

semmcci: Internal Tests

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Tests

```
#> test-semmcci-mc-latent-med-defined-none
#> Test passed
#> Test passed
#> Test passed

#> test-semmcci-mc-latent-med-defined

#> Test passed
#> Test passed
#> Test passed

#> test-semmcci-mc-latent-med-std-defined-none

#> Test passed
#> Test passed
#> Test passed

#> test-semmcci-mc-latent-med-std-defined

#> Test passed
#> Test passed
#> Test passed

#> test-semmcci-mc-moment

#> Test passed

#> test-semmcci-mc-simple-med-defined-equality

#> Test passed
#> Test passed
#> Test passed

#> test-semmcci-mc-simple-med-defined-inequality

#> Test passed
#> Test passed
#> Test passed
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```
#> test-semmcci-mc-simple-med-defined-meanstructure
#> Test passed
#> Test passed
#> Test passed

#> test-semmcci-mc-simple-med-defined-mi-amelia
#> Test passed

#> test-semmcci-mc-simple-med-defined-mi-list
#> Test passed

#> test-semmcci-mc-simple-med-defined-mi-mice
#> Test passed

#> test-semmcci-mc-simple-med-defined-none
#> Test passed
#> Test passed
#> Test passed

#> test-semmcci-mc-simple-med-defined
#> Test passed
#> Test passed
#> Test passed

#> test-semmcci-mc-simple-med-std-defined-meanstructure
#> Test passed
#> Test passed
#> Test passed

#> test-semmcci-mc-simple-med-std-defined-none-random-x
#> Test passed
#> Test passed
#> Test passed

#> test-semmcci-mc-simple-med-std-defined-none
#> Test passed
#> Test passed
#> Test passed

#> test-semmcci-mc-simple-med-std-defined
#> Test passed
#> Test passed
#> Test passed
```

```
#> test-semccci-mc-methods
```

```
#> Monte Carlo Confidence Intervals
```

#>	est	se	R	0.05%	0.5%	2.5%	97.5%	99.5%	99.95%
#> visual=~x1	1.0000	0.0000	100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
#> visual=~x2	0.5535	0.1194	100	0.2502	0.2832	0.3427	0.8141	0.8340	0.8340
#> visual=~x3	0.7294	0.1163	100	0.4307	0.4378	0.5278	0.9427	1.0001	1.0020
#> textual=~x4	1.0000	0.0000	100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
#> textual=~x5	1.1131	0.0622	100	0.9475	0.9494	0.9971	1.2367	1.2687	1.2906
#> textual=~x6	0.9261	0.0640	100	0.7830	0.7897	0.8059	1.0692	1.0944	1.1102
#> speed=~x7	1.0000	0.0000	100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
#> speed=~x8	1.1800	0.1704	100	0.7178	0.7178	0.8672	1.4724	1.5802	1.6112
#> speed=~x9	1.0815	0.1442	100	0.6298	0.6607	0.7652	1.3168	1.3319	1.3433
#> x1~~x1	0.5491	0.1061	100	0.2817	0.3036	0.3455	0.7595	0.7842	0.8006
#> x2~~x2	1.1338	0.0951	100	0.8407	0.8629	0.9794	1.3142	1.3415	1.3475
#> x3~~x3	0.8443	0.0884	100	0.6611	0.6702	0.6960	1.0175	1.0727	1.0959
#> x4~~x4	0.3712	0.0489	100	0.2453	0.2503	0.2566	0.4514	0.4635	0.4706
#> x5~~x5	0.4463	0.0549	100	0.3126	0.3155	0.3527	0.5476	0.5755	0.5793
#> x6~~x6	0.3562	0.0442	100	0.2415	0.2545	0.2746	0.4392	0.4443	0.4465
#> x7~~x7	0.7994	0.0782	100	0.6350	0.6389	0.6507	0.9519	0.9676	0.9715
#> x8~~x8	0.4877	0.0758	100	0.2992	0.3119	0.3454	0.6250	0.6712	0.6790
#> x9~~x9	0.5661	0.0682	100	0.4181	0.4250	0.4533	0.7095	0.7566	0.7779
#> visual~~visual	0.8093	0.1429	100	0.3247	0.3994	0.5362	1.0341	1.1331	1.1745
#> textual~~textual	0.9795	0.0968	100	0.7286	0.7338	0.8296	1.1965	1.2139	1.2201
#> speed~~speed	0.3837	0.0876	100	0.1881	0.1911	0.2293	0.5402	0.5980	0.6399
#> visual~~textual	0.4082	0.0720	100	0.2455	0.2491	0.2642	0.5378	0.5557	0.5608
#> visual~~speed	0.2622	0.0580	100	0.1418	0.1420	0.1531	0.3591	0.3937	0.4010
#> textual~~speed	0.1735	0.0461	100	0.0384	0.0485	0.0920	0.2486	0.2630	0.2658

```
#> Monte Carlo Confidence Intervals (Multiple Imputation Estimates)
```

#>	est	se	R	0.05%	0.5%	2.5%	97.5%	99.5%	99.95%
#> visual=~x1	1.0000	0.0000	100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
#> visual=~x2	0.5535	0.1022	100	0.2881	0.3048	0.3492	0.7338	0.7698	0.7735
#> visual=~x3	0.7294	0.1034	100	0.4605	0.4848	0.5177	0.9165	0.9732	0.9808
#> textual=~x4	1.0000	0.0000	100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
#> textual=~x5	1.1131	0.0515	100	0.9656	0.9788	0.9981	1.2058	1.2250	1.2328
#> textual=~x6	0.9261	0.0537	100	0.7743	0.7948	0.8449	1.0376	1.0461	1.0525
#> speed=~x7	1.0000	0.0000	100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
#> speed=~x8	1.1800	0.1569	100	0.8180	0.8404	0.8828	1.4637	1.5459	1.5749
#> speed=~x9	1.0815	0.1445	100	0.7094	0.7285	0.8016	1.3111	1.4579	1.5691
#> x1~~x1	0.5491	0.1071	100	0.3051	0.3080	0.3643	0.7502	0.8462	0.9204
#> x2~~x2	1.1338	0.0826	100	0.9334	0.9414	0.9655	1.2683	1.3008	1.3250
#> x3~~x3	0.8443	0.0937	100	0.6249	0.6299	0.6520	1.0120	1.0203	1.0250
#> x4~~x4	0.3712	0.0454	100	0.2591	0.2634	0.2758	0.4654	0.4863	0.5031
#> x5~~x5	0.4463	0.0600	100	0.2776	0.2861	0.3396	0.5599	0.5665	0.5690
#> x6~~x6	0.3562	0.0440	100	0.2361	0.2414	0.2614	0.4308	0.4532	0.4612
#> x7~~x7	0.7994	0.0854	100	0.6408	0.6426	0.6483	0.9775	0.9857	0.9916

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#> x8~~x8          0.4877 0.0803 100 0.2628 0.2867 0.3212 0.6266 0.6435 0.6517
#> x9~~x9          0.5661 0.0728 100 0.4003 0.4048 0.4217 0.6909 0.7517 0.7805
#> visual~~visual  0.8093 0.1474 100 0.4628 0.5200 0.5896 1.0975 1.1276 1.1360
#> textual~~textual 0.9795 0.1021 100 0.6865 0.7269 0.7918 1.1580 1.2214 1.2391
#> speed~~speed    0.3837 0.0777 100 0.2130 0.2133 0.2265 0.5436 0.5608 0.5611
#> visual~~textual 0.4082 0.0762 100 0.2237 0.2303 0.2824 0.5650 0.6067 0.6336
#> visual~~speed    0.2622 0.0522 100 0.1715 0.1731 0.1781 0.3720 0.3803 0.3849
#> textual~~speed   0.1735 0.0477 100 0.0603 0.0609 0.0868 0.2655 0.2937 0.3109
#> Standardized Monte Carlo Confidence Intervals
#>               est      se   R  0.05%   0.5%   2.5%  97.5%  99.5% 99.95%
#> visual=~x1      0.7719 0.0557 100 0.5618 0.5860 0.6605 0.8530 0.8799 0.8972
#> visual=~x2      0.4236 0.0638 100 0.2136 0.2326 0.2777 0.5260 0.5658 0.5801
#> visual=~x3      0.5811 0.0628 100 0.3809 0.3961 0.4469 0.6786 0.7032 0.7075
#> textual=~x4      0.8516 0.0217 100 0.7871 0.7907 0.8117 0.8932 0.8951 0.8954
#> textual=~x5      0.8551 0.0198 100 0.7759 0.7875 0.8125 0.8868 0.8960 0.8995
#> textual=~x6      0.8380 0.0240 100 0.7577 0.7712 0.7938 0.8829 0.8855 0.8863
#> speed=~x7        0.5695 0.0542 100 0.4442 0.4463 0.4539 0.6552 0.6761 0.6768
#> speed=~x8        0.7230 0.0540 100 0.5342 0.5756 0.6307 0.8092 0.8240 0.8329
#> speed=~x9        0.6650 0.0532 100 0.4600 0.4868 0.5458 0.7280 0.7584 0.7782
#> x1~~x1          0.4042 0.0836 100 0.1949 0.2253 0.2724 0.5637 0.6558 0.6842
#> x2~~x2          0.8206 0.0518 100 0.6635 0.6796 0.7233 0.9229 0.9454 0.9543
#> x3~~x3          0.6623 0.0704 100 0.4995 0.5055 0.5394 0.8003 0.8428 0.8549
#> x4~~x4          0.2748 0.0369 100 0.1983 0.1988 0.2022 0.3411 0.3748 0.3804
#> x5~~x5          0.2689 0.0335 100 0.1908 0.1972 0.2135 0.3398 0.3797 0.3980
#> x6~~x6          0.2977 0.0401 100 0.2145 0.2159 0.2204 0.3699 0.4050 0.4258
#> x7~~x7          0.6757 0.0605 100 0.5419 0.5429 0.5707 0.7939 0.8009 0.8027
#> x8~~x8          0.4772 0.0769 100 0.3063 0.3209 0.3452 0.6023 0.6666 0.7142
#> x9~~x9          0.5578 0.0677 100 0.3944 0.4243 0.4700 0.7021 0.7621 0.7883
#> visual~~visual  1.0000 0.0000 100 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
#> textual~~textual 1.0000 0.0000 100 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
#> speed~~speed    1.0000 0.0000 100 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
#> visual~~textual 0.4585 0.0654 100 0.2800 0.2956 0.3224 0.5729 0.5989 0.6118
#> visual~~speed    0.4705 0.0747 100 0.2910 0.3013 0.3272 0.6087 0.6862 0.7421
#> textual~~speed   0.2830 0.0642 100 0.0717 0.1019 0.1692 0.3897 0.4064 0.4098
#> Standardized Monte Carlo Confidence Intervals
#>               est      se   R  0.05%   0.5%   2.5%  97.5%  99.5% 99.95%
#> visual=~x1      0.7719 0.0508 100 0.6273 0.6339 0.6736 0.8609 0.8796 0.8826
#> visual=~x2      0.4236 0.0571 100 0.2599 0.2734 0.3024 0.5232 0.5355 0.5389
#> visual=~x3      0.5811 0.0555 100 0.4213 0.4271 0.4493 0.6650 0.6879 0.6992
#> textual=~x4      0.8516 0.0202 100 0.7985 0.7987 0.8054 0.8867 0.8905 0.8919
#> textual=~x5      0.8551 0.0247 100 0.7858 0.7912 0.8032 0.8948 0.9100 0.9121
#> textual=~x6      0.8380 0.0237 100 0.7748 0.7816 0.7917 0.8855 0.8899 0.8902
#> speed=~x7        0.5695 0.0522 100 0.4317 0.4332 0.4556 0.6488 0.6668 0.6815
#> speed=~x8        0.7230 0.0549 100 0.6059 0.6140 0.6235 0.8100 0.8558 0.8730
#> speed=~x9        0.6650 0.0541 100 0.5142 0.5205 0.5386 0.7595 0.7722 0.7752
#> x1~~x1          0.4042 0.0777 100 0.2209 0.2263 0.2588 0.5463 0.5982 0.6065

```

```

#> x2~~x2      0.8206 0.0468 100 0.7096 0.7132 0.7263 0.9085 0.9250 0.9324
#> x3~~x3      0.6623 0.0626 100 0.5111 0.5267 0.5578 0.7980 0.8175 0.8225
#> x4~~x4      0.2748 0.0342 100 0.2045 0.2071 0.2138 0.3513 0.3621 0.3624
#> x5~~x5      0.2689 0.0421 100 0.1681 0.1719 0.1994 0.3548 0.3740 0.3825
#> x6~~x6      0.2977 0.0396 100 0.2076 0.2080 0.2159 0.3732 0.3890 0.3997
#> x7~~x7      0.6757 0.0582 100 0.5355 0.5552 0.5790 0.7923 0.8123 0.8137
#> x8~~x8      0.4772 0.0794 100 0.2379 0.2672 0.3440 0.6112 0.6230 0.6329
#> x9~~x9      0.5578 0.0706 100 0.3991 0.4037 0.4231 0.7099 0.7290 0.7356
#> visual~~visual 1.0000 0.0000 100 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
#> textual~~textual 1.0000 0.0000 100 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
#> speed~~speed   1.0000 0.0000 100 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
#> visual~~textual 0.4585 0.0662 100 0.2767 0.2784 0.3293 0.6195 0.6373 0.6446
#> visual~~speed   0.4705 0.0675 100 0.3249 0.3351 0.3494 0.6102 0.6239 0.6274
#> textual~~speed   0.2830 0.0744 100 0.1052 0.1081 0.1372 0.4368 0.4588 0.4732
#> Monte Carlo Confidence Intervals
#> Monte Carlo Confidence Intervals (Multiple Imputation Estimates)
#> Standardized Monte Carlo Confidence Intervals
#> Standardized Monte Carlo Confidence Intervals

#> test-semmcci-npd

#> Test passed
#> Test passed
#> Test passed
#> Test passed

#> test-semmcci-zzz-coverage
#> test-semmcci-zzz-heywood

#> lavaan 0.6.16 ended normally after 18 iterations
#>
#> Estimator ML
#> Optimization method NLMINB
#> Number of model parameters 8
#>
#> Number of observations 50
#>
#> Model Test User Model:
#>
#> Test statistic 0.000
#> Degrees of freedom 2
#> P-value (Chi-square) 1.000
#>
#> Parameter Estimates:
#>
#> Standard errors Standard
#> Information Expected

```

```

#> Information saturated (h1) model          Structured
#>
#> Latent Variables:
#>           Estimate Std.Err  z-value  P(>|z|)
#>   eta1 =~
#>     y1           1.000
#>     y2           0.991    0.152    6.524    0.000
#>     y3           0.901    0.138    6.537    0.000
#>     y4           1.399    0.143    9.814    0.000
#>
#> Variances:
#>           Estimate Std.Err  z-value  P(>|z|)
#>   .y1           0.000    0.055    0.000    1.000
#>   .y2           0.980    0.203    4.822    0.000
#>   .y3           0.807    0.167    4.820    0.000
#>   .y4           0.696    0.176    3.960    0.000
#>   eta1          0.980    0.204    4.815    0.000
#>
#> Standardized Monte Carlo Confidence Intervals
#>           est se R 0.05% 0.5% 2.5% 97.5% 99.5% 99.95%
#> eta1=~y1  1.0000 NA 0    NA    NA    NA    NA    NA    NA
#> eta1=~y2  0.7039 NA 0    NA    NA    NA    NA    NA    NA
#> eta1=~y3  0.7047 NA 0    NA    NA    NA    NA    NA    NA
#> eta1=~y4  0.8566 NA 0    NA    NA    NA    NA    NA    NA
#> y1~~y1    0.0000 NA 0    NA    NA    NA    NA    NA    NA
#> y2~~y2    0.5045 NA 0    NA    NA    NA    NA    NA    NA
#> y3~~y3    0.5034 NA 0    NA    NA    NA    NA    NA    NA
#> y4~~y4    0.2662 NA 0    NA    NA    NA    NA    NA    NA
#> eta1~~eta1 1.0000 NA 0    NA    NA    NA    NA    NA    NA
#> [[1]]
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#> [[1]][[1]]$value
#> [[1]][[1]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[1]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[2]]
#> [[1]][[2]]$value
#> [[1]][[2]]$value[[1]]
#> [1] TRUE
#>

```

```

#>
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#>
#> [[1]][[3]]
#> [[1]][[3]]$value
#> [[1]][[3]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[3]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[4]]
#> [[1]][[4]]$value
#> [[1]][[4]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[4]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[5]]
#> [[1]][[5]]$value
#> [[1]][[5]]$value[[1]]
#> Monte Carlo Confidence Intervals
#>
#>               est      se      R      0.05%      0.5%      2.5%
#> ses=~education      1.0000  0.0000 20000      1.0000      1.0000      1.0000
#> ses=~sei            5.2195  0.4220 20000      3.9085      4.1545      4.3919
#> alien67=~anomia67    1.0000  0.0000 20000      1.0000      1.0000      1.0000
#> alien67=~powerless67 0.9787  0.0617 20000      0.7833      0.8208      0.8572
#> alien71=~anomia71    1.0000  0.0000 20000      1.0000      1.0000      1.0000
#> alien71=~powerless71 0.9221  0.0594 20000      0.7306      0.7659      0.8062
#> alien71~alien67      0.6070  0.0517 20000      0.4397      0.4763      0.5062
#> alien71~ses          -0.2268  0.0523 20000     -0.3937     -0.3615     -0.3281
#> alien67~ses          -0.5750  0.0566 20000     -0.7625     -0.7184     -0.6863
#> anomia67~~anomia71    1.6229  0.3146 20000      0.5985      0.8184      1.0120
#> powerless67~~powerless71 0.3387  0.2610 20000     -0.5094     -0.3368     -0.1687
#> education~~education  2.8013  0.5071 20000      1.1796      1.4967      1.7985
#> sei~~sei             264.5971 18.1113 20000    208.2917    218.7839    229.2471
#> anomia67~~anomia67    4.7307  0.4574 20000      3.2795      3.5600      3.8412
#> powerless67~~powerless67 2.5634  0.4037 20000      1.2084      1.5364      1.7691
#> anomia71~~anomia71    4.3992  0.5153 20000      2.6948      3.0592      3.3889

```

```

#> powerless71~~powerless71 3.0699 0.4359 20000 1.6115 1.9461 2.2087
#> ses~~ses 6.7983 0.6491 20000 4.7028 5.1378 5.5156
#> alien67~~alien67 4.8415 0.4722 20000 3.1702 3.6257 3.9180
#> alien71~~alien71 4.0832 0.3993 20000 2.7649 3.0673 3.3025
#> 97.5% 99.5% 99.95%
#> ses=~education 1.0000 1.0000 1.0000
#> ses=~sei 6.0321 6.3082 6.6221
#> alien67=~anomia67 1.0000 1.0000 1.0000
#> alien67=~powerless67 1.1002 1.1381 1.1818
#> alien71=~anomia71 1.0000 1.0000 1.0000
#> alien71=~powerless71 1.0380 1.0755 1.1175
#> alien71~alien67 0.7094 0.7425 0.7739
#> alien71~ses -0.1242 -0.0932 -0.0587
#> alien67~ses -0.4641 -0.4298 -0.3852
#> anomia67~~anomia71 2.2335 2.4409 2.6464
#> powerless67~~powerless71 0.8510 1.0081 1.2050
#> education~~education 3.7959 4.1313 4.4685
#> sei~~sei 300.0703 312.4038 326.5693
#> anomia67~~anomia67 5.6366 5.9009 6.2035
#> powerless67~~powerless67 3.3524 3.6115 3.9122
#> anomia71~~anomia71 5.3979 5.7343 6.0802
#> powerless71~~powerless71 3.9260 4.1809 4.5310
#> ses~~ses 8.0721 8.4775 8.9381
#> alien67~~alien67 5.7601 6.0306 6.4187
#> alien71~~alien71 4.8714 5.1333 5.5009
#>
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#> [[1]][[5]]$visible
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#>
#> [[1]][[6]]
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#> [[1]][[6]]$visible
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#>
#> [[1]][[7]]
#> [[1]][[7]]$value
#> [[1]][[7]]$value[[1]]
#> [1] TRUE
#>

```



```

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#> [[1]][[7]]$visible
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#>
#> [[1]][[8]]
#> [[1]][[8]]$value
#> [[1]][[8]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[8]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[9]]
#> [[1]][[9]]$value
#> [[1]][[9]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[9]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[10]]
#> [[1]][[10]]$value
#> [[1]][[10]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[10]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[11]]
#> [[1]][[11]]$value
#> [[1]][[11]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[11]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[12]]

```

```

#> [[1]][[12]]$value
#> [[1]][[12]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[12]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[13]]
#> [[1]][[13]]$value
#> [[1]][[13]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[13]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[14]]
#> [[1]][[14]]$value
#> [[1]][[14]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[14]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[15]]
#> [[1]][[15]]$value
#> [[1]][[15]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[15]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[16]]
#> [[1]][[16]]$value
#> [[1]][[16]]$value[[1]]
#> [1] TRUE
#>
#>
#>

```



```

#> [1] TRUE
#>
#>
#> [[1]][[19]]
#> [[1]][[19]]$value
#> [[1]][[19]]$value[[1]]
#> [[1]][[19]]$value[[1]]$thetahatstar
#>
#>          y1          y2          y3
#> [1,] 2.026950e-01 0.941969742 0.775510263
#> [2,] -2.685214e-01 0.703435787 0.055536726
#> [3,] -1.902134e+00 -3.497701643 -4.313000736
#> [4,] 7.224211e-01 1.076139420 1.498056667
#> [5,] 3.349854e-01 -1.474773560 -0.400717600
#> [6,] -8.647679e-01 -1.646461031 -1.992064836
#> [7,] 9.190307e-01 2.771052668 2.683830717
#> [8,] -3.162839e+00 -5.813906067 -7.170469997
#> [9,] 3.689037e-01 0.659884895 0.826223935
#> [10,] 1.754449e+00 3.421975835 4.086815016
#> [11,] -1.404647e+00 -3.731302741 -3.822282544
#> [12,] -3.180190e-01 -0.941457616 -0.919032780
#> [13,] 6.120408e-01 0.858408881 1.239583367
#> [14,] 9.221806e-01 1.388699189 1.920610269
#> [15,] 6.907457e-01 -0.350332126 0.666926087
#> [16,] 1.795174e-01 1.926518696 1.292991782
#> [17,] -5.735160e-01 -1.348344533 -1.463437559
#> [18,] -9.012470e-01 -1.846973242 -2.148829425
#> [19,] 1.076779e+00 1.924453398 2.410713034
#> [20,] -1.772954e+00 -3.099941565 -3.931175811
#> [21,] 8.197118e-02 -0.211601175 -0.015213404
#> [22,] 4.870769e-01 0.871394029 1.090962128
#> [23,] -2.723145e+00 -3.367268903 -5.264399637
#> [24,] 1.250991e+00 2.291890889 2.831863524
#> [25,] -6.311073e-01 -0.952332350 -1.315482454
#> [26,] 7.307629e-01 0.499600061 1.188503488
#> [27,] -1.540011e+00 -2.843212709 -3.498226796
#> [28,] -2.960740e-02 0.278643700 0.117715760
#> [29,] -1.523459e+00 -3.333366339 -3.749600917
#> [30,] -5.308503e-01 -0.658408628 -1.027348704
#> [31,] -1.368455e+00 -2.278458394 -2.970884789
#> [32,] 2.583860e-01 0.644667246 0.679965395
#> [33,] 4.487119e-01 1.098284022 1.169036189
#> [34,] 2.608182e-01 0.239095725 0.457923136
#> [35,] 1.796067e+00 2.349255772 3.543398107
#> [36,] 2.023380e+00 3.547581697 4.491873326
#> [37,] 7.269075e-01 0.273817343 1.058395957

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#> [38,] -1.011299e+00 -2.115148411 -2.434888061
#> [39,] 2.952578e+00 5.278257776 6.611016165
#> [40,] 7.775811e-01 0.676395712 1.344999031
#> [41,] 1.207393e+00 -0.097822272 1.451307064
#> [42,] 6.008634e-01 -0.090298630 0.699152447
#> [43,] -1.344664e+00 -2.202410774 -2.899014286
#> [44,] 1.151077e+00 4.135744605 3.730534036
#> [45,] -8.770482e-01 -1.256968505 -1.791226093
#> [46,] 4.849201e-01 0.063112146 0.639710040
#> [47,] -2.666933e+00 -4.164940474 -5.636979011
#> [48,] -7.646351e-01 -1.929866747 -2.024479675
#> [49,] 1.082873e+00 1.726002835 2.308180259
#> [50,] -5.380918e-01 -1.383429929 -1.438735197
#> [51,] -2.258646e-01 -0.878087121 -0.768950082
#> [52,] 8.782513e-01 0.643485821 1.452269209
#> [53,] -6.632419e-01 -0.815545447 -1.279642728
#> [54,] 1.899934e+00 3.241070031 4.167837169
#> [55,] 2.412756e-01 1.164867081 0.947318165
#> [56,] 1.091245e+00 1.346639178 2.108088329
#> [57,] 1.503885e+00 2.766026691 3.410342567
#> [58,] -5.098835e-01 -0.798139599 -1.078748436
#> [59,] 2.366540e+00 4.715993071 5.568205543
#> [60,] -4.487465e-01 -2.226805827 -1.795361739
#> [61,] -7.303970e-01 -1.248902009 -1.603878466
#> [62,] 2.249788e-01 -0.826784954 -0.178287029
#> [63,] -3.817317e-01 -1.374665915 -1.238893731
#> [64,] 7.281471e-01 -0.144377726 0.827861004
#> [65,] -4.394434e-01 -1.358824736 -1.302067855
#> [66,] -1.778214e-01 -0.498781684 -0.498542641
#> [67,] -1.960710e-01 0.133643406 -0.170329986
#> [68,] 1.010852e+00 0.808817365 1.709371451
#> [69,] -1.333414e-01 -0.254404894 -0.307458120
#> [70,] -6.198304e-01 -0.358032041 -0.971608655
#> [71,] 1.469836e-01 0.226877374 0.309193040
#> [72,] -7.093063e-01 -0.885799443 -1.376072055
#> [73,] -8.765410e-01 -1.239526925 -1.780914350
#> [74,] -8.287333e-01 -1.433097009 -1.828722391
#> [75,] 4.308596e-01 0.057979526 0.569449317
#> [76,] -1.779119e-01 -0.307140093 -0.392302344
#> [77,] 7.056748e-01 1.455438145 1.687669274
#> [78,] 9.712875e-01 1.215871733 1.885933593
#> [79,] 5.557527e-01 0.927583605 1.207782344
#> [80,] -1.406753e+00 -1.930004507 -2.825263485
#> [81,] 1.218608e+00 1.855580409 2.549348617
#> [82,] 7.064686e-01 0.819076382 1.335504999

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#> [83,] 8.869047e-02 -0.519199086 -0.177538552
#> [84,] -2.699055e-01 -0.222241261 -0.459901268
#> [85,] -2.572907e-01 -1.372800932 -1.082683295
#> [86,] 9.632838e-01 1.943331596 2.279662925
#> [87,] 5.528748e-01 1.137267782 1.320559654
#> [88,] -2.881345e+00 -5.238325605 -6.500029931
#> [89,] -1.649826e+00 -2.721731655 -3.567746690
#> [90,] 1.502969e+00 1.882306316 2.918772395
#> [91,] -3.662039e-01 -1.282596439 -1.168436155
#> [92,] 1.866433e+00 3.505256575 4.272674041
#> [93,] 9.732631e-02 -0.741965712 -0.290395979
#> [94,] -5.494900e-01 -0.184007199 -0.787319171
#> [95,] -2.015435e-01 -1.023895058 -0.819539576
#> [96,] -6.167176e-01 0.016540006 -0.759855226
#> [97,] 5.197661e-01 0.073607779 0.688986980
#> [98,] -9.786684e-01 -2.385260469 -2.544099202
#> [99,] 3.928299e-02 -0.313461547 -0.124972944
#> [100,] 1.355839e+00 1.504155285 2.525447110
#> [101,] 2.231432e+00 2.638850721 4.247001328
#> [102,] 8.907463e-01 0.603563677 1.445695020
#> [103,] 5.000194e-01 -0.117131195 0.558511032
#> [104,] -2.654036e+00 -4.042846210 -5.553139589
#> [105,] 2.885234e-01 -0.631392605 0.009386378
#> [106,] 6.600462e-01 0.123149324 0.891406824
#> [107,] 3.049961e-01 1.210776188 1.052254018
#> [108,] -1.507875e+00 -1.632595716 -2.786311715
#> [109,] -4.719731e-02 -0.254153340 -0.199898546
#> [110,] -6.872637e-01 -0.773139653 -1.286063893
#> [111,] 1.043502e+00 1.198746086 1.966479748
#> [112,] -1.453185e+00 -1.496115921 -2.642373897
#> [113,] -1.631020e+00 -3.475517430 -3.962615050
#> [114,] 3.710589e-01 -0.026288813 0.448113733
#> [115,] -9.346610e-02 -0.373592981 -0.323878781
#> [116,] -6.753965e-01 -2.070651099 -1.991330299
#> [117,] 1.433368e-01 -0.071188629 0.139231342
#> [118,] -3.628473e+00 -5.698724696 -7.687184928
#> [119,] -4.022765e-01 -1.947200466 -1.582245325
#> [120,] 4.162228e-01 0.869323514 1.001459556
#> [121,] -3.452428e-01 -0.910830493 -0.935983520
#> [122,] 3.315048e-01 1.361467694 1.168937335
#> [123,] 1.203419e+00 2.112722477 2.673111369
#> [124,] -2.726928e+00 -4.865404787 -6.100519574
#> [125,] -2.158883e-01 -0.539473790 -0.568593716
#> [126,] 9.096355e-01 1.318448584 1.865980629
#> [127,] -6.727276e-01 1.350281864 -0.089527701

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#> [128,] 3.176870e-01 1.012203524 0.957879755
#> [129,] 5.295360e-01 1.185674502 1.318320308
#> [130,] 1.513270e+00 1.412640607 2.670973699
#> [131,] 1.169342e-01 1.167487035 0.793721004
#> [132,] 8.698947e-01 0.962315697 1.618785819
#> [133,] -2.524098e-01 1.168428025 0.333678718
#> [134,] -1.998100e+00 -4.560597586 -5.022531038
#> [135,] 1.034772e+00 1.792541626 2.285125069
#> [136,] 2.904532e-01 1.306810103 1.087414063
#> [137,] -7.715425e-01 -1.983250905 -2.062719040
#> [138,] -5.703098e-01 -0.881821972 -1.200538902
#> [139,] 1.070529e+00 1.370512089 2.095504347
#> [140,] 1.681415e+00 2.612609686 3.546579092
#> [141,] -1.329171e+00 -3.397379052 -3.542852425
#> [142,] -8.927649e-01 -2.038576602 -2.244584241
#> [143,] 1.091495e+00 2.728344467 2.875188874
#> [144,] -1.112538e+00 -1.804758108 -2.388877984
#> [145,] -1.523467e-01 0.079190402 -0.146025811
#> [146,] -1.837232e-01 0.383379233 -0.016339708
#> [147,] 8.194364e-01 1.703638395 1.967268480
#> [148,] 1.941508e-01 0.066691613 0.279113118
#> [149,] -1.374374e+00 -1.602128979 -2.602930967
#> [150,] -1.151194e+00 -2.163699252 -2.636277808
#> [151,] 5.280858e-02 0.836375392 0.530004544
#> [152,] -2.128272e-01 0.013046779 -0.258150817
#> [153,] 3.027259e-01 1.745324180 1.346074845
#> [154,] 8.448151e-01 -0.004691409 1.050863725
#> [155,] 9.130055e-01 2.385825182 2.462532381
#> [156,] 1.266310e+00 3.665511100 3.613268211
#> [157,] 3.530588e-01 0.785797861 0.876342024
#> [158,] 2.319279e+00 3.543925547 4.858823557
#> [159,] -1.589919e-01 -0.598577243 -0.530445024
#> [160,] 1.763318e+00 3.625285807 4.210703958
#> [161,] 9.084969e-01 1.591508651 2.016097768
#> [162,] 1.288285e+00 1.764470888 2.585672985
#> [163,] 8.391885e-01 1.625394571 1.948476879
#> [164,] 2.513051e-01 -0.600207362 -0.019717563
#> [165,] 1.125032e+00 1.831580894 2.419342425
#> [166,] -6.498061e-01 -0.996921640 -1.363544740
#> [167,] -5.656447e-01 -0.257010431 -0.847977422
#> [168,] -5.019716e-01 -1.712803192 -1.576482364
#> [169,] -1.989203e+00 -3.692313473 -4.529575353
#> [170,] -5.621278e-01 -0.857529787 -1.176855044
#> [171,] 1.263651e-01 0.628177041 0.506186716
#> [172,] -1.532436e+00 -3.059776992 -3.608964160

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#> [173,] 1.380805e-02 0.770184934 0.444638745
#> [174,] 1.315572e+00 0.852279830 2.113471393
#> [175,] -1.292990e+00 -2.396525918 -2.942303745
#> [176,] 3.731779e-01 1.520355904 1.309079140
#> [177,] 6.271781e-01 1.292760518 1.499506204
#> [178,] -1.410892e+00 -2.725529387 -3.271907898
#> [179,] 2.264573e-01 0.641386102 0.638330081
#> [180,] 5.945225e-01 1.158605704 1.384335032
#> [181,] -1.037854e+00 -1.733081415 -2.255970286
#> [182,] -5.743650e-01 -1.091163361 -1.321771401
#> [183,] 1.848644e-01 0.120826927 0.297576027
#> [184,] 1.008390e+00 0.665600169 1.626822346
#> [185,] -6.935435e-01 -0.965006417 -1.400372802
#> [186,] 7.634712e-01 2.004371003 2.064375050
#> [187,] -1.306039e+00 -1.030483645 -2.200479707
#> [188,] -3.076476e-01 -0.294558055 -0.547097727
#> [189,] 2.125609e+00 4.118278735 4.936062833
#> [190,] -2.866073e-01 -1.434253906 -1.153344345
#> [191,] 1.215622e+00 2.390147536 2.842287612
#> [192,] 1.283005e-01 0.448006607 0.408612990
#> [193,] -9.012941e-02 0.424830124 0.123373397
#> [194,] 1.439887e+00 2.700970817 3.294435138
#> [195,] -3.145746e-01 -1.351814650 -1.142468692
#> [196,] 9.383405e-01 1.695114049 2.110808731
#> [197,] -3.798752e-01 0.335618009 -0.287442659
#> [198,] -2.549442e-01 -0.295508162 -0.481904922
#> [199,] -9.133295e-01 -0.555237796 -1.447036992
#> [200,] 1.126622e+00 2.651794580 2.876510119
#> [201,] -1.815003e+00 -3.103829919 -3.985767210
#> [202,] 4.802272e-01 1.676328904 1.529125890
#> [203,] 6.928703e-01 2.747314984 2.388639890
#> [204,] 7.919707e-01 1.886171865 2.034317761
#> [205,] 2.742320e-01 0.612239365 0.681728947
#> [206,] -1.022507e+00 -1.427813808 -2.067421974
#> [207,] 2.655317e-01 0.345628155 0.522921776
#> [208,] -2.076008e-01 -0.335374828 -0.444992937
#> [209,] -1.447538e+00 -1.776956422 -2.791186816
#> [210,] 7.300520e-01 1.822740025 1.921904404
#> [211,] 7.468577e-01 2.088470651 2.090330128
#> [212,] 1.607197e-01 -0.289738296 0.039621590
#> [213,] 3.293703e-01 0.785429532 0.846598511
#> [214,] 3.885296e-02 -0.675450096 -0.326397680
#> [215,] -2.222644e-01 -1.122134862 -0.899897010
#> [216,] 7.764502e-01 1.416625053 1.754385120
#> [217,] 1.824191e-01 1.681999188 1.160912024

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#> [218,] -3.134556e-01 -0.045754750 -0.416264752
#> [219,] -4.271443e-01 -0.561437529 -0.844214589
#> [220,] 3.334877e+00 5.537068420 7.231365056
#> [221,] 8.967012e-01 0.516812387 1.404977297
#> [222,] 1.485072e-01 -0.102450809 0.128329480
#> [223,] 1.423553e-01 0.156658272 0.264452890
#> [224,] 1.268492e+00 2.216037079 2.811591716
#> [225,] 2.316583e+00 4.195701224 5.217170886
#> [226,] 1.192916e-01 0.067651612 0.186298049
#> [227,] -1.767395e+00 -2.819687321 -3.768713313
#> [228,] -1.501398e+00 -2.751680172 -3.399280415
#> [229,] 1.323173e+00 1.377443875 2.414393321
#> [230,] -1.381355e+00 -3.088229168 -3.436359693
#> [231,] 1.035354e+00 0.944845687 1.815415070
#> [232,] -9.317360e-01 -0.879210804 -1.649780976
#> [233,] 7.242309e-01 0.596400919 1.234078641
#> [234,] 8.774174e-01 0.647773915 1.453609044
#> [235,] -1.232386e+00 -2.604986375 -2.982418252
#> [236,] 1.311123e+00 2.028021036 2.760410586
#> [237,] 2.186362e+00 3.707118672 4.783644068
#> [238,] 2.314538e-01 -0.314956444 0.113830490
#> [239,] -9.188340e-01 -1.261186534 -1.845673021
#> [240,] -8.226717e-01 -2.351315167 -2.330736349
#> [241,] -1.000327e+00 -1.947888358 -2.328383998
#> [242,] -1.684903e+00 -4.024980764 -4.334735695
#> [243,] 2.047576e+00 2.812642576 4.114184656
#> [244,] -8.540247e-01 -1.825804712 -2.078196587
#> [245,] 3.738541e-01 1.575988804 1.340796251
#> [246,] 4.696819e-01 0.208445696 0.701362441
#> [247,] 1.052605e+00 2.004529835 2.425006507
#> [248,] 2.567862e-01 0.568922739 0.635935491
#> [249,] 2.563240e-01 0.766675245 0.745103463
#> [250,] 1.254597e+00 1.808938810 2.568342629
#> [251,] -5.651806e-01 -0.215685152 -0.824464880
#> [252,] 5.371667e-01 -0.763758080 0.245982107
#> [253,] -1.048738e-01 -1.106876539 -0.745045643
#> [254,] 1.740931e+00 2.648131121 3.640507567
#> [255,] 2.027314e+00 3.033438268 4.211449907
#> [256,] 1.598691e-01 -0.307648213 0.028621678
#> [257,] -1.144125e+00 -3.238656042 -3.224019350
#> [258,] -1.529705e-01 0.385880159 0.023396289
#> [259,] -7.121414e-01 -1.403253958 -1.666772948
#> [260,] 3.874956e-01 -0.628309612 0.134513554
#> [261,] -1.792259e+00 -2.688960259 -3.727171072
#> [262,] -2.181315e+00 -3.179629323 -4.484616160

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#> [1386,] 4.755399e-01 0.547715215 0.896947517
#> [1387,] 1.790671e+00 1.519530780 3.076206123

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#> [1567,] -1.081600e+00 -1.851033546 -2.375979758

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#> [1625,] 1.455142e+00 2.859741267 3.401569410
#> [1626,] 1.321360e+00 2.431832101 2.997273546
#> [1627,] -1.184387e+00 -2.496100236 -2.862138027
#> [1628,] -1.277943e+00 -3.378684434 -3.468597719
#> [1629,] -1.659668e+00 -2.135482539 -3.254675233
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#> [1635,] -1.040550e+00 -2.725993488 -2.810356815
#> [1636,] -5.037535e-01 -0.368970828 -0.832933712
#> [1637,] 1.222077e-01 0.388249296 0.367852606
#> [1638,] -7.697639e-02 -0.852466633 -0.569071282
#> [1639,] -1.549037e-01 1.038437678 0.383127639
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#> [1647,] -1.673747e+00 -2.112228054 -3.259326183
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#> [1649,] 2.420418e-01 -0.916790919 -0.206959437
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#> [1651,] 1.558874e+00 3.100835185 3.664718355
#> [1652,] 7.922961e-01 1.344291010 1.734002363
#> [1653,] -8.513254e-01 -1.811340183 -2.066803381
#> [1654,] 2.102510e-01 1.379378404 1.027675969
#> [1655,] -3.534862e-02 0.181362677 0.056569688
#> [1656,] 7.084094e-01 1.341677313 1.627946865
#> [1657,] -8.382241e-01 -0.479141362 -1.311151703

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#> [1672,] 2.099840e-02 0.945414947 0.550850293
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#> [1679,] 1.028797e+00 0.419952336 1.515944853
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#> [1681,] -6.263912e-01 -0.620509856 -1.125454086
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#> [1702,] 1.425055e+00 3.327030820 3.623377439

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#> [1793,] -1.287277e+00 -2.335417610 -2.901267695
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#> [1840,] 5.710722e-01 0.143979859 0.792018127
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#> [1868,] -1.060521e-01 -1.483799342 -0.955691302
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#> [1883,] -8.360323e-03 -0.331313160 -0.194290085
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#> [1892,] -2.737877e-01 0.256192515 -0.199231521
#> [1893,] -2.505657e+00 -4.656948524 -5.708914581
#> [1894,] -1.969070e+00 -4.104148278 -4.733020604
#> [1895,] -1.471440e-01 -0.564860608 -0.496959498
#> [1896,] -2.219260e-01 0.196899859 -0.167466019
#> [1897,] -1.109713e+00 -2.973848720 -3.034150657
#> [1898,] -1.727732e+00 -3.015577260 -3.827966207
#> [1899,] -7.995706e-01 -0.911541234 -1.502915500
#> [1900,] -5.113678e-01 0.357001866 -0.439544173
#> [1901,] 1.315964e-02 0.505331025 0.296847371
#> [1902,] 1.871231e+00 1.882002071 3.377818752
#> [1903,] 1.844336e+00 3.202525072 4.077116124
#> [1904,] 1.000146e+00 1.017251914 1.811693843
#> [1905,] -1.004088e-01 -0.188890829 -0.230034243
#> [1906,] -1.950360e+00 -1.231633036 -3.115564148
#> [1907,] -9.193978e-01 -0.825931752 -1.604827818
#> [1908,] 1.773912e-01 -0.422544461 -0.013291274
#> [1909,] -4.699903e-01 -1.967004269 -1.677673314
#> [1910,] 1.272265e+00 0.665515340 1.955821781
#> [1911,] 8.648412e-01 0.637153076 1.432032625
#> [1912,] -8.494760e-01 -1.794910381 -2.055379314
#> [1913,] 2.220176e+00 4.891159714 5.482903639
#> [1914,] 2.168065e+00 3.029383494 4.384714220
#> [1915,] -1.510646e+00 -3.170734462 -3.643369212
#> [1916,] 3.823181e-01 0.216980889 0.597158128
#> [1917,] -7.031813e-01 -1.019871020 -1.442838483
#> [1918,] 1.105383e+00 1.533873163 2.229625148
#> [1919,] 8.862457e-01 1.619858815 2.004084156
#> [1920,] 1.605027e+00 2.093329588 3.163146137
#> [1921,] -1.443808e+00 -2.768782092 -3.336957073
#> [1922,] -1.241021e+00 -1.829956776 -2.563077298
#> [1923,] -4.088014e-01 0.510553363 -0.226431285
#> [1924,] 3.967605e-01 0.594925931 0.824911273
#> [1925,] -1.542403e+00 -1.998053980 -3.032181565
#> [1926,] 1.271537e+00 1.717600315 2.538776546
#> [1927,] -4.563526e-01 -2.476759505 -1.943560220

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#> [1928,] 1.147770e+00 2.544562997 2.843372274
#> [1929,] -1.444879e+00 -2.629151197 -3.260803499
#> [1930,] -4.846493e-01 -0.716026748 -1.001712666
#> [1931,] -1.779075e-01 0.215999684 -0.101976242
#> [1932,] 1.671918e+00 3.022254131 3.762072285
#> [1933,] 7.905355e-01 2.327055837 2.277200172
#> [1934,] 7.367561e-01 2.167205000 2.121427884
#> [1935,] -1.066259e+00 -3.150901304 -3.078221577
#> [1936,] -1.420958e+00 -2.611874413 -3.221386880
#> [1937,] 1.424676e+00 2.294738510 3.050025732
#> [1938,] -9.616360e-01 -2.660558673 -2.675639185
#> [1939,] -1.352316e+00 -1.834005086 -2.704106834
#> [1940,] -8.651743e-01 -0.906578191 -1.581967670
#> [1941,] -7.017152e-01 -1.871537824 -1.913649714
#> [1942,] -3.598963e-02 0.403840360 0.179236153
#> [1943,] 3.005265e-01 1.225794295 1.055014886
#> [1944,] 2.058159e-01 -0.987139620 -0.291172924
#> [1945,] 1.875255e+00 2.680922876 3.826204429
#> [1946,] 1.322783e+00 2.019486287 2.770213277
#> [1947,] 1.174944e+00 2.513734272 2.860147900
#> [1948,] 6.767322e-01 0.369788462 1.049088355
#> [1949,] -5.468071e-01 -1.318096207 -1.413345564
#> [1950,] 8.726402e-02 -0.474228299 -0.154360403
#> [1951,] 2.101866e-02 -0.316120824 -0.149223980
#> [1952,] 2.468314e-02 0.415060711 0.261120695
#> [1953,] 3.768713e-01 1.086208094 1.072750836
#> [1954,] -8.155094e-02 -0.904748598 -0.603789957
#> [1955,] -1.484948e+00 -1.878998404 -2.894465780
#> [1956,] -7.173771e-01 -1.620996010 -1.794139575
#> [1957,] 3.048168e-03 0.118501528 0.069564390
#> [1958,] -2.284379e-01 0.380221821 -0.073850225
#> [1959,] 1.897963e+00 5.173816897 5.237972867
#> [1960,] -2.939783e-01 -0.512133150 -0.650797374
#> [1961,] 1.534094e+00 2.467505342 3.282346032
#> [1962,] -4.266264e-01 -2.421764868 -1.875972552
#> [1963,] 1.575035e+00 3.814542908 4.080948028
#> [1964,] 3.210268e-01 0.253624382 0.541064815
#> [1965,] -9.030246e-01 -1.699605063 -2.069262851
#> [1966,] 1.295026e+00 2.008395023 2.729446575
#> [1967,] 1.814726e+00 2.265695293 3.520292830
#> [1968,] 5.242492e-01 0.725102041 1.056129380
#> [1969,] -6.687072e-01 -0.868946399 -1.316093101
#> [1970,] 1.521388e+00 2.040762402 3.029677570
#> [1971,] -1.445145e+00 -2.423556955 -3.147039105
#> [1972,] -1.099860e+00 -2.453773660 -2.733244644

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#> [1973,] -1.146898e+00 -1.271129586 -2.135582244
#> [1974,] -3.048929e+00 -5.714116759 -6.973047589
#> [1975,] 1.541620e-01 0.545735235 0.495097064
#> [1976,] -1.443493e+00 -2.482916675 -3.177921614
#> [1977,] -1.616814e+00 -1.552174433 -2.877525761
#> [1978,] -2.284458e-02 1.292570184 0.688835615
#> [1979,] 8.625835e-01 1.596045411 1.961362468
#> [1980,] 1.772205e+00 3.271552722 4.025478832
#> [1981,] 1.109845e+00 2.425563274 2.730040543
#> [1982,] 2.635155e-02 0.850765574 0.504999125
#> [1983,] -1.360630e+00 -1.944210423 -2.775633836
#> [1984,] -1.467650e+00 -2.812959404 -3.391204698
#> [1985,] -8.411192e-01 -1.537683155 -1.902208272
#> [1986,] -1.707158e+00 -4.014527362 -4.356685733
#> [1987,] 2.931896e-01 0.825935838 0.823961232
#> [1988,] -1.835242e+00 -3.592253961 -4.282059577
#> [1989,] 3.449869e-01 -0.278605183 0.275577392
#> [1990,] -5.641884e-01 -0.537875571 -1.002029845
#> [1991,] 8.521925e-01 1.490632422 1.889905213
#> [1992,] -2.708266e-01 0.507034138 -0.056332568
#> [1993,] -6.232566e-01 -1.096110795 -1.385483850
#> [1994,] -8.692727e-01 -2.027833945 -2.209328322
#> [1995,] -1.505229e+00 -2.543156866 -3.288335049
#> [1996,] -2.357798e+00 -4.795617040 -5.601492493
#> [1997,] 9.802066e-01 0.403968854 1.446483421
#> [1998,] 5.277294e-01 0.327051260 0.839567541
#> [1999,] -4.402432e-01 -1.753059150 -1.521848733
#> [2000,] -4.389994e-01 -1.286909284 -1.261604031
#>
#> [[1]][[19]]$value[[1]]$decomposition
#> [1] "eigen"
#>
#>
#>
#> [[1]][[19]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[20]]
#> [[1]][[20]]$value
#> [[1]][[20]]$value[[1]]
#> [[1]][[20]]$value[[1]]$M
#> [1] 2
#>
#> [[1]][[20]]$value[[1]]$est

```



```

#> [1] 0 0 0
#>
#> [[1]][[20]]$value[[1]]$within
#>      [,1] [,2] [,3]
#> [1,]    1    0    0
#> [2,]    0    1    0
#> [3,]    0    0    1
#>
#> [[1]][[20]]$value[[1]]$between
#>      [,1] [,2] [,3]
#> [1,]    0    0    0
#> [2,]    0    0    0
#> [3,]    0    0    0
#>
#> [[1]][[20]]$value[[1]]$total
#>      [,1] [,2] [,3]
#> [1,]    1    0    0
#> [2,]    0    1    0
#> [3,]    0    0    1
#>
#> [[1]][[20]]$value[[1]]$ariv
#> [1] NA
#>
#> [[1]][[20]]$value[[1]]$total_adj
#> [1] NA
#>
#>
#>
#> [[1]][[20]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[21]]
#> [[1]][[21]]$value
#> [[1]][[21]]$value[[1]]
#>
#>      est se R 0.05% 0.5% 2.5% 97.5% 99.5% 99.95%
#> eta1=~y1  1.0000 NA 0    NA    NA    NA    NA    NA    NA
#> eta1=~y2  0.7039 NA 0    NA    NA    NA    NA    NA    NA
#> eta1=~y3  0.7047 NA 0    NA    NA    NA    NA    NA    NA
#> eta1=~y4  0.8566 NA 0    NA    NA    NA    NA    NA    NA
#> y1~~y1    0.0000 NA 0    NA    NA    NA    NA    NA    NA
#> y2~~y2    0.5045 NA 0    NA    NA    NA    NA    NA    NA
#> y3~~y3    0.5034 NA 0    NA    NA    NA    NA    NA    NA
#> y4~~y4    0.2662 NA 0    NA    NA    NA    NA    NA    NA
#> eta1~~eta1 1.0000 NA 0    NA    NA    NA    NA    NA    NA

```

```
#>  
#>  
#> [[1]][[21]]$visible  
#> [1] TRUE
```

Environment

```
ls()  
#> [1] "i"      "root"   "tex_file"
```

Class

```
#> [[1]]  
#> [1] "character"  
#>  
#> [[2]]  
#> [1] "root_criterion"  
#>  
#> [[3]]  
#> [1] "character"
```

References

- Pesigan, I. J. A., & Cheung, S. F. (2023). Monte Carlo confidence intervals for the indirect effect with missing data. *Behavior Research Methods*. <https://doi.org/10.3758/s13428-023-02114-4>
- R Core Team. (2023). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. Vienna, Austria. <https://www.R-project.org/>