Burn-in Simulation Review - 3 (11.6.25)

2025-11-05

```
library(psych)
load(file = "thirdburn.rda")
# Initial review of outcomes ----

neff <- describeBy(neff_check ~ cat + group_prob + N + loading + n_items,
                   data = resultsfull, mat = T)
```

```
## Warning in min(x, na.rm = na.rm): no non-missing arguments to min; returning
## Inf
```

```
## Warning in max(x, na.rm = na.rm): no non-missing arguments to max; returning
## -Inf
```

```
neff <- cbind(neff[,2:6],neff[,8:11],neff[,14:15])
colnames(neff) <- c("cat","group_prob","N","loading","n_items","reps","mean","sd",
                    "median","min","max")
rownames(neff) <- NULL
print(neff)
```

```
##    cat group_prob   N loading n_items reps     mean        sd   median      min
## 1    2          1 100     0.5       6   19 156.7492 213.71629  69.4210   1.0192
## 2    3          1 100     0.5       6   20 335.9825 260.77833 336.0377   1.0110
## 3    2          2 100     0.5       6   20 215.0845 202.25480 175.3603   1.0231
## 4    3          2 100     0.5       6   20 314.4280 250.40295 368.5927   1.0143
## 5    2          3 100     0.5       6   20 360.6741 228.18409 360.0677   1.0185
## 6    3          3 100     0.5       6   20 538.3208 235.55074 478.6470   1.0281
## 7    2          1 150     0.5       6   20 260.0189 258.92359 178.9141   1.0123
## 8    3          1 150     0.5       6   20 420.7559 228.39564 458.4466   1.0146
## 9    2          2 150     0.5       6   20 379.1583 229.11707 407.3802   1.0142
## 10   3          2 150     0.5       6   20 436.1289 265.60809 392.7400   1.0208
## 11   2          3 150     0.5       6   20 358.9179 235.79859 304.9356  41.6625
## 12   3          3 150     0.5       6   20 591.4346 290.61287 512.1090 251.0671
## 13   2          1 200     0.5       6   20 423.0231 218.89263 386.4100   1.0139
## 14   3          1 200     0.5       6   20 490.3445 204.61417 510.0867   1.0120
## 15   2          2 200     0.5       6   20 287.9799 167.52713 241.0677   1.0201
## 16   3          2 200     0.5       6   20 483.7167 183.31340 492.1343   1.0206
## 17   2          3 200     0.5       6   20 413.4475 240.99789 383.0305   1.0066
## 18   3          3 200     0.5       6   20 557.8827 135.81543 577.1119 345.9828
## 19   2          1 100     0.8       6   20 313.6208 125.71774 338.6785   1.0060
## 20   3          1 100     0.8       6   20 364.5459 112.75631 379.2161   1.0054
## 21   2          2 100     0.8       6   20 317.0061 167.75744 341.6341   1.0057
## 22   3          2 100     0.8       6   20 359.9814 160.52390 334.4035   1.0058
## 23   2          3 100     0.8       6   20 382.1407 150.39468 375.7346   1.0059
## 24   3          3 100     0.8       6   20 338.5479 109.25139 346.3709   1.0057
## 25   2          1 150     0.8       6   20 381.0277  66.93818 397.1609 256.1221
## 26   3          1 150     0.8       6   20 393.9325  91.86496 384.3063 240.2772
```

```
## 27   2          2 150     0.8       6   20 351.0502 154.49125 356.2346   1.0037
## 28   3          2 150     0.8       6   20 379.4766  64.00103 382.1483 270.7339
## 29   2          3 150     0.8       6   20 383.8178 111.32818 410.8416   1.0047
## 30   3          3 150     0.8       6   20 350.1016 101.15081 332.6385 226.8909
## 31   2          1 200     0.8       6   20 382.4007 102.73211 405.5466   1.0026
## 32   3          1 200     0.8       6   20 337.4976 141.63710 340.0612   1.0031
## 33   2          2 200     0.8       6   20 391.0276 130.57699 412.6824   1.0030
## 34   3          2 200     0.8       6   20 362.5278  77.74323 366.3560 262.6198
## 35   2          3 200     0.8       6   20 407.4519  99.18872 390.8985 258.3624
## 36   3          3 200     0.8       6   20 356.6088 112.98629 364.6671   1.0035
## 37   2          1 100     0.5      12    1 139.4734        NA 139.4734 139.4734
## 38   3          1 100     0.5      12   11 228.4769 260.66312 121.7146   1.0153
## 39   2          2 100     0.5      12    0      NaN        NA       NA      Inf
## 40   3          2 100     0.5      12    9 192.4836 199.91965 148.3514   1.0167
## 41   2          3 100     0.5      12    2 379.5109 172.80622 379.5109 257.3185
## 42   3          3 100     0.5      12    8 321.8844 241.57873 254.5211   1.0163
## 43   2          1 150     0.5      12    5 326.3129 182.32426 330.6298  88.0435
## 44   3          1 150     0.5      12   14 318.6993 216.52172 310.1377  36.0811
## 45   2          2 150     0.5      12    7 219.6351 148.87163 257.5043   1.0098
## 46   3          2 150     0.5      12   14 215.4984 199.55527 169.2611   3.1908
## 47   2          3 150     0.5      12    9 216.3175 200.11338 207.7760   1.0096
## 48   3          3 150     0.5      12   14 314.9024 267.36306 255.2539   1.0110
## 49   2          1 200     0.5      12   13 223.3104 138.05014 190.8094   3.9571
## 50   3          1 200     0.5      12   19 304.7244 168.55837 300.3951   1.0069
## 51   2          2 200     0.5      12   10 187.3657 110.05653 166.8952   1.0101
## 52   3          2 200     0.5      12   16 258.7550 226.04711 174.5627   1.0081
## 53   2          3 200     0.5      12    7 233.3186 152.41936 192.0128  48.5734
## 54   3          3 200     0.5      12   17 306.6810 155.22473 275.0379  54.2215
## 55   2          1 100     0.8      12   20 179.8757  61.20540 185.8666   1.0046
## 56   3          1 100     0.8      12   20 161.0493  48.12461 165.4597  62.5583
## 57   2          2 100     0.8      12   20 180.5025  68.65972 191.7387   1.0054
## 58   3          2 100     0.8      12   20 152.4933  62.30955 167.6812   1.0061
## 59   2          3 100     0.8      12   20 161.5427  68.22511 168.3562   1.0057
## 60   3          3 100     0.8      12   20 160.4494  33.40528 161.1227  78.5004
## 61   2          1 150     0.8      12   20 180.8645  55.87281 188.8784   1.0043
## 62   3          1 150     0.8      12   20 188.5627  65.55266 172.2679  15.0668
## 63   2          2 150     0.8      12   20 200.0813  85.47730 208.1453   1.0038
## 64   3          2 150     0.8      12   20 186.7860  84.53217 171.3401   1.0041
## 65   2          3 150     0.8      12   20 189.1233  46.43095 192.5020 105.2017
## 66   3          3 150     0.8      12   20 156.3585  65.29381 166.1824   1.0044
## 67   2          1 200     0.8      12   20 175.5244  69.33570 188.4566   1.0029
## 68   3          1 200     0.8      12   20 173.9205  65.57313 173.8881   1.0029
## 69   2          2 200     0.8      12   20 201.2396  62.96617 198.9077   1.0030
## 70   3          2 200     0.8      12   20 181.7252  68.17295 171.9202   1.0033
## 71   2          3 200     0.8      12   20 210.9898  57.84208 211.2171 111.8599
## 72   3          3 200     0.8      12   20 194.5377  75.89907 195.1081   1.0032
##          max
## 1   686.9595
## 2   921.0547
## 3   598.2116
## 4   813.8358
## 5   735.6103
## 6  1036.2732
## 7   700.4503
```

```
## 8   835.5598
## 9   857.3027
## 10  843.5051
## 11  930.3033
## 12 1238.6586
## 13  959.0693
## 14  941.9146
## 15  710.6410
## 16  883.5227
## 17  856.1631
## 18  782.0024
## 19  483.0362
## 20  483.3059
## 21  585.4168
## 22  634.5848
## 23  602.9834
## 24  491.6545
## 25  511.4552
## 26  657.5067
## 27  579.8231
## 28  494.1702
## 29  501.7239
## 30  554.7920
## 31  514.8509
## 32  492.9917
## 33  612.5585
## 34  483.8750
## 35  639.7782
## 36  571.6095
## 37  139.4734
## 38  669.1491
## 39      -Inf
## 40  609.5342
## 41  501.7034
## 42  731.4189
## 43  598.0316
## 44  627.5045
## 45  392.6765
## 46  842.0010
## 47  548.8659
## 48 1008.8057
## 49  504.4999
## 50  672.6497
## 51  409.1100
## 52  703.9583
## 53  485.5397
## 54  585.5865
## 55  298.1667
## 56  246.9650
## 57  320.1039
## 58  218.9258
## 59  259.7990
## 60  227.1818
## 61  248.2692
```

```
## 62  285.9822
## 63  327.7598
## 64  370.1343
## 65  288.0708
## 66  260.4119
## 67  282.2329
## 68  281.5108
## 69  322.4879
## 70  302.9951
## 71  337.6441
## 72  333.7627
```

```
psr <- describeBy(psr_check ~ cat + group_prob + N + loading + n_items,
                  data = resultsfull, mat = T)
```

```
## Warning in min(x, na.rm = na.rm): no non-missing arguments to min; returning
## Inf
## Warning in min(x, na.rm = na.rm): no non-missing arguments to max; returning
## -Inf
```

```
psr <- cbind(psr[,2:6],psr[,8:11],psr[,14:15])
colnames(psr) <- c("cat","group_prob","N","loading","n_items","reps","mean","sd",
                   "median","min","max")
rownames(psr) <- NULL
print(psr)
```

```
##    cat group_prob   N loading n_items reps     mean           sd  median    min
## 1    2          1 100     0.5       6   19 2.256874 2.0315463352 1.03830 1.0029
## 2    3          1 100     0.5       6   20 1.841930 2.0914817349 1.00715 1.0021
## 3    2          2 100     0.5       6   20 1.664200 1.5417737451 1.01505 1.0022
## 4    3          2 100     0.5       6   20 2.358865 2.6209193420 1.00785 1.0013
## 5    2          3 100     0.5       6   20 1.477325 1.4505396817 1.00675 1.0021
## 6    3          3 100     0.5       6   20 1.210275 0.9165858043 1.00465 1.0023
## 7    2          1 150     0.5       6   20 2.451440 2.5617227073 1.01625 1.0015
## 8    3          1 150     0.5       6   20 2.090000 2.6918262912 1.00495 1.0021
## 9    2          2 150     0.5       6   20 1.593560 1.8059683915 1.00510 1.0016
## 10   3          2 150     0.5       6   20 1.255690 1.0993507950 1.00570 1.0017
## 11   2          3 150     0.5       6   20 1.011290 0.0122943247 1.00560 1.0015
## 12   3          3 150     0.5       6   20 1.005490 0.0034999098 1.00460 1.0014
## 13   2          1 200     0.5       6   20 1.317620 1.3927883587 1.00530 1.0023
## 14   3          1 200     0.5       6   20 1.345065 1.5202308361 1.00485 1.0023
## 15   2          2 200     0.5       6   20 1.261665 1.1235733163 1.00910 1.0024
## 16   3          2 200     0.5       6   20 1.253295 1.1044246997 1.00520 1.0016
## 17   2          3 200     0.5       6   20 1.493735 2.1655674099 1.00470 1.0026
## 18   3          3 200     0.5       6   20 1.003815 0.0017845167 1.00340 1.0017
## 19   2          1 100     0.8       6   20 2.002795 3.0647014089 1.00710 1.0024
## 20   3          1 100     0.8       6   20 1.551005 2.4386324868 1.00505 1.0020
## 21   2          2 100     0.8       6   20 2.554500 3.7793444993 1.00670 1.0026
## 22   3          2 100     0.8       6   20 1.533850 2.3480819038 1.00645 1.0018
## 23   2          3 100     0.8       6   20 1.519485 2.2963290699 1.00565 1.0028
## 24   3          3 100     0.8       6   20 1.532645 2.3515364336 1.00620 1.0023
## 25   2          1 150     0.8       6   20 1.006840 0.0033393034 1.00640 1.0022
## 26   3          1 150     0.8       6   20 1.005775 0.0029852047 1.00515 1.0022
## 27   2          2 150     0.8       6   20 2.353485 4.1459774509 1.00640 1.0022
## 28   3          2 150     0.8       6   20 1.006275 0.0048229577 1.00525 1.0012
```

```
## 29   2          3 150     0.8       6   20 1.590330 2.6151599504 1.00510 1.0016
## 30   3          3 150     0.8       6   20 1.007495 0.0037284786 1.00645 1.0024
## 31   2          1 200     0.8       6   20 1.849890 3.7747922079 1.00525 1.0019
## 32   3          1 200     0.8       6   20 2.407025 4.3268248638 1.00495 1.0014
## 33   2          2 200     0.8       6   20 1.770930 3.4223310030 1.00560 1.0024
## 34   3          2 200     0.8       6   20 1.007175 0.0066345091 1.00515 1.0025
## 35   2          3 200     0.8       6   20 1.005805 0.0038937838 1.00480 1.0012
## 36   3          3 200     0.8       6   20 1.715150 3.1711341797 1.00655 1.0016
## 37   2          1 100     0.5      12    1 1.006400           NA 1.00640 1.0064
## 38   3          1 100     0.5      12   11 2.944309 2.6483041307 1.01850 1.0021
## 39   2          2 100     0.5      12    0      NaN           NA      NA    Inf
## 40   3          2 100     0.5      12    9 1.689889 1.8412427606 1.01140 1.0052
## 41   2          3 100     0.5      12    2 1.002900 0.0005656854 1.00290 1.0025
## 42   3          3 100     0.5      12    8 1.713337 1.9972589466 1.00725 1.0047
## 43   2          1 150     0.5      12    5 1.013060 0.0146960199 1.00590 1.0025
## 44   3          1 150     0.5      12   14 1.014786 0.0208169627 1.00605 1.0027
## 45   2          2 150     0.5      12    7 2.098100 2.8781915688 1.00640 1.0026
## 46   3          2 150     0.5      12   14 1.071686 0.2186135011 1.01090 1.0029
## 47   2          3 150     0.5      12    9 2.615978 3.0707651423 1.00800 1.0026
## 48   3          3 150     0.5      12   14 1.515329 1.8907806257 1.00705 1.0029
## 49   2          1 200     0.5      12   13 1.069577 0.2123450578 1.00890 1.0026
## 50   3          1 200     0.5      12   19 1.898389 2.6766321681 1.01180 1.0024
## 51   2          2 200     0.5      12   10 1.753280 2.3509513426 1.00910 1.0056
## 52   3          2 200     0.5      12   16 2.484569 3.1809344000 1.00560 1.0020
## 53   2          3 200     0.5      12    7 1.017100 0.0138990407 1.01420 1.0028
## 54   3          3 200     0.5      12   17 1.009776 0.0075567461 1.00770 1.0021
## 55   2          1 100     0.8      12   20 1.605300 2.6451401018 1.01155 1.0033
## 56   3          1 100     0.8      12   20 1.018630 0.0103974744 1.01820 1.0028
## 57   2          2 100     0.8      12   20 1.549080 2.4101630946 1.00920 1.0021
## 58   3          2 100     0.8      12   20 2.041705 3.1562728220 1.01750 1.0031
## 59   2          3 100     0.8      12   20 1.537830 2.3389445476 1.01215 1.0024
## 60   3          3 100     0.8      12   20 1.013335 0.0097236703 1.01000 1.0042
## 61   2          1 150     0.8      12   20 1.634880 2.7839179091 1.01160 1.0051
## 62   3          1 150     0.8      12   20 1.015060 0.0122656731 1.01070 1.0040
## 63   2          2 150     0.8      12   20 2.360925 4.1525008154 1.01045 1.0022
## 64   3          2 150     0.8      12   20 1.653950 2.8731549174 1.01140 1.0037
## 65   2          3 150     0.8      12   20 1.015050 0.0090892939 1.01255 1.0049
## 66   3          3 150     0.8      12   20 1.635755 2.7578579675 1.01150 1.0046
## 67   2          1 200     0.8      12   20 1.803940 3.5442855030 1.01025 1.0025
## 68   3          1 200     0.8      12   20 1.803030 3.5309250904 1.01015 1.0033
## 69   2          2 200     0.8      12   20 1.780715 3.4361628445 1.01020 1.0027
## 70   3          2 200     0.8      12   20 1.742890 3.2782020149 1.00885 1.0022
## 71   2          3 200     0.8      12   20 1.010815 0.0058511605 1.00880 1.0026
## 72   3          3 200     0.8      12   20 1.750320 3.3136853741 1.00980 1.0039
##        max
## 1   6.1616
## 2   8.1476
## 3   5.6191
## 4  10.0031
## 5   6.2928
## 6   5.1044
## 7   7.6720
## 8   9.8695
## 9   7.1372
```

```
## 10  5.9257
## 11  1.0465
## 12  1.0155
## 13  7.2349
## 14  7.8038
## 15  6.0351
## 16  5.9454
## 17 10.6941
## 18  1.0091
## 19 11.1906
## 20 11.9116
## 21 11.5275
## 22 11.5097
## 23 11.2755
## 24 11.5232
## 25  1.0142
## 26  1.0120
## 27 14.5029
## 28  1.0226
## 29 12.7009
## 30  1.0144
## 31 17.8872
## 32 16.1246
## 33 16.3108
## 34  1.0321
## 35  1.0194
## 36 15.1878
## 37  1.0064
## 38  6.8817
## 39    -Inf
## 40  6.5796
## 41  1.0033
## 42  6.6563
## 43  1.0380
## 44  1.0788
## 45  8.6252
## 46  1.8304
## 47  8.7042
## 48  8.0846
## 49  1.7758
## 50 10.3302
## 51  8.4442
## 52  9.4909
## 53  1.0442
## 54  1.0306
## 55 12.8432
## 56  1.0395
## 57 11.7887
## 58 11.3644
## 59 11.4748
## 60  1.0394
## 61 13.4624
## 62  1.0571
## 63 14.5594
```

```
## 64 13.8606
## 65  1.0406
## 66 13.3523
## 67 16.8619
## 68 16.8042
## 69 16.3793
## 70 15.6704
## 71  1.0233
## 72 15.8286
```