The main focus of the chapter is on the period between 1974 and 1978, when the Shah sought to accelerate Iran's nuclear programme, creating tensions with the USA. This short period witnessed the emergence of a number of key features of the US-Iranian nuclear relationship: The divergence of perspectives on proliferation and the fuel cycle quickly became clear. Even in a context in which the two were Cold War allies, Iranian nationalism and ambition and American fear of proliferation produced deadlock in their nuclear negotiations. The American refusal to provide Iran with fuel cycle technology was, moreover, strongly influenced by pressure from Congress, which was able to exploit the need for its ratification of any nuclear agreement to great effect. Finally, the chapter reveals a tension between unilateralism and multilateralism that would recur in US policy, as it tried to persuade the other nuclear powers to join it in not transferring sensitive nuclear technology whilst also pursuing its own national interests and accommodating domestic pressures.

Introduction
Jack I. Garvey

This introductory chapter analyzes how the legal framework intended to ensure nonproliferation—the Nuclear Non-Proliferation Treaty (NPT), adopted in 1970—is failing to contain the evolution and exponential
growth of nuclear risk. It explains why the Grand Bargain of the NPT is not succeeding as conceived, and why counterproliferation will continue to fall short in achieving nuclear security unless reinforced and eventually supplanted by a different legal and institutional framework. The task of creating a new legal and institutional framework requires, first, understanding why the current legal and institutional infrastructure is failing, and how contemporary nuclear risk defies containment. This in turn requires examination of nuclear risk in greater detail, to understand its components and its dynamics, at every principal stage, from source to detonation, to identify where in the process we can work a new regime to construct security.

The Role of Security Assurances in the Nuclear Nonproliferation Regime

John Simpson

in Security Assurances and Nuclear Nonproliferation

This chapter outlines the sustained demands from Non-Aligned Movement (NAM) states, especially those within the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), for security assurances during the last half-century. It also presents a short analysis of the options available to improve existing NPT-related security assurances. The effect of recent changes in the security environment on the demands for NPT security assurances is dealt with. Security assurances entered the NPT review meeting in 2000, but in a way that suggested they were declining in salience. Recently, attempts to improve security assurances have been fought by long-standing pressures in order to enhance the diplomatic atmospherics surrounding the nuclear nonproliferation regime and the NPT. It is suggested that strengthening assurances and ensuring compliance continue to be pursued together, rather than be seen as competitive alternatives.

Unmaking the Bomb

Harold A. Feiveson, Alexander Glaser, Zia Mian, and Frank N. von Hippel

Unmaking the Bomb

Harold A. Feiveson, Alexander Glaser, Zia Mian, and Frank N. von Hippel

Published in print: 2014 Published Online: January 2015


Item type: book

DOI: 10.7551/mitpress/9780262027748.001.0001
The global stockpile, continued production and use of plutonium and highly enriched uranium – the fissile materials that are the essential ingredients of nuclear weapons – facilitates proliferation, increases the risk of nuclear terrorism and is an obstacle to achieving irreversible nuclear disarmament. The book begins by explaining how these materials are used in nuclear weapons, and describes the histories of fissile material production for weapons starting with the United States and including in historical order the Soviet Union, United Kingdom, France, China, Israel, India, Pakistan, North Korea, and South Africa. It also provides an overview of the current global stockpile of roughly 1900 tons of plutonium and highly enriched uranium – together sufficient for more than 100,000 nuclear weapons – by current or intended use in weapons and reactor fuel. The book then discusses the dangers associated with plutonium separation (reprocessing) and uranium enrichment, which put countries a short step away from nuclear weapons, and it offers a basis for policy initiatives to end the separation of plutonium in civilian nuclear power programs, and the use of highly enriched uranium fuel in research reactors and naval reactors. In its final section, the book assesses the technical and policy issues associated with negotiation of a verifiable Fissile Material Cutoff Treaty to end the production of fissile material for weapons and options for the safe and irreversible disposal of current stocks of plutonium and highly enriched uranium.

Britain and the Bomb

David James Gill


Publisher: Stanford University Press DOI: 10.11126/

Drawing on primary sources from both sides of the Atlantic, Britain and the Bomb explores how economic, political, and strategic considerations have shaped British nuclear diplomacy. The book concentrates on Prime Minister Harold Wilson’s first two terms of office, 1964-1970, which represent a critical period in international nuclear history. Wilson’s commitment to the Non-Proliferation Treaty and his support for continued investment in the British nuclear weapons program, despite serious economic and political challenges, established precedents that still influence policymakers today. The continued independence of Britain’s nuclear force, and the enduring absence of a German or European deterrent, certainly owes a debt to Wilson’s handling of nuclear diplomacy more than four decades ago. Beyond highlighting the importance of this period, the book explains how and why British nuclear diplomacy evolved during Wilson’s leadership. Cabinet discussions,
financial crises, and international tensions encouraged a degree of flexibility in the pursuit of strategic independence and the creation of a non-proliferation treaty. The book shows us that British nuclear diplomacy was a series of compromises, an intricate blend of political, economic, and strategic considerations.

2001–8: George W. Bush and the Failure of Confrontation

Steven Hurst

in The United States and the Iranian Nuclear Programme: A Critical History

Published in print: 2018 Published Online: May 2019
Item type: chapter

Chapter Four looks at US policy during the administration of George W. Bush. The revelations that focused international attention on the Iranian nuclear programme in 2002 exposed divisions within the Iranian elite over the nuclear programme, with the pragmatists and reformists who controlled policy-making until 2005 making repeated efforts to pursue a negotiated solution. Hard line conservatives in the Bush administration, however, had no interest in compromise with Iran. They were committed to regime change (at best) or compelling Tehran to abandon its pursuit of the fuel cycle (at worst). Once again, however, the policy was incoherent and ineffective. It contained no meaningful incentives for Tehran while the coercive measures employed were ineffectual, with Washington's continued unilateralism undermining its efforts to bring effective pressure to bear. Bush's rejection of the outreach of the Khatami government, moreover, contributed to the discrediting of the latter and to the reassertion of Iranian hard liners. The subsequent election of Ahmadinejad to the Iranian presidency in 2005 guaranteed continued stalemate.

The 1980s: Developing Hostility and the Origins of the Islamic Republic’s Nuclear Programme

Steven Hurst

in The United States and the Iranian Nuclear Programme: A Critical History

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Chronologically, Chapter Two focuses on the 1980s, but the main theme of the chapter is the development of mutual antipathy between Iran and
the United States. This development is traced through an examination of their interactions from the 1953 coup to the Iran-Iraq War. The chapter emphasizes how the experiences of the 1953 coup in Iran, the Iranian Revolution and subsequent hostage crisis and the Iran-Iraq War contributed to the development of a profound and widespread mutual hostility between the two countries that would subsequently come to act as a major constraint on policy-makers on both sides. The chapter also examines the origins of the IRI's nuclear programme and its connection to the emerging conflict with the USA.

India and the Comprehensive Test Ban Treaty
Karthik Nachiappan

in Does India Negotiate?

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Item type: chapter

In this chapter, I unpack how India negotiates the Comprehensive Test Ban Treaty, recounting the transnational pressures pushing toward test ban negotiations and why those developments served India’s interests having pulled for such an agreement for decades. This legacy of disarmament diplomacy strongly influenced the approach adopted by the overseeing institution Ministry of External Affairs at CTBT negotiations where Indian diplomats strove to negotiate an agreement that placed uniform constraints vis-à-vis nuclear tests on both nuclear and non-nuclear weapon states. And finally, I distil how domestic interest groups, namely security and nuclear experts, shaped public debates concerning the CTBT which, in turn, gave MEA officials more space to determine whether to ratify or reject the treaty once it became clear that India’s strategy would not have produced the agreement they desired.

The 1990s: Clinton and the Failure of Containment and Engagement
Steven Hurst

in The United States and the Iranian Nuclear Programme: A Critical History

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Item type: chapter

Chapter three explores developments under Presidents George H.W. Bush and Bill Clinton. It examines the continued development of the
Iranian nuclear programme, US efforts to curtail it, and the broader course of US-Iranian relations. The chapter demonstrates how domestic politics on both sides continued to prevent coherent policy-making and resolution of the conflict. Leaders with an interest in dialogue found their efforts to engage the other government undercut by the actions and opposition of hard liners in both countries. The need to pander to domestic (and Israeli) pressures also undermined the efficacy of US efforts to curtail the Iranian nuclear programme by driving them down a path of unilateral coercion that was completely ineffective. Consequently, the Iranian nuclear programme continued to develop largely unhindered by the United States.

Ending Production of Fissile Materials for Weapons
Harold A. Feiveson

in Unmaking the Bomb: A Fissile Material Approach to Nuclear Disarmament and Nonproliferation

To cap nuclear arsenals and make nuclear weapon reductions irreversible, it will be necessary to end the production of unsafeguarded highly enriched uranium and separated plutonium. To achieve this goal, in 1993, the UN General Assembly instructed the United Nations Conference on Disarmament in Geneva to begin negotiating a Fissile Material Cutoff Treaty (FMCT). This chapter explores the possible scope and verification challenges for an FMCT. These challenges include monitoring of operating and shutdown enrichment and reprocessing plants and ruling out potential clandestine production including at military nuclear facilities and in naval nuclear fuel programs in the nuclear weapon states. The latter two goals will pose some additional challenges beyond those of verifying the Non-proliferation Treaty in non-weapon states. Many non-weapon states also would like to see the nuclear weapon states place their pre-existing stocks of civilian and excess weapons material under international safeguards.

2009–15: Obama and the Road to the JCPOA
Steven Hurst

in The United States and the Iranian Nuclear Programme: A Critical History
Obama introduced significant changes to US policy that brought ambitions more effectively into line with the means available to achieve them. He secured more effective multilateral cooperation from key states, which in turn enabled him to impose more effective coercion. Of equal importance, however, was his abandonment of the demand that Iran give up the fuel cycle. That decision was driven by his recognition that continued enrichment was non-negotiable as far as Tehran was concerned and his fear that the alternative to acknowledging that would be military conflict. There would have been no JCPOA, however, without parallel changes inside Iran. After eight years of dominance by Iranian hard liners, the 2013 election saw Hassan Rouhani returned to office. Obama's concession on enrichment created the political space for him to pursue a negotiated solution while Iran's economic problems and growing legitimacy crisis persuaded the Supreme Leader to support him in doing so. A nuclear agreement was finally reached as a result of smarter diplomacy on the part of the USA, the exhaustion of coercive options short of war, and domestic political changes on both sides, but especially in Iran.

Introduction
Harold A. Feiveson

in Unmaking the Bomb: A Fissile Material Approach to Nuclear Disarmament and Nonproliferation

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Publisher: The MIT Press DOI: 10.7551/mitpress/9780262027748.003.0001
Item type: chapter

The world has struggled for over six decades with the dangers posed by huge quantities of plutonium and highly enriched uranium, the chain reacting fissile materials that are the key ingredients of nuclear weapons and that were described by the eminent physicist Niels Bohr in 1944 as possibly posing a “perpetual menace” to humankind. Since the failure of the post-World War II efforts to ban nuclear weapons and control fissile materials, nine other states have followed the United States and produced fissile materials and nuclear weapons. This chapter provides an overview of the book and an introduction to the fissile material problem and the proposals to cap, reduce, and eventually eliminate fissile materials. It explains why such initiatives are critical to support deep reductions and eventual elimination of all nuclear weapons, to make such nuclear disarmament more difficult to reverse, to raise the barriers to nuclear weapon proliferation, and to prevent nuclear terrorism.
Introduction
Steven Hurst

in The United States and the Iranian Nuclear Programme: A Critical History
Published in print: 2018 Published Online: May 2019
Publisher: Edinburgh University Press
Item type: chapter

This chapter outlines the main questions the book seeks to address and the explanatory framework adopted. The key questions it sets out to answer are: What was Iran's nuclear ambition? Why did the USA for so long fail to deal effectively with that ambition? And how was a negotiated solution to the conflict over Iran's nuclear programme eventually reached? The chapter goes on to outline the fundamental dilemma posed by the nature of nuclear energy and summarizes the attempt to resolve it through the nuclear non-proliferation regime. Finally, the chapter summarizes the explanatory framework employed by the book, which emphasizes the impact of domestic political considerations on the diplomacy of both sides and the obstacle this created to effective resolution of the conflict over Iran's nuclear programme.

Unconventional Weapons
Pesach Malovany IDF (Ret.), Amatzia Baram, Kevin M. Woods, and Ronna Englesberg

in Wars of Modern Babylon: A History of the Iraqi Army from 1921 to 2003
Published in print: 2017 Published Online: January 2018
Publisher: University Press of Kentucky
Item type: chapter

The chapter deals with the Iraqi efforts to develop and produce weapons of mass destruction—chemical, biological and nuclear. It describes the various projects in each field, their history, the foreign assistance they got, the infrastructure the Iraqis built for them, their achievements and types of weapons the Iraqis produces and their arsenals, especially of the Chemical and Biological weapons. The efforts of the U. N. supervisory commissions (UNSCOM) and the international Atomic Energy Agency (IAEA) to disarm Iraq from those weapons and capabilities to renew the development and production of them by Iraq after 1991. The use of chemical weapons by the Iraqis against the Kurds and the Iranian forces during the war between the two countries, and the possibility of using them against coalition forces during the wars in 1991 and 2003. The Iraqi
efforts to achieve a nuclear device in a crash program before the war in 1991.

How North Korea Got the Bomb
Walter C. Clemens

In Chapter Six, Clemens discusses North Korea’s interest in all things nuclear. Beginning with North Korean anxieties when the US started to deploy nuclear artillery shells and Honest John missiles into South Korea in 1958, Clemens examines the history of North Korea’s interest in creating nuclear devices. Because of the near absence of external support, the Kim dynasty’s dedication to self-reliance was reinforced. To conclude the chapter, Clemens reveals that North Korea tested its first nuclear device in 2006 after bribing Pakistan to provide the know-how and some equipment and technology.

Evidence from the Historical Record
Rupal N. Mehta

This chapter provides a series of quantitative, large-n analyses of nuclear reversal that test the core propositions and hypotheses derived in Chapter 2. It expands on existing work to systematically examine all states that engaged in nuclear weapons activity. It overviews the data on rewards (political, military, or economic) and punishments (economic or military) for analysis. It presents several statistical tests of the six hypotheses derived in Chapter 2. Using a time-series panel study that incorporates a variety of model specifications examining the impact of inducements on nuclear reversal, it finds significant support for the theoretical framework introduced earlier. Further, it finds support for the probabilistic conditions that examines special circumstances of leadership change and nuclear reversal among allies and adversaries.
Appendix 3.1 presents a battery of robustness checks to provide additional support for the findings.

Conclusion
Steven Hurst

in The United States and the Iranian Nuclear Programme: A Critical History

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Item type: chapter

The conclusion summarizes the arguments made in the previous chapters and returns to the key questions raised in the introduction. It concludes that the available evidence suggest that the Islamic Republic was not bent on the development of nuclear weapons and that key political factions within Iran were happy to forego them in return for reciprocal concessions from the USA. It further follows from that conclusion that claims that the JCPOA represented a successful coercion of Iran through sanctions are wide of the mark. Iranian leaders had been prepared to offer a compromise before effective sanctions were imposed and a deal was only reached when Obama conceded Iran the right to continue enriching uranium. Finally, the chapter argues, based on these conclusions, that Donald Trump's decision to abandon the agreement and re-impose sanctions is unlikely to produce the concessions from Iran that he desires.

‘The Hindu Bomb’: Nuclear Nationalism in The Last Jet-Engine Laugh

in Race, Ethnicity and Nuclear War: Representations of Nuclear Weapons and Post-Apocalyptic Worlds

Published in print: 2011 Published Online: June 2013
Publisher: Liverpool University Press
DOI: 10.5949/liverpool/9781846317088.003.0008
Item type: chapter

This chapter explores how South Asian writers have understood the possession of nuclear weapons — particularly the testing of India's nuclear arsenal in 1998 — as being central to the Hindu nationalism which achieved electoral success during the 1990s and 2000s. The discussion centres on Ruchir Joshi's novel The Last Jet-Engine Laugh (2001), with extended references to the writings of other South Asian novelists and essayists, including Romesh Gunesekera, Arundhati Roy and Vikram Chandra. As their fictional and polemical texts observe, proclaiming nuclear weapons as a way to achieve parity of international
importance with former colonizers and other superpowers is inherently problematic. While a nuclear-armed India fulfils Hindu nationalist rhetoric of national autonomy and the privileging of indigenous culture, such nuclear nationalism is predicated on wielding military technology already possessed by the Cold War nuclear powers. Paradoxically, many Hindu nationalists tried to define India’s superior identity as distinct from those nuclear powers.

**Borrowing the bomb**

Ken Young

in *The American Bomb in Britain: Us Air Forces' Strategic Presence, 1946-64*

Published in print: 2016 Published Online: January 2017

Publisher: Manchester University Press

This chapter takes forward the emerging co-operation between Britain and the United States in the field of weapon supply. British authorities were both gratified and suspicious of the new arrangements whereby nuclear weapons would be transferred to the RAF, with first the tactical Canberras and then the strategic V-bombers being modified under American supervision for this purpose. This work, and the need to adopt common safety and security procedures, drew the two air forces into much closer co-operation in a strategic partnership.

**The United States and the Iranian Nuclear Programme**

Steven Hurst

Published in print: 2018 Published Online: May 2019

Publisher: Edinburgh University Press

The United States, Iran and the Bomb provides the first comprehensive analysis of the US-Iranian nuclear relationship from its origins through to the signing of the Joint Comprehensive Plan of Action (JCPOA) in 2015. Starting with the Nixon administration in the 1970s, it analyses the policies of successive US administrations toward the Iranian nuclear programme. Emphasizing the centrality of domestic politics to decision-making on both sides, it offers both an explanation of the evolution of the relationship and a critique of successive US administrations' efforts to halt the Iranian nuclear programme, with neither coercive measures nor inducements effectively applied. The book further argues that factional politics inside Iran played a crucial role in Iranian nuclear decision-making and that American policy tended to reinforce the position of
Iranian hardliners and undermine that of those who were prepared to compromise on the nuclear issue. In the final chapter it demonstrates how President Obama's alterations to American strategy, accompanied by shifts in Iranian domestic politics, finally brought about the signing of the JCPOA in 2015.