Study Error vs. Sample Error

Study Error: eg.:

Estimate the proportion of Torontonian voters who will vote for Rob Ford.

You run a phone survey to estimate the proportion.

The study error is: 1) we have ruled out Toronto voters without phones.

2) Depending on when survey is carried out, response rate could be affected.

3) Votes who live outside Toronto can have Toronto cell #'s.

4) Non-response can be high.

Study error is the systematic skewing of results from the design of the setup.

These study errors cannot be addressed by the techniques of Stat 206.
Instead these errors must be addressed at the design stage.

Sampling Error:

Sampling Error occurs when the chosen sample is not a good representation of the population, for the desired attribute.

e.g.   Population = {A, B, C}

Say there are 3 users of an android app you have written.

Variable: time to complete some task measured in seconds.

Results:

User	A	B	C
Time(s)	2	10	18

mean time = 10s

Consider samples of size 1.

Taking unit A or C gives an estimate that is not a good representation of the population.

This type of error can be quantified using stat 206 techniques.