

North Korean Nuclear Conundrum

ISODARCO 2011

J.J. Suh

SAIS-Johns Hopkins University

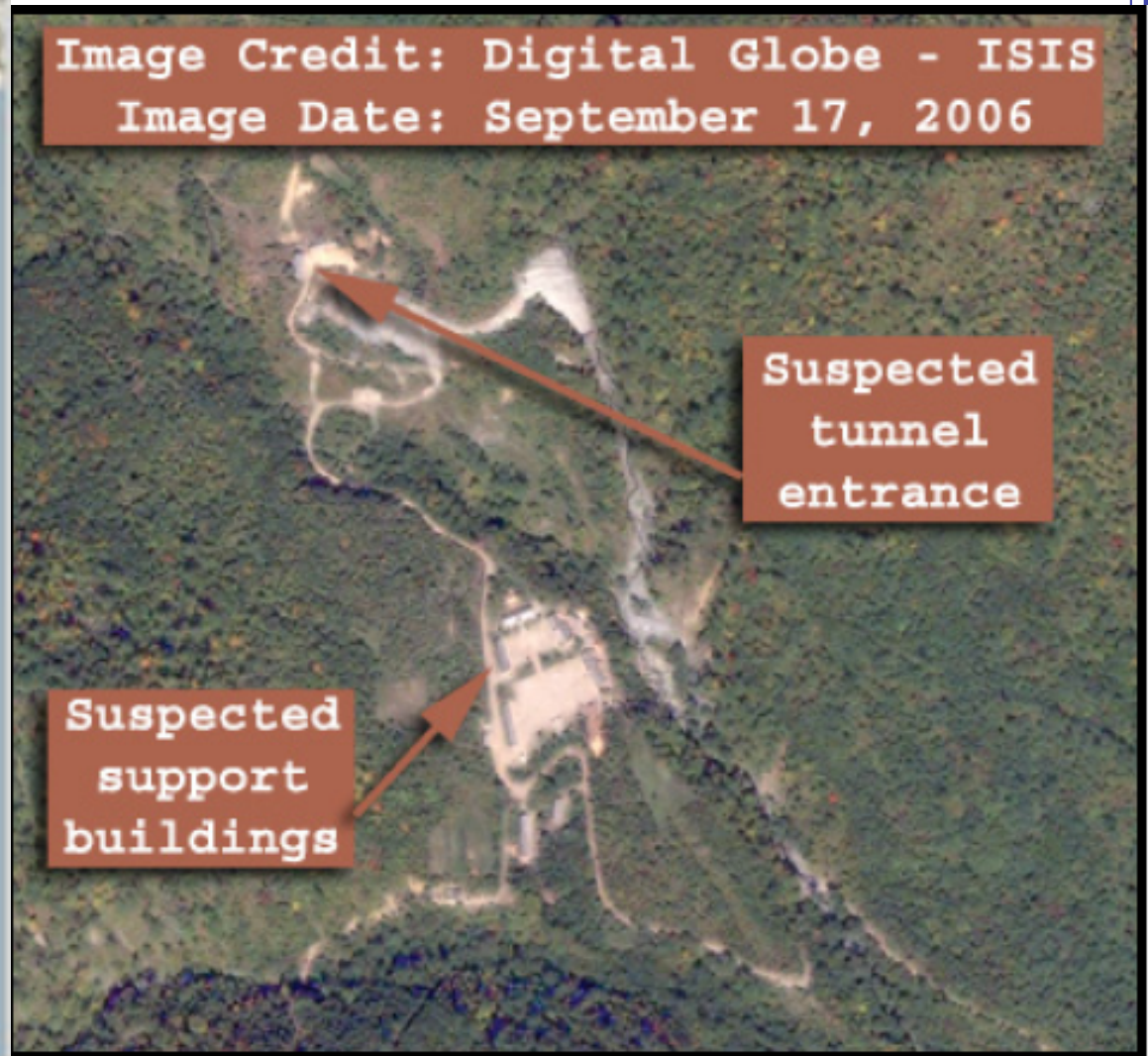
North Korean Nuclear Conundrum

- North Korea's Nuclear Capabilities
- 20 Years Crisis
- 60 Years Crisis
- Another Crisis or Institutional Solution?

North Korea's Test Site 2006

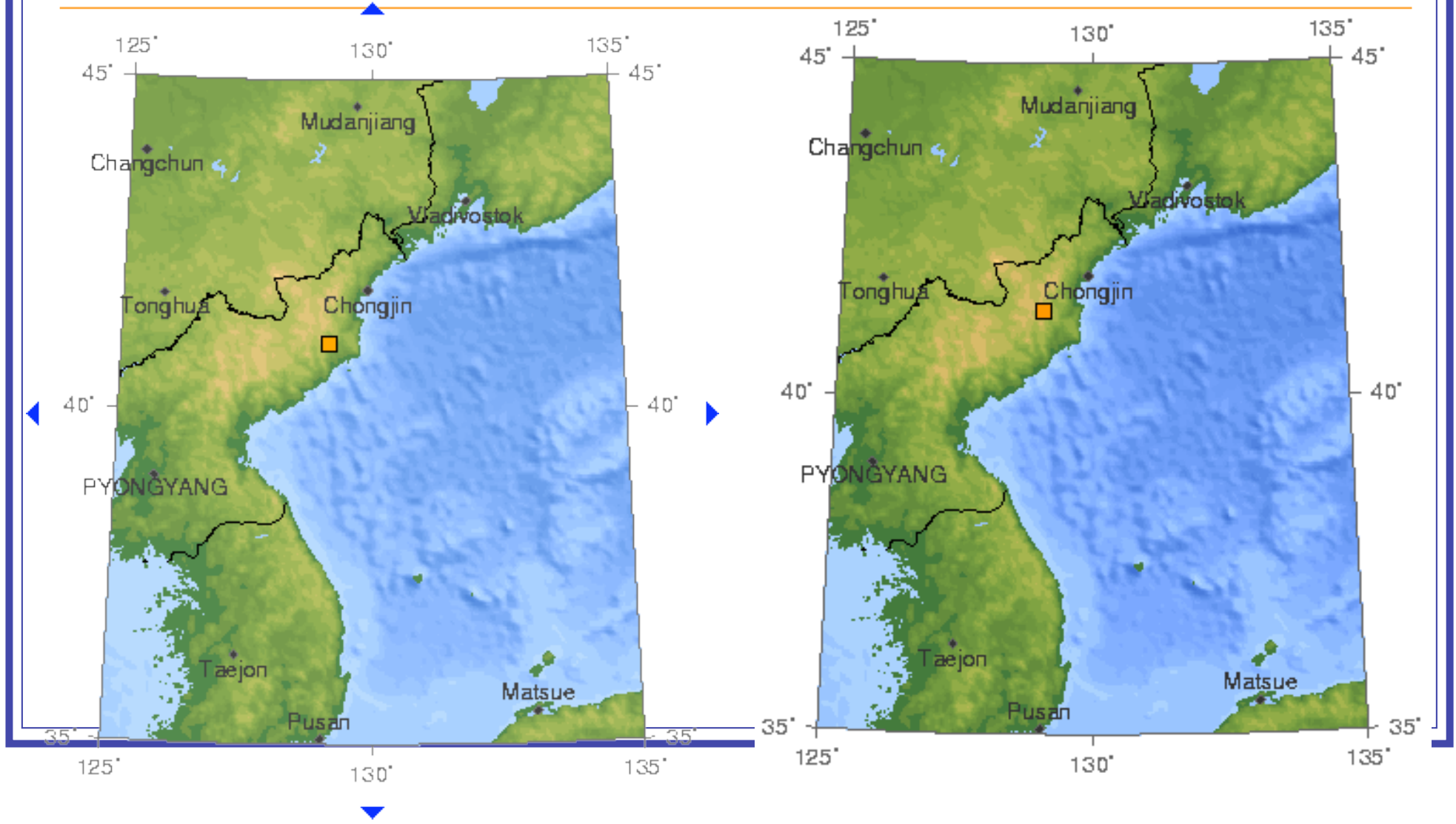


Image Credit: Digital Globe - ISIS
Image Date: September 17, 2006



Nuclear Test Sites, 2006 & 2009

Mon Oct 9 9:00:07 UTC 2006
1 earthquake on this map



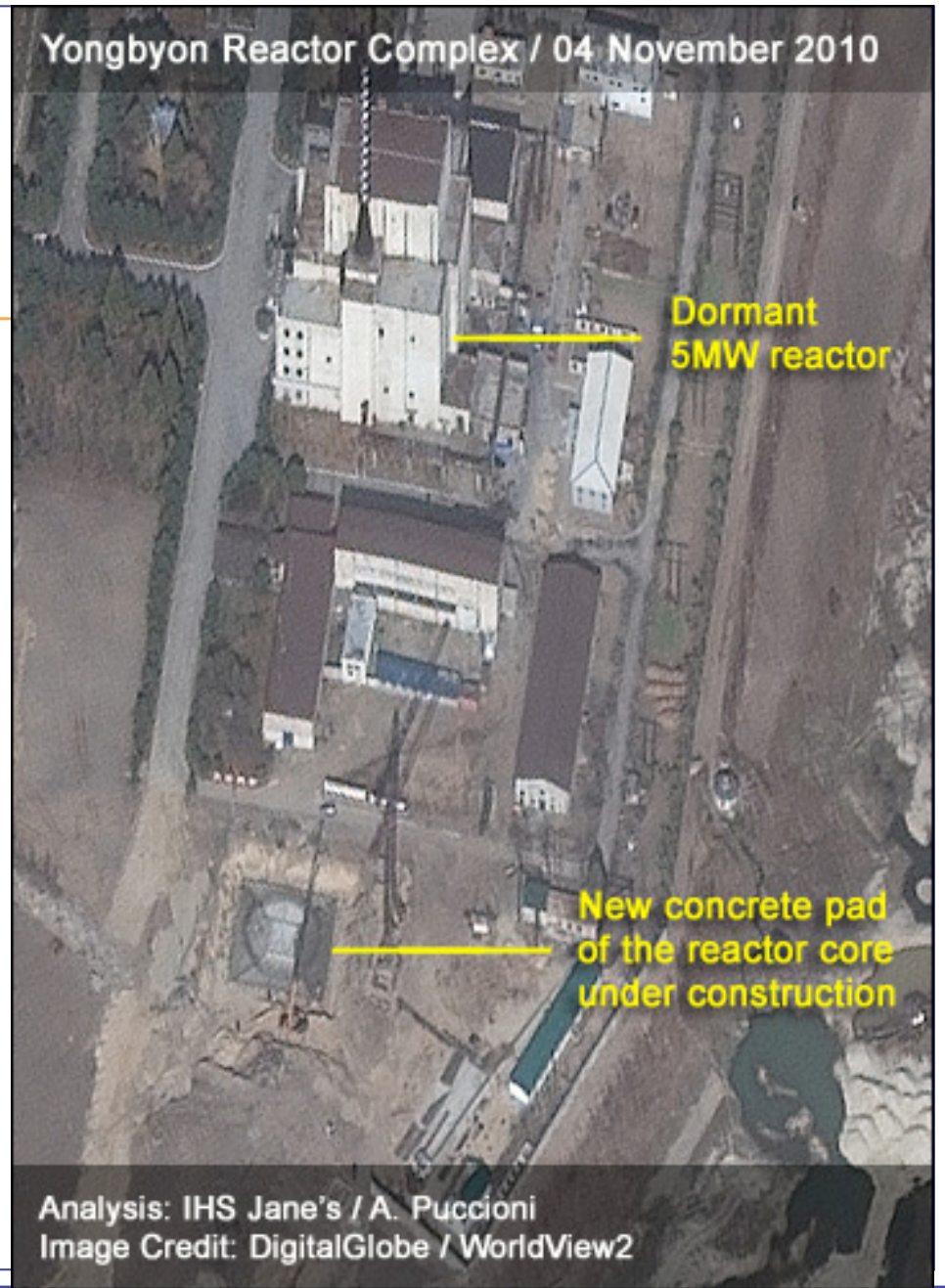
North Korea's Plutonium

<i>Plutonium Discharged from 5MW Reactor</i>		<i>Plutonium Separated</i>		<i>Weapon Equivalents</i>
<i>Date</i>	<i>Amount (Kg)</i>	<i>Date</i>	<i>Amount (Kg)</i>	<i>(number)</i>
		1989-1992	?	?
1986-1994	26~30	2003-2004	25~29	4~7
2003-2005	10~14	2005-2006	10~14	2~4
2005-2007	10~14	2009-2010	9~13	2~3
Subtotal	46~58		44~56	7~16
Total after tests			31~42	5~10

Yongbyon Nuclear Complex



5MW Reactor & LWR



Fuel Fabrication Facility



Uranium Enrichment Facility



LWR & Enrichment

■ LWR

- Under construction; to be completed in 2012
- Capacity: 100 MW-thermal (25-30 MWe?)
- Requires 4 tons of uranium oxide (enriched to 3.5%)

■ Enrichment Facility

- 2,000 centrifuges (P2) in 6 cascades
- Capacity: 2 tons of LEU
- Can produce 30-40kg of bomb grade HEU



20 Years Crisis

- Crisis in 1993 -> Geneva Agreed Framework (1994)
- Geneva Framework breaks down
-> “Bush’s bomb”
- 6 Party Talks and its failure
-> “Obama’s bomb”

1990s

- September 27, 1990: President Bush announces worldwide removal of tactical nuclear weapons
- December 1990: President Roh Tae Woo announces no nukes left in South Korea
- December 31, 1990: North & South sign Denuclearization Declaration
- January 1992: NK signs IAEA safeguards

Uncertainty in 1993

- NK: one reprocessing of 100 grams of plutonium
- IAEA: more than 100 grams; more than once
- CIA: “one or possibly two weapons”

UNCLASSIFIED

Nuclear Weapons

The US has been concerned about North Korea's desire for nuclear weapons and has assessed since the early 1990s that the North has one or possibly two weapons using plutonium it produced prior to 1992.

Uncertainty to Military Crisis

The U.S.

- Demands special inspections
- Resumes Team Spirit Exercise
- Contingency plans for bombing Yongbyon
- Laney and Luck plan evacuation on June 16

North Korea

- Kicks out inspectors
- Withdraws from NPT
- Declares “Semi-War” state

Carter Diplomacy Saves the Day

- Carter meets with KIS on the same day



Geneva Agreed Framework 1994

■ North Korea

- Stay within NPT
- Stop operating 5 MW reactor
- Halt nuclear facilities construction

■ The United States

- No threat or use of nuclear weapons against NK
- Supply heavy oil
- Provide LWR by 2003

Geneva Agreed Framework

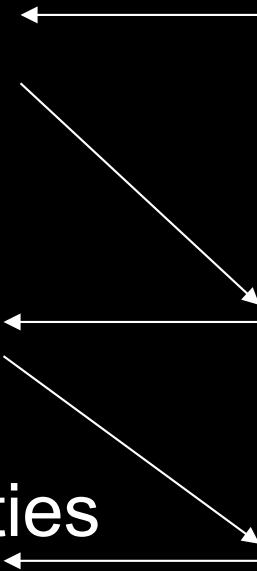
Breaks down

■ North Korea

- Stay within NPT
- Stop operating 5 MW reactor
- Halt nuclear facilities construction

■ The United States

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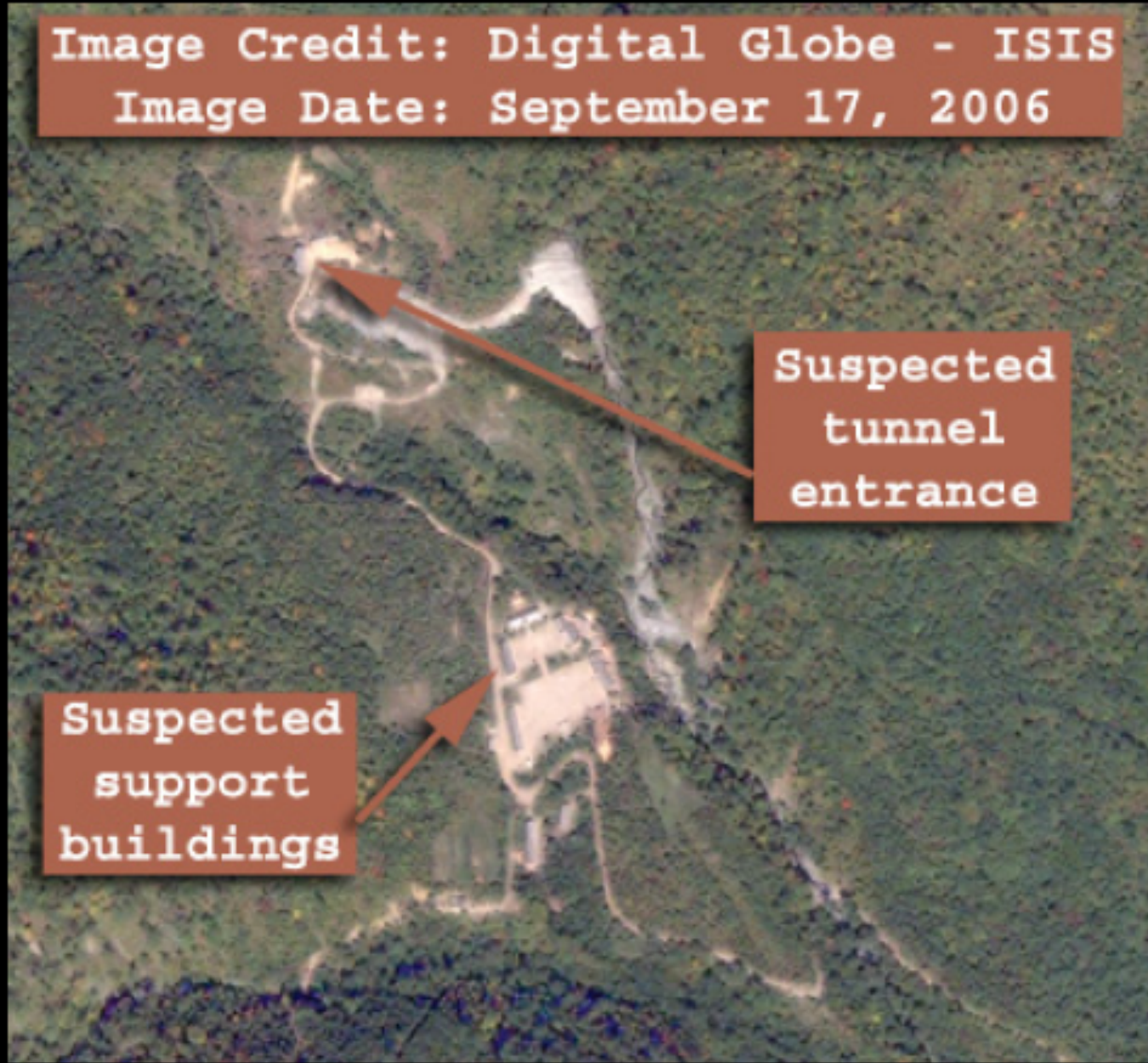
Power Block Excavation



How “Bush’s bomb” was made



Image Credit: Digital Globe - ISIS
Image Date: September 17, 2006



6 Party Talks Saves the Day

- Clash between Pyongyang's bilateral negotiations and Washington's multilateral approach
- China emerges as a go-between
- First meeting in August 2003
- 2004 Chairman's Statement
 - Denuclearization
 - Coordinated steps

Joint Statement

September 19, 2005



- Denuclearization
- “normalize their relations”
- Economic cooperation
- Regional peace and Korea peace regime
- "commitment for commitment, action for action"

Initial Actions

February 13, 2006

“coordinated steps”

- NK shut down
- Discuss a list of nuclear programs
- US: remove NK from terrorist list and Trading with Enemy act
- NK-Japan bilateral talks
- Energy assistance to NK



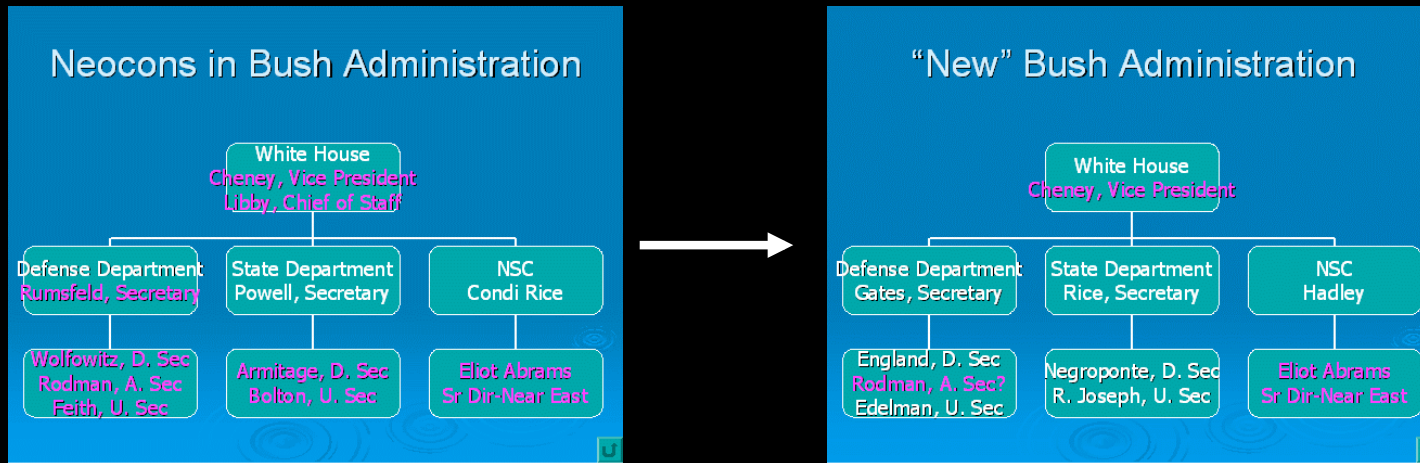
Uncertainty and Crisis in 2006



- US suspects NK of counterfeiting
 - Designates BDA as a concern
- NK suspects the US of hostile intention

US Election Saves the Day

- Nov 2006 Election
 - Democratic Majority in Congress
 - Mass Exodus of Neocons



- New bilateral negotiation begins

Second Phase Actions

October 3, 2007

DPRK

- To increase bilateral exchanges and enhance mutual trust
- To disable all existing nuclear facilities
- To provide a complete and correct declaration
- Not to transfer

U.S.

- To increase bilateral exchanges and enhance mutual trust
- To provide one million tons of HFO
- To fulfill its commitments in parallel with NK's actions

Uncertainty in 2008

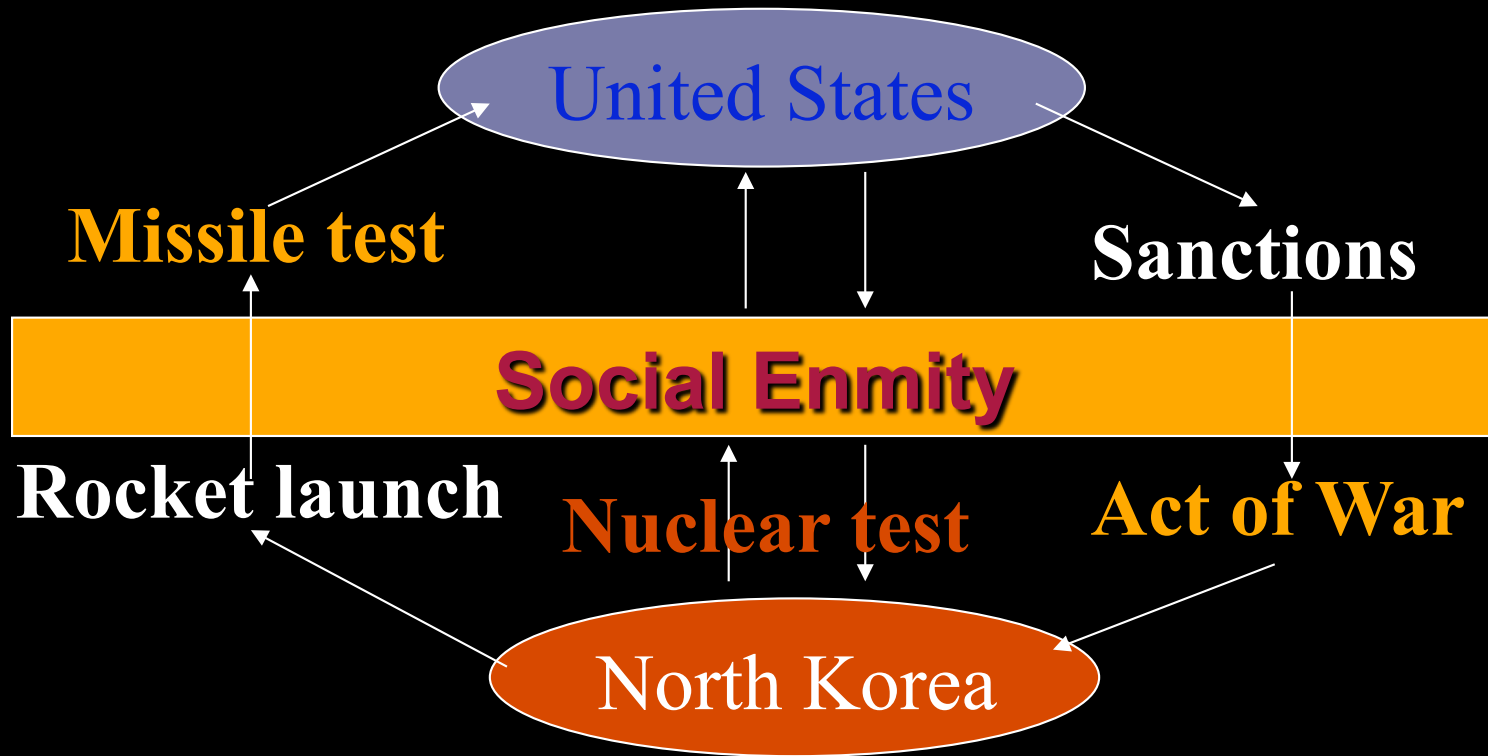
The U.S.

- Uncertainty about NK's past nuclear activities
 - Plutonium extracted
 - Centrifuges
 - Verification

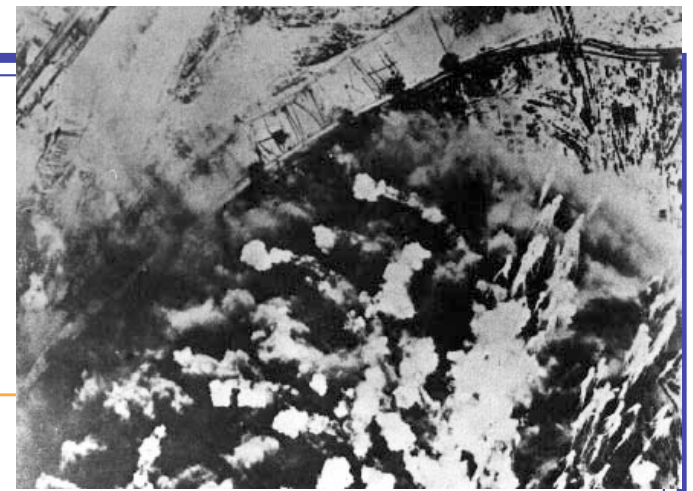
North Korea

- Uncertainty about US will to implement
 - Trading with Enemy Act
 - List of State Sponsors of Terrorism
 - Provision of HFO

How “Obama’s bomb” was made



Korean War



- Dec 24, 1950: MacArthur submits “a list of retardation targets” requiring 26 A-bombs
- April 6, 1951: President Truman signs an order to use Mark IVs against Chinese and North Korean targets
- June 1951: Project Vista
- October 1951: Operation Hudson Harbor

Introduction of Nuclear Weapons

- January 1958
 - 280 mm nuclear cannons
 - Honest John missiles
 - Matador cruise missiles
 - Atomic demolition mines (ADM)





- 1967 Pentagon war game
 - “the twelve ROKA and two US divisions in South Korea had ... keyed their defense plans almost entirely to the early use of nuclear weapons.”
- January 1968: Pueblo incident
 - “all the US F-4 fighter planes held on constant alert on Korean airfields were loaded only with nuclear warheads.”

1970s

- “AirLand Battle” strategy
 - Quick, deep strikes into enemy territory
 - Likely use of nuclear weapons



■ “Horizontal Escalation”

- a war with the Soviet Union may be conducted in a region of the world other than where the initial conflict breaks out.
- “it becomes quite obvious Korea could become the scene of a major war for reasons that have nothing to do with South Korea's defense against the North.”

1990s

- Continuation of Team Spirit Exercises
- Plan to surgically strike the Yongbyon nuclear complex
- “Two War Doctrine”

2000s

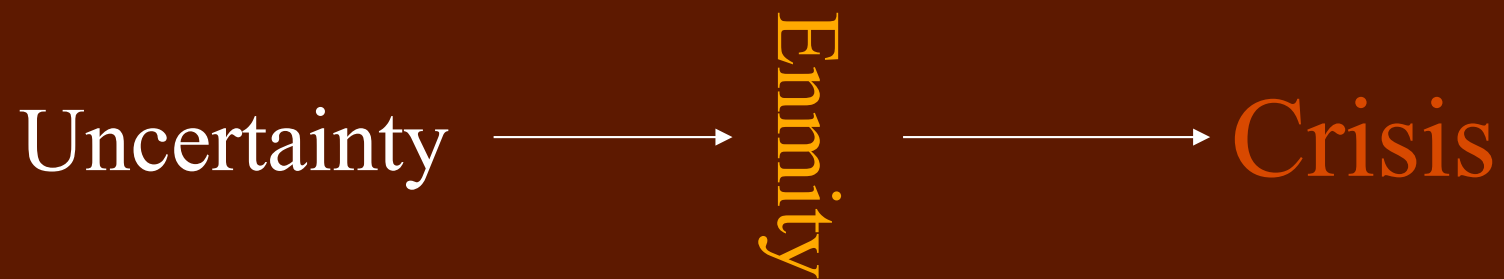
- George W Bush
 - “Axis of evil”
 - NPR (2002)
 - Retaliate conventional aggression with nukes
 - National Security Presidential Directive 17 (May 2002)
 - authorizes "pre-emptive strikes" on countries close to acquiring weapons of mass destruction

2010s

- Obama
 - Nuclear Posture Review (2010)
 - Excludes North Korea from negative security assurance
 - Formalizes extended deterrence with South Korea
 - Strengthens MD



Crisis or Institutional Solution?



■ Institutional Solution

- Denuclearization of the Korean Peninsula
- A permanent peace regime on the Korean Peninsula
- Security Cooperation in Northeast Asia

Korea, Quo Vadis?

- 6 Party Talks Succeed♪
 - Nuclear Free Korea
 - Permanent Peace on Korea
 - Peace and Cooperation in Asia Pacific
- 6 Party Talks Fail♪
 - Nuclear North Korea
 - Continuation of Korean War
 - 'New Cold War' in Asia Pacific

Thank you
