```
  TITLE:        PA & NA two-level CFA;

  DATA:    FILE = PANAS_mfa_2012.dat;
           FORMAT = free;
           TYPE = INDIVIDUAL;

  VARIABLE:
       NAMES ARE ID Session interest distress excited upset strong guilty
           scared hostile enthusia proud irritabl alert ashamed
           inspired nervous determin attentiv jittery active afraid
           CI DISE_DAY exercise
           age sex faculty study_yr PMexerc PMci PMdisedy;

       USEVARIABLES ARE ID interest excited strong enthusia proud alert inspired
           determine attentiv active
           distress upset guilty scared hostile irritabl ashamed nervous
           jittery afraid
           ;

       MISSING ARE ALL (999);

       CLUSTER = ID;

  ANALYSIS:   TYPE IS TWOLEVEL;
              ESTIMATOR = MLR;

  MODEL:

!!!!! MODEL 1a: Two-Level CFA -- 1 within factor 1 between factor;
       ! Level-1;
!          %WITHIN%
!             fw BY interest-afraid;
       ! Level-2;
!          %BETWEEN%
!             fb BY interest-afraid;


!!!!! MODEL 1b: Two-Level CFA -- 1 within factor 1 between factor,
                 !                    correlated uniqueness;
       ! Level-1;
!          %WITHIN%
!             fw BY interest-afraid;

!             interest with attentiv;    !! CORRELATED UNIQUENESSES;
!             interest with alert;
!             alert with attentiv;
!             excited with enthusia;
!             excited with inspired;
!             enthusia with inspired;
!             strong with active;
!             proud with determin;

!             distress with upset;
!             guilty with ashamed;
!             scared with afraid;
!             hostile with irritabl;
!             nervous with jittery;
```

```
        ! Level-2;
!           %BETWEEN%
!                fb BY interest-afraid;

!              interest with attentiv;
!              interest with alert;
!              alert with attentiv;
!              excited with enthusia;
!              excited with inspired;
!              enthusia with inspired;
!              strong with active;
!              proud with determin;

!              distress with upset;
!              guilty with ashamed;
!              scared with afraid;
!              hostile with irritabl;
!              nervous with jittery;



!!!!! MODEL 2a: Two-Level CFA: 1 within factor 2 indep between factors;
        ! Level-1;
!           %WITHIN%
!                fw BY interest-afraid;
        ! Level-2;
!           %BETWEEN%
!                PA_b BY interest-active;
!                NA_b BY distress-afraid;
!                PA_b WITH NA_b@0;


!!!!! MODEL 2b: Two-Level CFA: 1 within factor 2 indep between factors;
!                              correlated uniquenesses;
        ! Level-1;
!           %WITHIN%
!                fw BY interest-afraid;

!              interest with attentiv;
!              interest with alert;
!              alert with attentiv;
!              excited with enthusia;
!              excited with inspired;
!              enthusia with inspired;
!              strong with active;
!              proud with determin;

!              distress with upset;
!              guilty with ashamed;
!              scared with afraid;
!              hostile with irritabl;
!              nervous with jittery;

        ! Level-2;
!           %BETWEEN%
!                PA_b BY interest-active;
!                NA_b BY distress-afraid;
!                PA_b WITH NA_b@0;
```

```
!              interest with attentiv;
!              interest with alert;
!              alert with attentiv;
!              excited with enthusia;
!              excited with inspired;
!              enthusia with inspired;
!              strong with active;
!              proud with determin;

!              distress with upset;
!              guilty with ashamed;
!              scared with afraid;
!              hostile with irritabl;
!              nervous with jittery;



!!!!! MODEL 3a: Two-Level CFA: 2 indep within factors 2 indep between factors;
       ! Level-1;
!          %WITHIN%
!              PA_w BY interest-active;
!              NA_w BY distress-afraid;
!              PA_w WITH NA_w@0;
       ! Level-2;
!          %BETWEEN%
!              PA_b BY interest-active;
!              NA_b BY distress-afraid;
!              PA_b WITH NA_b@0;




!!!!! MODEL 3b: Two-Level CFA: 2 indep within factors 2 indep between factors;
  !                        correlated uniqueness;
       ! Level-1;
!          %WITHIN%
!              PA_w BY interest-active;
!              NA_w BY distress-afraid;
!              PA_w WITH NA_w@0;

!          interest with attentiv;  !! CORRELATED UNIQUENESS;
!          interest with alert;
!          alert with attentiv;
!          excited with enthusia;
!          excited with inspired;
!          enthusia with inspired;
!          strong with active;
!          proud with determin;

!          distress with upset;
!          guilty with ashamed;
!          scared with afraid;
!          hostile with irritabl;
!          nervous with jittery;
```

```
      ! Level-2;
!          %BETWEEN%
!               PA_b BY interest-active;
!               NA_b BY distress-afraid;
!               PA_b WITH NA_b@0;

!               interest with attentiv;
!               interest with alert;
!               alert with attentiv;
!               excited with enthusia;
!               excited with inspired;
!               enthusia with inspired;
!               strong with active;
!               proud with determin;

!               distress with upset;
!               guilty with ashamed;
!               scared with afraid;
!               hostile with irritabl;
!               nervous with jittery;



!!!!! MODEL 4a: Two-Level CFA: 2 corr within factors 2 corr between factors;
      ! Level-1;
!          %WITHIN%
!               PA_w BY interest-active;
!               NA_w BY distress-afraid;
!               PA_w WITH NA_w;
      ! Level-2;
!          %BETWEEN%
!               PA_b BY interest-active;
!               NA_b BY distress-afraid;
!               PA_b WITH NA_b;



!!!!! MODEL 4b: Two-Level CFA: 2 corr within factors 2 corr between factors;
  !                          correlated uniqueness;
      ! Level-1;
!          %WITHIN%
!                PA_w BY interest-active;
!                NA_w BY distress-afraid;
!                PA_w WITH NA_w;

!               interest with attentiv;  !! CORRELATED UNIQUENESS;
!               interest with alert;
!               alert with attentiv;
!               excited with enthusia;
!               excited with inspired;
!               enthusia with inspired;
!               strong with active;
!               proud with determin;

!               distress with upset;
!               guilty with ashamed;
!               scared with afraid;
!               hostile with irritabl;
!               nervous with jittery;
```

```
        ! Level-2;
!           %BETWEEN%
!               PA_b BY interest-active;
!               NA_b BY distress-afraid;
!               PA_b WITH NA_b;

!           interest with attentiv;
!           interest with alert;
!           alert with attentiv;
!           excited with enthusia;
!           excited with inspired;
!           enthusia with inspired;
!           strong with active;
!           proud with determin;

!           distress with upset;
!           guilty with ashamed;
!           scared with afraid;
!           hostile with irritabl;
!           nervous with jittery;



!!!!! MODEL 5a: Two-Level CFA: 2 corr within factors 2 indep between factors;

        ! Level-1;
            %WITHIN%
                PA_w BY interest-active;
                NA_w BY distress-afraid;
                PA_w WITH NA_w;

        ! Level-2;
            %BETWEEN%
                PA_b BY interest-active;
                NA_b BY distress-afraid;
                PA_b WITH NA_b@0;



!!!!! MODEL 5b: Two-Level CFA: 2 corr within factors 2 indep between factors;
  !                           correlated uniqueness;
        ! Level-1;
!           %WITHIN%
!               PA_w BY interest-active;
!               NA_w BY distress-afraid;
!               PA_w WITH NA_w;

!           interest with attentiv;  !! CORRELATED UNIQUENESS;
!           interest with alert;
!           alert with attentiv;
!           excited with enthusia;
!           excited with inspired;
!           enthusia with inspired;
!           strong with active;
!           proud with determin;

!           distress with upset;
```

```
!              guilty with ashamed;
!              scared with afraid;
!              hostile with irritabl;
!              nervous with jittery;

     ! Level-2;
!          %BETWEEN%
!              PA_b BY interest-active;
!              NA_b BY distress-afraid;
!              PA_b WITH NA_b@0;

!              interest with attentiv;
!              interest with alert;
!              alert with attentiv;
!              excited with enthusia;
!              excited with inspired;
!              enthusia with inspired;
!              strong with active;
!              proud with determin;

!              distress with upset;
!              guilty with ashamed;
!              scared with afraid;
!              hostile with irritabl;
!              nervous with jittery;

  OUTPUT:     STDYX MODINDICES;
```