Burn-in Simulation Review - 1 (11.5.25)

2025-11-05

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

neff <- describeBy(neff_check ~ cat + group_prob + N + loading + n_items,
                   data = resultsfull, mat = T)
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
## 1    2          1  100     0.5       6   98  94.94024 154.05984   1.03215
## 2    3          1  100     0.5       6  100 165.22733 220.85994   1.29510
## 3    2          2  100     0.5       6  100 110.92413 154.33256  14.44785
## 4    3          2  100     0.5       6  100 173.96300 194.13591 141.41560
## 5    2          3  100     0.5       6   99 138.79513 171.90902  51.19290
## 6    3          3  100     0.5       6  100 190.57971 223.66179  45.31105
## 7    2          1 1000     0.5       6  100 358.06870  85.02390 352.58350
## 8    3          1 1000     0.5       6  100 404.92385  83.59915 390.38345
## 9    2          2 1000     0.5       6  100 378.97990  82.87839 374.30640
## 10   3          2 1000     0.5       6  100 399.86692  86.69400 394.46505
## 11   2          3 1000     0.5       6  100 351.72762  83.58186 349.51610
## 12   3          3 1000     0.5       6  100 399.54009  82.96116 398.10710
## 13   2          1  100     0.8       6  100 204.25312 144.10894 246.16860
## 14   3          1  100     0.8       6  100 195.58164 124.26811 223.51290
## 15   2          2  100     0.8       6  100 151.27165 149.19434 172.30145
## 16   3          2  100     0.8       6  100 182.03970 139.66815 225.73630
## 17   2          3  100     0.8       6  100 193.57355 155.50116 228.05150
## 18   3          3  100     0.8       6  100 191.36917 141.32132 229.58035
## 19   2          1 1000     0.8       6  100 345.38489  57.96591 348.75450
## 20   3          1 1000     0.8       6  100 325.33747  64.28880 322.66695
## 21   2          2 1000     0.8       6  100 321.34311  63.89068 323.14960
## 22   3          2 1000     0.8       6  100 328.43856  71.27475 327.75920
## 23   2          3 1000     0.8       6  100 319.05162  56.69044 323.08105
## 24   3          3 1000     0.8       6  100 326.12416  58.40353 324.42385
## 25   2          1  100     0.5      12    1 144.78610        NA 144.78610
## 26   3          1  100     0.5      12   48 157.05972 152.87225 104.55125
## 27   2          2  100     0.5      12    1   1.00670        NA   1.00670
## 28   3          2  100     0.5      12   21 111.97043 120.27683  90.15270
## 29   2          3  100     0.5      12    2 120.21075 153.44436 120.21075
## 30   3          3  100     0.5      12   43 145.19706 159.42409  98.86390
## 31   2          1 1000     0.5      12  100 305.52935  67.47060 309.60595
## 32   3          1 1000     0.5      12  100 336.64391  81.70544 334.30790
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## 33   2          2 1000     0.5      12  100 302.43717  72.17527 300.25125
## 34   3          2 1000     0.5      12  100 322.25785  70.94595 311.56820
## 35   2          3 1000     0.5      12  100 309.08343  67.45793 308.80460
## 36   3          3 1000     0.5      12  100 325.88707  71.10252 322.16495
## 37   2          1  100     0.8      12  100 118.44854  52.86852 123.54355
## 38   3          1  100     0.8      12  100 123.36568  48.93249 127.87560
## 39   2          2  100     0.8      12  100 127.64111  56.16749 134.50385
## 40   3          2  100     0.8      12  100 125.16981  48.35407 127.19720
## 41   2          3  100     0.8      12  100 126.03392  54.32549 132.44355
## 42   3          3  100     0.8      12  100 119.87377  57.49290 123.81665
## 43   2          1 1000     0.8      12  100 172.97163  40.97500 170.89055
## 44   3          1 1000     0.8      12  100 169.52282  38.99950 170.81845
## 45   2          2 1000     0.8      12  100 176.60566  47.29447 181.79130
## 46   3          2 1000     0.8      12  100 173.70865  39.35058 173.70235
## 47   2          3 1000     0.8      12  100 172.98753  44.73771 177.40910
## 48   3          3 1000     0.8      12  100 172.71661  44.66081 168.44490
##          min      max
## 1     1.0050 752.2830
## 2     1.0046 973.9329
## 3     1.0050 676.4573
## 4     1.0056 803.4153
## 5     1.0007 683.8225
## 6     1.0049 825.6569
## 7   140.0477 604.4015
## 8   236.7590 602.3312
## 9   168.1092 607.4055
## 10 217.6875 613.7136
## 11 185.9034 552.8731
## 12 182.2966 598.1755
## 13    1.0009 526.7706
## 14    1.0010 466.8170
## 15    1.0009 498.0146
## 16    1.0008 461.5268
## 17    1.0008 549.6293
## 18    1.0008 477.1839
## 19 151.0791 484.0372
## 20 116.1753 478.0190
## 21 163.1585 482.5515
## 22 117.7863 523.9556
## 23 157.5633 497.6232
## 24 194.6036 486.2578
## 25 144.7861 144.7861
## 26    1.0039 488.3587
## 27    1.0067   1.0067
## 28    1.0046 379.4409
## 29   11.7092 228.7123
## 30    1.0049 616.1841
## 31 145.9747 462.1188
## 32 179.0906 539.6920
## 33 142.4002 523.7716
## 34 172.0608 503.4731
## 35 142.6209 528.1305
## 36 144.9195 529.7233
## 37    1.0011 227.6987
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## 38   1.0010 234.6410
## 39   1.0008 232.4678
## 40   1.0008 240.8901
## 41   1.0009 250.4636
## 42   1.0009 234.3866
## 43  72.0163 321.8333
## 44  17.7833 250.5019
## 45  31.9556 292.5623
## 46  50.1111 269.1922
## 47  30.9077 268.5444
## 48  75.9697 292.7948
```

```
psr <- describeBy(psr_check ~ cat + group_prob + N + loading + n_items,
                  data = resultsfull, mat = T)
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
## 1    2          1  100     0.5       6   98  4.567332  3.720758333  4.82130
## 2    3          1  100     0.5       6  100  4.352551  3.708399093  3.28930
## 3    2          2  100     0.5       6  100  3.647981  3.314368657  1.08095
## 4    3          2  100     0.5       6  100  3.900739  3.361698860  1.02735
## 5    2          3  100     0.5       6   99  3.314655  3.175642718  1.02630
## 6    3          3  100     0.5       6  100  4.433889  3.741713408  2.61980
## 7    2          1 1000     0.5       6  100  1.005924  0.003351379  1.00505
## 8    3          1 1000     0.5       6  100  1.006472  0.004143903  1.00560
## 9    2          2 1000     0.5       6  100  1.006333  0.004513617  1.00460
## 10   3          2 1000     0.5       6  100  1.006823  0.004534399  1.00565
## 11   2          3 1000     0.5       6  100  1.006369  0.004092657  1.00530
## 12   3          3 1000     0.5       6  100  1.005739  0.003670876  1.00465
## 13   2          1  100     0.8       6  100  8.676161 12.389067601  1.01090
## 14   3          1  100     0.8       6  100  7.675927 12.143321050  1.01010
## 15   2          2  100     0.8       6  100 14.313855 15.047672110  1.01475
## 16   3          2  100     0.8       6  100 10.462446 14.007055398  1.01255
## 17   2          3  100     0.8       6  100 11.241356 14.724204442  1.01220
## 18   3          3  100     0.8       6  100  9.637582 13.801660145  1.00915
## 19   2          1 1000     0.8       6  100  1.007908  0.005189455  1.00660
## 20   3          1 1000     0.8       6  100  1.007511  0.004635282  1.00570
## 21   2          2 1000     0.8       6  100  1.007988  0.004854162  1.00645
## 22   3          2 1000     0.8       6  100  1.007935  0.004701373  1.00715
## 23   2          3 1000     0.8       6  100  1.007719  0.004403137  1.00680
## 24   3          3 1000     0.8       6  100  1.007336  0.004865972  1.00605
## 25   2          1  100     0.5      12    1  1.013800           NA  1.01380
## 26   3          1  100     0.5      12   48  3.560127  4.194874383  1.01635
## 27   2          2  100     0.5      12    1 10.641800           NA 10.64180
## 28   3          2  100     0.5      12   21  4.477438  4.639637729  1.02100
## 29   2          3  100     0.5      12    2  1.006150  0.003889087  1.00615
## 30   3          3  100     0.5      12   43  3.494716  4.110173952  1.01730
## 31   2          1 1000     0.5      12  100  1.008801  0.006222726  1.00695
## 32   3          1 1000     0.5      12  100  1.007452  0.005153022  1.00650
## 33   2          2 1000     0.5      12  100  1.007944  0.005578464  1.00650
## 34   3          2 1000     0.5      12  100  1.007458  0.004821316  1.00630
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## 35   2          3 1000     0.5      12  100  1.007156  0.004733191  1.00605
## 36   3          3 1000     0.5      12  100  1.007415  0.004883437  1.00660
## 37   2          1  100     0.8      12  100  3.881166  9.180540756  1.01575
## 38   3          1  100     0.8      12  100  2.651623  7.224407197  1.01505
## 39   2          2  100     0.8      12  100  3.842264  9.878690702  1.01685
## 40   3          2  100     0.8      12  100  3.136706  8.622228968  1.01455
## 41   2          3  100     0.8      12  100  4.399086 10.268597078  1.01480
## 42   3          3  100     0.8      12  100  4.398424 10.269603794  1.01785
## 43   2          1 1000     0.8      12  100  1.015201  0.010712199  1.01235
## 44   3          1 1000     0.8      12  100  1.013867  0.009746940  1.01060
## 45   2          2 1000     0.8      12  100  1.014168  0.008251916  1.01180
## 46   3          2 1000     0.8      12  100  1.014090  0.008436734  1.01220
## 47   2          3 1000     0.8      12  100  1.014731  0.009320865  1.01305
## 48   3          3 1000     0.8      12  100  1.013592  0.008219964  1.01085
##        min     max
## 1   1.0025 12.5847
## 2   1.0026 13.9266
## 3   1.0016 12.2640
## 4   1.0023 12.5347
## 5   1.0022 13.0100
## 6   1.0023 12.9478
## 7   1.0016  1.0174
## 8   1.0021  1.0245
## 9   1.0016  1.0215
## 10  1.0016  1.0249
## 11  1.0012  1.0213
## 12  1.0018  1.0181
## 13  1.0013 43.7851
## 14  1.0013 38.6531
## 15  1.0018 44.7064
## 16  1.0022 49.0914
## 17  1.0017 45.6340
## 18  1.0021 51.9117
## 19  1.0023  1.0335
## 20  1.0011  1.0291
## 21  1.0019  1.0270
## 22  1.0018  1.0257
## 23  1.0020  1.0239
## 24  1.0013  1.0312
## 25  1.0138  1.0138
## 26  1.0028 14.3170
## 27 10.6418 10.6418
## 28  1.0035 13.2022
## 29  1.0034  1.0089
## 30  1.0023 12.6347
## 31  1.0021  1.0366
## 32  1.0016  1.0308
## 33  1.0018  1.0347
## 34  1.0013  1.0230
## 35  1.0015  1.0263
## 36  1.0013  1.0394
## 37  1.0036 35.2443
## 38  1.0031 40.1422
## 39  1.0033 51.5916
```

```
## 40  1.0034 50.5568
## 41  1.0041 43.6306
## 42  1.0035 41.8411
## 43  1.0035  1.0804
## 44  1.0018  1.0517
## 45  1.0025  1.0415
## 46  1.0025  1.0423
## 47  1.0036  1.0556
## 48  1.0037  1.0408
```