Correlation calculator

This tool can be used to:

- Calculate parametric (Pearson's) correlation.
- Calculate non-parametric (Spearman's) correlation.
- Produce a correlation matrix.
- Visualize correlation.

Instructions:

1) **Prepare dataset in the following format**.

Column 1: unique IDs
(no spaces or hyphens)

Columns with two or more
linguistic variables
(relative frequencies)

Row 1: header with
variable names (no
spaces or hyphens)

	File	Nouns	Adjectives	Verbs	Pronouns	Coordinators
1	File	Nouns	Adjectives	Verbs	Pronouns	Coordinators
2	BE_A01	196.3221	66.10338	156.0636	56.16302	33.79722
3	BE_A02	205.9146	74.47974	182.9135	49.83571	27.9299
4	BE_A03	249.	79.65032	192.3264	31.08305	28.65469
5	BE_A04	197.			103	23.86872
6	BE_A05	220.			722	25.93361
7	BE_A06	245.			107	31.9423
8	BE_A07	221.			803	24.73498
9	BE_A08	197.6927	75.51127	157.3152	54.53592	29.88988
10	BE_A09	203.869	66.96429	207.3413	59.52381	30.25794
11	BE_A10	231.3612	54.83405	182.7802	50.02405	19.24002
12	BE_A11	240.8223	54.33186	173.2746	30.34753	29.85805

2) **Copy and Paste the data into the Cluster tool.**

Correlation calculator Ⓡ	Clusters Ⓡ	MD analysis Ⓡ	▶ Videos

1. Paste tab delimited data including header row and id column. For help click here.

```
File    Nouns    Adjectives    Verbs        Pronouns        Coordinators
BE_A01  196.3220676    66.10337972    156.0636183    56.16302187    33.7972167
BE_A02  205.9145674    74.47973713    182.9134721    49.83570646    27.92990142
BE_A03  249.6357455    79.65031569    192.326372     31.08305002    28.65468674
BE_A04  197.4142218    79.56240676    189.9552461    50.72103431    23.86872203
BE_A05  220.9543568    65.87136929    168.5684647    51.86721992    25.93360996
BE_A06  245.2344152    70.58217414    185.9866048    41.73106646    31.94229778
BE_A07  221.1004543    77.23372034    151.9434629    41.8980313     24.73498233
BE_A08  197.6927111    75.51127425    157.3151547    54.53592029    29.88987939
BE_A09  203.8690476    66.96428571    207.3412698    59.52380952    30.25793651
BE_A10  231.3612314    54.83405483    182.7801828    50.02405002    19.24001924
BE_A11  240.8223201    54.3318649     173.2745962    30.34752814    29.85805188
BE_A12  199.3896236    61.03763988    196.8463886    95.62563581    37.13123093
BE_A13  238.3603239    71.86234818    192.3076923    39.97975709    23.27935223
```

3) Select the appropriate options.
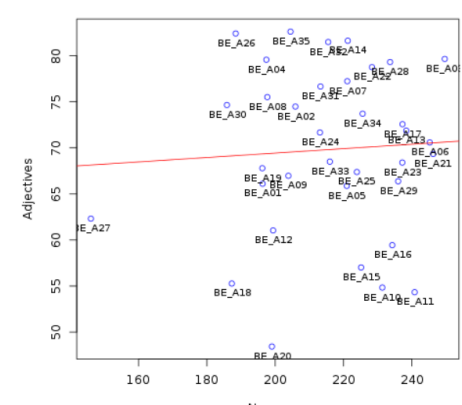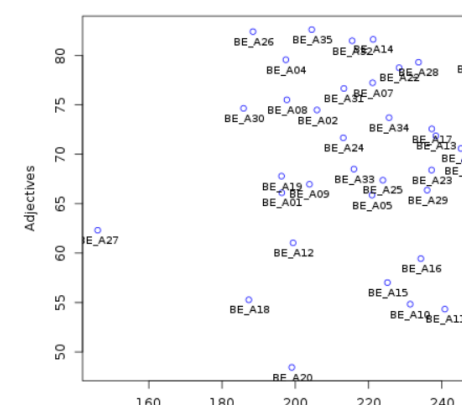
2. Select options.

◉ Parametric ◯ Non-parametric
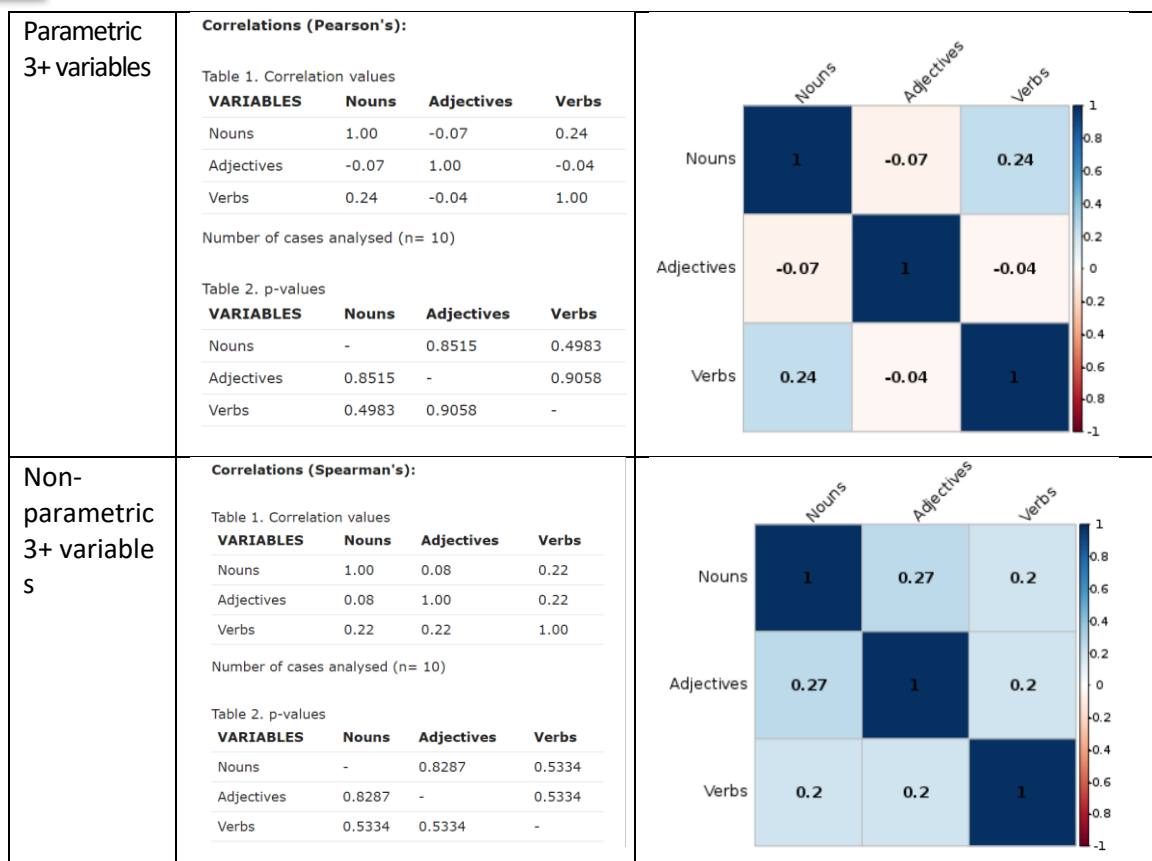
☐ Visualize correlation

> - Parametric (Pearson's) correlation for scale data (e.g. relative frequencies)
> - Non-parametric (Spearman's) correlation for ordinal data (ranks)

> Decide if you also want to visualise the data

4) Click 'Analyze'

5) The output: The tool automatically produces different types of output depending on the i) selected options and ii) the complexity of the data.

Options/ Data	Output	Visualization
Parametric 2 variables	**Correlation (Pearson's):** r = 0.059; p = 0.7384665; 95% CI: -0.28 to 0.384	Scatter plot with regression line
Non-parametric 2 variables	**Correlation (Spearman's):** r_s = -0.007; p = 0.9686163	Scatter plot

Parametric 3+ variables	**Correlations (Pearson's):** Table 1. Correlation values 	VARIABLES	Nouns	Adjectives	Verbs
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Nouns	1.00	-0.07	0.24
Adjectives	-0.07	1.00	-0.04
Verbs	0.24	-0.04	1.00 | Number of cases analysed (n= 10) Table 2. p-values | VARIABLES	Nouns	Adjectives	Verbs
---	---	---	---
Nouns	-	0.8515	0.4983
Adjectives	0.8515	-	0.9058
Verbs	0.4983	0.9058	-		
Non-parametric 3+ variables	**Correlations (Spearman's):** Table 1. Correlation values 	VARIABLES	Nouns	Adjectives	Verbs
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Nouns	1.00	0.08	0.22
Adjectives	0.08	1.00	0.22
Verbs	0.22	0.22	1.00 | Number of cases analysed (n= 10) Table 2. p-values | VARIABLES	Nouns	Adjectives	Verbs
---	---	---	---
Nouns	-	0.8287	0.5334
Adjectives	0.8287	-	0.5334
Verbs	0.5334	0.5334	-		

The tool can process easily very complex correlation matrices.

Table 1. Correlation values

VARIABLES	PAST	PERF	PRES	PLACE	TIME	X1PRON	X2PRON	X3PRON	IT	DEMPRON	INDPRON	DO	NOMZ	NN	PASS
PAST	1.00	0.11	-0.35	0.09	0.04	0.26	0.16	0.56	0.19	-0.03	0.17	0.12	-0.41	-0.18	-0.16
PERF	0.11	1.00	-0.46	0.11	0.13	-0.31	-0.35	-0.04	-0.40	-0.43	-0.04	-0.35	0.29	0.44	0.26
PRES	-0.35	-0.46	1.00	-0.13	0.00	0.57	0.53	0.15	0.61	0.60	0.09	0.49	-0.44	-0.70	-0.50
PLACE	0.09	0.11	-0.13	1.00	0.31	-0.19	-0.18	0.16	-0.08	-0.15	-0.03	-0.17	-0.20	0.15	-0.02
TIME	0.04	0.13	0.00	0.31	1.00	-0.05	-0.10	0.10	0.04	-0.02	0.00	-0.05	-0.22	0.02	-0.07
X1PRON	0.26	-0.31	0.57	-0.19	-0.05	1.00	0.59	0.21	0.55	0.45	0.21	0.58	-0.57	-0.76	-0.60
X2PRON	0.16	-0.35	0.53	-0.18	-0.10	0.59	1.00	0.16	0.48	0.50	0.12	0.47	-0.48	-0.67	-0.47
X3PRON	0.56	-0.04	0.15	0.16	0.10	0.21	0.16	1.00	0.31	0.13	0.14	0.17	-0.52	-0.37	-0.36
IT	0.19	-0.40	0.61	-0.08	0.04	0.55	0.48	0.31	1.00	0.47	0.16	0.48	-0.57	-0.73	-0.48
DEMPRON	-0.03	-0.43	0.60	-0.15	-0.02	0.45	0.50	0.13	0.47	1.00	0.09	0.48	-0.36	-0.66	-0.38
INDPRON	0.17	-0.04	0.09	-0.03	0.00	0.21	0.12	0.14	0.16	0.09	1.00	0.23	-0.19	-0.19	-0.21
DO	0.12	-0.35	0.49	-0.17	-0.05	0.58	0.47	0.17	0.48	0.48	0.23	1.00	-0.43	-0.59	-0.42
NOMZ	-0.41	0.29	-0.44	-0.20	-0.22	-0.57	-0.48	-0.52	-0.57	-0.36	-0.19	-0.43	1.00	0.53	0.59
NN	-0.18	0.44	-0.70	0.15	0.02	-0.76	-0.67	-0.37	-0.73	-0.66	-0.19	-0.59	0.53	1.00	0.56
PASS	-0.16	0.26	-0.50	-0.02	-0.07	-0.60	-0.47	-0.36	-0.48	-0.38	-0.21	-0.42	0.59	0.56	1.00
BYPASS	-0.15	0.26	-0.50	-0.04	-0.11	-0.57	-0.48	-0.31	-0.49	-0.39	-0.17	-0.43	0.60	0.57	0.59

R code that performs the analysis can be viewed and copied when going with the mouse pointer to   R code