

## In Class 9 – 9

```
require(heplots)
data(MockJury)
model1 <- lm(Years~Attr, data=MockJury)
anova(model1)

## Analysis of Variance Table
##
## Response: Years
##           Df Sum Sq Mean Sq F value Pr(>F)
## Attr       2     71    35.5    2.77  0.067
## Residuals 111   1421    12.8

summary(model1)

##
## Call:
## lm(formula = Years ~ Attr, data = MockJury)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -4.811 -2.811 -0.974  2.189 10.667
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      4.333      0.573    7.56 1.2e-11
## AttrAverage     -0.360      0.816   -0.44  0.660
## AttrUnattractive  1.477      0.821    1.80  0.075
##
## Residual standard error: 3.58 on 111 degrees of freedom
## Multiple R-squared:  0.0475, Adjusted R-squared:  0.0304
## F-statistic: 2.77 on 2 and 111 DF,  p-value: 0.067

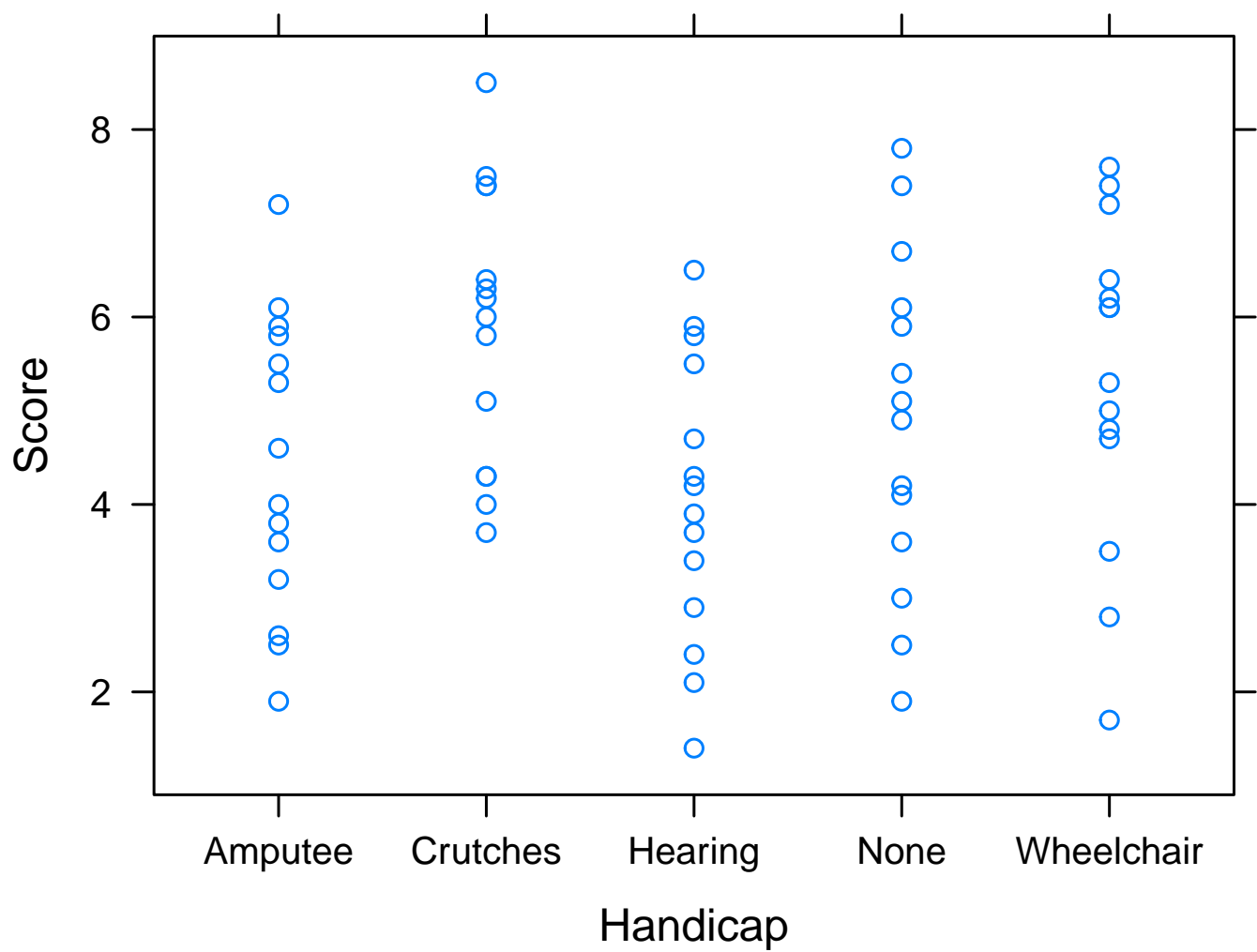
model2 <- lm(Years~Attr-1, data=MockJury)
anova(model2)

## Analysis of Variance Table
##
## Response: Years
##           Df Sum Sq Mean Sq F value Pr(>F)
## Attr       3    2582     861    67.2 <2e-16
## Residuals 111   1421     13
```

```
summary(model2)
```

	Estimate	Std. Error	t value	Pr(> t )
AttrBeautiful	4.3333	0.5730	7.563	1.23e-11
AttrAverage	3.9737	0.5805	6.845	4.41e-10
AttrUnattractive	5.8108	0.5883	9.878	< 2e-16

Study explores how physical handicaps affect peoples perception of employment qualifications. Researchers prepared 5 videotaped job interviews using actors with a script designed to reflect an interview with an applicant of average qualifications. The 5 tapes differed only in that the applicant appeared with a different handicap in each one. Seventy undergraduate students were randomly assigned to view the tapes and rate the qualification of the applicant on a 0-10 point scale. See the plot below. "Score" is the score each student gave to the applicant. "Handicap" is a factor variable with 5 levels.



1. Label  $y_{13}$  and  $y_{65}$ . Assume the numbering of observations starts from the bottom for each group.
2. Label  $\bar{y}_1$  through  $\bar{y}_5$ .
3. Now label  $e_{13}$  and  $e_{65}$ .
4. Label  $\bar{\bar{y}}$ .
5. Just looking at the plot, what do you think the results would be if you conducted a one way ANOVA hypothesis test? Why do you think so?