**Steps for conducting the parallel and serial mediation analysis in SPSS**

1. Download PROCESS software from <https://www.processmacro.org/download.html>

2. Open SPSS software with administrator privileges

3. Install custom dialog builder file for SPSS (EXTENSIONS > UTILITIES > INSTALL CUSTOM DIALOG) [see PROCESS documentation for details, as procedure differs for older versions]

4. Import data file (Lingua\_Franca\_Dataset\_REPLICATION.csv) in SPSS (FILE > IMPORT DATA > CSV DATA)

5. In SPSS, ANALYZE > REGRESSION > PROCESS v4.0

6. Model number = 80

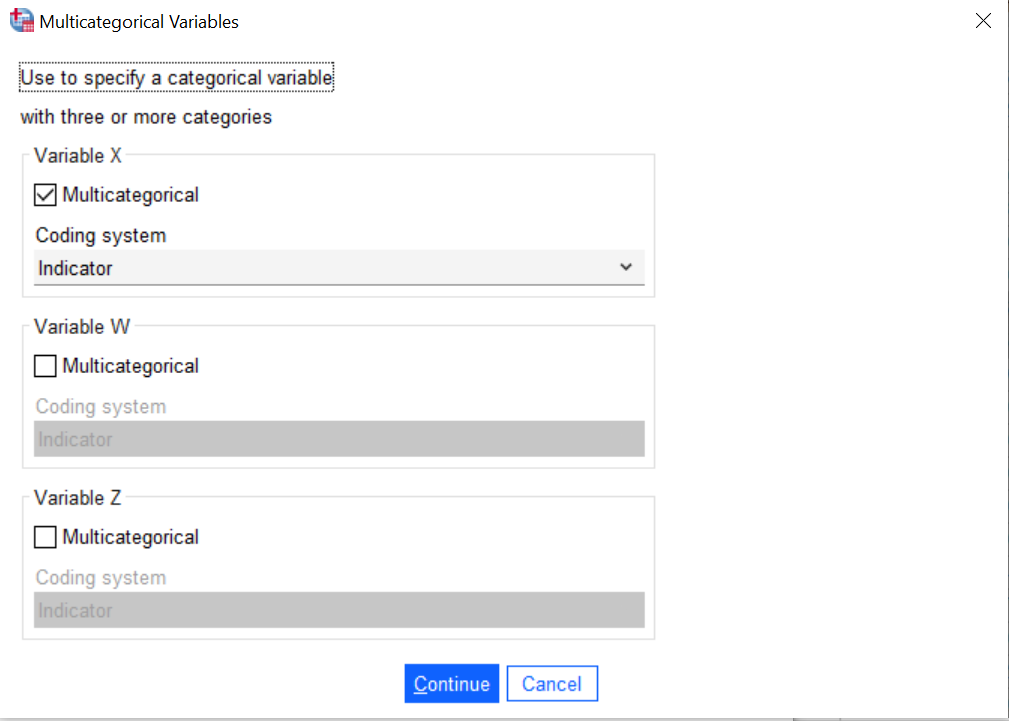
7. Confidence intervals = 95

8. Number of bootstrap samples = 5000

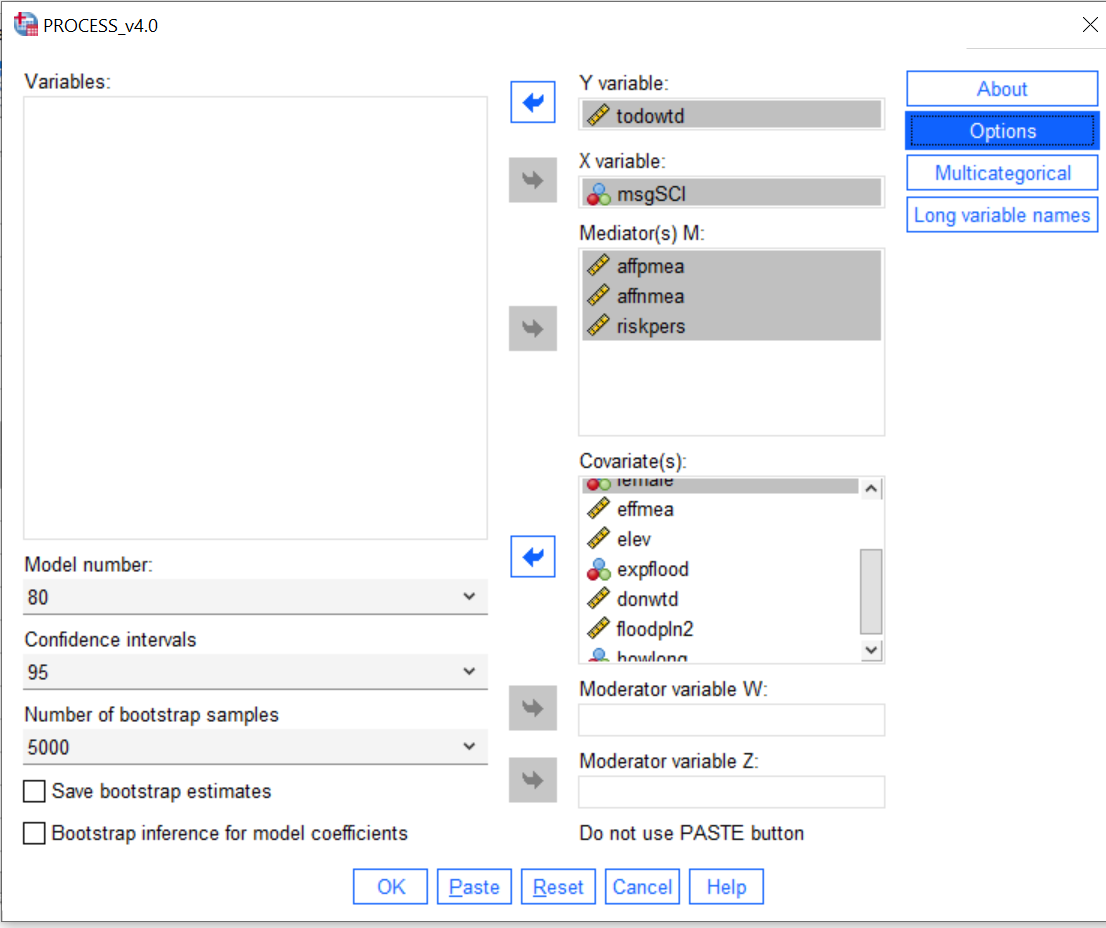
9. Y = intended decisions (*todowtd*)

10. X = risk messages (*msgSCI*)

10a. Under “Multicategorical”, check Variable X as multicategorical, with an “indicator” coding system (which compares each message to the science message).

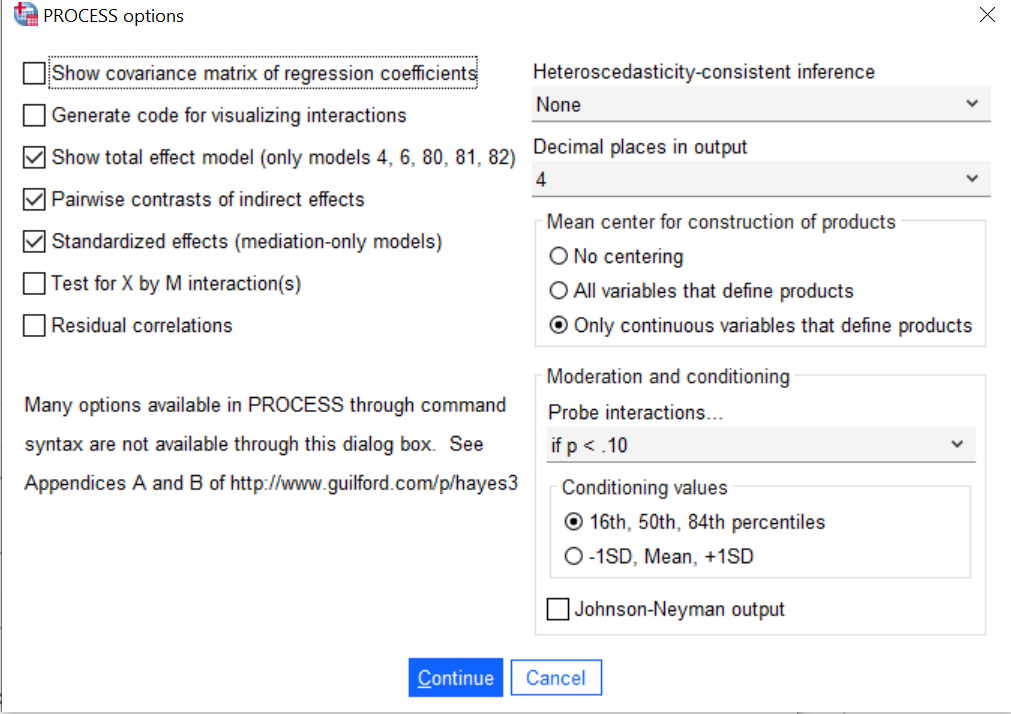


11. Mediators = positive affect (*affpmea*), negative affect (*affnmea*), and risk perception (*riskpers*).



12. Covariates = perceived self-efficacy (*effmea*), undertaken behaviors (*donwtd*), elevation *(elev)*, flood experience (*expflood*), floodplain (*fldpln2*), time owned *(howlong)*, income *(income)*, female *(female)*, age *(age)*, education (*highedu*)

13. Under Options, choose: show total effect model; pairwise contrasts of indirect effects; standardized effects; and mean center only for continuous variables that define products.



14. Hit OK to run. (To see syntax for model 80, hit PASTE.)**Matrix**

Run MATRIX procedure:

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* PROCESS Procedure for SPSS Version 4.0 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Written by Andrew F. Hayes, Ph.D. www.afhayes.com

Documentation available in Hayes (2022). www.guilford.com/p/hayes3

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Model : 80

Y : todowtd

X : msgSCI

M1 : affpmea

M2 : affnmea

M3 : riskpers

Covariates:

highedu age income female effmea elev expflood donwtd fldpln2 howlong

Sample

Size: 1938

Coding of categorical X variable for analysis:

msgSCI X1 X2 X3 X4

1.000 .000 .000 .000 .000

2.000 1.000 .000 .000 .000

3.000 .000 1.000 .000 .000

4.000 .000 .000 1.000 .000

5.000 .000 .000 .000 1.000

X1 = science compared to hero

X2 = science compared to victim

X3 = science compared to victim to hero

X4 = science compared to base

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

OUTCOME VARIABLE:

affpmea

Model Summary

R R-sq MSE F df1 df2 p

.2909 .0846 .8407 12.6961 14.0000 1923.0000 .0000

Model

coeff se t p LLCI ULCI

constant 2.1068 .1666 12.6482 .0000 1.7802 2.4335

X1 .3438 .0628 5.4775 .0000 .2207 .4669

X2 .1270 .0630 2.0164 .0439 .0035 .2506

X3 .3326 .0626 5.3083 .0000 .2097 .4554

X4 .0225 .0790 .2853 .7754 -.1325 .1776

highedu -.0326 .0155 -2.0981 .0360 -.0630 -.0021

age .0931 .0169 5.4933 .0000 .0599 .1263

income -.0020 .0133 -.1539 .8777 -.0281 .0240

female .0511 .0437 1.1691 .2425 -.0346 .1369

effmea -.0760 .0248 -3.0636 .0022 -.1246 -.0273

elev -.0010 .0016 -.6650 .5061 -.0041 .0020

expflood .1291 .0528 2.4446 .0146 .0255 .2327

donwtd 1.2196 .2242 5.4390 .0000 .7798 1.6593

fldpln2 .2415 .0608 3.9743 .0001 .1223 .3606

howlong -.0521 .0315 -1.6551 .0981 -.1138 .0096

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

OUTCOME VARIABLE:

affnmea

Model Summary

R R-sq MSE F df1 df2 p

.4038 .1630 .3000 26.7544 14.0000 1923.0000 .0000

Model

coeff se t p LLCI ULCI

constant 2.1116 .0995 21.2215 .0000 1.9165 2.3067

X1 .0034 .0375 .0909 .9276 -.0701 .0769

X2 .0574 .0376 1.5259 .1272 -.0164 .1312

X3 .0675 .0374 1.8040 .0714 -.0059 .1409

X4 .0040 .0472 .0850 .9323 -.0886 .0966

highedu -.0045 .0093 -.4882 .6255 -.0227 .0137

age -.0084 .0101 -.8344 .4041 -.0283 .0114

income .0089 .0079 1.1194 .2631 -.0067 .0245

female .0013 .0261 .0479 .9618 -.0500 .0525

effmea -.2274 .0148 -15.3489 .0000 -.2565 -.1984

elev -.0017 .0009 -1.8792 .0604 -.0036 .0001

expflood .1442 .0316 4.5720 .0000 .0824 .2061

donwtd .3160 .1339 2.3591 .0184 .0533 .5787

fldpln2 .1660 .0363 4.5736 .0000 .0948 .2372

howlong -.0073 .0188 -.3895 .6970 -.0442 .0296

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

OUTCOME VARIABLE:

riskpers

Model Summary

R R-sq MSE F df1 df2 p

.6165 .3800 19.2208 73.5943 16.0000 1921.0000 .0000

Model

coeff se t p LLCI ULCI

constant 8.7028 .8910 9.7675 .0000 6.9554 10.4502

X1 -.4716 .3027 -1.5578 .1194 -1.0653 .1221

X2 -.8254 .3016 -2.7367 .0063 -1.4170 -.2339

X3 -.5907 .3017 -1.9576 .0504 -1.1825 .0011

X4 -.1768 .3779 -.4678 .6400 -.9180 .5644

affpmea .3324 .1160 2.8655 .0042 .1049 .5599

affnmea 2.4322 .1942 12.5242 .0000 2.0514 2.8131

highedu .1619 .0743 2.1787 .0295 .0162 .3077

age -.0517 .0819 -.6310 .5281 -.2122 .1089

income .0783 .0636 1.2319 .2181 -.0464 .2030

female .2556 .2091 1.2223 .2217 -.1545 .6658

effmea -1.8645 .1258 -14.8202 .0000 -2.1112 -1.6177

elev -.0784 .0074 -10.5623 .0000 -.0929 -.0638

expflood .5602 .2540 2.2057 .0275 .0621 1.0583

donwtd 1.8406 1.0805 1.7035 .0886 -.2784 3.9596

fldpln2 2.2871 .2926 7.8168 .0000 1.7133 2.8609

howlong -.1319 .1506 -.8755 .3814 -.4273 .1636

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

OUTCOME VARIABLE:

todowtd

Model Summary

R R-sq MSE F df1 df2 p

.4649 .2161 .0266 31.1377 17.0000 1920.0000 .0000

Model

coeff se t p LLCI ULCI

constant .1420 .0340 4.1794 .0000 .0754 .2087

X1 -.0015 .0113 -.1321 .8949 -.0236 .0206

X2 .0135 .0113 1.2014 .2298 -.0085 .0356

X3 -.0043 .0112 -.3824 .7022 -.0264 .0178

X4 .0275 .0141 1.9515 .0511 -.0001 .0551

affpmea .0439 .0043 10.1341 .0000 .0354 .0524

affnmea .0030 .0075 .3981 .6906 -.0118 .0177

riskpers .0059 .0008 6.9711 .0000 .0043 .0076

highedu .0028 .0028 1.0055 .3148 -.0026 .0082

age -.0010 .0030 -.3129 .7544 -.0069 .0050

income .0040 .0024 1.6925 .0907 -.0006 .0087

female .0194 .0078 2.4871 .0130 .0041 .0347

effmea -.0250 .0049 -5.0520 .0000 -.0347 -.0153

elev -.0006 .0003 -2.0526 .0402 -.0011 .0000

expflood -.0017 .0095 -.1771 .8594 -.0202 .0169

donwtd .2387 .0403 5.9292 .0000 .1597 .3177

fldpln2 .0389 .0111 3.5145 .0005 .0172 .0606

howlong -.0096 .0056 -1.7050 .0884 -.0206 .0014

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* ANALYSIS NOTES AND ERRORS \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Level of confidence for all confidence intervals in output:

95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

NOTE: Standardized coefficients for dichotomous or multicategorical X are in

partially standardized form.

NOTE: The contrast option is not available with a multicategorical X.

------ END MATRIX -----