Statistics/Data Analysis

```
      name:  <unnamed>
       log:  C:\Users\dmk38\Documents\scholarship\res_note_AOT\results.smcl
  log type:  smcl
 opened on:  28 Sep 2016, 07:23:45

1 .
2 .
3 .                 *** form left_right outlook scale-- labeled "conservrepub" here but
  > "Left_right" in paper ****
4 .
5 .                 alpha libcon dem_repub, s i ge(left_right)

  Test scale = mean(standardized items)

  Average interitem correlation:      0.6367
  Number of items in the scale:            2
  Scale reliability coefficient:      0.7780

6 .                 zscore left_right
  z_left_right created with 55 missing values

7 .                 replace conservrepub=z_left_right
  (1,945 real changes made)

8 .
9 .                 *** center scale so that Moderate/Independent = 0 ***
10.
11.                  replace conservrepub =conservrepub+.2
  (1,945 real changes made)

12.
13.
14.                         *** values of "Left_right" for Liberal Democrat, Conservati
  > ve Republican & Moderate Independent, respectively ***
15.
16.                 su  conservrepub if libcon ==2  & dem_repub==2

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
conservrepub |         74   -.7360952           0  -.7360952  -.7360952

17.                 su conservrepub if libcon ==4 & dem_repub == 6

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
conservrepub |        108    1.249351           0   1.249351   1.249351

18.                 su conservrepub if libcon ==3 & dem_repub==3

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
conservrepub |         79   -.0025162           0  -.0025162  -.0025162

19.
20.                 *** form AOT scale ***
21.
22. alpha Contrary Chr Revise Weakling Intuition Ignore Search, s i ge(AOT)

  Test scale = mean(standardized items)
```

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem correlation	alpha
Contrary	**1567**	**+**	**0.6544**	**0.4570**	**0.1539**	**0.5219**
Chr	**1565**	**+**	**0.5111**	**0.2758**	**0.1903**	**0.5852**
Revise	**1568**	**+**	**0.6621**	**0.4662**	**0.1517**	**0.5176**
Weakling	**1581**	**-**	**0.5039**	**0.2644**	**0.1931**	**0.5894**
Intuition	**1580**	**-**	**0.3597**	**0.0991**	**0.2296**	**0.6413**
Ignore	**1564**	**-**	**0.6284**	**0.4254**	**0.1602**	**0.5338**
Search	**1558**	**+**	**0.5084**	**0.2730**	**0.1908**	**0.5859**
Test scale					**0.1814**	**0.6080**

```
23.
24.
25.                 zscore AOT
  z_AOT created with 409 missing values

26.                 replace AOT=z_AOT
  (1,591 real changes made)

27.
28.                 *** create median split for conservrepub ****
29.
30.                                       set seed 040706

31.         su conservrepub, d
```

conservrepub

Percentiles		Smallest		
1%	**-1.469674**	**-1.811352**		
5%	**-1.469674**	**-1.811352**		
10%	**-.9952391**	**-1.811352**	Obs	**1,945**
25%	**-.5208042**	**-1.811352**	Sum of Wgt.	**1,945**
50%	**.2566278**		Mean	**.2**
		Largest	Std. Dev.	**1**
75%	**.9902068**	**1.98293**		
90%	**1.508495**	**1.984128**	Variance	**1**
95%	**1.98293**	**1.984128**	Skewness	**.0983071**
99%	**1.98293**	**1.984128**	Kurtosis	**1.990759**

```
32.         g select=uniform() if conservrepub==r(p50)
  (1,845 missing values generated)

33.         gen ld=.
  (2,000 missing values generated)

34.         replace ld=1 if conservrepub<=r(p50)
  (1,115 real changes made)

35.         replace ld=0 if conservrepub>r(p50) & conservrepub<4
  (830 real changes made)

36.
37. replace ld=0 if conservrepub==r(p50) & select<.93
  (143 real changes made)
```

```
38.
39.         sort select

40.         su select
```

Variable	Obs	Mean	Std. Dev.	Min	Max
select	**155**	**.5053263**	**.2960188**	**.0094403**	**.9899448**

```
41.         tab conservrepub ld
```

conservrepub	ld 0	ld 1	Total
-1.811352	**0**	**5**	**5**
-1.469674	**0**	**133**	**133**
-1.21053	**0**	**8**	**8**
-1.127996	**0**	**23**	**23**
-.9952391	**0**	**173**	**173**
-.9513861	**0**	**15**	**15**
-.8624821	**0**	**8**	**8**
-.7360952	**0**	**74**	**74**
-.6922421	**0**	**15**	**15**
-.6097082	**0**	**20**	**20**
-.5208042	**0**	**117**	**117**
-.4769511	**0**	**63**	**63**
-.2616602	**0**	**105**	**105**
-.2178071	**0**	**23**	**23**
-.0914202	**0**	**9**	**9**
-.0463693	**0**	**37**	**37**
-.0025162	**0**	**79**	**79**
.0413369	**0**	**3**	**3**
.08519	**0**	**3**	**3**
.0863878	**0**	**17**	**17**
.2127747	**0**	**30**	**30**
.2566278	**143**	**12**	**155**
.3004809	**7**	**0**	**7**
.4268679	**66**	**0**	**66**
.4280656	**20**	**0**	**20**
.4719187	**4**	**0**	**4**
.5157718	**50**	**0**	**50**
.5596249	**2**	**0**	**2**
.6872097	**9**	**0**	**9**
.7310628	**66**	**0**	**66**
.7749159	**38**	**0**	**38**
.9451559	**4**	**0**	**4**
.9463537	**3**	**0**	**3**
.9902068	**83**	**0**	**83**
1.03406	**20**	**0**	**20**
1.035258	**6**	**0**	**6**
1.205498	**29**	**0**	**29**
1.249351	**108**	**0**	**108**
1.463444	**11**	**0**	**11**
1.464642	**36**	**0**	**36**
1.508495	**118**	**0**	**118**
1.723786	**14**	**0**	**14**
1.981732	**4**	**0**	**4**
1.98293	**129**	**0**	**129**
1.984128	**3**	**0**	**3**
Total	**973**	**972**	**1,945**

```
42.
43. *** correlations for AOT, left_right, and belief in climate change ***
44.
45.         pwcorr AOT WHYWARMER_c conservrepub
```

	AOT	WHYWAR~c	conser~b
AOT	**1.0000**		
WHYWARMER_c	**0.2413**	**1.0000**	
conservrepub	**-0.2438**	**-0.5082**	**1.0000**

```
46.
47.         **** proportion of climate change believers/nonbelivers at >= +1 SD on AOT
48.
49.         tab WHYWARMER_c if AOT >=1
```

WHYWARMER_c	Freq.	Percent	Cum.
0	**306**	**42.98**	**42.98**
1	**406**	**57.02**	**100.00**
Total	**712**	**100.00**	

```
50.
51.         **** proportion of left-of-center subjects at >= +1 SD on AOT
52.
53.         tab ld if AOT >=1
```

ld	Freq.	Percent	Cum.
0	**288**	**41.32**	**41.32**
1	**409**	**58.68**	**100.00**
Total	**697**	**100.00**	

```
54.
55. *** generate cross product interaction variable
56.
57. ge crxaot=conservrepub*AOT
  (453 missing values generated)

58.
59.
60.
61.
62. *** regression analysis, Table 1***
63.
64. logit WHYWARMER_c conservrepub AOT crxaot

  Iteration 0:   log likelihood =  -1069.851
  Iteration 1:   log likelihood = -784.79939
  Iteration 2:   log likelihood = -782.21268
  Iteration 3:   log likelihood = -782.19387
  Iteration 4:   log likelihood = -782.19387

  Logistic regression                                     Number of obs     =      1,547
                                                          LR chi2(3)        =     575.31
                                                          Prob > chi2       =     0.0000
  Log likelihood = -782.19387                             Pseudo R2         =     0.2689
```

WHYWARMER_c	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
conservrepub	**-1.396018**	**.0798103**	**-17.49**	**0.000**	**-1.552443**	**-1.239592**
AOT	**.4212632**	**.0673052**	**6.26**	**0.000**	**.2893474**	**.5531789**
crxaot	**-.4938492**	**.0750704**	**-6.58**	**0.000**	**-.6409845**	**-.3467139**
_cons	**.0748865**	**.0638699**	**1.17**	**0.241**	**-.0502962**	**.2000693**

```
65.
66. *** pseudo R^2***
67.
68. predict yhat
  (option pr assumed; Pr(WHYWARMER_c))
  (453 missing values generated)

69. pwcorr yhat WHYWARMER_c, sig
```

	yhat	WHYWAR~c
yhat	**1.0000**	
WHYWARMER_c	**0.5730** **0.0000**	**1.0000**

```
70. di 0.573^2
  .328329

71.
72.
73. **** monte carlo simulation for predicted values & figure 3 ***
74.
75. *** note: for details on Monte Carlo analysis,
76. *** see King, G., Tomz, M. & Wittenberg., J. Making the Most of Statistical Analyses
  > : Improving Interpretation and Presentation. Am. J. Pol. Sci 44, 347-361 (2000).
77.
78.
79. estsimp logit WHYWARMER_c conservrepub AOT crxaot

  Iteration 0:   log likelihood =  -1069.851
  Iteration 1:   log likelihood = -800.28895
  Iteration 2:   log likelihood = -782.98135
  Iteration 3:   log likelihood = -782.19646
  Iteration 4:   log likelihood = -782.19387

  Logistic regression                                     Number of obs   =       1547
                                                          LR chi2(3)      =     575.31
                                                          Prob > chi2     =     0.0000
  Log likelihood = -782.19387                             Pseudo R2       =     0.2689
```

WHYWARMER_c	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
conservrepub	-1.396018	.0798096	-17.49	0.000	-1.552441	-1.239594
AOT	.4212632	.0673049	6.26	0.000	.2893481	.5531783
crxaot	-.4938492	.0750699	-6.58	0.000	-.6409836	-.3467148
_cons	.0748865	.0638697	1.17	0.241	-.0502958	.2000689

```
  Simulating main parameters.  Please wait....
  % of simulations completed: 25% 50% 75% 100%

  Number of simulations  : 1000
  Names of new variables : b1 b2 b3 b4

80.
81.
```

```
82.
83. gen ldlower=.
  (2,000 missing values generated)

84. gen ldupper=.
  (2,000 missing values generated)

85. gen crlower=.
  (2,000 missing values generated)

86. gen crupper=.
  (2,000 missing values generated)

87.
88. ge  aotaxis = _n in 1/26
  (1,974 missing values generated)

89. set more off

90. local a = 1

91. while `a' <= 26 {
    2. local m = (`a'-1)*(.04*5)+-3
    3. setx AOT `m'
    4. setx conservrepub -.74 crxaot -.74*`m' /// simulate predicted values at 26 points
  >  on x axis for liberal democrat
  >
    5. simqi, genpr(MR)
    6. replace MR=1-MR
    7. _pctile MR, p(2.5,97.5)
    8. replace ldlower = r(r1) if aotaxis==`a' /// save lower point of 0.95 CI
  >
    9. replace ldupper = r(r2) if aotaxis==`a'  /// save upper point of 0.95 CI
  >
   10. drop  MR
   11.
92. setx conservrepub 1.25 crxaot `m' /// simulate predicted values at 26 points on x ax
  > is for liberal democrat
  >
   12. simqi, genpr(MR)
   13. replace MR=1-MR
   14. _pctile MR, p(2.5,97.5)
   15. replace crlower = r(r1) if aotaxis==`a' /// save lower point of 0.95 CI
  >
   16. replace crupper = r(r2) if aotaxis==`a'  /// save upper point of 0.95 CI
  >
   17.
93. drop MR
   18.
94. local a = `a' + 1
   19. }

  Simqi generated the following new variable(s): MR
  (1,000 real changes made)
  (1 real change made)
  (1 real change made)

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  (1 real change made)

95.
96.
97.
98. *** generate Figure 3 monte carlo output ***
99.
100
101
102 replace aotaxis=-3+(_n-1)*.04*5 in 1/26
  (26 real changes made)

103 sort aotaxis

104 ge aotaxis2=aotaxis+.02
  (1,974 missing values generated)

105 summarize aotaxis

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
     aotaxis |         26        -.5    1.529706        -3          2

106
107 twoway (rspike crlower crupper aotaxis2,  ylabel(0(.25)1, nogrid angle( 0)) ///
  > xtitle("AOT", height(5)) xlabel(-3/2)  scale(1.3) lwidth(thick) ///
  > lcolor(red) title("")    graphregion( color(white))) ///
  > (rspike ldlower ldupper aotaxis, lwidth(thick) lcolor(blue) legend(off))

108
109
110 *** generated predicted probabilities for liberal democrat & conservarive republican
  >  at low & high AOT ***
```

```
111
112 *** conservative repubican high
113 setx mean

114 setx conservrepub 1.25 AOT 1 crxaot  1.25

115 simqi, genpr(tval)

  Simqi generated the following new variable(s): tval

116 ge crhi=1-tval
  (1,000 missing values generated)

117 drop tval

118
119
120 **** conservative republican low
121 setx mean

122 setx conservrepub  1.25 AOT -1 crxaot -1.25

123 simqi, genpr(tval)

  Simqi generated the following new variable(s): tval

124 ge crlo=1-tval
  (1,000 missing values generated)

125 drop tval

126
127
128 ***** liberal democat high
129 setx mean

130 setx conservrepub -.74 AOT 1 crxaot -.74

131 simqi, genpr(tval)

  Simqi generated the following new variable(s): tval

132 ge ldhi=1-tval
  (1,000 missing values generated)

133 drop tval

134
135
136 ***** liberal democrat low
137 setx mean

138 setx conservrepub -.74 AOT -1 crxaot .74

139 simqi, genpr(tval)

  Simqi generated the following new variable(s): tval

140 ge ldlo=1-tval
  (1,000 missing values generated)
```

```
141 drop tval

142
143
144 *** specify values ***
145
146 su ldlo ldhi crlo crhi
```

Variable	Obs	Mean	Std. Dev.	Min	Max
ldlo	1,000	.5790328	.0300642	.4699975	.6789174
ldhi	1,000	.868636	.016676	.799071	.9126347
crlo	1,000	.1874365	.0179871	.1367871	.2509708
crhi	1,000	.1358958	.0215788	.0807336	.2107238

```
147
148 **** calculate degree of polarization at low and high AOT
149
150 *** polarization at low AOT
151 ge loval=ldlo-crlo
  (1,000 missing values generated)

152
153 *** polarization at high AOT
154 ge hival=ldhi-crhi
  (1,000 missing values generated)

155
156
157 *** specify values ****
158 su loval hival
```

Variable	Obs	Mean	Std. Dev.	Min	Max
loval	1,000	.3915963	.0362471	.2479529	.5047446
hival	1,000	.7327403	.0306421	.6251445	.8174161

```
159
160
161 *** view log of results ***
162
163 view results.smcl

164 log close
      name:  <unnamed>
       log:  C:\Users\dmk38\Documents\scholarship\res_note_AOT\results.smcl
  log type:  smcl
 closed on:  28 Sep 2016, 07:23:52
```