

Nuclear Weapons: A Paradigm Shift

Rethinking the Unthinkable

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Paradigm shift

Extraordinary

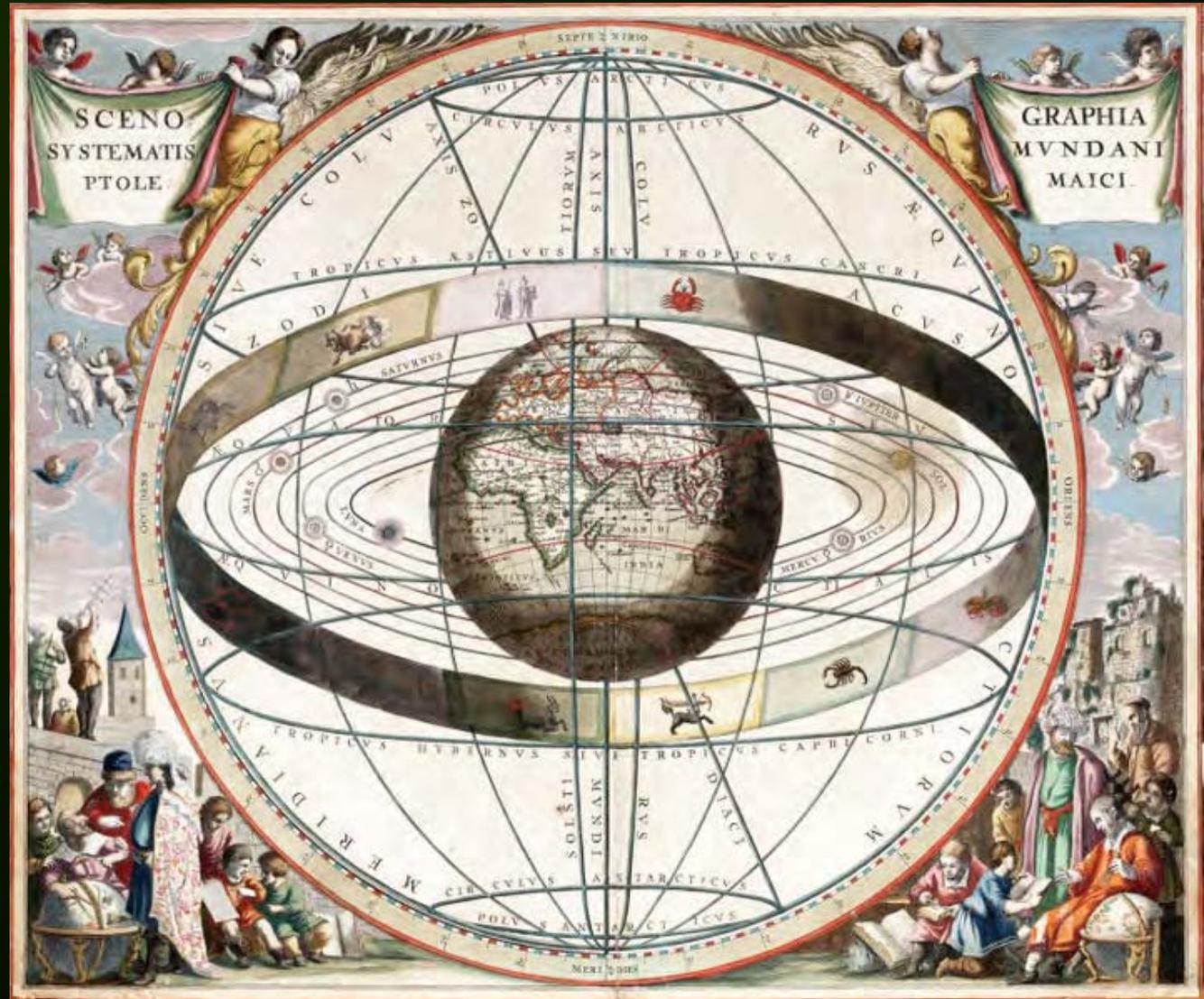
Hopeful



Paradigm shift

“Sometimes called a *gestalt*, a paradigm is a large interpretive framework that shapes how everything is seen, a way of constellating particulars into a whole.”

Paradigm shift



Paradigm shift



Paradigm shift



Paradigm shift



Apocalypse paradigm

Apocalypse paradigm

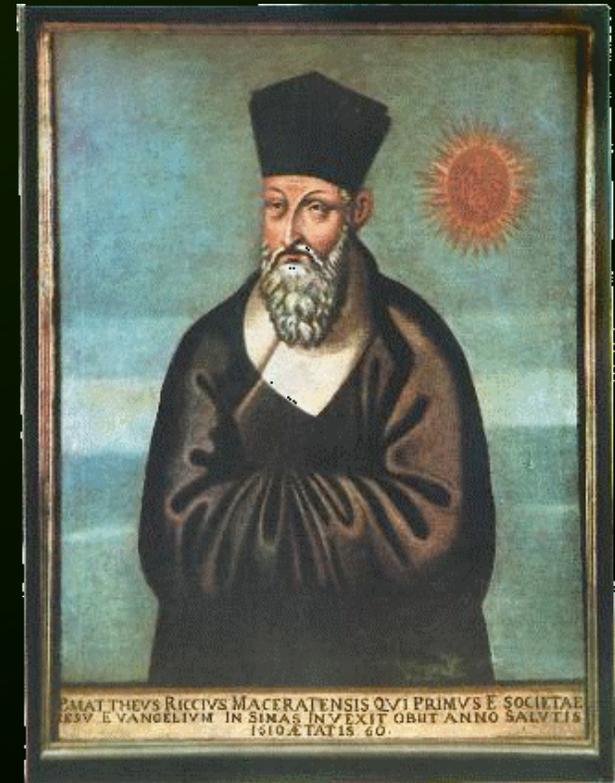
Biblical awe



Apocalypse paradigm

Biblical awe

Morality or human character questions



Apocalypse paradigm

Biblical awe

Morality or human character questions

End of the world



Interpretations and expectations

Newspapers trumpeted the bomb's incredible power and military effectiveness.



Bernard Baruch called it
"The winning weapon."

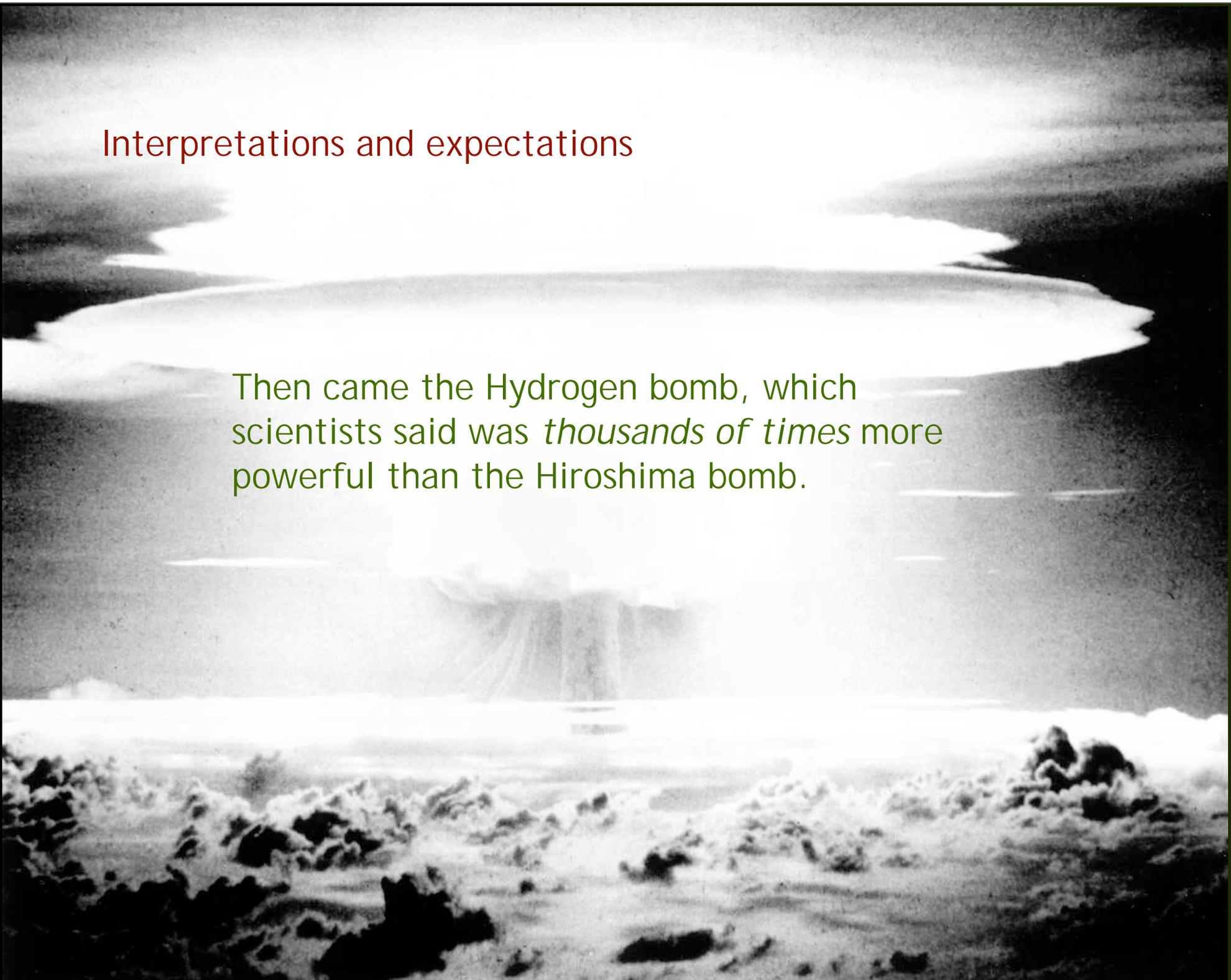
Interpretations and expectations

Secretary of State James Byrnes said it "assured ultimate success in negotiations."



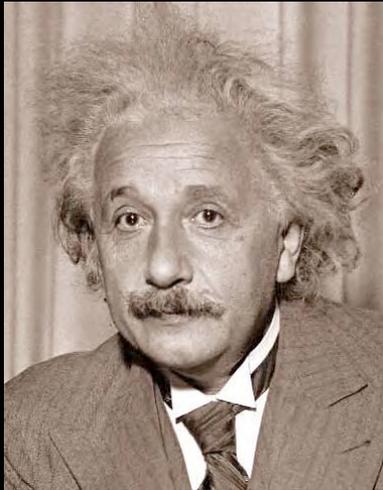
Interpretations and expectations

Then came the Hydrogen bomb, which scientists said was *thousands of times* more powerful than the Hiroshima bomb.



Interpretations and expectations

"War is no longer possible."



"Nuclear weapons have changed *everything*, except our way of thinking."

"Every man, woman and child lives under a nuclear sword of Damocles, hanging by the slenderest of threads, capable of being cut at any moment by accident, or miscalculation, or by madness."



Contradictions and Anomalies

Diplomatic influence



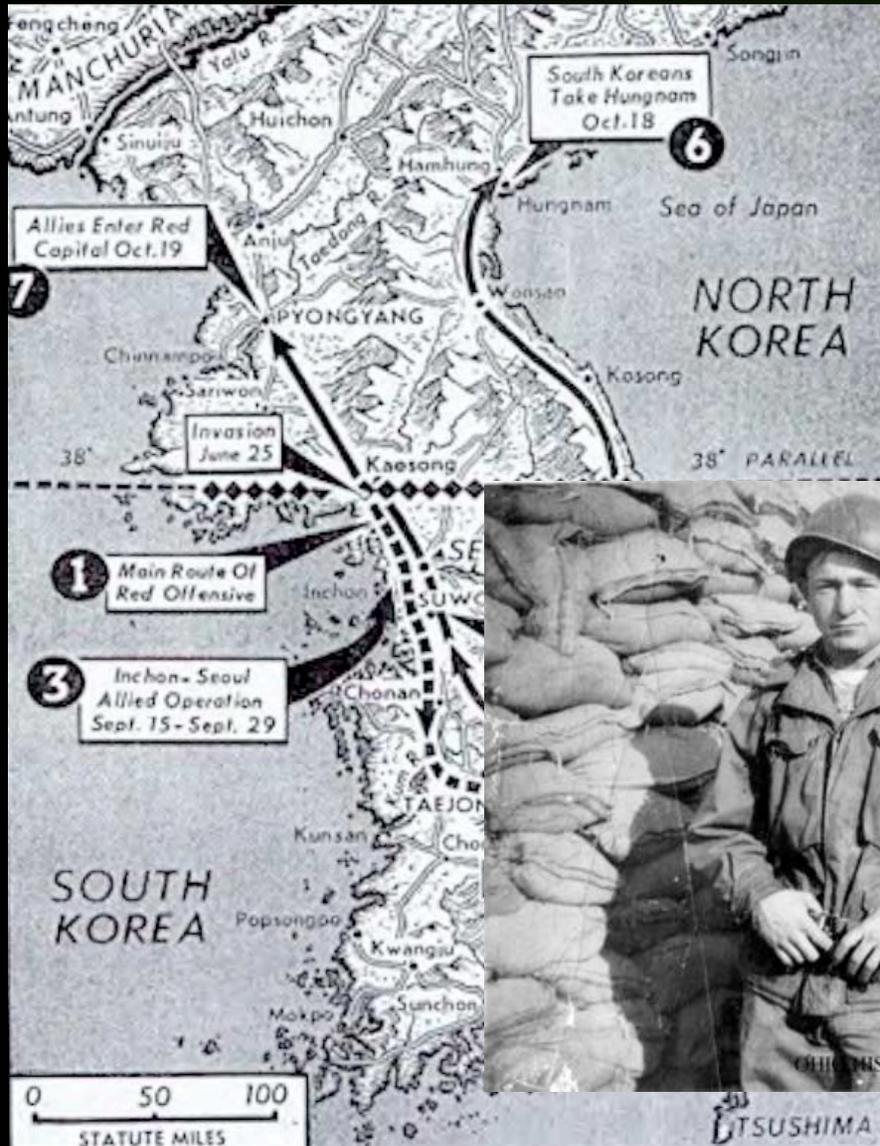
Diplomatic influence



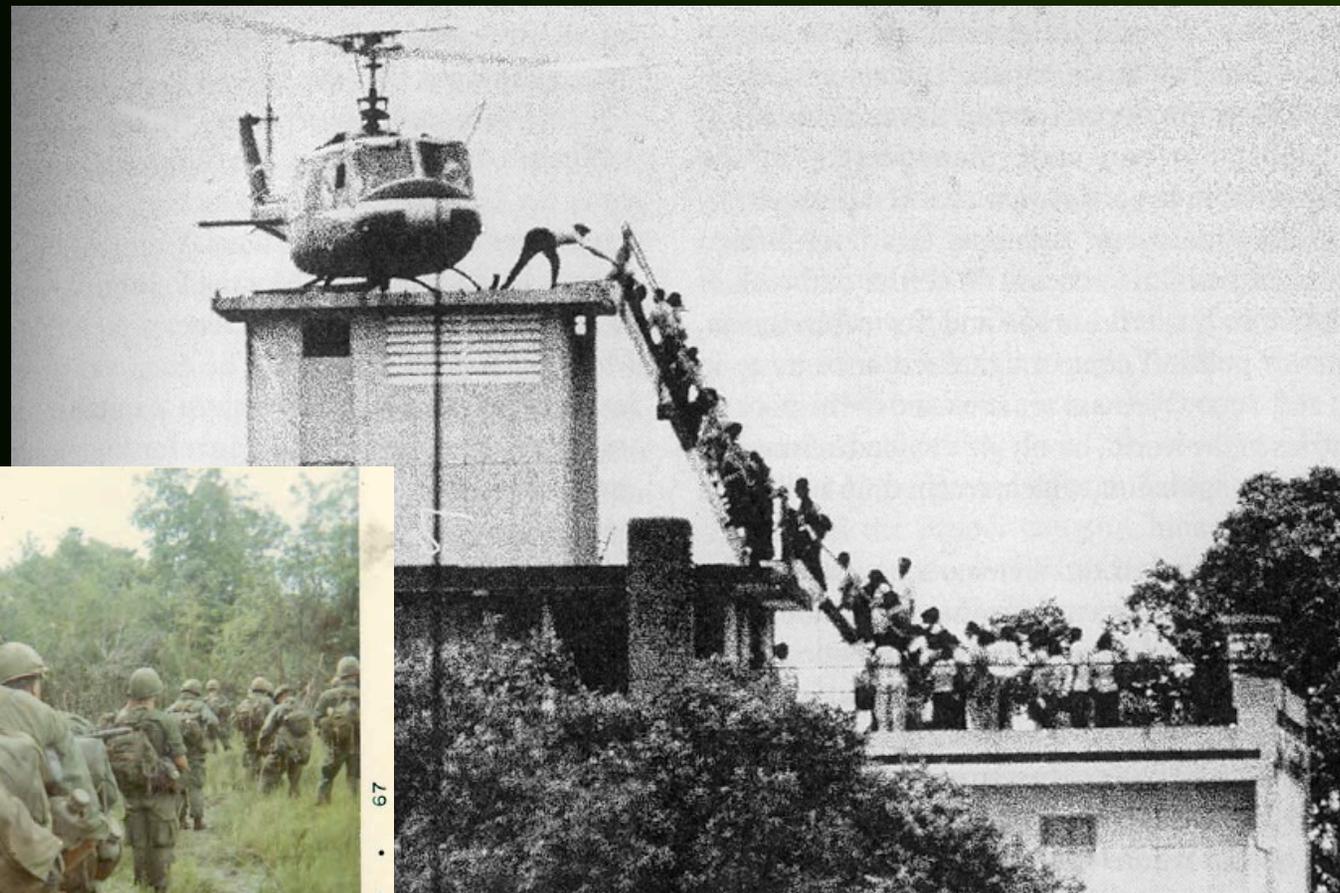
Diplomatic influence



Assure victory

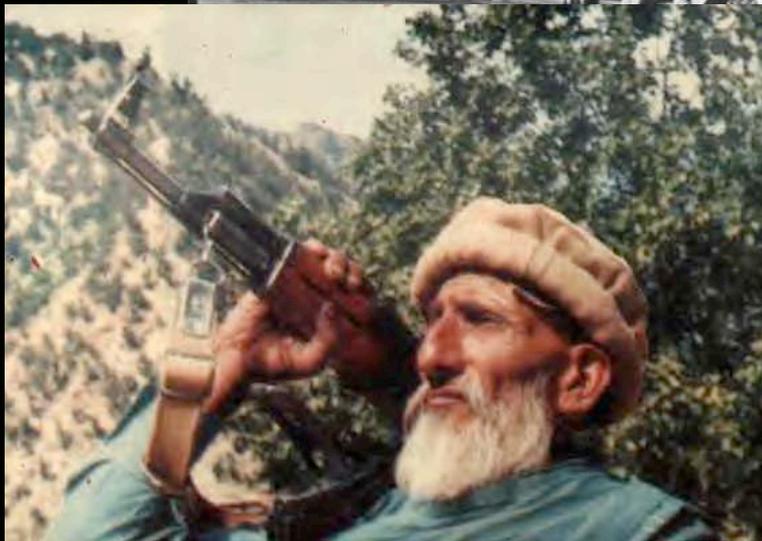


Assure victory

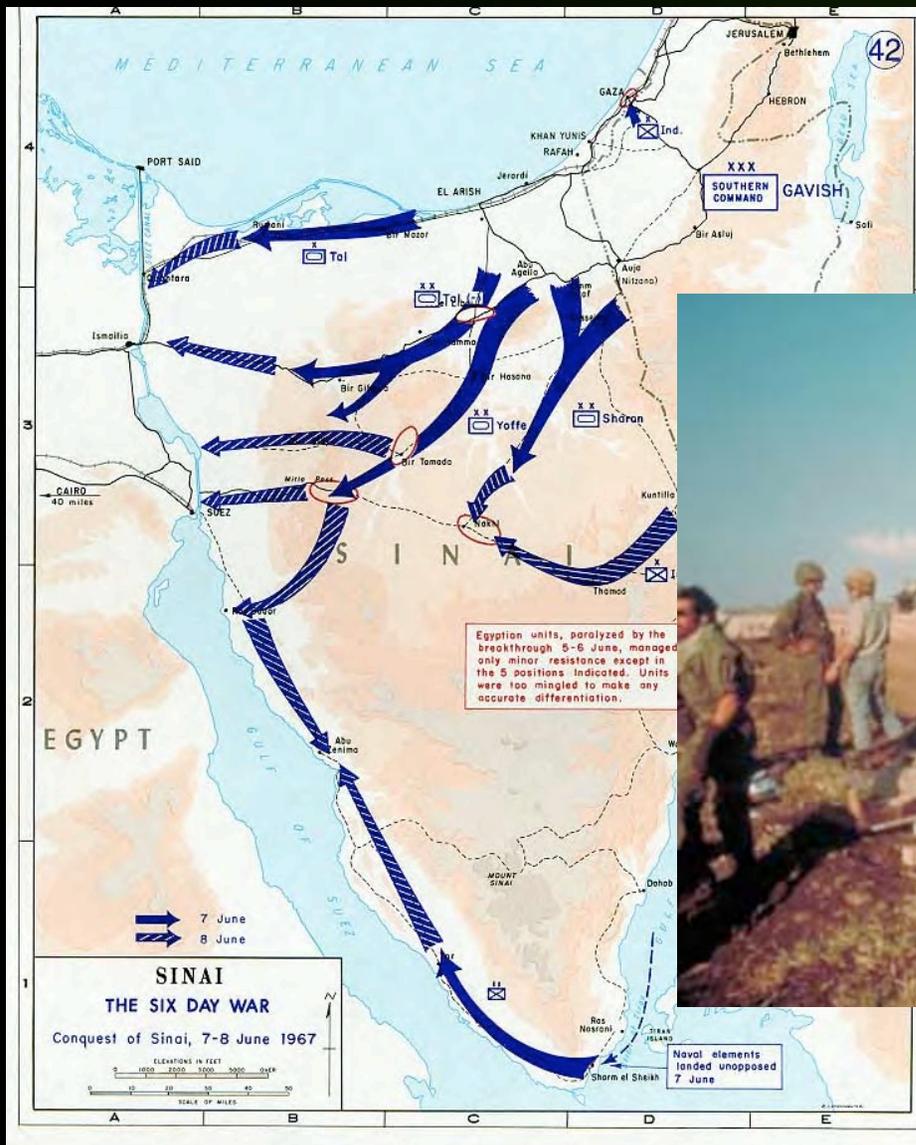


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Assure victory



Prevent attacks



Prevent attacks



War is not possible

Indonesian National Revolution
Vietnamese War of
Independence
Paraguayan Civil War
Indo-Pakistani War of 1947
Palestinian Civil War
1948 Arab-Israeli War
Costa Rican Civil War
Internal conflict in Myanmar
Malayan Emergency
Korean War
PLA Invasion of Tibet
Tunisian War of Independence
Mau Mau Uprising
Uprising of 1953 in East
Germany
Algerian War of Independence
First Sudanese Civil War
Poznań 1956 protests

Hungarian Uprising
Sinai Campaign
Cuban Revolution
Ifni War
Lebanon Crisis of 1958
1959 Tibetan Rebellion
Vietnam War
Laotian Civil War
Cambodian Civil War
Congo Crisis
Guatemalan Civil War
Eritrean War of Independence
Portuguese Colonial War
Angolan War of Independence
Tuareg Rebellion (1961–1964)
Guinea-Bissau War of
Independence
Mozambican War of
Independence

Invasion of Goa
Sino-Indian War
Indonesia-Malaysia confrontation
Yemen Civil War
Dhofar Rebellion
Sand War
Shifta War
Rhodesian Bush War
Colombian Armed Conflict
Operation Power Pack
Indo-Pakistani War of 1965
South African Border War
Namibian War of Independence
Chola incident
Six-Day War
Nigerian Civil War
Communist Insurgency War
Communist Insurgency in the
Philippines

Contradictions

Nuclear weapons did not make war unthinkable

They did not provide significant diplomatic leverage

They did not prevent defeat (Vietnam, Afghanistan)

They did not provide victory (Korea, Gulf War, etc. etc.)

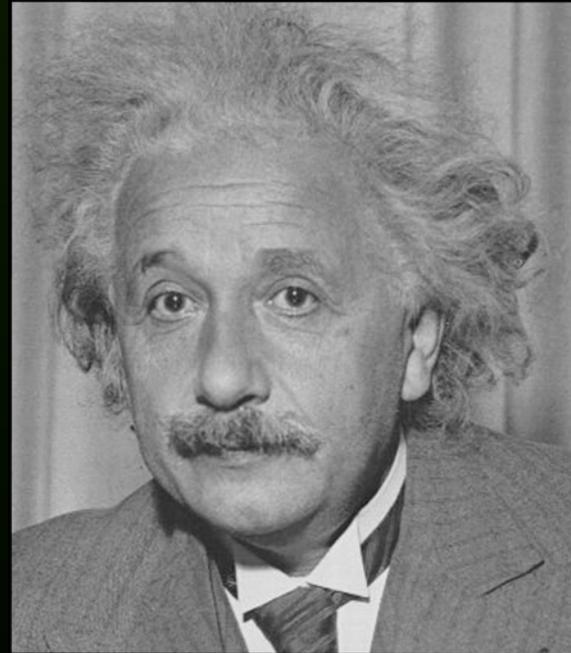
They did not prevent the loss of empire (England, Russia)

They did not prevent the invasion of Israel (1973) or the
Falkland Islands war (1982)

Nuclear Exceptionalism

Nuclear exceptionalism

“Nuclear weapons have changed everything -
except our way of thinking.”



Nuclear exceptionalism

Despite the fact that nuclear weapons have already been used twice, and the nuclear sword has been rattled many times, one can argue that for all practical purposes nuclear war is still (and hopefully will remain) so far from our experience that it is difficult to reason from, or illustrate arguments by, analogies from history. Thus, many of our concepts and doctrines must be based on abstract and analytical considerations.



--Herman Kahn

Nuclear exceptionalism

~~Rules~~

Nuclear exceptionalism

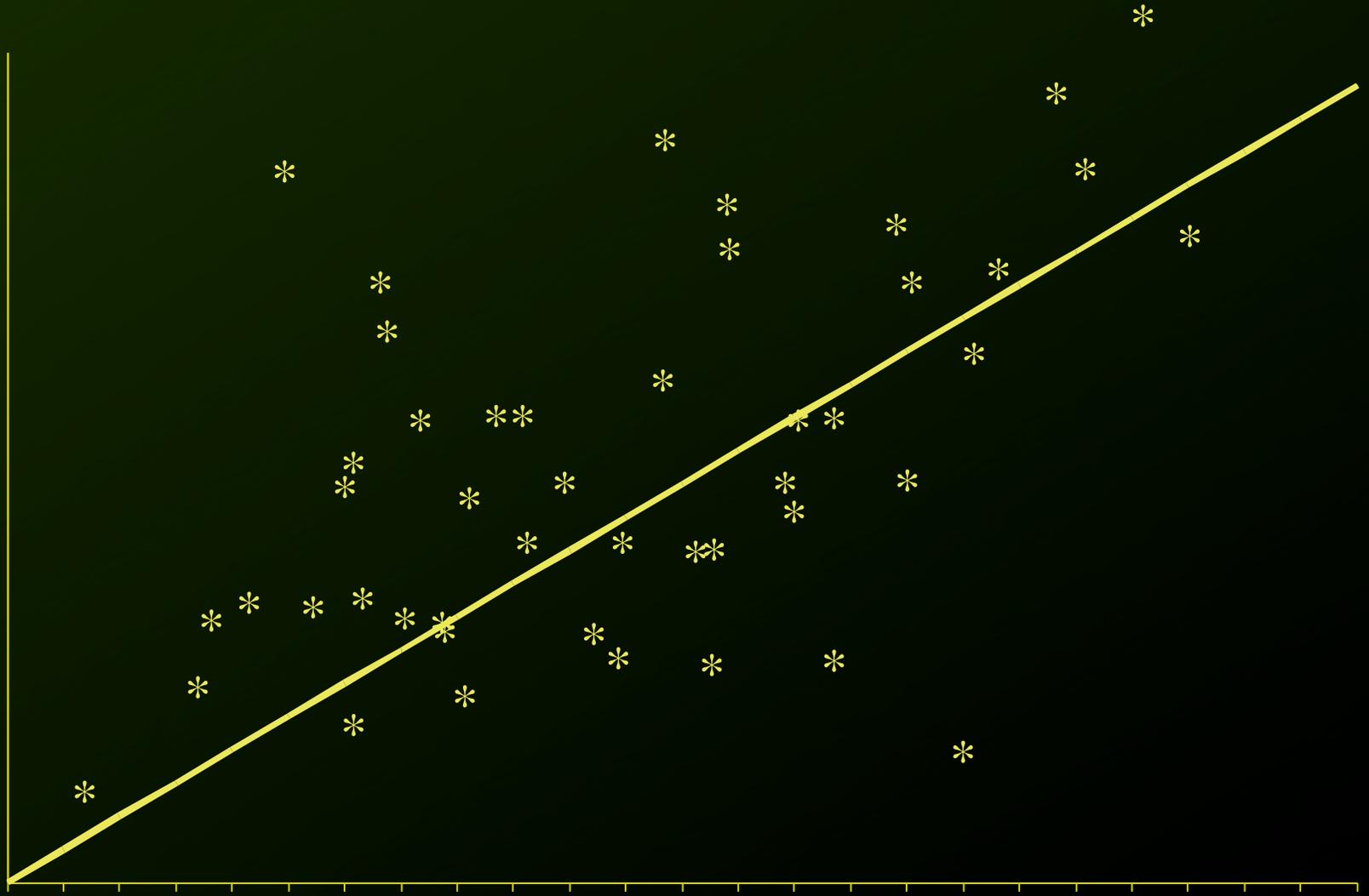
~~History~~

Nuclear exceptionalism

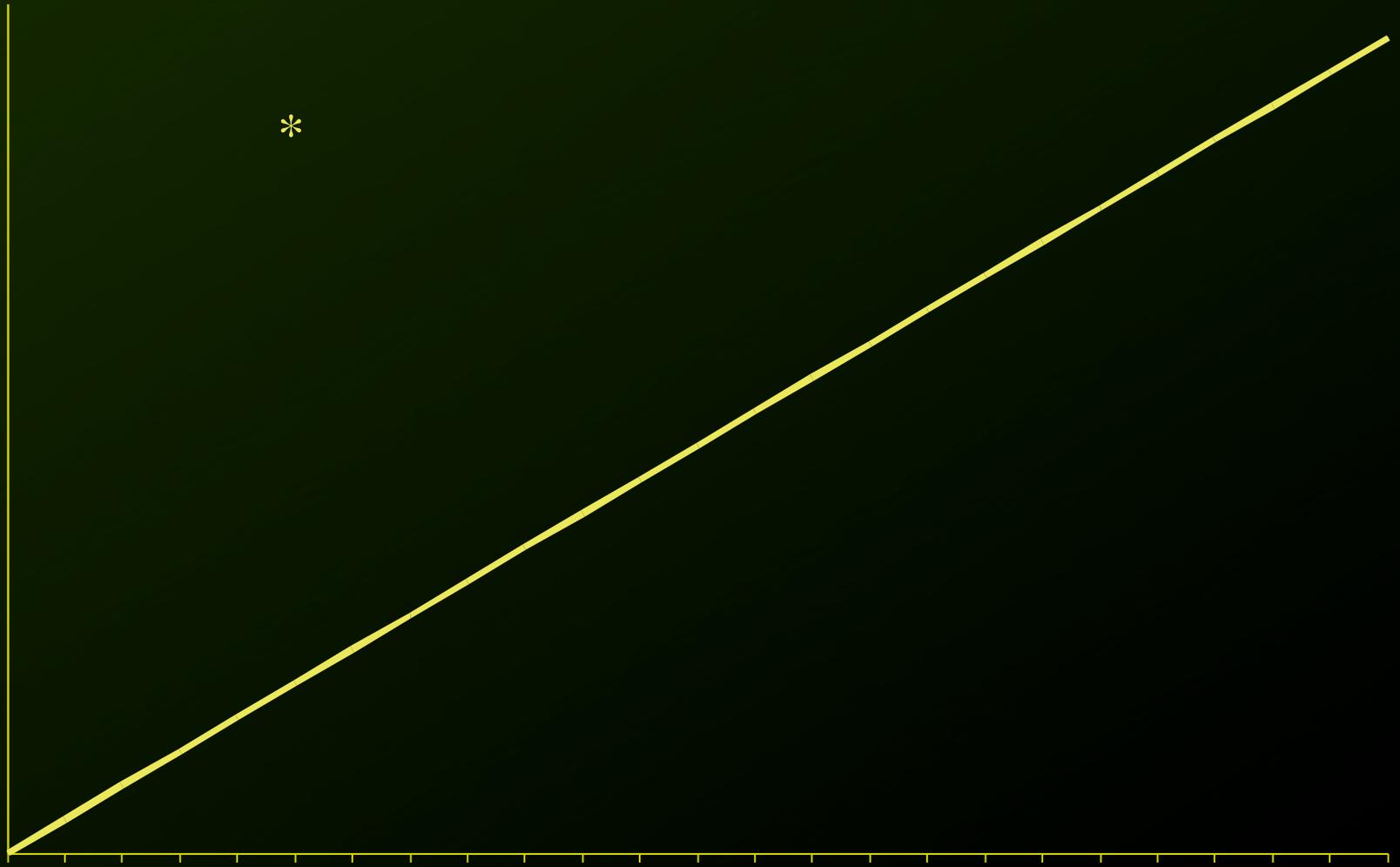
Even though 66 other cities were bombed . . .



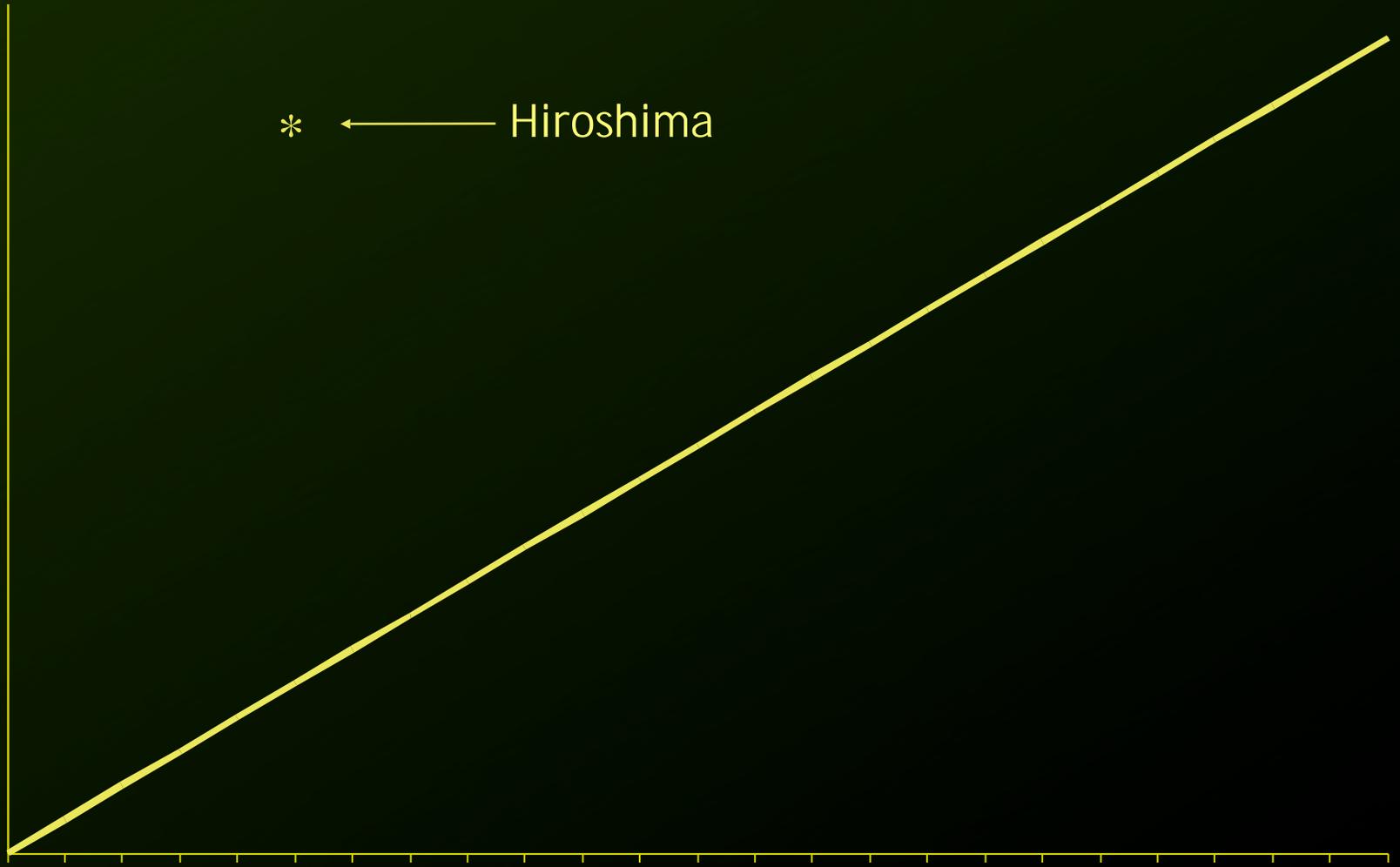
Nuclear exceptionalism - theoretical



Nuclear exceptionalism - theoretical

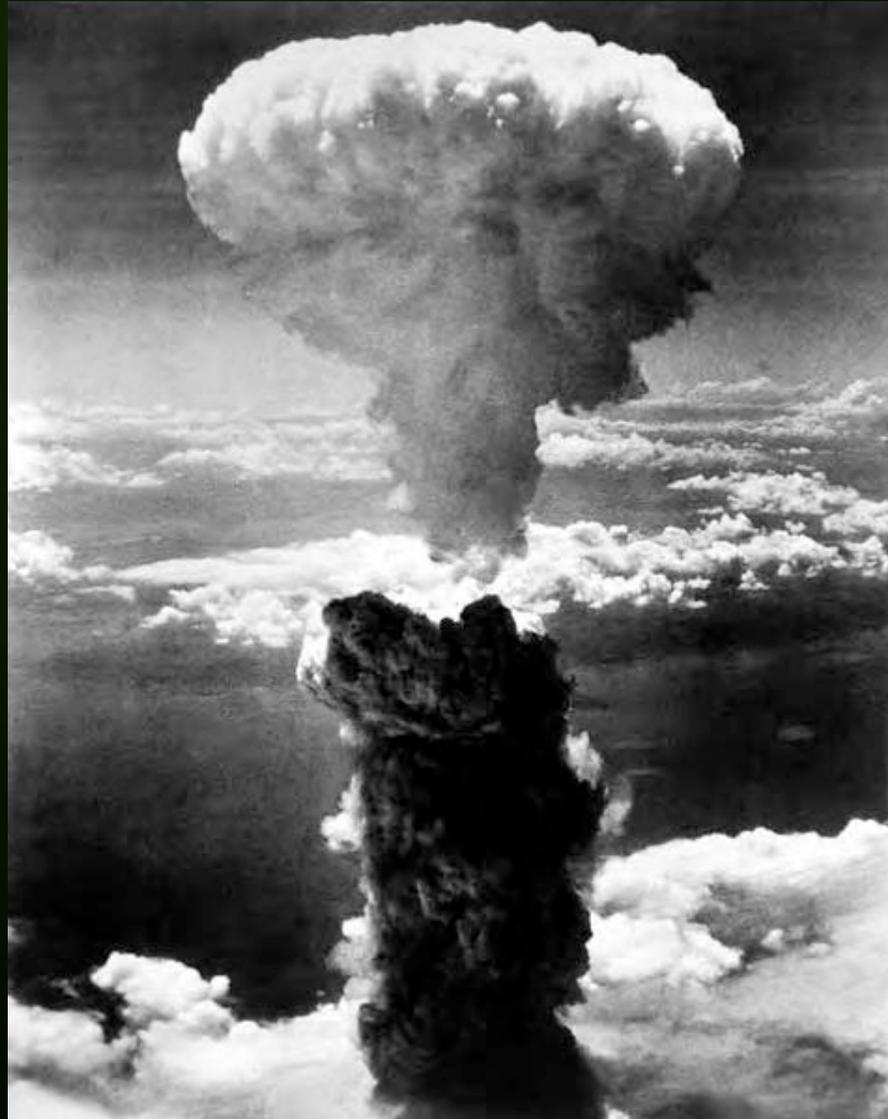


Nuclear exceptionalism - theoretical



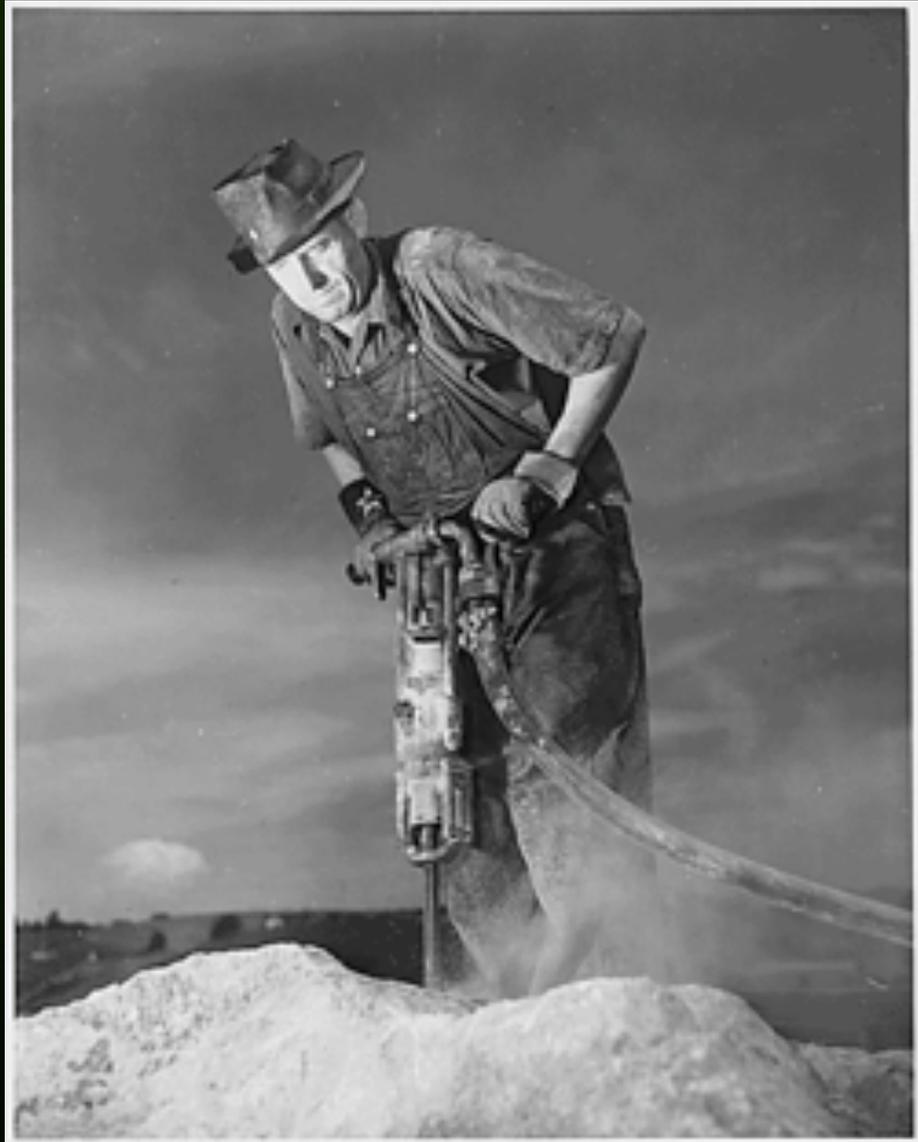
Nuclear exceptionalism

So powerful
So new
Forget past wars
Rules don't apply



Jackhammer exceptionalism

So powerful
So new
Forget past holes
Rules don't apply



Apocalypse paradigm

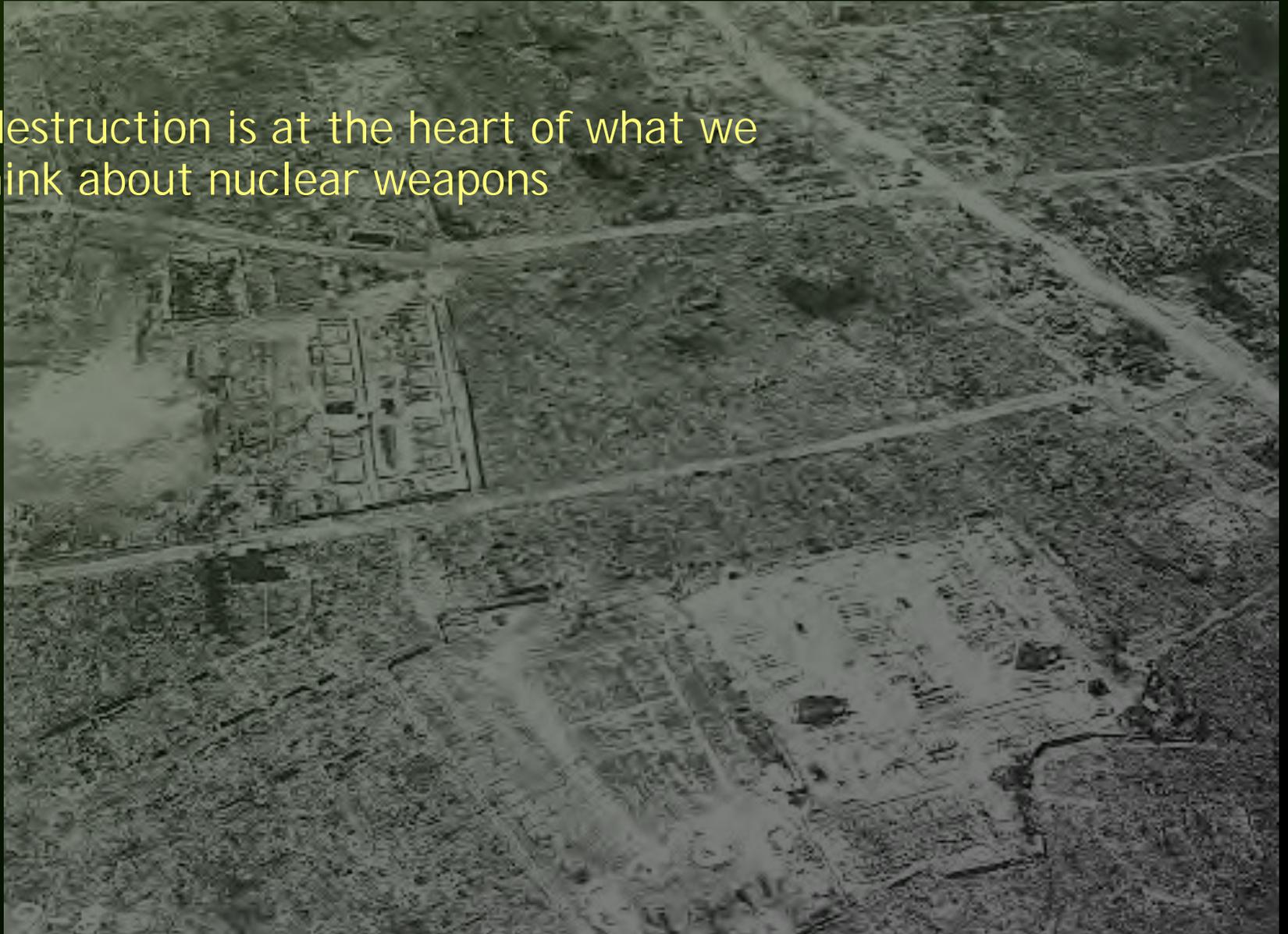
What if we re-evaluate nuclear weapons,
approaching the problem from another vantage?

From outside the apocalypse paradigm?

City Destruction

City destruction

City destruction is at the heart of what we think about nuclear weapons



City destruction



City destruction

Criteria:

1/3 killed

2/3 destroyed



City destruction

Only a handful



City destruction

Attila the Hun and Aquileia



City destruction

- Attila the Hun and Aquileia

- Genghis Khan and the Khwarazmian Empire



City destruction

- Attila the Hun and Aquileia
- Genghis Khan and the Khwarazmian Empire
- Tilly and Magdeburg



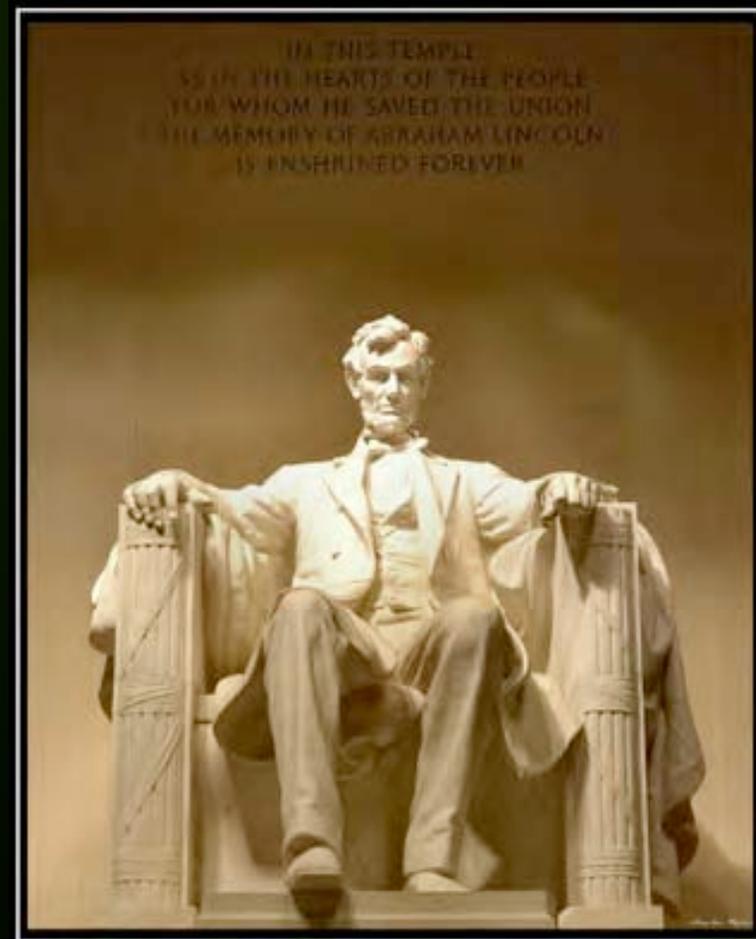
City destruction

Japanese, Stalin, Hitler, Churchill and WWII



City destruction

- Atlanta, Richmond



City destruction

- Why?

Killing civilians

City destruction is primarily about killing civilians



Killing civilians

City destruction is primarily about killing civilians

Wars are hardly ever won by killing civilians



Killing civilians

“But in a nuclear war the scale of the killing would be immense.”



Killing civilians

Even killing civilians on a massive scale
doesn't seem to win wars.



Killing civilians

Even killing civilians on a massive scale
doesn't seem to win wars.

An estimated 20 to 30% in Germany during
the Thirty Years War



Killing civilians

Even killing civilians on a massive scale doesn't seem to win wars.

An estimated 20 to 30% in Germany during the Thirty Years War

The Paraguayan war = 58%



City destruction

The lesson of history is incontrovertible: up to August 5, 1945 destroying cities doesn't win wars



Hiroshima

Hiroshima

Emotions; clear thinking
difficult

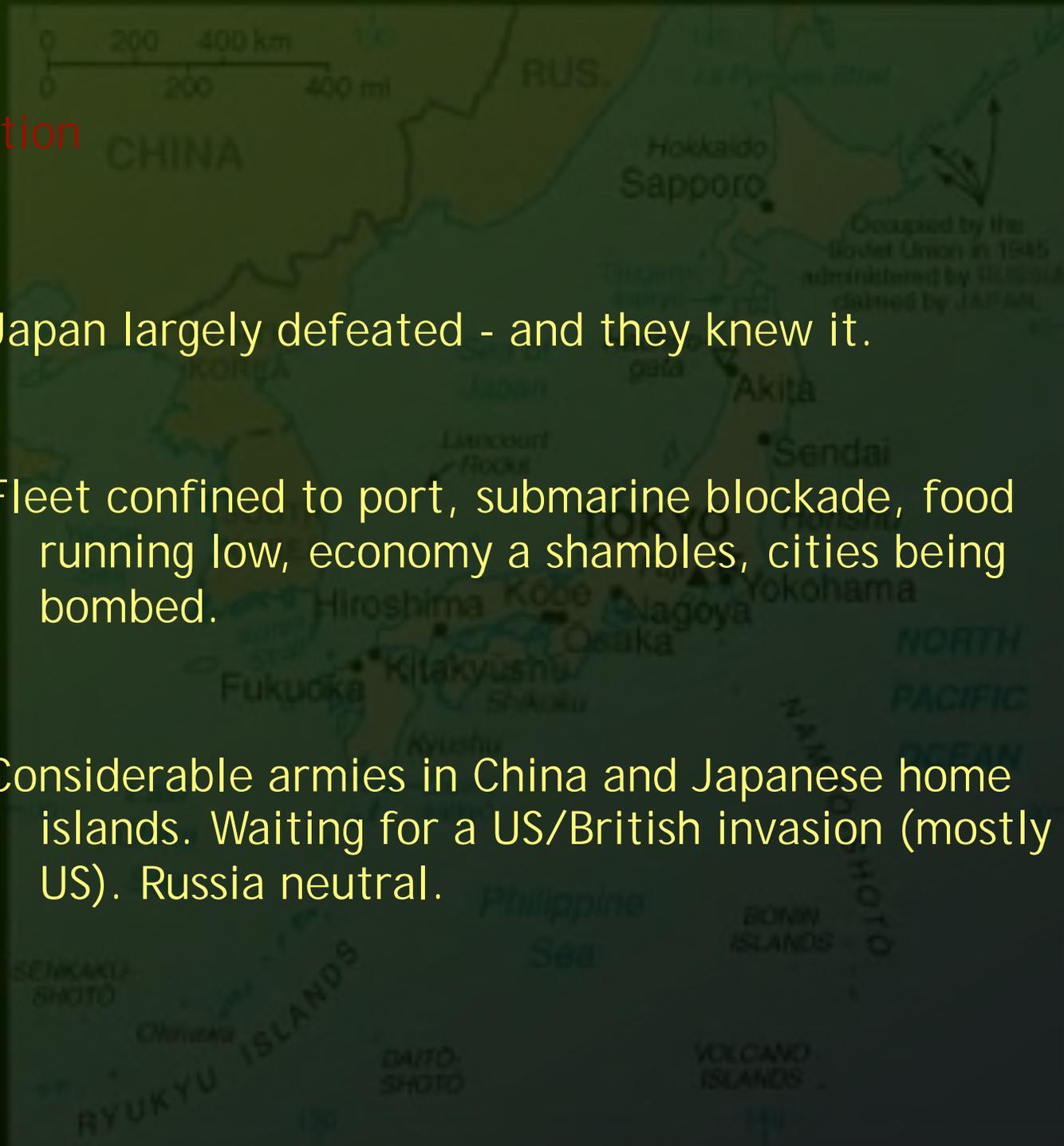
Not morality, but *did it
work?*

Situation

Japan largely defeated - and they knew it.

Fleet confined to port, submarine blockade, food running low, economy a shambles, cities being bombed.

Considerable armies in China and Japanese home islands. Waiting for a US/British invasion (mostly US). Russia neutral.



Traditional interpretation

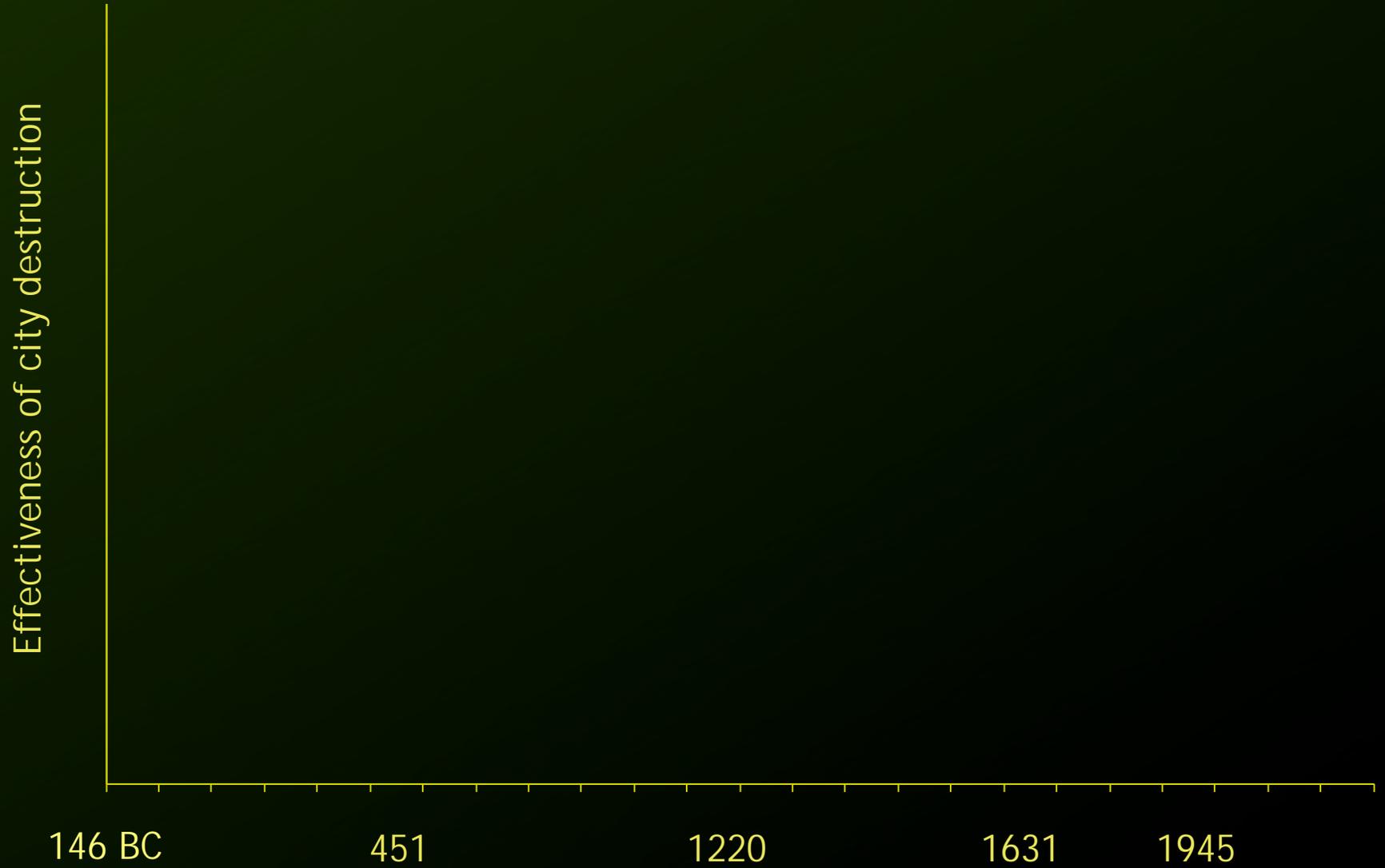
August 6th - Hiroshima

August 9th - Nagasaki

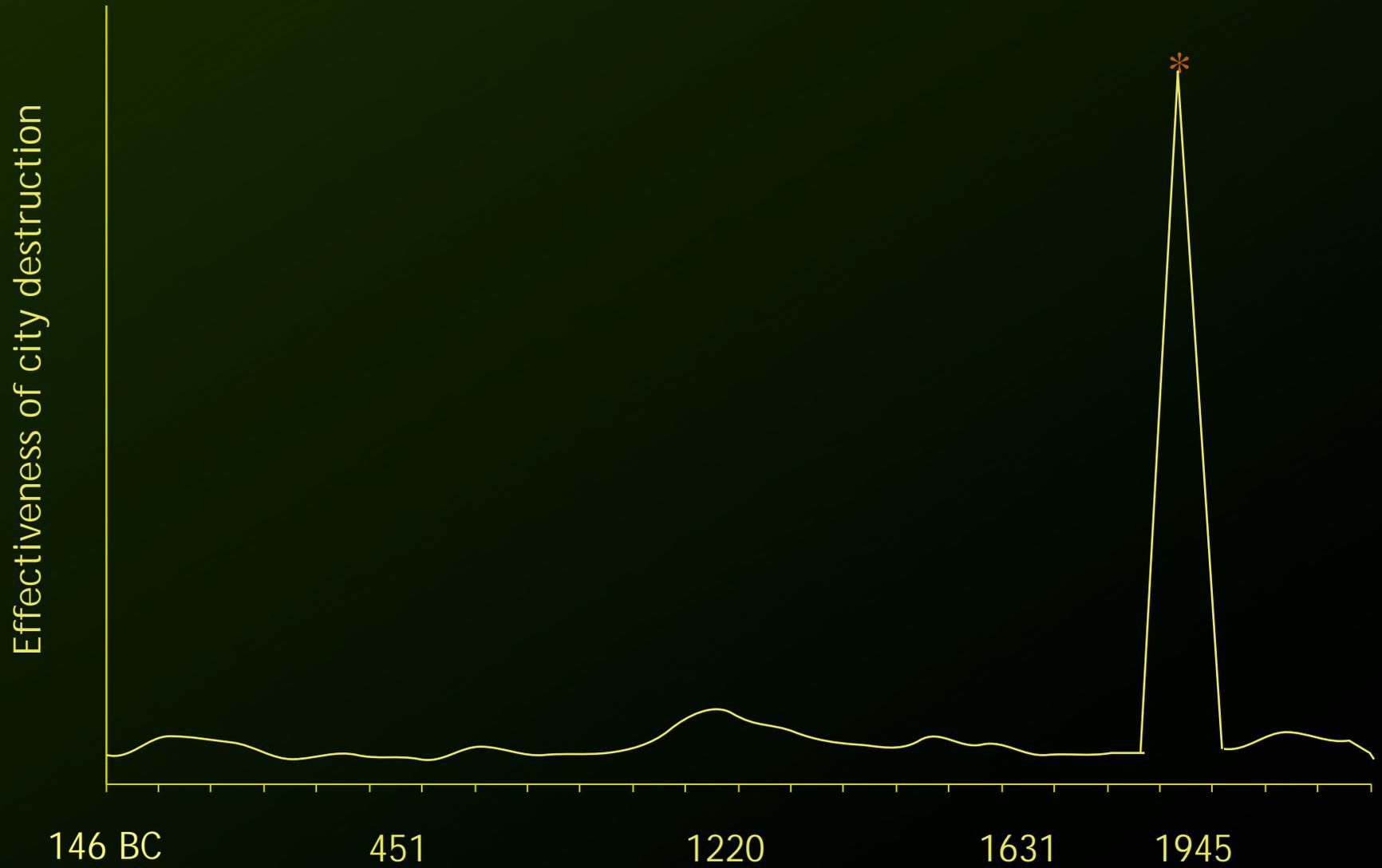
August 10th - surrender



Hiroshima in context



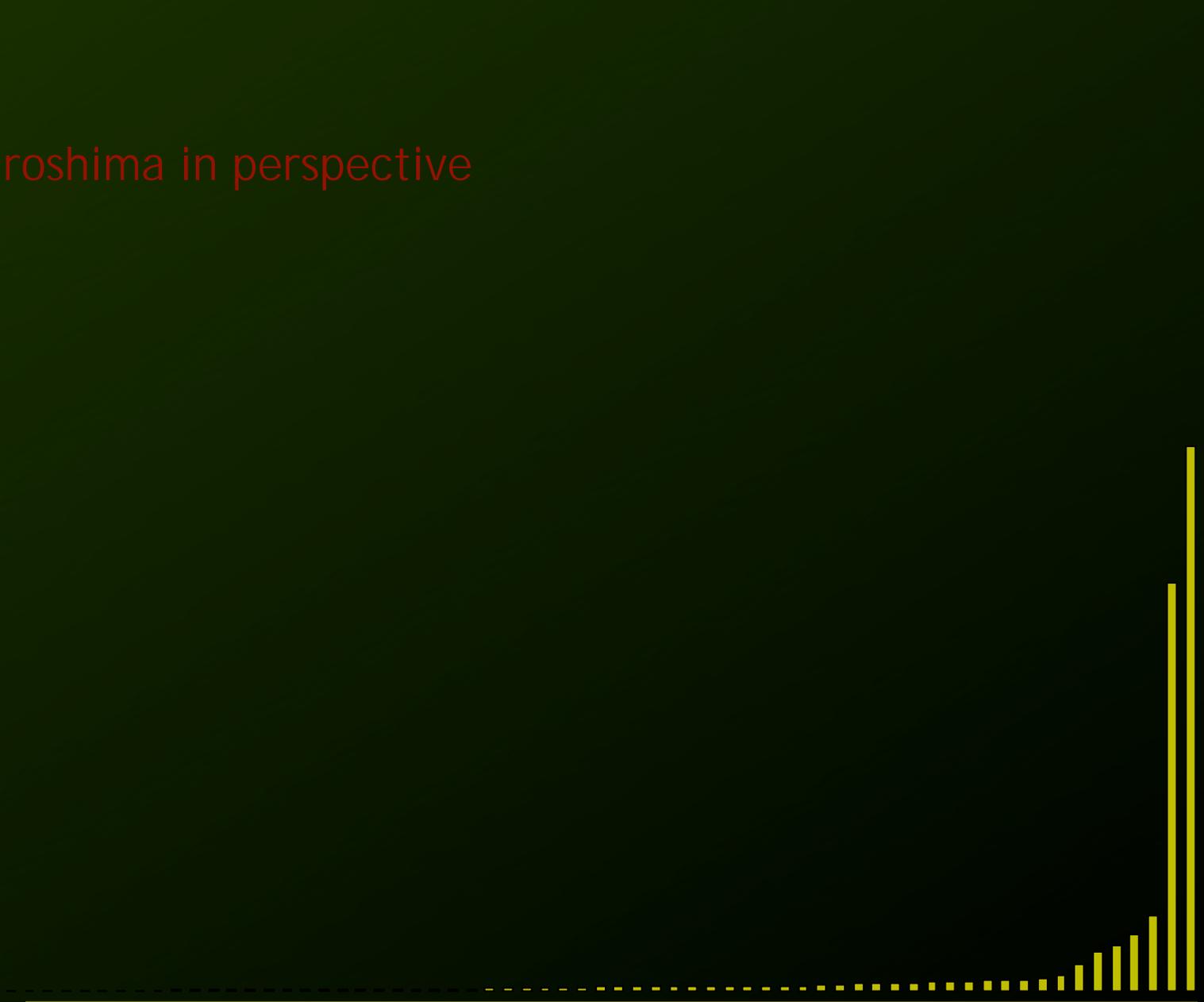
Hiroshima in context



Hiroshima in perspective



Hiroshima in perspective



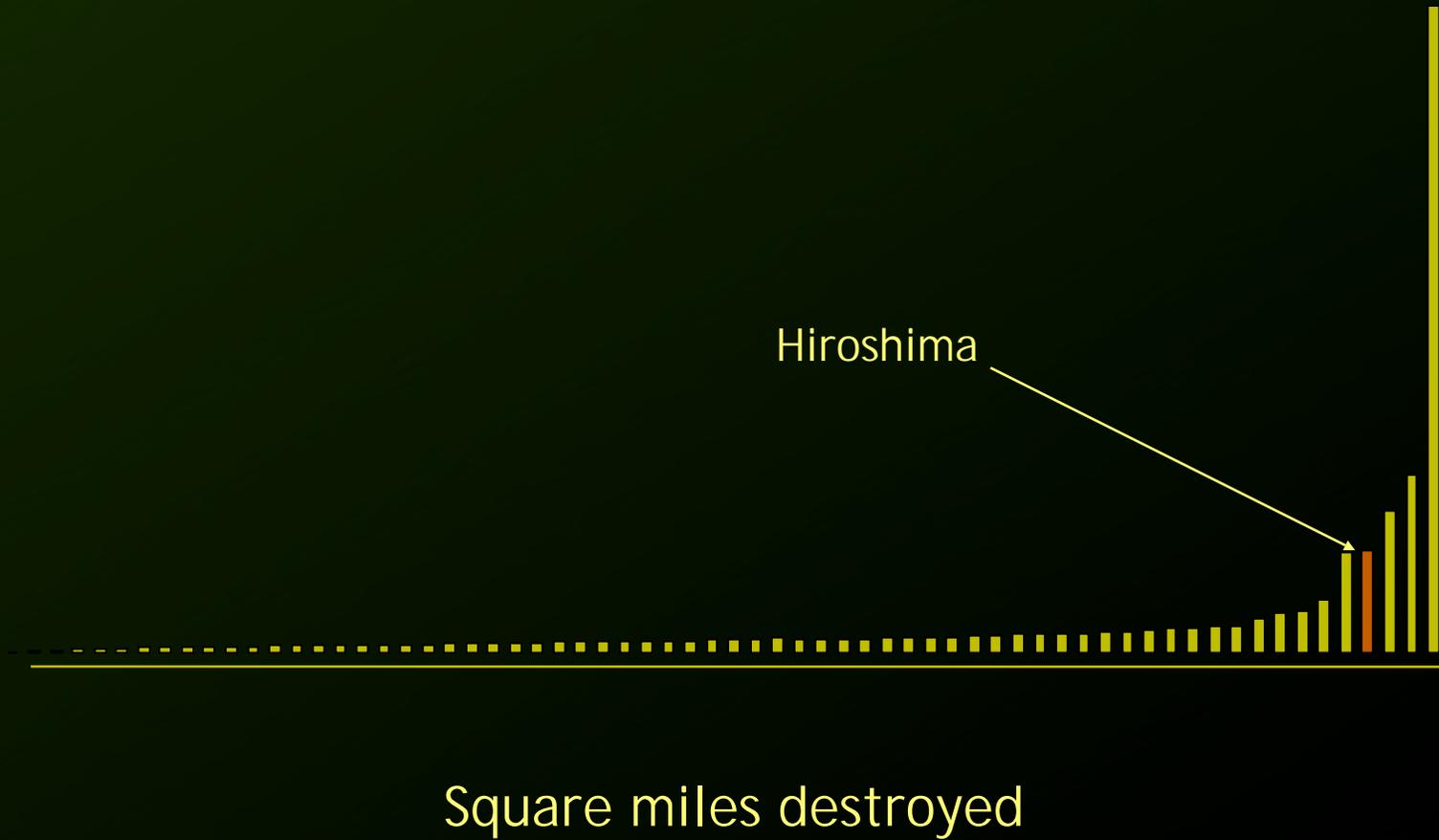
Killed

Hiroshima in perspective

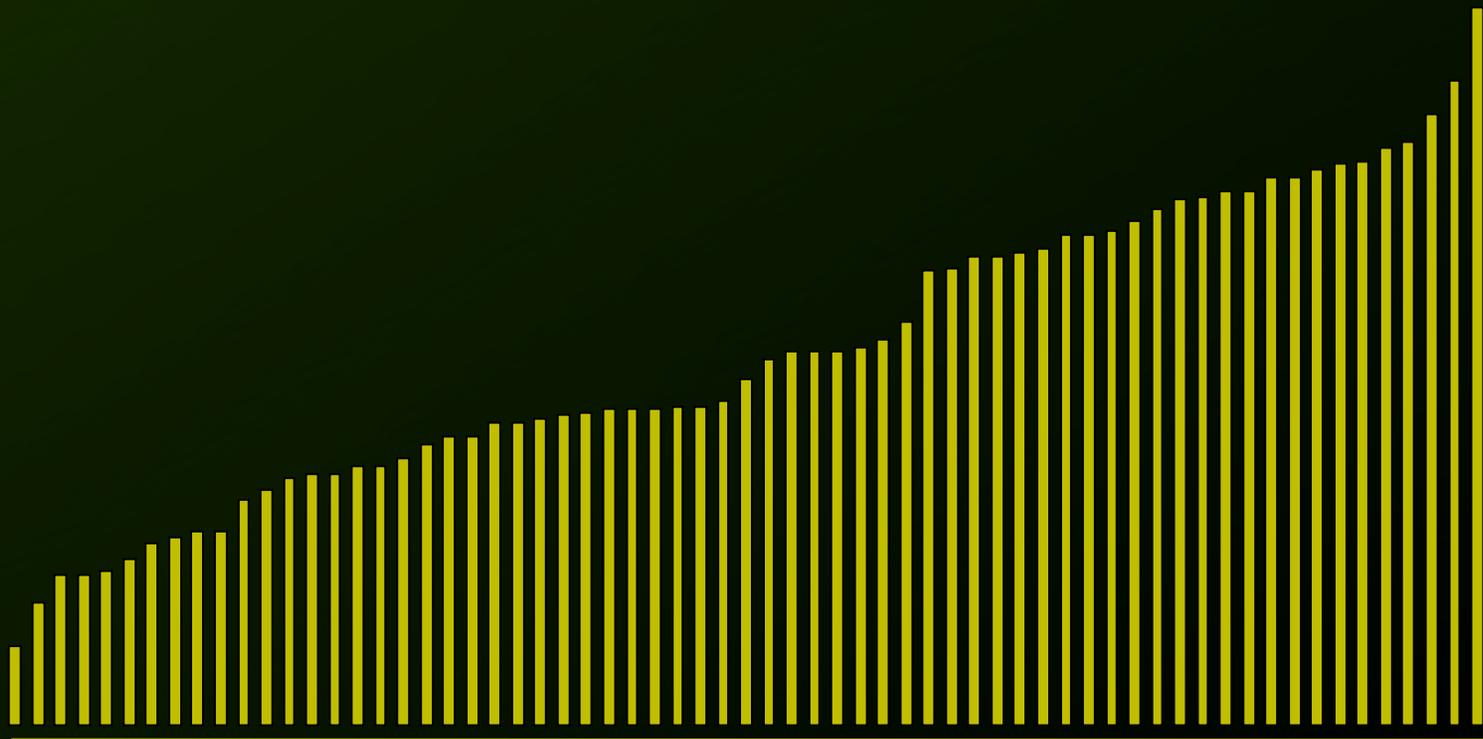


Square miles destroyed

Hiroshima in perspective



Hiroshima in perspective



Percent of city destroyed

Hiroshima in perspective



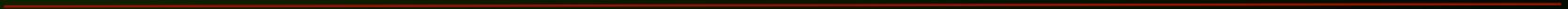
Percent of city destroyed

Hiroshima in perspective

Minister of War Anami Korechika said on August 13th that the atomic bomb seemed no more menacing than the fire bombings Japan had already endured for months.



Crisis



Crisis



Hiroshima

A "serious jolt"

"We must be tenacious and
fight on"

Soviet Intervention

Martial law

Overthrow the government

Crisis



8:15 am - Hiroshima bombed



Report of Truman's press release announcing A-bomb



12:01 am - Soviets invade Manchuria



10:30 am Supreme Council meets



Togo asks for meeting of Supreme Council - denied

4:30 am - Word reaches Tokyo of Soviet Invasion



Nagasaki

August 5

August 6

August 7

August 8

August 9

8:30 am - First report reaches Tokyo

6 hours

74 hours

Strategic situation



Mediation



Battle

Total

Summer 1945



Strategic situation



Mediation



Battle

Total

Summer 1945

✓

✓

2

Strategic situation



Mediation

Battle

Total

Summer 1945



2

After Hiroshima

Strategic situation



Mediation

Battle

Total

Summer 1945



2

After Hiroshima



Strategic situation



Mediation

Battle

Total

Summer 1945



2

After Hiroshima



Strategic situation



Mediation

Battle

Total

Summer 1945



2

After Hiroshima



2

Strategic situation



Mediation

Battle

Total

Summer 1945



2

After Hiroshima



2

After Soviet
intervention

Strategic situation



Mediation

Battle

Total

Summer 1945



2

After Hiroshima



2

After Soviet
intervention



			
	Mediation	Battle	Total
Summer 1945	✓	✓	2
After Hiroshima	✓	✓	2
After Soviet intervention	✗		

Strategic situ



Summer 194

After Hirosh

After Soviet
interventi

Total

2

2

Strategic situ



Summer 194

After Hirosh

After Soviet
interventi

Total

2

2

Strategic situ



Total

Summer 194

2

After Hirosh

2

After Soviet
interventi

[14 Divisions]

Strategic situ



Summer 194

After Hirosh

After Soviet
interventi

Total

2

2

Strategic situ



Summer 194

After Hirosh

After Soviet
interventi

Total

2

2

Strategic situation



Mediation

Battle

Total

Summer 1945



2

After Hiroshima



2

After Soviet
intervention



	Mediation	Battle	Total
Summer 1945	✓	✓	2
After Hiroshima	✓	✓	2
After Soviet intervention	✗	✗	

Strategic situation



Mediation

Battle

Total

Summer 1945



2

After Hiroshima



2

After Soviet
intervention



0

Soviet entry "would determine the fate of the Empire."

-- *Supreme Council, June 1945*

"The absolute maintenance of peace in our relations with the Soviet Union is one of the fundamental conditions for continuing the war"

-- *Kawabe, same meeting*



City bombing:
mentioned twice



A clever pretext

An amazing breakthrough that
no one predicted



A clever pretext

[Kido:] If military leaders could convince themselves that they were defeated by the power of science but not by lack of spiritual power or strategic errors, they could save face to some extent.



[Sakomizu:] In ending the war, the idea was to put the responsibility for defeat on the atomic bomb alone, and not on the military. This was a clever pretext.

Conclusion

- The Japanese did not surrender because of the nuclear bombing of Hiroshima and Nagasaki

Nuclear Deterrence

Nuclear deterrence

Nuclear deterrence relies on the threat of city destruction



Nuclear deterrence

If city destruction is an ineffective way to wage war, it calls the efficacy of deterrence into question



Size

Warhead size



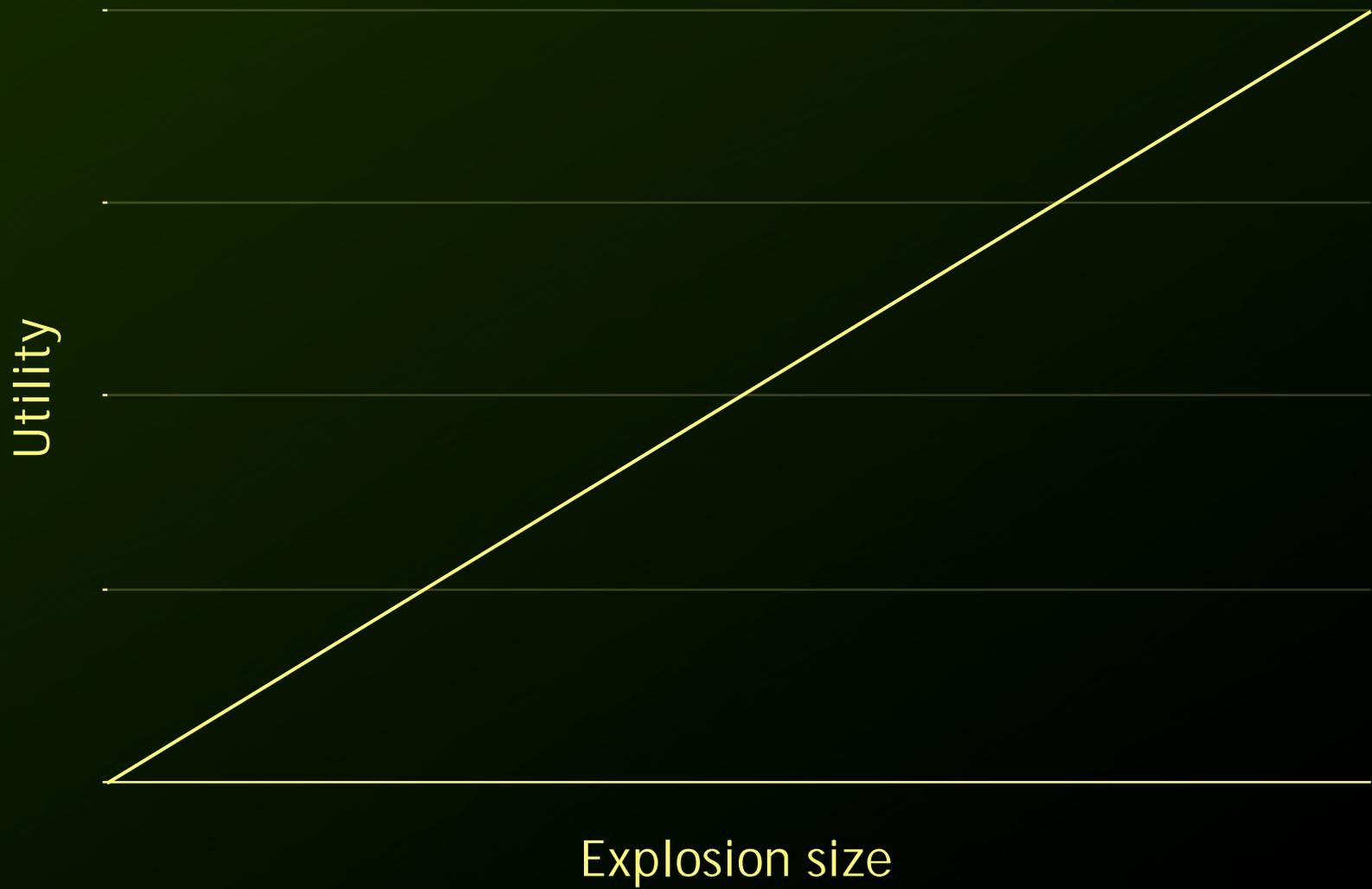
Warhead size



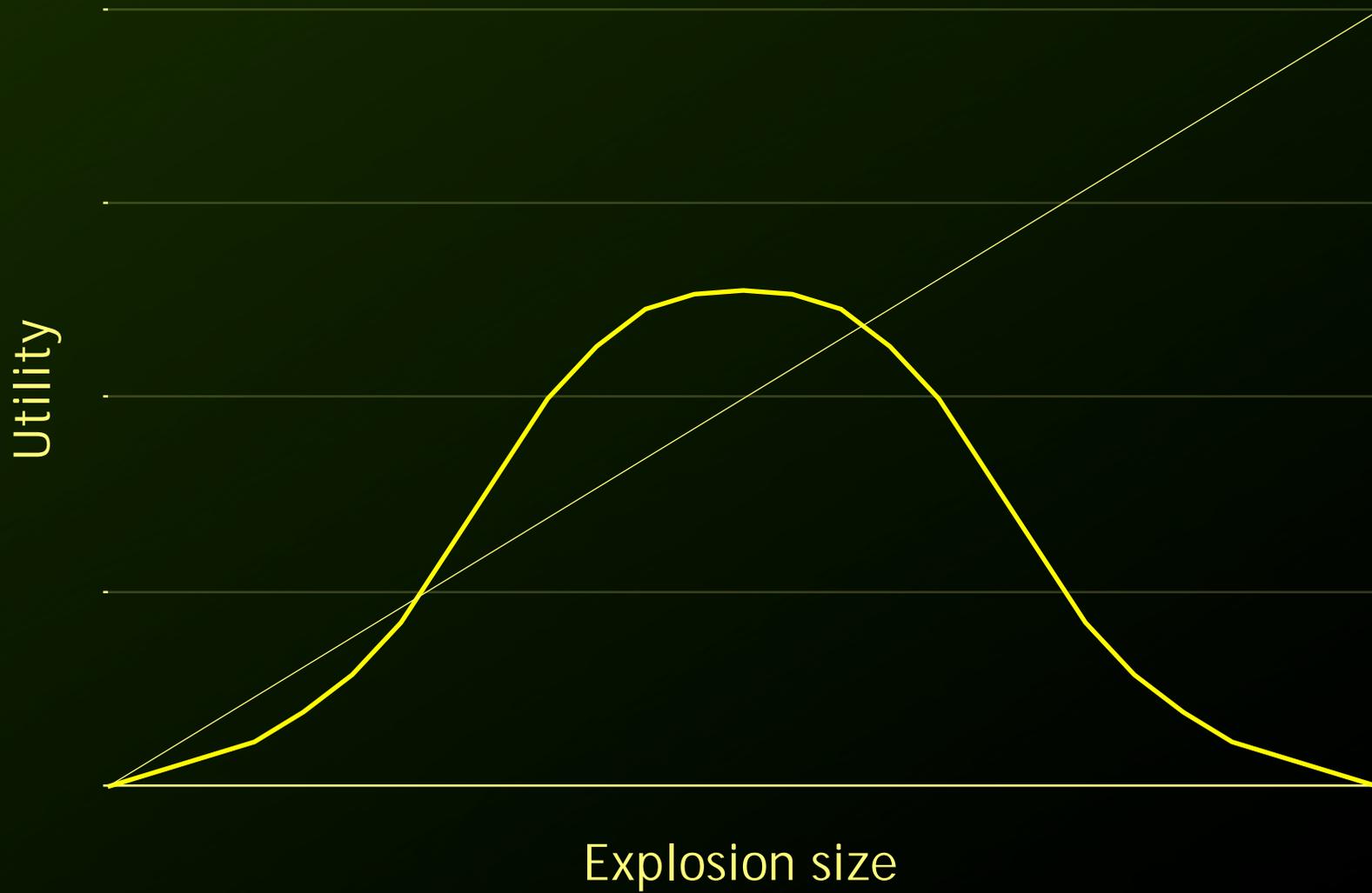
Warhead size



Bigness and utility



Bigness and utility



Bigness and utility

Dynamite in the bank



Bigness and utility



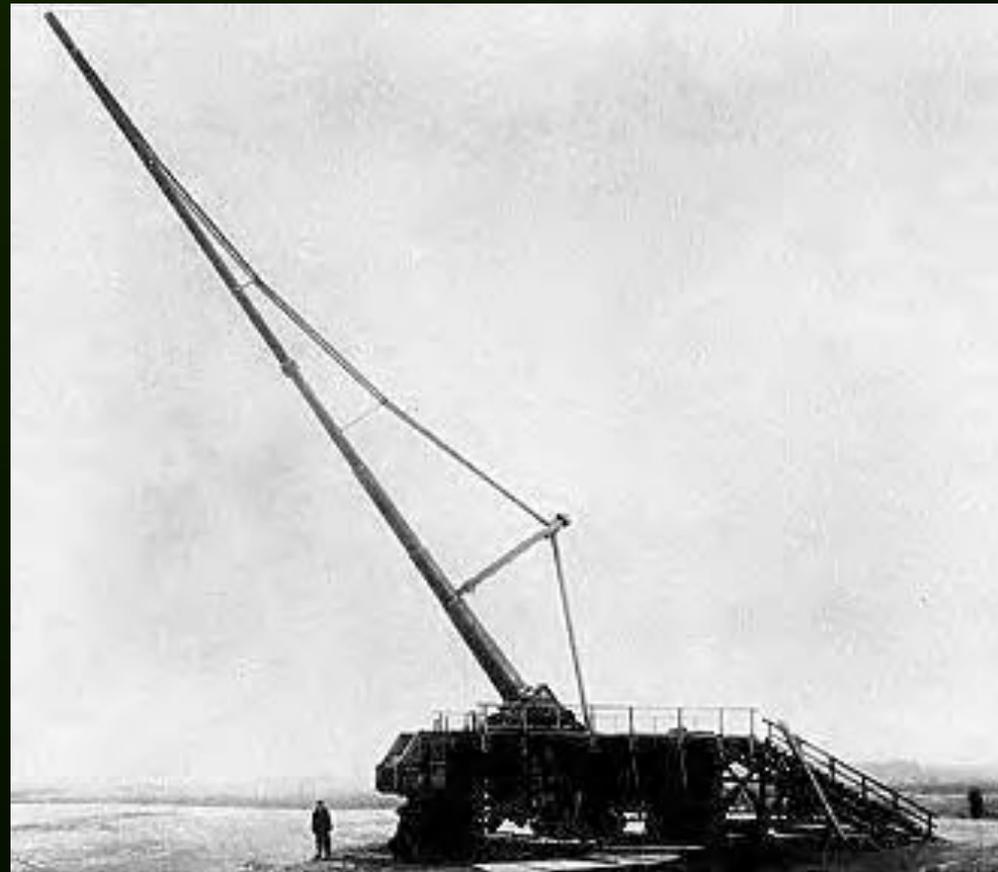
Bigness and utility



Bigness and utility



Bigness and utility



“Oversized Tool” Paradigm

New paradigm

Not Biblical



New paradigm

Not horror



Outsized Tool Paradigm

Tools, not monsters or gods



Outsized Tool Paradigm

Really only ideal for destroying cities



Outsized Tool Paradigm

Really only ideal for destroying cities

Destroying cities doesn't win wars



Outsized Tool Paradigm

Really only ideal for destroying cities

Destroying cities doesn't win wars

Dangerous but not useful



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Apocalypse paradigm

Biblical awe - enormous and certain power (the power of gods), exceptionalism



Apocalypse paradigm

Biblical awe - enormous and certain power (the power of gods), exceptionalism

Morality questions - forty years of revisionist/traditionalist debate



Outsized Tool Paradigm



Outsized Tool Paradigm

Hiroshima not anomalous



Outsized Tool Paradigm

Hiroshima not anomalous

Ineffectiveness not a contradiction, it's predicted



Usefulness

Trend toward precision-guided munitions



Usefulness

What happens to un-useful weapons?

Chemical weapons

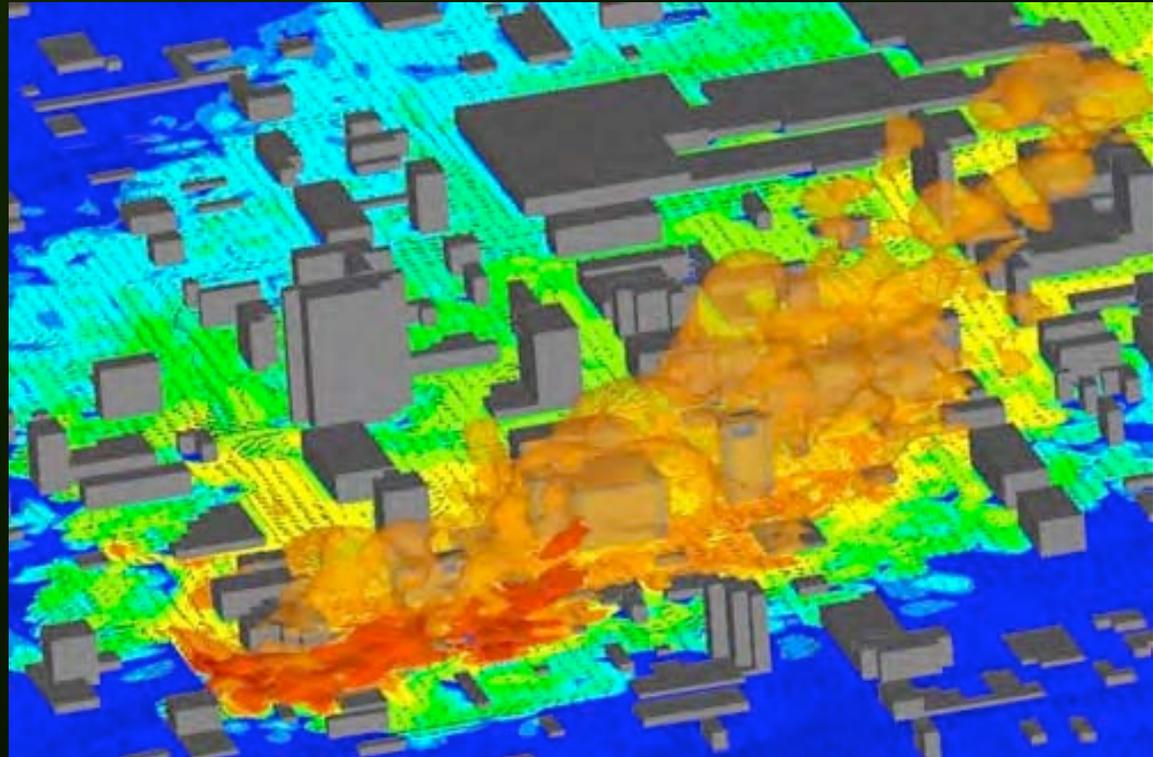
Chemical weapons were used extensively in World War I.



That experience led to two conclusions: they're horrible and they're not very useful militarily.

Biological weapons

Biological weapons have hardly been used in war at all.



It was obvious from the start that it would be very difficult to control the weapons. Even harder than chemical weapons.

Banned

Chemical weapons have been banned.

ORGANISATION FOR THE
PROHIBITION OF CHEMICAL WEAPONS

CONVENTION ON THE PROHIBITION OF THE
DEVELOPMENT, PRODUCTION, STOCKPILING AND
USE OF CHEMICAL WEAPONS AND ON THEIR
DESTRUCTION



OPCW

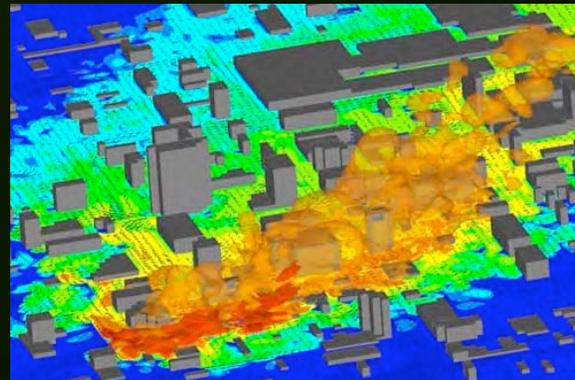
Banned

Chemical weapons have been
banned.

Biological weapons have been
banned.

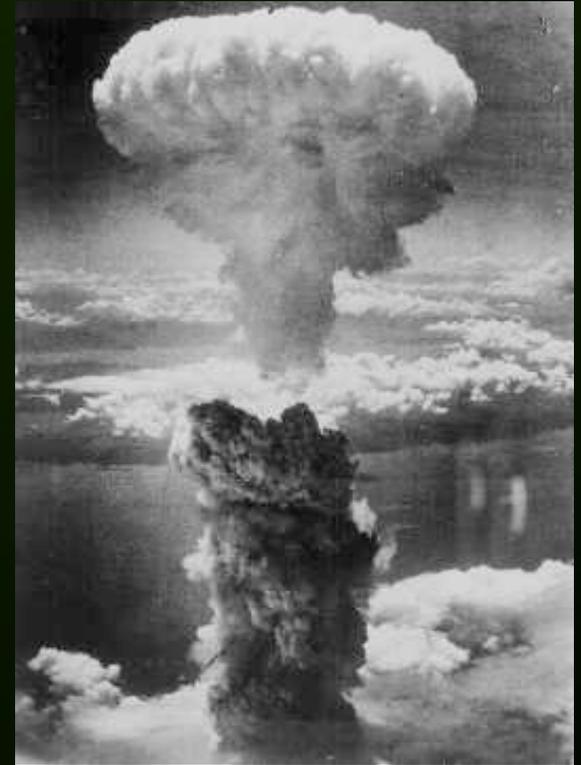
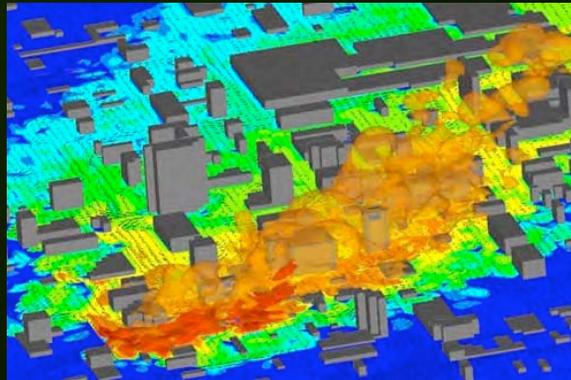


Ineffective weapons



The are horrible, they are dangerous, they can kill a lot of people, but they're hard to win a war with.

Ineffective weapons



The are horrible, they are dangerous, they can kill a lot of people, but they're hard to win a war with.

Conclusion

Nuclear weapons

A remarkable achievement



Nuclear weapons

Destroying cities doesn't win wars

Nuclear weapons

Destroying cities doesn't win wars

Destroying Hiroshima didn't win World War II

Nuclear weapons

Destroying cities doesn't win wars

Destroying Hiroshima didn't win World War II

Bigger isn't always better

Nuclear weapons

Destroying cities doesn't win wars

Destroying Hiroshima didn't win World War II

Bigger isn't always better

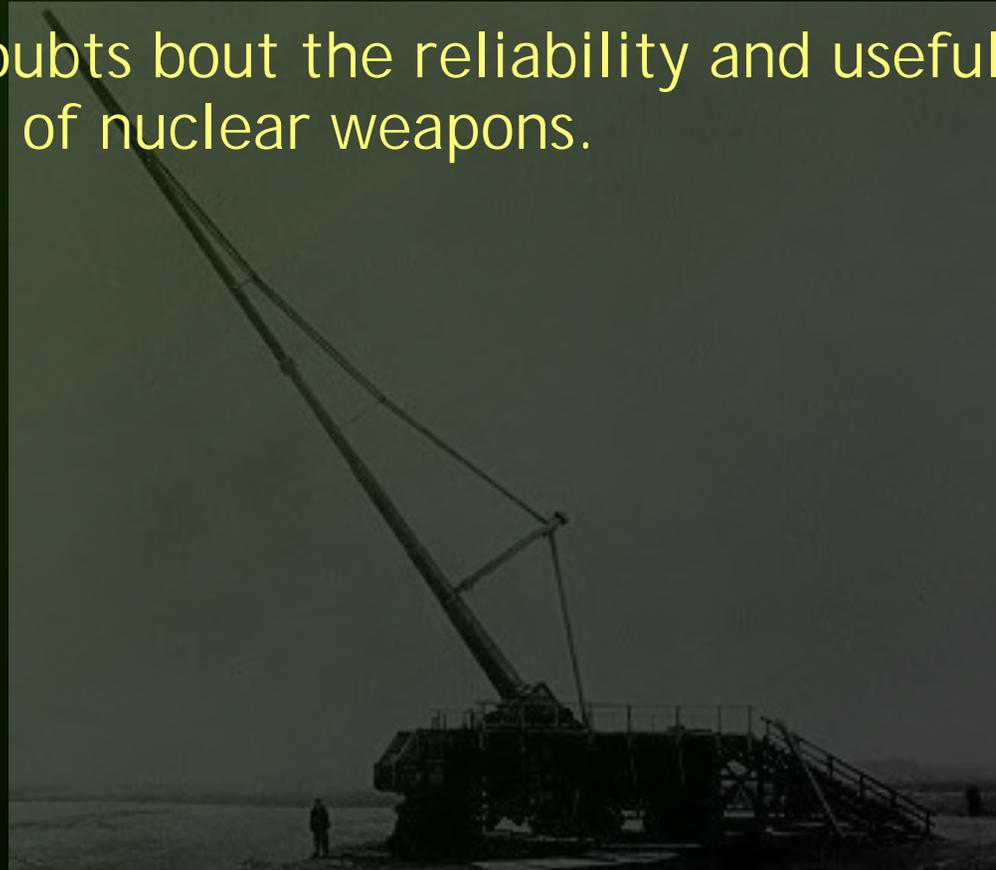
Weapons that aren't useful get abandoned or banned

The defense of the United States is vitally important.



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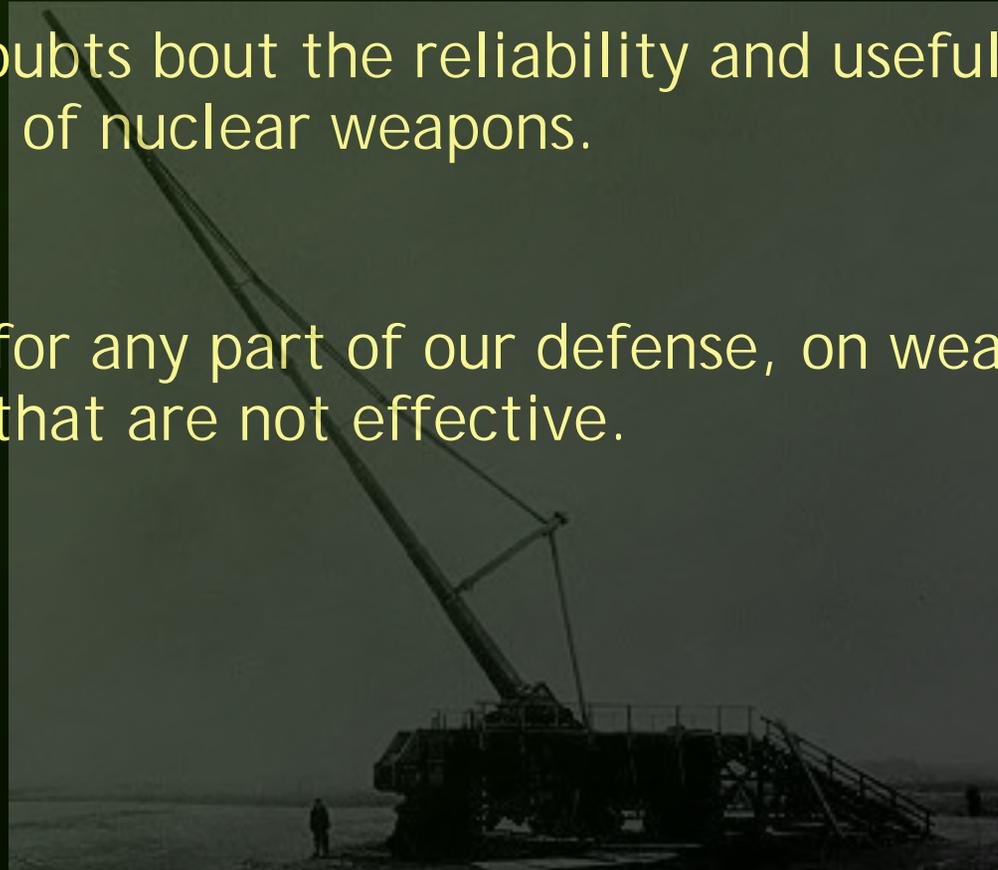
There are serious doubts about the reliability and usefulness of nuclear weapons.



The defense of the United States is vitally important.

There are serious doubts about the reliability and usefulness of nuclear weapons.

We cannot depend, for any part of our defense, on weapons that are not effective.

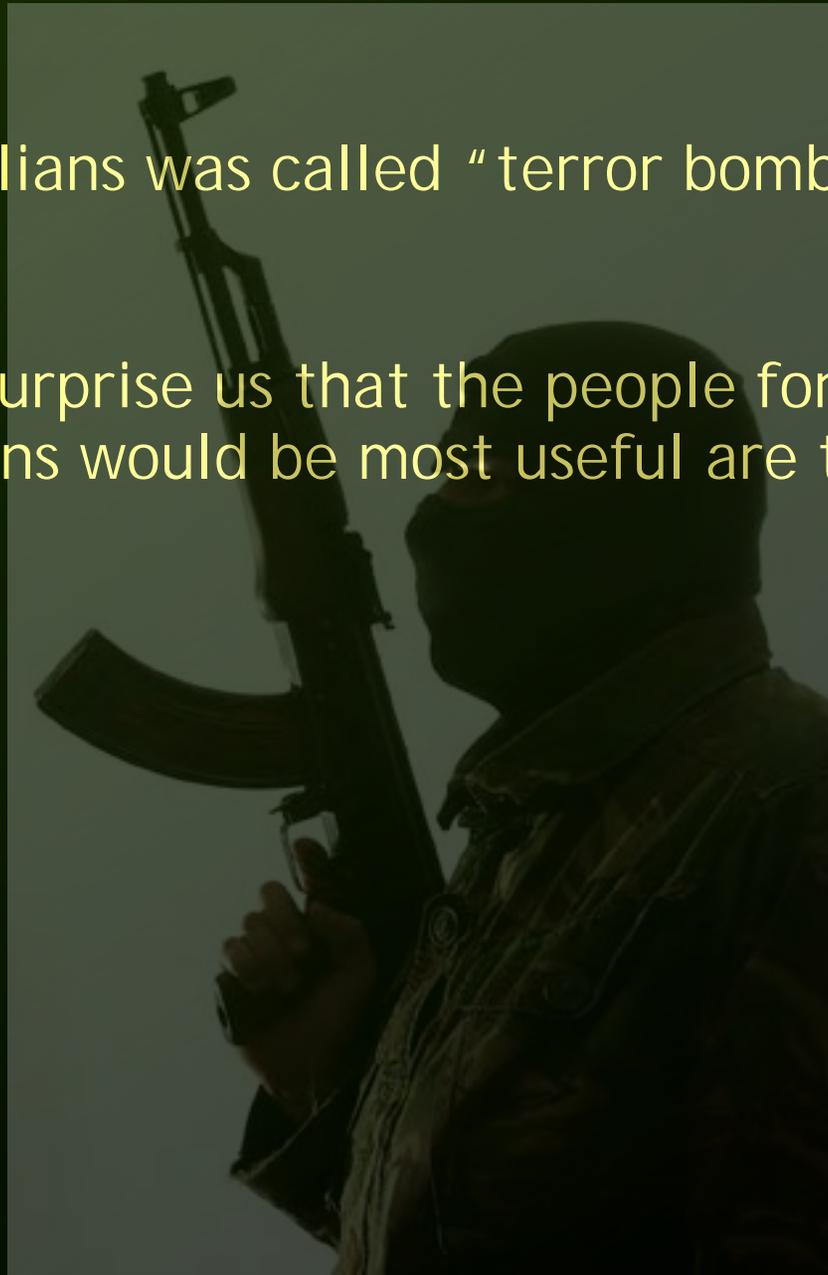


Bombing civilians was called "terror bombing" in WWII.



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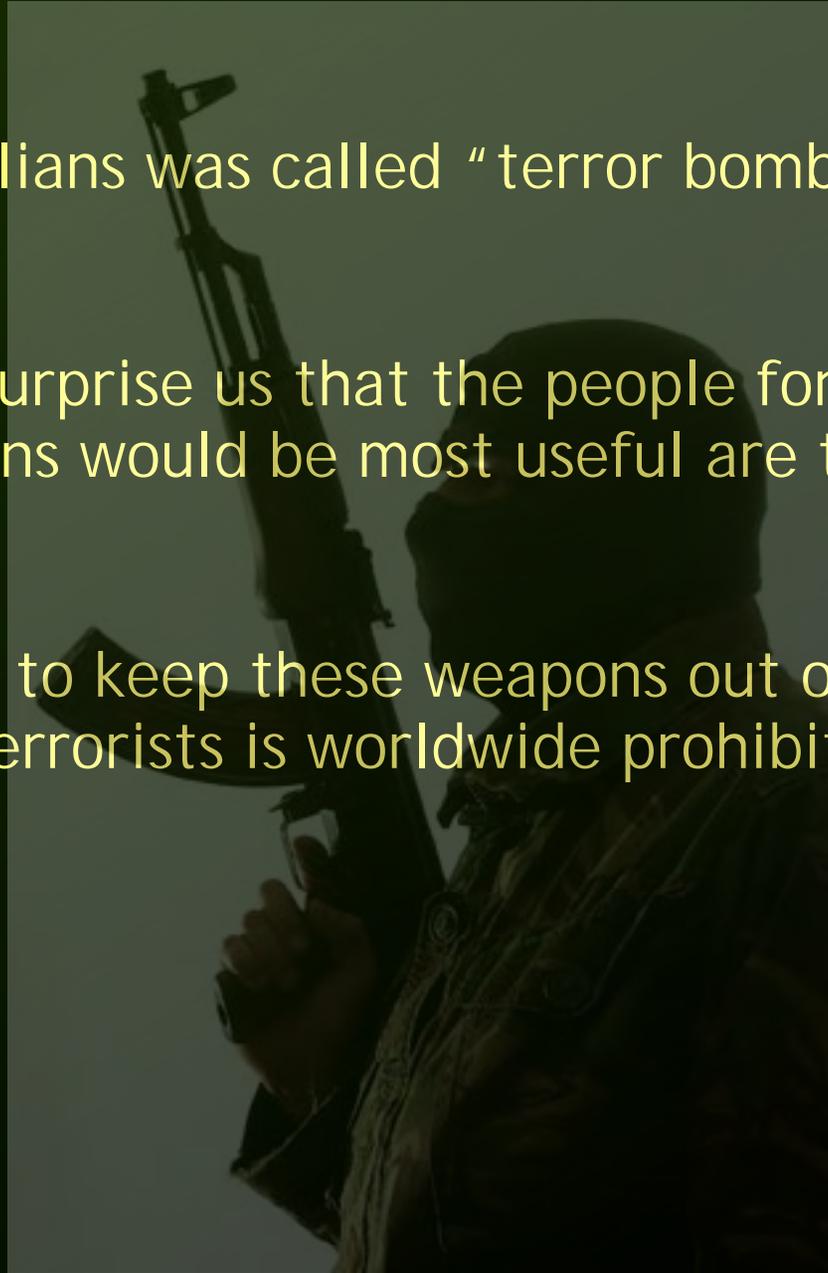
It should not surprise us that the people for whom nuclear weapons would be most useful are terrorists.



Bombing civilians was called “terror bombing” in WWII.

It should not surprise us that the people for whom nuclear weapons would be most useful are terrorists.

The best way to keep these weapons out of the hands of terrorists is worldwide prohibition.

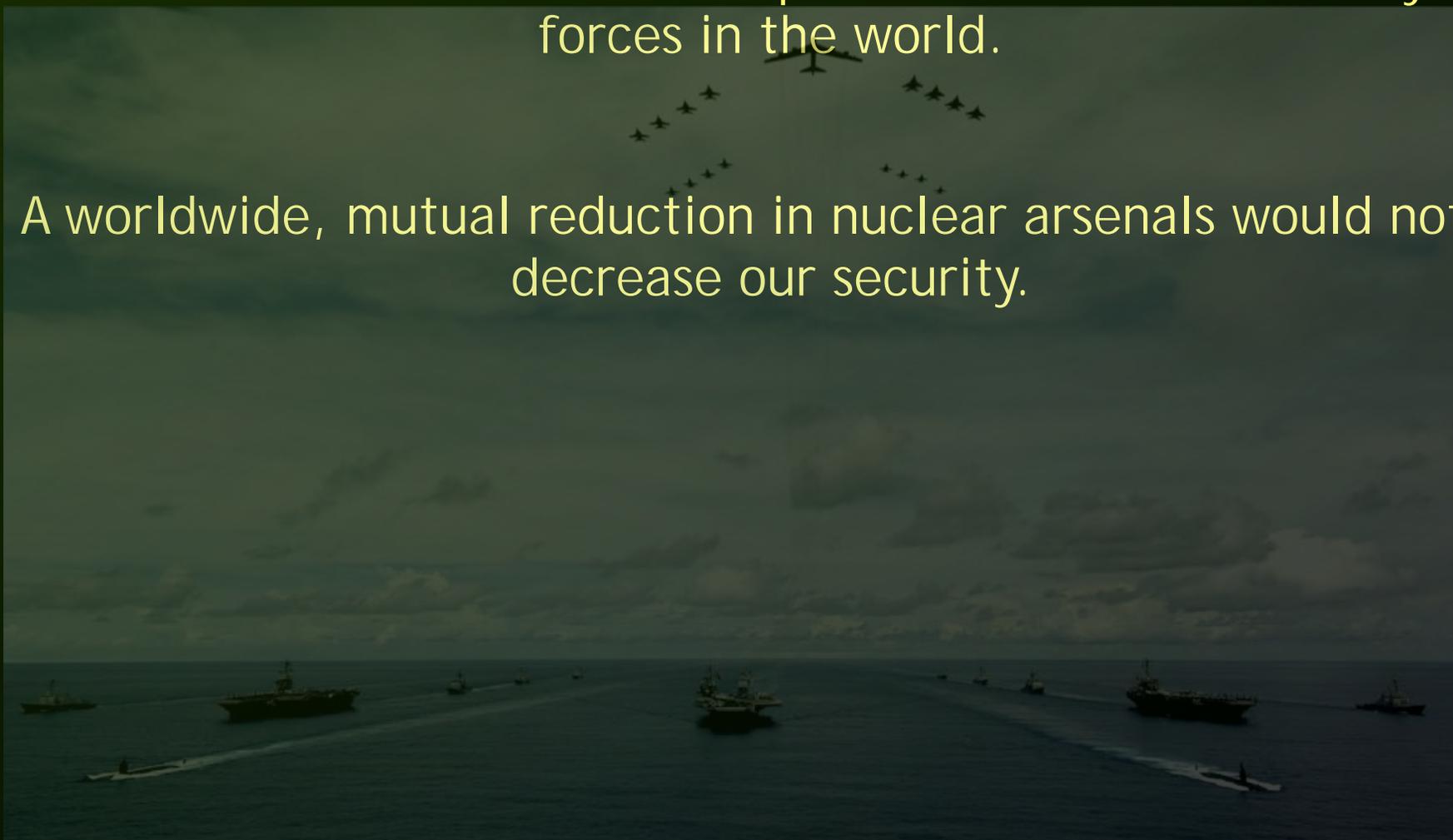


The US has one of the most capable conventional military forces in the world.



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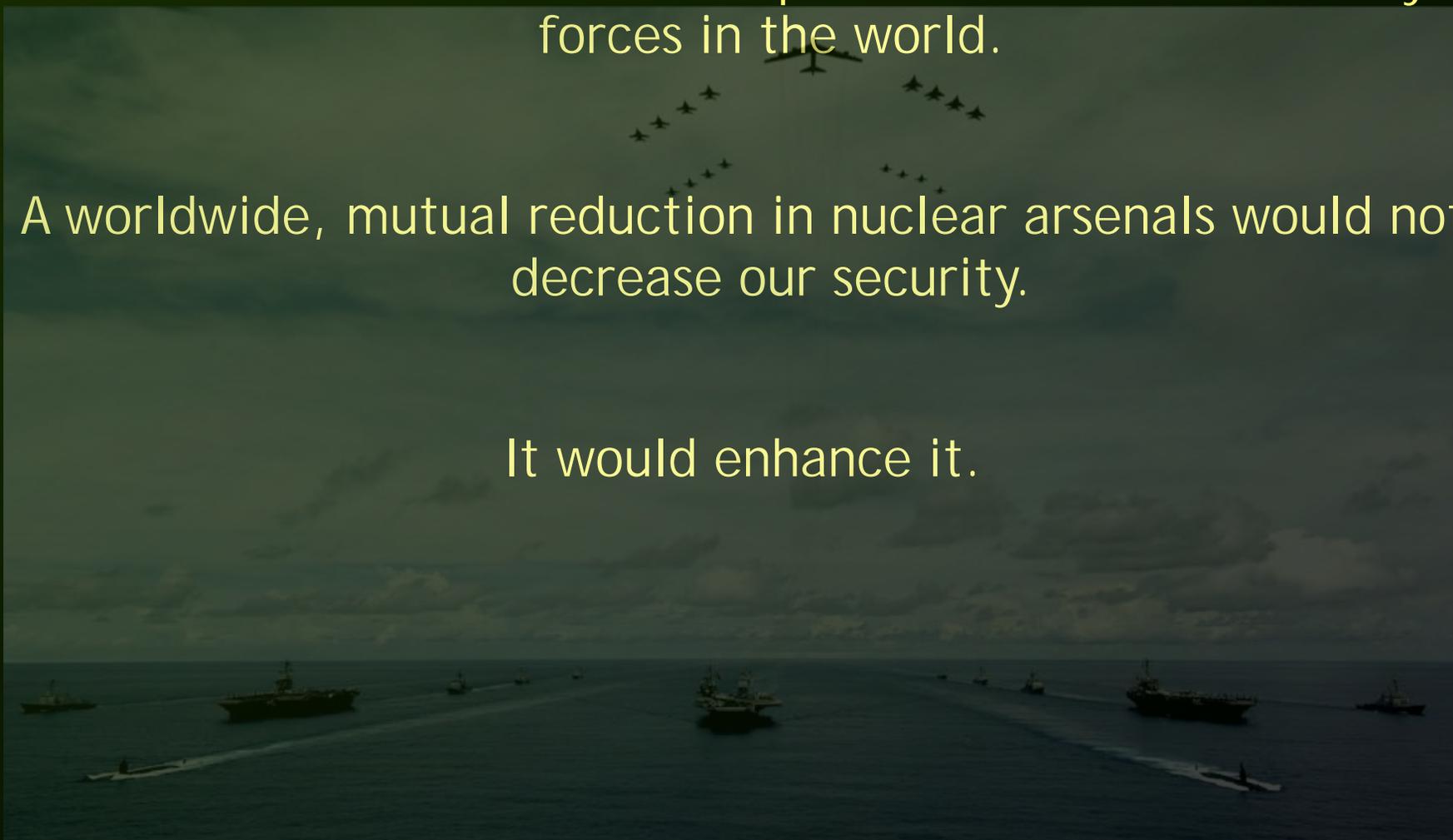
A worldwide, mutual reduction in nuclear arsenals would not decrease our security.



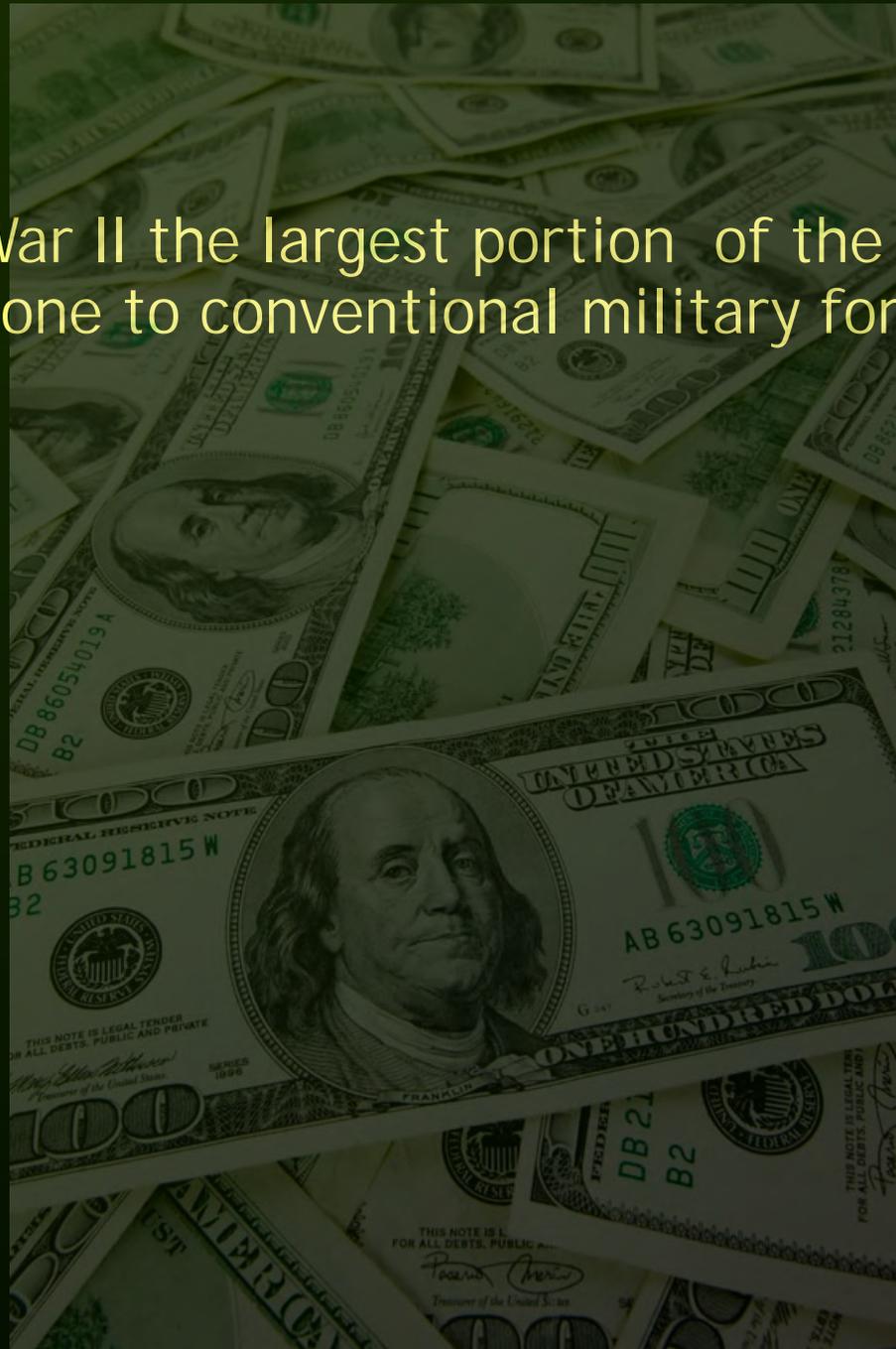
The US has one of the most capable conventional military forces in the world.

A worldwide, mutual reduction in nuclear arsenals would not decrease our security.

It would enhance it.

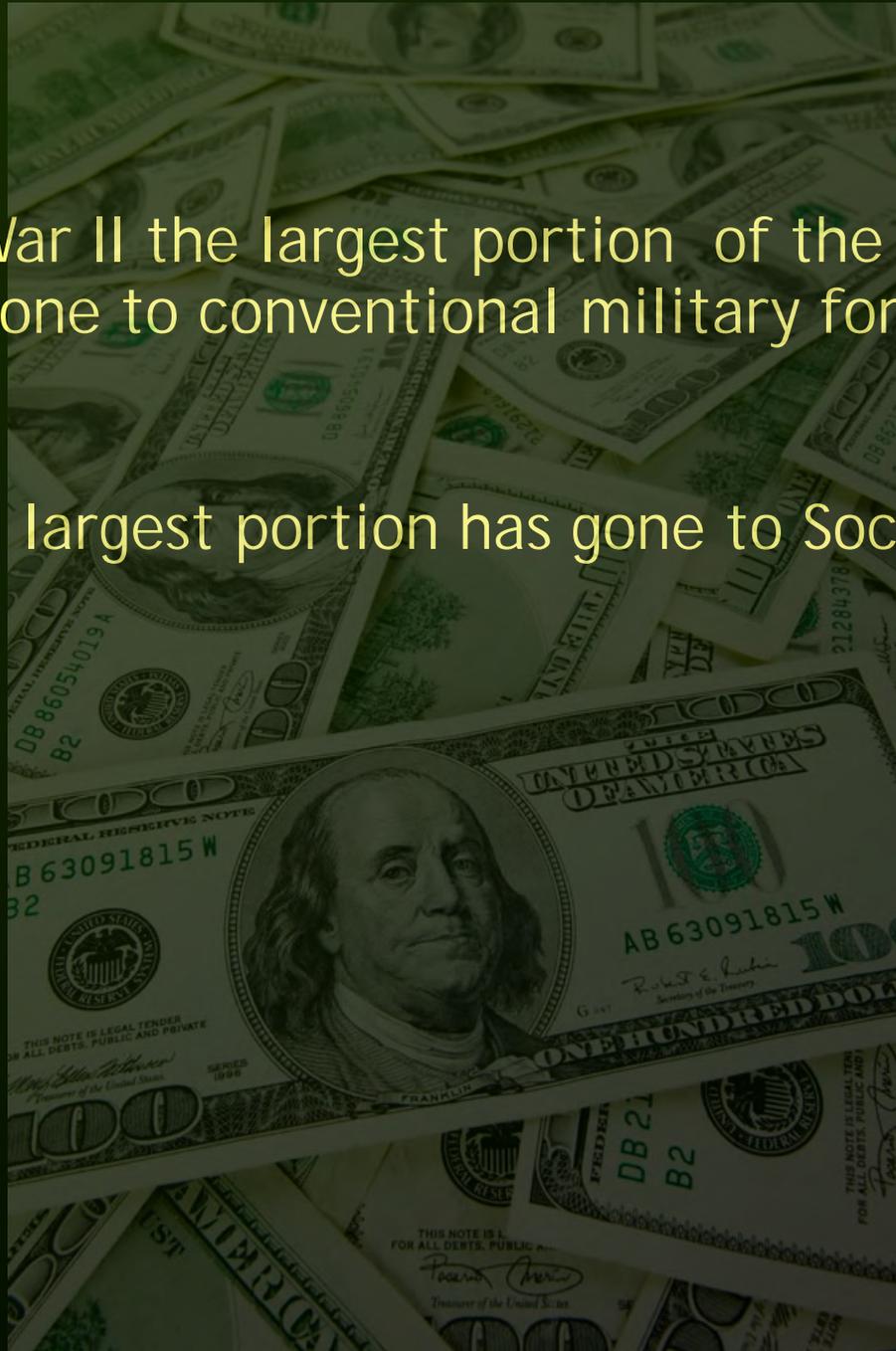


Since World War II the largest portion of the US budget has gone to conventional military forces.



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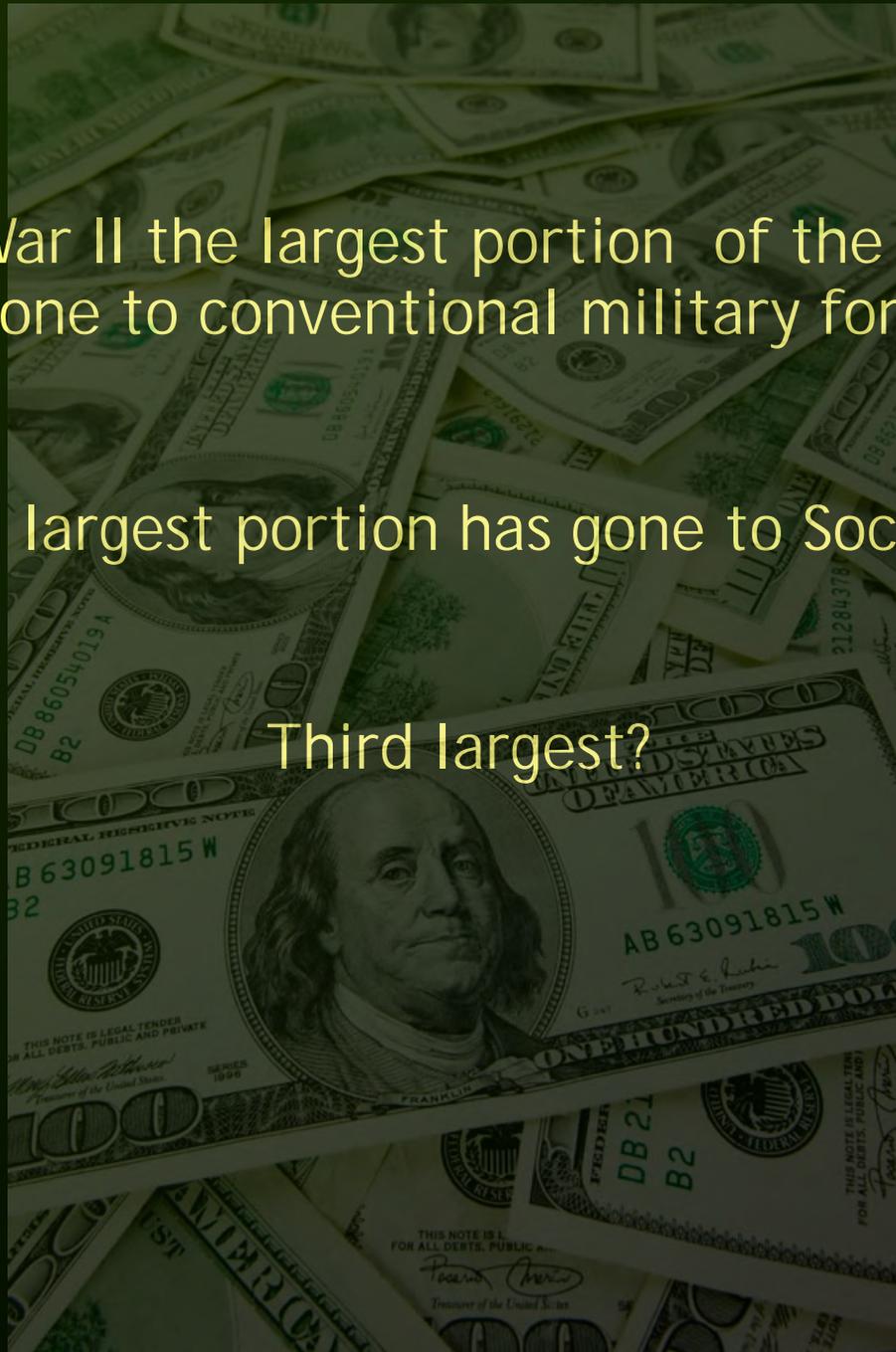
The second largest portion has gone to Social Security.



Since World War II the largest portion of the US budget has gone to conventional military forces.

The second largest portion has gone to Social Security.

Third largest?

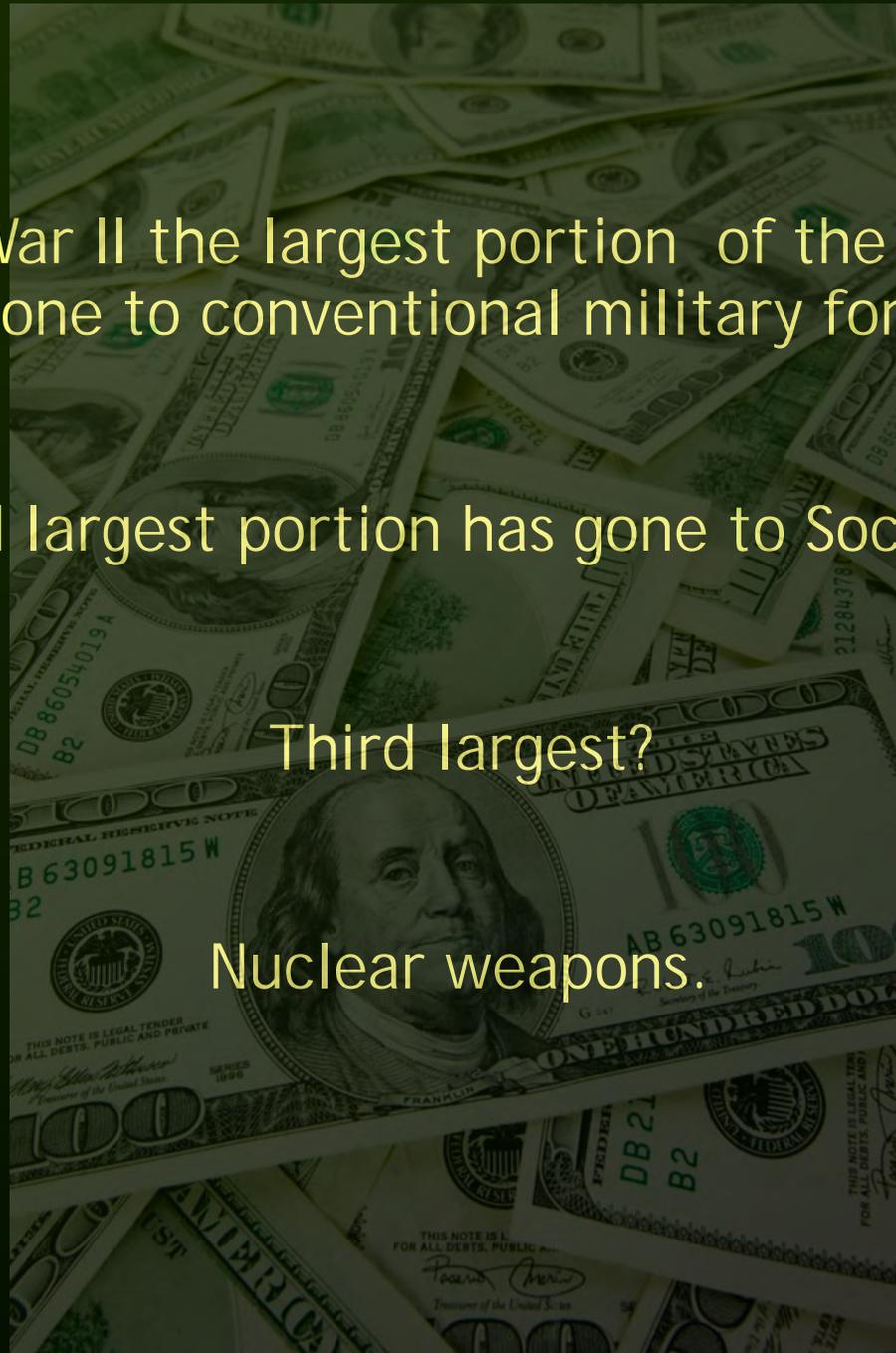


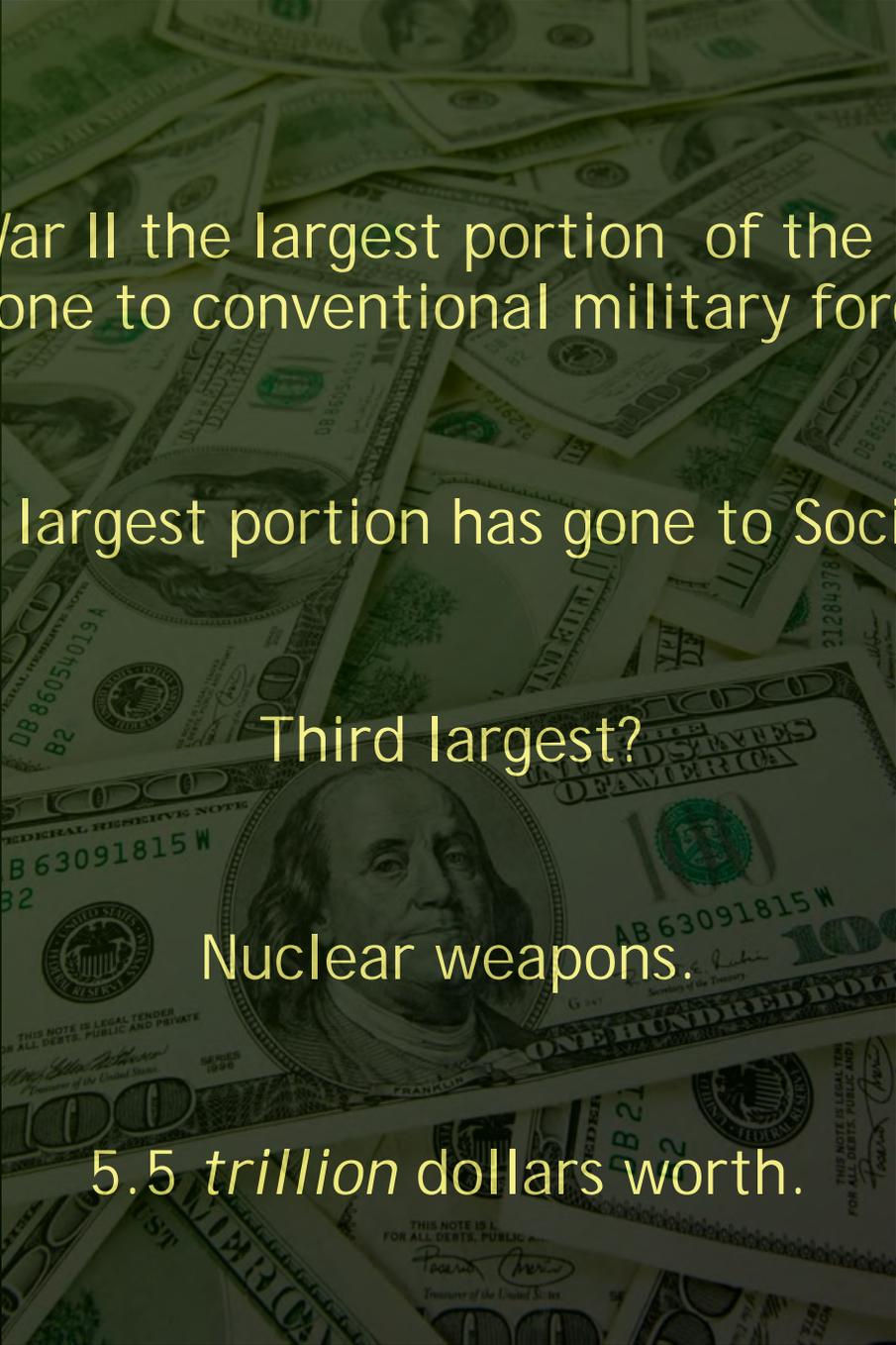
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The second largest portion has gone to Social Security.

Third largest?

Nuclear weapons.





Since World War II the largest portion of the US budget has gone to conventional military forces.

The second largest portion has gone to Social Security.

Third largest?

Nuclear weapons.

5.5 *trillion* dollars worth.

Nuclear weapons:

Nuclear weapons:

too big,

Nuclear weapons:

too big,

dangerous,

Nuclear weapons:

too big,

dangerous,

impractical,

Nuclear weapons:

too big,

dangerous,

impractical,

and wasteful.

Wouldn't we all be safer in a world
free
of nuclear weapons?

