Index

Page number in italics refers to figure

Abello, J., 74
Aggregation
defined, 10
weighted majority deadlock in, 13–15
Aggregation algorithm, as Condorcet winner, 77–78
Aggregation method, choice of, 11–13
Arrow, K. J., 28, 43
Arrow’s axiomatic system
difficulties with, 21–23
independence of irrelevant alternatives in, 18–19
and multicriterion ranking process, 18–23
positive responsiveness in, 19–20
proof of, 20–21
unrestricted domain in, 18
Arrow-Black single-peakedness,
and majority method, 43–46
Ayel, M., 97

Bipartition. See Inada’s conditions
Bipartition condition, and NITM
condition, 61–66
Bipartition with reference ordering, defined, 54
Black, D., 28, 37, 41
Black’s condition, and majority
method, 37–38
Borda, J. C., 88

Cj, graph of, 52–57, 53
Cj conditions, and majority
method, 47–49
Condition for transitivity of
method of majority decision (CTMM). See CTMM
Condorcet winner, aggregation algorithm as, 77–78
Coombs, C. H., 28, 34
Coombs’s condition, and majority
method, 34–37
Craven, J., 90
Criteria
attributes as, 8
objectives as, 8–9
CTMM (condition for transitivity
of method of majority decision), 48
operations on, 50–52

Decision-making, memory and, 11–13
Duncker, K., 9, 23
Dutta, B., 27

Ebbinghaus, H., 11
Electre, 111–112

Farquharson, R., 26
Ferejohn, J., 90
Fishburn, P. C., 83
Index

Gehrlein, W. V., 28
Gibbard, A., 27
Grether, D., 90
Guilbaud, G. Th., 28

Inada, K.-I., 59
Inada’s conditions
degree of diversity allowed by, 66–68
for majority rule, 59–68
not-in-the-middle condition (NITM) and, 59–68

Kemeny, J. G., 95
Köhler, G., 44, 47, 50, 89, 91, 92, 103
Köhlerian axioms, 89–100
proofs of, 91–100
Kramer, G. H., 46, 74, 90, 95

Levenglick, A., 95

Majority method, for multicriterion ranking, 25–28
Arrow-Black single-peakedness
and, 43–46
bipartition with reference ordering and, 54
Black’s condition and, 37–38
Cp conditions and, 47–49
Coombs’s condition and, 34–37
failure of, 74–75
Inada’s conditions for, 59–68
notation for proof of, 31, 48
outranking methods and, 101–103
Romero’s arboricity and, 38–40
Romero’s quasi-unimodality and, 41–43
transitivity of, 33–57
Ward’s CTMM and, 48–49

M.A.R.S.A.N. method, of multicriterion problem solving, 9
Maskin, E., 28
May’s axiomatic system, 23–25
Morton, G., 59

Multicriterion ranking process. See also Majority method for multicriterion ranking; specific systems
aggregation process in, 10–15

Arrow’s axiomatic system and,
18–23
identification step in, 8–10
Köhlerian axioms and, 89–100
May’s axiomatic system and, 23–25
memory and, 11–13
outranking axioms and, 83–100
outranking methods and, 101–110
selecting criteria in, 8–9
steps in, 7–15
strategic majority voting and, 25–28
transitivity of majority rule and,
33–46, 47–57
weighted majority deadlock in, 13–15

Newing, R. A., 41
NITM (not-in-the-middle) condition
bipartition condition and, 61–66
and Inada’s conditions, 59–68

Outranking axioms, 83–100
Köhlerian axioms, 89–100
sequential independent axioms, 83–89

Outranking methods, 101–110
Arrow-Raynaud’s method, 105–108
Arrow-Raynaud’s primal algorithm, 105
Electre, 111–112
Köhler’s dual algorithm, 104
Köhler’s method, 103–105
Köhler’s primal algorithm, 104
and majority method, 101–103

Pattanaik, P. K., 27
Peleg, B., 27

Raynaud, H., 47, 52, 55, 61, 62, 74
Reasonable limitation axioms, 70–73
alternativewise robustness, 70
criteriawise robustness, 70–71
and value restriction condition, 70–73
Romero, D., 28, 38, 44, 47, 50
Romero's algorithm, 113-117
pyramid array in, 113-114
snake(s) in, 114
Romero's arboricity, and majority
method, 38-40
Romero's quasi-unimodality, and
majority method, 41-43

Satterthwaite, M. A., 27
Sen, A.K., 69, 71
Sequential independence axioms,
83-89
decreasing sequential indepen-
dence, 86
dichotomous sequential indepen-
dence, 87
increasing sequential indepen-
dence, 86
sequential independence prin-
ciple, 84-86
Smith, J. H., 89
Snell, J. L., 95
Susmann, B., 9

Ungar, G., 11

Value restriction conditions, 69-75
reasonable limitation axioms and,
70-73
"Voting paradox," 28

Ward, B., 71
Ward's CTMM, and majority
method, 48-49

Young, H. P., 89, 95