

Index

- abandonment, threats of
 - by allies, 10, 15, 21
 - as sticks-based approach to nonproliferation, 12, 27, 54, 55–56, 453
 - see also specific countries*
- Abe, Shinzo, 370
- Abreu, Hugo, 93–94, 108
- Acheson, Dean, 199–200, 207, 278, 382
- Adenauer, Konrad, 397–398, 399–400, 405, 413
- adversaries
 - coding rules for, 463–466
 - definition of, 38
 - independent adversary, definition of, 38
 - listing of, 71–73t
 - in strategic logic of nuclear proliferation, 43–48
 - see also specific countries*
- adversaries and proliferation (cases), 87–176
 - overview, 28–29, 87–88
 - Brazil, 87, 88–116
 - Iran, 151–176
 - Iraq, 87–88, 131–151
 - Soviet Union, 87–88, 116–131
 - see also specific countries*
- African National Congress (ANC), 261, 276
- Agency for Accounting and Control of Nuclear Materials (ABACC) (Brazil/Argentina), 103, 104
- Agreed Framework (1994) (U.S./DPRK), 278, 286–293, 389
- Agreement on Cooperation for the Development and Application of the Peaceful Uses of Nuclear Energy (1980) (Brazil/Argentina), 95–96
- Agrell, Wilhelm, 194
- Ahmadinejad, Mahmoud, 162, 168
- Air Defense agreement (U.S./India), 242
- Alfonsín, Raúl, 98–99
- Algeria
 - abandonment of nuclearization, 76, 78–79
 - lack of benefit from allied protection, 78
 - nuclear development, adversaries, and allies, 71t
 - power, alliances, and nuclear proliferation, 80f
 - summary of nuclear development (1983–1993), 467–468
 - see also specific adversaries*
- Algiers Agreement (1975) (Iran/Iraq), 133–135, 160, 164–165
- Ali Khamenei, Sayyed, 162
- alliances, effects on proliferation, 23–24, 27, 48–53, 52t, 440–442
 - see also specific countries*
- Alliance Treaty Obligations and Provisions Project (ATOP), 68–69, 77n31, 78
- allied commitment to state's defense, 41–42
- allies
 - close ally, definition of, 38, 81–82, 84–85
 - coding rules for, 463–466
 - coercive tactics by, 15
 - definition of, 38
 - loose ally, definition of, 38, 81–82, 84–85
 - role of, 9

- allies (*cont.*)
 in strategic logic of nuclear proliferation, 48–53
see also close allies and proliferation (cases); loose allies and proliferation (cases); *specific countries*
- Alves, Rex Nazaré, 97, 113
- Anglo-Iranian Oil Company, 153
- Angola
 as adversary of South Africa, 79, 258, 262–265, 267, 270–271
 National Liberation Front of Angola (FNLA), 262
 National Union for the Total Independence of Angola (UNITA), 262
 People's Movement for the Liberation of Angola (MPLA), 262
- appendices
 Coding Rules (Appendix I), 463–466
 Formal Theory (Appendix IV), 498–531
 Other Cases of Nuclear Development (Appendix II), 467–479
 Puzzling Cases of No Nuclear Development (Appendix III), 480–497
- Argentina
 Agency for Accounting and Control of Nuclear Materials (ABACC), 103, 104
 Agreement on Cooperation for the Development and Application of the Peaceful Uses of Nuclear Energy (1980) (Brazil/Argentina), 95–96
 coordination with Brazil, 88–89, 92–93, 94, 95–96, 98, 101, 102–103, 110, 112, 114
 Declaration on the Common Nuclear Policy of Brazil and Argentina (1989–1999), 103
 Falklands War, 97
 Iperó Joint Statement on Nuclear Policy (1988) (Brazil/Argentina), 99
 Joint Declaration on Nuclear Policy (1985) (Brazil/Argentina), 98
 relations with Israel, 225
 as signatory to IAEA Quadripartite Agreement, 103
 Viedma Declaration, 98–99
- Aron, Raymond, 425
- Aronson, Shlomo, 236
- Atomic Energy Act (1946) (U.S.), 2, 105, 402–403, 427–428
- Atoms for Peace program (1953), 90, 91, 132, 155, 182, 221, 259–260, 300, 328, 402, 428
- Australia
 abandonment of nuclearization, 82
 benefit from allied protection, 78
 as loose ally, 81
 nuclear development, adversaries, and allies, 71t
 power, alliances, and nuclear proliferation, 80f
 summary of nuclear development (1956–1961), 468–469
 summary of nuclear development (1967–1972), 469–470
see also specific adversaries and allies
- “Axis of Evil” (Bush), 151, 163, 290–293, 389
- Ayub Khan, Muhammad, 329, 330–331
- Aziz, Tariq, 137, 149, 160
- Baghdad Pact (1955), 132, 133, 153–154, 328
- balance of power
 during Cold War, 121, 131
 cost of nuclear program and, 45
 future patterns of proliferation and, 457–458
- Ball, George, 407, 411
- Banco Delta Asia, 293
- Bangladesh, 252
- Barzani, Mustapha, 155
- Basic Agreement (1991) (ROK/DPRK), 388–389
- Bazargan, Mehdi, 159
- Begin, Menachem, 140
- Ben-Gurion, David, 223, 224–225, 231
- Bhabha, Homi J., 240, 244, 256
- Bhutto, Zulfikar Ali, 329, 331, 333–335, 338

- Blix, Hans, 141, 145
 Blood, Archer, 248
 Boegner, Jean-Marc, 421, 429
 Botha, Pieter Willem (“P. W.”), 261, 262, 265, 269–270, 271
 Brandt, Willy, 401
 Brazil, 88–116
 overview, 87
 Agency for Accounting and Control of Nuclear Materials (ABACC), 103, 104
 Agreement on Cooperation for the Development and Application of the Peaceful Uses of Nuclear Energy (1980) (Brazil/Argentina), 95–96
 alternative explanations, 112–116
 Angra I nuclear power plant, 93–94, 109
 civilian nuclear program, under military regime (1964–1975), 92–94
 civilian nuclear program, under Republican regime (1951–1964), 90–92
 cooperation with W. Germany and Autonomous Program of Nuclear Technology (PATN) (1975–1987), 94–101, 107–113
 coordination with Argentina, 88–89, 92–93, 94, 95–96, 98, 101, 102–103, 110, 112, 114
 counterfactual analysis, 175–176
 Declaration on the Common Nuclear Policy of Brazil and Argentina (1989–1999), 103
 early research collaboration with W. Germany, 90, 91
 Five Nations Declaration for a denuclearized Latin America, 92
 Iperó Joint Statement on Nuclear Policy (1988) (Brazil/Argentina), 99
 Joint Declaration on Nuclear Policy (1985) (Brazil/Argentina), 98
 lack of benefit from allied protection, 78
 lack of security motivation, 76, 84
 National Commission for Nuclear Energy (CNEN), 91, 96
 nuclear development, adversaries, and allies, 71t
 Parliamentary Commission of Inquiry (1990), 102
 proposal to UNGA for nuclear-weapons-free zone in Latin America, 91–92, 101
 resistance/accession to NPT, 88, 89, 92–93, 101–104, 106, 110, 114–115
 as signatory to IAEA Quadripartite Agreement, 103
 specific compensation policy, 103
 U.S. nonproliferation efforts, 89, 90–91, 92, 93, 104–111, 115–116
 Viedma Declaration, 98–99
 see also specific leaders
 Brazilian Physicists Society, 101
 Brezhnev, Leonid, 251
 Brown, Harold, 340, 369–370
 Brzezinski, Zbigniew, 314, 340–341
 Buckley, James, 351
 Buhite, Tussell, 123, 129–130
 Bundy, McGeorge, 212–213, 215–216, 408, 415
 Bundy, William, 308
 Burr, William, 218
 Bush, George H. W.
 policies on Iraq, 140
 policies on Pakistan, 345
 Bush, George W.
 policies on Iran, 151, 162–163, 167
 policies on Iraq, 2, 142, 143, 144, 149
 policies on Japan, 370–371
 policies on North Korea, 290–293, 389
 Byong-tae, Rhee, 287
 Byroade, Henry, 227

 Caetano, Marcelo, 262, 263, 274–275
 Café Filho, João, 90–91
 Cairo Declaration (1943), 198
 Canada
 nuclear cooperation with India, 240, 248, 256
 nuclear cooperation with Taiwan, 304

- Canberra Commission on the Elimination of Nuclear Weapons (1996), 460–461
- carrots-based approach to nonproliferation
- causal pathways and, 59
 - effectiveness of, 9–11, 12, 27, 54–57, 60, 74, 82
 - summary conclusion, 451–455
 - see also specific countries*
- Carter, Jimmy
- Agreed Framework negotiations, 288
 - policies on Brazil, 108–109
 - policies on Iran, 158, 159
 - policies on Japan, 369–370
 - policies on Pakistan, 337–338, 340
 - policies on South Africa, 259
 - policies on South Korea, 378, 387
 - policies on Taiwan, 314, 315–316, 318–319
- case selection, 84–86
- Castelo Branco, Humberto, 92, 103, 272
- Castro, Fidel, 270
- causal pathways to proliferation, 57–60
- observable implications, 59–60
 - for states without security sponsor, 57–58
 - for states with security sponsor, 58–59
 - see also specific countries*
- Central Treaty Organization (CENTO), 153–154
- Cha, Victor, 296, 323
- Cheney, Dick, 144
- Chen Yi, 210–211
- Chiang Ching-kuo, 302, 316, 323
- Chiang Kai-shek
- concerns over PRC nuclear tests, 300
 - endorsement of Pacific Union concept, 306
 - Formosa Resolution and, 206
 - founding of Chung-Shan Science Institute (CSSI), 301
 - reaction to Nixon Doctrine, 301–303
 - statements on termination of reprocessing, 313
- U.S. support for Nationalist government of, 198, 199, 308–309
- Chien, Frederick, 318
- China, 196–219
- overview, 177–178, 196–198
 - alternative explanations, 216–219
 - benefit from allied protection, 78
 - counterfactual analysis, 354–356
 - history of U.S.-China rivalry, 198–200, 249–250
 - incorporation of Tibet (1954), 238, 241–242
 - as loose ally, 81–82, 85
 - New Defense Technology Agreement (1957) (Soviet Union/China), 208
 - nuclear coercion in Korean War and Taiwan Strait crises, 196, 201–207
 - nuclear development, adversaries, and allies, 71t
 - nuclear test (1964), 103, 299–301, 308–309
 - power, alliances, and nuclear proliferation, 79, 80f
 - research and technology sharing with Iran, 160, 161, 166
 - Sino-Indian War (1962), 242, 246, 330
 - Sino-Soviet alliance and split, 207–212
 - Sino-U.S. rapprochement and Taiwan, 298, 303, 309–311, 316–318
 - Subei nuclear plant, 212
 - U.S. counterproliferation efforts, 212–216
 - U.S. security guarantees in East Asia, 457
 - see also specific adversaries and allies; specific leaders*
- Chirac, Jacques, 136
- Choi, Lyong, 393
- Christopher, Warren, 109, 338
- Chun Doo-hwan, 378, 388
- Clinton, Bill
- dual containment policy in Middle East, 166
 - policies on North Korea, 2, 289
 - policies on Pakistan, 349

- close allies and proliferation (cases),
 357–436
 overview, 357–359
 France, 418–436
 Japan, 359–377
 South Korea, 377–394
 West Germany, 394–417
see also specific countries
- close ally, definition of, 38,
 81–82, 84–85
see also specific countries
- Coding Rules (Appendix I), 463–466
- coercive tactics
 by allies, 2, 15
 credibility and effectiveness of, 26–27
 norm-internalization as, 18
see also nonproliferation policy tools
- Cold War, balance of power during,
 121, 131
see also post-Cold War, proliferation decline
- Cole, Paul M., 195
- Collins, J. Lawton, 382
- Collor de Mello, Fernando, 101–103,
 113–114
- Common Development Agency (CDA)
 (U.S./UK), 265
- Comprehensive Nuclear-Test-Ban
 Treaty (CTBT), 253
- Comprimo, 322
- constructivism
 arms control community and, 25
 on nonproliferation norms,
 15–16, 17–18
- Correlates of War (COW) project
 Composite Index of National
 Capability (CINC), 68, 76–77
 National Military Capabilities
 (NMC) data set, 68, 76–77
- Costa e Silva, Artur da, 92–93, 106
- cost of nuclear program
 definition of, 42
 security benefit and, 43, 45,
 47–48, 47f
 in strategic logic of nuclear
 proliferation, 53f
 willingness constraint and, 43
- cost of preventive war
 definition of, 42
 opportunity constraint and, 44
- relative power and, 43, 45, 46
 security benefit and, 44–45,
 47–48, 47f
 in strategic logic of nuclear
 proliferation, 53f
 summary conclusion, 459
- counterproliferation
 credibility and effectiveness of, 26–27
 definition of, 2
 low cost of for United States, 27
see also United States
- Craig, Campbell, 117
- Cuba, support of Angola, 262,
 270–271
- Cuban Missile Crisis (1962), 103,
 209, 281
- Cummings, Bruce, 295
- cyber warfare, 169–170, 459
- Declaration on the Common Nuclear
 Policy of Brazil and Argentina
 (1989–1999), 103
- de Klerk, Frederik Willem (“F. W.”),
 83n39, 258, 271, 276
- demand-and-supply framework, 20–
 26, 447–448
- Democratic People’s Republic of Korea
 (DPRK). *See* North Korea
- Deng Xiaoping, 282, 312, 340
- Denmark, 180, 186, 188, 189
- Desai, Morarji, 346
- Dobrynin, Anatoly, 214, 215–216
- Doo-hwan, Chun, 282
- Dubna Joint Institute for Nuclear
 Research, 280, 284
- Dulles, John Foster
 negotiations over Taiwan, 203, 204,
 206, 307, 320–321
 negotiations with France, 428
 negotiations with Israel, 223, 226,
 227, 237
 on New Look NATO strategy, 421
 on PRC as Soviet puppet
 regime, 207
 proposal for Western European
 nuclear stockpiles, 403
 as U.S. Secretary of State, 202
- Eban, Abba, 226
- economic integration. *See* neoliberalism

- Egypt
 abandonment of
 nuclearization, 76, 82
 benefit from allied protection, 78
 as loose ally, 81
 nuclear development, adversaries,
 and allies, 71t
 power, alliances, and nuclear
 proliferation, 80f
 relations with Israel, 221–222
 relations with Soviet Union, 155
 summary of nuclear development
 (1955–1967), 470–471
 U.S. security guarantees in Middle
 East, 457
*see also specific adversaries
 and allies*
- Eisenhower, Dwight D.
 massive retaliation doctrine
 (MAD), 202
 policies on Brazil, 90–91
 policies on Egypt, 425
 policies on Indochina War, 423
 policies on Israel, 219–220, 223,
 227, 236
 policies on Middle East, 226–227
 policies on Taiwan, 204–206, 307
 policies on West Germany, 395, 398,
 402–403
*see also Atoms for Peace
 program (1953)*
- Ekeus, Rolf, 149–150
- Eletrobrás, *Plan 90*, 94–95
- empirical research design, 61–70
 case-comparison and process-tracing
 analysis, 64–70
 counterfactual analysis, 66–67,
 175–176
 nuclear development, 61–64
 quantitative data, limitations
 of, 67–70
 treaty data, limitations of, 77
- enduring rivalries, 68
- entrapment
 conditions for, 57
 definition of, 35n
- Erhard, Ludwig, 408–409, 412n254,
 415–416
- Erlander, Tage, 183, 184, 192–193
- Eshkol, Levi, 225, 235
- Etemad, Akbar, 156–157, 158
- Eurodif consortium, 156
- European Atomic Energy Community
 (EURATOM), 399, 432
- European Defense Community (EDC),
 420, 432
- Falklands War (1982), 97
- Federal Republic of Germany (FRG).
See West Germany
- Figueiredo, João, 97–98, 102
- Fisher, Adrian, 407, 410, 411
- Fleischer, Ari, 142
- Fonseca, Maximiano da, 99, 100n80,
 109, 111
- forbearance. *See* nuclear forbearance
- Ford, Gerald
 policies on India, 337
 policies on Iran, 158
 policies on Pakistan, 337, 350
 policies on South Africa, 263, 266
 policies on Taiwan, 313
- Foreign Assistance Act (1961)
 (U.S.), 109
- Formal Theory, game-theoretic model
 (Appendix IV), 498–531
see also strategic theory of
 proliferation
- Forrestal, James, 122, 124
- France, 418–436
 overview, 357–359, 418–419
 acceleration of nuclearization
 (1954–1960), 421–427
 alternative explanations, 431–435
 benefit from allied protection, 78
*Centre Sabarien d'Expérimentations
 Militaires* (CSEM), 427
 as close ally, 81, 82, 85
*Comité des Applications Militaires
 de l'Énergie Atomique*, 426
Commissariat à l'Énergie Atomique
 (CEA), 419, 424, 426
 counterfactual analysis, 435–436
 early nuclearization (1945–1954),
 419–421
 F-I-G negotiations/treaty, 399,
 426, 434
 nuclear cooperation with India, 240
 nuclear development, adversaries,
 and allies, 71t

- power, alliances, and nuclear proliferation, 79, 80f
 Protocol of Sèvres (1956) (Israel/France/UK), 222
 relations with Israel, 222
 research and technology sharing with Iran, 156
 research and technology sharing with Iraq, 132, 136, 140
 supplied plutonium-reprocessing plant to Pakistan, 335
 Tehran Agreement (2003) (UK/France/Germany/Iran), 167
 U.S. inspection of nuclear facilities, 24
 U.S. nonproliferation efforts, 427–431
see also specific adversaries and allies; specific leaders
 Fuhrmann, Matthew, 218, 448
- Gaddis, John Lewis, 124
 Gaillard, Félix, 426, 432n344
 Gallois, Pierre, 421
 Gandhi, Indira, 244–245, 250–251, 252–253, 255, 348
 Gandhi, Rajiv, 348
 de Gaulle, Charles
 F-I-G negotiations/treaty, 400, 426
 policies on NATO, 429–434
 policies on nuclear development, 419
 policies on U.S., 422, 425, 427, 428–432
 policies on West Germany, 395
 Geisel, Ernesto, 94–96, 106–107, 110, 114
 Germany
 Tehran Agreement (2003) (UK/France/Germany/Iran), 167
see also West Germany
 Glenn, John, 343
 Glenn Amendment (1977) (U.S.), 337–338
 Gorbachev, Mikhail, 283
 Gordin, Michael, 126
 Gordon, Philip, 431
 Goulart, João, 91, 103n107
 Granieri, Ronald, 416
 Greece, 63, 480–484
 Gromyko, Andrei, 207, 408
 Groves, Leslie, 127–128
 Guam Doctrine. *See* Nixon, Richard M.
 Gulf War (1990–1991), 131–132, 143, 147, 160
 Gurion, David Ben, 160–161
- Habib, Philip, 384
 Haig, Alexander, 388
 Hamel, Wm. Christopher, 123, 129–130
 Hammarskjöld, Dag, 187
 Han Nien-lung, 319
 Harriman, W. Averell, 117, 213–214
 Hecker, Siegfried, 292
 Hersh, Seymour, 230
 Herter, Christian, 428–429
 Heuser, Beatrice, 431
 Hezbollah, 161
 highly enriched uranium (HEU), 264, 266, 328–329, 336–337
 Hillenkoeter, Roscoe H., 125–126
 Hinton, Deane, 343, 347
 historical patterns of nuclearization, 28, 61–86
 analysis of compatibility with theory, 70–84
 identification of close/loose allies, 81–82
 nuclear development, adversaries, and allies, 71–73t, 75, 77–78
 power, alliances, and nuclear proliferation, 79, 80f
 relative power and security alliances, 76–81
 state security threat level, 74–76
 sticks vs. carrots approaches, 74, 82
 summary conclusion, 82–84
 three-year timeframe, 75
 case selection and chapter organization, 84–86
 empirical research design, 61–70
 case-comparison and process-tracing analysis, 64–70
 counterfactual analysis, 66–67, 175–176
 INUS cause, definition of, 66
 nuclear development, 61–64

- historical patterns of nuclearization
 (*cont.*)
 quantitative data, limitations
 of, 67–70
 treaty data, limitations of, 77
see also specific countries
 Holbrooke, Richard, 298
 Holloway, David, 123
 Hummel, Arthur W., Jr., 339
 Humphrey, Hubert H., 382
 Hussein, Saddam, 132, 133, 134–136,
 138–142, 146, 148–151
 Hymans, Jacques E. C.
 on Argentina's nuclear
 forbearance, 112
 on domestic politics in Iraq,
 147–148
 on leader psychology, 217, 255, 273,
 296, 433, 446–447
 on non-security sources of nuclear
 proliferation, 18–19
 on nuclear weapons project
 efficiency, 19–20
- imperfect information, 44n17, 48, 144
- independent adversary,
 definition of, 38
- India, 238–258
 overview, 177–178, 238–242
 Air Defense agreement, with
 U.S., 242
 alternative explanations, 253–258
 Apsara nuclear reactor, 240
 benefit from allied protection, 78
 CIRUS nuclear reactor, 240, 248
 counterfactual analysis, 354–356
 Department of Atomic Energy, 240
 Indian Atomic Energy Commission
 (IAEC), 239–240, 244, 256
 India-Pakistan War (1971),
 251–252, 332–333
 Kashmir conflict with Pakistan,
 243–244
 as loose ally, 81–82, 85
 Mutual Security and Assistance
 Agreement (1954) (India/
 Pakistan), 328
 Non-Aligned Movement (NAM),
 238, 241–242, 251, 330
 as nonsignatory to NPT, 248, 257
- nuclear cooperation with
 France, 240
- nuclear development, adversaries,
 and allies, 71t
- nuclear tests (1998), 349
- Operation Shakti (Pokhran II),
 253, 254
- power, alliances, and nuclear
 proliferation, 79, 80f
- relations with China, 239,
 244–245
- security treaty with Soviet Union,
 254, 257
- Sino-Indian War and Chinese
 nuclear test, 242–245, 246,
 257–258
- Smiling Buddha nuclear test (1974),
 93, 252–253, 334–336
- Study of Nuclear Explosions for
 Peaceful Purposes (SNEPP)
 program, 242–243
- Treaty of Friendship with the Soviet
 Union (1971), 250–251, 333
- uncertainty over timing of
 nuclearization, 69
- U.S. nonproliferation efforts, 240,
 245–253
*see also specific adversaries and
 allies; specific leaders*
- Indian Independence Act (1947), 327
- India-Pakistan War (1971), 251–252,
 332–333
- Indochina War, 422–423, 425
- inhibition, strategies of, 20–26
- inspections regime, 24, 45, 54,
 138, 140
- International Atomic Energy Agency
 (IAEA)
 Additional Protocol I (1977), 167
 Iran's nuclear development, 157,
 163–164, 169, 170
 Iraq's nuclear development,
 137, 138
 North Korea's nuclear development,
 278, 285, 286–288, 289
 Quadripartite Agreement, 103
 South Africa's nuclear development,
 93, 259, 266–267
 South Korea's nuclear development,
 385–386, 389

- surveillance and detection
 - technology, 445
- Taiwan's nuclear development, 305, 312–313, 317
- International Crisis Behavior (ICB)
 - dataset, 77
- internationalizing models
 - (Solingen), 16–17
- international relations, neorealist
 - approach to, 14
- INUS cause, definition of, 66
- invisible hand (Smith), 1
- Iperó Joint Statement on Nuclear Policy
 - (Brazil/Argentina) (1988), 99
- Iran, 151–176
 - overview, 87–88, 151–155
 - abandonment of nuclearization, post-1984, 78–79
 - abandonment of nuclearization, pre-1978, 76, 82
 - accession to NPT, 157, 167
 - Algiers Agreement (1975) (Iran/Iraq), 133–135, 160, 164–165
 - alternative explanations, 172–175
 - Atomic Energy Organization of Iran (AEOI), 156, 159
 - Bushehr nuclear reactors, 156, 159, 160, 161, 167, 172
 - counterfactual analysis, 175–176
 - IAEA inspections, 163–164
 - Iran-Iraq War (1980–1988), 134, 159–160
 - Isfahan Nuclear Technology Centre, 161
 - Joint Comprehensive Plan of Action signatory, 88, 456–457
 - lack of benefit from allied protection, post-1984, 78
 - as loose ally, pre-1978, 81
 - nuclear development, adversaries, and allies, 71–72t
 - People's Mujahedin of Iran, 163
 - post-Cold War crises and accord, 160–164
 - power, alliances, and nuclear proliferation, 80f
 - preventive counter-proliferation strikes against, 79
 - quest for modernity and energy independence, 156–158
 - Shahab-III missile development, 164
 - statements to UNGA on peaceful use of nuclear energy, 162
 - strike against Iraqi nuclear reactor, 131
 - suspicions over nuclear weapons pursuit, 83
 - Tehran Agreement (2003) (UK/France/Germany/Iran), 167
 - Tehran Research Reactor, 169
 - U.S. nonproliferation and counterproliferation efforts, 164–171, 172–173
 - coercive threats against revolutionary regime, 166–171
 - Shah's intentions and, 165
 - veto on national reprocessing, 158–159, 165
 - see also specific adversaries; specific leaders*
- Iran-Contra affair, 161
- Iran-Iraq War (1980–1988), 134, 159–160
- Iraq, 131–151
 - overview, 87–88, 131–135
 - abandonment of nuclearization, 83
 - Algiers Agreement (1975) (Iran/Iraq), 133–135, 160, 164–165
 - alternative explanations, 146–151
 - attacks on Osirak nuclear reactor, 131, 136, 140
 - conflict/wars with Israel, 133
 - counterfactual analysis, 175–176
 - dormant nuclear-weapons program, 138–139
 - invasion of Kuwait (1990), 137
 - Iran-Iraq War (1980–1988), 134, 159–160
 - Iraqi Atomic Energy Commission (IAEC), 131, 136–137
 - Israeli and U.S. counterproliferation efforts, 140–146
 - strikes and sanctions, 140–141
 - U.S. invasion (2003), 27, 132, 142–146, 148–150, 444n4, 445
 - Israeli strike against nuclear reactor, 136
 - lack of benefit from allied protection, 78

Iraq (*cont.*)

- nuclear development, adversaries, and allies, 72t
- nuclear forbearance of, 14
- power, alliances, and nuclear proliferation, 80f
- preventive counter-proliferation strikes against, 78, 79, 131, 136, 140
- rationale for nuclear deterrent, 135–137
- research and technology sharing with other countries, 132
- see also specific adversaries; specific leaders*

Islamic Republic of Iran. *See* Iran

Israel, 219–238

- overview, 177–178, 219–221
- alternative explanations, 233–238
- benefit from allied protection, 78
- counterfactual analysis, 354–356
- counterproliferation efforts toward Iraq, 140–146
- Dimona nuclear reactor, 224, 225, 228, 229–233
- early nuclear development (1950s), 221–222
- Iraq, conflict/wars with, 133
- Israeli Atomic Energy Commission (IAEC), 221
- as loose ally, 81–82, 85
- nuclear cooperation with South Africa, 268–269
- nuclear development, adversaries, and allies, 72t
- power, alliances, and nuclear proliferation, 79, 80f
- Protocol of Sèvres (1956) (Israel/France/UK), 222
- RAFAEL (armament development authority), 224
- secret alliance with Iran, 160–161
- Six-Day War (1967), 133, 135, 155, 220, 226, 232, 238
- strike against Iraqi nuclear reactor, 131, 136, 161
- strike against Syrian nuclear reactor, 84
- Stuxnet (cyber warfare), 169–170

Suez Crisis (1956), 219–220, 222, 237, 418, 424–425, 433–434

uncertainty over timing of nuclearization, 69

U.S. nonproliferation efforts, 226–233

limited security guarantees, 223–226, 227–228

low risk of entrapment, 232–233, 237

sales of conventional weapons to, 232, 235–236

unintrusive inspections, 24, 225–226, 229–233, 235–236

see also specific adversaries and allies; specific leaders

Italy

abandonment of nuclearization, 82

benefit from allied protection, 78

as close ally, 81

F-I-G negotiations/treaty, 399, 426

nuclear development, adversaries, and allies, 72t

power, alliances, and nuclear proliferation, 80f

research and technology sharing with Iraq, 132

summary of nuclear development (1957–1958), 471–472

see also specific adversaries and allies

Jaguaribe, Roberto, 101

Japan, 63, 359–377

overview, 357–361

abandonment of nuclearization, 85

accession to NPT, 367

as adversary during run-up to U.S. nuclearization, 78

alternative explanations, 374–377

Atomic Energy Basic Act (1955), 362

counterfactual analysis, 435–436

expansionist policy, 360–361

Hiroshima/Nagasaki bombings, 116, 360, 361, 374, 375

Japan Atomic Energy Commission (JAEC), 362

Japanese Defense Agency (JDA), 367, 369, 370

- Mutual Defense Assistance Agreement (1954) (U.S./Japan), 362–363
- National Defense Program Outline (NDPO), 369
- during North Korean occupation, 280
- reassurances (post-late 1960s), 366–371
- Sino-U.S. rapprochement and, 368–369
- Treaty of Mutual Cooperation and Security (1960) (U.S./Japan), 363–364, 369
- U.S. nonproliferation efforts, 371–374
- U.S. security guarantees in East Asia, 457
- see also specific leaders*
- Jervis, Robert, 144
- Jha, Laxmi Kant, 244, 247, 257
- Johnson, Lyndon B.
 policies on China, 218–219
 policies on India, 246, 330
 policies on Israel, 220, 226, 229, 235, 237
 policies on Japan, 365–366
 policies on Pakistan, 330–331
 policies on South Africa, 266
 policies on Taiwan, 308
 policies on West Germany, 396, 406–414
- Johnson, U. Alexis, 366, 368
- Joint Comprehensive Plan of Action (JCPOA) (2015), 88, 152, 164, 171, 172, 174, 456–457, 461
- Joint Declaration on Nuclear Policy (1985) (Brazil/Argentina), 98
- Joint Declaration on the Denuclearization of the Korean Peninsula (1992) (ROK/DPRK), 285, 389
- Joint Plan of Action (JPOA), 171
- Joliot-Curie, Frédéric, 240
- Kahn, Herman, 372
- Kamel, Hussein, 136–137
- Kelly, James, 291–292
- Kemp, R. Scott, 448
- Kennedy, John F.
 policies on China, 197, 212–214, 218
 policies on India, 246, 330, 336
 policies on Israel, 220, 225, 229–232, 236–237
 policies on Pakistan, 336
 policies on South Africa, 266
 policies on West Germany, 396, 400, 403–406
- Kerry, John, 145
- Khan, Abdul Qadeer (“A. Q.”), 160, 291, 335
- Khan, Feroz Hassan, 351
- Khan, Yahya, 248–249, 332
- Khatami, Muhammad, 173
- Khomeini, Ruhollah, 159, 162
- Khrushchev, Nikita
 negotiations with Iran, 154
 policies on China, 207, 208–211, 214, 218
 policies on France, 430
 policies on Japan, 363
 policies on West Germany, 405
 PTBT negotiations, 406
 as secretary of Communist party, 281
- Kiesinger, Kurt, 413
- Kim Dae-jung, 289, 291, 389
- Kim Il, 281
- Kim Il-sung, 200, 201, 278, 279, 283, 372, 378–379, 382
- Kim Jong-il, 288, 291, 293
- Kim Jong-un, 293
- Kim Seong-jin, 380
- Kim Yong-nam, 283
- Kim Young-sam, 288
- Kissinger, Henry
 negotiations with Japan, 372
 oil negotiations with Iran, 164–165
 on Pakistan, 249, 250, 251–252, 332, 337
 on Shah Pahlavi, 151
 on South Korea, 383, 385
 on Taiwan, 302, 310
 visit to China (1971), 303, 332, 368, 373
 on West Germany, 415–416
- Kogan, Eugene, 324–325
- Korean Peninsula Energy Development Organization (KEDO), 288–289, 292

- Korean War, 196, 208, 277–279, 287, 306–308
 Kosygin, Alexei, 410–411
 Kraftwerk Union AG, 95, 156, 160
 Kroenig, Matthew, 218, 237, 448
 Kubitschek, Juscelino, 91
 Kuwait, Iraqi invasion of, 137
 Kuznetsov, Vasilii, 406
- Lake, David, 5, 148
 Lamazière, Georges, 101
 Lanoszka, Alexander, 391
 Laurence, William, 128
 Lawrence Livermore Laboratory, 275–276
 leader psychology. *See* political psychology, on leader psychology and state identity; *specific leaders*
 Lee Teng-hui, 317
 Lewis, John, 216
 Li, Danhui, 211
 Liberman, Peter, 272
 Libya
 abandonment of nuclearization, 76, 78–79, 83–84
 lack of benefit from allied protection, 78
 nuclear development, adversaries, and allies, 72t
 power, alliances, and nuclear proliferation, 80f
 summary of nuclear development (1970–2003), 472–473
 see also specific adversaries
 light-water reactors (LWRs), 284–285, 286, 288–289, 291
 Lilienthal, David, 126–127
 Lin Biao, 201
 literature review. *See* nuclear scholarship, phases of
 Liu, Jifeng, 210
 Liu, Yanqiong, 210
 loose allies and proliferation (cases), 177–356
 overview, 177–178
 China, 196–219
 India, 238–258
 Israel, 219–238
 North Korea, 277–297
 Pakistan, 326–356
 South Africa, 258–277
 Sweden, 179–196
 Taiwan, 297–326
 see also specific countries
 loose ally, definition of, 38, 81–82, 84–85
 Luck, Gary, 287
- managerial/institutional constraints, 19–20
 Manhattan project, 119
 Mao Zedong
 as founder of PRC, 196
 on peaceful reunification of Korea, 282
 People’s War strategy, 197–199
 policies on North Korea, 200, 201, 278
 policies on Soviet Union, 211
 policies on Taiwan, 203, 204, 205, 206–209, 216–217
 Marshall, George C., 199
 Martin, Henry James, 266
 massive retaliation doctrine (MAD), 179, 202, 307, 402
 McCloy, John, 406
 McCone, John A., 212–213, 215
 McFarlane, Robert, 351–352
 McGhee, George, 411–412
 McMahon Act. *See* Atomic Energy Act (1946) (U.S.)
 McNamara, Robert, 215, 329, 404
 Médici, Emílio, 93, 106
 Mendès France, Pierre, 424, 432n344, 433
 Menem, Carlos, 103
 Mercosur, 98
 Miklos, Jack, 165
 Mikoyan, Anastas, 405
 Miller, Nicholas, 321
 Mollet, Guy, 425–426, 433
 Molotov, Vyacheslav, 119
 Mondale, Walter, 109
 Montgomery, Alexander H., 63n5
 Mozambique, 258, 262–265
 Front for the Liberation of Mozambique (“Frelimo”), 262
 multilateral nuclear force (MLF)
 concept. *See* West Germany

- Musaddiq, Muhammad, 153
 Mutual Defense Assistance Agreement (1954) (U.S./Japan), 362–363
 Mutual Defense Treaty (1953) (U.S./South Korea), 379, 382
 Mutual Defense Treaty (1954) (U.S./Taiwan), 203, 298, 299, 307, 308, 315–316
 Mutual Security and Assistance Agreement (1954) (India/Pakistan), 328
- Nakasone, Yasuhiro, 367
 Namibia, 270–271
 Narang, Vipin, 70, 333–334
 Nasser, Gamal Abdel, 155, 219, 220, 232, 424
 national-identity conception, 18–19
 Nawaz, Sardar Shah, 346
 Nazi Germany, 78, 418
 Nehru, Braj Kumar, 243
 Nehru, Jawaharlal, 238, 240, 241–242, 246, 330
 neoliberalism
 arms control community and, 25
 on state security and prosperity, 15–17
 Netanyahu, Benjamin, 170
 New Defense Technology Agreement (1957) (Soviet Union/China), 208
 Nixon, Richard M.
 policies on Brazil, 106
 policies on India/Pakistan, 239, 248–253, 256–257
 policies on Israel, 226
 policies on Japan, 367–369, 372–373
 policies on Pakistan, 331–333
 policies on South Korea, 377, 379–380, 383, 391, 392
 policies on Taiwan, 301–303, 309–311
 nonproliferation, definition of, 2n3
 nonproliferation norms, 15–16, 17–18
 nonproliferation policy tools
 multiple policies, 454–455
 sticks vs. carrots approaches, 9–11, 12, 27, 54–57
 see also specific countries
- Nordenskiöld, Bengt, 182
 norm-internalization. *See*
 nonproliferation norms
 Norris, Robert, 34n
 Norstad, Lauris, 403
 North Atlantic Treaty Organization (NATO)
 France's participation in, 419, 420, 427, 429–434
 New Look strategy, 421–422
 Sweden's relationship to, 177, 181–182, 186, 188, 189–190, 193
 West Germany and, 31, 403, 404–405, 410–411, 412, 417
 North Korea, 277–297
 overview, 177–178, 277–279
 alternative explanations, 293–297
 Basic Agreement (1991) (ROK/DPRK), 388–389
 benefit from allied protection, 78
 counterfactual analysis, 354–356
 equal emphasis policy, 281–282
 Joint Declaration on the
 Denuclearization of the Korean Peninsula (1992) (DPRK/ROK), 285, 389
 Korean War, 196, 208, 277–279, 287, 306–308
 as loose ally, 81–82, 85
 nuclear development, adversaries, and allies, 72t
 nuclearization of, 12–13, 83
 nuclear tests, 378
 power, alliances, and nuclear proliferation, 80f
 research and technology sharing with Iran, 164
 resistance/accession to NPT, 284–285, 286–287, 292–293
 Soviet/Chinese support, 280–285, 294–295
 Treaty of Friendship, Co-operation and Mutual Assistance with the Soviet Union (DPRK/Soviet Union), 281
 uncertainty over timing of nuclearization, 69
 U.S. counterproliferation efforts, 284–293

- North Korea (*cont.*)
 Bush's "Axis of Evil" and
 Pyongyang's nuclear tests,
 290–293, 389
 mid-1990s crises leading to
 Agreed Framework, 278,
 286–293, 389
 U.S.–South Korean threat, 279–280
 Yongbyon Nuclear Research
 Complex, 280–281, 284,
 285–286
*see also specific adversaries and
 allies; specific leaders*
- Norway, 180, 186, 188, 189, 224
 nuclear age, inception of, 1–2
 nuclear deterrent, definition of,
 40–41
 nuclear exploration, definition of, 39
 nuclear forbearance
 definition of, 40
 in empirical research design, 69
 Paul on, 14–15
 Reiss on, 14
see also specific countries
- Nuclear Nonproliferation Act (1978)
 (U.S.), 109, 267, 338
- Nuclear Planning Group (NPG),
 409, 416
- nuclear politics, introduction, 1–32
 overview, 1–4
 chapter roadmap, 27–32
 empirical patterns, 11–13
 implications of argument, 26–27
 nonproliferation policy tools, 9–11
 role of allies, 9
 role of conventional power, 8–9
 role of security threats, 7, 11
 security theory of proliferation, 6
 strategic theory of proliferation, 4–5
 theoretical history, critique of, 13–26
 willingness/opportunity constraints
 on proliferation, 6–7
*see also strategic theory of
 proliferation*
- nuclear politics, summary conclusion,
 437–462
 future trends in nuclear
 proliferation, 455–462
 implications for future study,
 445–448
 implications for U.S.
 nonproliferation policy,
 449–458
 role of nuclear-nonproliferation
 regime, 443–445
 strategic logic of proliferation,
 441–443
 theoretical arguments, 437–441
 nuclear proliferation, definition of, 1n2
 nuclear pursuit, definition of, 39
 nuclear scholarship, phases of, 13–26
 non-security sources of
 demand, 15–20
 security sources of demand, 13–15
 supply constraints and strategies of
 inhibition, 20–26
 nuclear status, 39–40
 Nuclear Suppliers Group (NSG),
 103–104
 nuclear technology, 44–45
 nuclear weapons project efficiency
 (Hymans), 19–20
 Nuclebrás, 95
- Obama, Barack
 policies on Iran, 2, 163–164,
 168–169, 171, 174
 policies on Japan, 371
- Obeidi, Mahdi, 136, 138
- O'Hanlon, Michael, 283
- Oliveira Piva, Hugo de, 100
- 1 percent doctrine (Cheney), 144
- opportunity constraints. *See*
 willingness/opportunity
 constraints on proliferation
- oppositional nationalistic identity
 conception, 18–19, 446
- organizational theory, 19–20
- Organization of the Petroleum
 Exporting Countries (OPEC),
 156, 164
- Other Cases of Nuclear Development
 (Appendix II), 467–479
- Pahlavi, Muhammad Riza, 151,
 153–159, 165–172, 174
- Pakistan, 326–356
 overview, 177–178, 238, 239, 241,
 326–327
 alternative explanations, 349–356

- benefit from allied protection, 78
 counterfactual analysis, 354–356
 India-Pakistan War (1971),
 251–252, 332–333
 Karachi Nuclear Power Plant
 (KANUPP), 334
 Kashmir conflict with India, 243–244
 limited U.S. support during 1965/
 1971 wars, 331–334
 as loose ally, 81–82, 85
 Mutual Security and Assistance
 Agreement (1954) (India/
 Pakistan), 328
 Nixon and the “tilt” toward, 239,
 248–253, 256–257, 331–333
 nuclear development, adversaries,
 and allies, 72t
 nuclearization of, 15, 83
 Pakistan Atomic Research Reactor
 (PARR-1), 328–329
 Pakistani Atomic Energy
 Commission (PAEC), 328, 334,
 338, 341
 Pakistan-United States Bilateral
 Agreement of Cooperation
 (1959), 328, 333
 as post-Cold War proliferator,
 12–13, 22
 power, alliances, and nuclear
 proliferation, 79, 80f
 reaction to India’s Smiling Buddha
 nuclear test (1974), 334–336
 Saudi Arabia’s potential purchase of
 nuclear weapons from, 62n4
 uncertainty over timing of
 nuclearization, 69
 U.S. inspection of nuclear facilities, 24
 U.S. nonproliferation efforts, 323,
 336–349, 454
 limited coercive leverage during
 1970s, 336–340
 nuclear tests (1998), 349
 during Soviet invasion of
 Afghanistan, 340–345
 support and India’s preventive
 calculus, 345–349
 U.S. support and Indian threat,
 327–331
*see also specific adversaries and
 allies; specific leaders*
- Pakistan Institute of Nuclear Science
 and Technology (PINSTECH),
 328–329
 Pakistan-United States Bilateral
 Agreement of Cooperation
 (1959), 328, 333
 Pak Seongcheol, 280
 Park Chung-hee
 assassination of, 282, 388
 concerns over U.S. security
 guarantees, 377–378, 379–381,
 384, 387
 policies on U.S., 385–386, 393–394
 Park Dong-jin, 387
 Parodi, Alexandre, 420
 Parsi, Trita, 174
 Partial Nuclear Test Ban Treaty (PTBT)
 (1963), 185, 197, 211,
 213–214, 379, 403, 406, 414
 Paul, T. V., 14–15, 113, 114, 190,
 350, 376
 peaceful nuclear explosions (PNEs),
 93, 101, 103, 106, 248, 252,
 255–256
 People’s Republic of China (PRC).
See China
 Perkovich, George, 255, 352–353
 Perry, William, 287, 289, 290
 Pinheiro, Othon, 97, 103
 political psychology, on leader
 psychology and state identity,
 18–19, 217, 255, 273, 296, 433,
 446–447
 Portugal, independence of Angola/
 Mozambique from, 258,
 262–265, 270–271
 post-Cold War, proliferation decline,
 12–13, 21–22, 83–84
 Powell, Colin L., 142, 167
 Powell, Robert, 5
 powerful ally, definition of, 38
 Prat, Emmanuel, 235
 Pressler Amendment (1985), 343–344,
 345–346
 preventive war. *See* cost of
 preventive war
 process tracing, definition of, 65–66
 protégé states, 15
 see also strong protégé states;
 weak states

- Protocol of Sèvres (1956) (Israel/
 France/UK), 222
 Puzzling Cases of No Nuclear
 Development (Appendix III),
 480–497
- Qaddafi, Muammar, 83–84
 Qasim, Abdul Karim, 153–154
 quantitative data, limitations of, 67–70
 Quirino, Elpidio, 306
- Rabin, Yitzhak, 161
 Rabinowitz, Or, 351
 Radchenko, Sergey, 117
 Radford, Arthur W., 203
 Rapp, Torsten, 183
 Reagan, Ronald
 policies on Iran, 134–135
 policies on Pakistan, 341–345,
 350–351
 policies on South Africa, 270
 policies on South Korea, 378, 388
 policies on Taiwan, 316–317, 320
 regional instability, definition of, 35n
 Reischauer, Edwin O., 364
 Reiss, Mitchell, 14, 15
 relative power
 cost of nuclear program and,
 43, 45, 46
 cost of preventive war and, 43, 45
 definition of, 41
 nonproliferation policy tool
 effectiveness and, 54–56
 odds of proliferation and, 46, 48, 66
 Republic of China (ROC). *See* Taiwan
 Republic of Korea (ROK). *See*
 South Korea
 Rhee, Syngman, 200
 Rice, Condoleezza, 143–144, 291, 293,
 370–371
 Richelson, Jeffrey, 218
 Ritter, Scott, 139, 145
 Robertson, Walter, 321
 Roh Moo-hyun, 389
 Romania, 76, 78
 nuclear development, adversaries,
 and allies, 72t
 summary of nuclear development
 (1985–1993), 473–475
 Rosenberg, David Alan, 121, 122–123
- Rostow, Walt W., 247, 412
 Rouhani, Hassan, 171
 Rublee, Maria Rost, 17, 18, 192, 194,
 374, 415
 Rusk, Dean, 215, 226, 228, 247, 266,
 382, 403, 407
- Russia
 control over nuclear weapons in
 former Soviet republics, 34n
 research and technology sharing
 with Iran, 161, 166–167
 see also Soviet Union
- Sadat, Anwar, 155
 Sagan, Scott, 6, 14, 63n5, 70, 254, 431
 Sahabi, Fereidun, 159
 Sa'ïd, Muhammad, 152–153
 Sarabhai, Vikram, 244, 247, 256
 Sarney, José, 98–99, 100n77,
 114n157
 Sato, Eisaku, 365–366, 368, 372–373
 Sattar, Abdul, 353–354
 Saudi Arabia, 63
 nuclear forbearance of, 484–488
 potential purchase of nuclear
 weapons from Pakistan,
 62n4, 445
 U.S. security guarantees in Middle
 East, 457
- Schlesinger, James, 384
 Schmidt, Helmut, 109
 SEATO (Southeast Asia Treaty
 Organization), 328
 Second Kashmir War (1965), 331
 security, definition of, 41
 security-based theories of proliferation,
 6, 13–15, 46–47
 security benefit continuum, 47–48, 47f
 security threat, level of
 causal effects of, 66
 cost of nuclear program and, 43
 definition of, 41
 role in nuclear politics, 7, 11
 summary conclusion, 440
- Sharif, Nawaz, 349
 Sharp, Grant, 364
 Shastri, Lal Bahadur, 242–243, 244
 Shevardnadze, Eduard, 283
 Shigeru, Yoshida, 360, 361–366, 374
 Shultz, George, 342, 346, 352n898

- Silveira, Azeredo da, 110
 Singh, Sonali, 39, 63n5
 Sino-Indian War (1962), 242, 246, 330
 Six-Day War (1967), 133, 135, 155,
 220, 226, 232, 238
 Smirnov, Andrei, 405
 Smith, Adam, 1
 Snyder, Glenn H., 35n
 Snyder, Scott, 394
 Solingen, Etel
 on Brazil, 113–114
 on economic preferences and
 nuclearization, 446
 on internationalizing models,
 16–17
 on Iraq, 146, 173
 on Israel, 233–234, 235
 on Japan, 374
 on North Korea, 294
 on South Korea, 390–391
 on Taiwan, 320
 South Africa, 258–277
 overview, 177–178, 258–259
 abandonment of nuclearization,
 83, 83n39
 alternative explanations, 271–277
 apartheid regime's early nuclear
 development, 259–262
 Atomic Energy Board (AEB), 259,
 262, 263
 Atomic Energy Research and
 Development, 260
 benefit from allied protection, 78
 catalytic deterrence strategy, 270,
 270n476, 273
 counterfactual analysis, 354–356
 impact of Portuguese Revolution on
 security of, 262–265
 as loose ally, 81–82, 85
 nuclear cooperation with Israel,
 268–269
 nuclear development, adversaries,
 and allies, 72t
 power, alliances, and nuclear
 proliferation, 79, 80f
 resistance/accession to NPT, 258,
 259, 261, 266, 271
 SAFARI-1 nuclear reactor, 260, 266
 “Total National Strategy” Defense
 White paper, 264
 U.S. nonproliferation efforts,
 265–271
 ambivalence in U.S. alliance with,
 265–267
 ineffective U.S. supply-side efforts,
 267–269
 limited post-nuclearization U.S.
 support, 269–271
 nuclear reversal, 269–271
 Valindaba Y uranium plant, 264,
 268, 271
*see also specific adversaries and
 allies; specific leaders*
 Southern Cone
 as low-conflict zone, in 1980s, 113
 myth of security rivals in,
 95–96, 112
see also specific countries
 South Korea, 377–394
 overview, 357–359, 377–379
 abandonment of
 nuclearization, 82, 85
 accession to NPT, 377, 383–384
 Agency for Defense Development
 (ADD), 380, 381, 388
 alternative explanations, 390–394
 Basic Agreement (1991) (ROK/
 DPRK), 388–389
 Basic Plan for Developing Ballistic
 Missiles (1973), 381
 benefit from allied protection, 78
 as close ally, 81
 counterfactual analysis, 435–436
 establishment of, 277–278
 Joint Declaration on the
 Denuclearization of the Korean
 Peninsula (1992) (DPRK/ROK),
 285, 389
 Korea Atomic Energy Research
 Institute (KAERI), 379, 380,
 389–390
 Korean War, 196, 208, 277–279,
 287, 306–308
 Mutual Defense Treaty (1953) (U.S./
 South Korea), 379, 382
 nuclear development, adversaries,
 and allies, 72t
 nuclear forbearance of, 14, 17
 power, alliances, and nuclear
 proliferation, 80f

- South Korea (*cont.*)
 sunshine policy, 289, 290–291, 389
 Team Spirit, joint U.S. military exercise, 286, 287–288
 turn toward nuclear arms, 380–381
 U.S. deployment of nuclear weapons in, 279–280
 U.S. nonproliferation efforts, 381–390
 U.S. guarantees, 82, 377–378, 379–381, 384, 386–390
 verification and shutdown of program, 383–386
 U.S. security guarantees in East Asia, 457
 willingness, post-program development, 69
see also specific adversaries and allies; specific leaders
- South-West African People's Organization (SWAPO), 261
- Soviet Union, 116–131
 overview, 2, 15, 22, 87–88, 116
 alternative explanations, 125–131
 counterfactual analysis, 175–176
 lack of benefit from allied protection, 78
 New Defense Technology Agreement (1957) (Soviet Union/China), 208
 nuclear development, adversaries, and allies, 73t
 power, alliances, and nuclear proliferation, 80f
 public character of nuclearization, 118–119
 reaction to U.S. nuclear monopoly, 117–118
 relations with South Africa, 264
 research and technology sharing with Iraq, 132
 security treaty with India, 254, 257
 Sino-Soviet alliance and split, 207–212
 tactics during Suez Crisis, 222
 Treaty of Friendship, Co-operation and Mutual Assistance with the Soviet Union (DPRK/Soviet Union), 281
- Treaty of Friendship, with India (1971), 250–251, 333
- U.S. counterproliferation efforts, 119–125
 expected costs of hypothetical U.S. counterproliferation strike, 121–125
 expected effects of nuclearization on U.S. security, 120–121
see also Russia; specific adversaries; specific leaders
- Spain, 63, 488–493
- Sputnik (1957), 395, 399, 418, 422, 434
- Stalin, Joseph, 116–121, 128, 131, 200, 208, 278
- state security environment, as key to nuclear decisions, 20
- stealthy nuclearization, 45, 444–445
- sticks-based approach to nonproliferation
 causal pathways and, 59
 effectiveness of, 9–11, 12, 27, 54–57, 60, 74, 82
 summary conclusion, 448, 451–455
 threats of abandonment as, 12, 27, 54, 55–56, 453
- strategic, definition of, 5n9
- strategic environment, as evaluative criteria, 24–26
- strategic theory of proliferation, 4–5, 27–28, 33–60
 overview, 33
 causal pathways to proliferation, 57–60
 threat and power, 57–58
 threat and unreliable allies, 58–59
 nonproliferation policy tools, 9–11, 12, 27, 54–57, 454–455
 observable implications, 59–60
 strategic logic of nuclear proliferation, 37–53
 adversaries, threats, power, and proliferation, 43–48
 allies, assurances, and proliferation, 48–53
 connections between variables and nuclear status, 53f
 key actors, development phases, and strategic variables, 38–43

- strategic setting of nuclear development, 34–35
- willingness/opportunity constraints, 36–37
see also Formal Theory, game-theoretic model (Appendix IV)
- strategies of inhibition, 20–26
- Strauss, Franz Josef, 398–399, 412–413
- strong protégé states
 - carrots-based approach and, 12, 27
 - summary conclusion, 452–453
- Stumpf, Waldo, 267
- Stuxnet (cyber warfare), 169–170
- Suez Crisis (1956), 219–220, 222, 237, 418, 424–425, 433–434
- supply constraints and strategies of inhibition, 20–26
- surveillance and detection technology, 44–45
- Sweden, 179–196
 - overview, 177–180
 - abandonment of nuclearization, 76, 82
 - accession to NPT, 194
 - Ågesta nuclear reactor, 183, 195
 - alternative explanations, 191–196
 - benefit from allied protection, 78
 - Commission on Neutrality Policy (1992), 188, 189, 193
 - counterfactual analysis, 354–356
 - decision to renounce nuclear weapons, 183–189
 - Defense Ministry, 186–187, 194–195
 - as loose ally, 81, 85
 - National Defense Research Agency (FOA), 182–183
 - NATO and, 177, 181–182, 186, 188, 189–190, 193
 - neutrality and nuclear development, 180–183
 - nuclear development, adversaries, and allies, 73t
 - power, alliances, and nuclear proliferation, 80f
 - Swedish Parliamentary Commission of Defense, 185–186
 - Swedish Social Democratic Party study, 191, 194
- U.S. nonproliferation efforts, 189–190
see also specific adversaries and allies; specific leaders
- Swedlund, Nils, 180–182, 183
- Switzerland
 - abandonment of nuclearization, 76, 78–79
 - lack of benefit from allied protection, 78
 - nuclear development, adversaries, and allies, 73t
 - power, alliances, and nuclear proliferation, 80f
 - summary of nuclear development (1946–1969), 475
see also specific adversaries
- Symington Amendment, Foreign Assistance Act (1976) (U.S.), 337, 338, 341
- Syria
 - Israeli strike against nuclear reactor, 84
 - lack of benefit from allied protection, 78
 - nuclear development, adversaries, and allies, 73t
 - power, alliances, and nuclear proliferation, 80f
 - preventive counter-proliferation strikes against, 79
 - preventive strikes against secretive development, 78
 - relations with Israel, 221–222
 - summary of nuclear development (2001), 475–476
see also specific adversaries
- Taiwan, 297–326
 - overview, 177–178, 297–299
 - abandonment of nuclearization, 82
 - accession to NPT, 298, 304
 - alternative explanations, 318–326
 - Atomic Energy Council, 300
 - Atomic Power Research Commission, 300
 - benefit from allied protection, 78
 - Chung-Shan Science Institute (CSSI), 301
 - counterfactual analysis, 354–356

- Taiwan (*cont.*)
 history of U.S.-China rivalry and, 198–200
 Institute of Nuclear Energy Research (INER), 301, 317
 as loose ally, 81
 Mutual Defense Treaty (1954) (U.S./Taiwan), 203, 298, 299, 307, 308, 315–316
 National Tsinghua University
 nuclear reactor, 300
 as nonmember of UN, 298
 nuclear development (1970s), 304–305
 nuclear development, adversaries, and allies, 73t
 nuclear forbearance of, 14
 power, alliances, and nuclear proliferation, 80f
 reaction to Nixon Doctrine, 301–303
 reaction to PRC's nuclear test (1964), 299–301
 Taiwan Research Reactor (TRR), 314–315
 Taiwan Strait crises, 196, 201–207, 298, 299, 306–307, 320–321
 U.S. inspection of nuclear facilities, 24
 U.S. nonproliferation efforts, 305–318
 coercion to halt nuclear development, 311–315
 Korean War, 306–308
 management of Taipei's willingness to proliferate, 315–317
 nuclear reactivation (1980s), 317–318
 Sino-U.S. rapprochement, 298, 303, 309–311, 316–318
 U.S. response to PRC's nuclear test (1964), 308–309
 U.S. threats of abandonment, 82
see also specific adversaries and allies; specific leaders
 Taiwan Relations Act (1979) (U.S.), 299, 316
 Tamir, Avraham, 268
 Tanaka, Kakuei, 369
 Taylor, Maxwell, 372
 Tehran Agreement (2003) (UK/France/Germany/Iran), 167
 Tehran Conference (1943), 152
 Thayer, Bradley, 13
 Thompson, Llewellyn, 247, 405
 Three/Six-Party Talks (2003), 292–293
 Trading with the Enemy Act (1917) (U.S.), 279, 295
 treaty data, limitations of, 77
 Treaty of Friendship, Co-operation and Mutual Assistance with the Soviet Union (DPRK/Soviet Union), 281
 Treaty of Friendship with the Soviet Union (1971) (India), 250–251, 333
 Treaty of Mutual Cooperation and Security (1960) (U.S./Japan), 363–364, 369
 Treaty of Tlatelolco (1967), 92, 103
 Additional Protocol I (1977), 95
 Treaty on the Non-Proliferation of Nuclear Weapons (NPT) (1968), 2, 108, 401, 409, 411, 413
 Additional Protocol I (1997), 443
 Brazil's resistance/accession to, 88, 89, 92–93, 101–104, 106, 110, 114–115
 establishment of (1970), 18, 185
 India's rejection of, 248, 257
 Iran's accession to, 157, 167, 194
 Japan's accession to, 367
 limits on stealth nuclearization due to, 45
 North Korea's resistance/accession to, 284–285, 286–287, 292–293
 peaceful uses of nuclear energy, 162
 role in strategic logic of nuclear proliferation, 460–461
 role of trigger-warning about nuclear development, 443–445
 South Africa's resistance/accession to, 258, 259, 261, 266, 271
 South Korea's accession to, 377, 383–384
 Sweden's accession to, 194
 Taiwan's accession to, 298, 304

- weak unprotected states and, 447
- West Germany's resistance/accession to, 401, 413–414
- troop deployment, 54, 71–73t, 81
- Truman, Harry S.
 - policies on Korean War, 279
 - policies on North Korea, 295
 - policies on South Africa, 259, 265
 - policies on South Korea, 381–382
 - policies on Soviet Union, 120–121, 125, 126, 128, 129–131
 - policies on Taiwan, 199–200, 201, 305, 306
- Tucker, Nancy, 308
- Turkey, 63, 457, 493–497

- Ukraine, 34n
- Undén, Östen, 184
- Unger, Leonard, 313, 318
- Union of Soviet Socialist Republics (USSR). *See* Soviet Union
- United Kingdom
 - benefit from allied protection, 78
 - as close ally, 81, 82
 - Common Development Agency (CDA) (U.S./UK), 265
 - nuclear development, adversaries, and allies, 73t
 - nuclear submarines in Falklands War, 97
 - power, alliances, and nuclear proliferation, 79, 80f
 - Protocol of Sèvres (1956) (Israel/France/UK), 222
 - summary of nuclear development (1945–1952), 476–477
 - Tehran Agreement (2003) (UK/France/Germany/Iran), 167
 - see also specific adversaries and allies*
- United Nations
 - authorized use of force against Iraq, 137
- United Nations General Assembly (UNGA), 91–92, 101, 162
- United Nations Monitoring, Verification, and Inspection Commission (UNMOVIC), 139, 145, 149–150
- United Nations Security Council (UNSC)
 - Iran/Soviet dispute (1946), 153
 - P5+1 group negotiations with Iran, 169–170, 171
 - Powell's "Iraq: Failing to Disarm" presentation, 142
 - Resolution 418, 259, 267
 - Resolution 687, 138–139
 - U.S. proposal of sanctions on North Korea (1994), 288
 - U.S. proposals regarding Suez Crisis, 424
- United Nations Special Commission (UNSCOM), 138
- United States
 - as adversary during run-up to Soviet nuclearization, 78
 - Agreed Framework (1994) (U.S./DPRK), 278, 286–293, 389
 - Air Defense agreement (U.S./India), 242
 - Atoms for Peace program (1953), 90, 91, 132, 155, 182, 221, 259–260, 300, 328, 402, 428
 - Common Development Agency (CDA) (U.S./UK), 265
 - conventional power preponderance of, 12–13, 27, 84, 144, 166, 443, 450
 - counterproliferation efforts toward China, 212–216
 - Iran, 158–159, 164–171, 172–173
 - Iraq, 27, 132, 140–146, 148–150, 444n4, 445
 - North Korea, 278, 284–293
 - Soviet Union, 119–125
 - defense establishment endorsement of security explanations, 24–25
 - dual containment policy, 166
 - Formosa Resolution (1955), 203, 206
 - future patterns of proliferation and, 457–458
 - Gilpatric Committee (1964), 407
 - Gulf War (1990–1991), 131–132, 143, 147, 160
 - Harmon Committee report (1949), 124–125

- United States (*cont.*)
 history of U.S.-China rivalry,
 198–200, 249–250
 implications for U.S.
 nonproliferation policy,
 449–458
 invasion of Iraq (2003), 27, 132,
 142–146, 148–150, 444n4, 445
 Iraq Survey Group, 145, 150n317
 lack of benefit from allied
 protection, 78
 military dimension in prevention of
 proliferation, 26–27
 Mutual Defense Assistance
 Agreement (1954) (U.S./Japan),
 362–363
 Mutual Defense Treaty (1953)
 (U.S./South Korea), 379, 382
 Mutual Defense Treaty (1954)
 (U.S./Taiwan), 203, 298, 299,
 307, 308, 315–316
 National Intelligence Estimate
 (NIE), 212, 228, 246, 247–248,
 266, 311
 nonproliferation efforts toward
 Brazil, 89, 90–91, 92, 93,
 104–111, 115–116
 India, 240, 245–253
 Iran, 158–159, 164–171, 172–173
 Israel, 24, 226–233
 Japan, 371–374
 Pakistan, 323, 336–349, 454
 South Africa, 265–271
 South Korea, 381–390
 Sweden, 189–190
 Taiwan, 298, 303, 305–318
 West Germany, 395, 396, 398,
 400, 401–414
 nuclear development, adversaries,
 and allies, 73t
 nuclear proliferation concerns, 1–3
 Open Door policy, 198
 Operation Desert Fox (1998),
 139, 141
 Operation Desert Storm (1991), 137
 Operation Rolling Thunder (1965),
 364, 366
 Pakistan-United States Bilateral
 Agreement of Cooperation
 (1959), 328, 333
 power, alliances, and nuclear
 proliferation, 80f
 ratification of Additional Protocol I,
 Treaty of Tlatelolco, 95
 research and technology sharing
 with Iraq, 132–133
 Special National Intelligence
 Estimate (SNIE), 111, 115,
 251, 304
 study on effects of troop deployment
 on protégé's nuclear
 status, 23–24
 study on inspections of ally nuclear
 facilities, 24
 study on nuclear-weapon
 deployment to allies, 24
 Stuxnet (cyber warfare), 169–170
 summary of nuclear development
 (1942–1945), 477–478
 surveillance and detection
 technology, 445
 Treaty of Mutual Cooperation and
 Security (1960) (U.S./Japan),
 363–364, 369
 as unreliable ally, 82
 use of sanctions, 83–84
 use of threats of abandonment, 82
 Vietnam War, 310, 364, 366, 380
*see also specific adversaries; specific
 leaders; specific legislation*
 U.S. Atomic Energy Commission
 (AEC), 106–107, 126, 129,
 228, 230
 U.S. Bureau of Intelligence and
 Research (INR), 284,
 322n731
 U.S. Central Intelligence Agency (CIA)
 on Brazil, 111
 Estimate of the Status of the Russian
 Atomic Energy Project (1948),
 125–126
 on India, 347
 on Iraq, 136, 145
 on North Korea, 284, 285, 291–292
 on Pakistan, 335, 338
 on South Africa, 264, 272, 275
 on South Korea, 386, 387–388
 on Taiwan, 300, 304, 305, 317,
 322n731
 Ushiba, Nobuhiko, 368

- U.S. Joint Chiefs of Staff (JCS), 127, 130, 154, 231–232, 247, 305, 381
- U.S. National Security Council (NSC)
 on Israel, 221
 massive retaliation doctrine, 202
 on North Korea, 292
 on Pakistan, 342–343, 344
 on Scandinavia, 189
 on South Korea, 384
 on Soviet Union, 265
 on Taiwan, 313, 318
- U.S. State Department
 on India, 247, 249, 346
 on Israel, 232
 on Japan, 363, 371–372
 on North Korea, 284, 285
 on Pakistan, 249, 335–336, 338, 341–342
 on Taiwan, 315, 322
- Vajpayee, Atal Bihari, 238, 253
- Vance, Cyrus, 108, 109n130, 110n139, 315
- Van Wyk, Anna-Mart, 274–275, 276
- Vargas, Getúlio, 90
- Vasconcellos, Waldir, 99–100
- Venturini, Danilo, 109
- Verwoerd, Hendrik, 260–261
- Videla, Jorge, 96
- Viedma Declaration (Brazil/Argentina), 98–99
- Vietnam War, 310, 364, 366, 380
- Visser, Andries, 273
- Vorster, Balthazar Johannes (“John”), 261–262, 263, 264–265
- Walsh, Jim, 172
- Waltz, Kenneth, 14
- Way, Christopher R., 39, 63n5
- weak states
 cost of preventive war and, 45n19
 historical patterns of
 nuclearization, 11–12
 NPT and, 447
 sticks-based approach and, 10, 12
 summary conclusion, 453–454
 without great-power sponsor, 26–27
- West Germany, 394–417
 overview, 357–359, 394–401
 abandonment of
 nuclearization, 82, 85
 alternative explanations, 414–417
 benefit from allied protection, 78
 as close ally, 81
 counterfactual analysis, 435–436
 F-I-G negotiations/treaty, 399, 426, 434
 multilateral nuclear force (MLF)
 concept, 406
 nuclear development, adversaries, and allies, 73t
 power, alliances, and nuclear proliferation, 80f
 research and technology sharing with Brazil, 90, 91, 94–101, 107–113
 resistance/accession to NPT, 401, 413–414
 reunification goals, 412
 superpowers’ concerns over
 potential nuclearization of, 18
 U.S. nonproliferation efforts, 401–414
 Eisenhower administration policies, 395, 398, 402–403
 Johnson administration policies, 396, 406–414
 Kennedy administration policies, 396, 400, 403–406
 U.S. threats of abandonment, 82
 willingness, post-program development, 69
see also specific adversaries and allies; specific leaders
- Westinghouse, 93, 106
- Wilkerson, Larry, 167
- willingness/opportunity constraints on proliferation
 cost of nuclear program and, 43
 effects on alliances, 52t
 in nuclear politics, 6–7
 in strategic theory of nuclear proliferation, 36–37
 willingness threshold, 47–48, 47f
see also historical patterns of nuclearization; strategic theory of proliferation; specific countries

Wilson, Harold, 407, 409
Wolfowitz, Paul, 142n286

Xia, Yafeng, 211
Xue Litai, 216

Yeltsin, Boris, 166–167
Yugoslavia
 abandonment of nuclearization,
 76, 78–79
 lack of benefit from allied
 protection, 78
 nuclear development, adversaries,
 and allies, 73t
 power, alliances, and nuclear
 proliferation, 80f

summary of nuclear
 development (1954–1961),
 478–479
summary of nuclear development
 (1974–1987), 479
see also specific adversaries

Zhou Enlai
 on peaceful reunification of
 Korea, 282
 policies on Japan, 369,
 372, 373
 policies on U.S., 204, 205,
 249
Zia ul-Haq, Mohammed, 338–339,
 341–342, 351–352