```
get file='e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav'.
dataset name tw.
*** PART 1 **** .
** model 1 : all main, interaction .
DJMIXED /MIXEDMODEL
             DV = rt
             PREDICTORS = priming morph priming*morph
             PPS = Participant
             ITEMS = Word
             MODEL = 'interaction' .
Importing DJMIXED by Dirk P. Janssen, Revision: 1.8  at Date: 2009/10/20 13:0
6:55 v
Submitting model 'interaction'
MIXED rt
 BY morph priming
 /FIXED= priming morph priming*morph | SSTYPE(3)
 /RANDOM=INTERCEPT | SUBJECT(Participant) COVTYPE(VC)
 /RANDOM=INTERCEPT | SUBJECT(Word) COVTYPE(VC)
 /METHOD=ML
/PRINT=SOLUTION  TESTCOV  COVB
/CRITERIA=CIN(95) MXITER(10000) MXSTEP(50) SCORING(1) SINGULAR(0.000000000001
)
HCONVERGE(0, ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE) .
```

Mixed Model Analysis

Notes

Output Created		28-Oct-2009 16:17:34
Comments		
Input	Data	e: \flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2024

Notes

Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.
Syntax		MIXED rt BY morph priming /FIXED= priming morph priming*morph	SSTYPE(3) /RANDOM=INTERCEPT	SUBJECT (Participant) COVTYPE(VC) /RANDOM=INTERCEPT	SUBJECT (Word) COVTYPE(VC) /METHOD=ML /PRINT=SOLUTION TESTCOV COVB /CRITERIA=CIN(95) MXITER(10000) MXSTEP(50) SCORING(1) SINGULAR(0.000000000001) HCONVERGE(0, ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE) .
Resources	Processor Time	00:00:04.346
	Elapsed Time	00:00:04.406

[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav

Model Dimension[b]

		Number of Levels	Covariance Structure	Number of Parameters	Subject Variables
Fixed Effects	Intercept	1		1	
	Priming	2		1	
	Morph	2		1	
	Morph * Priming	4		1	
Random Effects	Intercept[a]	1	Variance Components	1	Participant
	Intercept[a]	1	Variance Components	1	Word

a. As of version 11.5, the syntax rules for the RANDOM subcommand have changed. Your command syntax may yield results that differ from those produced by prior versions. If you are using SPSS 11 syntax, please consult the current syntax reference guide for more information.

b. Dependent Variable: reaction time.

Model Dimension[b]

	Number of Levels	Covariance Structure	Number of Parameters	Subject Variables
Residual			1	
Total	11		7	

a. As of version 11.5, the syntax rules for the RANDOM subcommand have changed. Your command syntax may yield results that differ from those produced by prior versions. If you are using SPSS 11 syntax, please consult the current syntax reference guide for more information.

b. Dependent Variable: reaction time.

Information Criteria[a]

-2 Log Likelihood	26399.208
Akaike's Information Criterion (AIC)	26413.208
Hurvich and Tsai's Criterion (AICC)	26413.264
Bozdogan's Criterion (CAIC)	26459.498
Schwarz's Bayesian Criterion (BIC)	26452.498

The information criteria are displayed in smaller-is-better forms.

a. Dependent Variable: reaction time.

Fixed Effects

Type III Tests of Fixed Effects[a]

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	43.436	1960.693	.000
Priming	1	66.129	47.091	.000
Morph	1	188.970	4.747	.031
Morph * Priming	1	179.132	5.058	.026

a. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Fixed Effects[b]

Parameter	Intercept	[Priming=1]	[Priming=2]	[Morph=1]	[Morph=2]
Intercept	281.464349	-115.166718	0[a]	-48.804092	0[a]
[Priming=1]	-115.166718	231.336574	0[a]	47.365387	0[a]
[Priming=2]	0[a]	0[a]	0[a]	0[a]	0[a]
[Morph=1]	-48.804092	47.365387	0[a]	99.208115	0[a]
[Morph=2]	0[a]	0[a]	0[a]	0[a]	0[a]
[Morph=1] * [Priming=1]	47.123822	-163.395988	0[a]	-95.726908	0[a]
[Morph=1] * [Priming=2]	0[a]	0[a]	0[a]	0[a]	0[a]
[Morph=2] * [Priming=1]	0[a]	0[a]	0[a]	0[a]	0[a]
[Morph=2] * [Priming=2]	0[a]	0[a]	0[a]	0[a]	0[a]

a. The covariance is set to zero because it is associated with a redundant parameter.

b. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Fixed Effects[b]

Parameter	[Morph=1] * [Priming=1]	[Morph=1] * [Priming=2]	[Morph=2] * [Priming=1]	[Morph=2] * [Priming=2]
Intercept	47.123822	0[a]	0[a]	0[a]
[Priming=1]	-163.395988	0[a]	0[a]	0[a]
[Priming=2]	0[a]	0[a]	0[a]	0[a]
[Morph=1]	-95.726908	0[a]	0[a]	0[a]
[Morph=2]	0[a]	0[a]	0[a]	0[a]
[Morph=1] * [Priming=1]	332.490102	0[a]	0[a]	0[a]
[Morph=1] * [Priming=2]	0[a]	0[a]	0[a]	0[a]
[Morph=2] * [Priming=1]	0[a]	0[a]	0[a]	0[a]
[Morph=2] * [Priming=2]	0[a]	0[a]	0[a]	0[a]

a. The covariance is set to zero because it is associated with a redundant parameter.

b. Dependent Variable: reaction time.

Covariance Parameters

Estimates of Covariance Parameters[a]

Parameter		Estimate	Std. Error	Wald Z	Sig.
Residual		2.468501E4	805.178299	30.658	.000
Intercept [subject = Participant]	Variance	5630.315283	1467.016412	3.838	.000
Intercept [subject = Word]	Variance	2106.939460	545.101157	3.865	.000

a. Dependent Variable: reaction time.

Estimates of Covariance Parameters[a]

		95% Confidence Interval	
Parameter		Lower Bound	Upper Bound
Residual		2.315628E4	2.631467E4
Intercept [subject = Participant]	Variance	3378.675195	9382.508930
Intercept [subject = Word]	Variance	1268.912591	3498.423706

a. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Covariance Parameters[a]

		Residual	Intercept [subject = Participant] Variance	Intercept [subject = Word] Variance
Parameter				
Residual		6.4831E5	-1.002196E4	-5.035367E4
Intercept [subject = Participant]	Variance	-1.0021E4	2.152137E6	-200.211366
Intercept [subject = Word]	Variance	-5.0353E4	-200.211366	2.971353E5

a. Dependent Variable: reaction time.

```
DJMIXED /MODELSUMMARY
            MODEL = 'interaction' .
```

DJMIXED.modelsummary

Notes

Output Created		28-Oct-2009 16:18:11
Comments		
Input	Data	e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2024
Syntax		BEGIN PROGRAM PYTHON.

Notes

Resources	Processor Time	00:00:00.771
	Elapsed Time	00:00:00.821

[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav

Fixed Effects

		Statistic		
	Model Term	beta	F	p
1	Intercept	589.413773	1960.693	.000
2	Priming	63.837604	47.091	.000
3	Morph	-.229865	4.747	.031
4	Morph * Priming	41.009832	5.058	.026

Random Effects

		Statistic			
	Model Term	Adjustment for	Variance	Wald Z	p
1	Intercept	Participant	5630.315	3.838	.000
2	Intercept	Word	2106.939	3.865	.000
3	Error	--	24685.009	30.658	.000

```
*** PART 2 **** .
** model 2 : null model .
DJMIXED /MIXEDMODEL
            DV = rt
            PPS = Participant
            ITEMS = Word
            MODEL = 'null'  .
Submitting model 'null'
MIXED rt
 /FIXED=  | SSTYPE(3)
 /RANDOM=INTERCEPT | SUBJECT(Participant) COVTYPE(VC)
 /RANDOM=INTERCEPT | SUBJECT(Word) COVTYPE(VC)
 /METHOD=ML
/PRINT=SOLUTION  TESTCOV  COVB
```

```
/CRITERIA=CIN(95) MXITER(10000) MXSTEP(50) SCORING(1) SINGULAR(0.000000000001
)
HCONVERGE(0, ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE) .
```

Mixed Model Analysis

Notes

Output Created		28-Oct-2009 16:18:13
Comments		
Input	Data	e: \flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2024
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.
Syntax		MIXED rt /FIXED= | SSTYPE(3) /RANDOM=INTERCEPT | SUBJECT (Participant) COVTYPE(VC) /RANDOM=INTERCEPT | SUBJECT (Word) COVTYPE(VC) /METHOD=ML /PRINT=SOLUTION TESTCOV COVB /CRITERIA=CIN(95) MXITER(10000) MXSTEP(50) SCORING(1) SINGULAR(0.000000000001) HCONVERGE(0, ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE) .
Resources	Processor Time	00:00:02.574
	Elapsed Time	00:00:02.724

```
[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
```

Model Dimension[b]

		Number of Levels	Covariance Structure	Number of Parameters	Subject Variables
Fixed Effects	Intercept	1		1	
Random Effects	Intercept[a]	1	Variance Components	1	Participant
	Intercept[a]	1	Variance Components	1	Word
Residual				1	
Total		3		4	

a. As of version 11.5, the syntax rules for the RANDOM subcommand have changed. Your command syntax may yield results that differ from those produced by prior versions. If you are using SPSS 11 syntax, please consult the current syntax reference guide for more information.

b. Dependent Variable: reaction time.

Information Criteria[a]

-2 Log Likelihood	26440.355
Akaike's Information Criterion (AIC)	26448.355
Hurvich and Tsai's Criterion (AICC)	26448.375
Bozdogan's Criterion (CAIC)	26474.806
Schwarz's Bayesian Criterion (BIC)	26470.806

The information criteria are displayed in smaller-is-better forms.

a. Dependent Variable: reaction time.

Fixed Effects

Type III Tests of Fixed Effects[a]

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	52.151	1837.752	.000

a. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Fixed Effects[a]

Para...	Intercept
Intercept	224.910605

a. Dependent Variable: reaction time.

Covariance Parameters

Estimates of Covariance Parameters[a]

Parameter		Estimate	Std. Error	Wald Z	Sig.
Residual		2.462115E4	800.780560	30.746	.000
Intercept [subject = Participant]	Variance	5614.550995	1463.622871	3.836	.000
Intercept [subject = Word]	Variance	4297.996413	853.087667	5.038	.000

a. Dependent Variable: reaction time.

Estimates of Covariance Parameters[a]

Parameter		95% Confidence Interval	
		Lower Bound	Upper Bound
Residual		2.310063E4	2.624175E4
Intercept [subject = Participant]	Variance	3368.375656	9358.571043
Intercept [subject = Word]	Variance	2912.831351	6341.861557

a. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Covariance Parameters[a]

Parameter		Residual	Intercept [subject = Participant] Variance	Intercept [subject = Word] Variance
Residual		6.4124E5	-1.051672E4	-4.463656E4
Intercept [subject = Participant]	Variance	-1.0516E4	2.142192E6	3489.809324
Intercept [subject = Word]	Variance	-4.4636E4	3489.809324	7.277586E5

a. Dependent Variable: reaction time.

```
DJMIXED /MODELSUMMARY
            MODEL = 'null' .
```

DJMIXED.modelsummary

Notes

Output Created		28-Oct-2009 16:18:17
Comments		
Input	Data	e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2024
Syntax		BEGIN PROGRAM PYTHON.
Resources	Processor Time	00:00:00.060
	Elapsed Time	00:00:00.080

```
[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
```

Fixed Effects

		Statistic		
	Model Term	beta	F	p
1	Intercept	642.907313	1837.752	.000

Random Effects

			Statistic		
	Model Term	Adjustment for	Variance	Wald Z	p
1	Intercept	Participant	5614.551	3.836	.000
2	Intercept	Word	4297.996	5.038	.000
3	Error	--	24621.149	30.746	.000

```
** model 3 : main effects.
DJMIXED /MIXEDMODEL
             DV = rt
              PREDICTORS = priming morph
            PPS = Participant
             ITEMS = Word
             MODEL = 'main effects'  .
```

```
Submitting model 'main effects'
MIXED rt
 BY morph priming
 /FIXED= priming morph | SSTYPE(3)
 /RANDOM=INTERCEPT | SUBJECT(Participant) COVTYPE(VC)
 /RANDOM=INTERCEPT | SUBJECT(Word) COVTYPE(VC)
 /METHOD=ML
/PRINT=SOLUTION  TESTCOV  COVB
/CRITERIA=CIN(95) MXITER(10000) MXSTEP(50) SCORING(1) SINGULAR(0.000000000001
)
HCONVERGE(0, ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE) .
```

Mixed Model Analysis

Notes

Output Created		28-Oct-2009 16:18:36
Comments		
Input	Data	e: \flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2024
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.

Notes

Syntax		MIXED rt BY morph priming /FIXED= priming morph | SSTYPE (3) /RANDOM=INTERCEPT | SUBJECT (Participant) COVTYPE(VC) /RANDOM=INTERCEPT | SUBJECT (Word) COVTYPE(VC) /METHOD=ML /PRINT=SOLUTION TESTCOV COVB /CRITERIA=CIN(95) MXITER(10000) MXSTEP(50) SCORING(1) SINGULAR(0.000000000001) HCONVERGE(0, ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE) .
Resources	Processor Time	00:00:04.277
	Elapsed Time	00:00:04.447

[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav

Model Dimension[b]

		Number of Levels	Covariance Structure	Number of Parameters	Subject Variables
Fixed Effects	Intercept	1		1	
	Priming	2		1	
	Morph	2		1	
Random Effects	Intercept[a]	1	Variance Components	1	Participant
	Intercept[a]	1	Variance Components	1	Word
Residual				1	
Total		7		6	

a. As of version 11.5, the syntax rules for the RANDOM subcommand have changed. Your command syntax may yield results that differ from those produced by prior versions. If you are using SPSS 11 syntax, please consult the current syntax reference guide for more information.

b. Dependent Variable: reaction time.

Information Criteria[a]

-2 Log Likelihood	26404.215
Akaike's Information Criterion (AIC)	26416.215
Hurvich and Tsai's Criterion (AICC)	26416.257
Bozdogan's Criterion (CAIC)	26455.892
Schwarz's Bayesian Criterion (BIC)	26449.892

The information criteria are displayed in smaller-is-better forms.

a. Dependent Variable: reaction time.

Fixed Effects

Type III Tests of Fixed Effects[a]

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	43.967	1945.913	.000
Priming	1	64.816	44.989	.000
Morph	1	884.663	1.778	.183

a. Dependent Variable: reaction time.

Estimates of Fixed Effects[b]

Parameter	Estimate	Std. Error	df	t	Sig.
Intercept	583.718396	16.702283	69.864	34.948	.000
[Priming=1]	84.056449	12.531968	64.816	6.707	.000
[Priming=2]	0[a]	0	.	.	.
[Morph=1]	11.342533	8.507340	884.663	1.333	.183
[Morph=2]	0[a]	0	.	.	.

a. This parameter is set to zero because it is redundant.

b. Dependent Variable: reaction time.

Estimates of Fixed Effects[b]

Parameter	95% Confidence Interval	
	Lower Bound	Upper Bound
Intercept	550.405604	617.031189
[Priming=1]	59.027034	109.085864
[Priming=2]	.	.
[Morph=1]	-5.354390	28.039456
[Morph=2]	.	.

a. This parameter is set to zero because it is redundant.

b. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Fixed Effects[b]

Parameter	Intercept	[Priming=1]	[Priming=2]	[Morph=1]	[Morph=2]
Intercept	278.966246	-95.998998	0[a]	-35.594490	0[a]
[Priming=1]	-95.998998	157.050230	0[a]	.312120	0[a]
[Priming=2]	0[a]	0[a]	0[a]	0[a]	0[a]
[Morph=1]	-35.594490	.312120	0[a]	72.374829	0[a]
[Morph=2]	0[a]	0[a]	0[a]	0[a]	0[a]

a. The covariance is set to zero because it is associated with a redundant parameter.

b. Dependent Variable: reaction time.

Covariance Parameters

Estimates of Covariance Parameters[a]

Parameter		Estimate	Std. Error	Wald Z	Sig.
Residual		2.470650E4	806.441771	30.636	.000
Intercept [subject = Participant]	Variance	5630.632354	1467.223226	3.838	.000
Intercept [subject = Word]	Variance	2230.147818	572.376701	3.896	.000

a. Dependent Variable: reaction time.

Estimates of Covariance Parameters[a]

		95% Confidence Interval	
Parameter		Lower Bound	Upper Bound
Residual		2.317540E4	2.633875E4
Intercept [subject = Participant]	Variance	3378.719392	9383.442964
Intercept [subject = Word]	Variance	1348.556784	3688.060711

a. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Covariance Parameters[a]

		Residual	Intercept [subject = Participant] Variance	Intercept [subject = Word] Variance
Parameter				
Residual		6.5034E5	-1.006966E4	-5.381822E4
Intercept [subject = Participant]	Variance	-1.0069E4	2.152744E6	-72.361700
Intercept [subject = Word]	Variance	-5.3818E4	-72.361700	3.276151E5

a. Dependent Variable: reaction time.

```
DJMIXED /MODELSUMMARY
         MODEL = 'main effects' .
```

DJMIXED.modelsummary

Notes

Output Created		28-Oct-2009 16:18:42
Comments		
Input	Data	e: \flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2024
Syntax		BEGIN PROGRAM PYTHON.

Notes

Resources	Processor Time	00:00:00.120
	Elapsed Time	00:00:00.121

```
[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
```

Fixed Effects

		Statistic		
	Model Term	beta	F	p
1	Intercept	583.718396	1945.913	.000
2	Priming	84.056449	44.989	.000
3	Morph	11.342533	1.778	.183

Random Effects

		Statistic			
	Model Term	Adjustment for	Variance	Wald Z	p
1	Intercept	Participant	5630.632	3.838	.000
2	Intercept	Word	2230.148	3.896	.000
3	Error	--	24706.501	30.636	.000

```
DJMIXED /COMPAREMODELS
         MODEL1='null'   MODEL2='main effects'.
```

DJMIXED.CompareModels

Notes

Output Created		28-Oct-2009 16:18:43
Comments		
Input	Data	e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		BEGIN PROGRAM PYTHON.

Notes

Resources	Processor Time	00:00:00.070
	Elapsed Time	00:00:00.079

[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav

Likelihood Ratio Test

	Value
Model 1 name	null
Model 2 name	main effects
-2LLR for Model 1	26440.355
AIC for Model 1	26448.355
Number of Parameters …	4.000
-2LLR for Model 2	26404.215
AIC for Model 2	26416.215
Number of Parameters …	6.000
Chi-square value	36.140
Chi-square df	2.000
p-value	.000
LRT Best model …	Model 2

Comparison of two mixed models with LRT. A significant result indicates that the more complex Model 2 is a better fit than the simpler Model 1.

```
DJMIXED /COMPAREMODELS
         MODEL1='main effects' MODEL2='interaction'   .
```

DJMIXED.CompareModels

Notes

Output Created		28-Oct-2009 16:18:44
Comments		
Input	Data	e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>

Notes

Input	Weight	<none>
	Split File	<none>
Syntax		BEGIN PROGRAM PYTHON.
Resources	Processor Time	00:00:00.171
	Elapsed Time	00:00:00.182

`[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav`

Likelihood Ratio Test

	Value
Model 1 name	main effects
Model 2 name	interaction
-2LLR for Model 1	26404.215
AIC for Model 1	26416.215
Number of Parameters …	6.000
-2LLR for Model 2	26399.208
AIC for Model 2	26413.208
Number of Parameters …	7.000
Chi-square value	5.007
Chi-square df	1.000
p-value	.025
LRT Best model …	Model 2

Comparison of two mixed models with LRT. A significant result indicates that the more complex Model 2 is a better fit than the simpler Model 1.

```
*** PART 3 **** .
DJMIXED /MIXEDMODEL
            DV = rt
            PREDICTORS = form
            PPS = Participant
            ITEMS = Base
            MODEL = 'posthoc on form'
            POSTHOC = form  .
Submitting model 'posthoc on form'
MIXED rt
```

```
 BY form
 /FIXED= form | SSTYPE(3)
 /RANDOM=INTERCEPT | SUBJECT(Participant) COVTYPE(VC)
 /RANDOM=INTERCEPT | SUBJECT(Base) COVTYPE(VC)
 /EMMEANS = tables(form) compare adj(sidak)
 /METHOD=ML
/PRINT=SOLUTION  TESTCOV  COVB
/CRITERIA=CIN(95) MXITER(10000) MXSTEP(50) SCORING(1) SINGULAR(0.000000000001
)
HCONVERGE(0, ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE) .
```

Mixed Model Analysis

Notes

Output Created		28-Oct-2009 16:19:21
Comments		
Input	Data	e: \flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2024
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.

Notes

Syntax		MIXED rt BY form /FIXED= form | SSTYPE(3) /RANDOM=INTERCEPT | SUBJECT (Participant) COVTYPE(VC) /RANDOM=INTERCEPT | SUBJECT (Base) COVTYPE(VC) /EMMEANS = tables(form) compare adj(sidak) /METHOD=ML /PRINT=SOLUTION TESTCOV COVB /CRITERIA=CIN(95) MXITER(10000) MXSTEP(50) SCORING(1) SINGULAR(0.000000000001) HCONVERGE(0, ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE) .
Resources	Processor Time	00:00:00.992
	Elapsed Time	00:00:01.111

[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav

Model Dimension[b]

		Number of Levels	Covariance Structure	Number of Parameters	Subject Variables
Fixed Effects	Intercept	1		1	
	Form	3		2	
Random Effects	Intercept[a]	1	Variance Components	1	Participant
	Intercept[a]	1	Variance Components	1	Base
Residual				1	
Total		6		6	

a. As of version 11.5, the syntax rules for the RANDOM subcommand have changed. Your command syntax may yield results that differ from those produced by prior versions. If you are using SPSS 11 syntax, please consult the current syntax reference guide for more information.

b. Dependent Variable: reaction time.

Information Criteria[a]

-2 Log Likelihood	26398.109
Akaike's Information Criterion (AIC)	26410.109
Hurvich and Tsai's Criterion (AICC)	26410.150
Bozdogan's Criterion (CAIC)	26449.786
Schwarz's Bayesian Criterion (BIC)	26443.786

The information criteria are displayed in smaller-is-better forms.

a. Dependent Variable: reaction time.

Fixed Effects

Type III Tests of Fixed Effects[a]

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	46.251	1912.931	.000
Form	2	1966.388	75.460	.000

a. Dependent Variable: reaction time.

Estimates of Fixed Effects[b]

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	653.178714	15.915914	62.707	41.039	.000	621.370393	684.987035
[Form=0]	-63.846620	8.632142	1963.870	-7.396	.000	-80.775741	-46.917498
[Form=1]	39.236233	10.272030	1970.817	3.820	.000	19.091052	59.381414
[Form=2]	0[a]	0	.	.	.	.	.

a. This parameter is set to zero because it is redundant.

b. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Fixed Effects[b]

Para...	Intercept	[Form=0]	[Form=1]	[Form=2]
Intercept	253.316326	-50.008045	-50.672325	0[a]

a. The covariance is set to zero because it is associated with a redundant parameter.

b. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Fixed Effects[b]

Param…	Intercept	[Form=0]	[Form=1]	[Form=2]
[Form=0]	-50.008045	74.513881	50.689886	0[a]
[Form=1]	-50.672325	50.689886	105.514603	0[a]
[Form=2]	0[a]	0[a]	0[a]	0[a]

a. The covariance is set to zero because it is associated with a redundant parameter.

b. Dependent Variable: reaction time.

Covariance Parameters

Estimates of Covariance Parameters[a]

Parameter		Estimate	Std. Error	Wald Z	Sig.
Residual		2.532283E4	808.942565	31.304	.000
Intercept [subject = Participant]	Variance	5643.837438	1472.854195	3.832	.000
Intercept [subject = Base]	Variance	1156.775226	397.945087	2.907	.004

a. Dependent Variable: reaction time.

Estimates of Covariance Parameters[a]

Parameter		95% Confidence Interval	
		Lower Bound	Upper Bound
Residual		2.378595E4	2.695902E4
Intercept [subject = Participant]	Variance	3384.068562	9412.605106
Intercept [subject = Base]	Variance	589.420240	2270.245966

a. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Covariance Parameters[a]

Parameter		Residual	Intercept [subject = Participant] Variance	Intercept [subject = Base] Variance
Residual		6.5438E5	-1.084159E4	-1.023386E4
Intercept [subject = Participant]	Variance	-1.0841E4	2.169299E6	2124.408315

a. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Covariance Parameters[a]

Parameter	Residual	Intercept [subject = Participant] Variance	Intercept [subject = Base] Variance
Intercept [subject = Base] Variance	-1.0233E4	2124.408315	1.583603E5

a. Dependent Variable: reaction time.

Estimated Marginal Means

Form

Estimates[a]

Form	Mean	Std. Error	df	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
base	589.332	15.094	50.763	559.027	619.637
deri	692.415	16.046	64.766	660.366	724.464
infl	653.179	15.916	62.707	621.370	684.987

a. Dependent Variable: reaction time.

Pairwise Comparisons[b]

(I) Form	(J) Form	Mean Difference (I-J)	Std. Error	df	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	95% Confidence Interval for Difference[a] Upper Bound
base	deri	-103.083*	8.868	1966.242	.000	-124.276	-81.889
	infl	-63.847*	8.632	1963.870	.000	-84.476	-43.218
deri	base	103.083*	8.868	1966.242	.000	81.889	124.276
	infl	39.236*	10.272	1970.817	.000	14.688	63.784
infl	base	63.847*	8.632	1963.870	.000	43.218	84.476
	deri	-39.236*	10.272	1970.817	.000	-63.784	-14.688

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. Adjustment for multiple comparisons: Sidak.

b. Dependent Variable: reaction time.

```
DJMIXED /MODELSUMMARY
            MODEL = 'posthoc on form' .
```

DJMIXED.modelsummary

Notes

Output Created		28-Oct-2009 16:19:24
Comments		
Input	Data	e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2024
Syntax		BEGIN PROGRAM PYTHON.
Resources	Processor Time	00:00:00.531
	Elapsed Time	00:00:00.591

```
[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
```

Fixed Effects

		Statistic		
	Model Term	beta	F	p
1	Intercept	653.178714	1912.931	.000
2	Form	--	75.460	.000

Random Effects

		Statistic			
	Model Term	Adjustment for	Variance	Wald Z	p
1	Intercept	Participant	5643.837	3.832	.000
2	Intercept	Base	1156.775	2.907	.004
3	Error	--	25322.831	31.304	.000

```
DJMIXED /MIXEDMODEL
```

```
            DV = rt
            PREDICTORS = form
            PPS = Participant
            ITEMS = Base
            MODEL = 'contrast on form'
            CONTRAST = form | 0 1 -1 | 1 -0.5 -0.5   .
Submitting model 'contrast on form'
MIXED rt
 BY form
 /FIXED= form | SSTYPE(3)
 /RANDOM=INTERCEPT | SUBJECT(Participant) COVTYPE(VC)
 /RANDOM=INTERCEPT | SUBJECT(Base) COVTYPE(VC)
 /TEST 'contrasts on form'  form 0 1 -1; form 1 -0.5 -0.5
 /METHOD=ML
/PRINT=SOLUTION  TESTCOV  COVB
/CRITERIA=CIN(95) MXITER(10000) MXSTEP(50) SCORING(1) SINGULAR(0.000000000001
)
HCONVERGE(0, ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE) .
```

Mixed Model Analysis

Notes

Output Created		28-Oct-2009 16:19:26
Comments		
Input	Data	e: \flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2024
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.

Notes

Syntax		MIXED rt BY form /FIXED= form	SSTYPE(3) /RANDOM=INTERCEPT	SUBJECT (Participant) COVTYPE(VC) /RANDOM=INTERCEPT	SUBJECT (Base) COVTYPE(VC) /TEST 'contrasts on form' form 0 1 -1; form 1 -0.5 -0.5 /METHOD=ML /PRINT=SOLUTION TESTCOV COVB /CRITERIA=CIN(95) MXITER(10000) MXSTEP(50) SCORING(1) SINGULAR(0.000000000001) HCONVERGE(0, ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE) .
Resources	Processor Time	00:00:00.691
	Elapsed Time	00:00:00.720

[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav

Model Dimension [b]

		Number of Levels	Covariance Structure	Number of Parameters	Subject Variables
Fixed Effects	Intercept	1		1	
	Form	3		2	
Random Effects	Intercept [a]	1	Variance Components	1	Participant
	Intercept [a]	1	Variance Components	1	Base
Residual				1	
Total		6		6	

a. As of version 11.5, the syntax rules for the RANDOM subcommand have changed. Your command syntax may yield results that differ from those produced by prior versions. If you are using SPSS 11 syntax, please consult the current syntax reference guide for more information.

b. Dependent Variable: reaction time.

Information Criteria[a]

-2 Log Likelihood	26398.109
Akaike's Information Criterion (AIC)	26410.109
Hurvich and Tsai's Criterion (AICC)	26410.150
Bozdogan's Criterion (CAIC)	26449.786
Schwarz's Bayesian Criterion (BIC)	26443.786

The information criteria are displayed in smaller-is-better forms.

a. Dependent Variable: reaction time.

Fixed Effects

Type III Tests of Fixed Effects[a]

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	46.251	1912.931	.000
Form	2	1966.388	75.460	.000

a. Dependent Variable: reaction time.

Estimates of Fixed Effects[b]

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	653.178714	15.915914	62.707	41.039	.000	621.370393	684.987035
[Form=0]	-63.846620	8.632142	1963.870	-7.396	.000	-80.775741	-46.917498
[Form=1]	39.236233	10.272030	1970.817	3.820	.000	19.091052	59.381414
[Form=2]	0[a]	0	.	.	.	.	.

a. This parameter is set to zero because it is redundant.

b. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Fixed Effects[b]

Para...	Intercept	[Form=0]	[Form=1]	[Form=2]
Intercept	253.316326	-50.008045	-50.672325	0[a]

a. The covariance is set to zero because it is associated with a redundant parameter.

b. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Fixed Effects[b]

Param…	Intercept	[Form=0]	[Form=1]	[Form=2]
[Form=0]	-50.008045	74.513881	50.689886	0[a]
[Form=1]	-50.672325	50.689886	105.514603	0[a]
[Form=2]	0[a]	0[a]	0[a]	0[a]

a. The covariance is set to zero because it is associated with a redundant parameter.

b. Dependent Variable: reaction time.

Covariance Parameters

Estimates of Covariance Parameters[a]

Parameter		Estimate	Std. Error	Wald Z	Sig.
Residual		2.532283E4	808.942565	31.304	.000
Intercept [subject = Participant]	Variance	5643.837438	1472.854195	3.832	.000
Intercept [subject = Base]	Variance	1156.775226	397.945087	2.907	.004

a. Dependent Variable: reaction time.

Estimates of Covariance Parameters[a]

Parameter		95% Confidence Interval	
		Lower Bound	Upper Bound
Residual		2.378595E4	2.695902E4
Intercept [subject = Participant]	Variance	3384.068562	9412.605106
Intercept [subject = Base]	Variance	589.420240	2270.245966

a. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Covariance Parameters[a]

Parameter		Residual	Intercept [subject = Participant] Variance	Intercept [subject = Base] Variance
Residual		6.5438E5	-1.084159E4	-1.023386E4
Intercept [subject = Participant]	Variance	-1.0841E4	2.169299E6	2124.408315

a. Dependent Variable: reaction time.

Covariance Matrix for Estimates of Covariance Parameters[a]

Parameter		Residual	Intercept [subject = Participant] Variance	Intercept [subject = Base] Variance
Intercept [subject = Base] Variance		-1.0233E4	2124.408315	1.583603E5

a. Dependent Variable: reaction time.

Custom Hypothesis Test (contrasts on form)

Contrast Estimates[a,b]

Contrast	Estimate	Std. Error	df	Test Value	t	Sig.
L1	39.236233	10.272030	1970.817	0	3.820	.000
L2	-83.464736	7.085383	1961.938	0	-11.780	.000

a. contrasts on form

b. Dependent Variable: reaction time.

Contrast Estimates[a,b]

Contrast	95% Confidence Interval	
	Lower Bound	Upper Bound
L1	19.091052	59.381414
L2	-97.360403	-69.569069

a. contrasts on form

b. Dependent Variable: reaction time.

Test of Contrasts[a]

Source	Numerator df	Denominator df	F	Sig.
contrasts on form	2	1966.332	75.460	.000

a. Dependent Variable: reaction time.

```
*** PART 4 **** .
* model with random factor for participant adjusting the effect of priming .
DJMIXED /STARTMODEL  model='model4' .
```

DJMIXED.StartModel

Notes

Output Created		28-Oct-2009 16:19:54
Comments		
Input	Data	e: \flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2024
Syntax		BEGIN PROGRAM PYTHON.
Resources	Processor Time	00:00:00.211
	Elapsed Time	00:00:00.220

```
[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
```

```
Starting model 'model4'
```

Mixed Model Analysis

Notes

Output Created		28-Oct-2009 16:19:56
Comments		
Input	Data	e: \flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2024
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.

Notes

Missing Value Handling	Cases Used	Statistics are based on all cases with valid data for all variables in the model.

Syntax		MIXED rt BY morph priming
		  /FIXED= morph priming morph*priming
		  /RANDOM= Intercept Priming
			SUBJECT(Participant) COVTYPE (VC)
			  /RANDOM= Intercept
				SUBJECT (Word) COVTYPE(VC)
				  /METHOD= ML
				  /PRINT=SOLUTION TESTCOV G
				  /CRITERIA=CIN(95) MXITER (10000) MXSTEP(50) SCORING(1) SINGULAR(0.000000000001)
				  HCONVERGE(0, ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE) .

Resources	Processor Time	00:00:00.801
	Elapsed Time	00:00:00.872

[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav

Model Dimension[b]

		Number of Levels	Covariance Structure	Number of Parameters	Subject Variables
Fixed Effects	Intercept	1		1	
	Morph	2		1	
	Priming	2		1	
	Morph * Priming	4		1	
Random Effects	Intercept + Priming [a]	3	Variance Components	2	Participant
	Intercept [a]	1	Variance Components	1	Word
Residual				1	
Total		13		8	

a. As of version 11.5, the syntax rules for the RANDOM subcommand have changed. Your command syntax may yield results that differ from those produced by prior versions. If you are using SPSS 11 syntax, please consult the current syntax reference guide for more information.

b. Dependent Variable: reaction time.

Information Criteria[a]

-2 Log Likelihood	26384.408
Akaike's Information Criterion (AIC)	26400.408
Hurvich and Tsai's Criterion (AICC)	26400.480
Bozdogan's Criterion (CAIC)	26453.311
Schwarz's Bayesian Criterion (BIC)	26445.311

The information criteria are displayed in smaller-is-better forms.

a. Dependent Variable: reaction time.

Fixed Effects

Type III Tests of Fixed Effects[a]

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	43.743	1943.101	.000
Morph	1	182.008	4.743	.031
Priming	1	64.049	33.155	.000
Morph * Priming	1	179.184	4.900	.028

a. Dependent Variable: reaction time.

Estimates of Fixed Effects[b]

Parameter	Estimate	Std. Error	df	t	Sig.
Intercept	589.547976	17.306019	79.732	34.066	.000
[Morph=1]	-.116259	9.884934	1892.891	-.012	.991
[Morph=2]	0[a]	0	.	.	.
[Priming=1]	63.876961	17.213258	87.304	3.711	.000
[Priming=2]	0[a]	0	.	.	.
[Morph=1] * [Priming=1]	40.867691	18.461291	179.184	2.214	.028
[Morph=1] * [Priming=2]	0[a]	0	.	.	.
[Morph=2] * [Priming=1]	0[a]	0	.	.	.
[Morph=2] * [Priming=2]	0[a]	0	.	.	.

a. This parameter is set to zero because it is redundant.

b. Dependent Variable: reaction time.

Estimates of Fixed Effects[b]

Parameter	95% Confidence Interval	
	Lower Bound	Upper Bound
Intercept	555.106122	623.989830
[Morph=1]	-19.502770	19.270251
[Morph=2]	.	.
[Priming=1]	29.665424	98.088498
[Priming=2]	.	.
[Morph=1] * [Priming=1]	4.438181	77.297202
[Morph=1] * [Priming=2]	.	.
[Morph=2] * [Priming=1]	.	.
[Morph=2] * [Priming=2]	.	.

a. This parameter is set to zero because it is redundant.

b. Dependent Variable: reaction time.

Covariance Parameters

Estimates of Covariance Parameters[a]

Parameter		Estimate	Std. Error	Wald Z	Sig.
Residual		2.412653E4	794.057448	30.384	.000
Intercept [subject = Participant]	Variance	5158.667008	1491.294209	3.459	.001
Priming [subject = Participant]	Variance	1030.427125	448.319809	2.298	.022
Intercept [subject = Word]	Variance	2184.608363	553.272167	3.949	.000

a. Dependent Variable: reaction time.

Estimates of Covariance Parameters[a]

Parameter		95% Confidence Interval	
		Lower Bound	Upper Bound
Residual		2.261934E4	2.573415E4
Intercept [subject = Participant]	Variance	2927.303412	9090.907758
Priming [subject = Participant]	Variance	439.213028	2417.460303
Intercept [subject = Word]	Variance	1329.838707	3588.791387

a. Dependent Variable: reaction time.

Random Effects Covariance Structures (G)

Intercept [subject = Participant][a]

	Intercept | Participant
Intercept | Participant	5158.667008

Variance Components

a. Dependent Variable: reaction time.

Priming [subject = Participant][a]

	[Priming=1] | Participant	[Priming=2] | Participant
[Priming=1] | Participant	1030	0
[Priming=2] | Participant	0	1030

Variance Components

a. Dependent Variable: reaction time.

Intercept [subject = Word][a]

	Intercept | Word
Intercept | Word	2184.608363

Variance Components

a. Dependent Variable: reaction time.

DJMIXED.StopModel

Notes

Output Created		28-Oct-2009 16:19:57
Comments		
Input	Data	e: \flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>

Notes

Input	Split File	<none>
	N of Rows in Working Data File	2024
Syntax		BEGIN PROGRAM '# '.
Resources	Processor Time	00:00:00.000
	Elapsed Time	00:00:00.000

```
[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav


Ending model 'model4'


** NOT CORRECT, COMPARISON INVOLVES TWO MODELS WHICH DIFFER IN RANDOM COMPONE
NTS ONLY .
DJMIXED /comparemodels model1='interaction' model2='model4' .
```

DJMIXED.CompareModels

Notes

Output Created		28-Oct-2009 16:19:58
Comments		
Input	Data	e: \flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		BEGIN PROGRAM PYTHON.
Resources	Processor Time	00:00:00.100
	Elapsed Time	00:00:00.119

```
[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
```

Likelihood Ratio Test

	Value
Model 1 name	interaction
Model 2 name	model4
-2LLR for Model 1	26399.208
AIC for Model 1	26413.208
Number of Parameters …	7.000
-2LLR for Model 2	26384.408
AIC for Model 2	26400.408
Number of Parameters …	8.000
Chi-square value	14.800
Chi-square df	1.000
p-value	.000
LRT Best model …	Model 2

Comparison of two mixed models with LRT. A significant result indicates that the more complex Model 2 is a better fit than the simpler Model 1.

```
DJMIXED /comparemodels model1='interaction' model2='model4' type=random  .
```

DJMIXED.CompareRandomModels

Notes

Output Created		28-Oct-2009 16:19:59
Comments		
Input	Data	e: \flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
	Active Dataset	tw
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		BEGIN PROGRAM PYTHON.
Resources	Processor Time	00:00:00.141
	Elapsed Time	00:00:00.160

```
[tw] e:\flash\schrijf\twicerandom\data1\tw-set1b-spss.sav
```

```
Note: This routine is only appropriate for the comparison of two
   models that have the same fixed effects and differ their random
   effects only.  This routine uses a chi-squared mixture to obtain
   the correct statistics for this special case (Stram and Lee, 1994).
   Comparison of any other types of models should be done with the
   function 'comparemodels' instead.
```

Likelihood Ratio Test - Using chi-square mixture

	Value
Model 1 name	interaction
Model 2 name	model4
-2LLR for Model 1	26399.208
AIC for Model 1	26413.208
Number of Random Parameters for Model 1	2.000
Total number of Parameters for Model 1	7.000
-2LLR for Model 2	26384.408
AIC for Model 2	26400.408
Number of Random Parameters for Model 2	3.000
Total number of Parameters for Model 2	8.000
Chi-square value	14.800
Chi-square df	2,3
p-value	.001
Best model (alpha=0.05)	Model 2

Comparison of two mixed models with LRT, where the mixed models only differ in the random effects. A significant result indicates that the more complex Model 2 is a better fit than the simpler Model 1.