PartyID

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This analysis examines the role of party identity in determining support for invasive species management.

```
## Warning: package 'devtools' was built under R version 3.4.3
```

```
## Loading GainLossPackage
```

```
## Loading required package: lattice
```

```
## Loading required package: plyr
```

```
##
## Attaching package: 'psych'
```

```
## The following objects are masked from 'package:ggplot2':
##
##     %+%, alpha
```

Categorical and Pooled data on Treatments

```r
summary(as.factor(kuni.treat.df$treat))
```

```
##  control  ecogain  ecoloss econgain econloss
##      218      217      215      216      211
```

```r
summary(as.factor(kuni.treat.df$ecoecon))
```

```
## control     eco    econ
##     218     432     427
```

```r
summary(as.factor(kuni.treat.df$gainloss))
```

```
## control    gain    loss
##     218     433     426
```

```r
#reference level
treat_factor <- as.factor(kuni.treat.df$treat)
kuni.treat.df<- within(kuni.treat.df, treat<- relevel(treat_factor, ref = "control"))
```

Subsetting the data by party

```r
reps_df <- subset(kuni.treat.df, partyid==1)
summary(reps_df$treat)
```

```
##  control  ecogain  ecoloss econgain econloss
##       60       60       67       60       55
```

```r
dems_df <- subset(kuni.treat.df, partyid==2)
summary(dems_df$treat)
```

```
##  control  ecogain  ecoloss econgain econloss 
##      108       97       96      111      103
```

```
inds_df <- subset(kuni.treat.df, partyid==3)
summary(inds_df$treat)
```

```
##  control  ecogain  ecoloss econgain econloss 
##       44       53       47       40       45
```

Republican Support

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max. 
##  0.0000  1.0000  1.0000  0.7517  1.0000  1.0000
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max. 
##    0.00    0.75    1.00    0.75    1.00    1.00
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max. 
##   0.000   1.000   1.000   0.806   1.000   1.000
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max. 
##  0.0000  0.0000  1.0000  0.7333  1.0000  1.0000
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max. 
##     0.0     1.0     1.0     0.8     1.0     1.0
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max. 
##  0.0000  0.0000  1.0000  0.6667  1.0000  1.0000
```

```
## 
##  Pearson's Chi-squared test
## 
## data:  rep_support and reps_df$treat
## X-squared = 4.1779, df = 4, p-value = 0.3825
```

```
## [1] 1
```

```
## 
## Call:
## glm(formula = project_support == 1 ~ as.factor(reps_df$treat), 
##     family = binomial(link = "logit"), data = reps_df)
## 
## Deviance Residuals: 
##     Min       1Q   Median       3Q      Max  
## -1.8109   0.6568   0.6681   0.7876   0.9005  
## 
## Coefficients:
##                                  Estimate Std. Error z value Pr(>|z|)  
## (Intercept)                        0.6931     0.2739   2.531   0.0114 *
## as.factor(reps_df$treat)ecogain    0.4055     0.4048   1.002   0.3166  
## as.factor(reps_df$treat)ecoloss    0.7309     0.4128   1.770   0.0767 .
## as.factor(reps_df$treat)econgain   0.3185     0.4003   0.796   0.4263  
## as.factor(reps_df$treat)econloss   0.6931     0.4343   1.596   0.1105  
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## 
## (Dispersion parameter for binomial family taken to be 1)
## 
```

```
##     Null deviance: 338.55  on 301  degrees of freedom
## Residual deviance: 334.43  on 297  degrees of freedom
## AIC: 344.43
##
## Number of Fisher Scoring iterations: 4
```

Democratic Support

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  0.0000  0.0000  1.0000  0.7068  1.0000  1.0000
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   0.000   1.000   0.732   1.000   1.000
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  0.0000  1.0000  1.0000  0.8854  1.0000  1.0000
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  0.0000  0.0000  1.0000  0.6667  1.0000  1.0000
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  0.0000  0.0000  1.0000  0.7184  1.0000  1.0000
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  0.0000  0.0000  1.0000  0.5556  1.0000  1.0000
```

```
##
##  Pearson's Chi-squared test
##
## data:  dem_support and dems_df$treat
## X-squared = 27.927, df = 4, p-value = 1.291e-05
```

```
## [1] 3.871925e-05
```

```
##
## Call:
## glm(formula = project_support == 1 ~ as.factor(treat), family = binomial(link = "logit"),
##     data = dems_df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0816  -1.2735   0.7900   0.9005   1.0842
##
## Coefficients:
##                          Estimate Std. Error z value Pr(>|z|)
## (Intercept)                0.2231     0.1936   1.152  0.24919
## as.factor(treat)ecogain    0.7814     0.3001   2.604  0.00921 **
## as.factor(treat)ecoloss    1.8216     0.3744   4.866 1.14e-06 ***
## as.factor(treat)econgain   0.4700     0.2794   1.682  0.09248 .
## as.factor(treat)econloss   0.7136     0.2924   2.441  0.01466 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 623.15  on 514  degrees of freedom
## Residual deviance: 593.26  on 510  degrees of freedom
```

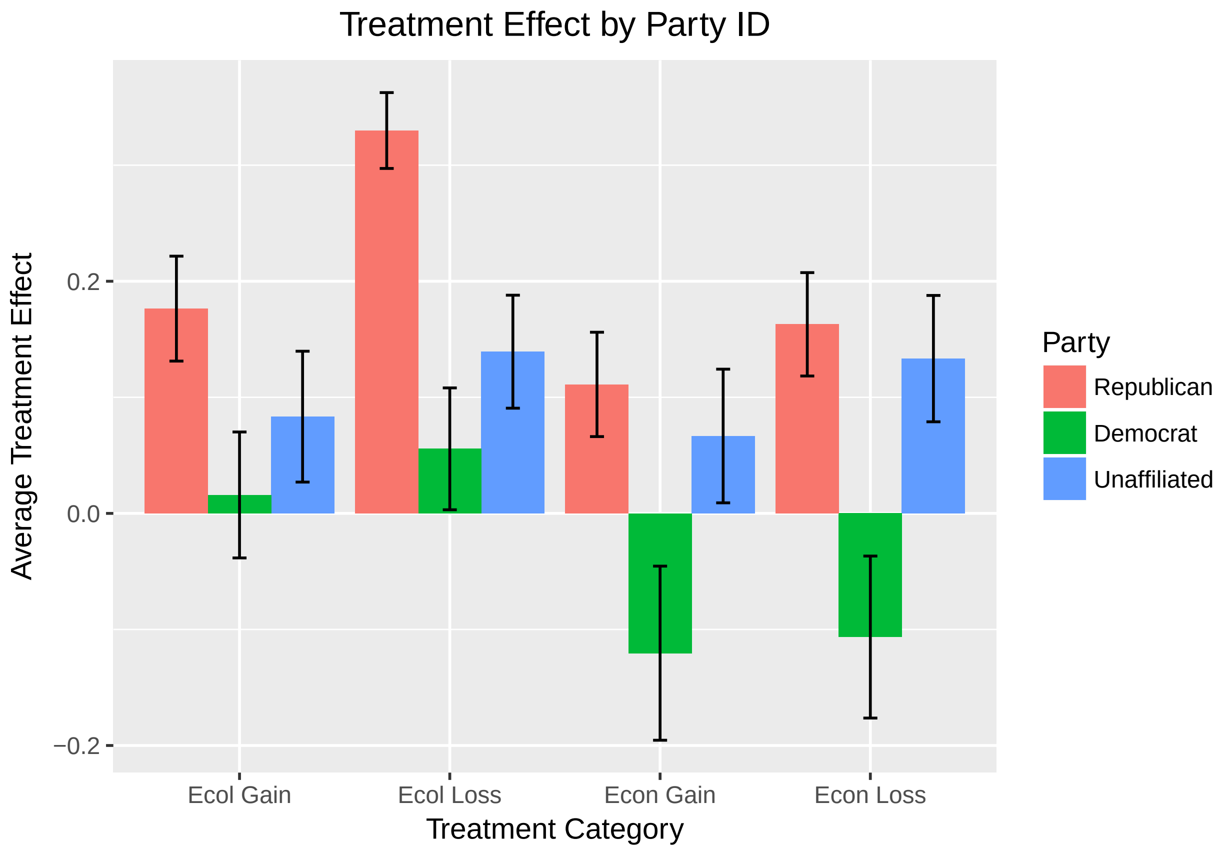
```
## AIC: 603.26
##
## Number of Fisher Scoring iterations: 4
```

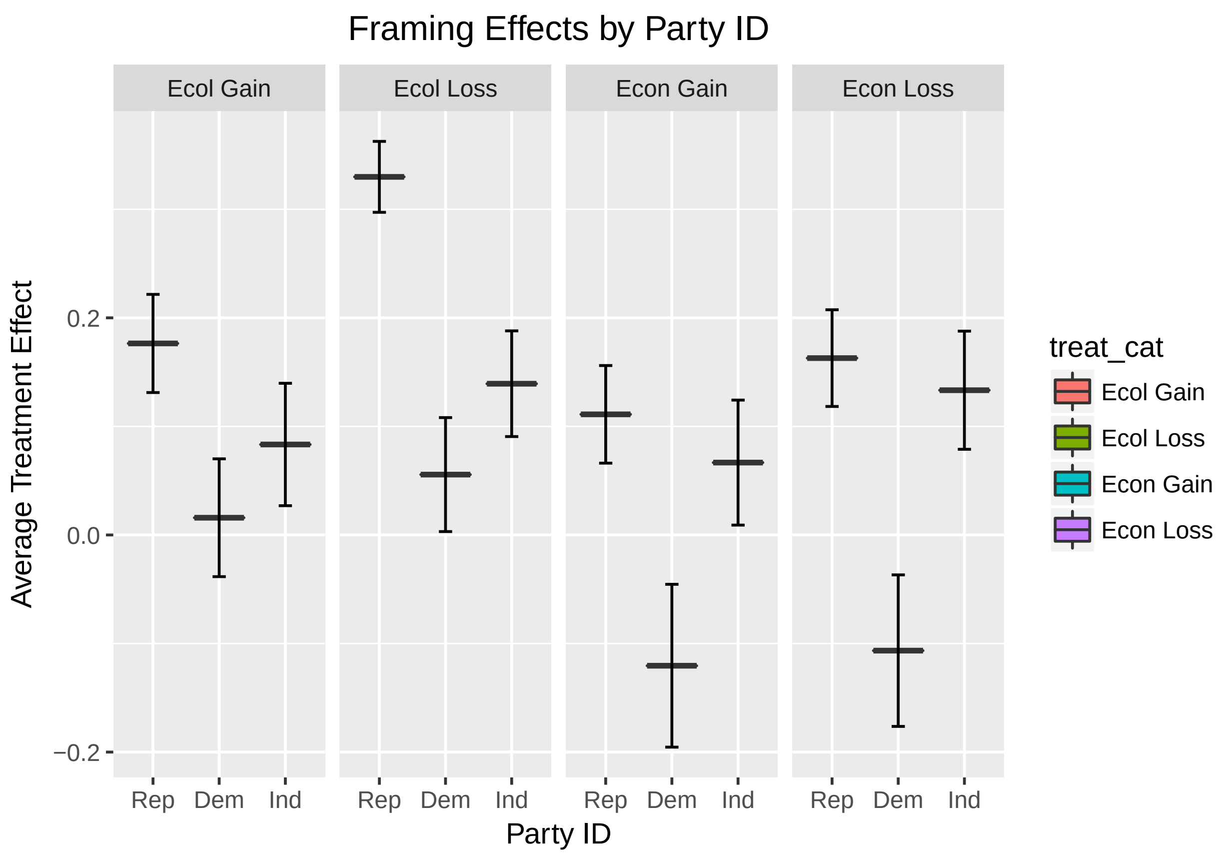
Independent Support

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  0.0000  1.0000  1.0000  0.7686  1.0000  1.0000

##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  0.0000  1.0000  1.0000  0.8113  1.0000  1.0000

##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  0.0000  1.0000  1.0000  0.8511  1.0000  1.0000

##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   0.000   1.000   0.675   1.000   1.000

##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  0.0000  0.0000  1.0000  0.6889  1.0000  1.0000

##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  0.0000  1.0000  1.0000  0.7955  1.0000  1.0000

##
##  Pearson's Chi-squared test
##
## data:  ind_support and inds_df$treat
## X-squared = 6.0966, df = 4, p-value = 0.1921

## [1] 0.5761537

##
## Call:
## glm(formula = project_support == 1 ~ as.factor(treat), family = binomial(link = "logit"),
##     data = inds_df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.9515   0.5679   0.6467   0.8633   0.8866
##
## Coefficients:
##                          Estimate Std. Error z value Pr(>|z|)
## (Intercept)                1.3581     0.3737   3.634 0.000279 ***
## as.factor(treat)ecogain    0.1005     0.5128   0.196 0.844629
## as.factor(treat)ecoloss    0.3848     0.5546   0.694 0.487705
## as.factor(treat)econgain  -0.6272     0.5036  -1.245 0.212973
## as.factor(treat)econloss  -0.5632     0.4933  -1.142 0.253608
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 247.78  on 228  degrees of freedom
## Residual deviance: 241.73  on 224  degrees of freedom
## AIC: 251.73
##
```

```
## Number of Fisher Scoring iterations: 4
```

Plotting al parties together





Potential major heterogeneous treatment effects: eco-loss for dems, eco-gain for reps, both econ for reps. Republicans seem much more responsive to gain frames, dems somewhat more responsive to loss frames. Dems also much less responsive to control frame as compared to republicans. Independents seems somewhere in between.

Pooled Ecological Treatments

*note that the support_func that generates these results uses the following calculation to generate the ci: ci<-ATE + c(-qnorm(0.975),qnorm(0.975))*sqrt(abs((1/N)*ATE*(1-ATE)))

```
rep_ecosupport<-support_func(rep_support, treat.type=c("ecogain", "ecoloss", "control"), reps_df)
rep_ecosupport
```

```
## $support
## [1] 0.7795276
##
## $control
## [1] 0.6666667
##
## $N
## [1] 127
##
## $se
## [1] 0.03693241
##
## $ATE
## [1] 0.1128609
```

```
##
## $ci
## [1] 0.05782908 0.16789271
```

```r
dem_ecosupport<-support_func(dem_support, treat.type=c("ecogain", "ecoloss", "control"), dems_df)
dem_ecosupport
```

```
## $support
## [1] 0.8082902
##
## $control
## [1] 0.5555556
##
## $N
## [1] 193
##
## $se
## [1] 0.02840895
##
## $ATE
## [1] 0.2527346
##
## $ci
## [1] 0.1914235 0.3140457
```

```r
ind_ecosupport<-support_func(ind_support, treat.type=c("ecogain", "ecoloss", "control"), inds_df)
ind_ecosupport
```

```
## $support
## [1] 0.83
##
## $control
## [1] 0.7954545
##
## $N
## [1] 100
##
## $se
## [1] 0.03775252
##
## $ATE
## [1] 0.03454545
##
## $ci
## [1] -0.001248482  0.070339391
```

Pooled Economic treatments

```r
rep_econsupport<-support_func(rep_support, treat.type=c("econgain", "econloss", "control"), reps_df)
rep_econsupport
```

```
## $support
## [1] 0.7652174
##
```

```
## $control
## [1] 0.6666667
##
## $N
## [1] 115
##
## $se
## [1] 0.0396984
##
## $ATE
## [1] 0.09855072
##
## $ci
## [1] 0.04407541 0.15302604
```

```r
dem_econsupport<-support_func(dem_support, treat.type=c("econgain", "econloss", "control"), dems_df)
dem_econsupport
```

```
## $support
## [1] 0.6915888
##
## $control
## [1] 0.5555556
##
## $N
## [1] 214
##
## $se
## [1] 0.03164457
##
## $ATE
## [1] 0.1360332
##
## $ci
## [1] 0.09010156 0.18196490
```

```r
ind_econsupport<-support_func(ind_support, treat.type=c("econgain", "econloss", "control"), inds_df)
ind_econsupport
```

```
## $support
## [1] 0.6823529
##
## $control
## [1] 0.7954545
##
## $N
## [1] 85
##
## $se
## [1] 0.05079691
##
## $ATE
## [1] -0.1131016
##
## $ci
```

```
## [1] -0.18853096 -0.03767225
```

Pooled Gain Treatments

```r
rep_gainsupport<-support_func(rep_support, treat.type=c("ecogain", "econgain", "control"), reps_df)
#Alex: ATE=.075, N=120, 95% CI is .028 - .122
rep_gainsupport
```

```
## $support
## [1] 0.7416667
##
## $control
## [1] 0.6666667
##
## $N
## [1] 120
##
## $se
## [1] 0.04012556
##
## $ATE
## [1] 0.075
##
## $ci
## [1] 0.02787418 0.12212582
```

```r
dem_gainsupport<-support_func(dem_support, treat.type=c("ecogain", "econgain", "control"), dems_df)
#Alex: ATE=.142, N=208, 95% CI is .094 - .189
dem_gainsupport
```

```
## $support
## [1] 0.6971154
##
## $control
## [1] 0.5555556
##
## $N
## [1] 208
##
## $se
## [1] 0.03193786
##
## $ATE
## [1] 0.1415598
##
## $ci
## [1] 0.09418568 0.18893398
```

```r
inds_gainsupport<-support_func(ind_support, treat.type=c("ecogain", "econgain", "control"), inds_df)
#Alex: ATE=-.043, N=93, 95% CI is -.084 to -.002
inds_gainsupport
```

```
## $support
## [1] 0.7526882
```

```
##
## $control
## [1] 0.7954545
##
## $N
## [1] 93
##
## $se
## [1] 0.04498172
##
## $ATE
## [1] -0.04276637
##
## $ci
## [1] -0.0856855457  0.0001527988
```

Pooled Loss Treatments

```r
rep_loss<-support_func(rep_support, treat.type=c("ecoloss", "econloss", "control"), reps_df)
#Alex: ATE=.137, N=122, 95% CI is .076 - .198
rep_loss
```

```
## $support
## [1] 0.8032787
##
## $control
## [1] 0.6666667
##
## $N
## [1] 122
##
## $se
## [1] 0.03613817
##
## $ATE
## [1] 0.136612
##
## $ci
## [1] 0.07567017 0.19755387
```

```r
dem_loss<-support_func(dem_support, treat.type=c("ecoloss", "econloss", "control"), dems_df)
#Alex: ATE=.243, N=199, 95% CI is .184 - .303
dem_loss
```

```
## $support
## [1] 0.798995
##
## $control
## [1] 0.5555556
##
## $N
## [1] 199
##
## $se
```

```
## [1] 0.02848019
##
## $ATE
## [1] 0.2434394
##
## $ci
## [1] 0.1838130 0.3030659
```

```r
ind_loss<-support_func(ind_support, treat.type=c("ecoloss", "econloss", "control"), inds_df)
#Alex: ATE=-.024, N=92, 95% CI is -.055 to -.007
ind_loss
```

```
## $support
## [1] 0.7717391
##
## $control
## [1] 0.7954545
##
## $N
## [1] 92
##
## $se
## [1] 0.04399773
##
## $ATE
## [1] -0.02371542
##
## $ci
## [1] -0.055554396  0.008123566
```