Tabular and Graphical Display of Data

We'll start with Cleveland's ideas; answer the questions on the other sheet and type your answers into my spreadsheet.

Which of the five methods was easiest for you? Hardest? Why?

List what you think some best practices are for labeling and describing a graphical plot.

Tabular Data

"Getting information from a table is like extracting sunlight from a cucumber."
Farquhar and Farquhar, 1891, p55.

"To build any effective display we must have a firm notion of purpose. We cannot know what the best answers are unless we know what the questions are. Thus we must first understand what questions will be asked of data. Any discussion of data display in the abstract is pointless." *Wainer (1997 JEBS)*

Ehrenberg's Strong Criterion for a Good Table: The patterns and exceptions in a table should be obvious at a glance.

Ehrenberg's Weak Criterion for a Good Table: The patterns and exceptions in a table should be obvious at a glance once one has been told what they are.

Things to Consider:

- Round Appropriately
- Order Rows/Columns Sensibly
- Add Row/Column Summaries
- Transpose for easy comparison
  (usually easier to compare numbers down columns)
- Clean layout/proper spacing
- Avoid multivariate tables
- Add labels, titles, explanatory text
- Emphasize unusual values

Start on the top side of your handout. Does the table meet the strong criterion? the weak criterion? Why or why not? What would you change?

Then open up the bottom. What changed? Is this table easier to understand? Why or why not?

UK Vessels

Before

UK Merchant Vessels over 500 tons in Service

	1962	1967	1973
Number of vessels			
All vessels	2,689	2,181	1,776
Passenger	242	173	122
Dry cargo	1,847	1,527	1,165
Tankers	600	481	489
Deadweight in thousands of tons			
All vessels	26,577	27,488	46,763
Passenger	1,467	919	349
Dry cargo	13,990	14,362	20,115
Tankers	11,120	12,167	26,299

After

UK Merchant Vessels in Service

Vessels over 500 tons	1962	1967	1973
Number			
Passenger	240	170	120
Tankers	600	480	490
Dry cargo	1,800	1,500	1,200
All vessels	2,700	2,200	1,800
Deadweight tons (thousands)			
Passenger	1,500	920	350
Tankers	11,000	12,000	26,000
Dry cargo	14,000	14,000	20,000
All vessels	26,000	27,000	47,000

TV Correlations

Before

Correlation among TV audiences

		PrB	ThW	Tod	WoS	GrS	LnU	MoD	Pan	RgS	24H
ITV	PrB	1.000	0.106	0.065	0.505	0.474	0.092	0.473	0.168	0.309	0.124
	ThW	0.106	1.000	0.270	0.142	0.132	0.189	0.082	0.352	0.064	0.395
	Tod	0.065	0.270	1.000	0.093	0.070	0.155	0.038	0.200	0.051	0.244
	WoS	0.505	0.147	0.093	1.000	0.622	0.079	0.581	0.187	0.297	0.140
BBC	GrS	0.474	0.132	0.070	0.622	1.000	0.085	0.593	0.181	0.341	0.142
	LnU	0.092	0.189	0.155	0.079	0.085	1.000	0.049	0.197	0.097	0.266
	MoD	0.473	0.082	0.039	0.581	0.593	0.049	1.000	0.131	0.327	0.122
	Pan	0.168	0.352	0.200	0.187	0.181	0.197	0.131	1.000	0.147	0.524
	RgS	0.309	0.064	0.051	0.296	0.341	0.097	0.326	0.147	1.000	0.121
	24H	0.124	0.395	0.244	0.140	0.142	0.266	0.122	0.524	0.121	1.000

Sports Programs:
PrB: Prof. Boxing
WoS: World of Sport
GrS: Grandstand
MoD: Match of the Day
RgS: Rugby Special

News Programs:
ThW: This Week
Tod: Today
LnU: Line Up
Pan: Panorama
24H: 24 Hours

After

Correlation among TV audiences

Programmes		WoS	MoD	GrS	PrB	RgS	24H	Pan	ThW	Tod	LnU
World of Sport	ITV		.6	.6	.5	.3	.1	.2	.1	.1	.1
Match of the Day	BBC	.6		.6	.5	.3	.1	.1	.1	.0	.0
Grandstand	BBC	.6	.6		.5	.3	.1	.2	.1	.1	.1
Prof. Boxing	ITV	.5	.5	.5		.3	.1	.2	.1	.1	.1
Rugby Special	BBC	.3	.3	.3	.3		.1	.1	.1	.1	.1
24 Hours	BBC	.1	.1	.1	.1	.1		.5	.4	.2	.2
Panorama	BBC	.2	.1	.2	.2	.1	.5		.4	.2	.2
This Week	ITV	.1	.1	.1	.1	.1	.4	.4		.3	.2
Today	ITV	.1	.0	.1	.1	.1	.2	.2	.3		.2
Line Up	BBC	.1	.0	.1	.1	.1	.2	.2	.2	.2	

Unemployment

Before

Unemployment in Great Britain (thousands)

	1966	1968	1970	1973
Total unemployed	330.9	549.4	582.2	597.9
Males	259.6	460.7	495.3	499.4
Females	71.3	88.8	86.9	98.5

After

Unemployment in Great Britain (thousands)

Year	Male	Female	Total
1966	260	71	330
1968	460	89	550
1970	500	87	580
1973	500	99	600
Average	430	86	520

Battery Life

Before

Battery Life in Hours

Battery Brand	Cassette Player	Radio	Flashlight	Portable Computer
Constant Charge	5	19	10	3
Electro-Blaster	10	26	15	4
Never Die	8	28	16	6
PowerBat	7	24	13	5
Servo-Cell	4	21	12	2

After

Battery Life in Hours

Battery Brand	Radio	Flash.	Cass. Player	Port. Comp.	**Brand Averages**
Never Die	28	16	8	6	**15**
Electro-Blaster	26	15	10	4	**14**
PowerBat	24	13	7	5	**12**
Servo-Cell	21	12	4	2	**10**
Constant Charge	19	10	5	3	**9**
Usage averages	**24**	**13**	**7**	**4**	**12**

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Name: _____

Describe one interesting thing you learned about tables or graphs today.