

06-08-2011 14:47:24

OUTPUT for Model 6P from Chechile (2004)
using both Population Parameter Mapping (PPM) as well as
a standard Bayesian analysis using the Metropolis-Hastings MCMC algorithm
For the PPM method the dstar value is .05
where dstar is the max modeling error in proportion units for any cell

Condition Number 1

3.5 sec pooled across retention interval and type of interpolated activity -- chechile&meyer exp 2

The multinomial frequencies are:

old N3 N2/1 Y2/1 Y3: 85 175 221 869

new N3 N2/1 Y2/1 Y3: 1067 211 54 18

correct recall = 596 incorrect recall = 754

First the PPM analysis

theta s mean = .5666794087617787 and sd = 1.863943958392073D-02
theta r mean = .7802244702546232 and sd = 3.542462701193305D-02
theta l mean = .312412632153436 and sd = 2.529875675227352D-02
theta g mean = .5579911898817319 and sd = 2.482514762202611D-02
theta gp mean = .7939124519768717 and sd = 2.455495459089192D-02
theta k mean = .7186477085798603 and sd = 1.700573878109924D-02
mean modeling error for PPM = 4.424325506885845D-03
The probability of coherence for the Model/condition
P(coh) = 1

absurdity distribution

negative theta g = 0

cells with error greater than dstar

0 0 0 0
0 0 0 0

the six respective medians are:

56
77
31
55
79
71

The PPM cumulative distributions for the model parameters.

The first column is the x value in units of .01.

The next six columns are the cumulative probabilities

the parameter being equal to or less than the x value

The columns are in units of .001 and correspond respectively

to theta s theta r theta l theta g theta gp theta k

0 0 0 0 0 0
1 0 0 0 0 0
2 0 0 0 0 0
3 0 0 0 0 0
4 0 0 0 0 0
5 0 0 0 0 0
6 0 0 0 0 0
7 0 0 0 0 0
8 0 0 0 0 0
9 0 0 0 0 0
10 0 0 0 0 0
11 0 0 0 0 0
12 0 0 0 0 0
13 0 0 0 0 0
14 0 0 0 0 0
15 0 0 0 0 0

| | | | | | | |
|----|------|-----|------|------|-----|------|
| 16 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 0 | 0 | 1 | 0 | 0 | 0 |
| 24 | 0 | 0 | 5 | 0 | 0 | 0 |
| 25 | 0 | 0 | 17 | 0 | 0 | 0 |
| 26 | 0 | 0 | 43 | 0 | 0 | 0 |
| 27 | 0 | 0 | 97 | 0 | 0 | 0 |
| 28 | 0 | 0 | 188 | 0 | 0 | 0 |
| 29 | 0 | 0 | 316 | 0 | 0 | 0 |
| 30 | 0 | 0 | 469 | 0 | 0 | 0 |
| 31 | 0 | 0 | 622 | 0 | 0 | 0 |
| 32 | 0 | 0 | 756 | 0 | 0 | 0 |
| 33 | 0 | 0 | 860 | 0 | 0 | 0 |
| 34 | 0 | 0 | 930 | 0 | 0 | 0 |
| 35 | 0 | 0 | 968 | 0 | 0 | 0 |
| 36 | 0 | 0 | 987 | 0 | 0 | 0 |
| 37 | 0 | 0 | 995 | 0 | 0 | 0 |
| 38 | 0 | 0 | 998 | 0 | 0 | 0 |
| 39 | 0 | 0 | 999 | 0 | 0 | 0 |
| 40 | 0 | 0 | 999 | 0 | 0 | 0 |
| 41 | 0 | 0 | 1000 | 0 | 0 | 0 |
| 42 | 0 | 0 | 1000 | 0 | 0 | 0 |
| 43 | 0 | 0 | 1000 | 0 | 0 | 0 |
| 44 | 0 | 0 | 1000 | 0 | 0 | 0 |
| 45 | 0 | 0 | 1000 | 0 | 0 | 0 |
| 46 | 0 | 0 | 1000 | 0 | 0 | 0 |
| 47 | 0 | 0 | 1000 | 0 | 0 | 0 |
| 48 | 0 | 0 | 1000 | 3 | 0 | 0 |
| 49 | 0 | 0 | 1000 | 10 | 0 | 0 |
| 50 | 1 | 0 | 1000 | 26 | 0 | 0 |
| 51 | 8 | 0 | 1000 | 63 | 0 | 0 |
| 52 | 28 | 0 | 1000 | 130 | 0 | 0 |
| 53 | 78 | 0 | 1000 | 232 | 0 | 0 |
| 54 | 183 | 0 | 1000 | 374 | 0 | 0 |
| 55 | 352 | 0 | 1000 | 531 | 0 | 0 |
| 56 | 563 | 0 | 1000 | 685 | 0 | 0 |
| 57 | 761 | 0 | 1000 | 811 | 0 | 0 |
| 58 | 896 | 0 | 1000 | 899 | 0 | 0 |
| 59 | 966 | 0 | 1000 | 953 | 0 | 0 |
| 60 | 992 | 0 | 1000 | 981 | 0 | 0 |
| 61 | 998 | 0 | 1000 | 994 | 0 | 0 |
| 62 | 999 | 0 | 1000 | 998 | 0 | 0 |
| 63 | 1000 | 0 | 1000 | 999 | 0 | 0 |
| 64 | 1000 | 0 | 1000 | 999 | 0 | 0 |
| 65 | 1000 | 0 | 1000 | 1000 | 0 | 0 |
| 66 | 1000 | 0 | 1000 | 1000 | 0 | 4 |
| 67 | 1000 | 0 | 1000 | 1000 | 0 | 15 |
| 68 | 1000 | 3 | 1000 | 1000 | 0 | 49 |
| 69 | 1000 | 8 | 1000 | 1000 | 0 | 136 |
| 70 | 1000 | 18 | 1000 | 1000 | 0 | 296 |
| 71 | 1000 | 39 | 1000 | 1000 | 2 | 518 |
| 72 | 1000 | 73 | 1000 | 1000 | 6 | 745 |
| 73 | 1000 | 123 | 1000 | 1000 | 18 | 897 |
| 74 | 1000 | 197 | 1000 | 1000 | 42 | 973 |
| 75 | 1000 | 289 | 1000 | 1000 | 86 | 994 |
| 76 | 1000 | 395 | 1000 | 1000 | 164 | 999 |
| 77 | 1000 | 511 | 1000 | 1000 | 279 | 999 |
| 78 | 1000 | 623 | 1000 | 1000 | 424 | 1000 |
| 79 | 1000 | 720 | 1000 | 1000 | 587 | 1000 |
| 80 | 1000 | 805 | 1000 | 1000 | 737 | 1000 |

| | | | | | | |
|-----|------|------|------|------|------|------|
| 81 | 1000 | 869 | 1000 | 1000 | 855 | 1000 |
| 82 | 1000 | 915 | 1000 | 1000 | 934 | 1000 |
| 83 | 1000 | 948 | 1000 | 1000 | 974 | 1000 |
| 84 | 1000 | 970 | 1000 | 1000 | 993 | 1000 |
| 85 | 1000 | 983 | 1000 | 1000 | 998 | 1000 |
| 86 | 1000 | 991 | 1000 | 1000 | 999 | 1000 |
| 87 | 1000 | 995 | 1000 | 1000 | 999 | 1000 |
| 88 | 1000 | 997 | 1000 | 1000 | 1000 | 1000 |
| 89 | 1000 | 998 | 1000 | 1000 | 1000 | 1000 |
| 90 | 1000 | 999 | 1000 | 1000 | 1000 | 1000 |
| 91 | 1000 | 999 | 1000 | 1000 | 1000 | 1000 |
| 92 | 1000 | 999 | 1000 | 1000 | 1000 | 1000 |
| 93 | 1000 | 999 | 1000 | 1000 | 1000 | 1000 |
| 94 | 1000 | 999 | 1000 | 1000 | 1000 | 1000 |
| 95 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 96 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 97 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 98 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 99 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 100 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |

Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 56

lower 95% pt. = 53 and upper pt. = 60

Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 77

lower 95% pt. = 71 and upper pt. = 84

Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 30

lower 95% pt. = 26 and upper pt. = 35

Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 55

lower 95% pt. = 51 and upper pt. = 60

Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 79

lower 95% pt. = 74 and upper pt. = 83

Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 72

lower 95% pt. = 68 and upper pt. = 74

Now the comparable Bayesian Analysis via MCMC

theta s mean = .5688167193015417 and sd = 1.822855438246622D-02
theta r mean = .7774007689674696 and sd = 3.481868761401575D-02
theta l mean = .3118091379423936 and sd = 2.507867875539281D-02
theta g mean = .5526626280069351 and sd = 2.418705392595692D-02
theta gp mean = .8080716122289499 and sd = 2.170388725847618D-02
theta k mean = .7191313446978728 and sd = 1.704142304371802D-02

the six respective medians are:

56
77
31
55
80
71

The MCMC cumulative distributions.

The first column is the x value in units of .01.

The next six columns are the cumulative probabilities
the parameter being equal to or less than the x value

The columns are in units of .001 and correspond respectively to theta s theta r theta l theta g theta gp theta k

| | | | | | | |
|----|-----|---|------|-----|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 0 | 0 | 1 | 0 | 0 | 0 |
| 24 | 0 | 0 | 5 | 0 | 0 | 0 |
| 25 | 0 | 0 | 16 | 0 | 0 | 0 |
| 26 | 0 | 0 | 45 | 0 | 0 | 0 |
| 27 | 0 | 0 | 98 | 0 | 0 | 0 |
| 28 | 0 | 0 | 195 | 0 | 0 | 0 |
| 29 | 0 | 0 | 326 | 0 | 0 | 0 |
| 30 | 0 | 0 | 477 | 0 | 0 | 0 |
| 31 | 0 | 0 | 633 | 0 | 0 | 0 |
| 32 | 0 | 0 | 771 | 0 | 0 | 0 |
| 33 | 0 | 0 | 867 | 0 | 0 | 0 |
| 34 | 0 | 0 | 931 | 0 | 0 | 0 |
| 35 | 0 | 0 | 969 | 0 | 0 | 0 |
| 36 | 0 | 0 | 988 | 0 | 0 | 0 |
| 37 | 0 | 0 | 996 | 0 | 0 | 0 |
| 38 | 0 | 0 | 999 | 0 | 0 | 0 |
| 39 | 0 | 0 | 999 | 0 | 0 | 0 |
| 40 | 0 | 0 | 999 | 0 | 0 | 0 |
| 41 | 0 | 0 | 999 | 0 | 0 | 0 |
| 42 | 0 | 0 | 999 | 0 | 0 | 0 |
| 43 | 0 | 0 | 1000 | 0 | 0 | 0 |
| 44 | 0 | 0 | 1000 | 0 | 0 | 0 |
| 45 | 0 | 0 | 1000 | 0 | 0 | 0 |
| 46 | 0 | 0 | 1000 | 0 | 0 | 0 |
| 47 | 0 | 0 | 1000 | 1 | 0 | 0 |
| 48 | 0 | 0 | 1000 | 5 | 0 | 0 |
| 49 | 0 | 0 | 1000 | 16 | 0 | 0 |
| 50 | 2 | 0 | 1000 | 40 | 0 | 0 |
| 51 | 8 | 0 | 1000 | 92 | 0 | 0 |
| 52 | 21 | 0 | 1000 | 174 | 0 | 0 |
| 53 | 56 | 0 | 1000 | 296 | 0 | 0 |
| 54 | 142 | 0 | 1000 | 450 | 0 | 0 |
| 55 | 305 | 0 | 1000 | 618 | 0 | 0 |
| 56 | 520 | 0 | 1000 | 763 | 0 | 0 |
| 57 | 730 | 0 | 1000 | 872 | 0 | 0 |
| 58 | 878 | 0 | 1000 | 939 | 0 | 0 |
| 59 | 960 | 0 | 1000 | 975 | 0 | 0 |
| 60 | 990 | 0 | 1000 | 991 | 0 | 0 |
| 61 | 998 | 0 | 1000 | 997 | 0 | 0 |
| 62 | 999 | 0 | 1000 | 999 | 0 | 0 |

| | | | | | | |
|-----|------|------|------|------|------|------|
| 63 | 1000 | 0 | 1000 | 1000 | 0 | 0 |
| 64 | 1000 | 0 | 1000 | 1000 | 0 | 0 |
| 65 | 1000 | 0 | 1000 | 1000 | 0 | 0 |
| 66 | 1000 | 0 | 1000 | 1000 | 0 | 3 |
| 67 | 1000 | 1 | 1000 | 1000 | 0 | 14 |
| 68 | 1000 | 3 | 1000 | 1000 | 0 | 47 |
| 69 | 1000 | 9 | 1000 | 1000 | 0 | 132 |
| 70 | 1000 | 20 | 1000 | 1000 | 0 | 288 |
| 71 | 1000 | 43 | 1000 | 1000 | 0 | 509 |
| 72 | 1000 | 77 | 1000 | 1000 | 0 | 732 |
| 73 | 1000 | 138 | 1000 | 1000 | 2 | 891 |
| 74 | 1000 | 218 | 1000 | 1000 | 6 | 971 |
| 75 | 1000 | 316 | 1000 | 1000 | 16 | 995 |
| 76 | 1000 | 425 | 1000 | 1000 | 43 | 999 |
| 77 | 1000 | 542 | 1000 | 1000 | 101 | 1000 |
| 78 | 1000 | 654 | 1000 | 1000 | 199 | 1000 |
| 79 | 1000 | 751 | 1000 | 1000 | 346 | 1000 |
| 80 | 1000 | 831 | 1000 | 1000 | 522 | 1000 |
| 81 | 1000 | 893 | 1000 | 1000 | 698 | 1000 |
| 82 | 1000 | 932 | 1000 | 1000 | 844 | 1000 |
| 83 | 1000 | 957 | 1000 | 1000 | 936 | 1000 |
| 84 | 1000 | 975 | 1000 | 1000 | 978 | 1000 |
| 85 | 1000 | 986 | 1000 | 1000 | 994 | 1000 |
| 86 | 1000 | 991 | 1000 | 1000 | 998 | 1000 |
| 87 | 1000 | 995 | 1000 | 1000 | 999 | 1000 |
| 88 | 1000 | 997 | 1000 | 1000 | 1000 | 1000 |
| 89 | 1000 | 999 | 1000 | 1000 | 1000 | 1000 |
| 90 | 1000 | 999 | 1000 | 1000 | 1000 | 1000 |
| 91 | 1000 | 999 | 1000 | 1000 | 1000 | 1000 |
| 92 | 1000 | 999 | 1000 | 1000 | 1000 | 1000 |
| 93 | 1000 | 999 | 1000 | 1000 | 1000 | 1000 |
| 94 | 1000 | 999 | 1000 | 1000 | 1000 | 1000 |
| 95 | 1000 | 999 | 1000 | 1000 | 1000 | 1000 |
| 96 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 97 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 98 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 99 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 100 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |

Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 56

lower 95% pt. = 53 and upper pt. = 60

Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 77

lower 95% pt. = 71 and upper pt. = 84

Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 31

lower 95% pt. = 26 and upper pt. = 35

Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 55

lower 95% pt. = 50 and upper pt. = 59

Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 81

lower 95% pt. = 76 and upper pt. = 84

Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 72

lower 95% pt. = 68 and upper pt. = 74

The following are the MLE values
theta s= .5700984145315589

theta r= .7743405327513939
theta l= .3101927387257374
theta g= .5519540229114481
theta g'= .8094704955874064
theta k= .7201298655793407

actual and exp. frequency for correct recall, incorrect recall
and the four cells for old recog. and four cell for foil recog.

act and exp freq 596.0001 595.9579185392746
act and exp freq 754.0001 754.0420814607254
act and exp freq 85.0001 80.65977844455186
act and exp freq 175.0001 179.3713840381673
act and exp freq 221.0001 220.9700836025885
act and exp freq 869.0001 868.9987539146924
act and exp freq 1067.0001 1067.044024312855
act and exp freq 211.0001 210.9692263722219
act and exp freq 54.0001 49.65698239296404
act and exp freq 18.0001 22.32976692195911

power divergence stat. for lamda=2/3 (see Read & Cressie
This statistic for this model should be a chi squared
distributed value with one degree of freedom.
the power divergence stat. is 1.575369929262804

Condition Number 2
1.5 sec pooled across retention interval and type of inter. activity

The multinomial frequencies are:
old N3 N2/1 Y2/1 Y3: 101 195 228 826
new N3 N2/1 Y2/1 Y3: 1035 249 48 18
correct recall = 443 incorrect recall = 907

First the PPM analysis

theta s mean = .5260995316772363 and sd = 1.926514264817245D-02
theta r mean = .6252720048995262 and sd = .0335232914248618
theta l mean = .330534520489854 and sd = 2.467851696215916D-02
theta g mean = .5388571357292967 and sd = 2.420729976737133D-02
theta gp mean = .8360766982421216 and sd = 2.143649545555485D-02
theta k mean = .6750185892733883 and sd = 1.900756727604451D-02
mean modeling error for PPM = 4.105963649862161D-03
The probability of coherence for the Model/condition
P(coh) = 1

absurdity distribution
negative theta g = 0
cells with error greater than dstar
0 0 0 0
0 0 0 0

the six respective medians are:
52
62
33
53
83
67

The PPM cumulative distributions for the model parameters.
The first column is the x value in units of .01.
The next six columns are the cumulative probabilities
the parameter being equal to or less than the x value
The columns are in units of .001 and correspond respectively

to theta s theta r theta 1 theta g theta gp theta k

| | | | | | | | | | |
|----|------|-----|------|------|---|----|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | 0 | 0 | 48 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | 0 | 0 | 104 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | 0 | 0 | 204 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 0 | 0 | 336 | 0 | 0 | 0 | 0 | 0 | 0 |
| 32 | 0 | 0 | 494 | 0 | 0 | 0 | 0 | 0 | 0 |
| 33 | 0 | 0 | 653 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | 0 | 0 | 787 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35 | 0 | 0 | 883 | 0 | 0 | 0 | 0 | 0 | 0 |
| 36 | 0 | 0 | 942 | 0 | 0 | 0 | 0 | 0 | 0 |
| 37 | 0 | 0 | 975 | 0 | 0 | 0 | 0 | 0 | 0 |
| 38 | 0 | 0 | 990 | 0 | 0 | 0 | 0 | 0 | 0 |
| 39 | 0 | 0 | 996 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40 | 0 | 0 | 999 | 0 | 0 | 0 | 0 | 0 | 0 |
| 41 | 0 | 0 | 999 | 0 | 0 | 0 | 0 | 0 | 0 |
| 42 | 0 | 0 | 1000 | 0 | 0 | 0 | 0 | 0 | 0 |
| 43 | 0 | 0 | 1000 | 0 | 0 | 0 | 0 | 0 | 0 |
| 44 | 0 | 0 | 1000 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 | 0 | 0 | 1000 | 0 | 0 | 0 | 0 | 0 | 0 |
| 46 | 2 | 0 | 1000 | 2 | 0 | 0 | 0 | 0 | 0 |
| 47 | 10 | 0 | 1000 | 8 | 0 | 0 | 0 | 0 | 0 |
| 48 | 33 | 0 | 1000 | 22 | 0 | 0 | 0 | 0 | 0 |
| 49 | 90 | 0 | 1000 | 54 | 0 | 0 | 0 | 0 | 0 |
| 50 | 197 | 0 | 1000 | 114 | 0 | 0 | 0 | 0 | 0 |
| 51 | 368 | 0 | 1000 | 216 | 0 | 0 | 0 | 0 | 0 |
| 52 | 572 | 0 | 1000 | 357 | 0 | 0 | 0 | 0 | 0 |
| 53 | 764 | 2 | 1000 | 516 | 0 | 0 | 0 | 0 | 0 |
| 54 | 895 | 7 | 1000 | 677 | 0 | 0 | 0 | 0 | 0 |
| 55 | 963 | 20 | 1000 | 808 | 0 | 0 | 0 | 0 | 0 |
| 56 | 990 | 44 | 1000 | 900 | 0 | 0 | 0 | 0 | 0 |
| 57 | 998 | 84 | 1000 | 956 | 0 | 0 | 0 | 0 | 0 |
| 58 | 999 | 145 | 1000 | 983 | 0 | 0 | 0 | 0 | 0 |
| 59 | 999 | 229 | 1000 | 994 | 0 | 0 | 0 | 0 | 0 |
| 60 | 1000 | 334 | 1000 | 998 | 0 | 0 | 0 | 0 | 0 |
| 61 | 1000 | 448 | 1000 | 999 | 0 | 3 | 0 | 0 | 0 |
| 62 | 1000 | 565 | 1000 | 999 | 0 | 11 | 0 | 0 | 0 |
| 63 | 1000 | 679 | 1000 | 1000 | 0 | 36 | 0 | 0 | 0 |

| | | | | | | |
|-----|------|------|------|------|------|------|
| 64 | 1000 | 772 | 1000 | 1000 | 0 | 97 |
| 65 | 1000 | 849 | 1000 | 1000 | 0 | 213 |
| 66 | 1000 | 906 | 1000 | 1000 | 0 | 386 |
| 67 | 1000 | 944 | 1000 | 1000 | 0 | 593 |
| 68 | 1000 | 969 | 1000 | 1000 | 0 | 779 |
| 69 | 1000 | 983 | 1000 | 1000 | 0 | 907 |
| 70 | 1000 | 991 | 1000 | 1000 | 0 | 972 |
| 71 | 1000 | 995 | 1000 | 1000 | 0 | 994 |
| 72 | 1000 | 998 | 1000 | 1000 | 0 | 999 |
| 73 | 1000 | 999 | 1000 | 1000 | 0 | 999 |
| 74 | 1000 | 999 | 1000 | 1000 | 0 | 1000 |
| 75 | 1000 | 999 | 1000 | 1000 | 0 | 1000 |
| 76 | 1000 | 999 | 1000 | 1000 | 2 | 1000 |
| 77 | 1000 | 999 | 1000 | 1000 | 7 | 1000 |
| 78 | 1000 | 999 | 1000 | 1000 | 21 | 1000 |
| 79 | 1000 | 1000 | 1000 | 1000 | 52 | 1000 |
| 80 | 1000 | 1000 | 1000 | 1000 | 114 | 1000 |
| 81 | 1000 | 1000 | 1000 | 1000 | 220 | 1000 |
| 82 | 1000 | 1000 | 1000 | 1000 | 375 | 1000 |
| 83 | 1000 | 1000 | 1000 | 1000 | 558 | 1000 |
| 84 | 1000 | 1000 | 1000 | 1000 | 735 | 1000 |
| 85 | 1000 | 1000 | 1000 | 1000 | 869 | 1000 |
| 86 | 1000 | 1000 | 1000 | 1000 | 950 | 1000 |
| 87 | 1000 | 1000 | 1000 | 1000 | 986 | 1000 |
| 88 | 1000 | 1000 | 1000 | 1000 | 997 | 1000 |
| 89 | 1000 | 1000 | 1000 | 1000 | 999 | 1000 |
| 90 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 91 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 92 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 93 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 94 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 95 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 96 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 97 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 98 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 99 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 100 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |

Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 52
lower 95% pt. = 49 and upper pt. = 56
Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 62
lower 95% pt. = 56 and upper pt. = 69
Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 33
lower 95% pt. = 28 and upper pt. = 37
Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 54
lower 95% pt. = 49 and upper pt. = 58
Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 83
lower 95% pt. = 79 and upper pt. = 87
Parameter modes and approximate 95% points
for the parameters in the same order as above
mode = 67
lower 95% pt. = 63 and upper pt. = 70

Now the comparable Bayesian Analysis via MCMC

theta s mean = .5276321397980054 and sd = 1.901601499935195D-02

theta r mean = .6227860058128833 and sd = 3.310756699204914D-02
 theta 1 mean = .3307762497623761 and sd = 2.428576145286804D-02
 theta g mean = .5353964954972267 and sd = 2.338424539109297D-02
 theta gp mean = .8478391968468825 and sd = 1.843530164438325D-02
 theta k mean = .6746557941158613 and sd = 1.907177514445281D-02

the six respective medians are:

52
 62
 33
 53
 84
 67

The MCMC cumulative distributions.

The first column is the x value in units of .01.

The next six columns are the cumulative probabilities

the parameter being equal to or less than the x value

The columns are in units of .001 and correspond respectively

to theta s theta r theta 1 theta g theta gp theta k

| | theta s | theta r | theta 1 | theta g | theta gp | theta k |
|----|---------|---------|---------|---------|----------|---------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 0 | 0 | 1 | 0 | 0 | 0 |
| 26 | 0 | 0 | 5 | 0 | 0 | 0 |
| 27 | 0 | 0 | 16 | 0 | 0 | 0 |
| 28 | 0 | 0 | 44 | 0 | 0 | 0 |
| 29 | 0 | 0 | 101 | 0 | 0 | 0 |
| 30 | 0 | 0 | 200 | 0 | 0 | 0 |
| 31 | 0 | 0 | 331 | 0 | 0 | 0 |
| 32 | 0 | 0 | 487 | 0 | 0 | 0 |
| 33 | 0 | 0 | 647 | 0 | 0 | 0 |
| 34 | 0 | 0 | 788 | 0 | 0 | 0 |
| 35 | 0 | 0 | 881 | 0 | 0 | 0 |
| 36 | 0 | 0 | 946 | 0 | 0 | 0 |
| 37 | 0 | 0 | 977 | 0 | 0 | 0 |
| 38 | 0 | 0 | 991 | 0 | 0 | 0 |
| 39 | 0 | 0 | 997 | 0 | 0 | 0 |
| 40 | 0 | 0 | 999 | 0 | 0 | 0 |
| 41 | 0 | 0 | 999 | 0 | 0 | 0 |
| 42 | 0 | 0 | 999 | 0 | 0 | 0 |
| 43 | 0 | 0 | 1000 | 0 | 0 | 0 |
| 44 | 0 | 0 | 1000 | 0 | 0 | 0 |
| 45 | 0 | 0 | 1000 | 0 | 0 | 0 |

| | | | | | | |
|-----|------|------|------|------|------|------|
| 46 | 1 | 0 | 1000 | 2 | 0 | 0 |
| 47 | 8 | 0 | 1000 | 8 | 0 | 0 |
| 48 | 29 | 0 | 1000 | 25 | 0 | 0 |
| 49 | 80 | 0 | 1000 | 66 | 0 | 0 |
| 50 | 180 | 0 | 1000 | 142 | 0 | 0 |
| 51 | 334 | 0 | 1000 | 255 | 0 | 0 |
| 52 | 534 | 1 | 1000 | 411 | 0 | 0 |
| 53 | 739 | 3 | 1000 | 569 | 0 | 0 |
| 54 | 879 | 8 | 1000 | 727 | 0 | 0 |
| 55 | 962 | 23 | 1000 | 854 | 0 | 0 |
| 56 | 990 | 48 | 1000 | 931 | 0 | 0 |
| 57 | 998 | 91 | 1000 | 972 | 0 | 0 |
| 58 | 999 | 155 | 1000 | 991 | 0 | 0 |
| 59 | 1000 | 249 | 1000 | 997 | 0 | 0 |
| 60 | 1000 | 364 | 1000 | 999 | 0 | 1 |
| 61 | 1000 | 480 | 1000 | 999 | 0 | 4 |
| 62 | 1000 | 601 | 1000 | 1000 | 0 | 12 |
| 63 | 1000 | 710 | 1000 | 1000 | 0 | 37 |
| 64 | 1000 | 799 | 1000 | 1000 | 0 | 101 |
| 65 | 1000 | 868 | 1000 | 1000 | 0 | 217 |
| 66 | 1000 | 917 | 1000 | 1000 | 0 | 394 |
| 67 | 1000 | 953 | 1000 | 1000 | 0 | 608 |
| 68 | 1000 | 973 | 1000 | 1000 | 0 | 785 |
| 69 | 1000 | 984 | 1000 | 1000 | 0 | 908 |
| 70 | 1000 | 992 | 1000 | 1000 | 0 | 973 |
| 71 | 1000 | 996 | 1000 | 1000 | 0 | 994 |
| 72 | 1000 | 998 | 1000 | 1000 | 0 | 999 |
| 73 | 1000 | 999 | 1000 | 1000 | 0 | 999 |
| 74 | 1000 | 999 | 1000 | 1000 | 0 | 1000 |
| 75 | 1000 | 999 | 1000 | 1000 | 0 | 1000 |
| 76 | 1000 | 999 | 1000 | 1000 | 0 | 1000 |
| 77 | 1000 | 1000 | 1000 | 1000 | 0 | 1000 |
| 78 | 1000 | 1000 | 1000 | 1000 | 1 | 1000 |
| 79 | 1000 | 1000 | 1000 | 1000 | 7 | 1000 |
| 80 | 1000 | 1000 | 1000 | 1000 | 25 | 1000 |
| 81 | 1000 | 1000 | 1000 | 1000 | 73 | 1000 |
| 82 | 1000 | 1000 | 1000 | 1000 | 165 | 1000 |
| 83 | 1000 | 1000 | 1000 | 1000 | 325 | 1000 |
| 84 | 1000 | 1000 | 1000 | 1000 | 531 | 1000 |
| 85 | 1000 | 1000 | 1000 | 1000 | 738 | 1000 |
| 86 | 1000 | 1000 | 1000 | 1000 | 888 | 1000 |
| 87 | 1000 | 1000 | 1000 | 1000 | 966 | 1000 |
| 88 | 1000 | 1000 | 1000 | 1000 | 993 | 1000 |
| 89 | 1000 | 1000 | 1000 | 1000 | 999 | 1000 |
| 90 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 91 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 92 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 93 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 94 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 95 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 96 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 97 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 98 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 99 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| 100 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |

Parameter modes and approximate 95% points
for the parameters in the same order as above

mode = 53

lower 95% pt. = 49 and upper pt. = 56

Parameter modes and approximate 95% points
for the parameters in the same order as above

mode = 62

lower 95% pt. = 55 and upper pt. = 68

Parameter modes and approximate 95% points
for the parameters in the same order as above

mode = 33
 lower 95% pt. = 28 and upper pt. = 37
 Parameter modes and approximate 95% points
 for the parameters in the same order as above
 mode = 53
 lower 95% pt. = 49 and upper pt. = 58
 Parameter modes and approximate 95% points
 for the parameters in the same order as above
 mode = 85
 lower 95% pt. = 81 and upper pt. = 88
 Parameter modes and approximate 95% points
 for the parameters in the same order as above
 mode = 67
 lower 95% pt. = 63 and upper pt. = 70

The following are the MLE values

theta s= .529192047278421
 theta r= .6200701507080669
 theta l= .3286417590096827
 theta g= .5343003589945191
 theta g'= .8489193903026081
 theta k= .6763320243531667

actual and exp. frequency for correct recall, incorrect recall
 and the four cells for old recog. and four cell for foil recog.
 act and exp freq 443.0001 442.9838598877453
 act and exp freq 907.0001 907.0161401122548
 act and exp freq 101.0001 97.27611293204686
 act and exp freq 195.0001 198.7182647306556
 act and exp freq 228.0001 227.9908138969503
 act and exp freq 826.0001 826.0148084403473
 act and exp freq 1035.0001 1034.953564426029
 act and exp freq 249.0001 249.0314961886417
 act and exp freq 48.0001 44.31967358481731
 act and exp freq 18.0001 21.69526580051231

power divergence stat. for lamda=2/3 (see Read & Cressie
 This statistic for this model should be a chi squared
 distributed value with one degree of freedom.
 the power divergence stat. is 1.157787270637182

 Condition Number 3
 the null case with all zeros to assess the prior P(coh) value

The multinomial frequencies are:
 old N3 N2/1 Y2/1 Y3: 0 0 0 0
 new N3 N2/1 Y2/1 Y3: 0 0 0 0
 correct recall = 0 incorrect recall = 0

First the PPM analysis

theta s mean = .4026554914675176 and sd = .2246200373135174
 theta r mean = .6198937104767112 and sd = .3291326206492625
 theta l mean = .3273163614168573 and sd = .2084578401213903
 theta g mean = .3795519526074572 and sd = .2582306770942748
 theta gp mean = .3773260863712344 and sd = .2539622014177792
 theta k mean = .2238890528300642 and sd = .2151872721915726
 mean modeling error for PPM = 2.607190617330925D-02
 The probability of coherence for the Model/condition
 P(coh) = 5.30333333333334D-02

absurdity distribution
 negative theta g = 15046

cells with error greater than dstar

7735 0 4893 0
633 12 0 90

the six respective medians are:

38
65
28
34
34
16

The PPM cumulative distributions for the model parameters.

The first column is the x value in units of .01.

The next six columns are the cumulative probabilities

the parameter being equal to or less than the x value

The columns are in units of .001 and correspond respectively

to theta s theta r theta l theta g theta gp theta k

| 0 | 3 | 6 | 0 | 13 | 11 | 206 |
|----|-----|-----|-----|-----|-----|-----|
| 1 | 13 | 17 | 6 | 25 | 32 | 230 |
| 2 | 18 | 20 | 11 | 38 | 49 | 252 |
| 3 | 28 | 27 | 23 | 50 | 65 | 270 |
| 4 | 40 | 30 | 33 | 69 | 76 | 288 |
| 5 | 47 | 37 | 47 | 89 | 95 | 302 |
| 6 | 56 | 45 | 60 | 109 | 110 | 321 |
| 7 | 67 | 50 | 80 | 131 | 124 | 338 |
| 8 | 77 | 57 | 103 | 145 | 143 | 353 |
| 9 | 91 | 64 | 120 | 159 | 159 | 375 |
| 10 | 100 | 74 | 136 | 175 | 174 | 389 |
| 11 | 109 | 84 | 159 | 188 | 186 | 406 |
| 12 | 121 | 89 | 180 | 210 | 205 | 428 |
| 13 | 129 | 100 | 203 | 228 | 223 | 446 |
| 14 | 144 | 110 | 223 | 238 | 238 | 474 |
| 15 | 155 | 118 | 251 | 253 | 255 | 489 |
| 16 | 169 | 123 | 274 | 270 | 267 | 507 |
| 17 | 186 | 130 | 295 | 287 | 279 | 519 |
| 18 | 202 | 140 | 316 | 303 | 291 | 533 |
| 19 | 218 | 147 | 336 | 316 | 304 | 545 |
| 20 | 229 | 155 | 358 | 329 | 316 | 560 |
| 21 | 241 | 164 | 372 | 350 | 326 | 579 |
| 22 | 257 | 173 | 390 | 361 | 340 | 593 |
| 23 | 274 | 182 | 411 | 377 | 354 | 607 |
| 24 | 287 | 190 | 431 | 384 | 369 | 616 |
| 25 | 301 | 199 | 455 | 393 | 380 | 627 |
| 26 | 318 | 204 | 473 | 406 | 397 | 641 |
| 27 | 334 | 211 | 495 | 417 | 412 | 658 |
| 28 | 353 | 216 | 510 | 433 | 427 | 672 |
| 29 | 369 | 226 | 533 | 441 | 442 | 688 |
| 30 | 383 | 232 | 541 | 451 | 450 | 700 |
| 31 | 404 | 242 | 554 | 460 | 468 | 712 |
| 32 | 421 | 249 | 574 | 479 | 480 | 722 |
| 33 | 435 | 258 | 589 | 495 | 495 | 733 |
| 34 | 455 | 264 | 608 | 506 | 512 | 745 |
| 35 | 466 | 272 | 620 | 518 | 529 | 760 |
| 36 | 480 | 284 | 641 | 527 | 545 | 767 |
| 37 | 495 | 290 | 653 | 544 | 554 | 774 |
| 38 | 511 | 299 | 669 | 563 | 560 | 785 |
| 39 | 530 | 307 | 685 | 577 | 573 | 791 |
| 40 | 541 | 317 | 695 | 590 | 585 | 798 |
| 41 | 556 | 328 | 707 | 599 | 602 | 810 |
| 42 | 568 | 337 | 717 | 609 | 609 | 818 |
| 43 | 583 | 345 | 722 | 622 | 622 | 828 |
| 44 | 598 | 350 | 728 | 636 | 638 | 837 |
| 45 | 604 | 360 | 741 | 644 | 646 | 846 |
| 46 | 610 | 365 | 753 | 651 | 656 | 855 |

| | | | | | | |
|-----|------|------|------|------|------|------|
| 47 | 624 | 371 | 770 | 661 | 674 | 862 |
| 48 | 641 | 377 | 781 | 673 | 683 | 866 |
| 49 | 653 | 382 | 793 | 681 | 689 | 871 |
| 50 | 673 | 397 | 800 | 690 | 698 | 876 |
| 51 | 686 | 405 | 808 | 698 | 707 | 878 |
| 52 | 700 | 409 | 817 | 709 | 717 | 883 |
| 53 | 720 | 417 | 833 | 721 | 730 | 888 |
| 54 | 736 | 424 | 837 | 729 | 740 | 895 |
| 55 | 747 | 430 | 849 | 740 | 747 | 901 |
| 56 | 756 | 440 | 855 | 747 | 756 | 908 |
| 57 | 773 | 450 | 862 | 754 | 762 | 912 |
| 58 | 783 | 457 | 869 | 764 | 771 | 918 |
| 59 | 791 | 465 | 878 | 774 | 780 | 924 |
| 60 | 797 | 470 | 882 | 785 | 787 | 928 |
| 61 | 805 | 473 | 893 | 793 | 795 | 934 |
| 62 | 813 | 478 | 897 | 804 | 803 | 937 |
| 63 | 819 | 487 | 904 | 811 | 812 | 942 |
| 64 | 832 | 495 | 908 | 818 | 818 | 947 |
| 65 | 843 | 502 | 915 | 824 | 831 | 950 |
| 66 | 853 | 508 | 922 | 832 | 840 | 954 |
| 67 | 862 | 515 | 930 | 837 | 849 | 956 |
| 68 | 871 | 521 | 935 | 846 | 853 | 962 |
| 69 | 879 | 527 | 937 | 852 | 860 | 964 |
| 70 | 888 | 538 | 944 | 858 | 866 | 967 |
| 71 | 895 | 548 | 947 | 863 | 874 | 971 |
| 72 | 905 | 556 | 952 | 869 | 879 | 975 |
| 73 | 908 | 563 | 955 | 874 | 888 | 977 |
| 74 | 919 | 572 | 957 | 884 | 895 | 978 |
| 75 | 925 | 579 | 959 | 894 | 903 | 981 |
| 76 | 935 | 588 | 962 | 901 | 910 | 986 |
| 77 | 942 | 594 | 967 | 910 | 917 | 986 |
| 78 | 945 | 600 | 969 | 914 | 922 | 987 |
| 79 | 952 | 608 | 972 | 920 | 929 | 989 |
| 80 | 958 | 615 | 975 | 925 | 934 | 990 |
| 81 | 961 | 621 | 975 | 933 | 940 | 991 |
| 82 | 966 | 626 | 976 | 939 | 946 | 991 |
| 83 | 969 | 635 | 979 | 944 | 952 | 992 |
| 84 | 972 | 640 | 980 | 950 | 956 | 994 |
| 85 | 978 | 644 | 983 | 955 | 961 | 994 |
| 86 | 983 | 656 | 984 | 960 | 966 | 996 |
| 87 | 985 | 664 | 988 | 964 | 970 | 997 |
| 88 | 991 | 678 | 990 | 966 | 972 | 998 |
| 89 | 992 | 685 | 991 | 970 | 974 | 999 |
| 90 | 996 | 694 | 991 | 975 | 975 | 999 |
| 91 | 996 | 701 | 994 | 980 | 979 | 999 |
| 92 | 996 | 710 | 996 | 984 | 981 | 999 |
| 93 | 998 | 715 | 997 | 986 | 985 | 999 |
| 94 | 999 | 720 | 998 | 989 | 989 | 1000 |
| 95 | 999 | 728 | 998 | 992 | 991 | 1000 |
| 96 | 999 | 734 | 998 | 994 | 993 | 1000 |
| 97 | 999 | 740 | 999 | 997 | 995 | 1000 |
| 98 | 1000 | 746 | 1000 | 999 | 996 | 1000 |
| 99 | 1000 | 752 | 1000 | 1000 | 1000 | 1000 |
| 100 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |

Parameter modes and approximate 95% points
for the parameters in the same order as above

mode = 31

lower 95% pt. = 1 and upper pt. = 88

Parameter modes and approximate 95% points

for the parameters in the same order as above

mode = 100

lower 95% pt. = 0 and upper pt. = 100

Parameter modes and approximate 95% points

for the parameters in the same order as above

mode = 15

lower 95% pt. = 1 and upper pt. = 77
 Parameter modes and approximate 95% points
 for the parameters in the same order as above
 mode = 7
 lower 95% pt. = 0 and upper pt. = 86
 Parameter modes and approximate 95% points
 for the parameters in the same order as above
 mode = 1
 lower 95% pt. = 0 and upper pt. = 86
 Parameter modes and approximate 95% points
 for the parameters in the same order as above
 mode = 0
 lower 95% pt. = 0 and upper pt. = 76

Now the comparable Bayesian Analysis via MCMC

theta s mean = .5010585678100586 and sd = .2875603541569282
 theta r mean = .4999979792912801 and sd = .2897106790821744
 theta l mean = .5032125884373982 and sd = .2885502404867904
 theta g mean = .5022872397104899 and sd = .2888681478179507
 theta gp mean = .5014650250116984 and sd = .2881667014957369
 theta k mean = .499808780670166 and sd = .2887414904203093

the six respective medians are:

50
 50
 50
 50
 50
 49

The MCMC cumulative distributions.

The first column is the x value in units of .01.

The next six columns are the cumulative probabilities
 the parameter being equal to or less than the x value

The columns are in units of .001 and correspond respectively

to theta s theta r theta l theta g theta gp theta k

| 0 | 9 | 10 | 8 | 9 | 10 | 10 |
|----|-----|-----|-----|-----|-----|-----|
| 1 | 19 | 21 | 17 | 19 | 19 | 19 |
| 2 | 29 | 31 | 28 | 29 | 30 | 29 |
| 3 | 39 | 41 | 38 | 38 | 40 | 38 |
| 4 | 49 | 52 | 47 | 49 | 50 | 47 |
| 5 | 58 | 62 | 57 | 59 | 59 | 57 |
| 6 | 68 | 73 | 68 | 69 | 68 | 67 |
| 7 | 77 | 82 | 78 | 80 | 79 | 78 |
| 8 | 88 | 92 | 89 | 89 | 88 | 89 |
| 9 | 98 | 102 | 99 | 99 | 97 | 99 |
| 10 | 108 | 111 | 110 | 109 | 107 | 108 |
| 11 | 118 | 121 | 119 | 118 | 117 | 119 |
| 12 | 128 | 131 | 129 | 129 | 127 | 129 |
| 13 | 137 | 141 | 139 | 140 | 136 | 139 |
| 14 | 148 | 152 | 149 | 149 | 145 | 149 |
| 15 | 157 | 162 | 158 | 159 | 154 | 159 |
| 16 | 167 | 173 | 169 | 169 | 164 | 169 |
| 17 | 177 | 183 | 179 | 179 | 174 | 179 |
| 18 | 188 | 193 | 188 | 189 | 184 | 190 |
| 19 | 198 | 203 | 197 | 198 | 195 | 200 |
| 20 | 208 | 212 | 208 | 209 | 205 | 210 |
| 21 | 218 | 222 | 218 | 219 | 216 | 220 |
| 22 | 227 | 232 | 228 | 229 | 226 | 229 |
| 23 | 237 | 243 | 238 | 238 | 236 | 239 |
| 24 | 246 | 252 | 247 | 249 | 245 | 250 |
| 25 | 255 | 261 | 257 | 259 | 256 | 260 |
| 26 | 265 | 271 | 266 | 269 | 266 | 270 |
| 27 | 276 | 282 | 277 | 278 | 276 | 281 |
| 28 | 286 | 290 | 286 | 287 | 286 | 291 |

| | | | | | | |
|----|-----|-----|-----|-----|-----|-----|
| 29 | 296 | 300 | 295 | 297 | 297 | 301 |
| 30 | 306 | 310 | 306 | 306 | 307 | 311 |
| 31 | 316 | 320 | 316 | 316 | 318 | 321 |
| 32 | 326 | 330 | 325 | 326 | 328 | 331 |
| 33 | 336 | 339 | 335 | 335 | 338 | 341 |
| 34 | 346 | 349 | 344 | 347 | 348 | 351 |
| 35 | 356 | 358 | 354 | 357 | 358 | 362 |
| 36 | 365 | 368 | 363 | 367 | 369 | 373 |
| 37 | 376 | 378 | 374 | 377 | 379 | 383 |
| 38 | 385 | 388 | 383 | 388 | 389 | 392 |
| 39 | 397 | 398 | 393 | 397 | 400 | 402 |
| 40 | 408 | 408 | 403 | 406 | 410 | 412 |
| 41 | 417 | 418 | 412 | 417 | 419 | 421 |
| 42 | 427 | 428 | 422 | 426 | 430 | 430 |
| 43 | 436 | 439 | 432 | 436 | 440 | 440 |
| 44 | 447 | 449 | 442 | 447 | 450 | 450 |
| 45 | 456 | 459 | 453 | 456 | 459 | 460 |
| 46 | 467 | 469 | 463 | 467 | 468 | 471 |
| 47 | 476 | 479 | 472 | 475 | 478 | 481 |
| 48 | 486 | 488 | 482 | 485 | 488 | 490 |
| 49 | 498 | 498 | 491 | 495 | 498 | 500 |
| 50 | 508 | 508 | 502 | 505 | 509 | 510 |
| 51 | 518 | 518 | 512 | 515 | 519 | 519 |
| 52 | 528 | 529 | 522 | 525 | 529 | 528 |
| 53 | 538 | 539 | 532 | 534 | 540 | 538 |
| 54 | 548 | 548 | 543 | 544 | 549 | 549 |
| 55 | 557 | 559 | 554 | 554 | 559 | 560 |
| 56 | 567 | 568 | 564 | 563 | 569 | 570 |
| 57 | 578 | 577 | 575 | 573 | 580 | 579 |
| 58 | 588 | 588 | 585 | 583 | 589 | 589 |
| 59 | 598 | 598 | 594 | 593 | 599 | 599 |
| 60 | 607 | 607 | 605 | 602 | 609 | 608 |
| 61 | 618 | 617 | 616 | 612 | 618 | 619 |
| 62 | 629 | 627 | 626 | 623 | 628 | 630 |
| 63 | 638 | 638 | 636 | 633 | 639 | 639 |
| 64 | 651 | 648 | 646 | 643 | 649 | 649 |
| 65 | 661 | 658 | 657 | 654 | 658 | 660 |
| 66 | 671 | 668 | 666 | 665 | 669 | 671 |
| 67 | 681 | 678 | 676 | 675 | 680 | 681 |
| 68 | 691 | 688 | 686 | 686 | 689 | 691 |
| 69 | 702 | 698 | 696 | 696 | 698 | 701 |
| 70 | 711 | 708 | 707 | 705 | 708 | 712 |
| 71 | 722 | 719 | 715 | 716 | 717 | 721 |
| 72 | 732 | 729 | 725 | 727 | 726 | 731 |
| 73 | 742 | 738 | 734 | 737 | 736 | 741 |
| 74 | 753 | 749 | 745 | 746 | 747 | 751 |
| 75 | 762 | 759 | 756 | 756 | 757 | 761 |
| 76 | 771 | 770 | 767 | 766 | 768 | 771 |
| 77 | 782 | 779 | 777 | 777 | 777 | 781 |
| 78 | 792 | 789 | 788 | 787 | 787 | 790 |
| 79 | 802 | 798 | 799 | 797 | 798 | 800 |
| 80 | 812 | 809 | 809 | 808 | 808 | 810 |
| 81 | 820 | 820 | 819 | 818 | 818 | 819 |
| 82 | 830 | 829 | 829 | 828 | 828 | 829 |
| 83 | 840 | 839 | 838 | 840 | 838 | 839 |
| 84 | 850 | 848 | 848 | 849 | 849 | 849 |
| 85 | 860 | 859 | 859 | 860 | 858 | 859 |
| 86 | 870 | 869 | 869 | 870 | 868 | 869 |
| 87 | 880 | 880 | 878 | 880 | 880 | 880 |
| 88 | 890 | 889 | 888 | 891 | 889 | 889 |
| 89 | 900 | 898 | 897 | 900 | 899 | 899 |
| 90 | 910 | 909 | 908 | 911 | 909 | 908 |
| 91 | 920 | 919 | 918 | 920 | 919 | 917 |
| 92 | 930 | 929 | 929 | 930 | 929 | 927 |
| 93 | 940 | 938 | 939 | 940 | 938 | 937 |

94 949 949 949 949 948 948
 95 958 959 960 959 958 958
 96 968 969 969 970 969 968
 97 979 980 979 979 980 979
 98 990 990 989 990 990 988
 99 1000 1000 1000 1000 1000 1000
 100 1000 1000 1000 1000 1000 1000

Parameter modes and approximate 95% points
 for the parameters in the same order as above
 mode = 64

lower 95% pt. = 0 and upper pt. = 99
 Parameter modes and approximate 95% points
 for the parameters in the same order as above
 mode = 14

lower 95% pt. = 0 and upper pt. = 98
 Parameter modes and approximate 95% points
 for the parameters in the same order as above
 mode = 75

lower 95% pt. = 1 and upper pt. = 99
 Parameter modes and approximate 95% points
 for the parameters in the same order as above
 mode = 83

lower 95% pt. = 0 and upper pt. = 99
 Parameter modes and approximate 95% points
 for the parameters in the same order as above
 mode = 87

lower 95% pt. = 0 and upper pt. = 99
 Parameter modes and approximate 95% points
 for the parameters in the same order as above
 mode = 35

lower 95% pt. = 0 and upper pt. = 99

The following are the MLE values
 theta s= .2843974932655103
 theta r= 1.094131207877771
 theta l= .4275020307420567
 theta g= .3937505248997097
 theta g'= .4536807489687819
 theta k= 6.987132104330203D-02

actual and exp. frequency for correct recall, incorrect recall
 and the four cells for old recog. and four cell for foil recog.

act and exp freq 1.0000000000211D-04 0
 act and exp freq 1.0000000000211D-04 0
 act and exp freq 1.0000000000211D-04 0
 act and exp freq 1.0000000000211D-04 0
 act and exp freq 1.0000000000211D-04 0
 act and exp freq 1.0000000000211D-04 0
 act and exp freq 1.0000000000211D-04 0
 act and exp freq 1.0000000000211D-04 0
 act and exp freq 1.0000000000211D-04 0
 act and exp freq 1.0000000000211D-04 0

power divergence stat. for lamda=2/3 (see Read & Cressie
 This statistic for this model should be a chi squared
 distributed value with one degree of freedom.
 the power divergence stat. is 0
