The one-ten-mds data

March 18, 2011

The data:

```
en 0 2 2  7 6  6   6  6  7  9 9
no 2 0 1  5 4  6   6  6  7  8 9
dk 2 1 0  6 5  6   5  5  6  8 9
nl 7 5 6  0 5  9   9  9 10  8 9
de 6 4 5  5 0  7   7  7  8  9 9
fr 6 6 6  9 7  0   2  1  5 10 9
es 6 6 5  9 7  2   0  1  3 10 9
it 6 6 5  9 7  1   1  0  4 10 8
pl 7 7 6 10 8  5   3  4  0 10 9
hu 9 8 8  8 9  10 10 10 10  0 8
sf 9 9 9  9 9  9   9  8  9  8 0
```

The SAS code and output:

```
data lang(type=distance);
        infile "one-ten.dat";
        input lang $ en no dk nl de fr es it pl hu sf;

proc mds level=ordinal out=coords outres=dist;
    id lang;

proc print data=dist;
   var _row_ _col_ data distance residual;

proc print data=coords;

proc plot data=coords vpercent=70;
    plot dim2 * dim1 = '*' $ lang;

run;
```

```
Multidimensional Scaling:  Data=WORK.LANG.DATA
Shape=TRIANGLE Condition=MATRIX Level=ORDINAL
Coef=IDENTITY Dimension=2 Formula=1 Fit=1
```

Mconverge=0.01 Gconverge=0.01 Maxiter=100 Over=2 Ridge=0.0001

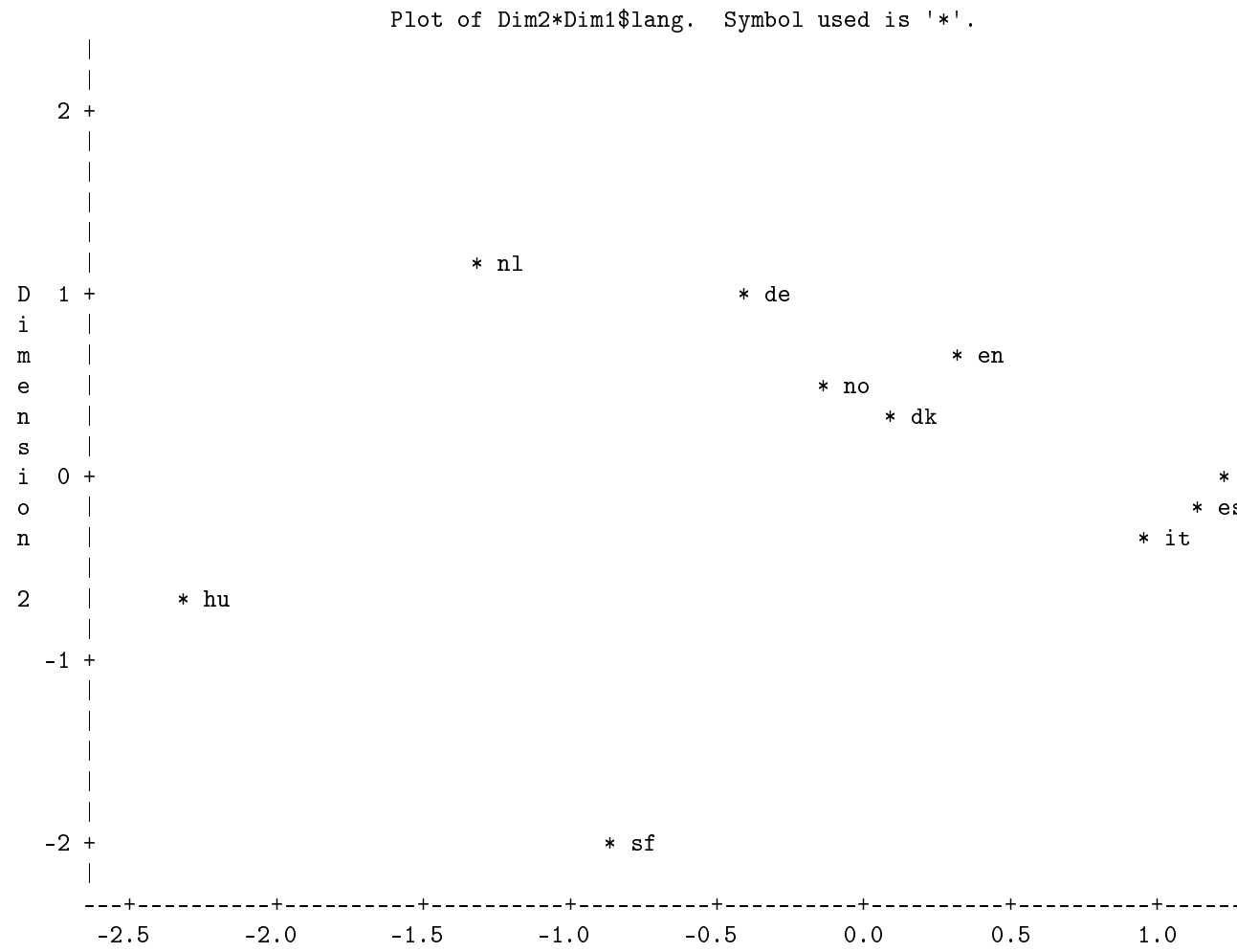
Iteration	Type	Badness-of-Fit Criterion	Change in Criterion	Convergence Measures: Monotone	Convergence Measures: Gradient
0	Initial	0.2009	.	.	.
1	Monotone	0.1478	0.0531	0.1358	0.6781
2	Gau-New	0.1126	0.0352	.	.
3	Monotone	0.1020	0.0105	0.0483	0.3363
4	Gau-New	0.0997	0.002376	.	.
5	Monotone	0.0928	0.006869	0.0374	0.2226
6	Gau-New	0.0923	0.000483	.	.
7	Monotone	0.0915	0.000823	0.0138	0.2190
8	Gau-New	0.0914	0.0000983	.	.
9	Monotone	0.0910	0.000349	0.009497	0.2341
10	Gau-New	0.0888	0.002191	.	0.0533
11	Gau-New	0.0887	0.000106	.	0.0169
12	Gau-New	0.0887	0.0000126	.	0.006850

Convergence criteria are satisfied.

Obs	_ROW_	_COL_	DATA	DISTANCE	RESIDUAL
1	no	en	2	0.42128	-0.03205
2	dk	en	2	0.41084	-0.02161
3	dk	no	1	0.33888	0.05036
4	nl	en	7	1.67790	0.21807
5	nl	no	5	1.31502	-0.27280
6	nl	dk	6	1.61869	-0.30413
7	de	en	6	0.81928	0.49528
8	de	no	4	0.57598	-0.01077
9	de	dk	5	0.91363	0.12859
10	de	nl	5	0.91057	0.13165
11	fr	en	6	1.08924	0.22532
12	fr	no	6	1.43140	-0.11684
13	fr	dk	6	1.16571	0.14885
14	fr	nl	9	2.74432	0.06741
15	fr	de	7	1.90852	-0.01255
16	es	en	6	1.15668	0.15789
17	es	no	6	1.44474	-0.13018
18	es	dk	5	1.14337	-0.10115
19	es	nl	9	2.75659	0.05514
20	es	de	7	1.96444	-0.06847
21	es	fr	2	0.25061	0.13863
22	it	en	6	1.20574	0.10882
23	it	no	6	1.42696	-0.11240

24	it	dk	5	1.10041	-0.05819
25	it	nl	9	2.71570	0.09603
26	it	de	7	1.97877	-0.08280
27	it	fr	1	0.50554	-0.11631
28	it	es	1	0.26063	0.12861
29	pl	en	7	1.72707	0.16890
30	pl	no	7	1.95373	-0.05776
31	pl	dk	6	1.62422	-0.30966
32	pl	nl	10	3.23354	0.24178
33	pl	de	8	2.50680	-0.14324
34	pl	fr	5	0.81691	0.22530
35	pl	es	3	0.61292	-0.04771
36	pl	it	4	0.52808	0.03712
37	hu	en	9	2.91842	-0.10669
38	hu	no	8	2.51545	-0.15189
39	hu	dk	8	2.58067	-0.21711
40	hu	nl	8	2.02361	0.33995
41	hu	de	9	2.56879	0.24294
42	hu	fr	10	3.62303	-0.14771
43	hu	es	10	3.49132	-0.01600
44	hu	it	10	3.30518	0.17014
45	hu	pl	10	3.66676	-0.19144
46	sf	en	9	2.89228	-0.08055
47	sf	no	9	2.67996	0.13177
48	sf	dk	9	2.48611	0.32562
49	sf	nl	9	3.15422	-0.34249
50	sf	de	9	3.10815	-0.29643
51	sf	fr	9	2.94928	-0.13755
52	sf	es	9	2.72040	0.09132
53	sf	it	8	2.46255	-0.09899
54	sf	pl	9	2.54350	0.26823
55	sf	hu	8	2.00452	0.35904

Obs	_DIMENS_	_MATRIX_	_TYPE_	lang	_NAME_	Dim1	Dim2
1	2	.	CRITERION			0.08872	.
2	2	.	CONFIG	en	en	0.30099	0.65225
3	2	.	CONFIG	no	no	-0.11417	0.58068
4	2	.	CONFIG	dk	dk	0.08220	0.30450
5	2	.	CONFIG	nl	nl	-1.30472	1.13912
6	2	.	CONFIG	de	de	-0.39587	1.08307
7	2	.	CONFIG	fr	fr	1.22529	0.07596
8	2	.	CONFIG	es	es	1.12900	-0.15541
9	2	.	CONFIG	it	it	0.96244	-0.35587
10	2	.	CONFIG	pl	pl	1.33098	-0.73409
11	2	.	CONFIG	hu	hu	-2.33345	-0.60349
12	2	.	CONFIG	sf	sf	-0.88268	-1.98673



NOTE: 1 obs had missing values.