Burn-in Simulation Review - 2 (11.5.25)

2025-11-05

```
library(psych)
load(file = "secondburn.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
```

```
## 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   19 198.4067 207.34237  93.1259   1.0138
## 2    3          1 100     0.5       6   20 304.9843 217.35905 334.9257   1.0181
## 3    2          2 100     0.5       6   20 195.1093 268.74454  40.6794   1.0146
## 4    3          2 100     0.5       6   20 305.7772 222.60961 291.2439   1.0195
## 5    2          3 100     0.5       6   19 211.5422 177.20222 146.2539   1.0280
## 6    3          3 100     0.5       6   20 347.9580 194.09023 374.4963   1.0171
## 7    2          1 150     0.5       6   20 190.8860 162.51510 169.4864   1.0168
## 8    3          1 150     0.5       6   20 282.3106 173.65487 314.8077   1.0187
## 9    2          2 150     0.5       6   20 220.0997 150.93112 235.1783   1.0197
## 10   3          2 150     0.5       6   20 347.8860 139.86080 331.7070 169.7519
## 11   2          3 150     0.5       6   20 181.8414  95.84605 183.4284   1.0389
## 12   3          3 150     0.5       6   20 316.3794 196.63266 337.0990   1.0133
## 13   2          1 200     0.5       6   20 267.0312 165.40685 254.5865   1.0101
## 14   3          1 200     0.5       6   20 321.8757 143.35520 327.3229   1.0133
## 15   2          2 200     0.5       6   20 308.5824 226.76317 290.7495   1.0132
## 16   3          2 200     0.5       6   20 424.8541 161.86658 420.1836   1.0183
## 17   2          3 200     0.5       6   20 304.5752 111.88757 292.6855 101.3502
## 18   3          3 200     0.5       6   20 471.8580 197.40695 433.4375   1.0276
## 19   2          1 100     0.8       6   20 270.3870 103.42334 282.3288   1.0060
## 20   3          1 100     0.8       6   20 221.7989  76.72452 227.4111   1.0053
## 21   2          2 100     0.8       6   20 241.9523 131.07171 261.1450   1.0055
```

```
## 22   3          2 100     0.8       6   20 219.5895  93.66858 233.5215   1.0055
## 23   2          3 100     0.8       6   20 254.4540 105.67162 277.1116   1.0067
## 24   3          3 100     0.8       6   20 243.4775  96.07924 245.8877   1.0044
## 25   2          1 150     0.8       6   20 249.3123 123.85364 289.5280   1.0041
## 26   3          1 150     0.8       6   20 268.3914 108.92727 269.8620   1.0049
## 27   2          2 150     0.8       6   20 265.1970  91.85982 265.8492   1.0043
## 28   3          2 150     0.8       6   20 260.7308  77.03416 250.9294 116.5065
## 29   2          3 150     0.8       6   20 283.8497 126.27411 252.6519   1.0037
## 30   3          3 150     0.8       6   20 303.0211  77.77898 286.0092 183.5940
## 31   2          1 200     0.8       6   20 312.5797  51.05381 310.6846 226.9138
## 32   3          1 200     0.8       6   20 290.1615  57.80258 277.9659 180.0518
## 33   2          2 200     0.8       6   20 275.4128 100.55924 264.5040   1.0038
## 34   3          2 200     0.8       6   20 288.1622  90.35232 306.0251   1.0035
## 35   2          3 200     0.8       6   20 305.0592  66.25820 302.9566 192.4355
## 36   3          3 200     0.8       6   20 287.2586 101.55718 314.7149   1.0032
## 37   2          1 100     0.5      12    0      NaN        NA       NA      Inf
## 38   3          1 100     0.5      12   12 184.8678 160.30117 137.8538   1.0079
## 39   2          2 100     0.5      12    1 232.6046        NA 232.6046 232.6046
## 40   3          2 100     0.5      12    4 321.0607 190.10126 254.6795 177.9324
## 41   2          3 100     0.5      12    0      NaN        NA       NA      Inf
## 42   3          3 100     0.5      12    9 230.4308 174.89411 295.9762   1.0170
## 43   2          1 150     0.5      12    5 224.5263  89.85977 233.0785  84.1915
## 44   3          1 150     0.5      12   12 300.3662 187.39825 298.4243   1.0151
## 45   2          2 150     0.5      12    4 213.7313  15.72977 213.5795 197.7012
## 46   3          2 150     0.5      12    9 194.6846  85.07025 220.4712   1.0105
## 47   2          3 150     0.5      12    6 236.8322 111.30428 240.3551  95.8426
## 48   3          3 150     0.5      12   14 220.8257 142.23066 221.6725   1.0114
## 49   2          1 200     0.5      12   12 163.5239  74.75717 149.7030  64.6546
## 50   3          1 200     0.5      12   19 245.0725 145.60681 213.6236   1.0076
## 51   2          2 200     0.5      12   11 194.9077  82.18706 224.0780   1.0092
## 52   3          2 200     0.5      12   17 183.0687 158.99974 163.2552   1.0081
## 53   2          3 200     0.5      12   15 169.7891 126.82980 118.8803  20.0990
## 54   3          3 200     0.5      12   20 248.8252 140.61181 225.2806  43.7075
## 55   2          1 100     0.8      12   20 128.6751  61.09233 136.2439   1.0061
## 56   3          1 100     0.8      12   20 127.4965  48.76729 138.6408   1.0054
## 57   2          2 100     0.8      12   20 131.8795  31.59388 129.2618  62.6109
## 58   3          2 100     0.8      12   20 115.6663  45.50003 110.7739   1.0067
## 59   2          3 100     0.8      12   20 135.6346  49.18738 136.0251   1.0055
## 60   3          3 100     0.8      12   20 144.4563  49.32427 144.3071  43.0158
## 61   2          1 150     0.8      12   20 138.8106  56.09915 142.7202   1.0037
## 62   3          1 150     0.8      12   20 144.3883  39.85550 137.0703 107.5282
## 63   2          2 150     0.8      12   20 130.4202  50.97001 135.8263  21.9964
## 64   3          2 150     0.8      12   20 145.3699  52.26606 139.3661  69.8896
## 65   2          3 150     0.8      12   20 159.6169  33.18618 146.0131 121.7638
## 66   3          3 150     0.8      12   20 142.7140  57.59751 157.2828   1.0039
## 67   2          1 200     0.8      12   20 162.6522  49.79391 167.6986   1.0033
## 68   3          1 200     0.8      12   20 161.6677  37.56046 169.8218  75.9192
## 69   2          2 200     0.8      12   20 144.3778  48.67359 155.0248   8.9567
## 70   3          2 200     0.8      12   20 146.6761  53.47958 152.0788  16.4597
## 71   2          3 200     0.8      12   20 150.8982  68.41930 142.4767   1.0033
## 72   3          3 200     0.8      12   20 154.3018  51.50722 151.7889   1.0035
##         max
## 1  574.2386
## 2  707.2501
```

```
## 3  904.4257
## 4  688.2904
## 5  708.3720
## 6  629.3114
## 7  504.3466
## 8  537.8243
## 9  451.2354
## 10 631.2287
## 11 362.3888
## 12 661.4586
## 13 541.7452
## 14 543.7006
## 15 729.0418
## 16 707.4354
## 17 528.2957
## 18 808.3016
## 19 475.1006
## 20 397.6437
## 21 516.0477
## 22 364.9861
## 23 430.1756
## 24 380.8038
## 25 374.7092
## 26 485.2507
## 27 428.6302
## 28 462.5255
## 29 501.7680
## 30 439.8813
## 31 413.7980
## 32 372.2381
## 33 429.6474
## 34 410.4427
## 35 474.5756
## 36 418.5570
## 37     -Inf
## 38 460.6818
## 39 232.6046
## 40 596.9516
## 41     -Inf
## 42 464.2698
## 43 334.3448
## 44 597.3858
## 45 230.0651
## 46 307.9586
## 47 384.8204
## 48 558.1989
## 49 287.2321
## 50 668.3535
## 51 292.7268
## 52 451.2565
## 53 459.5282
## 54 610.6849
## 55 235.6285
## 56 193.5665
```

```
## 57 214.1474
## 58 197.4612
## 59 214.4613
## 60 236.0766
## 61 262.6692
## 62 292.6693
## 63 206.7626
## 64 262.5281
## 65 223.7846
## 66 201.1584
## 67 237.1502
## 68 221.0122
## 69 223.1877
## 70 263.4033
## 71 327.4822
## 72 222.4504
```

```
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
```

```
## 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
```

```
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 2.346295 2.298682443 1.01540 1.0044
## 2    3          1 100     0.5       6   20 1.856885 1.806895777 1.01015 1.0030
## 3    2          2 100     0.5       6   20 2.045610 2.005021450 1.05870 1.0020
## 4    3          2 100     0.5       6   20 1.535360 1.436140351 1.00850 1.0030
## 5    2          3 100     0.5       6   19 1.235568 0.947225438 1.01060 1.0040
## 6    3          3 100     0.5       6   20 1.284410 1.233520789 1.00680 1.0029
## 7    2          1 150     0.5       6   20 1.502455 1.492347976 1.01300 1.0022
## 8    3          1 150     0.5       6   20 2.305630 3.311032805 1.00870 1.0040
## 9    2          2 150     0.5       6   20 1.609040 1.485764013 1.00835 1.0024
## 10   3          2 150     0.5       6   20 1.007305 0.004640494 1.00530 1.0022
## 11   2          3 150     0.5       6   20 1.192605 0.778007408 1.01355 1.0034
## 12   3          3 150     0.5       6   20 1.809040 2.002968147 1.01035 1.0026
## 13   2          1 200     0.5       6   20 1.403425 1.707485619 1.01015 1.0030
## 14   3          1 200     0.5       6   20 1.329925 1.437302119 1.00705 1.0035
## 15   2          2 200     0.5       6   20 1.656175 1.980579414 1.00750 1.0031
## 16   3          2 200     0.5       6   20 1.280740 1.218166807 1.00665 1.0017
## 17   2          3 200     0.5       6   20 1.009210 0.007359627 1.00780 1.0031
## 18   3          3 200     0.5       6   20 1.213955 0.930668531 1.00475 1.0030
```

```
## 19   2          1 100     0.8       6   20 1.529550 2.330634364 1.00735 1.0024
## 20   3          1 100     0.8       6   20 1.571075 2.516505663 1.00760 1.0021
## 21   2          2 100     0.8       6   20 2.576440 3.836171280 1.00620 1.0034
## 22   3          2 100     0.8       6   20 2.050140 3.211172371 1.00630 1.0017
## 23   2          3 100     0.8       6   20 1.497870 2.172247106 1.00935 1.0015
## 24   3          3 100     0.8       6   20 1.633910 2.787039985 1.00900 1.0028
## 25   2          1 150     0.8       6   20 2.902670 4.631316179 1.00845 1.0020
## 26   3          1 150     0.8       6   20 1.595515 2.614583218 1.00815 1.0027
## 27   2          2 150     0.8       6   20 1.641715 2.825926898 1.00775 1.0012
## 28   3          2 150     0.8       6   20 1.009015 0.007414728 1.00665 1.0023
## 29   2          3 150     0.8       6   20 1.710820 3.149277044 1.00480 1.0026
## 30   3          3 150     0.8       6   20 1.007200 0.004274034 1.00625 1.0020
## 31   2          1 200     0.8       6   20 1.007065 0.004720312 1.00445 1.0019
## 32   3          1 200     0.8       6   20 1.006080 0.003137985 1.00485 1.0024
## 33   2          2 200     0.8       6   20 1.700725 3.094975685 1.00730 1.0020
## 34   3          2 200     0.8       6   20 1.729170 3.228916364 1.00650 1.0020
## 35   2          3 200     0.8       6   20 1.007185 0.004069304 1.00560 1.0027
## 36   3          3 200     0.8       6   20 1.766575 3.392528439 1.00525 1.0020
## 37   2          1 100     0.5      12    0      NaN          NA      NA    Inf
## 38   3          1 100     0.5      12   12 2.612483 5.276645091 1.01590 1.0029
## 39   2          2 100     0.5      12    1 1.010700          NA 1.01070 1.0107
## 40   3          2 100     0.5      12    4 1.009700 0.001798147 1.00905 1.0084
## 41   2          3 100     0.5      12    0      NaN          NA      NA    Inf
## 42   3          3 100     0.5      12    9 2.192622 2.337387284 1.01240 1.0020
## 43   2          1 150     0.5      12    5 1.011700 0.005876649 1.00910 1.0068
## 44   3          1 150     0.5      12   12 1.515383 1.714361166 1.00625 1.0026
## 45   2          2 150     0.5      12    4 1.011825 0.009794344 1.00800 1.0050
## 46   3          2 150     0.5      12    9 1.833333 2.453979414 1.01710 1.0026
## 47   2          3 150     0.5      12    6 1.014517 0.009525212 1.01180 1.0034
## 48   3          3 150     0.5      12   14 1.964971 2.433804505 1.00835 1.0025
## 49   2          1 200     0.5      12   12 1.018125 0.009951165 1.01405 1.0106
## 50   3          1 200     0.5      12   19 1.483026 2.045227250 1.00990 1.0030
## 51   2          2 200     0.5      12   11 1.732555 2.399330974 1.00880 1.0041
## 52   3          2 200     0.5      12   17 2.020194 2.753042474 1.00810 1.0032
## 53   2          3 200     0.5      12   15 1.022113 0.022659053 1.01650 1.0055
## 54   3          3 200     0.5      12   20 1.010285 0.008848686 1.00745 1.0022
## 55   2          1 100     0.8      12   20 2.034610 3.141541566 1.01245 1.0046
## 56   3          1 100     0.8      12   20 1.573540 2.489765087 1.01610 1.0058
## 57   2          2 100     0.8      12   20 1.017100 0.010473274 1.01515 1.0037
## 58   3          2 100     0.8      12   20 1.511170 2.200197395 1.01480 1.0046
## 59   2          3 100     0.8      12   20 1.573790 2.482017200 1.01615 1.0019
## 60   3          3 100     0.8      12   20 1.018715 0.017477934 1.01190 1.0051
## 61   2          1 150     0.8      12   20 1.701720 3.061419776 1.01520 1.0074
## 62   3          1 150     0.8      12   20 1.012920 0.005923068 1.01235 1.0025
## 63   2          2 150     0.8      12   20 1.020825 0.019344002 1.01430 1.0043
## 64   3          2 150     0.8      12   20 1.017345 0.008786621 1.01465 1.0055
## 65   2          3 150     0.8      12   20 1.014085 0.006001077 1.01380 1.0063
## 66   3          3 150     0.8      12   20 2.340660 4.087011815 1.01310 1.0025
## 67   2          1 200     0.8      12   20 1.776000 3.420695195 1.01005 1.0022
## 68   3          1 200     0.8      12   20 1.016805 0.008013769 1.01490 1.0069
## 69   2          2 200     0.8      12   20 1.020695 0.022347694 1.01200 1.0035
## 70   3          2 200     0.8      12   20 1.018725 0.011308026 1.01645 1.0041
## 71   2          3 200     0.8      12   20 1.760575 3.342652571 1.01110 1.0052
## 72   3          3 200     0.8      12   20 1.740845 3.251244417 1.01155 1.0031
```

```
##        max
## 1   7.3632
## 2   6.3791
## 3   7.1247
## 4   6.1338
## 5   5.1466
## 6   6.5250
## 7   6.6380
## 8  12.0770
## 9   6.1107
## 10  1.0157
## 11  4.4971
## 12  7.4683
## 13  8.6547
## 14  7.4363
## 15  7.4592
## 16  6.4561
## 17  1.0362
## 18  5.1679
## 19 11.4313
## 20 12.2625
## 21 11.9442
## 22 11.9448
## 23 10.7266
## 24 13.4747
## 25 14.1055
## 26 12.7036
## 27 13.6477
## 28  1.0328
## 29 15.0906
## 30  1.0183
## 31  1.0161
## 32  1.0137
## 33 14.8498
## 34 15.4473
## 35  1.0169
## 36 16.1798
## 37    -Inf
## 38 19.3503
## 39  1.0107
## 40  1.0123
## 41    -Inf
## 42  6.5545
## 43  1.0213
## 44  6.9573
## 45  1.0263
## 46  8.3772
## 47  1.0288
## 48  8.0277
## 49  1.0453
## 50  9.9286
## 51  8.9668
## 52  9.5445
## 53  1.0931
```

```
## 54  1.0411
## 55 11.5366
## 56 12.1513
## 57  1.0435
## 58 10.8586
## 59 12.1186
## 60  1.0713
## 61 14.7082
## 62  1.0223
## 63  1.0766
## 64  1.0350
## 65  1.0248
## 66 14.7567
## 67 16.3089
## 68  1.0339
## 69  1.0945
## 70  1.0477
## 71 15.9619
## 72 15.5538
```