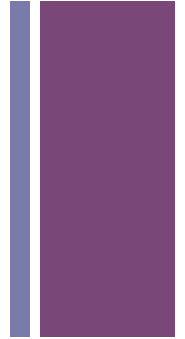


# + Multivariate analysis of variance

- IVs have the same structure as in a standard ANOVA
- Used to predict a set of DVs.
- MANOVA computes a series of ordered orthogonal linear combinations of the DVs (i.e., factors) with the constraint that the first factor generates the largest F if used in an ANOVA.

	<b>Age</b>	<b>Income</b>
<b>Non-Depressed</b>	S1 = 20, S2 = 30, ...	S1 = 30, S2 = 70, ...
<b>Depressed</b>	S51 = 40, S52 = 30, ...	S51 = 20, S52 = 30, ...

# + Discriminant analysis (DA)



- Predicting a nominal variable
  - Used to classify a case into one of two or more populations.
  - You need to know which population the individual belongs to for the initial sample.
  - You classify future individuals whose membership is unknown (prediction).
  - You identify which variables contribute to making the classification (description).
- Mathematically equivalent to MANOVA
- Used when a set of IVs are used to predict the group to which a given unit belongs (a nominal DV).
  - Deciding whether to approve a loan - age, income, marital status, outstanding debt, home ownership, etc..
  - Deciding whether an individual is more or less likely to be depressed - age, income, education, etc..
  - Look for variables that discriminate between students who decide to go to college, professional school, or work.
  - Look for variables that best predict whether a patient is likely to recover 100%, partially, or not at all.