Election data

November 22, 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 0.9302359 0.6772514 1.8973253 Greens 1.7567334 Left Party 2.7705983 0.5768651 2.4762461 0.4851657

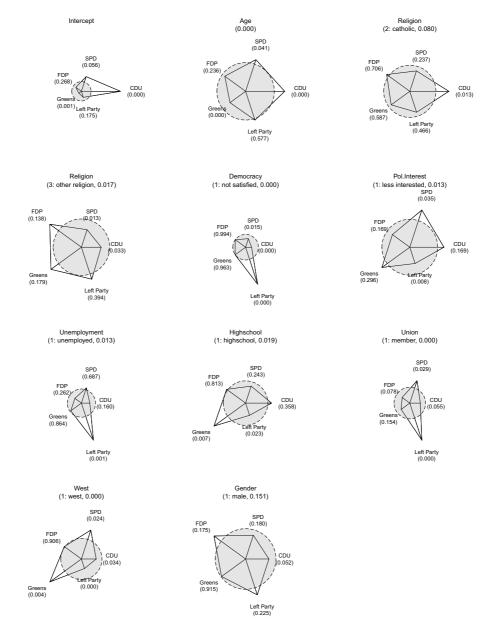
Gendermale
CDU 0.7689529
SPD 0.8261321
FDP 1.2896875
Greens 0.9805111
Left Party 1.2448406

\$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

```
-1.0963659 -0.39783976
                                          -0.1270912
                                                                   0.2863261
Greens
           -0.4246752 0.05271762
Left Party
                                          -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
                      1.115261560
                                                    -0.4882699
Left Party
           Unemploymentunemployed Highschool Highschool 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
             0.3272034 0.09663685
                                          0.2339585
                                                                  0.2129134
Greens
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
                        0.1933154
                                                     0.2026862
Greens
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
                        0.3014122
                                              0.2425590
                                                          0.2163638 0.1942385
Left Party
           Gendermale
CDU
            0.1353626
SPD
            0.1423081
FDP
            0.1874642
Greens
            0.1840961
Left Party 0.1805578
$pvalues
            (Intercept)
                                 Age Religioncatholic Religionother religion
CDU
           4.676339e-10 7.546903e-06
                                           0.01331273
                                                                    0.03294515
```

```
5.587306e-02 4.122377e-02
SPD
                                          0.23744191
                                                                 0.01289008
FDP
          2.682577e-01 2.364139e-01
                                          0.70647215
                                                                 0.13751127
Greens
          8.060262e-04 3.840798e-05
                                          0.58697772
                                                                 0.17868960
Left Party 1.752263e-01 5.768501e-01
                                          0.46563779
                                                                 0.39384854
          Democracynot satisfied Pol.Interestless interested
CDU
                    3.427534e-08
                                                 0.169317352
SPD
                    1.486244e-02
                                                 0.034817542
FDP
                    9.941175e-01
                                                 0.169258895
Greens
                    9.631490e-01
                                                 0.296458236
                    1.096027e-06
                                                 0.008429384
Left Party
          Unemploymentunemployed Highschoolhighschool Unionmember
CDU
                    0.1600629126
                                           0.35825560 5.460469e-02
                                           0.24343826 2.916062e-02
SPD
                    0.6869198158
FDP
                    0.2615109397
                                           0.81263410 7.761846e-02
Greens
                    0.8638123794
                                           0.00679876 1.535501e-01
                                           0.02332342 2.779363e-05
Left Party
                    0.0007223252
              Westwest Gendermale
CDU
          0.0342131983 0.0522701
          0.0241312891 0.1795432
SPD
FDP
          0.9055090031 0.1747625
          0.0039407859 0.9148623
Greens
Left Party 0.0001964094 0.2251490
$p_rel
              Age Religioncatholic Religionother religion
[1,] 5.625482e-07
                       0.08015606
                                              0.01694874
     Democracynot satisfied Pol.Interestless interested Unemploymentunemployed
                                                                   0.01308379
              2.955651e-10
                                            0.01335832
[1,]
     Highschool 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
```



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
                                                           0.9529622
FDP
           0.8131941 0.8949610
                                         0.8709703
           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
                                                     0.5982192
CDU
                             1.2235442
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
                                  0.6002911 1.0248899 1.2896875
                      1.0529720
Greens
                      1.7567334
                                  0.6772514 1.8973253 0.9805111
                                  2.4762461 0.4851657 1.2448406
Left Party
                      0.5768651
$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
           -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
                        0.2332478
                                              0.008931611
Greens
                        0.1731241
                                              1.115261560
Left Party
           Pol.Interestless interested Unemploymentunemployed
CDU
                             0.2017517
                                                   -0.51379796
SPD
                             0.3370220
                                                    0.12655711
FDP
                            -0.2621201
                                                   -0.55950540
```

```
0.2116163
                                                  -0.07231703
Greens
                                                   1.01906328
Left Party
                            -0.4882699
           Highschool Unionmember
                                               Westwest Gendermale
CDU
                     0.15543258
                                 -0.4072227 -0.33018737 -0.26272555
SPD
                    -0.22035841
                                  0.4005322 0.38842183 -0.19100061
                     0.05161669 -0.5103405 0.02458516 0.25439996
FDP
Greens
                     0.56345605 -0.3897127 0.64044515 -0.01968128
                    -0.55014691
                                  0.9067438 -0.72326476 0.21900748
Left Party
$se
           Intercept
                            Age Religionevangelical Religioncatholic
CDU
           0.2048527 0.06883778
                                         0.09223404
                                                            0.1001696
           0.2302249 0.07243803
SPD
                                         0.09354620
                                                           0.1038551
FDP
           0.2783841 0.09372915
                                         0.13052397
                                                           0.1410168
           0.2983730 0.09663685
                                         0.12673599
                                                           0.1395627
Greens
Left Party 0.2903597 0.09447744
                                         0.12295070
                                                            0.1410763
           Religionother religion Democracynot satisfied
                        0.1026721
CDU
                                               0.1388727
SPD
                        0.1071075
                                               0.1475205
FDP
                        0.1295140
                                               0.1944036
                        0.1278394
                                               0.1933154
Greens
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
                             0.2026862
                                                    0.4216166
Greens
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
                                  0.2730795 0.2221559
                      0.2081829
                                                       0.1840961
Greens
Left Party
                      0.2425590
                                  0.2163638 0.1942385 0.1805578
$pvalues
                                 Age Religionevangelical Religioncatholic
              Intercept
CDU
           5.487166e-12 7.546903e-06
                                              0.86803502
                                                              0.0001076154
SPD
           2.565764e-01 4.122377e-02
                                              0.02604988
                                                              0.9087082871
           4.575989e-01 2.364139e-01
FDP
                                              0.28987035
                                                              0.7326054235
           4.712495e-04 3.840798e-05
                                                              0.1967185156
Greens
                                              0.67535490
Left Party 1.451278e-01 5.768501e-01
                                              0.98940172
                                                              0.2241410666
           Religionother religion Democracynot satisfied
CDU
                     0.0002844199
                                            3.427534e-08
SPD
                     0.0398908409
                                            1.486244e-02
FDP
                     0.1502451117
                                            9.941175e-01
                     0.0680709355
                                            9.631490e-01
Greens
                                            1.096027e-06
                     0.1689280321
Left Party
           Pol.Interestless interested Unemploymentunemployed
CDU
                           0.169317352
                                                 0.1600629126
```

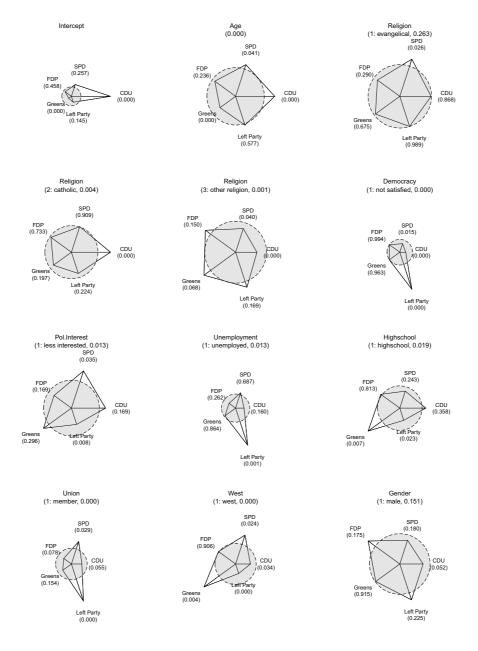
```
SPD
                         0.034817542
                                             0.6869198158
FDP
                                              0.2615109397
                         0.169258895
Greens
                         0.296458236
                                              0.8638123794
Left Party
                         0.008429384
                                              0.0007223252
          Highschoolhighschool Unionmember
                                             Westwest Gendermale
CDU
                   0.35825560 5.460469e-02 0.0342131983 0.0522701
SPD
                   0.24343826 2.916062e-02 0.0241312891 0.1795432
FDP
                   0.81263410 7.761846e-02 0.9055090031 0.1747625
                    0.00679876 1.535501e-01 0.0039407859 0.9148623
Greens
Left Party
                    0.02332342 2.779363e-05 0.0001964094 0.2251490
$p_rel
             Age Religionevangelical Religioncatholic Religionother religion
[1,] 5.625482e-07
                 0.2626094
                                       0.003582126
                                                             0.0005500146
    Democracynot satisfied Pol.Interestless interested Unemploymentunemployed
             2.955651e-10
                                        0.01335832
                                                                0.01308379
[1,]
    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



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

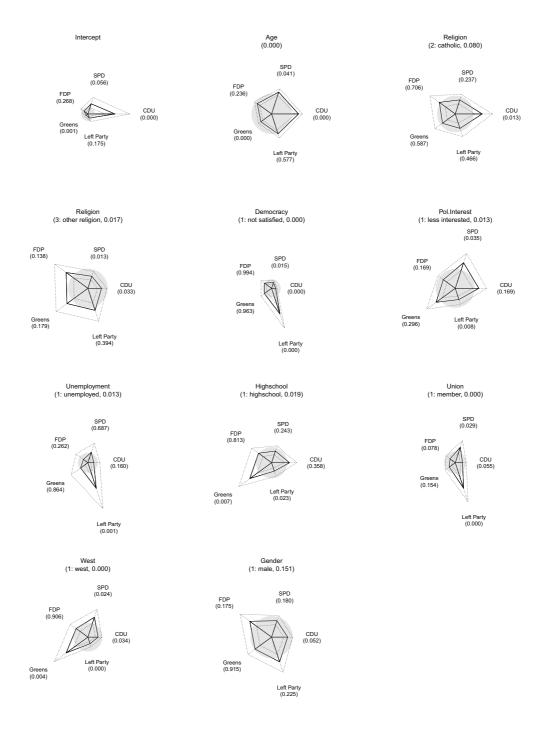
```
> star.nominal(Partychoice ~ Age + Religion + Democracy + Pol.Interest +
+ Unemployment + Highschool + Union + West + Gender, election, cex.cat = 1,
+ cex.labels = 1.2, conf.int = TRUE, dist.cov = 0.7, lwd.circle = 0.01,
+ lty.circle = "solid", col.circle = "gray90")
$odds
           (Intercept)
                             Age Religioncatholic Religionother religion
CDU
             4.0414158 1.3610161
                                         1.4966911
                                                                 0.6995757
             1.5990006 1.1593572
SPD
                                         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
                        3.0503659
                                                     0.6136872
Left Party
           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
                        0.9302359
                                              1.7567334
                                                          0.6772514 1.8973253
Greens
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
            -1.0963659 -0.39783976
                                          -0.1270912
                                                                   0.2863261
Greens
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
                      0.008931611
                                                     0.2116163
Greens
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
                                                         -0.3897127
Greens
                       -0.07231703
                                             0.56345605
                                                                      0.64044515
Left Party
                        1.01906328
                                            -0.55014691
                                                           0.9067438 -0.72326476
            Gendermale
CDU
           -0.26272555
SPD
           -0.19100061
FDP
            0.25439996
           -0.01968128
Greens
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
             0.3272034 0.09663685
                                          0.2339585
                                                                  0.2129134
Greens
             0.3132746 0.09447744
                                                                  0.2049558
Left Party
                                          0.2328110
           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
                         0.2288390
                                                      0.1853461
Left Party
           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
                         0.4216166
                                              0.2081829
                                                           0.2730795 0.2221559
Greens
                         0.3014122
                                              0.2425590
                                                           0.2163638 0.1942385
Left Party
           Gendermale
CDU
            0.1353626
SPD
            0.1423081
FDP
            0.1874642
Greens
            0.1840961
Left Party 0.1805578
$pvalues
                                  Age Religioncatholic Religionother religion
            (Intercept)
CDU
           4.676339e-10 7.546903e-06
                                            0.01331273
                                                                    0.03294515
SPD
           5.587306e-02 4.122377e-02
                                            0.23744191
                                                                    0.01289008
FDP
           2.682577e-01 2.364139e-01
                                            0.70647215
                                                                    0.13751127
           8.060262e-04 3.840798e-05
                                            0.58697772
                                                                    0.17868960
Greens
Left Party 1.752263e-01 5.768501e-01
                                            0.46563779
                                                                    0.39384854
           Democracynot satisfied Pol.Interestless interested
CDU
                     3.427534e-08
                                                   0.169317352
SPD
                     1.486244e-02
                                                   0.034817542
FDP
                     9.941175e-01
                                                   0.169258895
                     9.631490e-01
Greens
                                                   0.296458236
Left Party
                     1.096027e-06
                                                   0.008429384
           Unemploymentunemployed Highschoolhighschool Unionmember
```

```
CDU
                  0.1600629126
                                      0.35825560 5.460469e-02
SPD
                                      0.24343826 2.916062e-02
                  0.6869198158
                                    0.81263410 7.761846e-02 0.00679876 1.535501e-01
                  0.2615109397
FDP
Greens
                  0.8638123794
Left Party
                 0.0007223252
                                      0.02332342 2.779363e-05
            Westwest Gendermale
CDU
        0.0342131983 0.0522701
SPD
         0.0241312891 0.1795432
         0.9055090031 0.1747625
FDP
Greens
        0.0039407859 0.9148623
Left Party 0.0001964094 0.2251490
$p_rel
            Age Religioncatholic Religionother religion
[1,] 5.625482e-07 0.08015606 0.01694874
   Democracynot satisfied Pol.Interestless interested Unemploymentunemployed
                                                            0.01308379
            2.955651e-10
                                      0.01335832
   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

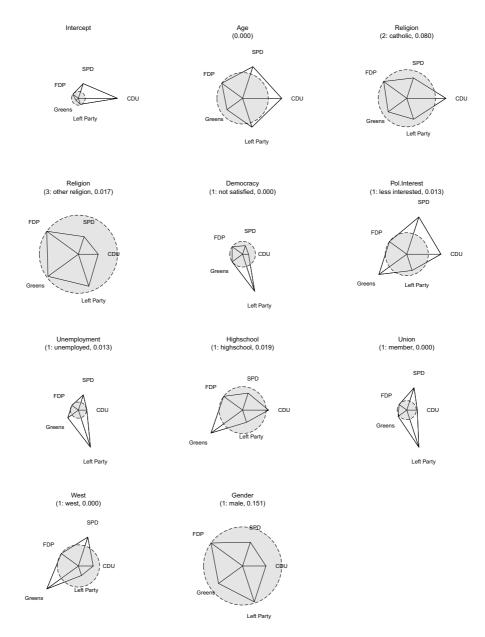


Effect Stars for the multinomial logit model for the election data with reference category "FDP". Leaving away the p-values can sometimes increase clarity.

```
> 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
             0.9233541 1.1778524
                                                                 0.8609512
Left Party
                                         0.7711865
           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
                         3.0459971
                                                      0.7975986
Left Party
           Unemploymentunemployed Highschoolhighschool Unionmember Westwest
                          1.046768
CDU
                                              1.1093962
                                                            1.108622 0.7013330
SPD
                          1.985881
                                              0.7618732
                                                            2.486492 1.4388392
FDP
                          1.000000
                                              1.0000000
                                                            1.000000 1.0000000
                                                            1.128205 1.8512480
Greens
                          1.627733
                                              1.6683571
                          4.848012
                                              0.5478446
                                                            4.125075 0.4733833
Left Party
           Gendermale
CDU
            0.5962319
SPD
            0.6405676
FDP
            1.0000000
Greens
            0.7602703
Left Party 0.9652265
$coefficients
                               Age Religioncatholic Religionother religion
           (Intercept)
CDU
            1.74152788 0.4192066
                                          0.3132895
                                                                -0.68175613
SPD
            0.81431163
                        0.2588409
                                         -0.2862425
                                                                -0.75275168
FDP
            0.0000000 0.0000000
                                          0.0000000
                                                                 0.00000000
           -0.75143306 -0.2868646
                                         -0.2170585
                                                                -0.03814868
Greens
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
                       0.00749834
                                                      0.4737365
Greens
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
                       0.48718838
                                              0.5118394
                                                          0.1206278 0.6158600
Greens
Left Party
                       1.57856868
                                             -0.6017636
                                                          1.4170843 -0.7478499
            Gendermale
CDU
           -0.51712551
SPD
           -0.44540057
FDP
            0.00000000
           -0.27408124
Greens
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
             0.5063563 0.1516420
                                        0.3850338
                                                                0.3421559
Left Party
           Democracynot satisfied Pol.Interestless interested
CDU
                        0.2600887
                                                     0.2661171
SPD
                        0.2699519
                                                     0.2800941
FDP
                        0.0000000
                                                     0.0000000
                        0.3083424
Greens
                                                     0.3181750
                        0.3492097
                                                     0.3002552
Left Party
           Unemploymentunemployed Highschoolhighschool Unionmember Westwest
                                                          0.4094231 0.2863042
CDU
                        0.7168346
                                              0.3031167
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
                        0.6641306
                                              0.3727579
                                                          0.4108462 0.3211392
Left Party
           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
     Highschool Unionmember
                                           Westwest Gendermale
               0.01862473 3.281531e-05 1.548773e-05 0.1509492
[1,]
$xlim
[1] 14.83574 81.02598
$ylim
```

[1] 14.20808 102.48075



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

```
> election[,13:16] <- election[,13:16] - election[,12]</pre>
> election[,18:21] <- election[,18:21] - election[,17]</pre>
> election[,23:26] <- election[,23:26] - election[,22]
> election[,28:31] <- election[,28:31] - election[,27]</pre>
> election$Social <- election$Social_SPD</pre>
> 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
             0.7701760 0.9442876
                                         0.5854530
                                                                 0.7926053
Left Party
           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
                         0.7956908
                                                          0.6326797 1.7707552
Greens
                                              1.4416545
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
```

-0.20827246

-0.34664642

0.2382030 0.15110952

SPD

```
FDP
            -0.5104367 -0.05673755
                                          0.30414302
                                                                  0.56578447
            -0.8019323 -0.34547661
Greens
                                         -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
                       -0.1472290
                                                     0.1069501
Greens
Left Party
                        0.9847334
                                                    -0.2514543
           Unemploymentunemployed Highschool Highschool Unionmember
                                                                       Westwest
CDU
                      -0.04241539
                                              0.2685628
                                                         -0.4757488 -0.5492632
SPD
                       0.01169086
                                             -0.1491866
                                                           0.3676605 0.4927227
FDP
                                                         -0.3327317 -0.2936015
                      -0.10560618
                                              0.2659413
Greens
                      -0.22854455
                                              0.3657914
                                                         -0.4577910 0.5714061
Left Party
                       0.36487527
                                             -0.7511089
                                                          0.8986110 -0.2212641
            Gendermale
           -0.22126042
CDU
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
             0.3588036 0.10644737
                                          0.2543597
                                                                  0.2385184
Greens
                                                                  0.2560869
Left Party
             0.3877065 0.11781620
                                          0.2877358
           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
                                                           0.3197829 0.2347514
                        0.5596199
                                              0.2476985
                                              0.2372396
                                                           0.2999115 0.2481622
Greens
                        0.4718760
                        0.4071883
                                              0.2986892
                                                           0.2749185 0.2431232
Left Party
           Gendermale
CDU
            0.1737192
SPD
            0.1584829
FDP
            0.2080704
Greens
            0.2018792
Left Party 0.2212970
$pvalues
            (Intercept)
                                  Age Religioncatholic Religionother religion
```

```
CDU
          7.524280e-06 0.0003798648
                                        0.01154341
                                                               0.72232632
SPD
          3.916164e-01 0.0595012660
                                        0.26877575
                                                              0.07108457
FDP
          1.507434e-01 0.5866826337
                                        0.25365660
                                                              0.02135912
Greens
          2.541623e-02 0.0011723817
                                        0.70011784
                                                               0.70892058
Left Party 5.006031e-01 0.6265709476
                                       0.06279671
                                                               0.36407825
          Democracynot satisfied Pol.Interestless interested
CDU
                    0.0000768875
                                                 0.4116184
SPD
                    0.0680518890
                                                  0.1239858
FDP
                    0.4127862736
                                                  0.1814395
                    0.4922522847
                                                 0.6405535
Greens
Left Party
                   0.0004807739
                                                  0.2798851
          Unemploymentunemployed Highschoolhighschool Unionmember
                                                                   Westwest
CDU
                       0.9223284 0.22309295 0.082712972 0.006793975
SPD
                      0.9744602
                                         0.47969066 0.082919129 0.010725547
FDP
                      0.8503197
                                        0.28298006 0.298111111 0.211047250
                                         0.12310646 0.126905294 0.021304109
Greens
                      0.6281504
                      0.3702074
                                         0.01191391 0.001080636 0.362774885
Left Party
          Gendermale
CDU
          0.20278137
SPD
          0.09247829
FDP
          0.72500759
         0.74489229
Greens
Left Party 0.11475823
$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
[1,] 5.117136e-07 0.0001397863 1.107482e-10 0 0.000175962
    Religioncatholic Religionother religion Democracynot satisfied
      0.0606889 0.1014177 3.01792e-05
\lceil 1. \rceil
    Pol.Interestless interested Unemploymentunemployed Highschoolhighschool
                     0.2696232
                                           0.9151604
                                                              0.04863854
\lceil 1, \rceil
    Unionmember Westwest Gendermale
[1,] 0.002959962 0.001123774 0.2346133
$xlim
[1] 9.882976 53.976255
[1] 9.46485 68.26856
```

