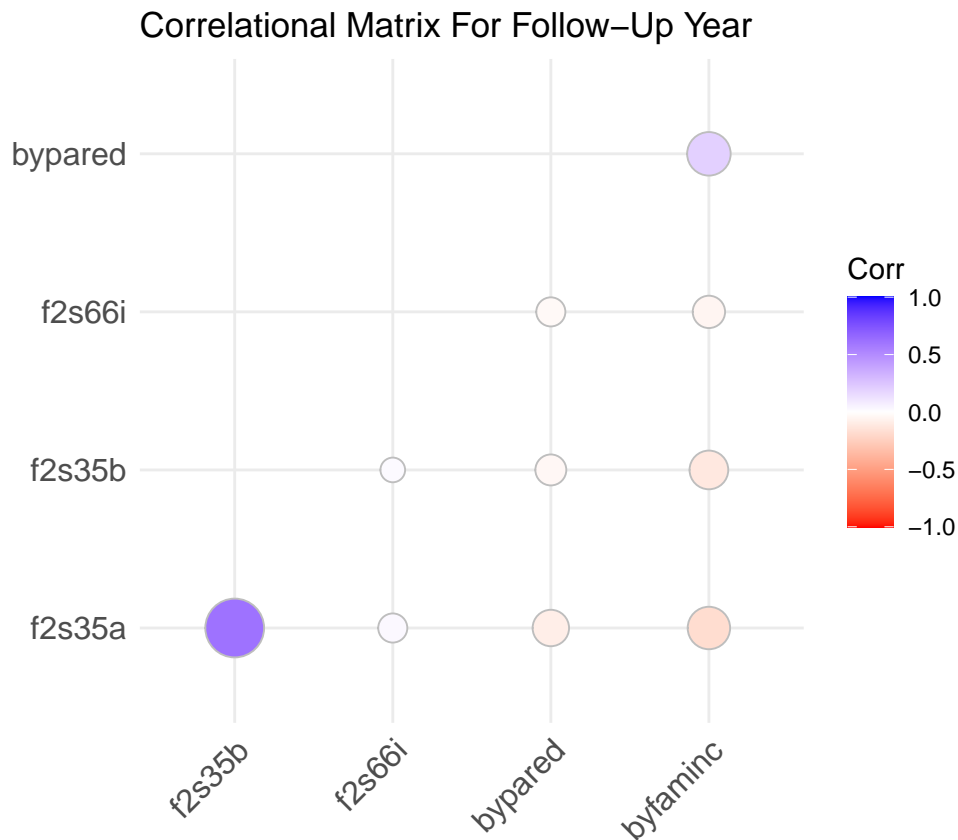
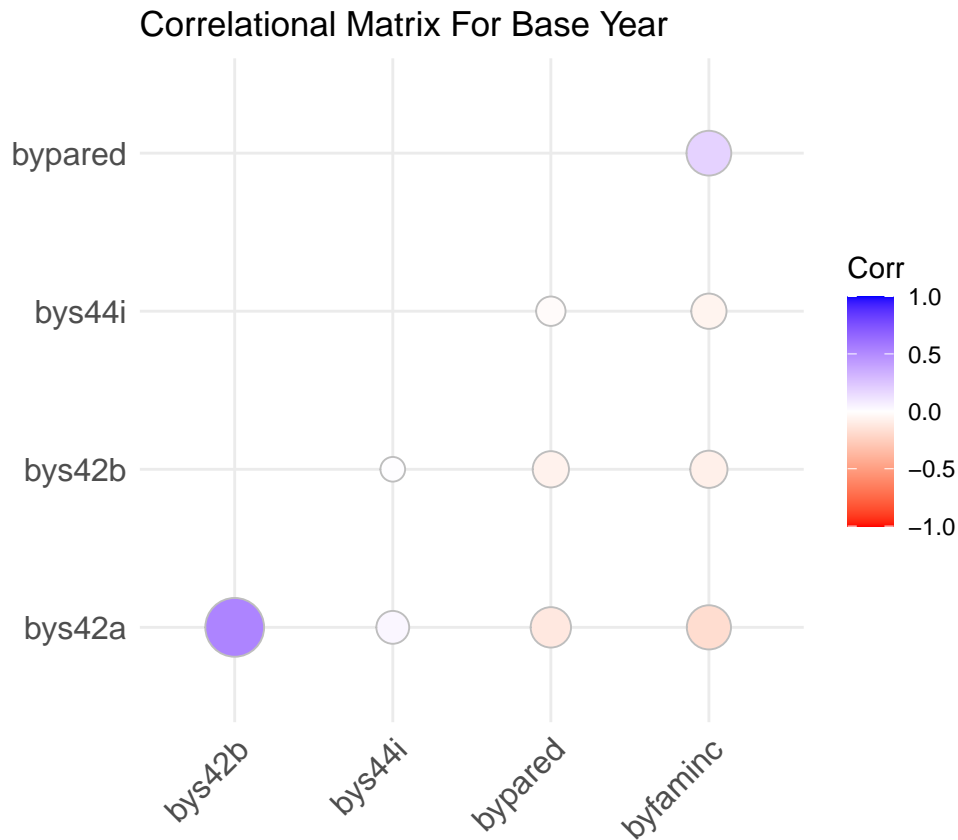


## Presentation with Anna Shetler & Joe Risi

Seminar leadership question: Does watching too much television make you feel useless?

Correlation Matrices, Nothing looks too correlated thankfully



## Run Ordinal Logistic Regression

Run the model for the base year only including TV watching

```
##
## Re-fitting to get Hessian

## Call:
## MASS::polr(formula = bys44i ~ ., data = baseYearModel)
##
## Coefficients:
##              Value Std. Error t value
## bys42a  0.05355    0.01500  3.5704
## bys42b -0.01014    0.01375 -0.7379
##
## Intercepts:
##      Value      Std. Error t value
## 1|2 -1.7092    0.0586   -29.1812
## 2|3  0.1515    0.0545    2.7804
## 3|4  2.5781    0.0643   40.1174
##
## Residual Deviance: 21301.26
## AIC: 21311.26

##      bys42a      bys42b
## 1.0550077 0.9899078
```

Run the model for the base year only including TV watching as a categorical variable

```
##
## Re-fitting to get Hessian

## Call:
## MASS::polr(formula = bys44i ~ ., data = baseYearModelWide)
##
## Coefficients:
##              Value Std. Error t value
## bys42a.don.t.watch.tv -0.10095    0.13962 -0.7231
## bys42a.lt.1.hour.a.day -0.24607    0.10163 -2.4212
## bys42a.1.2.hours      -0.24477    0.08325 -2.9402
## bys42a.2.3.hours      -0.22434    0.07982 -2.8106
## bys42a.3.4.hours      -0.19112    0.07996 -2.3903
## bys42a.4.5.hours      -0.04127    0.08366 -0.4932
## bys42b.don.t.watch.tv  0.19895    0.12473  1.5949
## bys42b.lt.1.hour.a.day  0.02845    0.09917  0.2869
## bys42b.1.2.hours      -0.09333    0.07755 -1.2036
## bys42b.2.3.hours      -0.06018    0.06965 -0.8640
## bys42b.3.4.hours      -0.04121    0.06786 -0.6073
## bys42b.4.5.hours      -0.11224    0.06733 -1.6670
##
## Intercepts:
##      Value      Std. Error t value
## 1|2 -2.0626    0.0654   -31.5191
## 2|3 -0.2000    0.0609    -3.2832
## 3|4  2.2308    0.0682   32.7105
##
## Residual Deviance: 21280.76
```

```
## AIC: 21310.76
##   bys42a.don.t.watch.tv bys42a.lt.1.hour.a.day   bys42a.1.2.hours
##           0.9039760           0.7818682           0.7828882
##   bys42a.2.3.hours   bys42a.3.4.hours   bys42a.4.5.hours
##           0.7990474           0.8260358           0.9595746
##   bys42b.don.t.watch.tv bys42b.lt.1.hour.a.day   bys42b.1.2.hours
##           1.2201151           1.0288579           0.9108912
##   bys42b.2.3.hours   bys42b.3.4.hours   bys42b.4.5.hours
##           0.9415990           0.9596307           0.8938330
```

Run the model for the base year only with TV watching and controls

```
##
## Re-fitting to get Hessian

## Call:
## MASS::polr(formula = bys44i ~ ., data = baseYearModelControls)
##
## Coefficients:
##               Value Std. Error t value
## bypared.h.s..grad.or.ged -0.05970    0.08610 -0.6934
## bypared...hs....4yr.deg -0.15268    0.08041 -1.8987
## bypared.college.graduate -0.12015    0.09399 -1.2783
## bypared.m.a..equivalent -0.18487    0.10502 -1.7604
## bypared.ph.d...m.d...other -0.15511    0.12575 -1.2335
## bys42a              0.03549    0.01543  2.3002
## bys42b              0.01085    0.01390  0.7805
## sex.female          0.55496    0.04021 13.8019
## race.amer.ind.ak.native -0.34535    0.23401 -1.4758
## race.asian.pacific.islndr -0.12046    0.07942 -1.5166
## race.black.not.hispanic -0.39812    0.07980 -4.9891
## race.hispanic          -0.18244    0.06795 -2.6847
## byfaminc..10.000....19.999 -0.01787    0.08563 -0.2087
## byfaminc..20.000..24.999 -0.06088    0.09311 -0.6539
## byfaminc..25.000..34.999 -0.13819    0.08457 -1.6339
## byfaminc..35.000..49.999 -0.11694    0.08509 -1.3744
## byfaminc..50.000..74.999 -0.12868    0.09259 -1.3897
## byfaminc..75.000.and.above -0.46748    0.10708 -4.3658
##
## Intercepts:
##      Value    Std. Error t value
## 1|2 -1.7394    0.1109   -15.6815
## 2|3  0.1618    0.1088    1.4864
## 3|4  2.6315    0.1141   23.0606
##
## Residual Deviance: 21035.57
## AIC: 21077.57

##   bypared.h.s..grad.or.ged   bypared...hs....4yr.deg
##           0.9420472           0.8584048
##   bypared.college.graduate   bypared.m.a..equivalent
##           0.8867899           0.8312159
##   bypared.ph.d...m.d...other   bys42a
##           0.8563173           1.0361297
##           bys42b           sex.female
```

```

##          1.0109057          1.7418781
##   race.amer.ind.ak.native  race.asian.pacific.islndr
##          0.7079693          0.8865158
##   race.black.not.hispanic          race.hispanic
##          0.6715803          0.8332380
## byfaminc..10.000....19.999  byfaminc..20.000..24.999
##          0.9822915          0.9409373
##   byfaminc..25.000..34.999  byfaminc..35.000..49.999
##          0.8709355          0.8896396
##   byfaminc..50.000..74.999 byfaminc..75.000.and.above
##          0.8792584          0.6265795

## -----
## Test for          X2  df  probability
## -----
## Omnibus          39.83   36   0.3
## bypared.h.s..grad.or.ged 0.98    2   0.61
## bypared...hs....4yr.deg 1.46    2   0.48
## bypared.college.graduate 0.04    2   0.98
## bypared.m.a..equivalent 0.81    2   0.67
## bypared.ph.d...m.d...other 0    2   1
## bys42a          5.62    2   0.06
## bys42b          0.01    2   1
## sex.female      8.32    2   0.02
## race.amer.ind.ak.native 0.68    2   0.71
## race.asian.pacific.islndr 3.37    2   0.19
## race.black.not.hispanic 2.67    2   0.26
## race.hispanic        0.51    2   0.77
## byfaminc..10.000....19.999 1.74    2   0.42
## byfaminc..20.000..24.999 1.49    2   0.47
## byfaminc..25.000..34.999 0.75    2   0.69
## byfaminc..35.000..49.999 0.15    2   0.93
## byfaminc..50.000..74.999 0.03    2   0.98
## byfaminc..75.000.and.above 0.33    2   0.85
## -----
##
## H0: Parallel Regression Assumption holds

```

Run the model for the follow-up year only including TV watching

```

##
## Re-fitting to get Hessian

## Call:
## MASS::polr(formula = f2s66i ~ ., data = followYearModel)
##
## Coefficients:
##          Value Std. Error t value
## f2s35a 0.03199   0.02019   1.5847
## f2s35b 0.01403   0.01891   0.7417
##
## Intercepts:
##          Value Std. Error t value
## 1|2 -1.6175   0.0574  -28.1646
## 2|3  0.3797   0.0538    7.0537

```

```
## 3|4    3.1578    0.0725    43.5708
```

```
##
```

```
## Residual Deviance: 18961.86
```

```
## AIC: 18971.86
```

```
##    f2s35a    f2s35b
```

```
## 1.032506 1.014125
```

```
## -----
```

```
## Test for X2  df  probability
```

```
## -----
```

```
## Omnibus      3.58    4    0.47
```

```
## f2s35a       1.04    2    0.6
```

```
## f2s35b       2.74    2    0.25
```

```
## -----
```

```
##
```

```
## H0: Parallel Regression Assumption holds
```

Run the model for the follow-up year only including TV watching as a categorical variable

```
##
```

```
## Re-fitting to get Hessian
```

```
## Call:
```

```
## MASS::polr(formula = f2s66i ~ ., data = followYearModelWide)
```

```
##
```

```
## Coefficients:
```

```
##              Value Std. Error t value
```

```
## f2s35a.don.t.watch.tv -0.01718    0.14557 -0.1180
```

```
## f2s35a.less.1hr.day    0.01334    0.10997  0.1213
```

```
## f2s35a.1.2.hours.day -0.03165    0.10385 -0.3048
```

```
## f2s35a.2.3.hours.day -0.01842    0.09989 -0.1844
```

```
## f2s35a.3.5.hours.day  0.11032    0.09594  1.1498
```

```
## f2s35b.don.t.watch.tv -0.07334    0.13759 -0.5330
```

```
## f2s35b.less.1hr.day  -0.21049    0.09645 -2.1823
```

```
## f2s35b.1.2.hours.day -0.13865    0.08414 -1.6478
```

```
## f2s35b.2.3.hours.day -0.21144    0.07855 -2.6916
```

```
## f2s35b.3.5.hours.day -0.19591    0.07511 -2.6082
```

```
##
```

```
## Intercepts:
```

```
##      Value    Std. Error t value
```

```
## 1|2 -1.8899    0.0821  -23.0208
```

```
## 2|3  0.1098    0.0789   1.3922
```

```
## 3|4  2.8920    0.0916  31.5651
```

```
##
```

```
## Residual Deviance: 18944.37
```

```
## AIC: 18970.37
```

```
## f2s35a.don.t.watch.tv    f2s35a.less.1hr.day    f2s35a.1.2.hours.day
```

```
##           0.9829661           1.0134334           0.9688414
```

```
## f2s35a.2.3.hours.day    f2s35a.3.5.hours.day    f2s35b.don.t.watch.tv
```

```
##           0.9817459           1.1166301           0.9292871
```

```
## f2s35b.less.1hr.day    f2s35b.1.2.hours.day    f2s35b.2.3.hours.day
```

```
##           0.8101855           0.8705330           0.8094208
```

```
## f2s35b.3.5.hours.day
```

```
##           0.8220892
```

```
## -----
## Test for      X2  df  probability
## -----
## Omnibus           51.97   20   0
## f2s35a.don.t.watch.tv    2.15    2   0.34
## f2s35a.less.1hr.day  0.03    2   0.98
## f2s35a.1.2.hours.day  1.57    2   0.46
## f2s35a.2.3.hours.day  2.72    2   0.26
## f2s35a.3.5.hours.day  3.87    2   0.14
## f2s35b.don.t.watch.tv    1.48    2   0.48
## f2s35b.less.1hr.day  5.51    2   0.06
## f2s35b.1.2.hours.day 10.58    2   0.01
## f2s35b.2.3.hours.day 12.24    2    0
## f2s35b.3.5.hours.day  8     2   0.02
## -----
##
## H0: Parallel Regression Assumption holds
```

Run the model for the follow-up year only including TV watching + controls

```
##
## Re-fitting to get Hessian
## Call:
## MASS::polr(formula = f2s66i ~ ., data = followYearModelControls)
##
## Coefficients:
##
##              Value Std. Error  t value
## bypared.h.s..grad.or.ged -0.062943   0.09483 -0.66377
## bypared...hs....4yr.deg   0.044368   0.08913  0.49777
## bypared.college.graduate -0.043264   0.10248 -0.42218
## bypared.m.a..equivalent -0.010948   0.11227 -0.09751
## bypared.ph.d...m.d...other 0.009981   0.13309  0.07499
## f2s35a                    0.035172   0.02072  1.69749
## f2s35b                    0.017465   0.01904  0.91751
## sex.female                0.555495   0.04189 13.26133
## race.amer.ind.ak.native   0.216166   0.24475  0.88323
## race.asian.pacific.islndr 0.275220   0.08201  3.35596
## race.black.not.hispanic  -0.426133   0.08374 -5.08887
## race.hispanic             -0.240565   0.07067 -3.40426
## byfaminc..10.000....19.999 -0.067241   0.09300 -0.72302
## byfaminc..20.000..24.999  -0.156406   0.10051 -1.55611
## byfaminc..25.000..34.999  -0.106506   0.09046 -1.17744
## byfaminc..35.000..49.999  -0.222143   0.09098 -2.44166
## byfaminc..50.000..74.999  -0.270172   0.09897 -2.72981
## byfaminc..75.000.and.above -0.386275   0.11352 -3.40275
##
## Intercepts:
##      Value   Std. Error t value
## 1|2 -1.5551   0.1201  -12.9494
## 2|3  0.4886   0.1186   4.1184
## 3|4  3.3075   0.1285  25.7470
##
## Residual Deviance: 18715.11
## AIC: 18757.11
```

```

##   bypared.h.s..grad.or.ged   bypared...hs....4yr.deg
##                               0.9389975             1.0453671
##   bypared.college.graduate   bypared.m.a..equivalent
##                               0.9576586             0.9891121
##   bypared.ph.d...m.d...other                f2s35a
##                               1.0100307             1.0357984
##                               f2s35b             sex.female
##                               1.0176183             1.7428034
##   race.amer.ind.ak.native   race.asian.pacific.islndr
##                               1.2413085             1.3168205
##   race.black.not.hispanic                race.hispanic
##                               0.6530292             0.7861839
##   byfaminc..10.000....19.999   byfaminc..20.000..24.999
##                               0.9349699             0.8552121
##   byfaminc..25.000..34.999   byfaminc..35.000..49.999
##                               0.8989695             0.8008005
##   byfaminc..50.000..74.999   byfaminc..75.000.and.above
##                               0.7632482             0.6795837

## -----
## Test for          X2  df  probability
## -----
## Omnibus                95.52   36   0
## bypared.h.s..grad.or.ged 0.86    2   0.65
## bypared...hs....4yr.deg 0.34    2   0.84
## bypared.college.graduate 0.71    2   0.7
## bypared.m.a..equivalent  2.28    2   0.32
## bypared.ph.d...m.d...other 0.74    2   0.69
## f2s35a                  4.41    2   0.11
## f2s35b                  2.25    2   0.33
## sex.female              17.11    2   0
## race.amer.ind.ak.native  7.08    2   0.03
## race.asian.pacific.islndr 8.69    2   0.01
## race.black.not.hispanic 38.34    2   0
## race.hispanic           4.69    2   0.1
## byfaminc..10.000....19.999 2.46    2   0.29
## byfaminc..20.000..24.999 0.34    2   0.84
## byfaminc..25.000..34.999 0.28    2   0.87
## byfaminc..35.000..49.999 0.39    2   0.82
## byfaminc..50.000..74.999 0.95    2   0.62
## byfaminc..75.000.and.above 4.7    2   0.1
## -----
##
## H0: Parallel Regression Assumption holds

```