

INDEX

- absolute agreement ICC, 87, 89, 90
- Adamson, Lauren B.
 - joint engagement codes, 15
 - joint engagement ratings, 22
- adjusted residual, 110, 128
 - how distributed, 110
- agreement. *See* event-based, interval-based, observer, point-by-point, time-based, summary
- agreement matrix, 59
- alignment
 - algorithm for single-code event data, 74
 - algorithm for timed-event data, 79
 - example for single-coded events, 75
 - matrices, 74
 - transformations, 74
 - why needed, 73
- alignment kappa (for single-coded events), 76
- Altmann, Jeanne, 19, 32
 - definitions for event, state, 2, 32
 - on sampling, 36
- analytic units, 4
- AND command, 119
- asymptotic *p* values, 156
- automated coding, 20

- Bakeman & Brownlee
 - object struggle codes, 39, 144
 - parallel play codes, 10
- Bakeman & Helmreich, daily activity codes, 14
- Barker, Roger, 2, 8
- Belsky & Most, infant play codes, 16
- between-subjects. *See* factors
- binary recode, 127
- binomial test. *See* sign test
- Bonferroni correction, 128

- Bornstein, Marc, people-object codes, 17
- BOUT command, 121
- bout duration
 - mean, 100
 - min and max, 100
- categorical-scale measurement. *See* nominal-scale
- CHAIN command, 123
- chi-square, 129. *See* likelihood-ratio, Pearson
- code names
 - recommendations for, 23
 - rules for, SDIS, 46
 - single-character, SDIS, 47
- code prevalence, 63, 65
- codes
 - can and cannot repeat, 108, 140
 - concreteness (physically, socially based), 19
 - granularity (micro to macro), 18
 - mutually exclusive, exhaustive, 21
 - number of, effect on kappa, 66
 - vs. rating scales, 21
- code-unit grid, 53
- coding manual, 22
- coding methods. *See* computer-assisted, lexical chaining, post hoc
- coding schemes
 - development of, 13
 - examples. *See* Bakeman & Brownlee, Bakeman & Helmreich, Belsky & Most, Bornstein & Cote, Ekman & Friesen, Fossey, Konner, Oller, Parten, Pianta, Smith, Ueno & Matsuzawa, Wolff
- Cohen's kappa, 59, 72, 81
- combination codes, SDIS, 49
- commission errors, 59, 69

- computer-assisted coding systems, 37, 54, 124.
 See Mangold INTERACT, Noldus The Observer
- conditional independence in log-linear analysis, 142
- conditional probability, 108
- confidence intervals. *See* odds ratio
- confusion matrix, 60
- context codes, SDIS, 49
- contingency indices. *See* log odds, odds ratio, Yule's Q
- co-occurrence, 106
- correlational studies, 3
- criterion-referenced ICC, 87, 90
- Cronbach's internal consistency alpha, 91
- cross-recurrence plot, 150
- data management, 54
- data modification commands, 119. *See* AND, BOUT, CHAIN, EVENT, LUMP, NOR, NOT, OR, RECODE, REMOVE, RENAME, WINDOW, XOR
- data modification, benefits of, 118, 124
- data reduction, 43, 93
- data transformations and recodes, 128
- data types in SDIS, 44. *See* interval, multicode, single-code, state, timed-event
- declaration, SDIS, 46
- degrees of freedom
 for chi-square, 111
 in log-linear analysis, 141
- deviant cells, 128
- digital recording, advantages of, 37
- dot plot. *See* recurrence plot
- duration, 97
 for interval and multicode data, 97
 for single-code event data, 97
 for timed-event data, 97
 relative. *See* relative duration
- dynamic programming, 73
- Ekman, Paul, facial action coding system (FACS), 20
- embedding dimension in recurrence plots, 149
- empirical zeros, 76
- episode for interval and multicode data, 96, 99, 100, 102
- estimated duration for interval data, 97
- event
 J. Altmann's definition. *See* Altmann
 onset and offset times, 48
 EVENT command, 121
 event data, 72. *See* multicode, single-code, state, timed-event
 event recording, 26
 event-based agreement, 72, 78
 exact *p* values, 156
 exclusive offset times, 46
 exhaustive. *See* mutually exclusive and exhaustive
 expected frequency, 109
 experimental studies, 3
 export files, 127
- factors, 4
 between-subjects, 4
 in SDIS, 48
 pooling over. *See* pooling
 within-subjects, 5
- file formats, 55
- files. *See* export, MDS, SDS, tab-delimited
- Fossey, Dian, gorilla vocalization codes, 23
- frames, number per second, 38, 45
- frequency, 95
 for interval or multicode data, 96
 for single-code or timed-event data, 96
 relative. *See* relative frequency
- G^2 difference test, 130, 141
- gap
 mean between event onsets, 100
 mean between events, 100
 min and max, 100
- Generalized Sequential Querier. *See* GSEQ
- gold standard, 57, 68, 75
 advantages, 68, 69
 disadvantages, 68
- GSEQ, 44, 118
- Haccou & Meelis, alignment algorithm, 80
- hierarchical rule
 when coding, 16
 when tallying, 106
- hypergeometric distribution, 156
- ICC, 58, 87
 and weighted kappa, 82
 formulas for, 91
 models for, 90
 reliability sample, 88
 standards for, 91
 vs. kappa, 58
 vs. *r*, 88
- inclusive offset times, 46

- independence, model of, 129
- instantaneous sampling, 32
- interval data, 50, 77
 - agreement for, 81
- interval duration, 33
- interval recording, 26, 30, 31, 81
 - advantages and disadvantages, 33
- interval sequential data. *See* interval data
- interval-based agreement, 81
- interval-scale measurement, 3
- intraclass correlation coefficient. *See* ICC
- iterative proportional fitting (IPF), 76, 79
- iterative proportional fitting (IPF), 116, 141
- joint frequency, 105
 - tallying interval, multicode, and time-event data, 105, 106
 - tallying lagged single-code event data, 107
- kappa. *See* alignment, Cohen's, timed-event
 - alignment, time unit, weighted
 - agreement vs. reliability, 69
 - factors affecting magnitude, 63
 - formula for, 60
 - no single acceptable value, 83
 - number of codes, effect on, 66
 - standard error, 63
 - standards for, 66, 166, 168
 - statistical significance, 63
 - unsatisfactory guidelines for, 63
 - vs. ICC, 58
 - weighted average of 2×2 tables, 62
- kappa maximum, formula for, 64
- kappa table, 60, 61, 83
 - collapsing into 2×2 tables, 61
- Konner, Melvin, !Kung study, 2, 31
- lagged and unlagged tallies, 107
- lag-sequential analysis, 135, 138
- latency, 100
 - min and max, 100
- lexical chaining, 39
- likelihood-ratio chi-square (G^2), 116
- live observation
 - advantages, 36
 - vs. recorded behavior, 36
- log odds, 113
- logical zeros. *See* structural zeros
- log-linear analysis, 141, 144
 - example, multicode events, 144
 - of interval and multicode event data, 144
 - of single-code event data, 139
- LUMP command, 122
 - vs. RECODE, 122
- macro. *See* codes, granularity
- Mangold INTERACT, 37, 54
- Martin & Bateson
 - definition for duration, 97
 - definition for frequency, 96
 - on recording rules, 27
 - on sampling, 36
- MDS file (modified SDS), 118
- mean bout duration. *See* bout duration
- mean gap. *See* gap
- mean latency. *See* latency
- measurement scale. *See* nominal, interval,
 - ordinal, ratio
- micro. *See* codes, granularity
- missing data, 115, 127
- molar. *See* codes, granularity
- molecular. *See* codes, granularity
- momentary events, 50
- momentary sampling, 32, 34
 - vs. one-zero, 33
- multicode event data, 50
- multiple streams, SDIS, 50
- mutually exclusive and exhaustive, 59
 - defined, 15
 - making codes exhaustive, 16
 - making codes mutually exclusive, 15
 - should codes be ME&E, 17
- narrative reports, 2, 57
- Needleman-Wunsch algorithm, 73
- Noldus The Observer, 37, 55
- nominal-scale measurement, 3, 58, 93
- NOR command, 120
- norm-referenced ICC, 87, 90
- NOT command, 119
- novelty scores in recurrence plots, 154
- observational methods, reasons for, 6
- observed joint frequency. *See* joint frequency
- observer accuracy, 63, 65
 - reasons why important, 57
- observer agreement, 57
- observer bias, 63
 - and kappa maximum, 64
- observer drift, 23
- observer training, 58, 65, 84
- observers
 - as cultural informants, detectors, 20

- odds ratio, 112
 - 95% confidence intervals, 114
 - guidelines, 114
- offset times. *See* inclusive, exclusive
- Oller, Kimbrough, infant vocalization codes, 20
- omission errors, 59, 69
- one-zero sampling, 32
 - vs. momentary and whole-interval, 33
- onset and offset times. *See* event
- optimal global alignment, 73
- OR command, 119
 - vs. RECODE, 120
- ordinal-scale measurement, 3, 58
- outcome variables, 4
- overlapped sampling of *m*-event chains, 139
 - vs. nonoverlapped, 139
- paper and pencil, when best used, 41
- Parten, Mildred, social participation codes, 8
- partial-interval sampling, 32, 62
- Pearson chi-square (χ^2), 116
- Pearson correlation coefficient, 87
- percentage agreement, 60
- permutation tests, 156
 - example of, 157
 - sampled. *See* sampled permutation tests
 - vs. asymptotic tests, 156, 160
- phi coefficient (ϕ), 114
- physically based codes. *See* codes
- Pianta, Robert, classroom codes, 35
- point sampling, 32
- point-by-point agreement, 58
 - vs. summary, 59
- pooling
 - advantages of, 126
 - aversion to, 125
 - over sessions, factor levels, 125
- post-hoc coding, 39
- predictor variables, 4
- predominant activity sampling, 33
- probability, 98. *See* conditional, transitional
 - for interval and multicode data, 98
 - for single-code event data, 98
 - for timed-event data, 98
 - vs. duration, 98
- PSEQ computer program, 158
- quasi-independence, model of, 130
- RAP computer program, 153
- rate, 96
 - vs. frequency, 96
- rating scales, 21
 - and weighted kappa, 83
- ratio-scale measurement, 3, 58, 93
- raw residual, 109
- RECODE command
 - for interval, multicode, and timed-event data, 120
 - for single-code data, 122
 - vs. LUMP, 122
 - vs. OR, 120
- recorded behavior
 - vs. live observation, 36
- recording strategies, 26. *See* event (timed event, untimed-event), interval, selected interval
- recurrence analysis, 148, 156
- recurrence plot, 148
- reference set in permutation tests, 156
- relative consistency ICC, 87, 89, 90
- relative duration, 98
 - for single-code event data, 98
 - for timed-event, interval, and multicode data, 98
- relative frequency, 96
- REMOVE command, 123
- RENAME command, 123
- repeat. *See* codes, can and cannot
- research factors. *See* factors
- residual. *See* adjusted, raw, standardized
- residual code, in GSEQ, 106
- sampled permutation tests, 158
 - example of, 158
- sampling
 - of intervals. *See* instantaneous, momentary, one-zero, partial interval, point, predominant activity, whole-interval
 - of single-coded events. *See* overlapped
- sampling unit, 5
- saturated model, 141
- SDIS, 44
- SDS file (SDIS formatted), 118
- selected-interval recording, 27, 34
- sensitivity, 69
- sequential analysis, defined, 134
- Sequential Data Interchange Standard. *See* SDIS
- sequential data types. *See* data types in SDIS
- session
 - as basic analytic unit, 5
 - defined, 5
 - SDIS notation, 47

- start and stop times, 47
- sessions, pooling over. *See* pooling
- sign test, 137
 - example, 138
- similarity map. *See* recurrence plot
- single-code event data
 - agreement for, 72
- skew. *See* standardized
- Smith, Peter, developmental progression
 - codes, 9
- socially-based codes. *See* codes
- specificity, 69
- spreadsheets, 53
- standardized residual, 110
- standardized skew, 128
- start and stop times. *See* session
- state data, 50
- state, J. Altmann's definition. *See* Altmann
- statistical packages, 53, 118, 124
- statistical significance, 128
- statistics for 2×2 tables, 104. *See* log odds, odds ratio, Yule's Q
- statistics for contingency table cells, 104, 105. *See* adjusted residual, conditional probability, expected frequency, joint frequency, raw residual, transitional probability
- statistics for contingency tables, 104.
 - See* likelihood, Pearson chi-square
- statistics for individual codes, 93, 99. *See* bout duration, duration, frequency, gap, latency, probability, rate, relative duration, relative frequency
 - frequency vs. duration, 101
 - rate vs. probability, 101
- recommendations for single-code event data, 101
- recommendations for timed-event data, 101
- redundancies among, 102
- relative frequency vs. probability, 101
- Stevens, S. S., measurement scales, 3
- streams, multiple. *See* multiple streams
- structural zeros, 75, 76, 79, 108, 130
- summary agreement, 58
 - vs. point-by-point, 59
- summary scores, 93, 104
- systematic observation defined, 3
- tab-delimited file, 127
- time
 - accuracy of, 45
 - discrete view of, 53
 - formats for, 38, 45
 - SDIS formats, 46
- time sampling, 26, 27, 31. *See* interval recording
 - as defined by Arrington, 34
- time series data, 134
- time windows
 - for time-window sequential analysis, 136
 - in recurrence plots, 149, 150
- time-based agreement, 77
- time-budget information, 14
- timed-event alignment kappa, 79, 84
- timed-event data, 77
 - agreement for, 77, 78
- timed-event recording, 26, 29
- times
 - onset and offset. *See* event start and stop. *See* session
- time-unit kappa, 77, 84
- time-unit kappa with tolerance, 78
- time-window sequential analysis, 135
 - example, 136
- transitional probability, 109
- type I error, 110, 128
- Ueno & Matsuzawa, food transfer
 - codes, 18
- untimed-event recording, 26, 28
- vulnerability to zero cells, 2×2 table statistics, 115
- weighted kappa
 - and ICC, 82
 - and rating scales, 83
 - formula for, 82
- whole-interval sampling, 32
 - vs. one-zero, 33
- WINDOW command, 124, 136
- winnowing
 - for adjusted residuals, 129
 - in log-linear analysis, 143
- within-subjects. *See* factors
- Wolff, Peter, infant state codes, 14
- XOR command, 120
- Yoder & Symons, 23, 135
 - on ICCs, 89, 92
 - on sampling, 27, 35, 36
- Yule's Q, 114