

```
# Step 1: Load packages and set the seed.
```

```
library(smacof)
```

```
## Loading required package: plotrix
```

```
## Loading required package: colorspace
```

```
## Loading required package: e1071
```

```
##
```

```
## Attaching package: 'smacof'
```

```
## The following object is masked from 'package:base':
```

```
##
```

```
##      transform
```

```
set.seed(1)
```

```
# Import Data from CSV with header
```

```
df <- read.csv(file.choose(),header=TRUE) ## Choose TP3_Prefs.csv file
```

```
head(df)
```

```
##      Paramount TheTop Bistro1245 TheSwamp Mildreds Emilianos Leos706 Beef0Bradys
## 1          12   11.0          10          6      8.0          7          9          5.0
## 2          12   11.0           7          6      9.0          8         10          3.0
## 3          11   10.0           9          6      7.0          8         10          4.0
## 4           1    3.0           2          4      6.5         10          9          5.0
## 5          12   11.0           8          6      9.0          7         10          4.0
## 6           5    9.5          10         11      3.0          6          8          9.5
##      TiAmo Carrabbas LasMargaritas Shoneys
## 1    3.0          2.0           4      1.0
## 2    4.0          2.0           5      1.0
## 3    2.5          2.5           5      1.0
## 4    8.0         12.0          11      6.5
## 5    3.0          2.0           5      1.0
## 6    1.0          2.0           7      4.0
```

```
summary(df)
```

```
##      Paramount      TheTop      Bistro1245      TheSwamp
## Min.   : 1.000   Min.   : 2.00   Min.   : 1.000   Min.   : 1.000
## 1st Qu.: 1.000   1st Qu.: 2.25   1st Qu.: 3.000   1st Qu.: 4.000
## Median : 5.500   Median : 8.50   Median : 7.000   Median : 6.000
## Mean   : 5.933   Mean   : 7.05   Mean   : 6.367   Mean   : 6.033
## 3rd Qu.:10.750   3rd Qu.:11.00   3rd Qu.: 9.750   3rd Qu.: 7.000
## Max.   :12.000   Max.   :12.00   Max.   :12.000   Max.   :11.000
##      Mildreds      Emilianos      Leos706      Beef0Bradys
## Min.   : 2.000   Min.   : 4.00   Min.   : 6.000   Min.   : 2.00
## 1st Qu.: 4.000   1st Qu.: 6.00   1st Qu.: 8.000   1st Qu.: 4.00
## Median : 6.000   Median : 8.00   Median : 8.000   Median : 5.00
## Mean   : 6.433   Mean   : 8.00   Mean   : 8.433   Mean   : 6.05
## 3rd Qu.: 8.750   3rd Qu.: 9.75   3rd Qu.: 9.000   3rd Qu.: 9.00
## Max.   :12.000   Max.   :12.00   Max.   :12.000   Max.   :12.00
##      TiAmo      Carrabbas      LasMargaritas      Shoneys
## Min.   : 1.000   Min.   : 2.000   Min.   : 4.0    Min.   : 1.000
## 1st Qu.: 2.000   1st Qu.: 2.625   1st Qu.: 5.0    1st Qu.: 1.000
## Median : 5.000   Median : 4.750   Median : 7.0    Median : 3.500
## Mean   : 4.783   Mean   : 6.167   Mean   : 7.4    Mean   : 5.217
## 3rd Qu.: 7.000   3rd Qu.:10.000   3rd Qu.:10.0    3rd Qu.:10.750
## Max.   :12.000   Max.   :12.000   Max.   :12.0    Max.   :12.000
```

```
# Convert all columns to numeric
df[] <- lapply(df, as.numeric)
```

```
df_rev <- 13 - df
head(df_rev)
```

```
##      Paramount TheTop Bistro1245 TheSwamp Mildreds Emilianos Leos706 Beef0Bradys
## 1           1    2.0           3          7        5.0           6          4          8.0
## 2           1    2.0           6          7        4.0           5          3         10.0
## 3           2    3.0           4          7        6.0           5          3          9.0
## 4          12   10.0          11          9        6.5           3          4          8.0
## 5           1    2.0           5          7        4.0           6          3          9.0
## 6           8    3.5           3          2       10.0           7          5          3.5
##      TiAmo Carrabbas LasMargaritas Shoneys
## 1   10.0       11.0           9       12.0
## 2    9.0       11.0           8       12.0
## 3   10.5       10.5           8       12.0
## 4    5.0        1.0           2        6.5
## 5   10.0       11.0           8       12.0
## 6   12.0       11.0           6        9.0
```

```
str(df_rev)
```

```
## 'data.frame':   30 obs. of  12 variables:
## $ Paramount    : num  1 1 2 12 1 8 12 12 12 12 ...
## $ TheTop       : num  2 2 3 10 2 3.5 11 9 10 11 ...
## $ Bistro1245   : num  3 6 4 11 5 3 10 8 11 10 ...
## $ TheSwamp     : num  7 7 7 9 7 2 8 6 9 6 ...
## $ Mildreds     : num  5 4 6 6.5 4 10 9 11 8 9 ...
## $ Emilianos    : num  6 5 5 3 6 7 7 7 6 7 ...
## $ Leos706      : num  4 3 3 4 3 5 5 5 5 5 ...
## $ Beef0Bradys  : num  8 10 9 8 9 3.5 4 3 7 4 ...
## $ TiAmo        : num  10 9 10.5 5 10 12 6 10 4 8 ...
## $ Carrabbas    : num  11 11 10.5 1 11 11 2 4 1 3 ...
## $ LasMargaritas: num  9 8 8 2 8 6 3 1 2 2 ...
## $ Shoneys      : num  12 12 12 6.5 12 9 1 2 3 1 ...
```

```
un_df_rev <- unfolding(df_rev, type="interval")
un_df_rev
```

```
##
## Call: unfolding(delta = df_rev, type = "interval")
##
## Model:                Rectangular smacof
## Number of subjects:   30
## Number of objects:    12
## Transformation:       interval
## Conditionality:       matrix
##
## Stress-1 value:       0.164483
## Penalized Stress:     0.00111
## Number of iterations: 1632
```

```
summary(un_df_rev)
```

```

##
## Subject configuration (rows):
##      D1      D2
## 1  -0.6318  0.0555
## 2  -0.6154  0.2677
## 3  -0.6332  0.0665
## 4   0.5477  0.2767
## 5  -0.6079  0.1317
## 6  -0.3083 -0.6474
## 7   0.7200 -0.0371
## 8   0.6172 -0.2847
## 9   0.7085  0.1217
## 10  0.7018 -0.1173
## 11 -0.6788 -0.2952
## 12  0.2101 -0.6632
## 13 -0.6493 -0.2494
## 14  0.7115  0.0631
## 15 -0.6691  0.0185
## 16 -0.5436  0.4485
## 17 -0.5586  0.4298
## 18  0.7128 -0.0116
## 19  0.7018 -0.1173
## 20  0.1021  0.7230
## 21  0.6935 -0.1129
## 22  0.5146  0.5211
## 23 -0.4912  0.4959
## 24 -0.3436 -0.6331
## 25 -0.2594 -0.6003
## 26 -0.4490 -0.5713
## 27 -0.6615  0.2626
## 28 -0.6205  0.1085
## 29  0.7207  0.0855
## 30 -0.2866  0.4754
##
## Object configuration (columns):
##      D1      D2
## Paramount    -0.8202  0.2749
## TheTop        -0.7070 -0.0731
## Bistro1245    -0.5493 -0.5290
## TheSwamp      -0.1296 -0.7256
## Mildreds      -0.3644  0.5817
## Emilianos     -0.4134  0.1883
## Leos706       -0.0492  0.1023
## Beef0Bradys   0.3559 -0.6428
## TiAmo         0.4668  0.8592
## Carrabbas     0.7403  0.1198
## LasMargaritas 0.5612 -0.0233
## Shoneys       0.9088 -0.1325
##
##
## Stress per point rows:
##      SPP SPP(%)

```

```

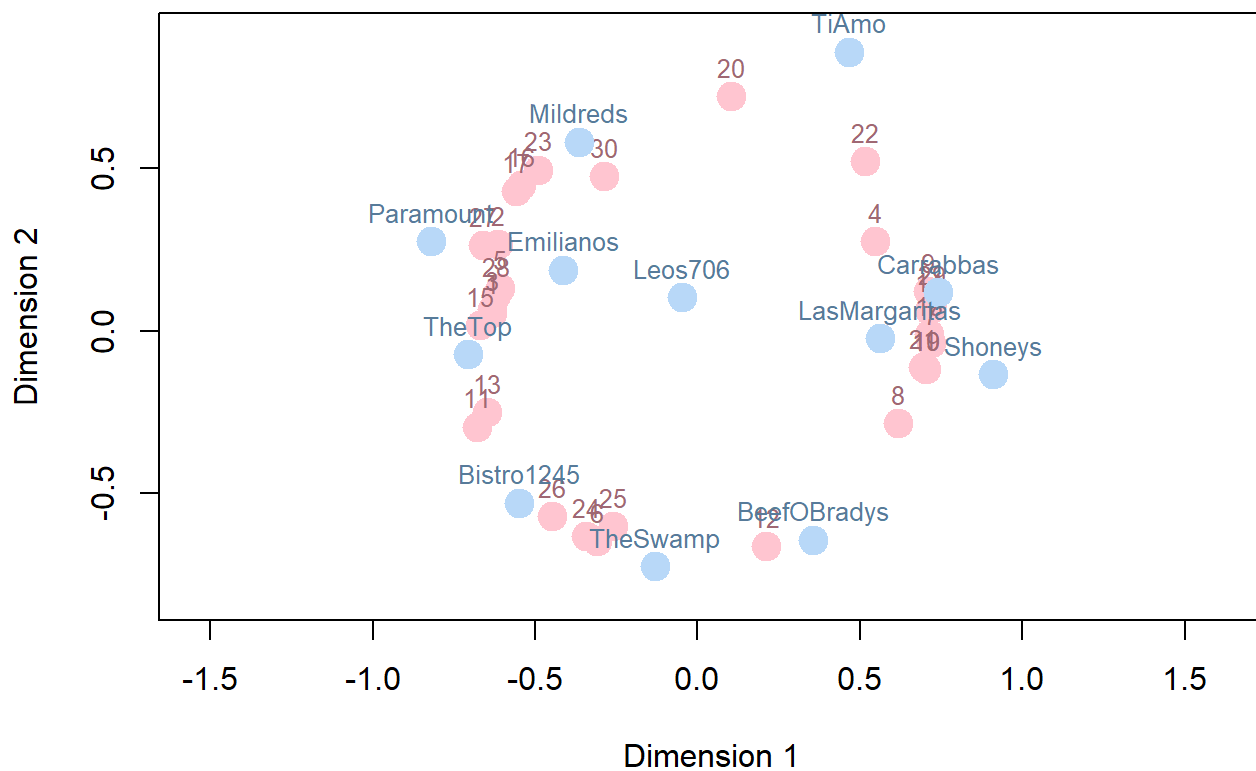
## 17 1.4798 1.4798
## 15 1.4969 1.4969
## 16 1.5985 1.5985
## 13 1.6304 1.6304
## 23 1.8042 1.8042
## 10 1.9439 1.9439
## 19 1.9439 1.9439
## 7 1.9719 1.9719
## 11 1.9914 1.9914
## 14 2.0994 2.0994
## 29 2.1271 2.1271
## 27 2.1895 2.1895
## 18 2.2001 2.2001
## 9 2.3662 2.3662
## 8 2.4041 2.4041
## 21 2.5067 2.5067
## 26 2.8358 2.8358
## 6 3.0818 3.0818
## 3 3.5971 3.5971
## 24 3.6301 3.6301
## 2 3.6394 3.6394
## 12 3.8467 3.8467
## 1 4.5963 4.5963
## 5 4.9042 4.9042
## 20 4.9739 4.9739
## 28 5.0000 5.0000
## 22 5.6166 5.6166
## 4 6.6199 6.6199
## 30 6.7633 6.7633
## 25 9.1411 9.1411
##
## Stress per point columns:
##      SPP SPP(%)
## 17 1.4798 1.4798
## 15 1.4969 1.4969
## 16 1.5985 1.5985
## 13 1.6304 1.6304
## 23 1.8042 1.8042
## 10 1.9439 1.9439
## 19 1.9439 1.9439
## 7 1.9719 1.9719
## 11 1.9914 1.9914
## 14 2.0994 2.0994
## 29 2.1271 2.1271
## 27 2.1895 2.1895
## 18 2.2001 2.2001
## 9 2.3662 2.3662
## 8 2.4041 2.4041
## 21 2.5067 2.5067
## 26 2.8358 2.8358
## 6 3.0818 3.0818
## 3 3.5971 3.5971

```

```
## 24 3.6301 3.6301
## 2 3.6394 3.6394
## 12 3.8467 3.8467
## 1 4.5963 4.5963
## 5 4.9042 4.9042
## 20 4.9739 4.9739
## 28 5.0000 5.0000
## 22 5.6166 5.6166
## 4 6.6199 6.6199
## 30 6.7633 6.7633
## 25 9.1411 9.1411
```

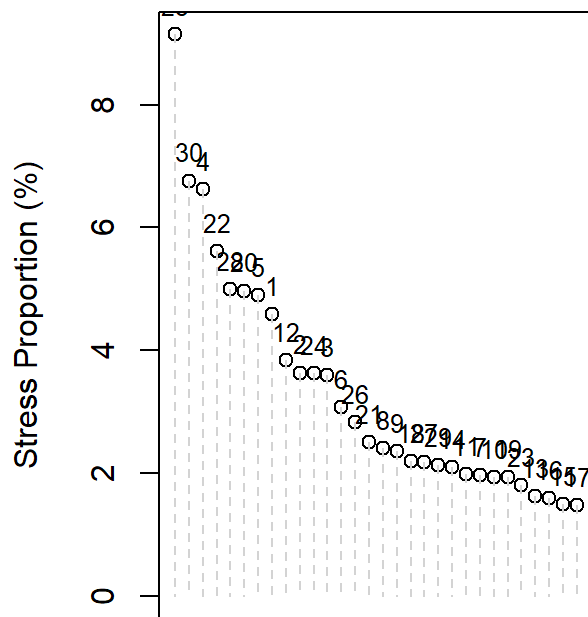
```
plot(un_df_rev, pch=19, cex=2)
```

Joint Configuration Plot

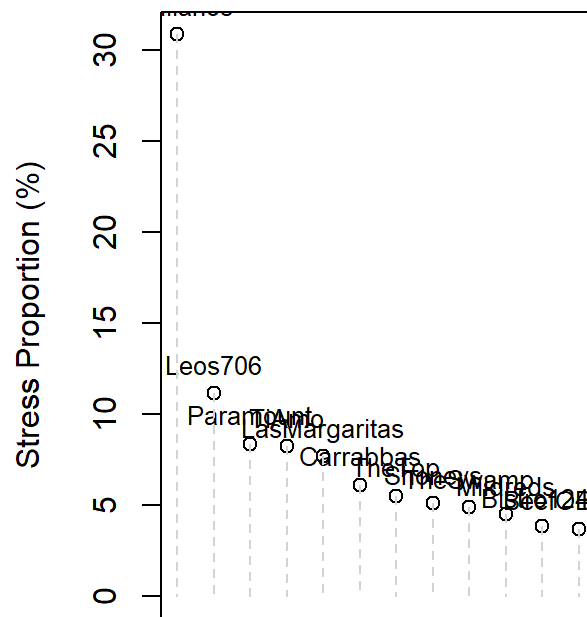


```
plot(un_df_rev, "stressplot")
```

Stress Decomposition Chart - Row Stress Decomposition Chart - Column



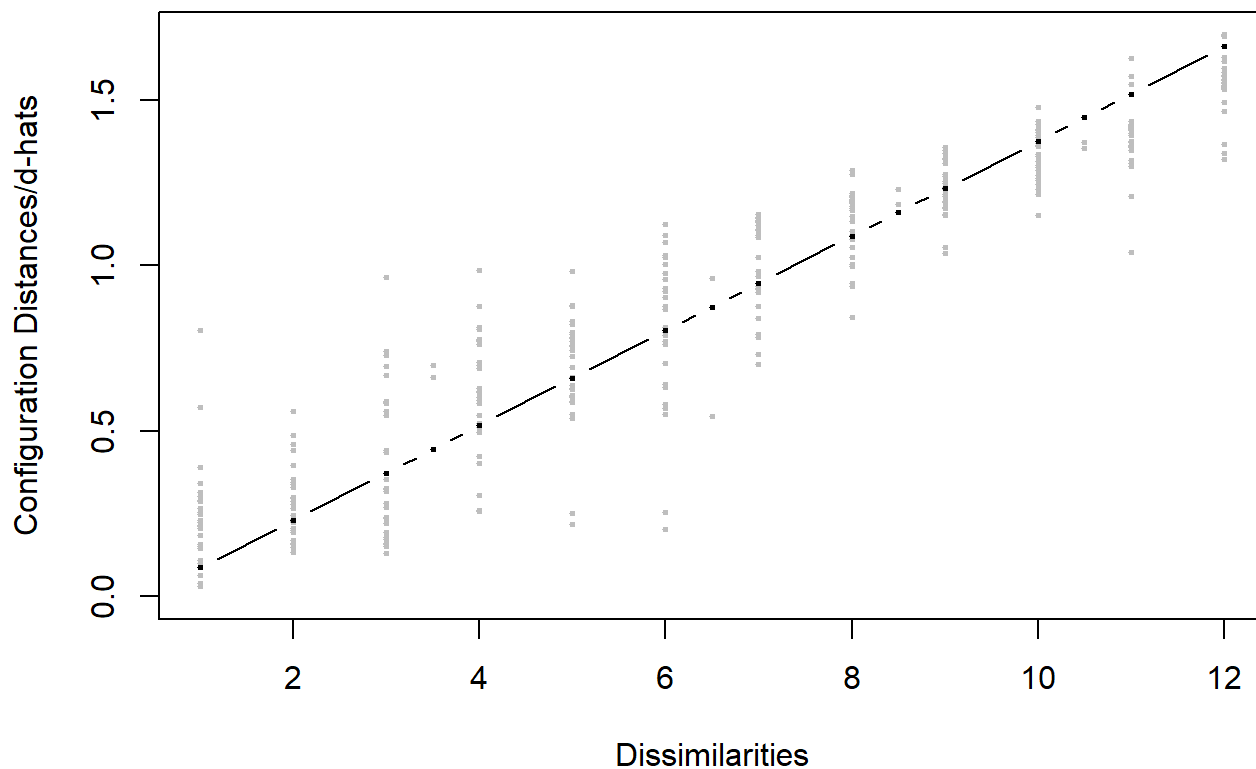
Row Objects



Column Objects

```
plot(un_df_rev, "Shepard")
```

Shepard Diagram



2D Interval Row-Conditional Unfolding Model

```
un_df_rev.row <- unfolding(df_rev, type="interval", conditionality = "row")
```

```
## Warning in unfolding(df_rev, type = "interval", conditionality = "row"):  
## Iteration limit reached! Increase itmax argument!
```

```
un_df_rev.row
```

```
##  
## Call: unfolding(delta = df_rev, type = "interval", conditionality = "row")  
##  
## Model: Rectangular smacof  
## Number of subjects: 30  
## Number of objects: 12  
## Transformation: interval  
## Conditionality: row  
##  
## Stress-1 value: 0.087094  
## Penalized Stress: 0.519606  
## Number of iterations: 10000
```

```
summary(un_df_rev.row)
```



```

##
## Subject configuration (rows):
##      D1      D2
## 1  -0.8593  0.0073
## 2  -0.6500  0.1761
## 3  -0.5746  0.0314
## 4   0.4032  0.2606
## 5  -0.6809  0.1108
## 6  -0.2363 -0.5397
## 7   0.8815 -0.0560
## 8   0.5248 -0.3181
## 9   0.7738  0.2254
## 10  0.7032 -0.2058
## 11 -0.8297 -0.2988
## 12  0.1871 -0.5213
## 13 -0.4891 -0.1442
## 14  0.8225  0.1382
## 15 -0.7260 -0.0457
## 16 -0.4705  0.3947
## 17 -0.6872  0.4823
## 18  0.8360 -0.0266
## 19  0.7032 -0.2058
## 20  0.1041  0.8321
## 21  0.6701 -0.1946
## 22  0.5433  0.6065
## 23 -0.5738  0.6137
## 24 -0.3272 -0.5676
## 25 -0.1297 -0.3043
## 26 -0.4591 -0.5219
## 27 -0.7339  0.2327
## 28 -0.3735  0.0264
## 29  0.9494  0.2073
## 30 -0.2107  0.2854
##
## Object configuration (columns):
##      D1      D2
## Paramount    -0.8762  0.2539
## TheTop        -0.6849 -0.1889
## Bistro1245    -0.5745 -0.5022
## TheSwamp      -0.1031 -0.7216
## Mildreds      -0.3004  0.6383
## Emilianos     -0.1200  0.2758
## Leos706       -0.0151  0.0837
## Beef0Bradys   0.2918 -0.6385
## TiAmo         0.4003  0.8226
## Carrabbas     0.6754  0.2799
## LasMargaritas 0.4399 -0.0457
## Shoneys       0.8668 -0.2572
##
##
## Stress per point rows:
##      SPP  SPP(%)

```

```

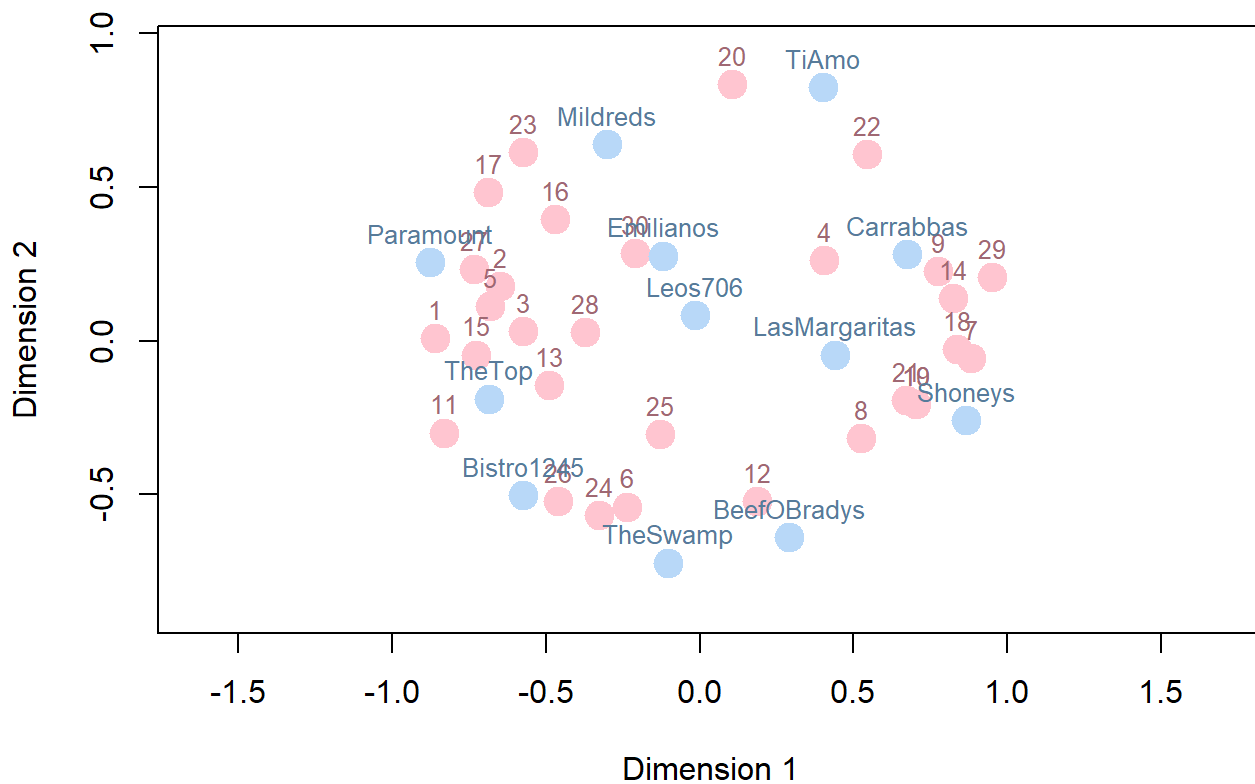
## 17  1.4185  1.4185
## 9   1.6878  1.6878
## 15  1.7060  1.7060
## 10  1.7234  1.7234
## 19  1.7234  1.7234
## 23  1.8478  1.8478
## 29  1.9134  1.9134
## 4   2.0259  2.0259
## 8   2.2155  2.2155
## 13  2.2264  2.2264
## 20  2.2798  2.2798
## 7   2.3432  2.3432
## 6   2.4218  2.4218
## 18  2.8455  2.8455
## 16  2.8645  2.8645
## 14  2.9340  2.9340
## 11  3.0718  3.0718
## 21  3.1020  3.1020
## 3   3.4459  3.4459
## 28  3.4647  3.4647
## 12  3.7958  3.7958
## 1   3.8358  3.8358
## 27  3.9954  3.9954
## 2   4.3046  4.3046
## 30  4.6409  4.6409
## 24  4.7551  4.7551
## 26  4.8939  4.8939
## 5   5.0480  5.0480
## 22  6.3346  6.3346
## 25 11.1347 11.1347
##
## Stress per point columns:
##      SPP  SPP(%)
## 17  1.4185  1.4185
## 9   1.6878  1.6878
## 15  1.7060  1.7060
## 10  1.7234  1.7234
## 19  1.7234  1.7234
## 23  1.8478  1.8478
## 29  1.9134  1.9134
## 4   2.0259  2.0259
## 8   2.2155  2.2155
## 13  2.2264  2.2264
## 20  2.2798  2.2798
## 7   2.3432  2.3432
## 6   2.4218  2.4218
## 18  2.8455  2.8455
## 16  2.8645  2.8645
## 14  2.9340  2.9340
## 11  3.0718  3.0718
## 21  3.1020  3.1020
## 3   3.4459  3.4459

```

```
## 28 3.4647 3.4647
## 12 3.7958 3.7958
## 1 3.8358 3.8358
## 27 3.9954 3.9954
## 2 4.3046 4.3046
## 30 4.6409 4.6409
## 24 4.7551 4.7551
## 26 4.8939 4.8939
## 5 5.0480 5.0480
## 22 6.3346 6.3346
## 25 11.1347 11.1347
```

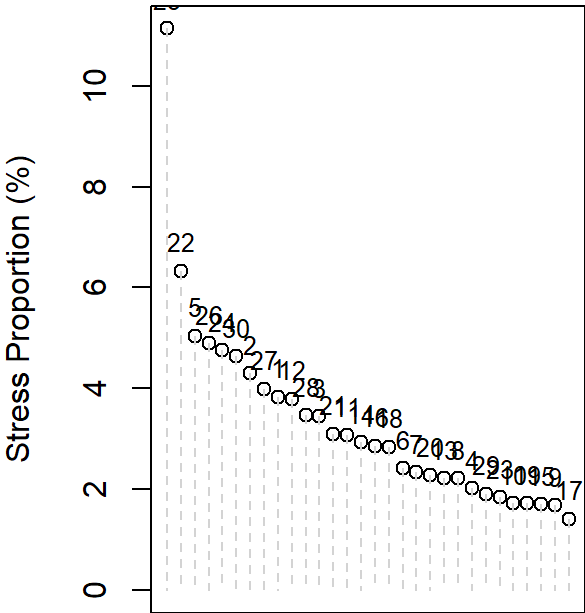
```
plot(un_df_rev.row, pch=19, cex=2)
```

Joint Configuration Plot

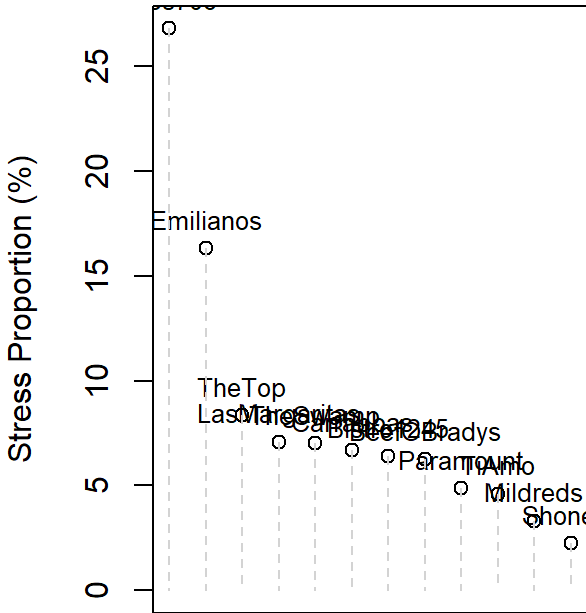


```
plot(un_df_rev.row, "stressplot")
```

Stress Decomposition Chart - Row Stress Decomposition Chart - Column



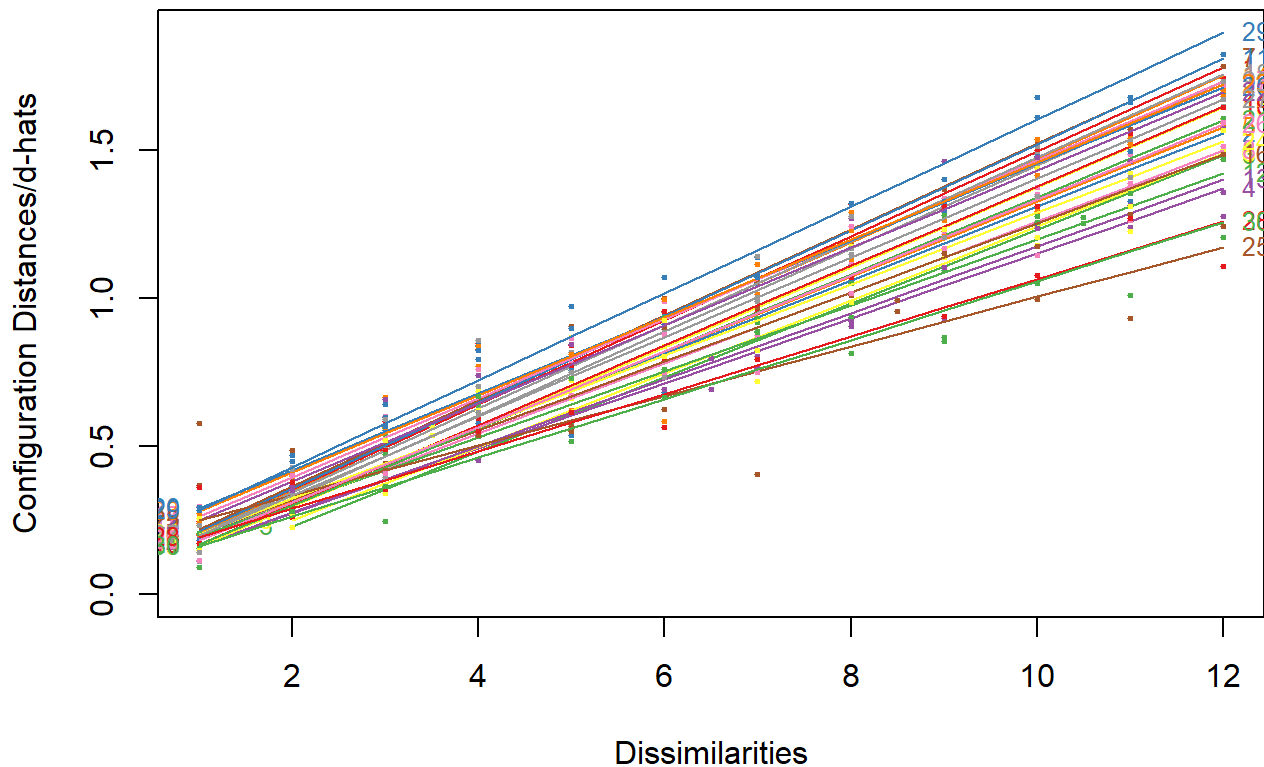
Row Objects



Column Objects

```
plot(un_df_rev.row, "Shepard")
```

Shepard Diagram



2D Ordinal Unfolding Model

```
un_df_rev.ord <- unfolding(df_rev, type="ordinal")
un_df_rev.ord
```

```
##
## Call: unfolding(delta = df_rev, type = "ordinal")
##
## Model:          Rectangular smacof
## Number of subjects: 30
## Number of objects: 12
## Transformation: ordinalp
## Conditionality: matrix
##
## Stress-1 value:  0.085273
## Penalized Stress: 1.652697
## Number of iterations: 63
```

```
summary(un_df_rev.ord)
```

```

##
## Subject configuration (rows):
##      D1      D2
## 1  -0.7341  0.0176
## 2  -0.7044  0.1715
## 3  -0.6855  0.0476
## 4   0.4841  0.3250
## 5  -0.7287  0.1054
## 6  -0.2883 -0.6202
## 7   0.7344 -0.0412
## 8   0.5859 -0.3427
## 9   0.6810  0.2011
## 10  0.6789 -0.1956
## 11 -0.6628 -0.2269
## 12  0.2576 -0.6447
## 13 -0.6290 -0.2005
## 14  0.6971  0.1319
## 15 -0.7051 -0.0670
## 16 -0.5174  0.4196
## 17 -0.5888  0.4059
## 18  0.7209 -0.0127
## 19  0.6789 -0.1956
## 20  0.1149  0.6914
## 21  0.6708 -0.1771
## 22  0.4748  0.5429
## 23 -0.4675  0.5212
## 24 -0.3422 -0.6006
## 25 -0.2139 -0.5248
## 26 -0.4850 -0.5136
## 27 -0.7057  0.2150
## 28 -0.5313  0.0455
## 29  0.7088  0.1572
## 30 -0.2697  0.4279
##
## Object configuration (columns):
##      D1      D2
## Paramount    -0.8913  0.3001
## TheTop        -0.7095 -0.1497
## Bistro1245    -0.6088 -0.4992
## TheSwamp      -0.1098 -0.7424
## Mildreds      -0.3637  0.6234
## Emilianos     -0.1673  0.2125
## Leos706       -0.0543  0.0822
## Beef0Bradys   0.3273 -0.6435
## TiAmo         0.4609  0.8440
## Carrabbas     0.7197  0.2241
## LasMargaritas 0.4689 -0.0639
## Shoneys       0.9278 -0.1876
##
##
## Stress per point rows:
##      SPP  SPP(%)

```

```

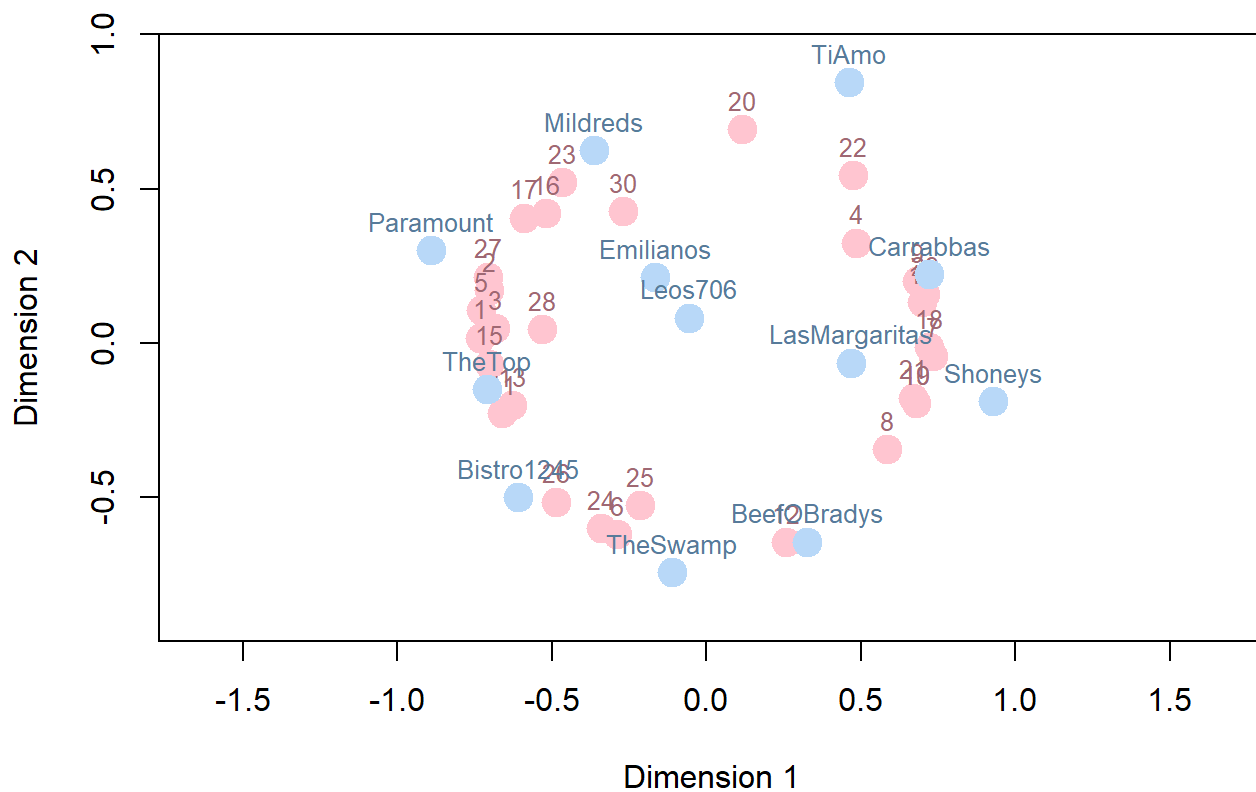
## 9 1.0955 1.0955
## 15 1.4182 1.4182
## 13 1.4444 1.4444
## 3 1.5063 1.5063
## 7 1.6205 1.6205
## 10 1.6466 1.6466
## 19 1.6466 1.6466
## 18 1.7621 1.7621
## 14 1.7652 1.7652
## 29 1.8034 1.8034
## 11 1.8146 1.8146
## 17 2.0108 2.0108
## 6 2.0749 2.0749
## 2 2.1096 2.1096
## 8 2.1173 2.1173
## 1 2.1883 2.1883
## 21 2.2182 2.2182
## 5 2.4628 2.4628
## 16 2.4798 2.4798
## 27 2.7092 2.7092
## 24 3.0689 3.0689
## 23 3.6195 3.6195
## 26 3.9501 3.9501
## 22 3.9930 3.9930
## 4 4.3041 4.3041
## 20 4.4314 4.4314
## 12 4.5913 4.5913
## 28 6.3734 6.3734
## 30 9.3812 9.3812
## 25 18.3930 18.3930
##
## Stress per point columns:
##      SPP  SPP(%)
## 9 1.0955 1.0955
## 15 1.4182 1.4182
## 13 1.4444 1.4444
## 3 1.5063 1.5063
## 7 1.6205 1.6205
## 10 1.6466 1.6466
## 19 1.6466 1.6466
## 18 1.7621 1.7621
## 14 1.7652 1.7652
## 29 1.8034 1.8034
## 11 1.8146 1.8146
## 17 2.0108 2.0108
## 6 2.0749 2.0749
## 2 2.1096 2.1096
## 8 2.1173 2.1173
## 1 2.1883 2.1883
## 21 2.2182 2.2182
## 5 2.4628 2.4628
## 16 2.4798 2.4798

```

```
## 27 2.7092 2.7092
## 24 3.0689 3.0689
## 23 3.6195 3.6195
## 26 3.9501 3.9501
## 22 3.9930 3.9930
## 4 4.3041 4.3041
## 20 4.4314 4.4314
## 12 4.5913 4.5913
## 28 6.3734 6.3734
## 30 9.3812 9.3812
## 25 18.3930 18.3930
```

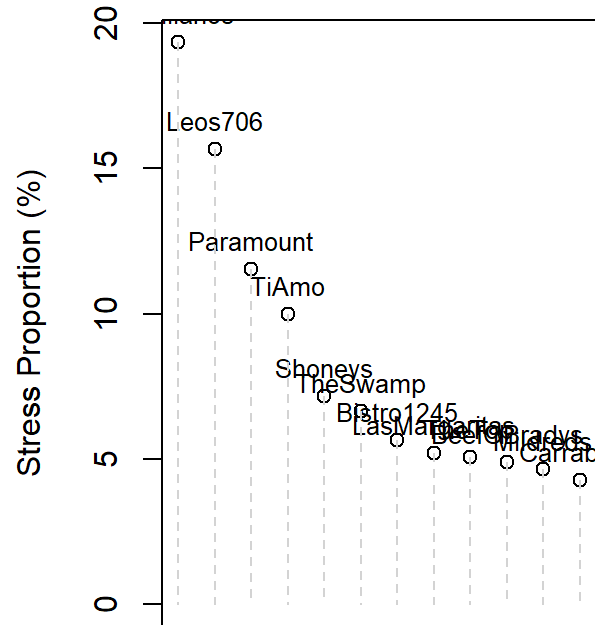
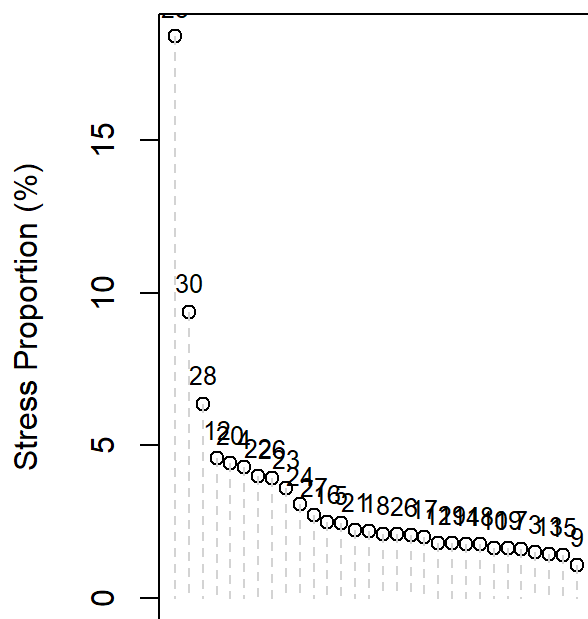
```
plot(un_df_rev.ord, pch=19, cex=2)
```

Joint Configuration Plot



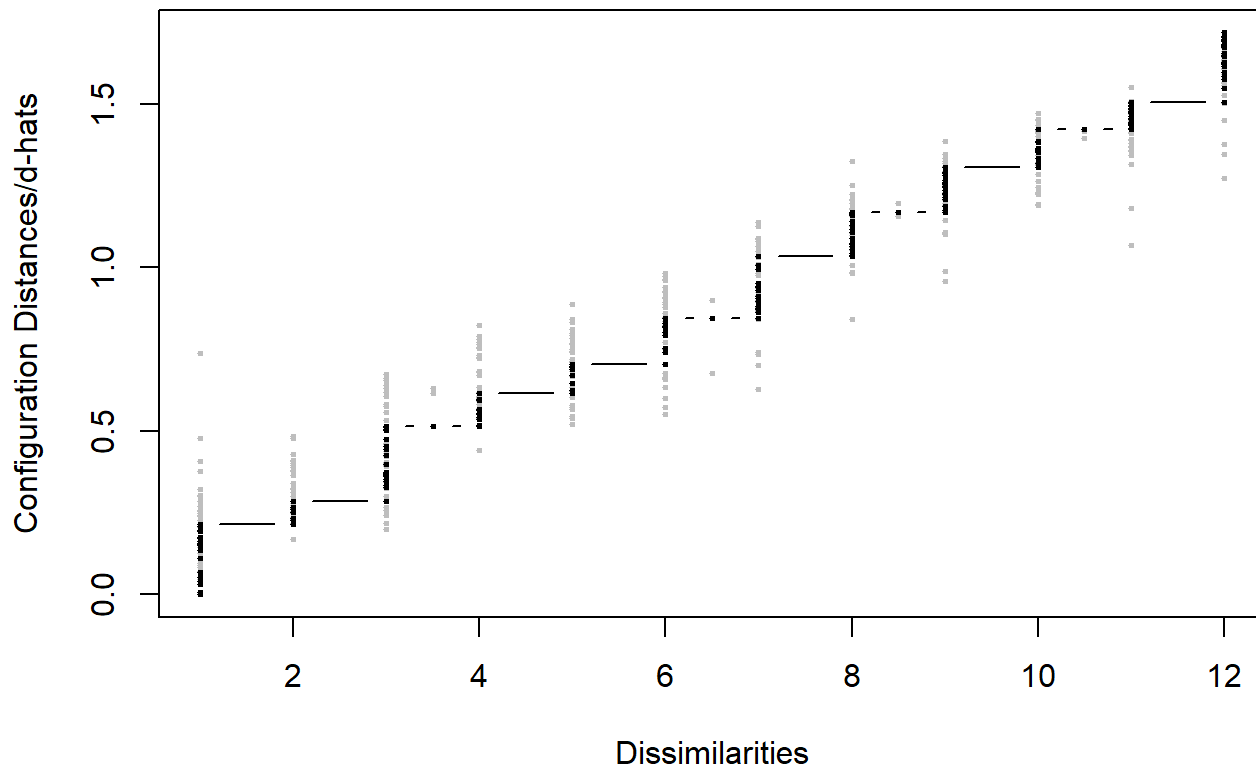
```
plot(un_df_rev.ord, "stressplot")
```


Stress Decomposition Chart - Row Stress Decomposition Chart - Column



```
plot(un_df_rev.ord, "Shepard")
```

Shepard Diagram



```
un_df_rev.ordsec <- unfolding(df_rev, type="ordinal", ties = "secondary")
un_df_rev.ordsec
```

```
##
## Call: unfolding(delta = df_rev, type = "ordinal", ties = "secondary")
##
## Model:          Rectangular smacof
## Number of subjects: 30
## Number of objects: 12
## Transformation:  ordinals
## Conditionality:   matrix
##
## Stress-1 value:    0.144163
## Penalized Stress:  0.001059
## Number of iterations: 1491
```

2D Ordinal Row-Conditional Unfolding Model (We're choosing this model!)

```
un_df_rev.ordrow <- unfolding(df_rev, type="ordinal", conditionality = "row")
```

```
## Warning in unfolding(df_rev, type = "ordinal", conditionality = "row"):
## Iteration limit reached! Increase itmax argument!
```

```
un_df_rev.ordrow
```

```
##  
## Call: unfolding(delta = df_rev, type = "ordinal", conditionality = "row")  
##  
## Model:                Rectangular smacof  
## Number of subjects:   30  
## Number of objects:    12  
## Transformation:       ordinalp  
## Conditionality:       row  
##  
## Stress-1 value:       0.00596  
## Penalized Stress:     1.886149  
## Number of iterations: 10000
```

```
summary(un_df_rev.ordrow)
```

```

##
## Subject configuration (rows):
##      D1      D2
## 1  -0.9256 -0.0131
## 2  -0.5641  0.1876
## 3  -0.6698  0.0579
## 4   0.4400  0.3438
## 5  -0.7375  0.0903
## 6  -0.1696 -0.3610
## 7   0.9030 -0.0032
## 8   0.4412 -0.2292
## 9   0.6857  0.2119
## 10  0.7866 -0.1833
## 11 -0.7647 -0.2108
## 12  0.1385 -0.3673
## 13 -0.4278 -0.0826
## 14  0.9171  0.0907
## 15 -0.7439 -0.0865
## 16 -0.4437  0.2727
## 17 -0.5780  0.3570
## 18  0.8446  0.0390
## 19  0.7866 -0.1833
## 20  0.2468  1.2749
## 21  0.5881 -0.1266
## 22  1.0474  1.0318
## 23 -0.4883  0.5543
## 24 -0.4337 -0.6122
## 25 -0.0837 -0.2108
## 26 -0.4353 -0.5441
## 27 -0.9985  0.2359
## 28 -0.2732  0.0026
## 29  1.1984  0.1532
## 30 -0.1189  0.3037
##
## Object configuration (columns):
##      D1      D2
## Paramount    -0.8014  0.2584
## TheTop        -0.5509 -0.1496
## Bistro1245    -0.4290 -0.5435
## TheSwamp      -0.0405 -0.6570
## Mildreds      -0.2279  0.5779
## Emilianos     -0.0748  0.2824
## Leos706       -0.0342  0.2257
## Beef0Bradys   0.1625 -0.6218
## TiAmo         0.3165  0.8305
## Carrabbas     0.5602  0.2243
## LasMargaritas 0.3912 -0.1497
## Shoneys       0.7284 -0.2776
##
##
## Stress per point rows:
##      SPP  SPP(%)

```

```

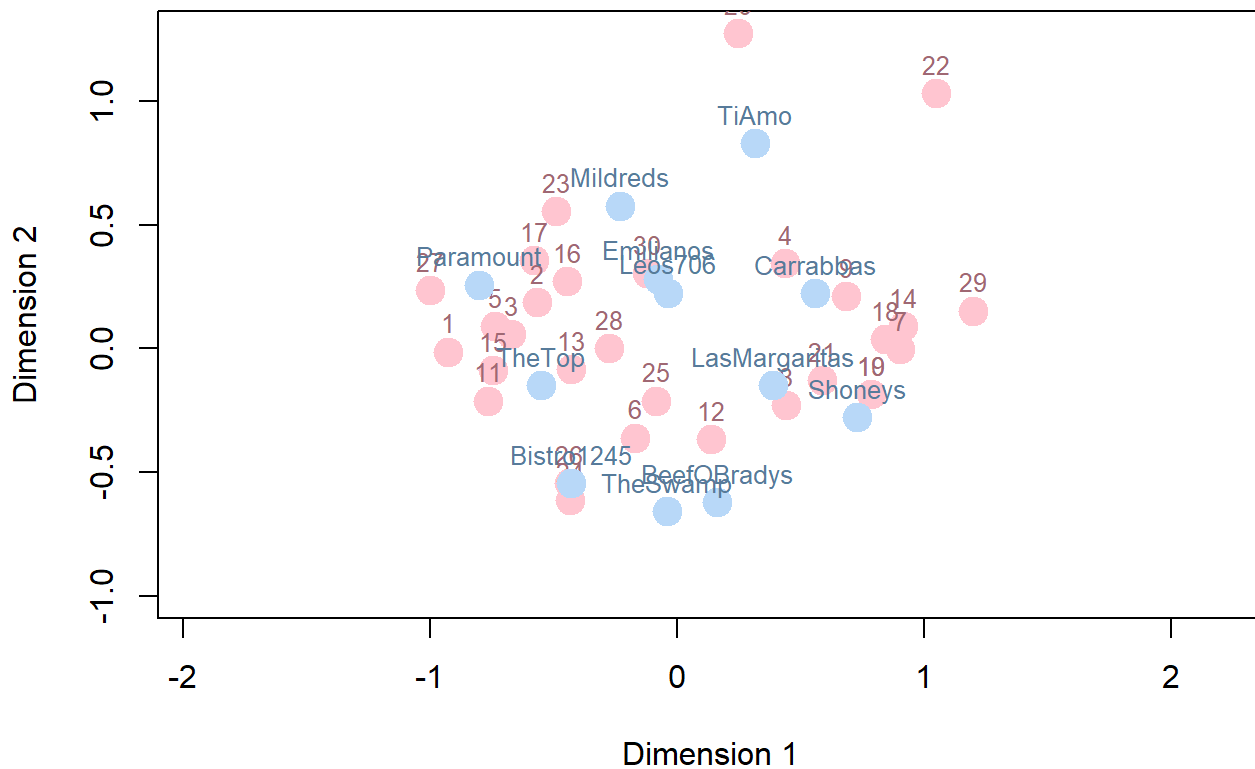
## 15  0.0022  0.0022
## 23  0.0024  0.0024
## 9   0.0025  0.0025
## 10  0.0026  0.0026
## 19  0.0026  0.0026
## 18  0.0032  0.0032
## 7   0.0046  0.0046
## 27  0.0100  0.0100
## 17  0.0214  0.0214
## 30  0.0508  0.0508
## 13  0.1625  0.1625
## 11  0.2196  0.2196
## 6   0.2741  0.2741
## 20  0.6137  0.6137
## 29  1.0970  1.0970
## 1   1.9514  1.9514
## 3   1.9619  1.9619
## 22  2.1340  2.1340
## 8   2.7245  2.7245
## 5   2.8650  2.8650
## 16  3.4052  3.4052
## 4   3.5039  3.5039
## 2   4.2382  4.2382
## 26  4.4869  4.4869
## 24  4.9924  4.9924
## 28  5.2673  5.2673
## 14  6.6049  6.6049
## 12 11.5668 11.5668
## 25 17.2896 17.2896
## 21 24.5386 24.5386
##
## Stress per point columns:
##      SPP  SPP(%)
## 15  0.0022  0.0022
## 23  0.0024  0.0024
## 9   0.0025  0.0025
## 10  0.0026  0.0026
## 19  0.0026  0.0026
## 18  0.0032  0.0032
## 7   0.0046  0.0046
## 27  0.0100  0.0100
## 17  0.0214  0.0214
## 30  0.0508  0.0508
## 13  0.1625  0.1625
## 11  0.2196  0.2196
## 6   0.2741  0.2741
## 20  0.6137  0.6137
## 29  1.0970  1.0970
## 1   1.9514  1.9514
## 3   1.9619  1.9619
## 22  2.1340  2.1340
## 8   2.7245  2.7245

```

```
## 5 2.8650 2.8650
## 16 3.4052 3.4052
## 4 3.5039 3.5039
## 2 4.2382 4.2382
## 26 4.4869 4.4869
## 24 4.9924 4.9924
## 28 5.2673 5.2673
## 14 6.6049 6.6049
## 12 11.5668 11.5668
## 25 17.2896 17.2896
## 21 24.5386 24.5386
```

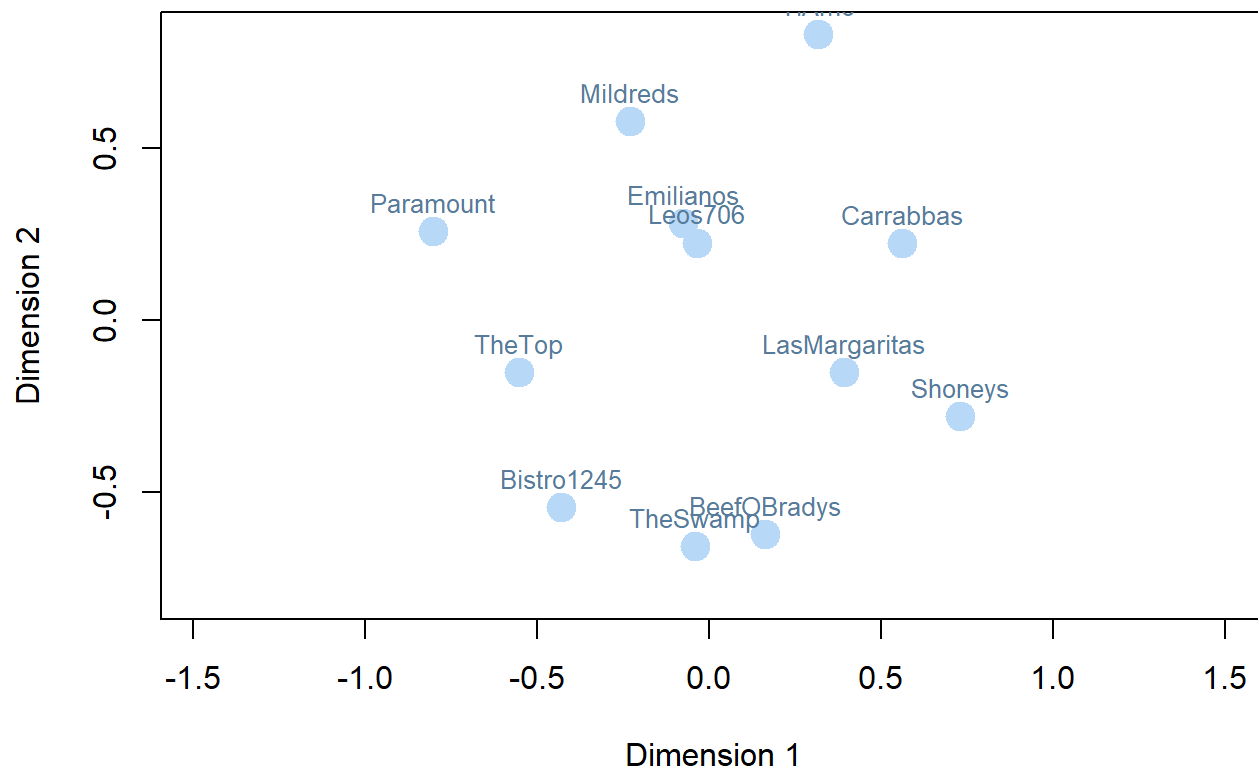
```
plot(un_df_rev.ordrow, pch=19, cex=2)
```

Joint Configuration Plot



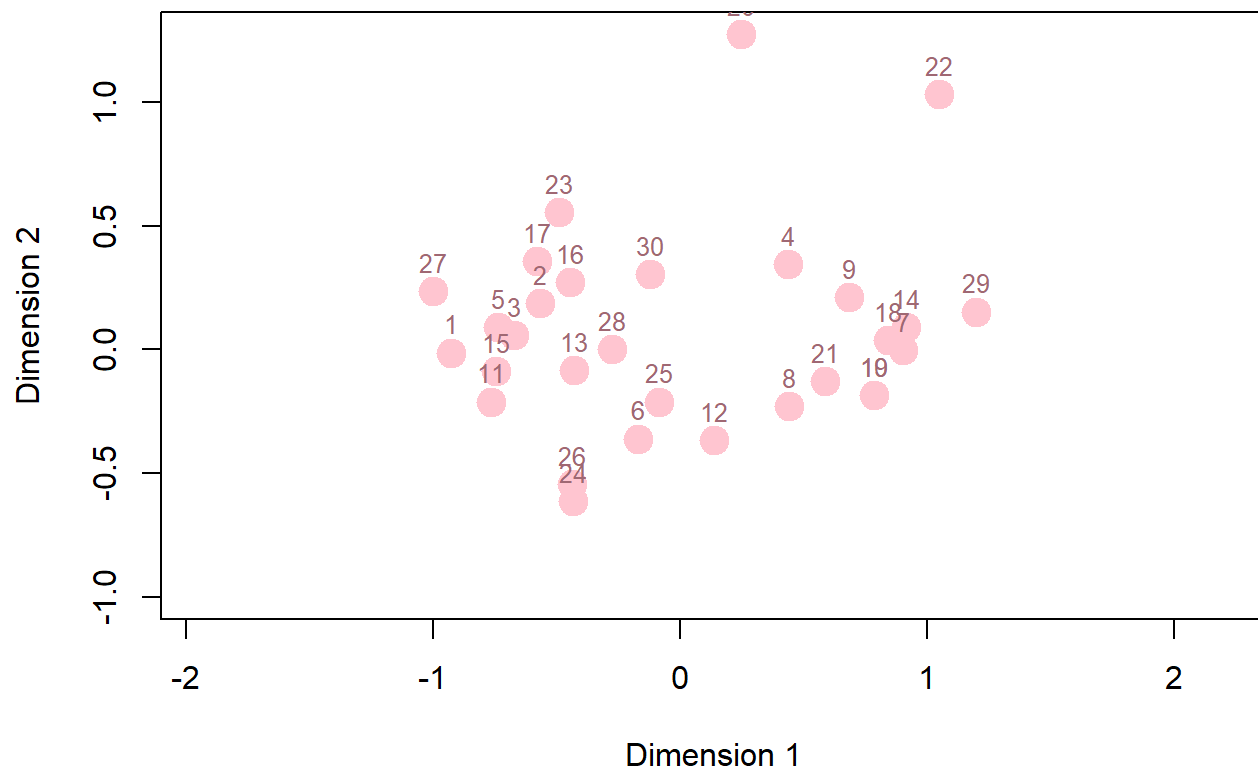
```
plot(un_df_rev.ordrow, pch=19, cex=2, what="columns")
```

Configuration Plot - Columns



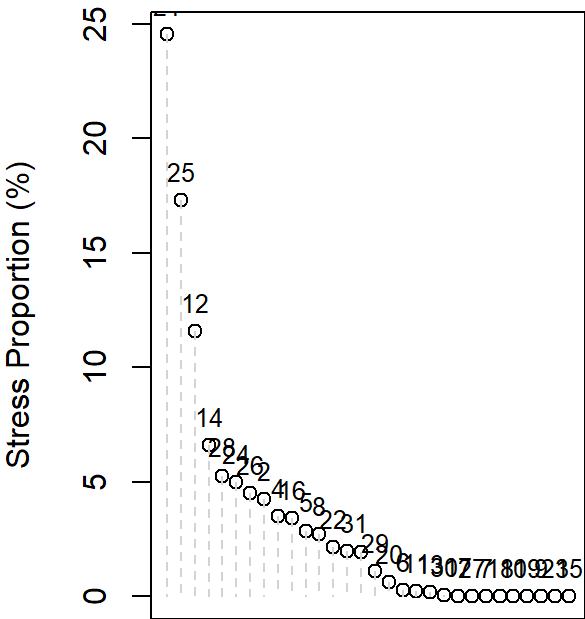
```
plot(un_df_rev.ordrow, pch=19, cex=2, what = "rows")
```

Configuration Plot - Rows

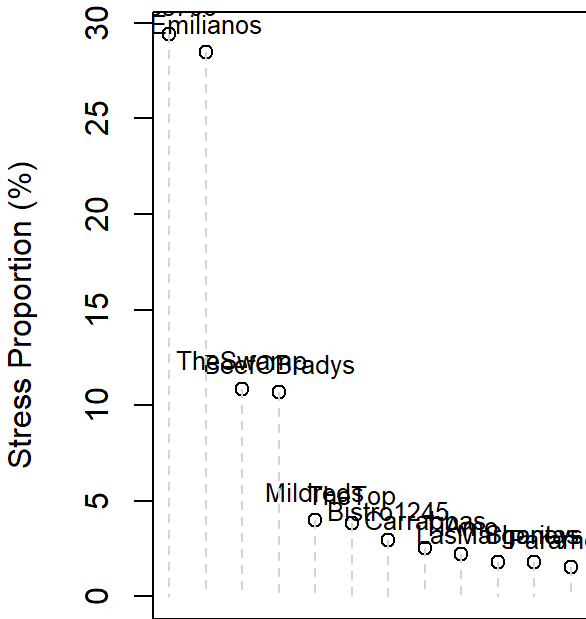


```
plot(un_df_rev.ordrow, "stressplot")
```


Stress Decomposition Chart - Row Stress Decomposition Chart - Column



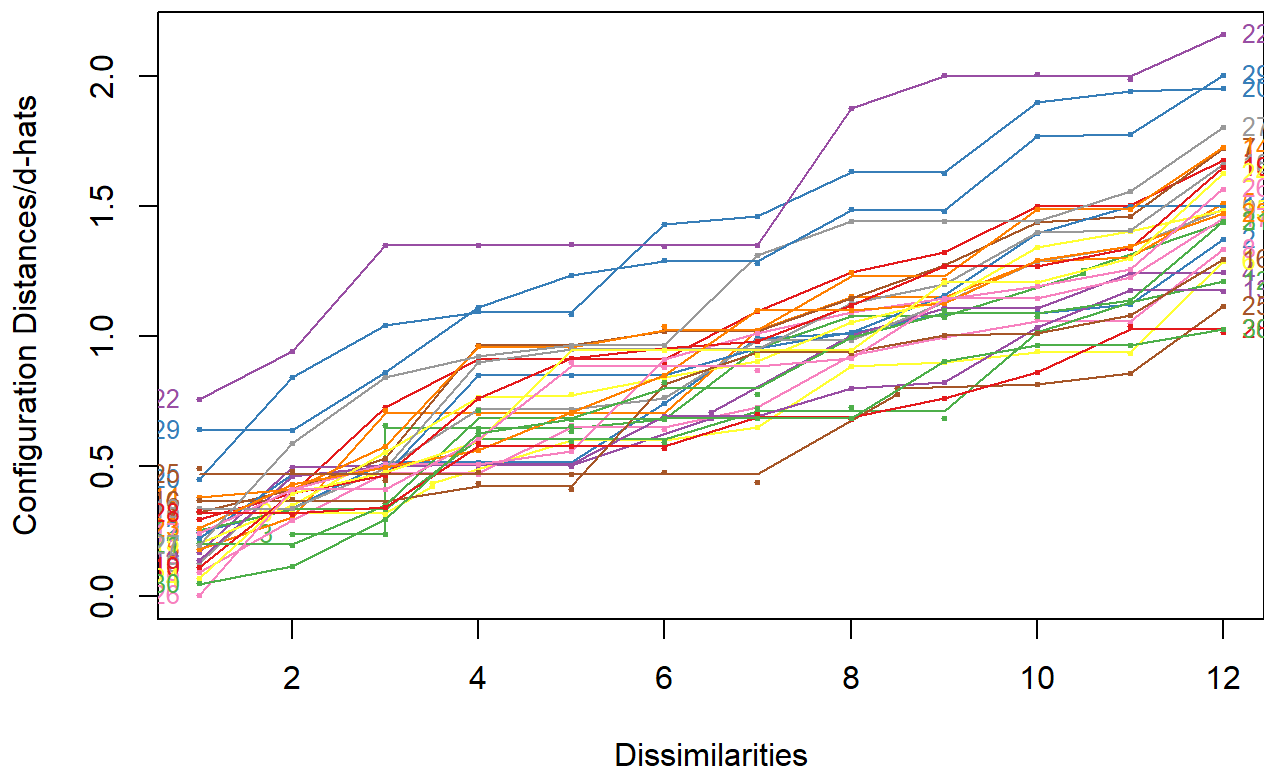
Row Objects



Column Objects

```
plot(un_df_rev.ordrow,"Shepard")
```

Shepard Diagram



```
un_df_rev.ordrowsec <- unfolding(df_rev, type="ordinal", conditionality = "row", ties =
"secondary")
```

```
## Warning in unfolding(df_rev, type = "ordinal", conditionality = "row", ties =
## "secondary"): Iteration limit reached! Increase itmax argument!
```

```
un_df_rev.ordrowsec
```

```
##
## Call: unfolding(delta = df_rev, type = "ordinal", conditionality = "row",
##   ties = "secondary")
##
## Model:                Rectangular smacof
## Number of subjects:    30
## Number of objects:     12
## Transformation:        ordinals
## Conditionality:        row
##
## Stress-1 value:        0.00968
## Penalized Stress:      1.637028
## Number of iterations:  10000
```

```
plot(un_df_rev.ordrowsec, pch=19, cex=2)
```

Joint Configuration Plot

