Index

P $\xi$-stable coalition structure 199
$\omega$-stable coalition structure 190
absorbing state 102
admissible imputations 171, 195
Agency (Game 6.2) 91–93
aggregation of strategies 141–2, 208–16
anonymous (solutions) 125
anticoordination game 62
arm-wrestling 69, 73
Arrow impossibility theorem 112, 115
Arrow, Kenneth 112
assurance principle 31, 38, 151, 181
assurance value 31, 151–4
auction 117–20
Aumann, Robert 3, 6, 27, 38, 40, 41, 43, 48, 71, 75, 97, 172, 208
Aumann’s Game (Game 5.2) 75, 83
backward induction 86
basic subgame 86
Battle of the Sexes (Game 3.2) 39
Bayesian decision making 43
Bayesian Nash Equilibrium 111
behavior strategies 13, 16, 36, 85, 148–150
behavioral game theory 46
de Borda 112
bounded rationality 66
bridge (card game) 22
brief (partitions, games) 182, 212
Buffet, Warren 134
burnt bannock 74

candidate solution 173, 190, 197
Centipede Game with threat 105
Centipede Game (Game 6.4) 104
characteristic function see coalition function

city-state 234
Clark, J.B. 222
classical game theory 46
coalition function 18, 21, 30, 34, 38 41
151, 187, 236
coalition structure 22, 43, 54
coalitional cost 221
coalitional deviation 178
coalitional egoism 128
coalitional play 208–26
coalitional preferences 219–221
coalition-proof equilibrium 64
Coalitions among colleges (Game 8.4) 136
commitment 155–62, 232
revocable 143
Two-Person Game (Game 10.3) 157
Complementary Market Entry (Game 5.3) 79
conditional transfer 143
Condorcet 112, 118
Conflict among Three Nations (Game 4.7) 63
consensus game 191–3
consistent conjectures 62–63, 192–3
constant-sum game 58
consumers’ cooperatives 30, 134
consumer’s surplus 89
contestability 146
contingent claims 79
contingent fee 91
contingent strategy 2, 8, 16
cooperative commonwealth 242
coopetition 54
coordination games 59–61
core assignment algorithm 128, 188

correlated strategy (equilibrium) 37, 40, 44, 69–84, 212–3

game illustrating (Game 10.1) 148

covariance under strategic equivalence 124, 126

custom 60, 80–82

of the sea 75

decisive voting procedure 115
deviation 173, 197

Doddson, C. L. 112
dominance cycles 177

game illustrating (Game 11.2) 177
dominant strategy 50–52, 55
dominant strategy equilibrium 51–52, 111
dummy player 127, 128, 187
duopoly 41, 96–103

Duopoly Game (Game 6.6) 66, 96–103

economic planning agency 81
efficiency 172, 196
elections 113–116

endogenous coalitions 173, 197
Engels, Friedrich 117, 241–2

Entry Game (Game 2.2) 10, 85–87
evolution 53, 61–62
exchange games 42, 129, 142–147, 237, 238–240

extensive form 10, 85–108, 138–141
externality 6, 21, 89, 150–53 216–19

The Farmers’ Game (Game 9.1) 139–41

The Fender-Bender Game (Game 4.5) 60–61, 81

feudal society 253

film industry 133

The Final Problem (Game 4.3) 57
fine partition 171, 194
focal equilibrium (Schelling point) 39–40, 61

folk theorem 45, 96–103

foresight 37, 175–85, 198–200

forgiving trigger strategy rule 99

Gang Game 227–31

Gibbard-Satterthwaite Theorem 114–15, 162–3

grand coalition 18

granular refinement 172, 195

grim trigger 99

Harsanyi, John 39, 43, 46

Hobbes, Thomas 227

holdout behavior 151

Holmes, Sherlock (fictional character) 27, 56–7

honesty 158–161

Hurwicz, Leonard 109

hybrid solution 54

ideal rationality 161–4

imbedded coalition 21

imbedded game 16, 91, 93–5, 109, 237–43

imperfect recall 8, 22, 36, 138–47, 169, 221

implementation theory 5, 43–44, 109–120, 191

imputation 123

incentive compatibility 109

incredible threat 86

independence of irrelevant alternatives 113, 126

individual rationality 125

indivisibilities 216

industrial organization 62

information set 11, 35

interactive decision theory 3, 5, 8, 9, 25, 28, 93, 95

intercoalition side payments 169, 179

The Intersection Game (Game 4.5) 61–2, 82

intertemporal inconsistency (in decision-making) 155

irreversible events 102

iterated elimination of dominated strategies 34, 55

Jevons, Stanley 78

Kaldor, Nicholas 224

Koczy’s game (Game 11.1) 174–6, 178, 180

Kuhn, Harold 13, 22–3, 35–6, 138, 148
Index

law of one price 143, 146
Lindow man 74
Luce, R. Duncan 37–8, 125
market entry 10, 140
Marshall, Alfred 222
Marx, Karl 117, 241–2
Maskin, Eric 5, 44, 109, 115
McKinsey’s Game (Game 3.1) 34
membership raiding 175, 177, 180
military draft 72
military rank 82
Mill, J. S. 112
minimax 29, 31, 34
mixed strategy 47
monarchy 242
monopoly 142–6
monopoly restriction of output 146
Morgenstern, Oskar 12, 27–32, 105, 122, 160–61
Myerson, Roger 44, 109
naive core 175, 198–201
naive excess 175
naive stability 197
Nash equilibrium 5, 32, 37, 39, 45, 50–68, 88, 95, 103, 153–4
Nash program 33
Nash, John 32, 39, 88, 95, 105, 125, 186
nested game 16, 91
NIMBY, Game 14.1 183–4, 192–3, 209–10
nonaggregative games 142, 169, 208, 216–25
noncomparable utility 151
nonconstant-sum games 29
noncooperative game theory 4, 62, 70, 208
non-envious division 110
non-transferable utility (NTU) 24, 129, 143, 150
normal form 11–16, 29
Normandy invasion game (Game 2.6) 23, 58
normative economics 112
nucleolus 51, 127–8, 146–89, 199–204
null coalition 18
oligopoly 62
see also duopoly
opportunism 93, 98
optimism/pessimism 175, 183
optimistic core 176
Pareto dominance 51
Pareto, Vilfredo 112
Parking Garage Game (Game 5.1) 69
particulate refinement 172, 195
partition 21, 194
partition function 8, 221, 41, 169–185, 190–193, 194, 208, 222, 236
partitional deviations 178, 180, 234
patent rights 87
perfect equilibrium 88
perfect rationality 159–63
perfect recall 138–146, 148
pessimistic core 176
Pigou, A. C. 112
poison gas 99
Political economy 236
The Pollution Game (Game 5.2) 82
with coalitions (Game 10.5) 152
with 5 players (Game 14.4) 217–19
pragmatism 3, 88, 120, 141, 178, 208, 237
Prisoner’s Dilemma 12, 33, 37, 42, 46
production, games with 132–35
production game 237, 240–41
proper game 171, 194, 200, 212, 238
proper refinement 172
proper subgame 16
public good 74
production game (Game 2.5) 20, 123–4, 150–52, 171
production game with 5 players (Game 14.3) 213–6
public policy process 3
Raiffa, Howard 37–8, 125
reciprocity 106
third-party 106
negative 106
recursive core 176
reduced game 55, 86
refinement (of a partition) 21, 172, 194
refinement (of Nash equilibrium) 44, 65

rent-seeking behavior 95
residual contract dynamics 178
residual game 176
residual partition 173
rhetorical interpretation (of cooperative game solutions) 129
Ricardian corn economy 238–242
riparian rights 93
roundabout production 104
Rousseau, J.-J., 18
Schelling, Thomas 3, 39, 61, 90, 155
Schmeidler order 187–8, 202–4
game to illustrate, Game 12.1 187
secondary transfer 145
Selten, Reinhard 14, 42, 44, 46, 87, 105, 154, 164
Horse (Game 2.3) 14, 88
Shapley value 36, 41, 51, 126–7, 129, 135–6, 186, 199, 201, 236
Shapley, Lloyd 36, 41, 125, 129, 150, 186, 236
side payments 18, 23, 123
Simon, Herbert 66
simultaneous ascending auction 118
singleton coalitions 18
Smith, Adam 27, 142
social contract 228
social dilemma 50–3
social mechanism design 5, 109–21
sophisticated rationality 160–64
stability interpretation (of cooperative game solutions) 128
Stag Hunt, Game 2.4 20
state transition matrix 100
state variable 52
stoplight 73
strategic form see normal form
strategic investment to deter entry (Game 6.1) 89–91
strategically equivalent games 124
strategy-proof election rules 114
strong equilibrium 64
subgame 16, 36
subgame perfect equilibrium 44, 45, 85–7, 157–8
subjective probability 43, 58, 72–3
successor function 182–3, 198–99
sunspot 78
superadditive cover 196
superadditivity 6, 20, 22, 31, 43, 195–197
supergame 38, 97
symmetrical solutions 125–6
Talmud, Babylonian 27
Terrorist vs. Defender (Game 4.4) 58–9
tit for tat 45, 98–9
tradeable emissions controls 116–7
transferable utility (TU) 18, 23, 30, 171, 220
TU games 23
transfers, game of 143–6
trembling hand equilibrium 44, 87
trigger strategy rule 98–100
two-by-two games 9, 24
types (of agents in mechanism design) 110
uncertainty 17
utility 16, 18, 28
utopian 109, 235
value of a coalition 18
Vickrey auction 117
von Neumann and Morgenstern solution set 31–32, 201
von Neumann, John 12, 27–32, 105 122, 160–61
voting 43
The VPC Game (Game 14.2) 210–13
water 9, 50, 54–6
The Water Game (Game 2.1) 9, 50–51, 53
weak domination 87
weakness of will 155
welfare triangle 146
zero-sum game 29–30