Election data

May 23, 2012

```
> library(EffectStars)
> data(election)
```

Effect Stars for the multinomial logit model for the election data.

```
> star.nominal(Partychoice ~ Age + Religion + Democracy + Pol.Interest +
+ Unemployment + Highschool + Union + West + Gender, election, cex.cat = 1,
+ cex.labels = 1.2, lwd.circle = 1.5, dist.cov = 0.8)
```

$odds

	(Intercept)	Age	Religioncatholic	Religionother religion
CDU	4.0414158	1.3610161	1.4966911	0.6995757
SPD	1.5990006	1.1593572	0.8217861	0.6516310
FDP	0.7082679	0.8949610	1.0941385	1.3833039
Greens	0.3340830	0.6717697	0.8806534	1.3315266
Left Party	0.6539821	1.0541319	0.8437848	1.1909572

	Democracynot satisfied	Pol.Interestless interested
CDU	0.4647253	1.2235442
SPD	0.6981525	1.4007699
FDP	1.0014343	0.7694186
Greens	1.0089716	1.2356737
Left Party	3.0503659	0.6136872

	Unemploymentunemployed	Highschoolhighschool	Unionmember	Westwest
CDU	0.5982192	1.1681632	0.6654959	0.7187890
SPD	1.1349143	0.8022312	1.4926189	1.4746517
FDP	0.5714917	1.0529720	0.6002911	1.0248899
Greens	0.9302359	1.7567334	0.6772514	1.8973253
Left Party	2.7705983	0.5768651	2.4762461	0.4851657

	Gendermale
CDU	0.7689529
SPD	0.8261321
FDP	1.2896875
Greens	0.9805111
Left Party	1.2448406

$coefficients

	(Intercept)	Age	Religioncatholic	Religionother religion
CDU	1.3965951	0.30823152	0.4032568	-0.3572813
SPD	0.4693788	0.14786573	-0.1962752	-0.4282769
FDP	-0.3449328	-0.11097512	0.0899673	0.3244748

```
Greens        -1.0963659 -0.39783976          -0.1270912                  0.2863261
Left Party    -0.4246752  0.05271762          -0.1698577                  0.1747573
              Democracynot satisfied Pol.Interestless interested
CDU                    -0.766308725                    0.2017517
SPD                    -0.359317717                    0.3370220
FDP                     0.001433271                   -0.2621201
Greens                  0.008931611                    0.2116163
Left Party              1.115261560                   -0.4882699
              Unemploymentunemployed Highschoolhighschool Unionmember    Westwest
CDU                    -0.51379796          0.15543258  -0.4072227 -0.33018737
SPD                     0.12655711         -0.22035841   0.4005322  0.38842183
FDP                    -0.55950540          0.05161669  -0.5103405  0.02458516
Greens                 -0.07231703          0.56345605  -0.3897127  0.64044515
Left Party              1.01906328         -0.55014691   0.9067438 -0.72326476
              Gendermale
CDU           -0.26272555
SPD           -0.19100061
FDP            0.25439996
Greens        -0.01968128
Left Party     0.21900748


$se
              (Intercept)        Age Religioncatholic Religionother religion
CDU            0.2241870 0.06883778        0.1629128                  0.1675213
SPD            0.2454879 0.07243803        0.1661371                  0.1722206
FDP            0.3115688 0.09372915        0.2388946                  0.2184835
Greens         0.3272034 0.09663685        0.2339585                  0.2129134
Left Party     0.3132746 0.09447744        0.2328110                  0.2049558
              Democracynot satisfied Pol.Interestless interested
CDU                     0.1388727                    0.1467925
SPD                     0.1475205                    0.1596902
FDP                     0.1944036                    0.1906898
Greens                  0.1933154                    0.2026862
Left Party              0.2288390                    0.1853461
              Unemploymentunemployed Highschoolhighschool Unionmember   Westwest
CDU                     0.3657289          0.1691886   0.2118735 0.1559290
SPD                     0.3140074          0.1889160   0.1836202 0.1722467
FDP                     0.4983006          0.2177650   0.2891981 0.2071113
Greens                  0.4216166          0.2081829   0.2730795 0.2221559
Left Party              0.3014122          0.2425590   0.2163638 0.1942385
              Gendermale
CDU            0.1353626
SPD            0.1423081
FDP            0.1874642
Greens         0.1840961
Left Party     0.1805578


$pvalues
              (Intercept)          Age Religioncatholic Religionother religion
CDU           2.338170e-10 3.773452e-06        0.006656363                  0.016472574
```

```
SPD         2.793653e-02 2.061189e-02      0.118720953             0.006445038
FDP         1.341288e-01 1.182070e-01      0.353236077             0.068755637
Greens      4.030131e-04 1.920399e-05      0.293488859             0.089344799
Left Party  8.761314e-02 2.884250e-01      0.232818896             0.196924269
           Democracynot satisfied Pol.Interestless interested
CDU                  1.713767e-08                0.084658676
SPD                  7.431218e-03                0.017408771
FDP                  4.970588e-01                0.084629447
Greens               4.815745e-01                0.148229118
Left Party           5.480134e-07                0.004214692
           Unemploymentunemployed Highschoolhighschool  Unionmember
CDU                  0.0800314563           0.17912780 2.730234e-02
SPD                  0.3434599079           0.12171913 1.458031e-02
FDP                  0.1307554699           0.40631705 3.880923e-02
Greens               0.4319061897           0.00339938 7.677503e-02
Left Party           0.0003611626           0.01166171 1.389682e-05
              Westwest Gendermale
CDU         0.0171065991 0.02613505
SPD         0.0120656445 0.08977159
FDP         0.4527545016 0.08738123
Greens      0.0019703929 0.45743114
Left Party  0.0000982047 0.11257452


$p_rel
           Age Religioncatholic Religionother religion
[1,] 5.625482e-07      0.08015606             0.01694874
    Democracynot satisfied Pol.Interestless interested Unemploymentunemployed
[1,]           2.955651e-10                  0.01335832             0.01308379
     Highschoolhighschool  Unionmember    Westwest Gendermale
[1,]           0.01862473 3.281531e-05 1.548773e-05  0.1509492


$xlim
[1] 10.50768 57.38810

$ylim
[1] 10.06313 72.58383
```
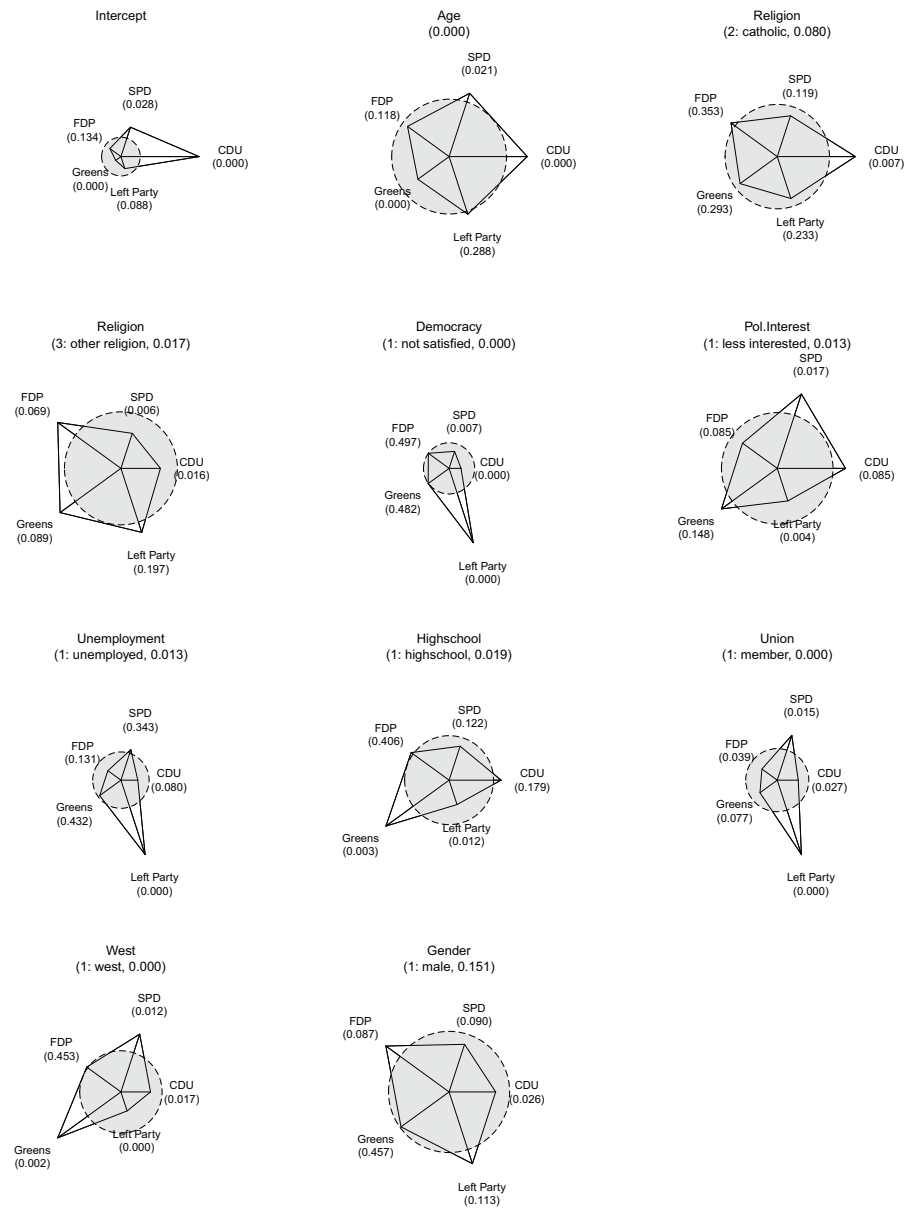
Intercept

SPD
(0.028)
FDP
(0.134)
Greens
(0.000)
CDU
(0.000)
Left Party
(0.088)

Age
(0.000)

SPD
(0.021)
FDP
(0.118)
Greens
(0.000)
CDU
(0.000)
Left Party
(0.288)

Religion
(2: catholic, 0.080)

SPD
(0.119)
FDP
(0.353)
Greens
(0.293)
CDU
(0.007)
Left Party
(0.233)

Religion
(3: other religion, 0.017)

FDP
(0.069)
SPD
(0.006)
CDU
(0.016)
Greens
(0.089)
Left Party
(0.197)

Democracy
(1: not satisfied, 0.000)

SPD
(0.007)
FDP
(0.497)
Greens
(0.482)
CDU
(0.000)
Left Party
(0.000)

Pol.Interest
(1: less interested, 0.013)

SPD
(0.017)
FDP
(0.085)
Greens
(0.148)
CDU
(0.085)
Left Party
(0.004)

Unemployment
(1: unemployed, 0.013)

SPD
(0.343)
FDP
(0.131)
Greens
(0.432)
CDU
(0.080)
Left Party
(0.000)

Highschool
(1: highschool, 0.019)

SPD
(0.122)
FDP
(0.406)
Greens
(0.003)
CDU
(0.179)
Left Party
(0.012)

Union
(1: member, 0.000)

SPD
(0.015)
FDP
(0.039)
Greens
(0.077)
CDU
(0.027)
Left Party
(0.000)

West
(1: west, 0.000)

SPD
(0.012)
FDP
(0.453)
Greens
(0.002)
CDU
(0.017)
Left Party
(0.000)

Gender
(1: male, 0.151)

SPD
(0.090)
FDP
(0.087)
Greens
(0.457)
CDU
(0.026)
Left Party
(0.113)

4

Effect Stars for the multinomial logit model for the election data using effect coding for the categorical predictor religion.

```
> star.nominal(Partychoice ~ Age + Religion + Democracy + Pol.Interest +
+ Unemployment + Highschool + Union + West + Gender, election, cex.cat = 1,
+ cex.labels = 1.2, lwd.circle = 1.5, dist.cov = 0.8, pred.coding = "effect")

$odds
            Intercept       Age Religionevangelical Religioncatholic
CDU         4.1038281 1.3610161           0.9847917        1.4739290
SPD         1.2984806 1.1593572           1.2314398        1.0119801
FDP         0.8131941 0.8949610           0.8709703        0.9529622
Greens      0.3522946 0.6717697           0.9483057        0.8351287
Left Party  0.6550511 1.0541319           0.9983681        0.8424079
            Religionother religion Democracynot satisfied
CDU                      0.6889363              0.4647253
SPD                      0.8024443              0.6981525
FDP                      1.2048167              1.0014343
Greens                   1.2626943              1.0089716
Left Party               1.1890137              3.0503659
            Pol.Interestless interested Unemploymentunemployed
CDU                           1.2235442              0.5982192
SPD                           1.4007699              1.1349143
FDP                           0.7694186              0.5714917
Greens                        1.2356737              0.9302359
Left Party                    0.6136872              2.7705983
            Highschoolhighschool Unionmember  Westwest Gendermale
CDU                    1.1681632   0.6654959 0.7187890  0.7689529
SPD                    0.8022312   1.4926189 1.4746517  0.8261321
FDP                    1.0529720   0.6002911 1.0248899  1.2896875
Greens                 1.7567334   0.6772514 1.8973253  0.9805111
Left Party             0.5768651   2.4762461 0.4851657  1.2448406


$coefficients
            Intercept         Age Religionevangelical Religioncatholic
CDU         1.4119202  0.30823152        -0.015325141       0.38793162
SPD         0.2611948  0.14786573         0.208184017       0.01190886
FDP        -0.2067854 -0.11097512        -0.138147361      -0.04818006
Greens     -1.0432875 -0.39783976        -0.053078316      -0.18016948
Left Party -0.4230420  0.05271762        -0.001633199      -0.17149094
            Religionother religion Democracynot satisfied
CDU                     -0.3726065            -0.766308725
SPD                     -0.2200929            -0.359317717
FDP                      0.1863274             0.001433271
Greens                   0.2332478             0.008931611
Left Party               0.1731241             1.115261560
            Pol.Interestless interested Unemploymentunemployed
CDU                           0.2017517            -0.51379796
SPD                           0.3370220             0.12655711
FDP                          -0.2621201            -0.55950540
```

```
Greens                          0.2116163              -0.07231703
Left Party                     -0.4882699               1.01906328
          Highschoolhighschool Unionmember    Westwest  Gendermale
CDU                 0.15543258   -0.4072227 -0.33018737 -0.26272555
SPD                -0.22035841    0.4005322  0.38842183 -0.19100061
FDP                 0.05161669   -0.5103405  0.02458516  0.25439996
Greens              0.56345605   -0.3897127  0.64044515 -0.01968128
Left Party         -0.55014691    0.9067438 -0.72326476  0.21900748


$se
          Intercept       Age Religionevangelical Religioncatholic
CDU       0.2048527 0.06883778          0.09223404        0.1001696
SPD       0.2302249 0.07243803          0.09354620        0.1038551
FDP       0.2783841 0.09372915          0.13052397        0.1410168
Greens    0.2983730 0.09663685          0.12673599        0.1395627
Left Party 0.2903597 0.09447744          0.12295070        0.1410763
          Religionother religion Democracynot satisfied
CDU                    0.1026721               0.1388727
SPD                    0.1071075               0.1475205
FDP                    0.1295140               0.1944036
Greens                 0.1278394               0.1933154
Left Party             0.1258484               0.2288390
          Pol.Interestless interested Unemploymentunemployed
CDU                         0.1467925               0.3657289
SPD                         0.1596902               0.3140074
FDP                         0.1906898               0.4983006
Greens                      0.2026862               0.4216166
Left Party                  0.1853461               0.3014122
          Highschoolhighschool Unionmember  Westwest Gendermale
CDU                  0.1691886   0.2118735 0.1559290  0.1353626
SPD                  0.1889160   0.1836202 0.1722467  0.1423081
FDP                  0.2177650   0.2891981 0.2071113  0.1874642
Greens               0.2081829   0.2730795 0.2221559  0.1840961
Left Party           0.2425590   0.2163638 0.1942385  0.1805578


$pvalues
              Intercept          Age Religionevangelical Religioncatholic
CDU        2.743583e-12 3.773452e-06          0.43401751     5.380768e-05
SPD        1.282882e-01 2.061189e-02          0.01302494     4.543541e-01
FDP        2.287995e-01 1.182070e-01          0.14493518     3.663027e-01
Greens     2.356247e-04 1.920399e-05          0.33767745     9.835926e-02
Left Party 7.256390e-02 2.884250e-01          0.49470086     1.120705e-01
          Religionother religion Democracynot satisfied
CDU                    0.0001422099            1.713767e-08
SPD                    0.0199454205            7.431218e-03
FDP                    0.0751225559            4.970588e-01
Greens                 0.0340354678            4.815745e-01
Left Party             0.0844640161            5.480134e-07
          Pol.Interestless interested Unemploymentunemployed
CDU                         0.084658676               0.0800314563
```

```
SPD                             0.017408771              0.3434599079
FDP                             0.084629447              0.1307554699
Greens                          0.148229118              0.4319061897
Left Party                      0.004214692              0.0003611626
          Highschoolhighschool  Unionmember      Westwest Gendermale
CDU               0.17912780    2.730234e-02  0.0171065991 0.02613505
SPD               0.12171913    1.458031e-02  0.0120656445 0.08977159
FDP               0.40631705    3.880923e-02  0.4527545016 0.08738123
Greens            0.00339938    7.677503e-02  0.0019703929 0.45743114
Left Party        0.01166171    1.389682e-05  0.0000982047 0.11257452

$p_rel
            Age Religionevangelical Religioncatholic Religionother religion
[1,] 5.625482e-07            0.2626094      0.003582126           0.0005500146
     Democracynot satisfied Pol.Interestless interested Unemploymentunemployed
[1,]           2.955651e-10                   0.01335832             0.01308379
      Highschoolhighschool  Unionmember     Westwest Gendermale
[1,]           0.01862473 3.281531e-05 1.548773e-05  0.1509492

$xlim
[1] 10.66995 58.27436

$ylim
[1] 10.21853 73.70475
```
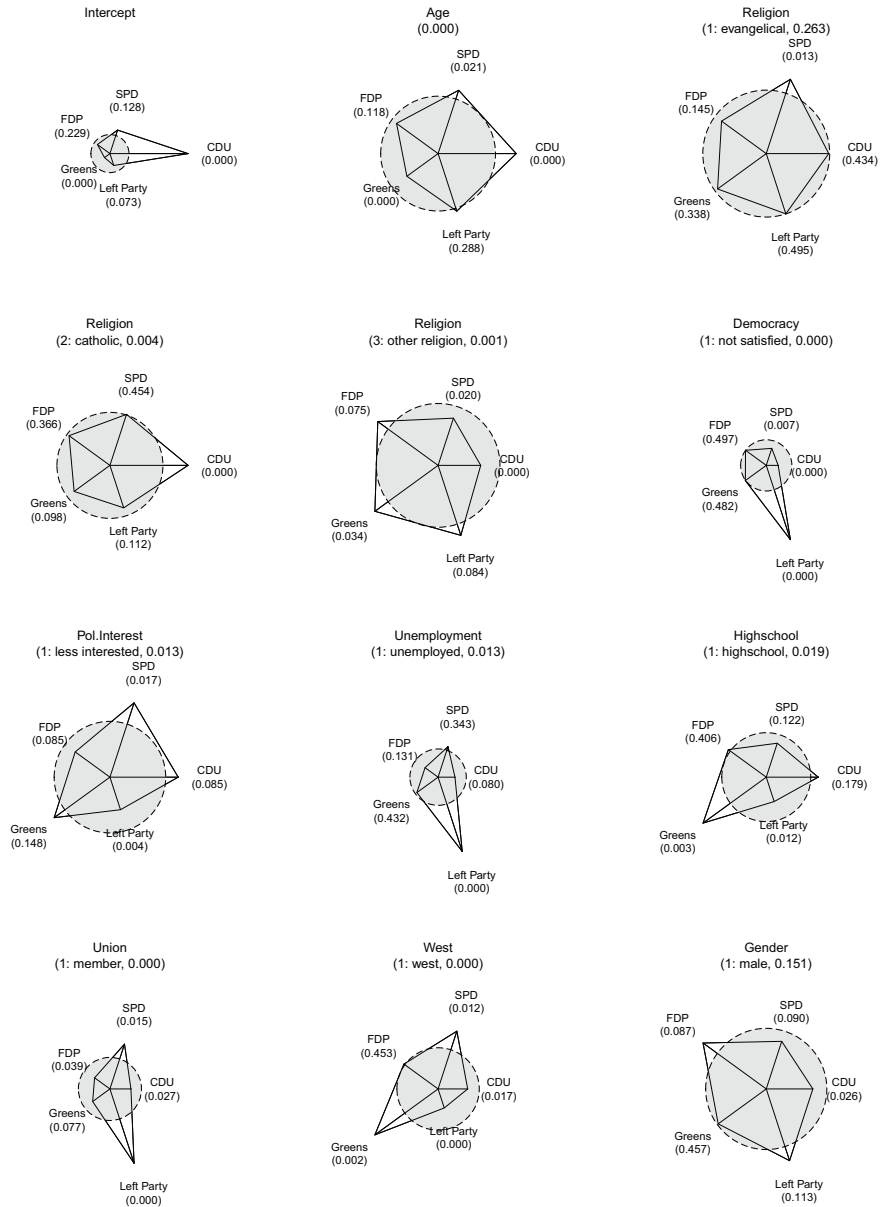
Intercept

SPD
(0.128)
FDP
(0.229)
CDU
(0.000)
Greens
(0.000)
Left Party
(0.073)

Age
(0.000)

SPD
(0.021)
FDP
(0.118)
CDU
(0.000)
Greens
(0.000)
Left Party
(0.288)

Religion
(1: evangelical, 0.263)

SPD
(0.013)
FDP
(0.145)
CDU
(0.434)
Greens
(0.338)
Left Party
(0.495)

Religion
(2: catholic, 0.004)

SPD
(0.454)
FDP
(0.366)
CDU
(0.000)
Greens
(0.098)
Left Party
(0.112)

Religion
(3: other religion, 0.001)

SPD
(0.020)
FDP
(0.075)
CDU
(0.000)
Greens
(0.034)
Left Party
(0.084)

Democracy
(1: not satisfied, 0.000)

SPD
(0.007)
FDP
(0.497)
CDU
(0.000)
Greens
(0.482)
Left Party
(0.000)

Pol.Interest
(1: less interested, 0.013)

SPD
(0.017)
FDP
(0.085)
CDU
(0.085)
Greens
(0.148)
Left Party
(0.004)

Unemployment
(1: unemployed, 0.013)

SPD
(0.343)
FDP
(0.131)
CDU
(0.080)
Greens
(0.432)
Left Party
(0.000)

Highschool
(1: highschool, 0.019)

SPD
(0.122)
FDP
(0.406)
CDU
(0.179)
Greens
(0.003)
Left Party
(0.012)

Union
(1: member, 0.000)

SPD
(0.015)
FDP
(0.039)
CDU
(0.027)
Greens
(0.077)
Left Party
(0.000)

West
(1: west, 0.000)

SPD
(0.012)
FDP
(0.453)
CDU
(0.017)
Greens
(0.002)
Left Party
(0.000)

Gender
(1: male, 0.151)

SPD
(0.090)
FDP
(0.087)
CDU
(0.026)
Greens
(0.457)
Left Party
(0.113)

Effect Stars for the multinomial logit model for the election data including confidence intervals.

```
> star.nominal(Partychoice ~ Age + Religion + Democracy + Pol.Interest +
+ Unemployment + Highschool + Union + West + Gender, election, cex.cat = 1,
+ cex.labels = 1.2, conf.int = TRUE, dist.cov = 0.7, lwd.circle = 0.01,
+ lty.circle = "solid", col.circle = "gray90")
```

$odds

	(Intercept)	Age	Religioncatholic	Religionother religion
CDU	4.0414158	1.3610161	1.4966911	0.6995757
SPD	1.5990006	1.1593572	0.8217861	0.6516310
FDP	0.7082679	0.8949610	1.0941385	1.3833039
Greens	0.3340830	0.6717697	0.8806534	1.3315266
Left Party	0.6539821	1.0541319	0.8437848	1.1909572

	Democracynot satisfied	Pol.Interestless interested
CDU	0.4647253	1.2235442
SPD	0.6981525	1.4007699
FDP	1.0014343	0.7694186
Greens	1.0089716	1.2356737
Left Party	3.0503659	0.6136872

	Unemploymentunemployed	Highschoolhighschool	Unionmember	Westwest
CDU	0.5982192	1.1681632	0.6654959	0.7187890
SPD	1.1349143	0.8022312	1.4926189	1.4746517
FDP	0.5714917	1.0529720	0.6002911	1.0248899
Greens	0.9302359	1.7567334	0.6772514	1.8973253
Left Party	2.7705983	0.5768651	2.4762461	0.4851657

	Gendermale
CDU	0.7689529
SPD	0.8261321
FDP	1.2896875
Greens	0.9805111
Left Party	1.2448406

$coefficients

	(Intercept)	Age	Religioncatholic	Religionother religion
CDU	1.3965951	0.30823152	0.4032568	-0.3572813
SPD	0.4693788	0.14786573	-0.1962752	-0.4282769
FDP	-0.3449328	-0.11097512	0.0899673	0.3244748
Greens	-1.0963659	-0.39783976	-0.1270912	0.2863261
Left Party	-0.4246752	0.05271762	-0.1698577	0.1747573

	Democracynot satisfied	Pol.Interestless interested
CDU	-0.766308725	0.2017517
SPD	-0.359317717	0.3370220
FDP	0.001433271	-0.2621201
Greens	0.008931611	0.2116163
Left Party	1.115261560	-0.4882699

	Unemploymentunemployed	Highschoolhighschool	Unionmember	Westwest
CDU	-0.51379796	0.15543258	-0.4072227	-0.33018737
SPD	0.12655711	-0.22035841	0.4005322	0.38842183

```
FDP                -0.55950540           0.05161669  -0.5103405   0.02458516
Greens             -0.07231703           0.56345605  -0.3897127   0.64044515
Left Party          1.01906328          -0.55014691   0.9067438  -0.72326476
         Gendermale
CDU       -0.26272555
SPD       -0.19100061
FDP        0.25439996
Greens    -0.01968128
Left Party 0.21900748


$se
         (Intercept)       Age Religioncatholic Religionother religion
CDU        0.2241870 0.06883778        0.1629128              0.1675213
SPD        0.2454879 0.07243803        0.1661371              0.1722206
FDP        0.3115688 0.09372915        0.2388946              0.2184835
Greens     0.3272034 0.09663685        0.2339585              0.2129134
Left Party 0.3132746 0.09447744        0.2328110              0.2049558
         Democracynot satisfied Pol.Interestless interested
CDU                   0.1388727                    0.1467925
SPD                   0.1475205                    0.1596902
FDP                   0.1944036                    0.1906898
Greens                0.1933154                    0.2026862
Left Party            0.2288390                    0.1853461
         Unemploymentunemployed Highschoolhighschool Unionmember  Westwest
CDU                   0.3657289            0.1691886   0.2118735 0.1559290
SPD                   0.3140074            0.1889160   0.1836202 0.1722467
FDP                   0.4983006            0.2177650   0.2891981 0.2071113
Greens                0.4216166            0.2081829   0.2730795 0.2221559
Left Party            0.3014122            0.2425590   0.2163638 0.1942385
         Gendermale
CDU       0.1353626
SPD       0.1423081
FDP        0.1874642
Greens     0.1840961
Left Party 0.1805578


$pvalues
         (Intercept)          Age Religioncatholic Religionother religion
CDU        2.338170e-10 3.773452e-06     0.006656363            0.016472574
SPD        2.793653e-02 2.061189e-02     0.118720953            0.006445038
FDP        1.341288e-01 1.182070e-01     0.353236077            0.068755637
Greens     4.030131e-04 1.920399e-05     0.293488859            0.089344799
Left Party 8.761314e-02 2.884250e-01     0.232818896            0.196924269
         Democracynot satisfied Pol.Interestless interested
CDU                  1.713767e-08                   0.084658676
SPD                  7.431218e-03                   0.017408771
FDP                  4.970588e-01                   0.084629447
Greens               4.815745e-01                   0.148229118
Left Party           5.480134e-07                   0.004214692
         Unemploymentunemployed Highschoolhighschool  Unionmember
```

```
CDU                   0.0800314563          0.17912780 2.730234e-02
SPD                   0.3434599079          0.12171913 1.458031e-02
FDP                   0.1307554699          0.40631705 3.880923e-02
Greens                0.4319061897          0.00339938 7.677503e-02
Left Party            0.0003611626          0.01166171 1.389682e-05
                 Westwest Gendermale
CDU         0.0171065991 0.02613505
SPD         0.0120656445 0.08977159
FDP         0.4527545016 0.08738123
Greens      0.0019703929 0.45743114
Left Party  0.0000982047 0.11257452

$p_rel
          Age Religioncatholic Religionother religion
[1,] 5.625482e-07       0.08015606             0.01694874
    Democracynot satisfied Pol.Interestless interested Unemploymentunemployed
[1,]           2.955651e-10                  0.01335832              0.01308379
    Highschoolhighschool  Unionmember     Westwest Gendermale
[1,]           0.01862473 3.281531e-05 1.548773e-05  0.1509492

$xlim
[1] 21.11333 89.20505

$ylim
[1]  15.25633 119.39484
```

Intercept

SPD
(0.028)

FDP
(0.134)

CDU
(0.000)

Greens
(0.000)

Left Party
(0.088)

Age
(0.000)

SPD
(0.021)

FDP
(0.118)

CDU
(0.000)

Greens
(0.000)

Left Party
(0.288)

Religion
(2: catholic, 0.080)

FDP
(0.353)

SPD
(0.119)

CDU
(0.007)

Greens
(0.293)

Left Party
(0.233)

Religion
(3: other religion, 0.017)

FDP
(0.069)

SPD
(0.006)

CDU
(0.016)

Greens
(0.089)

Left Party
(0.197)

Democracy
(1: not satisfied, 0.000)

FDP
(0.497)

SPD
(0.007)

CDU
(0.000)

Greens
(0.482)

Left Party
(0.000)

Pol.Interest
(1: less interested, 0.013)

SPD
(0.017)

FDP
(0.085)

CDU
(0.085)

Greens
(0.148)

Left Party
(0.004)

Unemployment
(1: unemployed, 0.013)

SPD
(0.343)

FDP
(0.131)

CDU
(0.080)

Greens
(0.432)

Left Party
(0.000)

Highschool
(1: highschool, 0.019)

SPD
(0.122)

FDP
(0.406)

CDU
(0.179)

Greens
(0.003)

Left Party
(0.012)

Union
(1: member, 0.000)

SPD
(0.015)

FDP
(0.039)

CDU
(0.027)

Greens
(0.077)

Left Party
(0.000)

West
(1: west, 0.000)

SPD
(0.012)

FDP
(0.453)

CDU
(0.017)

Greens
(0.002)

Left Party
(0.000)

Gender
(1: male, 0.151)

FDP
(0.087)

SPD
(0.090)

CDU
(0.026)

Greens
(0.457)

Left Party
(0.113)

Effect Stars for the multinomial logit model for the election data with reference category "FDP". Leaving away the p-values can sometimes increase clarity.

```
> star.nominal(Partychoice ~ Age + Religion + Democracy + Pol.Interest +
+ Unemployment + Highschool + Union + West + Gender, election, cex.cat = 1,
+ cex.labels = 1.2, lwd.circle = 1.5, refLevel = 3, symmetric = FALSE,
+ dist.cov = 0.8, printpvalues = FALSE)
```

$odds

	(Intercept)	Age	Religioncatholic	Religionother religion
CDU	5.7060549	1.5207546	1.3679174	0.5057281
SPD	2.2576211	1.2954276	0.7510805	0.4710685
FDP	1.0000000	1.0000000	1.0000000	1.0000000
Greens	0.4716901	0.7506133	0.8048829	0.9625698
Left Party	0.9233541	1.1778524	0.7711865	0.8609512

	Democracynot satisfied	Pol.Interestless interested
CDU	0.4640597	1.5902192
SPD	0.6971526	1.8205564
FDP	1.0000000	1.0000000
Greens	1.0075265	1.6059837
Left Party	3.0459971	0.7975986

	Unemploymentunemployed	Highschoolhighschool	Unionmember	Westwest
CDU	1.046768	1.1093962	1.108622	0.7013330
SPD	1.985881	0.7618732	2.486492	1.4388392
FDP	1.000000	1.0000000	1.000000	1.0000000
Greens	1.627733	1.6683571	1.128205	1.8512480
Left Party	4.848012	0.5478446	4.125075	0.4733833

	Gendermale
CDU	0.5962319
SPD	0.6405676
FDP	1.0000000
Greens	0.7602703
Left Party	0.9652265

$coefficients

	(Intercept)	Age	Religioncatholic	Religionother religion
CDU	1.74152788	0.4192066	0.3132895	-0.68175613
SPD	0.81431163	0.2588409	-0.2862425	-0.75275168
FDP	0.00000000	0.0000000	0.0000000	0.00000000
Greens	-0.75143306	-0.2868646	-0.2170585	-0.03814868
Left Party	-0.07974242	0.1636927	-0.2598250	-0.14971745

	Democracynot satisfied	Pol.Interestless interested
CDU	-0.76774200	0.4638719
SPD	-0.36075099	0.5991422
FDP	0.00000000	0.0000000
Greens	0.00749834	0.4737365
Left Party	1.11382829	-0.2261498

	Unemploymentunemployed	Highschoolhighschool	Unionmember	Westwest
CDU	0.04570744	0.1038159	0.1031178	-0.3547725
SPD	0.68606251	-0.2719751	0.9108727	0.3638367

```
FDP                     0.00000000           0.0000000    0.0000000   0.0000000
Greens                  0.48718838           0.5118394    0.1206278   0.6158600
Left Party              1.57856868          -0.6017636    1.4170843  -0.7478499
          Gendermale
CDU       -0.51712551
SPD       -0.44540057
FDP        0.00000000
Greens    -0.27408124
Left Party -0.03539248


$se
          (Intercept)        Age Religioncatholic Religionother religion
CDU         0.4221328 0.1284995        0.3203722              0.3074730
SPD         0.4442698 0.1327443        0.3263157              0.3141545
FDP         0.0000000 0.0000000        0.0000000              0.0000000
Greens      0.5159550 0.1543796        0.3848794              0.3480935
Left Party  0.5063563 0.1516420        0.3850338              0.3421559
          Democracynot satisfied Pol.Interestless interested
CDU                    0.2600887                     0.2661171
SPD                    0.2699519                     0.2800941
FDP                    0.0000000                     0.0000000
Greens                 0.3083424                     0.3181750
Left Party             0.3492097                     0.3002552
          Unemploymentunemployed Highschoolhighschool Unionmember  Westwest
CDU                    0.7168346            0.3031167   0.4094231 0.2863042
SPD                    0.6775919            0.3242640   0.3875045 0.3039587
FDP                    0.0000000            0.0000000   0.0000000 0.0000000
Greens                 0.7594319            0.3391805   0.4639223 0.3477697
Left Party             0.6641306            0.3727579   0.4108462 0.3211392
          Gendermale
CDU        0.2570587
SPD        0.2654992
FDP        0.0000000
Greens     0.3006965
Left Party 0.2982224


$p_rel
          Age Religioncatholic Religionother religion
[1,] 5.625482e-07      0.08015606             0.01694874
    Democracynot satisfied Pol.Interestless interested Unemploymentunemployed
[1,]          2.955651e-10                   0.01335832             0.01308379
     Highschoolhighschool Unionmember    Westwest Gendermale
[1,]           0.01862473 3.281531e-05 1.548773e-05  0.1509492


$xlim
[1] 14.83574 81.02598


$ylim
[1]  14.20808 102.48075
```

14

Intercept

SPD
FDP
Greens CDU
Left Party

Age
(0.000)

SPD
FDP
Greens CDU
Left Party

Religion
(2: catholic, 0.080)

SPD
FDP
Greens CDU
Left Party

Religion
(3: other religion, 0.017)

FDP
SPD
Greens CDU
Left Party

Democracy
(1: not satisfied, 0.000)

SPD
FDP
Greens CDU
Left Party

Pol.Interest
(1: less interested, 0.013)

SPD
FDP
Greens CDU
Left Party

Unemployment
(1: unemployed, 0.013)

SPD
FDP
Greens CDU
Left Party

Highschool
(1: highschool, 0.019)

SPD
FDP
Greens CDU
Left Party

Union
(1: member, 0.000)

SPD
FDP
Greens CDU
Left Party

West
(1: west, 0.000)

SPD
FDP
Greens CDU
Left Party

Gender
(1: male, 0.151)

SPD
FDP
Greens CDU
Left Party

15

Effect Stars for the multinomial logit model for the election data with four category-specific covariates.

```
> election[,13:16] <- election[,13:16] - election[,12]
> election[,18:21] <- election[,18:21] - election[,17]
> election[,23:26] <- election[,23:26] - election[,22]
> election[,28:31] <- election[,28:31] - election[,27]
> election$Social <- election$Social_SPD
> election$Immigration <- election$Immigration_SPD
> election$Nuclear <- election$Nuclear_SPD
> election$Left_Right <- election$Left_Right_SPD
> star.nominal(Partychoice ~ Social + Immigration + Nuclear + Left_Right + Age +
+ Religion + Democracy + Pol.Interest + Unemployment + Highschool + Union + West +
+ Gender, data = election,
+ xij = list(Social ~ Social_SPD + Social_FDP + Social_Greens + Social_Left,
+ Immigration ~ Immigration_SPD + Immigration_FDP + Immigration_Greens + Immigration_Left,
+ Nuclear ~ Nuclear_SPD + Nuclear_FDP + Nuclear_Greens + Nuclear_Left,
+ Left_Right ~ Left_Right_SPD + Left_Right_FDP + Left_Right_Greens + Left_Right_Left),
+ cex.cat = 1, cex.labels = 1.4, lwd.circle = 1.5, dist.cov = 0.8)
```

```
$odds
            (Intercept)       Age Religioncatholic Religionother religion
CDU           3.8011447 1.3612851        1.7116679              0.9270493
SPD           1.2689668 1.1631240        0.8119858              0.7070553
FDP           0.6002334 0.9448420        1.3554629              1.7608286
Greens        0.4484616 0.7078829        0.9066765              1.0931248
Left Party    0.7701760 0.9442876        0.5854530              0.7926053
            Democracynot satisfied Pol.Interestless interested
CDU                      0.4898356                    1.1705339
SPD                      0.7386462                    1.3192603
FDP                      1.1961609                    0.7482434
Greens                   0.8630963                    1.1128787
Left Party               2.6770981                    0.7776690
            Unemploymentunemployed Highschoolhighschool Unionmember  Westwest
CDU                      0.9584716            1.3080832   0.6214195 0.5773750
SPD                      1.0117595            0.8614084   1.4443515 1.6367666
FDP                      0.8997789            1.3046584   0.7169625 0.7455735
Greens                   0.7956908            1.4416545   0.6326797 1.7707552
Left Party               1.4403343            0.4718430   2.4561892 0.8015050
            Gendermale
CDU          0.8015079
SPD          0.7659470
FDP          1.0759390
Greens       1.0678932
Left Party   1.4176792


$coefficients
            (Intercept)       Age Religioncatholic Religionother religion
CDU           1.3353023 0.30842916       0.53746829            -0.07574850
SPD           0.2382030 0.15110952      -0.20827246            -0.34664642
```

```
FDP          -0.5104367 -0.05673755      0.30414302            0.56578447
Greens       -0.8019323 -0.34547661     -0.09796952            0.08904038
Left Party   -0.2611363 -0.05732452     -0.53536933           -0.23242993
            Democracynot satisfied Pol.Interestless interested
CDU                    -0.7136854                    0.1574600
SPD                    -0.3029363                    0.2770712
FDP                     0.1791172                   -0.2900269
Greens                 -0.1472290                    0.1069501
Left Party              0.9847334                   -0.2514543
            Unemploymentunemployed Highschoolhighschool Unionmember   Westwest
CDU                    -0.04241539           0.2685628  -0.4757488 -0.5492632
SPD                     0.01169086          -0.1491866   0.3676605  0.4927227
FDP                    -0.10560618           0.2659413  -0.3327317 -0.2936015
Greens                 -0.22854455           0.3657914  -0.4577910  0.5714061
Left Party              0.36487527          -0.7511089   0.8986110 -0.2212641
            Gendermale
CDU         -0.22126042
SPD         -0.26664233
FDP          0.07319380
Greens       0.06568778
Left Party   0.34902117


$se
            (Intercept)        Age Religioncatholic Religionother religion
CDU           0.2981722 0.08679121        0.2127910              0.2131650
SPD           0.2780505 0.08018670        0.1883308              0.1920546
FDP           0.3552321 0.10436419        0.2664386              0.2458249
Greens        0.3588036 0.10644737        0.2543597              0.2385184
Left Party    0.3877065 0.11781620        0.2877358              0.2560869
            Democracynot satisfied Pol.Interestless interested
CDU                     0.1805016                    0.1917790
SPD                     0.1660231                    0.1801202
FDP                     0.2187023                    0.2170315
Greens                  0.2143911                    0.2290519
Left Party              0.2820579                    0.2327036
            Unemploymentunemployed Highschoolhighschool Unionmember   Westwest
CDU                     0.4350242            0.2204325   0.2741820  0.2029215
SPD                     0.3651699            0.2110732   0.2120310  0.1931098
FDP                     0.5596199            0.2476985   0.3197829  0.2347514
Greens                  0.4718760            0.2372396   0.2999115  0.2481622
Left Party              0.4071883            0.2986892   0.2749185  0.2431232
            Gendermale
CDU          0.1737192
SPD          0.1584829
FDP          0.2080704
Greens       0.2018792
Left Party   0.2212970


$pvalues
            (Intercept)          Age Religioncatholic Religionother religion
```

```
CDU          3.762140e-06 0.0001899324      0.005771707          0.36116316
SPD          1.958082e-01 0.0297506330      0.134387873          0.03554228
FDP          7.537170e-02 0.2933413168      0.126828299          0.01067956
Greens       1.270811e-02 0.0005861909      0.350058922          0.35446029
Left Party   2.503016e-01 0.3132854738      0.031398355          0.18203913
          Democracynot satisfied Pol.Interestless interested
CDU                 3.844375e-05                    0.20580920
SPD                 3.402594e-02                    0.06199291
FDP                 2.063931e-01                    0.09071977
Greens              2.461261e-01                    0.32027674
Left Party          2.403870e-04                    0.13994256
          Unemploymentunemployed Highschoolhighschool  Unionmember     Westwest
CDU                    0.4611642           0.111546473 0.0413564862 0.003396988
SPD                    0.4872301           0.239845328 0.0414595647 0.005362773
FDP                    0.4251598           0.141490031 0.1490555557 0.105523625
Greens                 0.3140752           0.061553232 0.0634526468 0.010652055
Left Party             0.1851037           0.005956953 0.0005403181 0.181387442
          Gendermale
CDU        0.10139068
SPD        0.04623915
FDP        0.36250380
Greens     0.37244615
Left Party 0.05737912


$catspec
        Social Immigration    Nuclear Left_Right
[1,] -0.1630662  -0.1194577 -0.1848822 -0.6269847


$catspecse
        Social Immigration    Nuclear Left_Right
[1,] 0.03313544  0.03170079 0.02960555 0.04180896


$p_rel
         Social   Immigration       Nuclear Left_Right        Age
[1,] 5.117136e-07 0.0001397863 1.107482e-10         0 0.000175962
    Religioncatholic Religionother religion Democracynot satisfied
[1,]       0.0606889               0.1014177               3.01792e-05
    Pol.Interestless interested Unemploymentunemployed Highschoolhighschool
[1,]                  0.2696232              0.9151604            0.04863854
    Unionmember    Westwest Gendermale
[1,] 0.002959962 0.001123774  0.2346133


$xlim
[1]  9.882976 53.976255


$ylim
[1]  9.46485 68.26856
```
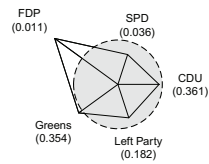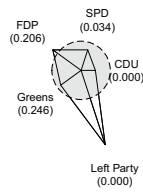
Intercept
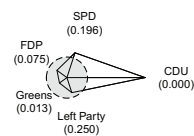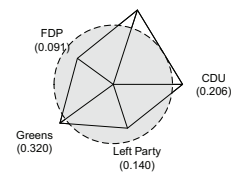
Age
(0.000)
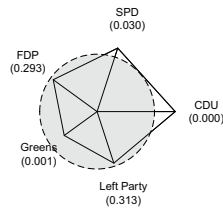
Religion
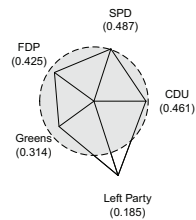(2: catholic, 0.061)
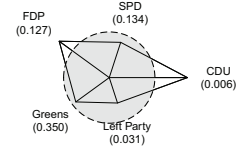
Religion
(3: other religion, 0.101)

Democracy
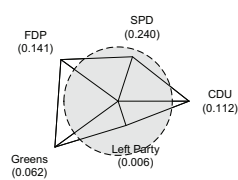(1: not satisfied, 0.000)

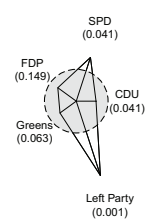Pol.Interest
(1: less interested, 0.270)
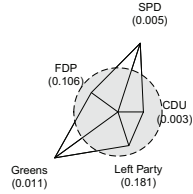
Unemployment
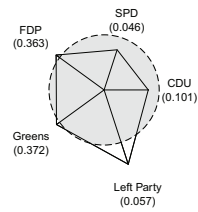(1: unemployed, 0.915)

Highschool
(1: highschool, 0.049)

Union
(1: member, 0.003)

West
(1: west, 0.001)

Gender
(1: male, 0.235)

Global coefficients