CAMBRIDGE

Cambridge University Press
978-1-107-05389-2 - Research: A Biologist's Guide to Articles, Talks, and Posters
R. S. Clymo
Index
More information

Index

Page numbers in ***bold italic*** are for ***tables***; in *italic* for *figures*

abbreviations, 9, 12
  journal titles, 312, ***312***
  Latin, 145
  units, 199
article, scientific, 3–47
  abstract, 10–11
  acknowledg(e)ments, 23
  choosing a target. *See* journal: choosing a target
  concepts, misunderstood. *See* words, technical
  conclusions, 23
  discussion, 21–22
  elements in, 13
  how long to publish?, 37
  introduction, 12
  keywords, 9, 10
  letter to editor, submission, 46
  methods, 16–18
  misused words. *See* words, often misused
  preparation, advice, 39–47
  publication
    duplicate, 37, 110
    fragmented, 35
    salami-slicing, 35
    SPU (smallest publishable unit), 35
  purpose of, 8
  references, 24
  results, 18–21
  'scientific English', 6
  sections, ***7***
  solicited, 36
  structure, special
    CONSORT, MOOSE, QUORUM, STARD, 5
  structure, standard, 4
  summary, 10–11
  supplementary materials, 26
  symbols and abbreviations, 12
  symposium or conference, 36
  tables and figures, 25
  title, 7–10
author, scientific, 101–115
  concept of, 107
  criteria for, 113–114, ***114***
  deluded, 111
  fraudulent, 110

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-1-107-05389-2 - Research: A Biologist's Guide to Articles, Talks, and Posters
R. S. Clymo
Index
More information

author, scientific (cont.)
ghost, 112
graduate and supervisor, 108
guest. *See* author, scientific: parasitic
numbers per article, 108
parasitic, 109

Bayes, 258
Bibliography (for this book), 317

CC (citation count), 28
CI (citation index), 28
CI (confidence interval), 229, 255, 289
citation type
author–date (Harvard), 306
citation-number, 307
citing. *See* referencing and citing
CLT (central limit theorem), 226
CMYK. *See* figures: colour
common sense, place for, 260
copyright, 58–62
correlation, 250
example, egg size and numbers, *256*
example, river flow and sunspots, *254*
patterns of, *250*
count, citation. *See* CC
CV (coefficient of variation), 224

data
types of, ***262***
digits, significant. *See* sigdig
dimensions, 200–210
balance, in equations, 200
inferring, 210
logarithms, and, 203
other than [M], [L], [T], 209
polynomial coefficients of, 208
problem solving, *205*
unbalanced, 202
units, combining with, 201
distribution
normal, 223
Student's '*t*', 227

editor
duties of, 53
functions in publishing, 47–53
equations
dimensions unbalanced, 202
explicit, 200
implicit, 202
implicit, solving, 203
errors
bias, 214
bias with imprecision, *215*
bias, assessing, 216–217
combination of, 237–241, *238*
examples, 240, ***241***
imprecision, 214
normiles, 225
quantiles, 225
quartiles, 225
SD. *See* SD
SEM. *See* SEM
imprecision with bias, *215*
imprecision, quantifying, 221–237
managing, 211–241
material, in, 218–220
measurement, in, 218–220
mistakes, 212
types of, *211*, 212
evidence, the. *See* tables and figures

factor, impact. *See* IF
fallacy, planning, 37
figures
colour in, 277, 297–299
colour-blind, for the, 299
design of, 275
diagrams, line, 294

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-1-107-05389-2 - Research: A Biologist's Guide to Articles, Talks, and Posters
R. S. Clymo
Index
More information

graphs in. *See* graphs
images, 294–296
modes, colour, 297–299
file, format of, 300–304
'.asc', '.txt', 300
'.doc', '.docx', '.odt', '.rtf', 300
'.pdf', '.ps', '.tex', 300
'.raw', '.gif', '.png', '.tif', '.jpg', 302
bitmap. *See* file, format of: rastered
document layout, 300
rastered (bitmap), 301–302
resolution, 301
text, 300
vectored, 301
word-processor, 300
fonts. *See* style: typefaces and fonts
functional analysis, 253, 256
example, river flow and sunspots, *255*

graphs, 273–294
bar plots
categoric, 290
compared, *291*
continuous, 292
discrete, 292
boxed?, 279
design of, 275
misleading, *229*, *256*, *284*
multiple, arrangement of, 278
polynomials, dangers of, *287*, 287
Tufte, 'chart junk', 275
types of, 290
'whiskers' about the mean, *229*
graphs, annotations, 289
graphs, axes
ends (ragged/sharp), 279
miscellaneous, 284
orientation, 278
quotients and ratios, 283
suppressed zero, *277*
ticks, 280
titles, 280
transform, log, 281
zero suppressed, 279
graphs, data
smoothing, *289*
symbols, choice of, 286
graphs, lines, fitted, 286
LOESS, LOWESS, *288*, 289
regression. *See* regression
graphs, radial
pie charts, defects of, 293
wind rose, multivariate data, 293

hypothesis
testing, 246–250, ***251***

IF (impact factor), 29–32, 53
defects of, 29
maximum, by subject, *31*
misuse of, 32
image
manipulation, unacceptable, 294
importance. *See* significance
index
citation, 28
Google Scholar, 32
Hirsch, 29

jargon. *See* style: jargon
journal
articles, number of, subject comparison, *103*
choosing a target, 6, 28–37
growth
in articles, *103*
in authors, *104*
in pages, *102*
types of, *33*

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-1-107-05389-2 - Research: A Biologist's Guide to Articles, Talks, and Posters
R. S. Clymo
Index
More information

kurtosis, 221

labels, graph axes and table headings, for. *See* variable: name and value
likelihood, 258

mean, 221
median, 221, 223, 225
  symbol for, 221

names, Latin, of organisms, 26–27
NHST (null hypothesis significance test), 257–258
normiles, 225
number, numeral, digit, value, figure, 189

offprints, 46, 57
  as pdf, 46, 57

patents, 58–59
pdf
  for slide design, 76
  offprint, in place of, 46
  proofs, 52, 54
poster, scientific
  at the meeting, 98
  design, ***90***
  design, layout, 92–97
  handout. *See* poster, scientific: summary
  leaving for the meeting, 97
  preparing, 89–92
  purpose, 88
  sizes, paper and font, 92, ***95***
  summary, 88, 98
  title, 88
proofs, 54–58
  correction marks, ***56***
property, intellectual. *See* copyright
publishing
  access, gold or green, 66
  open access, 65
  the digital future, 62
punctuation. *See* style: punctuation

quantiles, 225
quartiles, 225

referee. *See* reviewer
References (for this book), 318–325
referencing and citing, 305–314
  titles, journal, abbreviated, 312, ***313***
regression, 251–253
  example, river flow and sunspots, ***255***
reprints. *See* offprints
reviewer, 47–50
RGB. *See* figures: colour

science
  processes, types of, 13
SD (standard deviation), 221–225
  change with sample size, ***228***
  uses of, 221
SEM (standard error of the mean), 226–230
  change with sample size, ***228***
  uses of, 226
SI (Système International), 193–200
  multipliers, 197
  units, ***194***
  units, derived, ***195***
  units, non-standard, ***196***
sigdig (significant digits), 230–237
  examples, ***235***
  random values, sampling from, ***233***
  rules for, ***235***
significance
  is not importance, 260
  P values, 243

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-1-107-05389-2 - Research: A Biologist's Guide to Articles, Talks, and Posters
R. S. Clymo
Index
More information

skewness, 221, 225
speaking about your work. *See* talk, giving a
standard deviation. *See* SD
statistics
  AIC, 258
  Bayes, ***260***
  Bayesian, 258
  'fishing' (mass significance), *246*
  likelihood, 258
  sampling, SD, SEM, *222*
structure, of this book, xiv
style
  abbreviations. *See* abbreviations
  active/passive, 126, 128
  adjectives, use of, 129, 131–132
  ambiguity, 132
  apostrophe, 139
  characters, special, 152
  dates and time, 146
  dominance, first and last elements of, 124
  enclosures, (), [], 142
  footnotes and endnotes, 143
  guidelines, 128–135
  hyphens and dashes, 140
  I/we, 126, 129
  italics, use of, 145
  jargon, 83, 89, 130, 166
  prefixes to names, 144
  punctuation, 136–142
  punctuation, guides, 137
  rules, grammatical, three kinds, 127
  scientific, 125
  typefaces and fonts, 147–152, ***152***
    characters, non-keyboard, ***156***
  verbs, tense of, 127
  words, misused. *See* words, often misused
  words, technical, misunderstood. *See* words, technical
symbols
  chemical, 193
  variables, variates, parameters, 192

tables, 263–273
  author, responsibility for design, 265
  data in, 271
  data, missing, special entries, 272
  entries, order, row/column in, 267
  examples
    data, types of, ***262***
    figures, compared with, ***273***
    Mendel's peas, ***264***
    redesign, power of, ***270***
    solar system, ***269***
  figures, compared with, ***273***
  furniture, 270
  furniture, minimise, 271
  heading/caption, 265
  improvement, by redesign, 268
  layout, 266
  orientation, physical, 267
  portrait/landscape, 267
  row, column, orientation, 267
  strengths, 263
tables and figures
  the evidence, 261–297
talk, giving a, 69–86
  before the performance, 81
  how not to perform, 86
  importance of (Hamming's view), 69
  practice and refine, 80
  purpose, 70
  slide design, *75*
  slide order, 74
  structure of, 72
  summary on paper, 70

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-1-107-05389-2 - Research: A Biologist's Guide to Articles, Talks, and Posters
R. S. Clymo
Index
More information

talk, giving a (cont.)
the performance itself, 82
three performance rules, 82, 85
topic, choosing a suitable, 70
translation, perils of, 72
who will your audience be?, 70
theorem, central limit. *See* CLT
transform, axis
logarithm, 281

units
derived. *See* SI: units, derived
multipliers, SI. *See* SI: multipliers
non-standard. *See* SI: units, non-standard
SI. *See* SI: units
value, part of, 189

value
in text, digits or words?, 190
numerical, range of, 190
thousands separator, 191
variable
ephemeral, 179
name and value, 206
on graph axes, 206, 280
parenthesis convention, 207
slash convention, 206
table rows and columns, 206
units, logarithm of, invalid, 203
variables, relations among
correlation. *See* correlation
functional. *See* functional analysis
regression. *See* regression
variance, 224

word-processor, 39
LaTeX, limited acceptability, 39
mathematical expressions, 39
pdf, reading, 300
words, often misused (alphabetical), 157
'affect' to 'frequent', 158
'gender' to 'may/might', 163
'maximum' to 'shall/will', 167
'significant' to 'yes/absolutely', 172
singular/plural, 172
words, technical, often misunderstood
abscissa/ordinate, 177
amount/concentration, 177
anaerobic/anoxic, 178
Avogadro constant/number, 178
citations/references, 178
constant, 178
control, 179
dilute, 179
efficiency, 179
ephemeral variable, 179
flux, 180
Kelvin/Celsius/centigrade, 180
light, measurement of, 182
magnitude, order of, 185
mol/equivalent, 184
nutrient/limiting factor, 184
order, first, second, 180
parameter/variable, 185
percent/proportion, 186
rate, 186
ratio/quotient, 187
stress/strain, 187
variable/variate, 188
weight/mass/mol, 183

© in this web service Cambridge University Press www.cambridge.org