

Contents

Preface	1
1. Introduction	4
Tools and Data Types	6
Visualization and Probabilistic Inference	12
Direct Manipulation	14
2. Univariate Data	16
Quantile Plots	17
Q-Q Plots	21
Box Plots	25
Normal Q-Q Plots	28
Fits and Residuals	34
Log Transformation	42
Power Transformation	56
Complex Shifts and Robust Fitting	68
Direct Manipulation: Outlier Deletion	80
Visualization and Probabilistic Inference	82
3. Bivariate Data	86
Smooth Curves and Banking	87
Fitting: Parametric and Loess	91
Visualizing Residuals	102
Robust Fitting	110
Transformation of a Factor and Jittering	119
The Iterative Process of Fitting	122
Slicing	128
Discrete Values of a Factor	136
Transforming Factor and Response	142
Bivariate Distributions	146
Time Series	152
Seasonal Components in Time Series	159
Direct Manipulation: Labeling by Brushing	172
Visualization and Probabilistic Inference	177

4. Trivariate Data	180
Coplots of Data	182
Direct Manipulation: Conditioning by Brushing	191
Coplots of Fitted Surfaces	194
Graphing Residuals	205
More on Coplots and Fitting	218
Level Plots of Data	228
Improvisation	232
Contour Plots of Surfaces	238
Level Plots of Surfaces	245
3-D Wireframe Plots of Surfaces	249
3-D Plots of Data: Stereo	256
Level Plots of Surfaces with Superposed Color	257
Direct Manipulation and Shading for 3-D Plots of Surfaces	267
Coplots vs. Factor-Plane Methods	270
Visualization and Probabilistic Inference	270
5. Hypervariate Data	272
Scatterplot Matrices	274
Coplots of Data	276
Coplots of Hypervariate Surfaces and Cropping	282
Multivariate Distributions	293
Direct Manipulation: Enhanced Linking by Brushing	294
Improvisation	296
Visualization and Probabilistic Inference	301
6. Multiway Data	302
Multiway Dot Plots	303
Additive Fits	308
Superposition and Differences	320
The Case of the Anomalous Barley Site	328
Visualization and Probabilistic Inference	339
Bibliography	341
Index	347
Colophon	359