acyclic rationality, 111
admissible class, 125
agenda, 8, 26
agenda manipulability, 53
aggregation procedure, 8, 9
all-or-none lemma, 72
almost weak dominance manipulable, 149
anonymity, 20
antidictatorship, 23
approval voting, 161
Armstrong, T., 121
Arrow, K., 3, 13, 15, 19, 20
Arrow’s impossibility theorem, 13–20, 69, 72
for social choice functions, 17, 76
for social welfare function, 18, 30, 31, 75
for voting rules, 19, 30, 31
Austen-Smith, D., 20
ballot or A-ballot, 5
Banks, J., 20
Barberá, S., 52, 61, 74, 104, 109, 111, 154, 160
Barberá-Kelly theorem, 102, 109
for linear ballots, 105
for non-linear ballots, 109
Barberá-Sonnenschein-Zhou theorem, 164
Bartholdi, J., 42
binary relation, 4–5
properties, 4–5
Black, D., 7, 9
Blau, J., 72, 121, 155
Blin, J., 123
blocking power, 62, 83, 105
Bonchek, M., 7, 20
Boolean function, 136
Borda, C., 8, 37
Borda count or rule, 9, 25, 44, 57
broad, 14–15, 30
narrow, 14–15
score, 9, 30
Brams, S., 12, 20, 161
Bryce, G., 18
BSZ manipulability,
Buchanan, P., 10
Burani, N., 38
Bush, G., 10, 13
Campbell, D., 20
Carroll, L. (see also Dodgson, C.), 10–12
Ching, S., 95
choice independence of irrelevant alternatives (CIIA), 19, 74, 134, 136
Clinton, W., 12
coalitional manipulability, 122, 124
COMAP, 10
Comfort, W., 120
Condorcet, M., 10
Condorcet rule or method or voting procedure, 10, 24, 44, 58, 59
voting paradox, 10, 30
winner (CW), 10, 149
Condorcet (cont.)
winner criterion (CWC), 149, 162
weak versions (WCWC), 147
ultrafilter versions (U-Condorcet winner), 126
constant-sum hypergraph, 137
Coomb’s rule, 26, 27, 48
Copeland’s function or rule, 9, 25, 48
Crofton, M., 10
cumulative voting, 12
Deb, R., 155
decisive, 121
deFinetti, B., 38
Denicolo, V., 18
derived relations, 5, 29
dictating set, 62, 73
pairwise, 115
dictators, invisible (see also ultrafilters), 121
dictatorships, 14, 23, 44, 58, 141
weak, 68
Dodgson, C., 10–12, 37
down-monotonicity, 63
for singleton winners with a voting rule, 83
for singleton winners with a social choice function, 105
downward normal, 111
dual, 137, 138
Duggan, J., 7, 53, 82, 152, 166
Duggan-Schwartz theorem, 53, 81, 87, 99
for linear ballots, 82
for non-linear ballots, 87
dummy, 58
duple (probabilistic voting rule), 165
Dutta, B., 167
duermvirates, 23, 44
edges, 136
Euclid’s axioms, 69
E_{a, R}(X), 95
existence lemma, 64, 84, 106, 115
expected utility manipulation, 41–42, 43, 44, 95, 101
for probabilistic voting rule, 165
Feldman, A., 20, 24, 53, 91, 154, 156, 157
Feldman’s theorem, 88, 94
Felsenthal, D., 12–13, 20
figure skating, 16
filter, 120
Fishburn, P. 3, 4, 7, 8, 9, 12, 16, 20, 38, 54, 74, 121, 161
Galton, J., 10
Gardenfors, P., 7, 42, 61, 149
Gardenfors theorem, 147, 152
Geanakoplos, 74
Gendron, M., 42
Gibbard, A., 61, 91, 108, 166
Gibbard’s theorem, 160, 164, 166
Gibbard-Satterthwaite theorem, 51, 60, 68, 69, 72–99
for linear ballots, 61
for non-linear ballots, 68
for non-resolute voting rules, 51, 67
with non-imposition, 67
G_i(z) or G(z), 57, 89
Gore, A., 10, 13
graph, 136
Guilbaud, G., 121
Guinier, L., 12
Hansson, B., 18, 121
Hare, T., 11, 26
Hare rule or system, 11, 27, 28, 48
hypergraph, 136
constant sum, 137
monotone, 138
independence of irrelevant alternatives (IIA), 16, 17
binary, 111
choice (CIIA), 19, 74, 134
monotone (MIIA), 70
pairwise, 18
weak pairwise with ties in the ballots, 114
indifference, 5
invisible dictator (see also ultrafilter), 121
iterated plurality rule, 27, 48, 58
Johnson, W., 18
Kelly, J., 19, 20, 52, 53, 104, 154
Kemeny’s rule, 27
Kindl, R., 42
Kirkman, A., 121
LaPlace, P., 9
Lauwers, 121
Levenglick, 27
linear ordering, 5
separable, 163
strict, 5
Llull, R., 10
localized (probabilistic voting rule), 165
local nominator, 154, 156
MacIntyre, I., 113
MacIntyre-Pattanaik theorem, 114, 117
majority rule, 59
Makinson, D., 72
manipulability
agenda, 53, 54, 56
by optimists and pessimists, 39–41, 42, 43, 44, 53, 58, 59, 81
coalitional, 122
expected utility, 41–42, 43, 53, 58, 59
for probabilistic voting rules, 165
for resolute social choice functions, 141
for resolute social welfare functions, 142
for resolute voting rules, 60
single-winner, 38, 48, 58
weak-dominance, 38–39, 52, 56, 57, 58
almost weak dominance, 149
max version and min version, 39, 43, 58
weak dominance on the agenda v, 103
max_i(X, P), 6
McLean, I., 9
Merlin, V., 27
Mihaela, H., 122, 123, 124, 125
Mill, J., 11
min_i(X, P), 6
Monjardet, B., 18, 27, 72, 123
monotonicity or monotone, 21
hypergraph, 138
independence of irrelevant alternatives (MIIA), 70
strong, 134
Morgenstern, O., 13
Moulin, H., 7, 12, 30, 61, 133
Muller, E., 133
Nader, R., 10
Nandeibaum, S., 166
Nanson, E., 10
near-unanimity rule, 22, 44, 58
Nejepontis, S., 120
neutrality, 20, 138, 143
 Nicholas of Cusa, 9
nomining set, 105
nomination with second rule, 22, 44, 51
nominator, 52
local, 154
non-dictators, 14, 17, 18, 19
non-imposition, 21
non-manipulable – see manipulation normal, 111
downward, 111
upward, 111
weakly downward, 114
Nurmi, H., 20
oligarchic procedure for pairs, 108
oligarchies, 23, 51
pairwise, 52
omninomination rule, 22, 51, 59, 83
ordering, 5
strict linear, 5
weak, 5
Orlin, J., 42
pairwise
dictating set,
down monotonicity for singleton winners, 105
IIA, 18
nominator, 103
non-imposed, 52, 103
oligarchy, 52, 108, 109
proper, 153
Pareto, 14, 17, 18, 19, 21
Pareto rule, 25, 44, 58, 159
with dummies, 113
Pattanaik, P., 113
Pazner, E., 122, 123
plurality rule or plurality voting, 11, 22, 44, 58, 59
iterated, 27
runoff rule or procedure, 22, 48
principal ultrafilter, 120
probability function, 41
profile or (A, N)-profile or linear profile, 5
Pukelsheim, F., 9, 10
quasitransitivity, 52, 104
quota system, 161, 164
Ramamurthy, K., 138
residual resoluteness (RR), 152
resolute
voting rules, 8, 60, 77, 133, 146
social choice functions, 8, 28
social welfare functions, 8, 142, 146
restriction of ballots and profiles, 6
Riker, W., 3, 20, 37, 53, 54, 61
Saari, D., 20, 27, 70
Satterthwaite, M., 61, 133
Savage, L., 38
Schmeidler, D., 61
Schwartz, T., 7, 53, 82, 152
Sen, A., 7, 14, 20, 56
Sen, Arunava, 61
separability of a linear ordering, 163
sequential pairwise voting or rule, 11, 26, 48, 100
Shepsle, K., 7, 20
simple game, 138
single-transferable vote system, 11
single-winner manipulability, 38, 42, 44, 48, 51, 57, 58
Slomson, A., 120
social choice function, 8
social welfare function, 8, 77
social welfare relation, 119
Sondermann, D., 121
Sonnenschein, H., 61, 160
splitting condition or splitting lemma, 65, 73, 74, 85, 106
Smith, D., 42
Strafin, P., 11, 20
strict linear ordering, 5
strict preference, 5
strong monotonicity, 134
strong positive association, 134
sure-thing principle, 149, 151
Suzumura, K., 20
Tanaka, Y., 166
Taylor, A., 7, 9, 11, 18, 20, 61, 82, 137, 139
Taylor, G., 24
tie-breaking scoring system, 57
Todd, C., 1, 10
top condition, 34
top set, 82, 165
top, (P), 6
transitive rationality, 16, 17, 54
triumvirates, 23, 51, 59
U-Condorcet winner, 126
ultrafilters, 120
principal, 120
unanimity, 21, 109
unanimity rule, 21, 51, 59
unilateral (probabilistic voting rule), 165
upward normal, 111
Urken, A., 9
utility function, 41
Van Liedekerke, 121
vertices, 136
viable alternative, 139
von Neumann, J., 13
voting rules, 8, 20–29, 77
anonymous, 20
monotone, 21
neutral, 20
non-imposed, 21
non-resolute, 81, 96, 147, 159
probabilistic, 165
dupie, 165
localized, 165
probabilistic mixture thereof, 165
unilateral, 165
resolute, 8, 20–29
unanimous, 21
yes-no, 138
weak
Condorcet rule, 25, 48, 58
Condorcet social choice function, 113
Condorcet winner (WCW), 147
Condorcet winner criterion (WCWC), 147
dictator, 68
dominance manipulability, 38–39, 42, 44, 147
almost weak dominance manipulable, 149
on the agenda v, 103
max and min versions, 39, 45
downward normality, 114
ordering, 5
pairwise IIa with ties in the ballots, 114
Wesley, E., 122, 123
Wiles, A., 70
Wilson, R., 70
yes-no voting system, 138
Young, P., 27, 57
Zermello-Frankel axioms, 69
Zhou, L., 95, 160
Zwicker, W., 24, 38, 137, 139