

Obs	no2	sheep	time	y
1	1	1	time1	2.197
2	1	1	time2	2.442
3	1	1	time3	2.542
4	1	1	time4	2.241
5	1	1	time5	1.960
6	1	1	time6	1.988
7	1	2	time1	1.932
8	1	2	time2	2.526
9	1	2	time3	2.526
10	1	2	time4	2.152
11	1	2	time5	1.917
12	1	2	time6	1.917
13	1	3	time1	1.946
14	1	3	time2	2.251
15	1	3	time3	2.501
16	1	3	time4	1.988
17	1	3	time5	1.686
18	1	3	time6	1.841
19	1	4	time1	1.758
20	1	4	time2	2.054
21	1	4	time3	2.588
22	1	4	time4	2.197
23	1	4	time5	2.140
24	1	4	time6	1.686
25	2	5	time1	2.230
26	2	5	time2	3.086
27	2	5	time3	3.357
28	2	5	time4	3.219
29	2	5	time5	2.827
30	2	5	time6	2.534

The Mixed Procedure

Model Information	
Data Set	WORK.SHEEP
Dependent Variable	y
Covariance Structure	Variance Components
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Satterthwaite

Class Level Information		
Class	Levels	Values
no2	3	1 2 3
sheep	12	1 2 3 4 5 6 7 8 9 10 11 12
time	6	time1 time2 time3 time4 time5 time6

Dimensions	
Covariance Parameters	2
Columns in X	28
Columns in Z	12
Subjects	1
Max Obs Per Subject	72

Number of Observations	
Number of Observations Read	72
Number of Observations Used	72
Number of Observations Not Used	0

Iteration History			
Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	97.82866407	
1	1	64.14375645	0.00000000

The Mixed Procedure

Convergence criteria met.

Covariance Parameter Estimates	
Cov Parm	Estimate
sheep(no2)	0.1457
Residual	0.08004

Fit Statistics	
-2 Res Log Likelihood	64.1
AIC (smaller is better)	68.1
AICC (smaller is better)	68.4
BIC (smaller is better)	69.1

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
no2	2	9	12.32	0.0026
time	5	45	22.37	<.0001
no2*time	10	45	5.62	<.0001

The Mixed Procedure

Model Information	
Data Set	WORK.SHEEP
Dependent Variable	y
Covariance Structure	Compound Symmetry
Subject Effect	sheep
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Satterthwaite

Class Level Information		
Class	Levels	Values
no2	3	1 2 3
sheep	12	1 2 3 4 5 6 7 8 9 10 11 12
time	6	time1 time2 time3 time4 time5 time6

Dimensions	
Covariance Parameters	2
Columns in X	28
Columns in Z	0
Subjects	12
Max Obs Per Subject	6

Number of Observations	
Number of Observations Read	72
Number of Observations Used	72
Number of Observations Not Used	0

Iteration History			
Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	97.82866407	
1	1	64.14375645	0.00000000

The Mixed Procedure

Convergence criteria met.

Covariance Parameter Estimates		
Cov Parm	Subject	Estimate
CS	sheep	0.1457
Residual		0.08004

Fit Statistics	
-2 Res Log Likelihood	64.1
AIC (smaller is better)	68.1
AICC (smaller is better)	68.4
BIC (smaller is better)	69.1

Null Model Likelihood Ratio Test		
DF	Chi-Square	Pr > ChiSq
1	33.68	<.0001

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
no2	2	9	12.32	0.0026
time	5	45	22.37	<.0001
no2*time	10	45	5.62	<.0001

**Model 2: Analysis of sheep data
assuming a general unstructured var-cov structure**

The Mixed Procedure

Model Information	
Data Set	WORK.SHEEP
Dependent Variable	y
Covariance Structure	Unstructured
Subject Effect	sheep
Estimation Method	REML
Residual Variance Method	None
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Satterthwaite

Class Level Information		
Class	Levels	Values
no2	3	1 2 3
sheep	12	1 2 3 4 5 6 7 8 9 10 11 12
time	6	time1 time2 time3 time4 time5 time6

Dimensions	
Covariance Parameters	21
Columns in X	28
Columns in Z	0
Subjects	12
Max Obs Per Subject	6

Number of Observations	
Number of Observations Read	72
Number of Observations Used	72
Number of Observations Not Used	0

Iteration History			
Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	97.82866407	
1	1	-33.85975117	0.00000000

**Model 2: Analysis of sheep data
assuming a general unstructured var-cov structure**

The Mixed Procedure

Convergence criteria met.

Estimated R Matrix for sheep 1						
Row	Col1	Col2	Col3	Col4	Col5	Col6
1	0.02802	-0.01171	-0.02377	-0.02072	-0.04629	-0.02553
2	-0.01171	0.1218	0.1179	0.1544	0.1979	0.2052
3	-0.02377	0.1179	0.1349	0.1757	0.2328	0.2247
4	-0.02072	0.1544	0.1757	0.2464	0.3141	0.3035
5	-0.04629	0.1979	0.2328	0.3141	0.4224	0.3875
6	-0.02553	0.2052	0.2247	0.3035	0.3875	0.4010

Estimated R Correlation Matrix for sheep 1						
Row	Col1	Col2	Col3	Col4	Col5	Col6
1	1.0000	-0.2005	-0.3867	-0.2494	-0.4255	-0.2408
2	-0.2005	1.0000	0.9196	0.8915	0.8723	0.9287
3	-0.3867	0.9196	1.0000	0.9638	0.9751	0.9660
4	-0.2494	0.8915	0.9638	1.0000	0.9735	0.9655
5	-0.4255	0.8723	0.9751	0.9735	1.0000	0.9415
6	-0.2408	0.9287	0.9660	0.9655	0.9415	1.0000

Covariance Parameter Estimates		
Cov Parm	Subject	Estimate
UN(1,1)	sheep	0.02802
UN(2,1)	sheep	-0.01171
UN(2,2)	sheep	0.1218
UN(3,1)	sheep	-0.02377
UN(3,2)	sheep	0.1179
UN(3,3)	sheep	0.1349
UN(4,1)	sheep	-0.02072
UN(4,2)	sheep	0.1544
UN(4,3)	sheep	0.1757
UN(4,4)	sheep	0.2464

**Model 2: Analysis of sheep data
assuming a general unstructured var-cov structure**

The Mixed Procedure

Covariance Parameter Estimates		
Cov Parm	Subject	Estimate
UN(5,1)	sheep	-0.04629
UN(5,2)	sheep	0.1979
UN(5,3)	sheep	0.2328
UN(5,4)	sheep	0.3141
UN(5,5)	sheep	0.4224
UN(6,1)	sheep	-0.02553
UN(6,2)	sheep	0.2052
UN(6,3)	sheep	0.2247
UN(6,4)	sheep	0.3035
UN(6,5)	sheep	0.3875
UN(6,6)	sheep	0.4010

Fit Statistics	
-2 Res Log Likelihood	-33.9
AIC (smaller is better)	8.1
AICC (smaller is better)	37.0
BIC (smaller is better)	18.3

Null Model Likelihood Ratio Test		
DF	Chi-Square	Pr > ChiSq
20	131.69	<.0001

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
no2	2	9	12.32	0.0026
time	5	9	350.24	<.0001
no2*time	10	9	10.39	0.0008

**Model 2: Analysis of sheep data
assuming a general unstructured var-cov structure**

The Mixed Procedure

Least Squares Means							
Effect	NAME OF FORMER VARIABLE	no2	Estimate	Standard Error	DF	t Value	Pr > t
no2*time	time1	1	1.9582	0.08370	9	23.40	<.0001
no2*time	time2	1	2.3182	0.1745	9	13.29	<.0001
no2*time	time3	1	2.5392	0.1837	9	13.83	<.0001
no2*time	time4	1	2.1445	0.2482	9	8.64	<.0001
no2*time	time5	1	1.9257	0.3250	9	5.93	0.0002
no2*time	time6	1	1.8580	0.3166	9	5.87	0.0002
no2*time	time1	2	2.2980	0.08370	9	27.46	<.0001
no2*time	time2	2	2.9010	0.1745	9	16.62	<.0001
no2*time	time3	2	3.2338	0.1837	9	17.61	<.0001
no2*time	time4	2	3.2875	0.2482	9	13.25	<.0001
no2*time	time5	2	2.8725	0.3250	9	8.84	<.0001
no2*time	time6	2	2.5735	0.3166	9	8.13	<.0001
no2*time	time1	3	2.1647	0.08370	9	25.86	<.0001
no2*time	time2	3	3.6123	0.1745	9	20.70	<.0001
no2*time	time3	3	3.8880	0.1837	9	21.17	<.0001
no2*time	time4	3	3.9573	0.2482	9	15.94	<.0001
no2*time	time5	3	3.8110	0.3250	9	11.73	<.0001
no2*time	time6	3	3.7068	0.3166	9	11.71	<.0001
no2*time	time1	1	1.9582	0.08370	9	23.40	<.0001
no2*time	time2	1	2.3182	0.1745	9	13.29	<.0001
no2*time	time3	1	2.5392	0.1837	9	13.83	<.0001
no2*time	time4	1	2.1445	0.2482	9	8.64	<.0001
no2*time	time5	1	1.9257	0.3250	9	5.93	0.0002
no2*time	time6	1	1.8580	0.3166	9	5.87	0.0002
no2*time	time1	2	2.2980	0.08370	9	27.46	<.0001
no2*time	time2	2	2.9010	0.1745	9	16.62	<.0001
no2*time	time3	2	3.2338	0.1837	9	17.61	<.0001
no2*time	time4	2	3.2875	0.2482	9	13.25	<.0001
no2*time	time5	2	2.8725	0.3250	9	8.84	<.0001
no2*time	time6	2	2.5735	0.3166	9	8.13	<.0001

**Model 2: Analysis of sheep data
assuming a general unstructured var-cov structure**

The Mixed Procedure

Least Squares Means							
Effect	NAME OF FORMER VARIABLE	no2	Estimate	Standard Error	DF	t Value	Pr > t
no2*time	time1	3	2.1647	0.08370	9	25.86	<.0001
no2*time	time2	3	3.6123	0.1745	9	20.70	<.0001
no2*time	time3	3	3.8880	0.1837	9	21.17	<.0001
no2*time	time4	3	3.9573	0.2482	9	15.94	<.0001
no2*time	time5	3	3.8110	0.3250	9	11.73	<.0001
no2*time	time6	3	3.7068	0.3166	9	11.71	<.0001

Tests of Effect Slices						
Effect	NAME OF FORMER VARIABLE	no2	Num DF	Den DF	F Value	Pr > F
no2*time	time1		2	9	4.18	0.0519
no2*time	time2		2	9	13.79	0.0018
no2*time	time3		2	9	13.49	0.0020
no2*time	time4		2	9	13.64	0.0019
no2*time	time5		2	9	8.41	0.0087
no2*time	time6		2	9	8.67	0.0080
no2*time		1	5	9	65.00	<.0001
no2*time		2	5	9	152.14	<.0001
no2*time		3	5	9	153.87	<.0001