# The rex2 data

## March 24, 2011

### The data:

```
para 1 0.722 0.714 0.203 0.095
sent 0.722 1 0.685 0.246 0.181
word 0.714 0.685 1 0.170 0.113
add 0.203 0.246 0.170 1 0.585
dots 0.095 0.181 0.113 0.585 1
```

The SAS code and output:

```
data rmat(type=corr);
  infile "rex2.dat";
  input _name_ $ para sent word add dots;
```

proc print;

proc factor scree method=prinit;

proc factor method=prinit rotate=varimax;

run;

Obs	_name_	para	sent	word	add	dots
1	para	1.000	0.722	0.714	0.203	0.095
2	sent	0.722	1.000	0.685	0.246	0.181
3	word	0.714	0.685	1.000	0.170	0.113
4	add	0.203	0.246	0.170	1.000	0.585
5	dots	0.095	0.181	0.113	0.585	1.000

The FACTOR Procedure

Input Data Type Correlations N Set/Assumed in Data Set 10000 N for Significance Tests 10000

The FACTOR Procedure

Initial Factor Method: Iterated Principal Factor Analysis

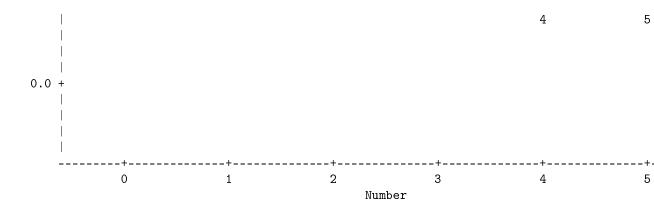
# Prior Communality Estimates: ONE

	Preliminary	Eigenvalues:	Total = 5 Ave	rage = 1
	Eigenvalue	Difference	Proportion	Cumulative
1	2.58746987	1.16575215	0.5175	0.5175
2	1.42171772	1.00652661	0.2843	0.8018
3	0.41519110	0.10409071	0.0830	0.8849
4	0.31110040	0.04657948	0.0622	0.9471
5	0.26452092		0.0529	1.0000

 $<sup>2\ \</sup>mbox{factors}$  will be retained by the MINEIGEN criterion.

```
The FACTOR Procedure
Initial Factor Method: Iterated Principal Factor Analysis
Scree Plot of Eigenvalues
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  1.0 +
  0.5 +
```

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The FACTOR Procedure

Initial Factor Method: Iterated Principal Factor Analysis

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Change			Communalities	3	
0.2131	0.82449	0.79958	0.79560	0.78693	0.80260
0.1079	0.77053	0.73280	0.72295	0.67904	0.70591
0.0546	0.75532	0.71087	0.69607	0.62448	0.65842
0.0276	0.75209	0.70379	0.68539	0.59683	0.63515
0.0141	0.75228	0.70158	0.68068	0.58274	0.62385
0.0073	0.75321	0.70091	0.67833	0.57543	0.61851
0.0039	0.75412	0.70072	0.67702	0.57152	0.61614
0.0022	0.75484	0.70066	0.67622	0.56932	0.61524
0.0013	0.75537	0.70064	0.67571	0.56797	0.61508
0.0009	0.75575	0.70062	0.67537	0.56705	0.61529
	Change 0.2131 0.1079 0.0546 0.0276 0.0141 0.0073 0.0039 0.0022 0.0013	Change 0.2131 0.82449 0.1079 0.77053 0.0546 0.75532 0.0276 0.75209 0.0141 0.75228 0.0073 0.75321 0.0039 0.75412 0.0022 0.75484 0.0013 0.75537	Change 0.2131 0.82449 0.79958 0.1079 0.77053 0.73280 0.0546 0.75532 0.71087 0.0276 0.75209 0.70379 0.0141 0.75228 0.70158 0.0073 0.75321 0.70091 0.0039 0.75412 0.70072 0.0022 0.75484 0.70066 0.0013 0.75537 0.70064	Change Communalities 0.2131	0.2131       0.82449       0.79958       0.79560       0.78693         0.1079       0.77053       0.73280       0.72295       0.67904         0.0546       0.75532       0.71087       0.69607       0.62448         0.0276       0.75209       0.70379       0.68539       0.59683         0.0141       0.75228       0.70158       0.68068       0.58274         0.0073       0.75321       0.70091       0.67833       0.57543         0.0039       0.75412       0.70072       0.67702       0.57152         0.0022       0.75484       0.70066       0.67622       0.56932         0.0013       0.75537       0.70064       0.67571       0.56797

Convergence criterion satisfied.

Eigenvalues of the Reduced Correlation Matrix: Total = 3.31477718 Average = 0.66295544

	Eigenvalue	Difference	Proportion	Cumulative
1	2.28220070	1.25031114	0.6885	0.6885
2	1.03188956	1.00687378	0.3113	0.9998
3	0.02501578	0.02604204	0.0075	1.0073
4	00102626	0.02227632	-0.0003	1.0070
5	02330258		-0.0070	1.0000

### Factor Pattern

	Factor1	Factor2
para	0.83498	-0.24200
sent	0.82533	-0.13946
word	0.78992	-0.22671
add	0.40982	0.63174
dots	0.33454	0.70949

Variance Explained by Each Factor

Factor1 Factor2 2.2822007 1.0318896

Final Communality Estimates: Total = 3.314090

para sent word add dots
0.75574929 0.70062380 0.67537332 0.56705315 0.61529069

The FACTOR Procedure

Input Data Type Correlations N Set/Assumed in Data Set 10000 N for Significance Tests 10000

The FACTOR Procedure

Initial Factor Method: Iterated Principal Factor Analysis

Prior Communality Estimates: ONE

	Preliminary	Eigenvalues:	Total = 5 Ave	rage = 1
	Eigenvalue	Difference	Proportion	Cumulative
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2	1.42171772	1.00652661	0.2843	0.8018
3	0.41519110	0.10409071	0.0830	0.8849
4	0.31110040	0.04657948	0.0622	0.9471
5	0.26452092		0.0529	1.0000

 $2\ \mbox{factors}$  will be retained by the MINEIGEN criterion.

Iteration	Change		C	ommunalitie	S	
1	0.2131	0.82449	0.79958	0.79560	0.78693	0.80260
2	0.1079	0.77053	0.73280	0.72295	0.67904	0.70591
3	0.0546	0.75532	0.71087	0.69607	0.62448	0.65842
4	0.0276	0.75209	0.70379	0.68539	0.59683	0.63515
5	0.0141	0.75228	0.70158	0.68068	0.58274	0.62385
6	0.0073	0.75321	0.70091	0.67833	0.57543	0.61851
7	0.0039	0.75412	0.70072	0.67702	0.57152	0.61614
8	0.0022	0.75484	0.70066	0.67622	0.56932	0.61524
9	0.0013	0.75537	0.70064	0.67571	0.56797	0.61508
10	0.0009	0.75575	0.70062	0.67537	0.56705	0.61529

Convergence criterion satisfied.

Eigenvalues of the Reduced Correlation Matrix: Total = 3.31477718 Average = 0.66295544

	Eigenvalue	Difference	Proportion	Cumulative
1	2.28220070	1.25031114	0.6885	0.6885
2	1.03188956	1.00687378	0.3113	0.9998
3	0.02501578	0.02604204	0.0075	1.0073
4	00102626	0.02227632	-0.0003	1.0070
5	02330258		-0.0070	1.0000

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	Factor1	Factor2
para	0.83498	-0.24200
sent	0.82533	-0.13946
word	0.78992	-0.22671
add	0.40982	0.63174
dots	0.33454	0.70949

#### The FACTOR Procedure

Initial Factor Method: Iterated Principal Factor Analysis Variance Explained by Each Factor

Factor1 Factor2 2.2822007 1.0318896

Final Communality Estimates: Total = 3.314090

para sent word add dots 0.75574929 0.70062380 0.67537332 0.56705315 0.61529069

The FACTOR Procedure Rotation Method: Varimax

Orthogonal Transformation Matrix

1 2 1 0.93037 0.36663 2 -0.36663 0.93037

#### Rotated Factor Pattern

	Factor1	Factor2
para	0.86556	0.08098
sent	0.81899	0.17284
word	0.81804	0.07868
add	0.14966	0.73801
dots	0.05112	0.78274

### Variance Explained by Each Factor

Factor1 Factor2 2.1141352 1.1999550

Final Communality Estimates: Total = 3.314090

para sent word add dots 0.75574929 0.70062380 0.67537332 0.56705315 0.61529069