

Main Analysis

```
library(metaSEM)
s= read.csv("H.csv", head= TRUE)
s1=as.data.frame(na.omit(s))
H=cor(s1, use="complete.obs", method="pearson")
s= read.csv("R.csv", head= TRUE)
s2=as.data.frame(na.omit(s))
R=cor(s2, use="complete.obs", method="pearson")
s= read.csv("U.csv", head= TRUE)
s3=as.data.frame(na.omit(s))
U=cor(s3, use="complete.obs", method="pearson")
s= read.csv("T.csv", head= TRUE)
s4=as.data.frame(na.omit(s))
T=cor(s4, use="complete.obs", method="pearson")
v=c(115, 305, 136, 296)
corrlist <- list(H, R, U, T)
fixed1 <- tssem1(corrlist, v, method="FEM")
fixed1 <- rerun(fixed1)
summary(fixed1)
coef(fixed1)

A1 <- create.mxMatrix(c(0, "1*H2L", "1*H2O", "0*H2F", "0*H2P", "0*H2C", "0*H2E", "1*H2I",
"1*H2M", "1*H2A", 0, 0, "1*L2O", "1*L2F", "0*L2P", "1*L2C",
"1*L2E", "1*L2I", "1*L2M", "-1*L2A", 0, 0, 0, 0, 0, 0, 0, 0, 0,
"1*O2M", "1*O2A", 0, 0, 0, 0, 0, 0, 0, 0, "-1*F2M", "-1*F2A",
0, 0, 0, 0, 0, 0, 0, 0, "1*P2M", "1*P2A", 0, 0, 0, 0, 0, 0, 0, 0,
"1*C2M", "1*C2A", 0, 0, 0, 0, 0, 0, 0, 0, "1*E2M", "1*E2A",
0, 0, 0, 0, 0, 0, 0, 0, "1*I2M", "1*I2A", 0, 0, 0, 0, 0, 0, 0, 0, 0,
"1*M2A", 0, 0, 0, 0, 0, 0, 0, 0, 0, 0),
type="Full", ncol=10, nrow=10, as.mxMatrix=FALSE)
dimnames(A1) <- dimnames(corrlist[[1]])
A1

S1 <- create.mxMatrix(c(1, 0, 0, 0, 0, 0, 0, 0, 0, 0, "0*ErrVarL", 0, 0, 0, 0, 0, 0, 0, 0,
"0*ErrVarO", 0, 0, 0, 0, "0*CovIO", 0, 0, "0*ErrVarF", 0, 0, 0,
"0*CovIF", 0, 0, "0*ErrVarP", "0*CovPC", "0*CovPE", "0*CovIP", 0, 0,
"0*ErrVarC", "0*CovCE", "0*CovIC", 0, 0, "0*ErrVarE", "0*CovIE", 0, 0,
"0*ErrVarI", 0, 0, "0*ErrVarM", 0, "0*ErrVarA"),
type="Symm", byrow=FALSE, as.mxMatrix=FALSE)
dimnames(S1) <- dimnames(corrlist[[1]])
S1

fixed2 <- tssem2(fixed1, Amatrix=A1, Smatrix=S1, intervals.type="LB", diag.constraints=TRUE,
mx.algebras=fixed2 <- tssem2(fixed1, Amatrix=A1, Smatrix=S1,
mx.algebras=list(LRA=mxAlgebra(L2O*O2A+L2F*F2A+L2P*P2A+L2C*C2A+L2E*E2A+L2I*I2A+L2M*M
2A, name="LRA"),
OMA=mxAlgebra(O2M*M2A, name="OMA"), FMA=mxAlgebra(F2M*M2A, name="FMA"),
PMA=mxAlgebra(P2M*P2A, name="PMA"), CMA=mxAlgebra(C2M*C2A, name="CMA"),
EMA=mxAlgebra(E2M*M2A, name="EMA"), IMA=mxAlgebra(I2M*M2A, name="IMA"),
LOA=mxAlgebra(L2O*O2A, name="LOA"), LFA=mxAlgebra(L2F*F2A, name="LFA"),
LPA=mxAlgebra(L2P*P2A, name="LPA"), LCA=mxAlgebra(L2C*C2A, name="LCA"),
LEA=mxAlgebra(L2E*E2A, name="LEA"), LIA=mxAlgebra(L2I*I2A, name="LIA"),
LMA=mxAlgebra(L2M*M2A, name="LMA")))
fixed2 <- rerun(fixed2)
summary(fixed2)
```

Confidence Intervals

```
library(metaSEM)
s= read.csv("H.csv", head= TRUE)
s1=as.data.frame(na.omit(s))
H=cor(s1, use="complete.obs", method="pearson")
s= read.csv("R.csv", head= TRUE)
s2=as.data.frame(na.omit(s))
R=cor(s2, use="complete.obs", method="pearson")
s= read.csv("U.csv", head= TRUE)
s3=as.data.frame(na.omit(s))
U=cor(s3, use="complete.obs", method="pearson")
s= read.csv("T.csv", head= TRUE)
s4=as.data.frame(na.omit(s))
T=cor(s4, use="complete.obs", method="pearson")
v=c(115, 305, 136, 296)
corrlist <- list(H, R, U, T)
fixed1 <- tssem1(corrlist, v, method="FEM")
fixed1 <- rerun(fixed1)

summary(fixed1)

A1 <- create.mxMatrix(c(0, ".1*H2L", ".1*H2O", "0*H2F", "0*H2P", "0*H2C", "0*H2E", ".1*H2I",
".1*H2M", ".1*H2A", 0, 0, ".1*L2O", ".1*L2F", "0*L2P", ".1*L2C",
".1*L2E", ".1*L2I", ".1*L2M", "-.1*L2A", 0, 0, 0, 0, 0, 0, 0, 0,
".1*O2M", ".1*O2A", 0, 0, 0, 0, 0, 0, 0, 0, "-.1*F2M", "-.1*F2A", 0, 0, 0, 0, 0, 0, ".1*P2M", ".1*P2A", 0,
0, 0, 0, 0, 0, 0,
".1*C2M", ".1*C2A", 0, 0, 0, 0, 0, 0, 0, 0, ".1*E2M", ".1*E2A",
0, 0, 0, 0, 0, 0, 0, ".1*I2M", ".1*I2A", 0, 0, 0, 0, 0, 0, 0, 0,
".1*M2A", 0, 0, 0, 0, 0, 0, 0, 0, 0, 0),
type="Full", ncol=10, nrow=10, as.mxMatrix=FALSE)
dimnames(A1) <- dimnames(corrlist[[1]])
S1 <- create.mxMatrix(c(1, 0, 0, 0, 0, 0, 0, 0, 0, 0, "0.3*ErrVarL", 0, 0, 0, 0, 0, 0, 0, 0,
"0.3*ErrVarO", 0, 0, 0, 0, "0*CovIO", 0, 0, "0.3*ErrVarF", 0, 0, 0,
"0*CovIF", 0, 0, "0.3*ErrVarP", "0*CovPC", "0*CovPE", "0*CovIP", 0, 0,
"0.3*ErrVarC", "0*CovCE", "0*CovIC", 0, 0, "0.3*ErrVarE", "0*CovIE", 0, 0,
"0.3*ErrVarI", 0, 0, "0.3*ErrVarM", 0, "0.3*ErrVarA"),
type="Symm", byrow=FALSE, as.mxMatrix=FALSE)
dimnames(S1) <- dimnames(corrlist[[1]])

fixed2 <- tssem2(fixed1, Amatrix=A1, Smatrix=S1, intervals.type="LB", diag.constraints=TRUE,
mx.algebras=list(
LRA=mxAlgebra(L2O*O2A+L2F*F2A+L2P*P2A+L2C*C2A+L2E*E2A+L2I*I2A+L2M*M2A, name="LRA"),
OMA=mxAlgebra(O2M*M2A, name="OMA"), FMA=mxAlgebra(F2M*M2A, name="FMA"),
PMA=mxAlgebra(P2M*P2A, name="PMA"), CMA=mxAlgebra(C2M*C2A, name="CMA"),
EMA=mxAlgebra(E2M*M2A, name="EMA"), IMA=mxAlgebra(I2M*M2A, name="IMA"),
LOA=mxAlgebra(L2O*O2A, name="LOA"), LFA=mxAlgebra(L2F*F2A, name="LFA"),
LPA=mxAlgebra(L2P*P2A, name="LPA"), LCA=mxAlgebra(L2C*C2A, name="LCA"),
LEA=mxAlgebra(L2E*E2A, name="LEA"), LIA=mxAlgebra(L2I*I2A, name="LIA"),
LMA=mxAlgebra(L2M*M2A, name="LMA")))
# fixed2 <- rerun(fixed2)
summary(fixed2)
```