Supplementary Material 1 - Mplus Input – NCDS Cohort

**Model 0**

usevariable are

! 9 items version Malaise Inventory, Items 2, 3, 9, 12, 14, 16, 20 and 21

!ages 23, 33, 42 and 50

mal2\_1 mal3\_1 mal5\_1 mal9\_1 mal12\_1 mal14\_1 mal16\_1 mal20\_1 mal21\_1 !23yrs

mal2\_2 mal3\_2 mal5\_2 mal9\_2 mal12\_2 mal14\_2 mal16\_2 mal20\_2 mal21\_2 !33yrs

mal2\_3 mal3\_3 mal5\_3 mal9\_3 mal12\_3 mal14\_3 mal16\_3 mal20\_3 mal21\_3 !42yrs

mal2\_4 mal3\_4 mal5\_4 mal9\_4 mal12\_4 mal14\_4 mal16\_4 mal20\_4 mal21\_4; !50yrs

categorical are

mal2\_1 mal3\_1 mal5\_1 mal9\_1 mal12\_1 mal14\_1 mal16\_1 mal20\_1 mal21\_1

mal2\_2 mal3\_2 mal5\_2 mal9\_2 mal12\_2 mal14\_2 mal16\_2 mal20\_2 mal21\_2

mal2\_3 mal3\_3 mal5\_3 mal9\_3 mal12\_3 mal14\_3 mal16\_3 mal20\_3 mal21\_3

mal2\_4 mal3\_4 mal5\_4 mal9\_4 mal12\_4 mal14\_4 mal16\_4 mal20\_4 mal21\_4;

missing are all (-99, 9999);

Grouping is SEXN (1=MALE 2=FEMALE);

Analysis: parameterization=theta;

!model 0

MODEL:

T1 by mal2\_1@1

mal2\_2 (l1)

mal2\_3 (l2)

mal2\_4 (l3);

T2 by mal3\_1@1

mal3\_2 (l4)

mal3\_3 (l5)

mal3\_4 (l6);

T3 by mal5\_1@1

mal5\_2 (l7)

mal5\_3 (l8)

mal5\_4 (l9);

T4 by mal9\_1@1

mal9\_2 (l10)

mal9\_3 (l11)

mal9\_4 (l12);

T5 by mal12\_1@1

mal12\_2 (l13)

mal12\_3 (l14)

mal12\_4 (l15);

T6 by mal14\_1@1

mal14\_2 (l16)

mal14\_3 (l17)

mal14\_4 (l18);

T7 by mal16\_1@1

mal16\_2 (l19)

mal16\_3 (l20)

mal16\_4 (l21);

T8 by mal20\_1@1

mal20\_2 (l22)

mal20\_3 (l23)

mal20\_4 (l24);

T9 by mal21\_1@1

mal21\_2 (l25)

mal21\_3 (l26)

mal21\_4 (l27);

O1 by mal2\_1@1

mal3\_1(lamO2)

mal5\_1(lamO3)

mal9\_1 (lamO4)

mal12\_1(lamO5)

mal14\_1(lamO6)

mal16\_1(lamO7)

mal20\_1(lamO8)

mal21\_1(lamO9);

!O2 by Y12 to Y92 (33 yrs old)

O2 by mal2\_2@1

mal3\_2(lamO22)

mal5\_2(lamO32)

mal9\_2(lamO42)

mal12\_2 (lamO52)

mal14\_2 (lamO62)

mal16\_2 (lamO72)

mal20\_2 (lamO82)

mal21\_2 (lamO92);

!O3 by Y13 to Y93 (42 yrs old)

O3 by mal2\_3@1

mal3\_3(lamO23)

mal5\_3(lamO33)

mal9\_3(lamO43)

mal12\_3 (lamO53)

mal14\_3 (lamO63)

mal16\_3 (lamO73)

mal20\_3 (lamO83)

mal21\_3 (lamO93);

!O4 by Y14 to Y94 (50 yrs old)

O4 by mal2\_4@1

mal3\_4(lamO24)

mal5\_4(lamO34)

mal9\_4(lamO44)

mal12\_4 (lamO54)

mal14\_4 (lamO64)

mal16\_4 (lamO74)

mal20\_4 (lamO84)

mal21\_4 (lamO94);

[O1@0 O2@0 O3@0 O4@0];

! Thresholds!

[mal2\_1$1 mal2\_2$1 mal2\_3$1 mal2\_4$1];

[mal3\_1$1 mal3\_2$1 mal3\_3$1 mal3\_4$1];

[mal5\_1$1 mal5\_2$1 mal5\_3$1 mal5\_4$1];

[mal9\_1$1 mal9\_2$1 mal9\_3$1 mal9\_4$1];

[mal12\_1$1 mal12\_2$1 mal12\_3$1 mal12\_4$1];

[mal14\_1$1 mal14\_2$1 mal14\_3$1 mal14\_4$1];

[mal16\_1$1 mal16\_2$1 mal16\_3$1 mal16\_4$1];

[mal20\_1$1 mal20\_2$1 mal20\_3$1 mal20\_4$1];

[mal21\_1$1 mal21\_2$1 mal21\_3$1 mal21\_4$1];

! zero correlation!

O1 with T1-T9@0 O2@0 O3@0 O4@0;

O2 with T1-T9@0 O3@0 O4@0;

O3 with T1-T9@0 O4@0;

O4 with T1-T9@0;

! autoregressive effects

O4 on O3 (beta2m);

O3 on O2 (beta1m);

O2 on O1 (beta0m);

! state residual variances

O1\* (ovar1);

O2\* (ovar2);

O3\* (ovar3);

O4\* (ovar4);

!mal2\_1 mal2\_2 mal2\_3 mal2\_4 (resvar1);

!mal3\_1 mal3\_2 mal3\_3 mal3\_4 (resvar2);

!mal5\_1 mal5\_2 mal5\_3 mal5\_4 (resvar3);

!mal9\_1 mal9\_2 mal9\_3 mal9\_4 (resvar4);

! mal12\_1 mal12\_2 mal12\_3 mal12\_4 (resvar5);

! mal14\_1 mal14\_2 mal14\_3 mal14\_4 (resvar6);

! mal16\_1 mal16\_2 mal16\_3 mal16\_4 (resvar7);

! mal20\_1 mal20\_2 mal20\_3 mal20\_4 (resvar8);

! mal21\_1 mal21\_2 mal21\_3 mal21\_4 (resvar9);

Model female:

T1 by mal2\_1@1

mal2\_2 (l1f)

mal2\_3 (l2f)

mal2\_4 (l3f);

T2 by mal3\_1@1

mal3\_2 (l4f)

mal3\_3 (l5f)

mal3\_4 (l6f);

T3 by mal5\_1@1

mal5\_2 (l7f)

mal5\_3 (l8f)

mal5\_4 (l9f);

T4 by mal9\_1@1

mal9\_2 (l10f)

mal9\_3 (l11f)

mal9\_4 (l12f);

T5 by mal12\_1@1

mal12\_2 (l13f)

mal12\_3 (l14f)

mal12\_4 (l15f);

T6 by mal14\_1@1

mal14\_2 (l16f)

mal14\_3 (l17f)

mal14\_4 (l18f);

T7 mal16\_1@1

mal16\_2 (l19f)

mal16\_3 (l20f)

mal16\_4 (l21f);

T8 by mal20\_1@1

mal20\_2 (l22f)

mal20\_3 (l23f)

mal20\_4 (l24f);

T9 by mal21\_1@1

mal21\_2 (l25f)

mal21\_3 (l26f)

mal21\_4 (l27f);

O4 on O3 (beta2f);

O3 on O2 (beta1f);

O2 on O1 (beta0f);

O1\* (ovar1f);

O2\* (ovar2f);

O3\* (ovar3f);

O4\* (ovar4f);

O1 by mal2\_1@1

mal3\_1(lamO2f)

mal5\_1 (lamO3f)

mal9\_1 (lamO4f)

mal12\_1 (lamO5f)

mal14\_1 (lamO6f)

mal16\_1 (lamO7f)

mal20\_1 (lamO8f)

mal21\_1 (lamO9f);

!O2 by Y12 to Y92 (33 yrs old)

O2 by mal2\_2@1

mal3\_2 (lamO22f)

mal5\_2 (lamO32f)

mal9\_2 (lamO42f)

mal12\_2 (lamO52f)

mal14\_2 (lamO62f)

mal16\_2 (lamO72f)

mal20\_2 (lamO82f)

mal21\_2 (lamO92f);

!O3 by Y13 to Y93 (42 yrs old)

O3 by mal2\_3@1

mal3\_3 (lamO23f)

mal5\_3 (lamO33f)

mal9\_3 (lamO43f)

mal12\_3 (lamO53f)

mal14\_3 (lamO63f)

mal16\_3(lamO73f)

mal20\_3 (lamO83f)

mal21\_3 (lamO93f);

!O4 by Y14 to Y94 (50 yrs old)

O4 by mal2\_4@1

mal3\_4 (lamO24f)

mal5\_4 (lamO34f)

mal9\_4 (lamO44f)

mal12\_4 (lamO54f)

mal14\_4 (lamO64f)

mal16\_4 (lamO74f)

mal20\_4 (lamO84f)

mal21\_4 (lamO94f);

! Thresholds!

[mal2\_1$1 mal2\_2$1 mal2\_3$1 mal2\_4$1];

[mal3\_1$1 mal3\_2$1 mal3\_3$1 mal3\_4$1];

[mal5\_1$1 mal5\_2$1 mal5\_3$1 mal5\_4$1];

[mal9\_1$1 mal9\_2$1 mal9\_3$1 mal9\_4$1];

[mal12\_1$1 mal12\_2$1 mal12\_3$1 mal12\_4$1];

[mal14\_1$1 mal14\_2$1 mal14\_3$1 mal14\_4$1];

[mal16\_1$1 mal16\_2$1 mal16\_3$1 mal16\_4$1];

[mal20\_1$1 mal20\_2$1 mal20\_3$1 mal20\_4$1];

[mal21\_1$1 mal21\_2$1 mal21\_3$1 mal21\_4$1];

[t1@0 t2@0 t3@0 t4@0 t5@0 t6@0 t7@0 t8@0 t9@0];

mal2\_1@1 mal2\_2@1 mal2\_3@1 mal2\_4@1 ;

mal3\_1@1 mal3\_2@1 mal3\_3@1 mal3\_4@1 ;

mal5\_1@1 mal5\_2@1 mal5\_3@1 mal5\_4@1 ;

mal9\_1@1 mal9\_2@1 mal9\_3@1 mal9\_4@1 ;

mal12\_1@1 mal12\_2@1 mal12\_3@1 mal12\_4@1 ;

mal14\_1@1 mal14\_2@1 mal14\_3@1 mal14\_4@1 ;

mal16\_1@1 mal16\_2@1 mal16\_3@1 mal16\_4@1 ;

mal20\_1@1 mal20\_2@1 mal20\_3@1 mal20\_4@1 ;

mal21\_1@1 mal21\_2@1 mal21\_3@1 mal21\_4@1 ;

**!model 1**

usevariable are

mal2\_1 mal3\_1 mal5\_1 mal9\_1 mal10\_1 mal12\_1 mal16\_1 mal20\_1 mal21\_1 !23yrs

mal2\_2 mal3\_2 mal5\_2 mal9\_2 mal10\_2 mal12\_2 mal16\_2 mal20\_2 mal21\_2 !33yrs

mal2\_3 mal3\_3 mal5\_3 mal9\_3 mal12\_3 mal14\_3 mal16\_3 mal20\_3 mal21\_3 !42yrs

mal2\_4 mal3\_4 mal5\_4 mal9\_4 mal12\_4 mal14\_4 mal16\_4 mal20\_4 mal21\_4; !50 yrs

categorical are

mal2\_1 mal3\_1 mal5\_1 mal9\_1 mal10\_1 mal12\_1 mal16\_1 mal20\_1 mal21\_1 !23yrs

mal2\_2 mal3\_2 mal5\_2 mal9\_2 mal10\_2 mal12\_2 mal16\_2 mal20\_2 mal21\_2 !33yrs

mal2\_3 mal3\_3 mal5\_3 mal9\_3 mal12\_3 mal14\_3 mal16\_3 mal20\_3 mal21\_3 !42yrs

mal2\_4 mal3\_4 mal5\_4 mal9\_4 mal12\_4 mal14\_4 mal16\_4 mal20\_4 mal21\_4; !50 yrs

missing are all (-99, 9999);

Grouping is SEXN (1=MALE 2=FEMALE);

Analysis:

parameterization=theta;

difftest=model0;

MODEL:

T1 by mal2\_1@1

mal2\_2 (l1)

mal2\_3 (l2)

mal2\_4 (l3);

T2 by mal3\_1@1

mal3\_2 (l4)

mal3\_3 (l5)

mal3\_4 (l6);

T3 by mal5\_1@1

mal5\_2 (l7)

mal5\_3 (l8)

mal5\_4 (l9);

T4 by mal9\_1@1

mal9\_2 (l10)

mal9\_3 (l11)

mal9\_4 (l12);

T5 by mal12\_1@1

mal12\_2 (l13)

mal12\_3 (l14)

mal12\_4 (l15);

T6 by mal14\_1@1

mal14\_2 (l16)

mal14\_3 (l17)

mal14\_4 (l18);

T7 by mal16\_1@1

mal16\_2 (l19)

mal16\_3 (l20)

mal16\_4 (l21);

T8 by mal20\_1@1

mal20\_2 (l22)

mal20\_3 (l23)

mal20\_4 (l24);

T9 by mal21\_1@1

mal21\_2 (l25)

mal21\_3 (l26)

mal21\_4 (l27);

O1 by mal2\_1@1

mal3\_1 (lamO2)

mal5\_1 (lamO3)

mal9\_1 (lamO4)

mal12\_1 (lamO5)

mal14\_1 (lamO6)

mal16\_1 (lamO7)

mal20\_1 (lamO8)

mal21\_1 (lamO9);

!O2 by Y12 to Y92 (33 yrs old)

O2 by mal2\_2@1

mal3\_2 (lamO22)

mal5\_2 (lamO32)

mal9\_2 (lamO42)

mal12\_2 (lamO52)

mal14\_2 (lamO62)

mal16\_2 (lamO72)

mal20\_2 (lamO82)

mal21\_2 (lamO92);

!O3 by Y13 to Y93 (42 yrs old)

O3 by mal2\_3@1

mal3\_3 (lamO23)

mal5\_3 (lamO33)

mal9\_3 (lamO43)

mal12\_3 (lamO53)

mal14\_3 (lamO63)

mal16\_3(lamO73)

mal20\_3(lamO83)

mal21\_3 (lamO93);

!O4 by Y14 to Y94 (50 yrs old)

O4 by mal2\_4@1

mal3\_4 (lamO24)

mal5\_4 (lamO34)

mal9\_4 (lamO44)

mal12\_4 (lamO54)

mal14\_4 (lamO64)

mal16\_4 (lamO74)

mal20\_4 (lamO84)

mal21\_4 (lamO94);

[O1@0 O2@0 O3@0 O4@0];

! Thresholds!

[mal2\_1$1 mal2\_2$1 mal2\_3$1 mal2\_4$1];

[mal3\_1$1 mal3\_2$1 mal3\_3$1 mal3\_4$1];

[mal5\_1$1 mal5\_2$1 mal5\_3$1 mal5\_4$1];

[mal9\_1$1 mal9\_2$1 mal9\_3$1 mal9\_4$1];

[mal12\_1$1 mal12\_2$1 mal12\_3$1 mal12\_4$1];

[mal14\_1$1 mal14\_2$1 mal14\_3$1 mal14\_4$1];

[mal16\_1$1 mal16\_2$1 mal16\_3$1 mal16\_4$1];

[mal20\_1$1 mal20\_2$1 mal20\_3$1 mal20\_4$1];

[mal21\_1$1 mal21\_2$1 mal21\_3$1 mal21\_4$1];

! zero correlation!

O1 with T1-T9@0 O2@0 O3@0 O4@0;

O2 with T1-T9@0 O3@0 O4@0;

O3 with T1-T9@0 O4@0;

O4 with T1-T9@0;

! autoregressive effects

O4 on O3 (beta2m);

O3 on O2 (beta1m);

O2 on O1 (beta1m);

! state residual variances

O1\* (ovar1);

O2\* (ovar2);

O3\* (ovar3);

O4\* (ovar4);

Model female:

T1 by mal2\_1@1

mal2\_2 (l1f)

mal2\_3 (l2f)

mal2\_4 (l3f);

T2 by mal3\_1@1

mal3\_2 (l4f)

mal3\_3 (l5f)

mal3\_4 (l6f);

T3 by mal5\_1@1

mal5\_2 (l7f)

mal5\_3 (l8f)

mal5\_4 (l9f);

T4 by mal9\_1@1

mal9\_2 (l10f)

mal9\_3 (l11f)

mal9\_4 (l12f);

T5 by mal12\_1@1

mal12\_2 (l13f)

mal12\_3 (l14f)

mal12\_4 (l15f);

T6 by mal14\_1@1

mal14\_2 (l16f)

mal14\_3 (l17f)

mal14\_4 (l18f);

T7 by mal16\_1@1

mal16\_2 (l19f)

mal16\_3 (l20f)

mal16\_4 (l21f);

T8 by mal20\_1@1

mal20\_2 (l22f)

mal20\_3 (l23f)

mal20\_4 (l24f);

T9 by mal21\_1@1

mal21\_2 (l25f)

mal21\_3 (l26f)

mal21\_4 (l27f);

O4 on O3 (beta2f);

O3 on O2 (beta1f);

O2 on O1 (beta1f);

O1\* (ovar1f);

O2\* (ovar2f);

O3\* (ovar3f);

O4\* (ovar4f);

O1 by mal2\_1@1

mal3\_1 (lamO2f)

mal5\_1 (lamO3f)

mal9\_1 (lamO4f)

mal12\_1 (lamO5f)

mal14\_1 (lamO6f)

mal16\_1 (lamO7f)

mal20\_1 (lamO8f)

mal21\_1 (lamO9f);

!O2 by Y12 to Y92 (33 yrs old)

O2 by mal2\_2@1

mal3\_2 (lamO22f)

mal5\_2 (lamO32f)

mal9\_2 (lamO42f)

mal12\_2 (lamO52f)

mal14\_2 (lamO62f)

mal16\_2 (lamO72f)

mal20\_2 (lamO82f)

mal21\_2 (lamO92f);

!O3 by Y13 to Y93 (42 yrs old)

O3 by mal2\_3@1

mal3\_3 (lamO23f)

mal5\_3 (lamO33f)

mal9\_3 (lamO43f)

mal12\_3 (lamO53f)

mal14\_3 (lamO63f)

mal16\_3 (lamO73f)

mal20\_3 (lamO83f)

mal21\_3 (lamO93f);

!O4 by Y14 to Y94 (50 yrs old)

O4 by mal2\_4@1

mal3\_4 (lamO24f)

mal5\_4 (lamO34f)

mal9\_4 (lamO44f)

mal12\_4 (lamO54f)

mal14\_4 (lamO64f)

mal16\_4 (lamO74f)

mal20\_4 (lamO84f)

mal21\_4 (lamO94f);

! Thresholds!

[mal2\_1$1 mal2\_2$1 mal2\_3$1 mal2\_4$1];

[mal3\_1$1 mal3\_2$1 mal3\_3$1 mal3\_4$1];

[mal5\_1$1 mal5\_2$1 mal5\_3$1 mal5\_4$1];

[mal9\_1$1 mal9\_2$1 mal9\_3$1 mal9\_4$1];

[mal12\_1$1 mal12\_2$1 mal12\_3$1 mal12\_4$1];

[mal14\_1$1 mal14\_2$1 mal14\_3$1 mal14\_4$1];

[mal16\_1$1 mal16\_2$1 mal16\_3$1 mal16\_4$1];

[mal20\_1$1 mal20\_2$1 mal20\_3$1 mal20\_4$1];

[mal21\_1$1 mal21\_2$1 mal21\_3$1 mal21\_4$1];

[t1@0 t2@0 t3@0 t4@0 t5@0 t6@0 t7@0 t8@0 t9@0];

mal2\_1@1 mal2\_2@1 mal2\_3@1 mal2\_4@1 ;

mal3\_1@1 mal3\_2@1 mal3\_3@1 mal3\_4@1 ;

mal5\_1@1 mal5\_2@1 mal5\_3@1 mal5\_4@1 ;

mal9\_1@1 mal9\_2@1 mal9\_3@1 mal9\_4@1 ;

mal12\_1@1 mal12\_2@1 mal12\_3@1 mal12\_4@1 ;

mal14\_1@1 mal14\_2@1 mal14\_3@1 mal14\_4@1 ;

mal16\_1@1 mal16\_2@1 mal16\_3@1 mal16\_4@1 ;

mal20\_1@1 mal20\_2@1 mal20\_3@1 mal20\_4@1 ;

mal21\_1@1 mal21\_2@1 mal21\_3@1 mal21\_4@1 ;

**!model 2**

usevariable are

mal2\_1 mal3\_1 mal5\_1 mal9\_1 mal10\_1 mal12\_1 mal16\_1 mal20\_1 mal21\_1 !23yrs

mal2\_2 mal3\_2 mal5\_2 mal9\_2 mal10\_2 mal12\_2 mal16\_2 mal20\_2 mal21\_2 !33yrs

mal2\_3 mal3\_3 mal5\_3 mal9\_3 mal12\_3 mal14\_3 mal16\_3 mal20\_3 mal21\_3 !42yrs

mal2\_4 mal3\_4 mal5\_4 mal9\_4 mal12\_4 mal14\_4 mal16\_4 mal20\_4 mal21\_4; !50 yrs

categorical are

mal2\_1 mal3\_1 mal5\_1 mal9\_1 mal10\_1 mal12\_1 mal16\_1 mal20\_1 mal21\_1 !23yrs

mal2\_2 mal3\_2 mal5\_2 mal9\_2 mal10\_2 mal12\_2 mal16\_2 mal20\_2 mal21\_2 !33yrs

mal2\_3 mal3\_3 mal5\_3 mal9\_3 mal12\_3 mal14\_3 mal16\_3 mal20\_3 mal21\_3 !42yrs

mal2\_4 mal3\_4 mal5\_4 mal9\_4 mal12\_4 mal14\_4 mal16\_4 mal20\_4 mal21\_4; !50 yrs

missing are all (-99, 9999);

Grouping is SEXN (1=MALE 2=FEMALE);

Analysis:

parameterization=theta;

difftest=model1;

MODEL:

T1 by mal2\_1@1

mal2\_2 (l1)

mal2\_3 (l2)

mal2\_4 (l3);

T2 by mal3\_1@1

mal3\_2 (l4)

mal3\_3 (l5)

mal3\_4 (l6);

T3 by mal5\_1@1

mal5\_2 (l7)

mal5\_3 (l8)

mal5\_4 (l9);

T4 by mal9\_1@1

mal9\_2 (l10)

mal9\_3 (l11)

mal9\_4 (l12);

T5 by mal12\_1@1

mal12\_2 (l13)

mal12\_3 (l14)

mal12\_4 (l15);

T6 by mal14\_1@1

mal14\_2 (l16)

mal14\_3 (l17)

mal14\_4 (l18);

T7 by mal16\_1@1

mal16\_2 (l19)

mal16\_3 (l20)

mal16\_4 (l21);

T8 by mal20\_1@1

mal20\_2 (l22)

mal20\_3 (l23)

mal20\_4 (l24);

T9 by mal21\_1@1

mal21\_2 (l25)

mal21\_3 (l26)

mal21\_4 (l27);

O1 by mal2\_1@1

mal3\_1 (lamO2)

mal5\_1 (lamO3)

mal9\_1 (lamO4)

mal12\_1 (lamO5)

mal14\_1 (lamO6)

mal16\_1 (lamO7)

mal20\_1 (lamO8)

mal21\_1 (lamO9);

!O2 by Y12 to Y92 (33 yrs old)

O2 by mal2\_2@1

mal3\_2 (lamO2)

mal5\_2 (lamO3)

mal9\_2 (lamO4)

mal12\_2 (lamO5)

mal14\_2 (lamO6)

mal16\_2 (lamO7)

mal20\_2 (lamO8)

mal21\_2 (lamO9);

!O3 by Y13 to Y93 (42 yrs old)

O3 by mal2\_3@1

mal3\_3 (lamO2)

mal5\_3 (lamO3)

mal9\_3 (lamO4)

mal12\_3 (lamO5)

mal14\_3 (lamO6)

mal16\_3 (lamO7)

mal20\_3 (lamO8)

mal21\_3 (lamO9);

!O4 by Y14 to Y94 (50 yrs old)

O4 by mal2\_4@1

mal3\_4 (lamO2)

mal5\_4 (lamO3)

mal9\_4 (lamO4)

mal12\_4 (lamO5)

mal14\_4(lamO6)

mal16\_4 (lamO7)

mal20\_4 (lamO8)

mal21\_4 (lamO9);

[O1@0 O2@0 O3@0 O4@0];

! Thresholds!

[mal2\_1$1 n mal2\_2 1 mal2\_3$1 mal2\_4$1];

[mal3\_1$1 mal3\_2$1 mal3\_3$1 mal3\_4$1];

[mal5\_1$1 mal5\_2$1 mal5\_3$1 mal5\_4$1];

[mal9\_1$1 mal9\_2$1 mal9\_3$1 mal9\_4$1];

[mal12\_1$1 mal12\_2$1 mal12\_3$1 mal12\_4$1];

[mal14\_1$1 mal14\_2$1 mal14\_3$1 mal14\_4$1];

[mal16\_1$1 mal16\_2$1 mal16\_3$1 mal16\_4$1];

[mal20\_1$1 mal20\_2$1 mal20\_3$1 mal20\_4$1];

[mal21\_1$1 mal21\_2$1 mal21\_3$1 mal21\_4$1];

! zero correlation!

O1 with T1-T9@0 O2@0 O3@0 O4@0;

O2 with T1-T9@0 O3@0 O4@0;

O3 with T1-T9@0 O4@0;

O4 with T1-T9@0;

! autoregressive effects

O4 on O3 (beta2m);

O3 on O2 (beta1m);

O2 on O1 (beta1m);

! state residual variances

O1\* (ovar1);

O2\* (ovar2);

O3\* (ovar3);

O4\* (ovar4);

!mal2\_1 mal2\_2 mal2\_3 mal2\_4 (resvar1);

!mal3\_1 mal3\_2 mal3\_3 mal3\_4 (resvar2);

!mal5\_1 mal5\_2 mal5\_3 mal5\_4 (resvar3);

!mal9\_1 mal9\_2 mal9\_3 mal9\_4 (resvar4);

!mal12\_1 mal12\_2 mal12\_3 mal12\_4 (resvar5);

!mal14\_1 mal14\_2 mal14\_3 mal14\_4 (resvar6);

!mal16\_1 mal16\_2 mal16\_3 mal16\_4 (resvar7);

!mal20\_1 mal20\_2 mal20\_3 mal20\_4 (resvar8);

!mal21\_1 mal21\_2 mal21\_3 mal21\_4 (resvar9);

Model female:

T1 by mal2\_1@1

mal2\_2 (l1f)

mal2\_3 (l2f)

mal2\_4 (l3f);

T2 by mal3\_1@1

mal3\_2 (l4f)

mal3\_3 (l5f)

mal3\_4 (l6f);

T3 by mal5\_1@1

mal5\_2 (l7f)

mal5\_3 (l8f)

mal5\_4 (l9f);

T4 by mal9\_1@1

mal9\_2 (l10f)

mal9\_3 (l11f)

mal9\_4 (l12f);

T5 by mal12\_1@1

mal12\_2 (l13f)

mal12\_3 (l14f)

mal12\_4 (l15f);

T6 by mal14\_1@1

mal14\_2 (l16f)

mal14\_3 (l17f)

mal14\_4 (l18f);

T7 by mal16\_1@1

mal16\_2 (l19f)

mal16\_3 (l20f)

mal16\_4 (l21f);

T8 by mal20\_1@1

mal20\_2 (l22f)

mal20\_3 (l23f)

mal20\_4 (l24f);

T9 mal21\_1@1

mal21\_2 (l25f)

mal21\_3 (l26f)

mal21\_4 (l27f);

O4 on O3 (beta2f);

O3 on O2 (beta1f);

O2 on O1 (beta1f);

O1\* (ovar1f);

O2\* (ovar2f);

O3\* (ovar3f);

O4\* (ovar4f);

O1 by mal2\_1@1

mal3\_1 (lamO2f)

mal5\_1 (lamO3f)

mal9\_1 (lamO4f)

mal12\_1 (lamO5f)

mal14\_1 (lamO6f)

mal16\_1 (lamO7f)

mal20\_1 (lamO8f)

mal21\_1 (lamO9f);

!O2 by Y12 to Y92 (33 yrs old)

O2 by mal2\_2@1

mal3\_2 (lamO2f)

mal5\_2 (lamO3f)

mal9\_2 (lamO4f)

mal12\_2 (lamO5f)

mal14\_2 (lamO6f)

mal16\_2 (lamO7f)

mal20\_2 (lamO8f)

mal21\_2 (lamO9f);

!O3 by Y13 to Y93 (42 yrs old)

O3 by mal2\_3@1

mal3\_3 (lamO2f)

mal5\_3 (lamO3f)

mal9\_3 (lamO4f)

mal12\_3 (lamO5f)

mal14\_3 (lamO6f)

mal16\_3 (lamO7f)

mal20\_3(lamO8f)

mal21\_3(lamO9f);

!O4 by Y14 to Y94 (50 yrs old)

O4 by mal2\_4@1

mal3\_4 (lamO2f)

mal5\_4 (lamO3f)

mal9\_4 (lamO4f)

mal12\_4 (lamO5f)

mal14\_4 (lamO6f)

mal16\_4 (lamO7f)

mal20\_4 (lamO8f)

mal21\_4 (lamO9f);

! Thresholds!

[mal2\_1$1 mal2\_2$1 mal2\_3$1 mal2\_4$1];

[mal3\_1$1 mal3\_2$1 mal3\_3$1 mal3\_4$1];

[mal5\_1$1 mal5\_2$1 mal5\_3$1 mal5\_4$1];

[mal9\_1$1 mal9\_2$1 mal9\_3$1 mal9\_4$1];

[mal12\_1$1 mal12\_2$1 mal12\_3$1 mal12\_4$1];

[mal14\_1$1 mal14\_2$1 mal14\_3$1 mal14\_4$1];

[mal16\_1$1 mal16\_2$1 mal16\_3$1 mal16\_4$1];

[mal20\_1$1 mal20\_2$1 mal20\_3$1 mal20\_4$1];

[mal21\_1$1 mal21\_2$1 mal21\_3$1 mal21\_4$1];

[t1@0 t2@0 t3@0 t4@0 t5@0 t6@0 t7@0 t8@0 t9@0];

mal2\_1@1 mal2\_2@1 mal2\_3@1 mal2\_4@1 ;

mal3\_1@1 mal3\_2@1 mal3\_3@1 mal3\_4@1 ;

mal5\_1@1 mal5\_2@1 mal5\_3@1 mal5\_4@1 ;

mal9\_1@1 mal9\_2@1 mal9\_3@1 mal9\_4@1 ;

mal12\_1@1 mal12\_2@1 mal12\_3@1 mal12\_4@1 ;

mal14\_1@1 mal14\_2@1 mal14\_3@1 mal14\_4@1 ;

mal16\_1@1 mal16\_2@1 mal16\_3@1 mal16\_4@1 ;

mal20\_1@1 mal20\_2@1 mal20\_3@1 mal20\_4@1 ;

mal21\_1@1 mal21\_2@1 mal21\_3@1 mal21\_4@1 ;

**!model 3**

usevariable are

mal2\_1 mal3\_1 mal5\_1 mal9\_1 mal10\_1 mal12\_1 mal16\_1 mal20\_1 mal21\_1 !23yrs

mal2\_2 mal3\_2 mal5\_2 mal9\_2 mal10\_2 mal12\_2 mal16\_2 mal20\_2 mal21\_2 !33yrs

mal2\_3 mal3\_3 mal5\_3 mal9\_3 mal12\_3 mal14\_3 mal16\_3 mal20\_3 mal21\_3 !42yrs

mal2\_4 mal3\_4 mal5\_4 mal9\_4 mal12\_4 mal14\_4 mal16\_4 mal20\_4 mal21\_4; !50 yrs

categorical are

mal2\_1 mal3\_1 mal5\_1 mal9\_1 mal10\_1 mal12\_1 mal16\_1 mal20\_1 mal21\_1 !23yrs

mal2\_2 mal3\_2 mal5\_2 mal9\_2 mal10\_2 mal12\_2 mal16\_2 mal20\_2 mal21\_2 !33yrs

mal2\_3 mal3\_3 mal5\_3 mal9\_3 mal12\_3 mal14\_3 mal16\_3 mal20\_3 mal21\_3 !42yrs

mal2\_4 mal3\_4 mal5\_4 mal9\_4 mal12\_4 mal14\_4 mal16\_4 mal20\_4 mal21\_4; !50 yrs

missing are all (-99, 9999);

Grouping is SEXN (1=MALE 2=FEMALE);

Analysis:

parameterization=theta;

difftest=model2;

MODEL:

T1 by mal2\_1@1

mal2\_2 (l1)

mal2\_3 (l2)

mal2\_4 (l3);

T2 by mal3\_1@1

mal3\_2 (l4)

mal3\_3 (l5)

mal3\_4 (l6);

T3 by mal5\_1@1

mal5\_2 (l7)

mal5\_3 (l8)

mal5\_4 (l9);

T4 by mal9\_1@1

mal9\_2 (l10)

mal9\_3 (l11)

mal9\_4 (l12);

T5 by mal12\_1@1

mal12\_2 (l13)

mal12\_3 (l14)

mal12\_4 (l15);

T6 by mal14\_1@1

mal14\_2 (l16)

mal14\_3 (l17)

mal14\_4 (l18);

T7 by mal16\_1@1

mal16\_2 (l19)

mal16\_3 (l20)

mal16\_4 (l21);

T8 by mal20\_1@1

mal20\_2 (l22)

mal20\_3 (l23)

mal20\_4 (l24);

T9 by mal21\_1@1

mal21\_2 (l25)

mal21\_3 (l26)

mal21\_4 (l27);

O1 by mal2\_1@1

mal3\_1 (lamO2)

mal5\_1 (lamO3)

mal9\_1 (lamO4)

mal12\_1 (lamO5)

mal14\_1 (lamO6)

mal16\_1 (lamO7)

mal20\_1 (lamO8)

mal21\_1 (lamO9);

!O2 by Y12 to Y92 (33 yrs old)

O2 by mal2\_2@1

mal3\_2(lamO2)

mal5\_2 (lamO3)

mal9\_2 (lamO4)

mal12\_2 (lamO5)

mal14\_2 (lamO6)

mal16\_2 (lamO7)

mal20\_2 (lamO8)

mal21\_2 (lamO9);

!O3 by Y13 to Y93 (42 yrs old)

O3 by mal2\_3@1

mal3\_3 (lamO2)

mal5\_3 (lamO3)

mal9\_3 (lamO4)

mal12\_3 (lamO5)

mal14\_3 (lamO6)

mal16\_3 (lamO7)

mal20\_3 (lamO8)

mal21\_3 (lamO9);

!O4 by Y14 to Y94 (50 yrs old)

O4 by mal2\_4@1

mal3\_4 (lamO2)

mal5\_4 (lamO3)

mal9\_4 (lamO4)

mal12\_4 (lamO5)

mal14\_4 (lamO6)

mal16\_4 (lamO7)

mal20\_4 (lamO8)

mal21\_4 (lamO9);

[O1@0 O2@0 O3@0 O4@0];

! Thresholds!

[mal2\_1$1 mal2\_2$1 mal2\_3$1 mal2\_4$1];

[mal3\_1$1 mal3\_2$1 mal3\_3$1 mal3\_4$1];

[mal5\_1$1 mal5\_2$1 mal5\_3$1 mal5\_4$1];

[mal9\_1$1 mal9\_2$1 mal9\_3$1 mal9\_4$1];

[mal12\_1$1 mal12\_2$1 mal12\_3$1 mal12\_4$1];

[mal14\_1$1 mal14\_2$1 mal14\_3$1 mal14\_4$1];

[mal16\_1$1 mal16\_2$1 mal16\_3$1 mal16\_4$1];

[mal20\_1$1 mal20\_2$1 mal20\_3$1 mal20\_4$1];

[mal21\_1$1 mal21\_2$1 mal21\_3$1 mal21\_4$1];

! zero correlation!

O1 with T1-T9@0 O2@0 O3@0 O4@0;

O2 with T1-T9@0 O3@0 O4@0;

O3 with T1-T9@0 O4@0;

O4 with T1-T9@0;

! autoregressive effects

O4 on O3 (beta2m);

O3 on O2 (beta1m);

O2 on O1 (beta1m);

! state residual variances

O1\* (ovar1m);

O2\* (ovar2m);

O3\* (ovar3m);

O4\* (ovar4m);

!mal2\_1 mal2\_2 mal2\_3 mal2\_4 (resvar1);

!mal3\_1 mal3\_2 mal3\_3 mal3\_4 (resvar2);

!mal5\_1 mal5\_2 mal5\_3 mal5\_4 (resvar3);

!mal9\_1 mal9\_2 mal9\_3 mal9\_4 (resvar4);

!mal12\_1 mal12\_2 mal12\_3 mal12\_4 (resvar5);

!mal14\_1 mal14\_2 mal14\_3 mal14\_4 (resvar6);

!mal16\_1 mal16\_2 mal16\_3 mal16\_4 (resvar7);

!mal20\_1 mal20\_2 mal20\_3 mal20\_4 (resvar8);

!mal21\_1 mal21\_2 mal21\_3 mal21\_4 (resvar9);

mal2\_1@1 mal2\_2@1 mal2\_3@1 mal2\_4@1 ;

mal3\_1@1 mal3\_2@1 mal3\_3@1 mal3\_4@1 ;

mal5\_1@1 mal5\_2@1 mal5\_3@1 mal5\_4@1 ;

mal9\_1@1 mal9\_2@1 mal9\_3@1 mal9\_4@1 ;

mal12\_1@1 mal12\_2@1 mal12\_3@1 mal12\_4@1 ;

mal14\_1@1 mal14\_2@1 mal14\_3@1 mal14\_4@1 ;

mal16\_1@1 mal16\_2@1 mal16\_3@1 mal16\_4@1 ;

mal20\_1@1 mal20\_2@1 mal20\_3@1 mal20\_4@1 ;

mal21\_1@1 mal21\_2@1 mal21\_3@1 mal21\_4@1 ;

Model female:

O1\* (ovar1f);

O2\* (ovar2f);

O3\* (ovar3f);

O4\* (ovar4f);

**!model 4**

usevariable are

mal2\_1 mal3\_1 mal5\_1 mal9\_1 mal12\_1 mal14\_1 mal16\_1 mal20\_1 mal21\_1

mal2\_2 mal3\_2 mal5\_2 mal9\_2 mal12\_2 mal14\_2 mal16\_2 mal20\_2 mal21\_2

mal2\_3 mal3\_3 mal5\_3 mal9\_3 mal12\_3 mal14\_3 mal16\_3 mal20\_3 mal21\_3

mal2\_4 mal3\_4 mal5\_4 mal9\_4 mal12\_4 mal14\_4 mal16\_4 mal20\_4 mal21\_4;

categorical are

mal2\_1 mal3\_1 mal5\_1 mal9\_1 mal12\_1 mal14\_1 mal16\_1 mal20\_1 mal21\_1

mal2\_2 mal3\_2 mal5\_2 mal9\_2 mal12\_2 mal14\_2 mal16\_2 mal20\_2 mal21\_2

mal2\_3 mal3\_3 mal5\_3 mal9\_3 mal12\_3 mal14\_3 mal16\_3 mal20\_3 mal21\_3

mal2\_4 mal3\_4 mal5\_4 mal9\_4 mal12\_4 mal14\_4 mal16\_4 mal20\_4 mal21\_4;

missing are all (-99, 9999);

Grouping is SEXN (1=MALE 2=FEMALE);

Analysis:

parameterization=theta;

difftest=model3;

MODEL:

T1 by mal2\_1@1

mal2\_2@1

mal2\_3@1

mal2\_4@1;

T2 by mal3\_1@1

mal3\_2@1

mal3\_3@1

mal3\_4@1;

T3 by mal5\_1@1

mal5\_2@1

mal5\_3@1

mal5\_4@1;

T4 by mal9\_1@1

mal9\_2@1

mal9\_3@1

mal9\_4@1;

T5 by mal12\_1@1

mal12\_2@1

mal12\_3@1

mal12\_4@1;

T6 by mal14\_1@1

mal14\_2@1

mal14\_3@1

mal14\_4@1;

T7 by mal16\_1@1

mal16\_2@1

mal16\_3@1

mal16\_4@1;

T8 by mal20\_1@1

mal20\_2@1

mal20\_3@1

mal20\_4@1;

T9 by mal21\_1@1

mal21\_2@1

mal21\_3@1

mal21\_4@1;

O1 by mal2\_1@1

mal3\_1 (lamO2)

mal5\_1 (lamO3)

mal9\_1 (lamO4)

mal12\_1 (lamO5)

mal14\_1 (lamO6)

mal16\_1 (lamO7)

mal20\_1 (lamO8)

mal21\_1 (lamO9);

!O2 by Y12 to Y92 (33 yrs old)

O2 by mal2\_2@1

mal3\_2 (lamO2)

mal5\_2 (lamO3)

mal9\_2 (lamO4)

mal12\_2 (lamO5)

mal14\_2 (lamO6)

mal16\_2 (lamO7)

mal20\_2 (lamO8)

mal21\_2 (lamO9);

!O3 by Y13 to Y93 (42 yrs old)

O3 by mal2\_3@1

mal3\_3 (lamO2)

mal5\_3 (lamO3)

mal9\_3 (lamO4)

mal12\_3 (lamO5)

mal14\_3(lamO6)

mal16\_3 (lamO7)

mal20\_3 (lamO8)

mal21\_3 (lamO9);

!O4 by Y14 to Y94 (50 yrs old)

O4 by mal2\_4@1

mal3\_4 (lamO2)

mal5\_4 (lamO3)

mal9\_4 (lamO4)

mal12\_4 (lamO5)

mal14\_4 (lamO6)

mal16\_4 (lamO7)

mal20\_4 (lamO8)

mal21\_4 (lamO9);

[O1@0 O2@0 O3@0 O4@0];

! Thresholds!

[mal2\_1$1 mal2\_2$1 mal2\_3$1 mal2\_4$1] (tm1);

[mal3\_1$1 mal3\_2$1 mal3\_3$1 mal3\_4$1] (tm2);

[mal5\_1$1 mal5\_2$1 mal5\_3$1 mal5\_4$1] (tm3);

[mal9\_1$1 mal9\_2$1 mal9\_3$1 mal9\_4$1] (tm4);

[mal12\_1$1 mal12\_2$1 mal12\_3$1 mal12\_4$1] (tm5);

[mal14\_1$1 mal14\_2$1 mal14\_3$1 mal14\_4$1] (tm6);

[mal16\_1$1 mal16\_2$1 mal16\_3$1 mal16\_4$1] (tm7);

[mal20\_1$1 mal20\_2$1 mal20\_3$1 mal20\_4$1] (tm8);

[mal21\_1$1 mal21\_2$1 mal21\_3$1 mal21\_4$1] (tm9);

! zero correlation!

O1 with T1-T9@0 O2@0 O3@0 O4@0;

O2 with T1-T9@0 O3@0 O4@0;

O3 with T1-T9@0 O4@0;

O4 with T1-T9@0;

! autoregressive effects

O4 on O3 (beta2m);

O3 on O2 (beta1m);

O2 on O1 (beta1m);

! state residual variances

O1\* (ovar1);

O2\* (ovar2);

O3\* (ovar3);

O4\* (ovar4);

! mal2\_1 mal2\_2 mal2\_3 mal2\_4 (resvar1);

! mal3\_1 mal3\_2 mal3\_3 mal3\_4 (resvar2);

! mal5\_1 mal5\_2 mal5\_3 mal5\_4 (resvar3);

! mal9\_1 mal9\_2 mal9\_3 mal9\_4 (resvar4);

! mal12\_1 mal12\_2 mal12\_3 mal12\_4 (resvar5);

! mal14\_1 mal14\_2 mal14\_3 mal14\_4 (resvar6);

! mal16\_1 mal16\_2 mal16\_3 mal16\_4 (resvar7);

! mal20\_1 mal20\_2 mal20\_3 mal20\_4 (resvar8);

! mal21\_1 mal21\_2 mal21\_3 mal21\_4 (resvar9);

Model female:

O4 on O3 (beta2m);

O3 on O2 (beta1m);

O2 on O1 (beta1m);

O1\* (ovar1f);

O2\* (ovar2f);

O3\* (ovar3f);

O4\* (ovar4f);

O1 by mal2\_1@1

mal3\_1 (lamO2)

mal5\_1 (lamO3)

mal9\_1 (lamO4)

mal12\_1 (lamO5)

mal14\_1 (lamO6)

mal16\_1 (lamO7)

mal20\_1 (lamO8)

mal21\_1 (lamO9);

!O2 by Y12 to Y92 (33 yrs old)

O2 by mal2\_2@1

mal3\_2 (lamO2)

mal5\_2 (lamO3)

mal9\_2 (lamO4)

mal12\_2 (lamO5)

mal14\_2 (lamO6)

mal16\_2 (lamO7)

mal20\_2 (lamO8)

mal21\_2 (lamO9);

!O3 by Y13 to Y93 (42 yrs old)

O3 by mal2\_3@1

mal3\_3 (lamO2)

mal5\_3 (lamO3)

mal9\_3 (lamO4)

mal12\_3 (lamO5)

mal14\_3 (lamO6)

mal16\_3 (lamO7)

mal20\_3 (lamO8)

mal21\_3 (lamO9);

!O4 by Y14 to Y94 (50 yrs old)

O4 by mal2\_4@1

mal3\_4 (lamO2)

mal5\_4 (lamO3)

mal9\_4 (lamO4)

mal12\_4 (lamO5)

mal14\_4 (lamO6)

mal16\_4 (lamO7)

mal20\_4 (lamO8)

mal21\_4 (lamO9);

! Thresholds!

[mal2\_1$1 mal2\_2$1 mal2\_3$1 mal2\_4$1] (tm1);

[mal3\_1$1 mal3\_2$1 mal3\_3$1 mal3\_4$1] (tm2);

[mal5\_1$1 mal5\_2$1 mal5\_3$1 mal5\_4$1] (tm3);

[mal9\_1$1 mal9\_2$1 mal9\_3$1 mal9\_4$1] (tm4);

[mal12\_1$1 mal12\_2$1 mal12\_3$1 mal12\_4$1] (tm5);

[mal14\_1$1 mal14\_2$1 mal14\_3$1 mal14\_4$1] (tm6);

[mal16\_1$1 mal16\_2$1 mal16\_3$1 mal16\_4$1] (tm7);

[mal20\_1$1 mal20\_2$1 mal20\_3$1 mal20\_4$1] (tm8);

[mal21\_1$1 mal21\_2$1 mal21\_3$1 mal21\_4$1] (tm9);

[t1@0 t2@0 t3@0 t4@0 t5@0 t6@0 t7@0 t8@0 t9@0];

mal2\_1@1 mal2\_2@1 mal2\_3@1 mal2\_4@1 ;

mal3\_1@1 mal3\_2@1 mal3\_3@1 mal3\_4@1 ;

mal5\_1@1 mal5\_2@1 mal5\_3@1 mal5\_4@1 ;

mal9\_1@1 mal9\_2@1 mal9\_3@1 mal9\_4@1 ;

mal12\_1@1 mal12\_2@1 mal12\_3@1 mal12\_4@1 ;

mal14\_1@1 mal14\_2@1 mal14\_3@1 mal14\_4@1 ;

mal16\_1@1 mal16\_2@1 mal16\_3@1 mal16\_4@1 ;

mal20\_1@1 mal20\_2@1 mal20N@1 mal20\_4@1 ;

mal21\_1@1 mal21\_2@1 mal21\_3@1 mal21\_4@1 ;