

# BIG IDEAS IN STATISTICS

Gerald Goodall

Director of Education and Professional Affairs  
The Royal Statistical Society

(previously Senior Lecturer, Department of Mathematics and Statistics,  
Brunel University)

Chief Examiner and Principal Examiner in Statistics for OCR (MEI)

# THE REAL WORLD

# VARIABILITY

# DESIGN

For sheer delight, see  
[http://www.york.ac.uk/depts/maths/histstat/images/latin\\_square.gif](http://www.york.ac.uk/depts/maths/histstat/images/latin_square.gif)

# SAMPLING

Sample and population

# “BIAS”

# GRAPHS AND DIAGRAMS

*The Good, the Bad and the Ugly ....*

## EXCELLENT PRACTICE

See Tufte, *The Visual Display of Quantitative Information*  
Could even see <http://www.rss.org.uk/pdf/Graphs%20and%20diagrams.pdf>

## AWFUL PRACTICE

Tufte tells you all about it, with examples!  
OCR's "Uplink" spring 2006  
UCAS et al "What do graduates do?" for 2007  
*And others too numerous to mention ...*

Get a feel for it at <http://www.math.yorku.ca/SCS/Gallery/>

# "MODELLING"

# INFERENCE

# INTERPRETATION

# REAL PROBLEMS

# STATISTICAL LITERACY

## GAISE

Guidelines for Assessment and Instruction in  
Statistics Education

<http://www.amstat.org/education/gaise/>

## NEW ZEALAND MATHS CURRICULUM

[http://www.tki.org.nz/r/maths/curriculum/  
statement/p8\\_e.php](http://www.tki.org.nz/r/maths/curriculum/statement/p8_e.php)