Chapter 2 – Communication

- **"During a statistician's training, however, considerable emphasis is often placed on developing the necessary technical skills, leaving communication as something that can be 'picked up later.' For the consulting statistician, 'later' is no longer an option…" (p.27)**
- **Transfer of information: verbal interactions and emails & summaries/reports/presentations**

§2.1 Verbal Interaction

- *Initiate the Interaction*: **positive first impressions; stop what we doing immediately to get up and greet the client; make eye contact and smile; how much info do we need to know; ask lots of questions; take notes**
- **"In our experience, clients often tend to do two things**
  - **Use statistical terminology inappropriately**
  - **Fails to mention important variables…"**
- *Define the Problem*:
  - **Background: previous papers/analyses**
  - **Status: where are things now, what is time frame?**
  - **Aims: can key hypotheses be tested?**
  - **Expectations: what is my role? Reasonable? This can be problematic re: data cleaning and managing**

- *Technical Knowledge of the Client*: his/her statistical and methodological background – how best to answer the Q "what sample size do I need?" in terms of power or margin of error; educating the client, level of sophistication, formalizing the problem
- *Overall Issues and Objectives*: is the goal merely exploratory or if focused at an objective, is the design and plan adequate to achieve this?; methodology includes data types and outliers; post-experiment
- *Specific Contributions*: clarify roles and expectations regarding data management, data analysis, statistical analysis, report writing and time frame

§2.2 Other Aspects of Verbal Interaction

- **Persuasive communication also includes possibly redirecting the client/team**
- **Important to reiterate background in the initial contact**
- **If the decision time is undoable, it is "crucial that the client is not led to false expectations of our intent to participate …." Knowing when to walk away is key … but problems can result in better future projects!**
- **Possible reasons for dropping a project could include: inadequate sample size, data is biased, we feel the client doesn't really understand the research question,**

we may lack the statistical knowledge (i.e., needed technique), moral or ethical objections
- Need to control any negative reactions to client's possibly annoying idiosyncrasies
- We will improve over time, so be patient

§2.3 How to Write Reports
- "In our contacts with leading researchers in industry, the most prevalent complaint we hear from these scientists is that our statistics graduates have great difficulty in writing reports" ... so we need to practice!
- Need for documentation; limited time frame; readability of our report
- Recommended sections: (1) Title page (includes Executive Summary), (2) Introduction, (3) Results, (4) Conclusion, (5) References, and (6) Appendix

§2.4 Basic Guidelines for Writing
- Reference: Gopen and Swan (1990) at http://www-stat.wharton.upenn.edu/~buja/sci.html
- Loyola's writing center

§2.5 How to Make Effective Presentations
- Slides: not too technical, nor too much material on one slide

- **Handouts can help**
- **Practice your presentation, sometimes typing out (literally) what you will say to check the timing**
- **Nonverbal: face the audience; also, when we are nervous, we tend to rush … so, slow down**

§2.6 The Importance of Quality Graphics
- **See example on p.52**
- **Some further examples:**