


# Extended Pedigrees

HGEN619 class 2006



## Classic Twin Design

- ACE / ADE
  - heterogeneity
  - multivariate
  - developmental
- Issues
  - generalizability >Additional Siblings

## Example Data

- Study: Virginia 30,000: twins, parents, sibs, spouses, children
- Data: church attendance
- Variable: categorical, 6 ordered categories > 5 thresholds
- Analysis: 2 groups, males

## ACE Model Results

- Parameter Estimates  
a: 0.44      c: 0.59      e: 0.680
- Standardized Estimates + Confidence Intervals  
a<sup>2</sup>: 0.20      c<sup>2</sup>: 0.34      e<sup>2</sup>: 0.46  
CI 0.01-0.20      0.18-0.49      0.42-0.48
- Fit Statistics
  - Estimated parameters: 23
  - Observed statistics: 2807, 1 constraint
  - -2 times log-likelihood of data: 9364.528
  - Degrees of freedom: 2784

## CTD Assumptions

- Random mating
  - Assortment will increase MZ and DZ correlations
  - When fitting ACE model, with assortment present, C will be overestimated
  - When fitting AE model, with assortment present, A will be overestimated
- No Age Moderation
  - When fitting ACE model, with G x age interaction present, C will be overestimated

## Correlations

	Mm	Ff	Mf	Fm
MZ	.64	.63	—	—
DZ	.49	.53	.41	—
Sibs	.41	.47	.39	—
P-O	.49	.49	.49	.46
Spouse	—	—	.74	—