**Mean-level bias**

**Level of the sample**

MIXED

Mean\_level\_bias

 /PRINT = SOLUTION TESTCOV

 /RANDOM intercept | SUBJECT(Couple) COVTYPE(UNR)

 /REPEATED = Person | SUBJECT(Couple\*month) COVTYPE(CSH).

**Level of the individual**

MIXED Mean\_level\_bias WITH Individual\_difference\_centered

 /CRITERIA=CIN(95) MXITER(100) MXSTEP(10) SCORING(1) SINGULAR(0.000000000001) HCONVERGE(0,

 ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE)

 /FIXED=Individual\_difference\_centered | SSTYPE(3)

 /METHOD=REML

 /PRINT=SOLUTION TESTCOV

 /RANDOM=INTERCEPT | COVTYPE(VC)

 /REPEATED=Person | SUBJECT(Couple) COVTYPE(CSH).

**Correlational accuracy**

**Level of the sample**

MIXED

Perceived\_satisfaction WITH Actual\_satisfaction\_centered

 /FIXED Actual\_satisfaction\_centered |

 /PRINT = SOLUTION TESTCOV

 /RANDOM intercept Actual\_satisfaction\_centered| SUBJECT(Couple) COVTYPE(UNR)

 /REPEATED = Person | SUBJECT(Couple\*month) COVTYPE(CSH).

**Level of the individual**

MIXED Correlational\_accuracy WITH Individual\_difference\_centered

 /CRITERIA=CIN(95) MXITER(100) MXSTEP(10) SCORING(1) SINGULAR(0.000000000001) HCONVERGE(0,

 ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE)

 /FIXED=Individual\_difference\_centered | SSTYPE(3)

 /METHOD=REML

 /PRINT=SOLUTION TESTCOV

 /RANDOM=INTERCEPT | COVTYPE(VC)

 /REPEATED=Person | SUBJECT(Couple) COVTYPE(CSH).

Syntax for the T&B model

**Distinguishable Dyads**

In a Truth and Bias model with distinguishable dyads, each participant has an intercept, which reflects their directional bias, and so the random effect of the intercept refers to variability in participants’ directional bias. In the distinguishable case (such as if men and women were used with heterosexual couples), we could estimate a random intercept for men and one for women, and these two random intercepts, when truth mean centered, would reflect variance in men’s directional bias and variance in women’s directional bias. We could estimate the covariance between them, which would test whether women who engage in directional bias have male partners who also engage in directional bias (in other words, that the directional bias of the two partners in a dyad are correlated).

There is also a random effect of the truth force for women and a random effect of the truth force for men, and we can estimate the covariance between the two random effects to assess the within-dyad correlation of truth forces (if the woman is accurate is the man accurate). Further, we can assess the within-person correlations between directional bias and the truth force, and separately for men and women. For instance, the covariance between the woman’s intercept and her truth force estimates whether women who are directionally biased also have more (or less) accuracy as indicated by a positive truth force.

In the following syntax, “pdyad” is the dyad number, “day” is the day number, and “vdum” is a dichotomous variable that distinguishes between partner 1 and partner 2 in a dyad (coded 1 and 2 respectively). In the distinguishable case, person 1 and person 2 are determined by the distinguishing factor (e.g., by gender in a heterosexual couples). In the indistinguishable case, person 1 and person 2 are arbitrarily assigned.

“I1” is the intercept for Person 1 and is coded 1 for Person 1 and 0 for Person 2. “I2” is the intercept for Person 2 and is coded 0 for Person 1 and 1 for Person 2. “TruthC” is the truth variable and “BiasC” is the bias variable. “Judgmentc” is the truth centered judgment variable. “Vdum” is the partner number and is coded 1 and 2 for Partners 1 and 2, respectively.

**Most basic version of the T&B model**

**\*General template.**

**PROC** **MIXED** maxiter=**100000** SCORING=**500** convf=**.000000008** info covtest;

CLASS pdyad day vdum;

MODEL JudgmentC=TruthC BiasC /SOLUTION DDFM=SATTERTH ;

RANDOM I1 I2 I1\*TruthC I2\*TruthC I1\*BiasC I2\*BiasC/SUBJECT=pdyad REPEATED vdum / SUBJECT=day(pdyad) TYPE=CSH;

**run**;**quit**;

**\*With the variables from the roommate example.**

**PROC** **MIXED** maxiter=**100000** SCORING=**500** convf=**.000000008** info covtest;

CLASS pdyad day vdum;

MODEL JudgmentTargetsFeelingsC=TargetsFeelingsC PerceiversFeelingsC /SOLUTION DDFM=SATTERTH ;

RANDOM I1 I2 I1\* TargetsFeelingsC I2\* TargetsFeelingsC I1\* PerceiversFeelingsC I2\* PerceiversFeelingsC /SUBJECT=pdyad REPEATED vdum / SUBJECT=day(pdyad) TYPE=CSH;

**run**;**quit**;

**Adding a moderator**

**\*General template.**

**PROC** **MIXED** maxiter=**100000** SCORING=**500** convf=**.000000008** info covtest;

CLASS pdyad day vdum;

MODEL JudgmentC=TruthC BiasC Moderator Moderator\*Truth Moderator\*Bias /SOLUTION DDFM=SATTERTH ;

RANDOM I1 I2 I1\*TruthC I2\*TruthC I1\*BiasC I2\*BiasC/SUBJECT=pdyad REPEATED vdum / SUBJECT=day(pdyad) TYPE=CSH;

**run**;**quit**;

**\*With the variables from the roommate example.**

**PROC** **MIXED** maxiter=**100000** SCORING=**500** convf=**.000000008** info covtest;

CLASS pdyad day vdum;

MODEL JudgmentTargetsFeelingsC=TargetsFeelingsC PerceiversFeelingsC RelationshipCloseness RelationshipCloseness\*TargetFeelings RelationshipCloseness\*PereiverFeelings /SOLUTION DDFM=SATTERTH ;

RANDOM I1 I2 I1\* TargetsFeelingsC I2\* TargetsFeelingsC I1\* PerceiversFeelingsC I2\* PerceiversFeelingsC /SUBJECT=pdyad REPEATED vdum / SUBJECT=day(pdyad) TYPE=CSH;

**run**;**quit**;

**Assessing the association between the truth and bias variables**

**\*General template.**

**PROC** **MIXED** maxiter=**100000** SCORING=**500** convf=**.000000008** info covtest;

CLASS pdyad day vdum;

MODEL BiasC=TruthC /SOLUTION DDFM=SATTERTH ;

RANDOM I1 I2 I1\*TruthC I2\*TruthC/SUBJECT=pdyad REPEATED vdum / SUBJECT=day(pdyad) TYPE=CSH;

**run**;**quit**;

**\*With the variables from the roommate example.**

**PROC** **MIXED** maxiter=**100000** SCORING=**500** convf=**.000000008** info covtest;

CLASS pdyad day vdum;

MODEL PerceiversFeelingsC = TargetsFeelingsC /SOLUTION DDFM=SATTERTH ;

RANDOM I1 I2 I1\* TargetsFeelingsC I2\* TargetsFeelingsC/SUBJECT=pdyad REPEATED vdum / SUBJECT=day(pdyad) TYPE=CSH;

**run**;**quit**;

**Indistinguishable Dyads**

If the researcher has indistinguishable dyads (as in the T&B example in the main text), there is no longer a distinguishing factor, and so the researcher would estimate only one truth force variance and one intercept variance at the level of the random effects. To do this, the researcher would estimate the random effects in the same way as the distinguishable case, but an extra step is needed to force constraints on the variance-covariance matrix to make these parameters equal.

The following code must first be run to set constraints on the model. Explanations for each line are in () next to it (but do not run the part in parentheses). The first value sets the constraint (e.g., with 1). The constraints below are based on the order of the random effects in the random statement of the MIXED syntax:

RANDOM I1 I2 I1\*TruthC I2\*TruthC I1\*BiasC I2\*BiasC

For instance, the first two lines of the code below (1111 and 1221) force the first two parameters of the random effects to be equal, which are I1 and I2, reflecting the intercepts for persons 1 and 2, respectively. For each line, the first number forces the parameters to be equal (1 for I1 and I2), the second number refers to the row (1 in the case of 1111 and 2 in the case of 1221), the third number refers to the column (1 for 1111 and 2 for 1221), and the last number is always 1. When the row and the column are the same, then a variance is estimated. For instance, for 1111, the variance for “1 with 1” is estimated, and 1 is I1 because it is the first parameter in the random statement. When the row and the column are different then a covariance is estimated.

**data** gg;

input parm row col value;

datalines;

1 1 1 1 (intercept for person 1)

1 2 2 1 (intercept for person 2)

2 3 3 1 (truth force for person 1)

2 4 4 1 (truth force for person 2)

3 5 5 1 (bias force for person 1)

3 6 6 1 (bias force for person 2)

4 1 2 1 (within-dyad intercept covariance)

5 3 4 1 (within-dyad truth force covariance)

6 5 6 1 (within-dyad bias force covariance)

7 1 3 1 (within-person 1 intercept-truth force covariance)

7 2 4 1 (within-person 2 intercept-truth force covariance)

8 1 5 1 (within-person 1 intercept bias force covariance)

8 2 6 1 (within-person 2 intercept bias force covariance)

9 3 5 1 (within-person 1 truth force bias force covariance)

9 4 6 1 (within-person 2 truth force bias force covariance)

10 1 4 1 (within-dyad person 1 intercept with person 2 truth force covariance)

10 2 3 1 (within-dyad person 2 intercept with person 1 truth force covariance)

11 1 6 1 (within-dyad person 1 intercept with person 2 bias force covariance)

11 2 5 1 (within-dyad person 2 intercept with person 1 bias force covariance)

12 3 6 1 (within-dyad person 1 truth force with person 2 bias force covariance)

12 4 5 1 (within-dyad person 2 truth force with person 1 bias force covariance)

**run**;

After running the above code, you can then run the analysis. The “parms” statement is used to give the model starting values to ensure that the model will converge. The same is true for the “maxiter”, “scoring”, and “convf” statements.

**Most basic version of the T&B model**

**\*General template.**

**PROC** **MIXED** maxiter=**100000** SCORING=**500** convf=**.000000008** info covtest;

CLASS pdyad day vdum;

MODEL JudgmentC=TruthC BiasC /SOLUTION DDFM=SATTERTH ;

RANDOM I1 I2 I1\*TruthC I2\*TruthC I1\*BiasC I2\*BiasC/SUBJECT=pdyad type=lin(**12**) ldata=gg GCORR;

REPEATED vdum / SUBJECT=day(pdyad) TYPE=CS;

PARMS

(**.851767** ) (**.4518** ) (**.772**) (**.0**) (**.0** ) (**.0** ) (**.0**) (**.0** )(**.0** ) (**.0**) (**.0** )(**.0** )

(**.4100**) (**.03411**) ;

**run**;**quit**;

**\*With the variables from the roommate example.**

**PROC** **MIXED** maxiter=**100000** SCORING=**500** convf=**.000000008** info covtest;

CLASS pdyad day vdum;

MODEL JudgmentTargetsFeelingsC = TargetsFeelingsC PerceiversFeelingsC /SOLUTION DDFM=SATTERTH ;

RANDOM I1 I2 I1\* TargetsFeelingsC I2\* TargetsFeelingsC I1\* PerceiversFeelingsC I2\* PerceiversFeelingsC /SUBJECT=pdyad type=lin(**12**) ldata=gg GCORR;

REPEATED vdum / SUBJECT=day(pdyad) TYPE=CS;

PARMS

(**.851767** ) (**.4518** ) (**.772**) (**.0**) (**.0** ) (**.0** ) (**.0**) (**.0** )(**.0** ) (**.0**) (**.0** )(**.0** )

(**.4100**) (**.03411**) ;

**run**;**quit**;

**Adding a moderator**

**\*General template.**

**PROC** **MIXED** maxiter=**100000** SCORING=**500** convf=**.000000008** info covtest;

CLASS pdyad day vdum;

MODEL JudgmentC=TruthC BiasC Moderator Moderator\*Truth Moderator\*Bias /SOLUTION DDFM=SATTERTH ;

RANDOM I1 I2 I1\*TruthC I2\*TruthC I1\*BiasC I2\*BiasC/SUBJECT=pdyad type=lin(**12**) ldata=gg GCORR;

REPEATED vdum / SUBJECT=day(pdyad) TYPE=CS;

PARMS

(**.851767** ) (**.4518** ) (**.772**) (**.0**) (**.0** ) (**.0** ) (**.0**) (**.0** )(**.0** ) (**.0**) (**.0** )(**.0** )

(**.4100**) (**.03411**) ;

**run**;**quit**;

**\*With the variables from the roommate example.**

**PROC** **MIXED** maxiter=**100000** SCORING=**500** convf=**.000000008** info covtest;

CLASS pdyad day vdum;

MODEL JudgmentTargetsFeelingsC = TargetsFeelingsC PerceiversFeelingsC RelationshipCloseness\*TargetFeelings RelationshipCloseness\*PereiverFeelings /SOLUTION DDFM=SATTERTH ;

RANDOM I1 I2 I1\* TargetsFeelingsC I2\* TargetsFeelingsC I1\* PerceiversFeelingsC I2\* PerceiversFeelingsC /SUBJECT=pdyad type=lin(**12**) ldata=gg GCORR;

REPEATED vdum / SUBJECT=day(pdyad) TYPE=CS;

PARMS

(**.851767** ) (**.4518** ) (**.772**) (**.0**) (**.0** ) (**.0** ) (**.0**) (**.0** )(**.0** ) (**.0**) (**.0** )(**.0** )

(**.4100**) (**.03411**) ;

**run**;**quit**;

**Assessing the association between the truth and bias variables**

**\*General template.**

**PROC** **MIXED** maxiter=**100000** SCORING=**500** convf=**.000000008** info covtest;

CLASS pdyad day vdum;

MODEL BiasC =TruthC/SOLUTION DDFM=SATTERTH ;

RANDOM I1 I2 I1\*TruthC I2\*TruthC I1\*BiasC I2\*BiasC/SUBJECT=pdyad type=lin(**12**) ldata=gg GCORR;

REPEATED vdum / SUBJECT=day(pdyad) TYPE=CS;

PARMS

(**.851767** ) (**.4518** ) (**.772**) (**.0**) (**.0** ) (**.0** ) (**.0**) (**.0** )(**.0** ) (**.0**) (**.0** )(**.0** )

(**.4100**) (**.03411**) ;

**run**;**quit**;

**\*With the variables from the roommate example.**

**PROC** **MIXED** maxiter=**100000** SCORING=**500** convf=**.000000008** info covtest;

CLASS pdyad day vdum;

MODEL PerceiversFeelingsC = TargetsFeelingsC /SOLUTION DDFM=SATTERTH ;

RANDOM I1 I2 I1\* TargetsFeelingsC I2\* TargetsFeelingsC /SUBJECT=pdyad type=lin(**12**) ldata=gg GCORR;

REPEATED vdum / SUBJECT=day(pdyad) TYPE=CS;

PARMS

(**.851767** ) (**.4518** ) (**.772**) (**.0**) (**.0** ) (**.0** ) (**.0**) (**.0** )(**.0** ) (**.0**) (**.0** )(**.0** )

(**.4100**) (**.03411**) ;

**run**;**quit**;