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Author(s): Scarlett, Harry Alan

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Nuclear Weapon Culture

Nuclear Weapon Culture

Presentation Overview:

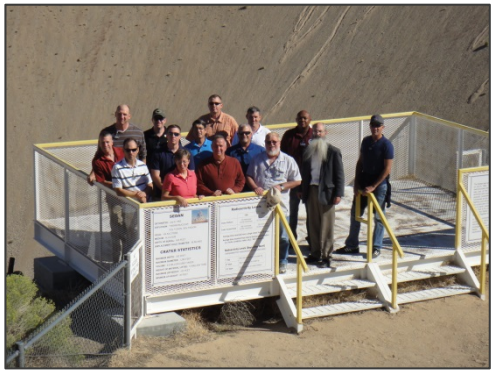
- Nuclear Weapon Culture
- Manhattan Project Secrecy & Intelligence
- Pre-Hiroshima & Nagasaki
- Surety
- Propaganda
- Living in the Nuclear Age
- Questions

Nuclear Weapon Culture

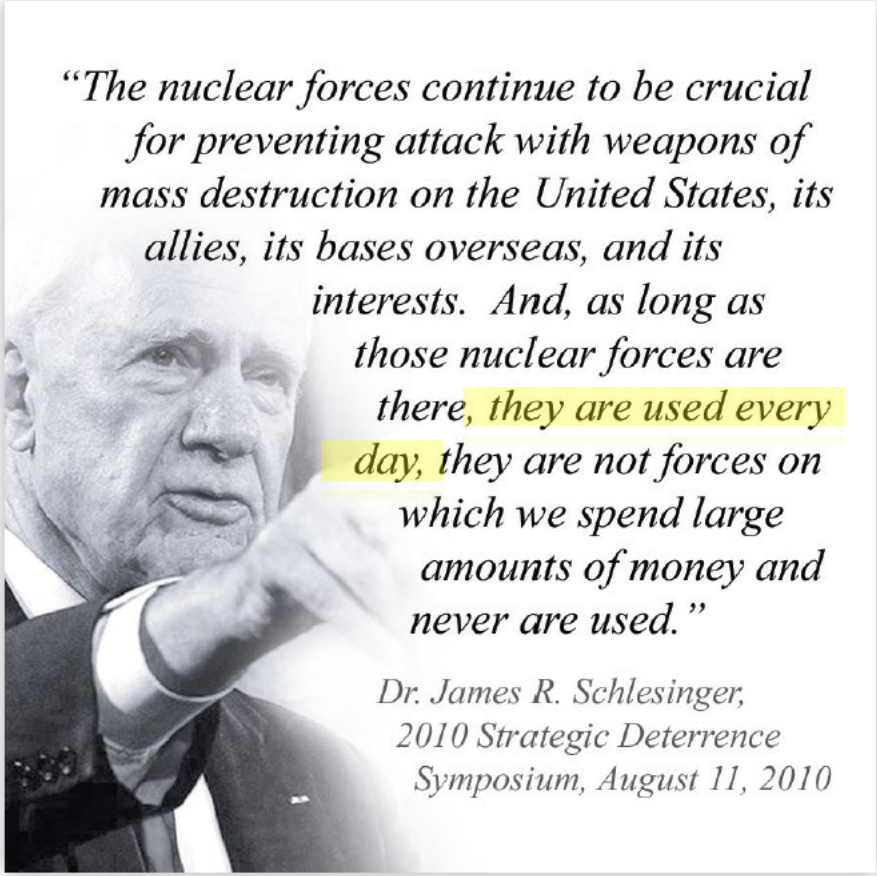
- **Culture defined (Merriam-Webster, 5b and 5c)**
  - *b* **:** the customary beliefs, social forms, and material traits of a racial, religious, or social group; *also* **:** the characteristic features of everyday existence (as diversions or a way of life} shared by people in a place or time <popular *culture*> <southern *culture*>
  - *c* **:** the set of shared attitudes, values, goals, and practices that characterizes an institution or organization
    <a corporate *culture* focused on the bottom line>

Nuclear Weapon Culture

- **What is "U.S. nuclear culture"?**
- The independent and synergistic relationships of all participants of the nuclear enterprise
- The prideful belief that nuclear weapons provide *a deterrence guarantee* to the U.S., allies, and friends
  - Policy implementation of a safe, secure, and effective stockpile

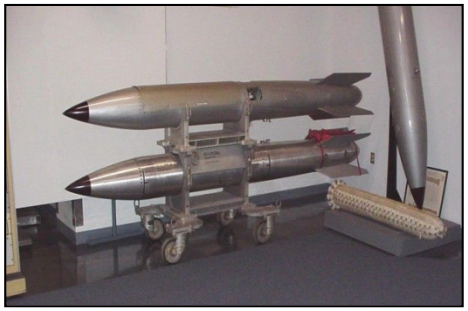


Nuclear Weapon Culture



Nuclear Weapon Culture

- **Deterrence:**
  - To “deter” is to stop people from doing something by frightening them
  - The maintenance of military power for the purpose of discouraging attack
  - The prevention of action by the existence of a credible threat of unacceptable counteraction and/ or the belief that cost of action outweighs perceived benefits



Nuclear Weapon Culture

From The Nuclear Posture Review 2018

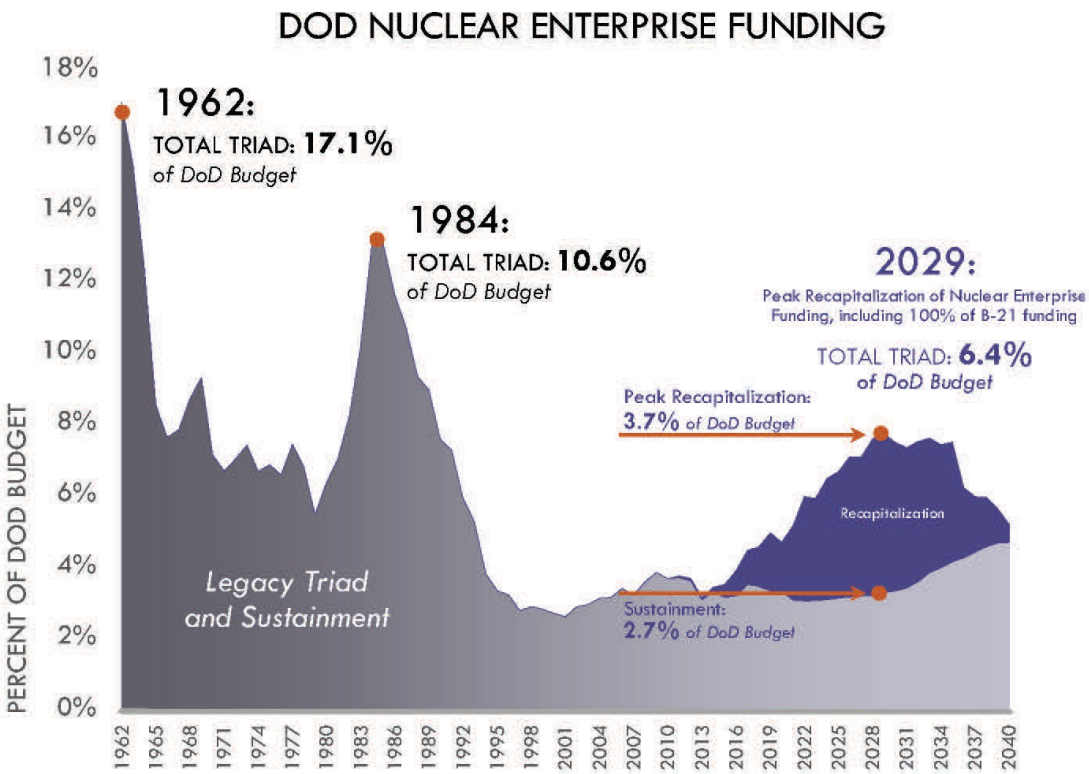


Figure 3. Cost of DoD Nuclear Force Replacement
Data provided by DoD

In 1950 the nuclear enterprise consisted of 8 sites with 55,000 employees,
By 1953, the enterprise had grown to 20 sites with 142,000 employees

Manhattan Project Secrecy & Intelligence

"Compartmentalization of knowledge, to me, was the very heart of security. My rule was simple and not capable of misinterpretation--- each man should know everything he needed to know to do his job and nothing else. Adherence to this rule not only provided an adequate measure of security, but it greatly improved over-all efficiency by making our people stick to their knitting."

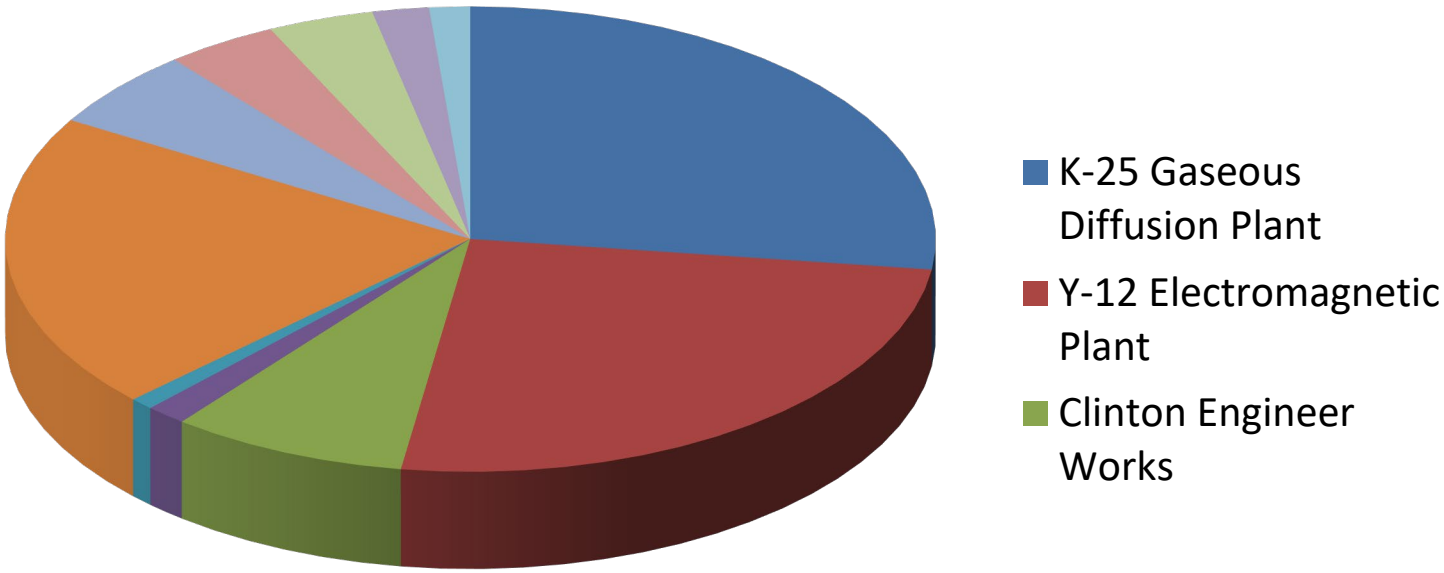
Gen. Leslie Groves (Kelly 2007, 235)

Manhattan Project Secrecy & Intelligence

- By the early 1940s the Soviet Union was operating a well-developed nuclear-espionage program
- The Kremlin was receiving regular leaks from a small, network of agents and couriers involved in the Manhattan Project
- To what degree this intelligence assisted the Soviet nuclear program remains disputed. The Soviet Union's first nuclear bomb, however, was a near-exact duplicate of the Trinity "gadget"
- July 1941: British government releases the "MAUD Report"
- The report injected new urgency into the nuclear effort. A subsequent American report, issued shortly before the Pearl Harbor attack, largely corroborated the British estimate
- Because nuclear fission had been discovered and developed in Nazi Germany in 1937, American leaders feared the Manhattan Project remained years behind Germany's program

Manhattan Project Secrecy & Intelligence

1944 USD: $1,889,604,000
1996 Constant USD: $21,570,821,000



The Brookings Institution, 2002 (http://www.brookings.edu/projects/archive/nucweapons/manhattan.aspx.)

Pre-Hiroshima & Nagasaki

- Opposition to Use of the Atomic Bomb
- Leo Szilard
- Petition to President
- July 3-17, 1945
- 69 co-signers at the Manhattan Project

SECRET

July 17, 1945

A PETITION TO THE PRESIDENT OF THE UNITED STATES

Discoveries of which the people of the United States are not aware may affect the welfare of this nation in the near future. The liberation of atomic power which has been achieved places atomic bombs in the hands of the Army. It places in your hands, as Commander-in-Chief, the fateful decision whether or not to sanction the use of such bombs in the present phase of the war against Japan.

We, the undersigned scientists, have been working in the field of atomic power. Until recently we have had to fear that the United States might be attacked by atomic bombs during this war and that her only defense might lie in a counterattack by the same means. Today, with the defeat of Germany, this danger is averted and we feel impelled to say what follows:

The war has to be brought speedily to a successful conclusion and attacks by atomic bombs may very well be an effective method of warfare. We feel, however, that such attacks on Japan could not be justified, at least not unless the terms which will be imposed after the war on Japan were made public in detail and Japan were given an opportunity to surrender.

If such public announcement gave assurance to the Japanese that they could look forward to a life devoted to peaceful pursuits in their homeland and if Japan still refused to surrender our nation might then, in certain circumstances, find itself forced to resort to the use of atomic bombs. Such a step, however, ought not to be made at any time without seriously considering the moral responsibilities which are involved.

The development of atomic power will provide the nations with new means of destruction. The atomic bombs at our disposal represent only the first step in this direction, and there is almost no limit to the destructive power which will become available in the course of their future development. Thus a nation which sets the precedent of using these newly liberated forces of nature for purposes of destruction may have to bear the responsibility of opening the door to an era of devastation on an unimaginable scale.

If after this war a situation is allowed to develop in the world which permits rival powers to be in uncontrolled possession of these new means of destruction, the cities of the United States as well as the cities of other nations will be in continuous danger of sudden annihilation. All the resources of the United States, moral and material, may have to be mobilized to prevent the advent of such a world situation. Its prevention is at present the solemn responsibility of the United States--singled out by virtue of her lead in the field of atomic power.

The added material strength which this lead gives to the United States brings with it the obligation of restraint and if we were to violate this obligation our moral position would be weakened in the eyes of the world and in our own eyes. It would then be more difficult for us to live up to our responsibility of bringing the unloosened forces of destruction under control.

In view of the foregoing, we, the undersigned, respectfully petition: first, that you exercise your power as Commander-in-Chief, to rule that the United States shall not resort to the use of atomic bombs in this war unless the terms which will be imposed upon Japan have been made public in detail and Japan knowing these terms has refused to surrender; second, that in such an event the question whether or not to use atomic bombs be decided by you in the light of the considerations presented in this petition as well as all the other moral responsibilities which are involved.

R S Lapp
R A Millikan
E P Wigner
George L. Monk
Leo Szilard
J. J. Nickson
W. J. Zachariasen
Francis R. Shoults
John A. Simpson
Walter Bartky
John R Howe
Franklin Roth

DECLASSIFIED
NARS, Date

Leo Szilard Home Page - World-Wide Web - http://www.peak.org/~danneng/szilard.html

Pre-Hiroshima & Nagasaki

- Target Committee
  - Four Military Officers
  - Nine Scientists
- 6 potential targets
- Specific Target Criteria
  - Symbolic value
  - Militarily significant
  - Intact, less damaged
  - Significant size

Pre-Hiroshima & Nagasaki

- **Target Specifics**
  - Kyoto: urban industrial area, population of 1,000,000, former capital of Japan
  - Hiroshima: Army depot, port within an urban industrial area, little damage from prior bombing
  - Yokohama: urban industrial area, nearly untouched by prior bombing
  - Kokura Arsenal: one of Japan’s largest arsenals; surrounded by urban industrial structures
  - Niigata: port of increasing importance; tool industries and refineries
  - Emperor's Palace: briefly considered; determined that target should be of military import

Surety

Nuclear Surety:

- Materiel, personnel, and procedures that contribute to the safety, security, and reliability of nuclear weapons, and to the assurance that there will be ***no:***
  - Nuclear weapon accidents
  - Incidents
  - Unauthorized weapon detonations
  - Degradation in performance at the target

Surety

ICBMs
LGM-30G Minuteman III

Attributes:

- Most responsive
- Bolsters stability
- Sovereign basing
- Low vulnerability to air defenses

Bombers
B52H; B2

Attributes:

- Visible
- Recallable
- Flexible / agile

SLBMs
Ohio-class submarine

Attributes:

- Most survivable
- Continuously at sea
- MIRVed
- Least time-to-target

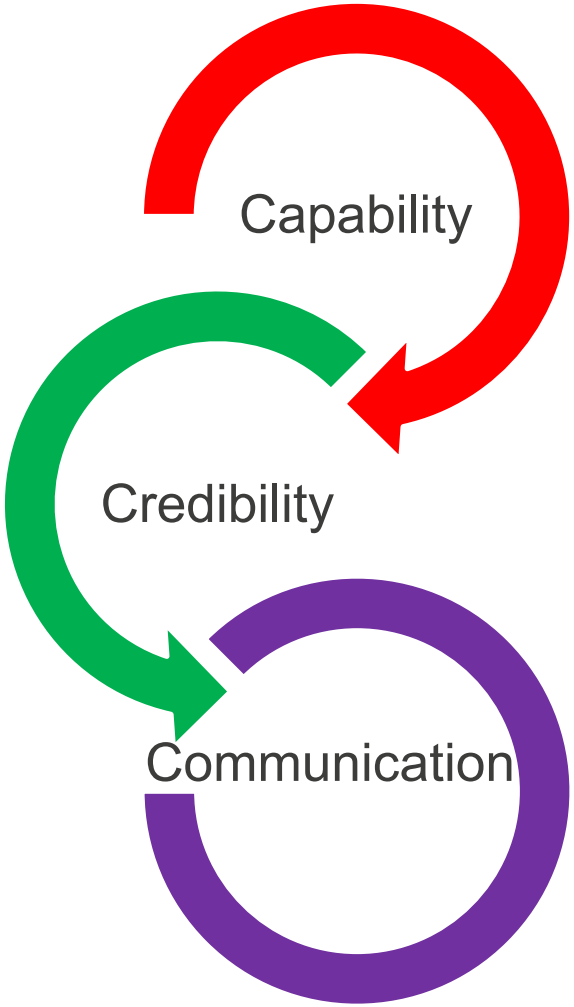
Surety

- **Capability, credibility, & communication**
  - Depends on high levels of nuclear surety
  - Surety of our deterrent is a key factor in how allies, partners, and adversaries view the U.S.
- Reduction in/loss of nuclear surety would have widespread negative consequences domestically and internationally
  - 1992 – 2008 atrophy of nuclear enterprise
  - August 2007 – Minot to Barksdale unauthorized transfer
  - March 2008 – Nuclear components shipped to Taiwan
  - Failed inspections
  - Cheating scandal
  - Low morale in enterprise
  - Neglect of DOE/ NNSA infrastructure

Surety

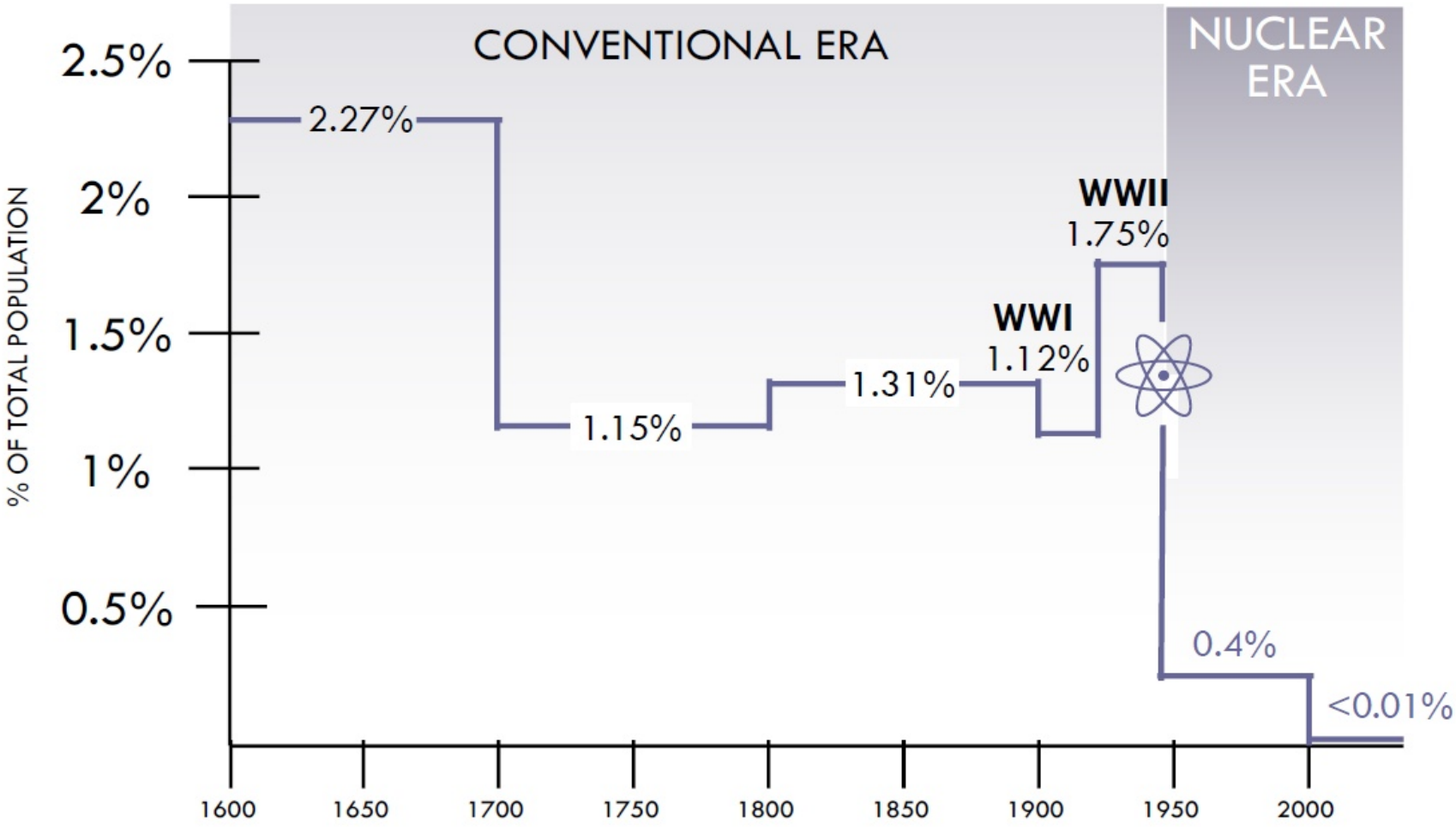
Elements of the deter phase

- Capability
  - Having the means to influence behavior
- **Credibility**
  - Believability that proposed actions will be employed
- **Communication**
  - Transmitting the intended message to the desired audience



Surety

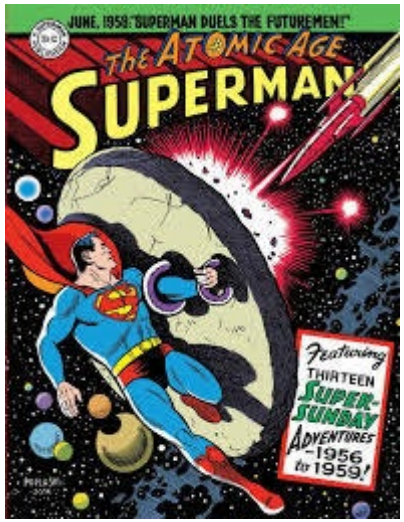
Wartime Fatalities/Percentage of World Population

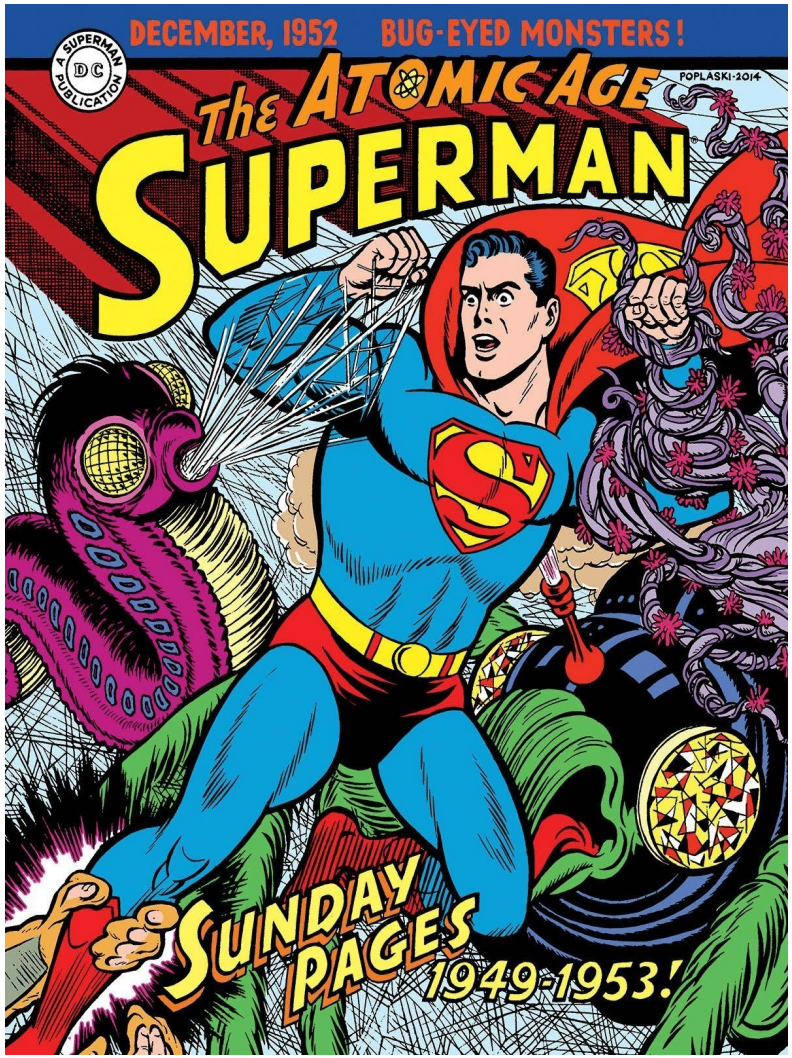


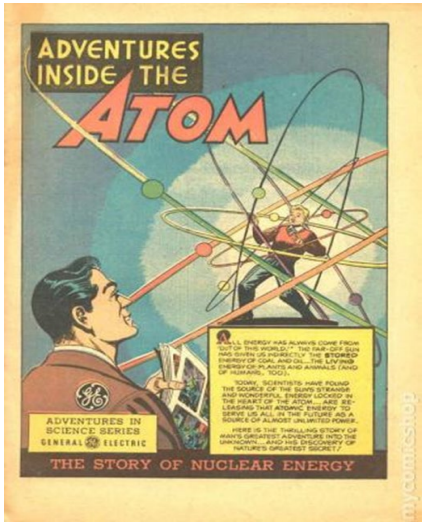
Data from the DoD Historical Office/ 2018 NPR

Propaganda
World War II: Anti-Axis Propaganda

Propaganda
Nuclear Culture in Media

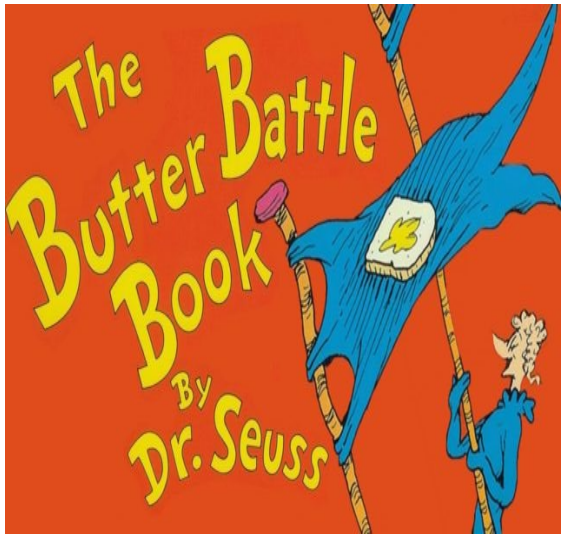






Propaganda
Nuclear Culture in Media

"In 1984, Dr. Seuss released a book called The Butter Battle Book. Like its name suggests, the book is centered around two cultures called the Yooks and the Zooks, who come into conflict because of the side on which their bread is buttered. Over the course of the book, the Yooks and the Zooks come up with more and more powerful weapons, culminating in both cultures coming up with bombs called Bitsy Big-Boy Boomeroos for which there is no protection to be had. Curiously, The Butter Battle Book came to a close with what can be called a cliffhanger ending, with the leaders of both sides poised to make up of their Bitsy Big-Boy Boomeroos upon receiving sufficient provocation."

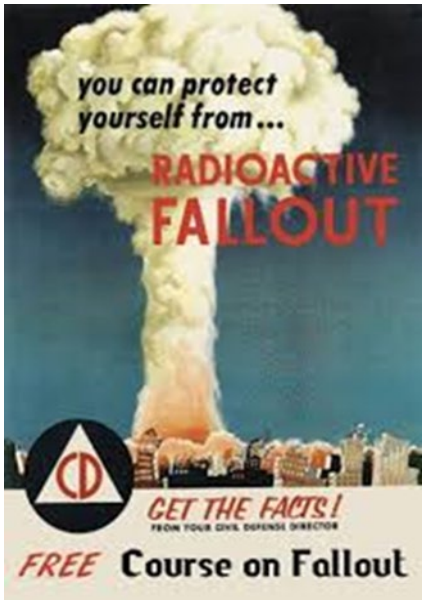


Aiden Mason, 2018 Did you Know Dr. Seuss Wrote a Book about Nuclear Weapons and The Cold War? Retrieved from https://www.tvovermind.com/know-dr-seuss-wrote-book-nuclear-weapons-cold-war/

Propaganda
Cold War U.S. Propaganda

Propaganda
Cold War U.S.S.R. Propaganda

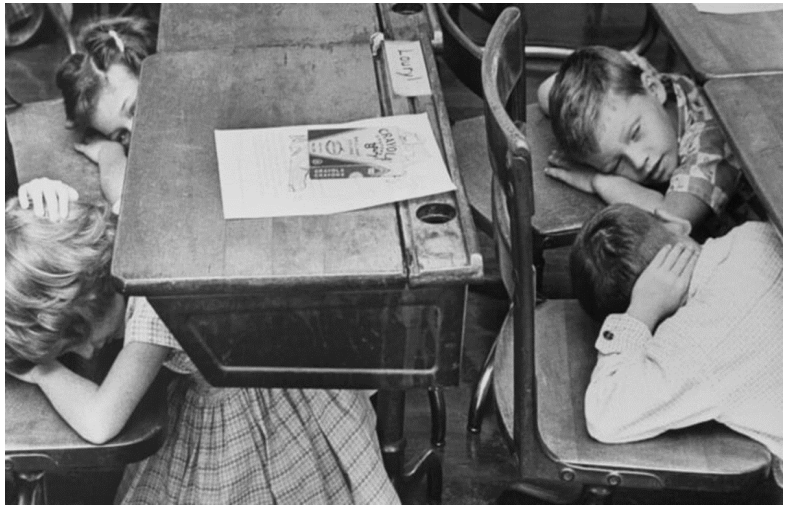
Living in the Nuclear Age
Civil Defense



Living in the Nuclear Age
Duck and Cover

Living in the Nuclear Age
The Physiological Need for Duck and Cover

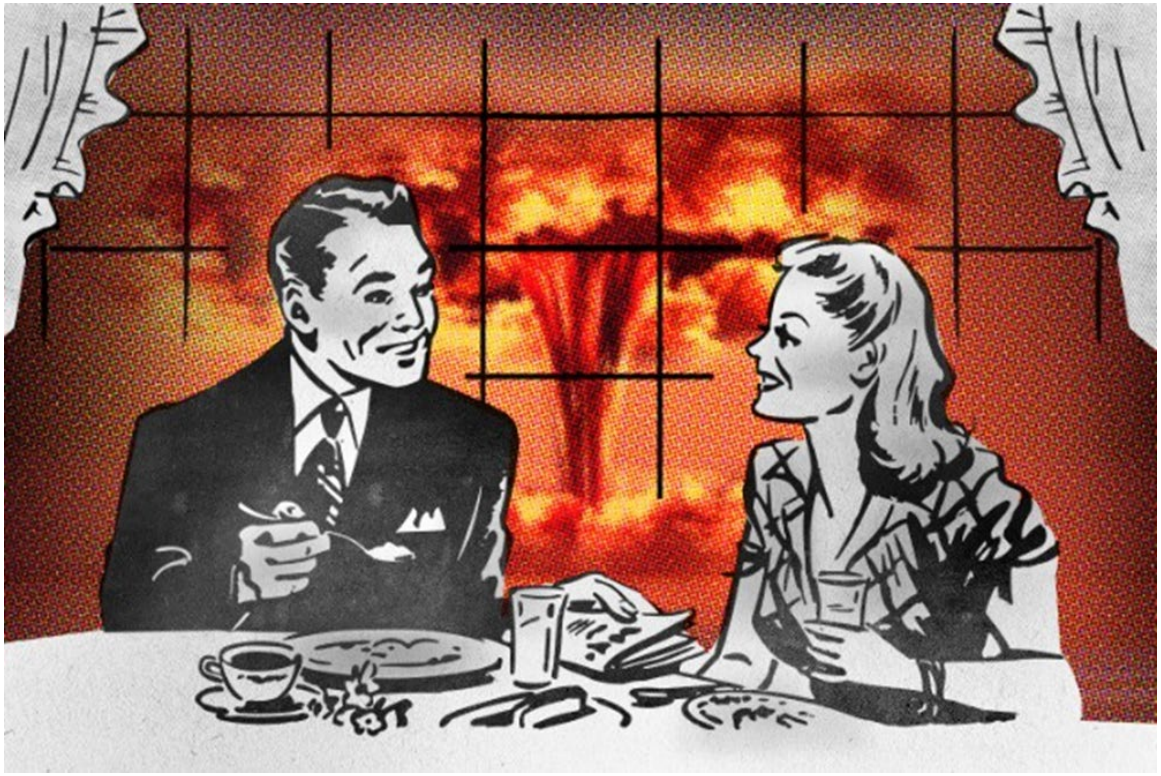
Soviet Tsar Bomba: 3,333 times more powerful than the Little Boy Bomb

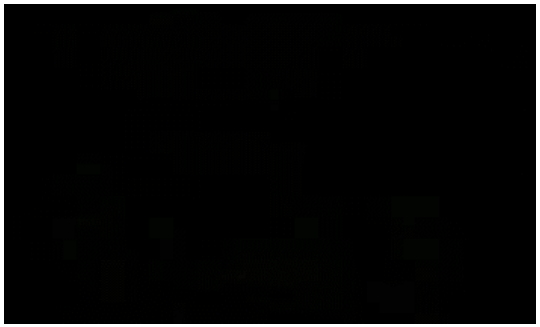


Living in the Nuclear Age

Impending Nuclear War?

Just Another Day





Living in the Nuclear Age

Louis Réard's two-piece swimsuit, which he called the bikini, was named four days after the first test of an American nuclear weapon at the Bikini Atoll. Earlier, Jacques Heim claimed success with a design he called "the Atom". In the end, the Bikini took popularity.

Operation Crossroads: Fact Sheet". Department of the Navy—Naval History and Heritage Command. Archived from the original on 24 October 2012. Retrieved 13 August 2013.

Living in the Nuclear Age
Cold War Nuclear Bomb Shelters

Nuclear bomb shelters of the past

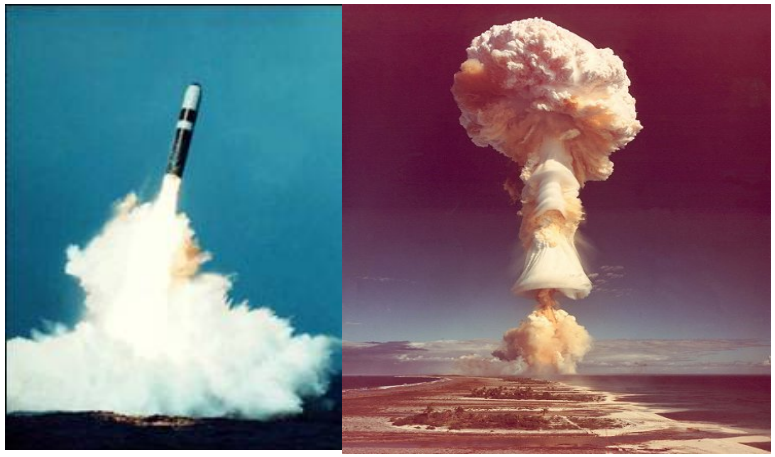
Living in the Nuclear Age
Nuclear Bomb Shelters in the 21 Century

Nuclear bomb shelters are alive and well

Living in the Nuclear Age
Cold War Assurances

Mutually Assured Destruction (MAD)

- Bipolar conflict
- Between determined superpowers
- Rationality of adversary understood
- Adversary tied to a geographical location
- Both sides were deterred from all out conflict
- Proxy wars were fought, and **VERY CLOSE** calls, however World War III did not take place

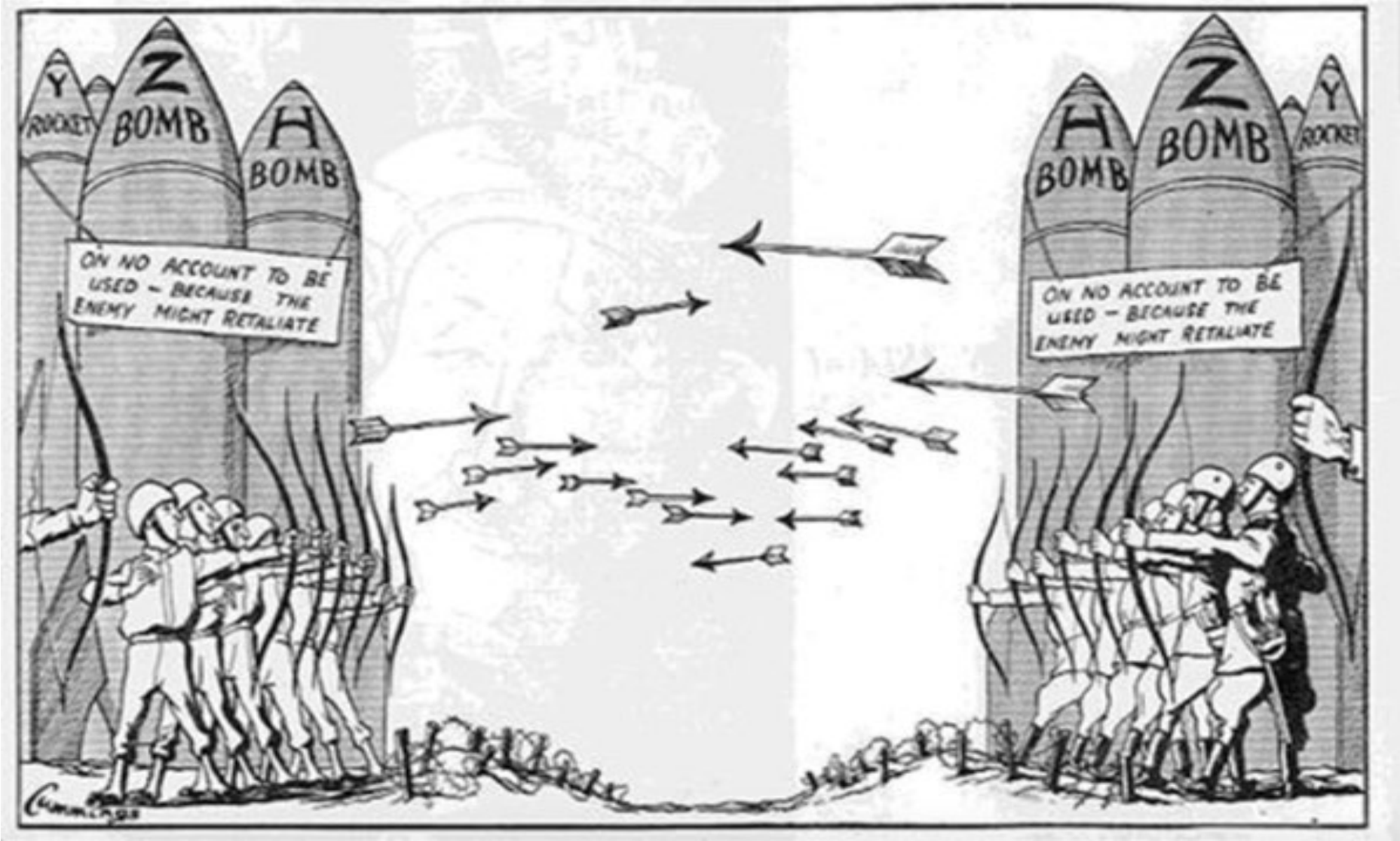


MAD actually preserved peace? Why?

Living in the Nuclear Age
Global Perspectives

Global Nuclear Weapon Perspectives
Is Today Safer?

Questions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