)

- Effect on Crisis Outbreak
  - Pakistan more aggressively emboldened
    - Revisionist intentions able to be pursued with higher frequency and intensity at both conventional and sub-conventional levels
  - India significantly deterred from conventional retaliation

# Kargil 1999

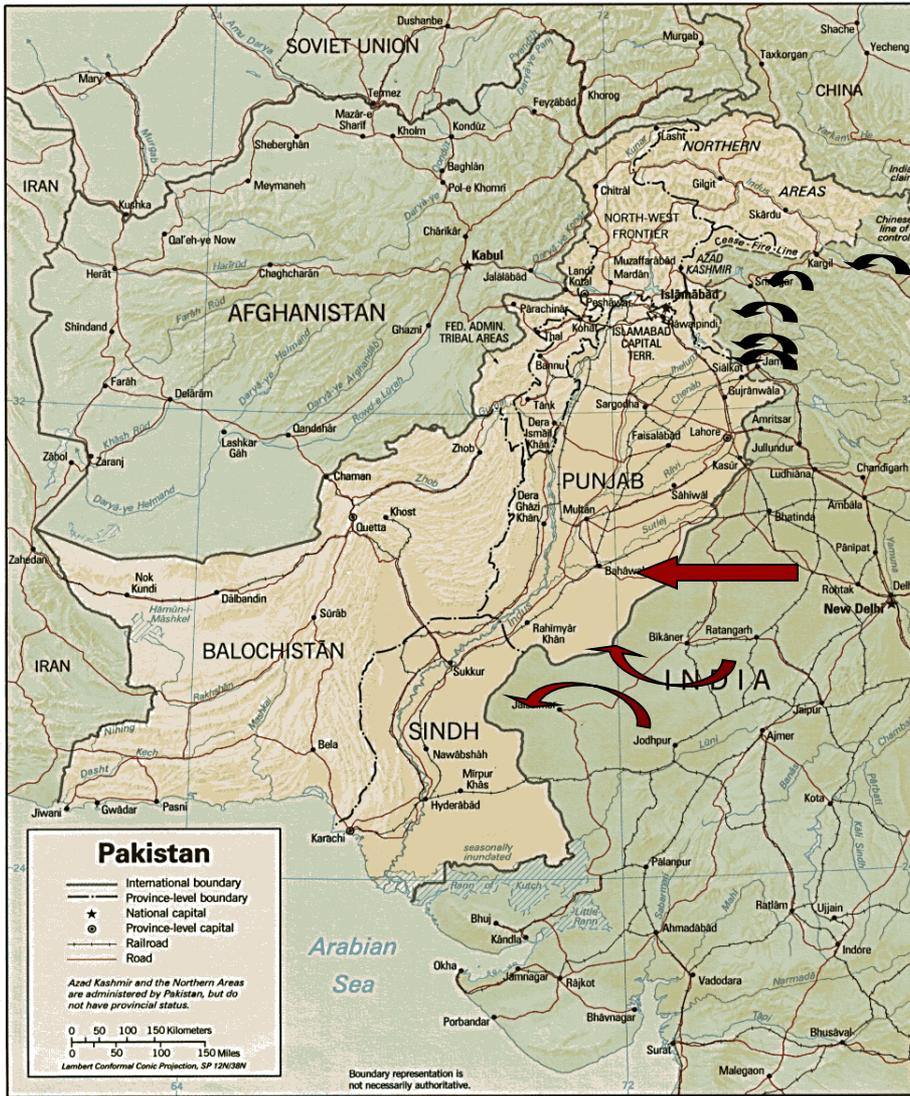


Courtesy of the US Navy. Image is in the [public domain](#).

# Kargil 1999

- India deterred from retaliating?
  - Expected BJP response: aggressive
  - Actual BJP response: muted
    - Constrained IAF and Army from crossing LoC and IB
    - Costly curtailing of military options for fear of triggering Pakistani nuclear use

# Operation Parakram 2001-2002



Dec 13, 2001: Pakistani-backed Parliament attack

January 2002: BJP contemplates limited war

May 14, 2002: Pakistani-backed Kaluchak massacre

June 2002: BJP prepares for large-scale conventional war

June 2002: Pakistan explicitly threatens nuclear use

October 2002: BJP demobilizes

Based on: VK Sood and Pravin Sawhney, *Operation Parakram: The War Unfinished*, 2003.

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# Operation Parakram 2001-2002

- Most likely case for an aggressive BJP response
- BJP balks in June 2002. Why?
- Power of Pakistan's first use posture

# Mumbai 2008

- Lashkar attacks on Mumbai, 26 November 2008
- Congress refrains from conventional retaliation
- Former CoAS: Pakistan's posture deterred Indian retaliation
- “But when the dust settled, all [the principals] agreed that the *unpredictability* on the Pakistan side and the fear that its decision makers could opt for a *disproportionate response, including the nuclear option*, stymied *any* possible chance of military action on India's behalf after 26/11.”—*Indian Express*, 26 November 2010

# Summary for Phase II

- Effect on Crisis Outbreak
  - More frequent and intense crises triggered by Pakistan
  - Emboldened by shield of first use nuclear posture
- Effect on Crisis Stability
  - Crises capped now because Indian full-scale conventional retaliatory options are off the table

# How Long Can this Last?

- Indian frustration: Traded conventional superiority for Pakistani subconventional aggression
  - Revisions at conventional level: “Cold Start”?
  - Consequences of this shift?
    - What effect will Cold Start have on Pakistan’s conventional and nuclear postures?
    - Indian response to deter battlefield nuclear weapons
- Pakistani use of ‘proxy forces’ as strategic policy
- Dangerous arms race + Fuse for crises under quasi-sovereign control (e.g. LeT) = A region on the brink

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