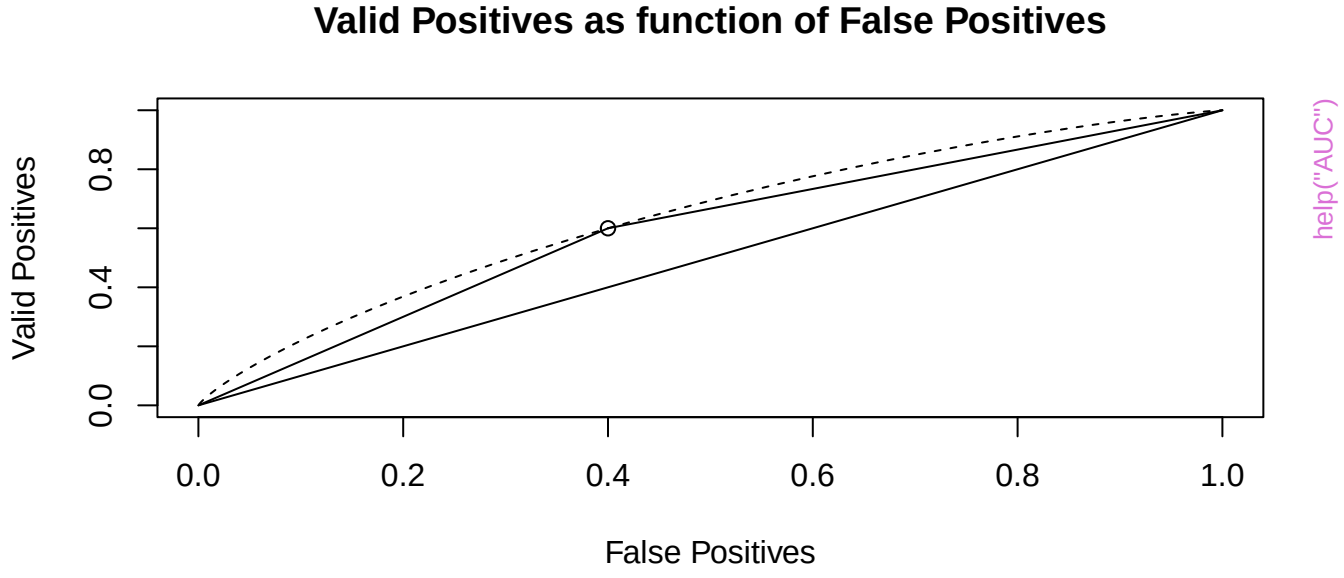
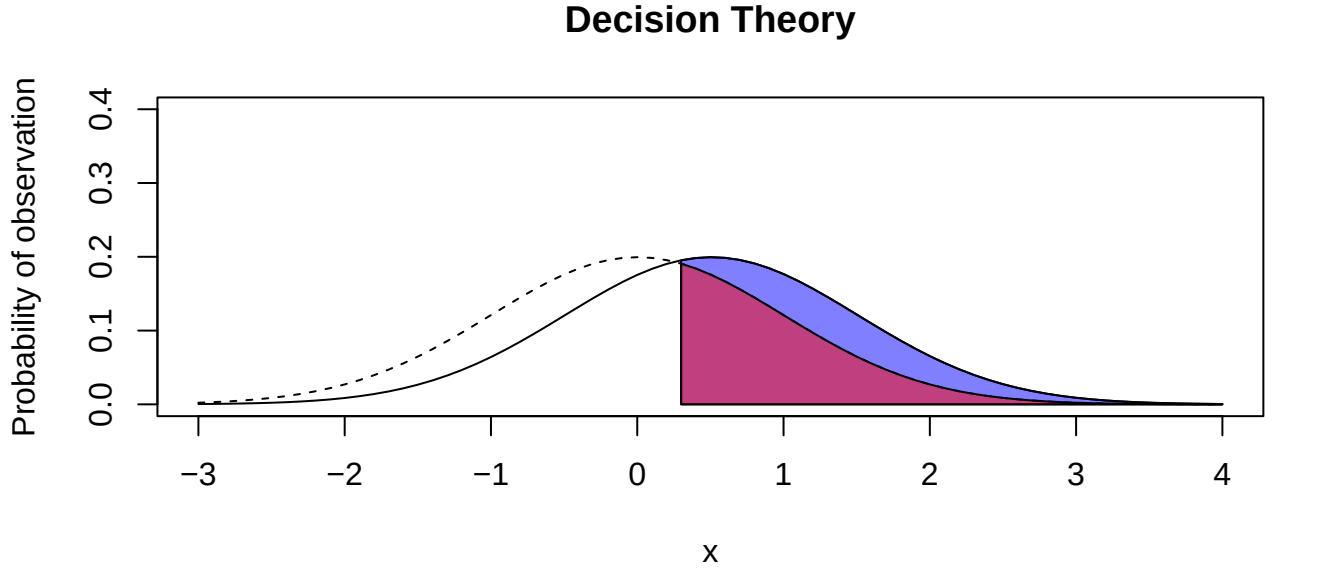
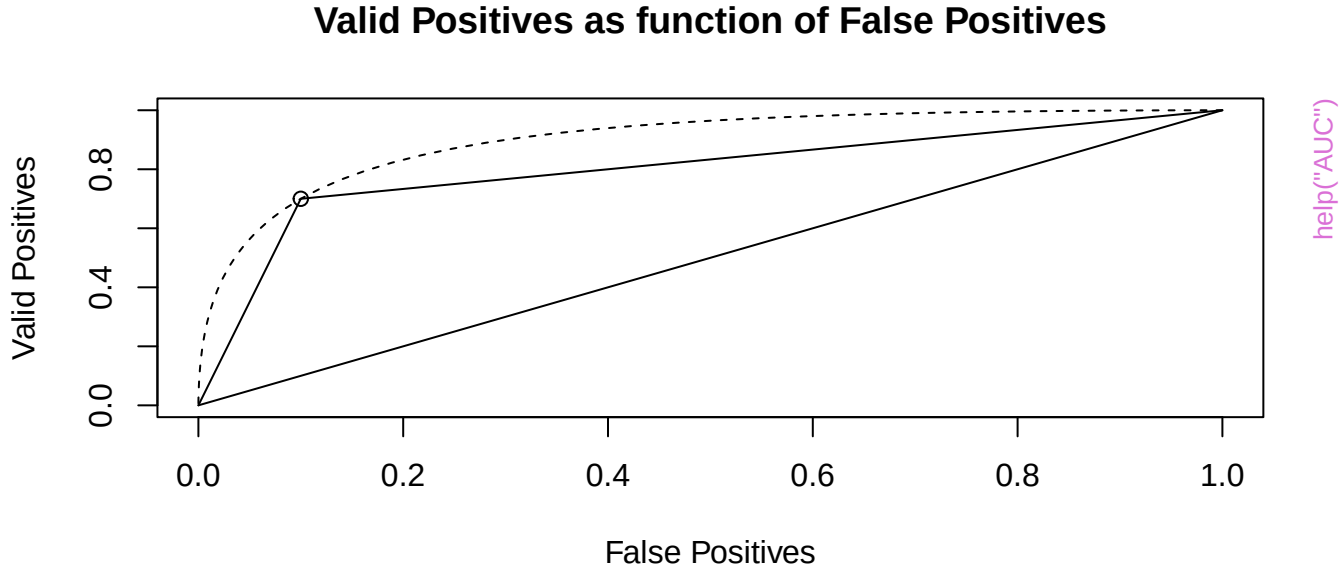
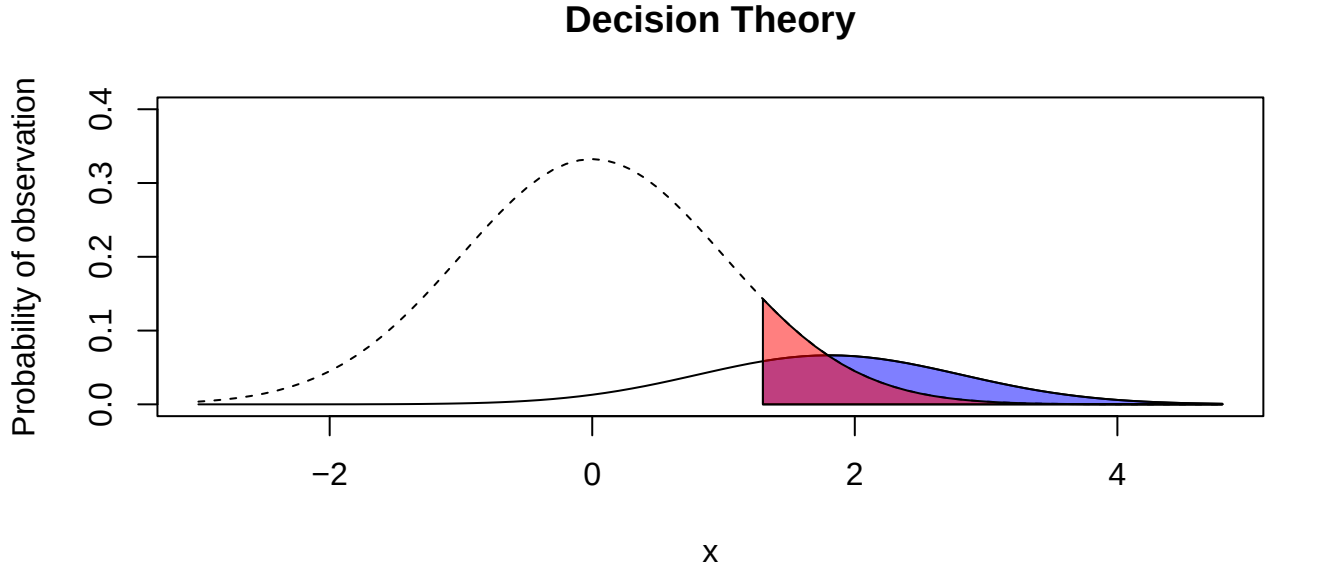
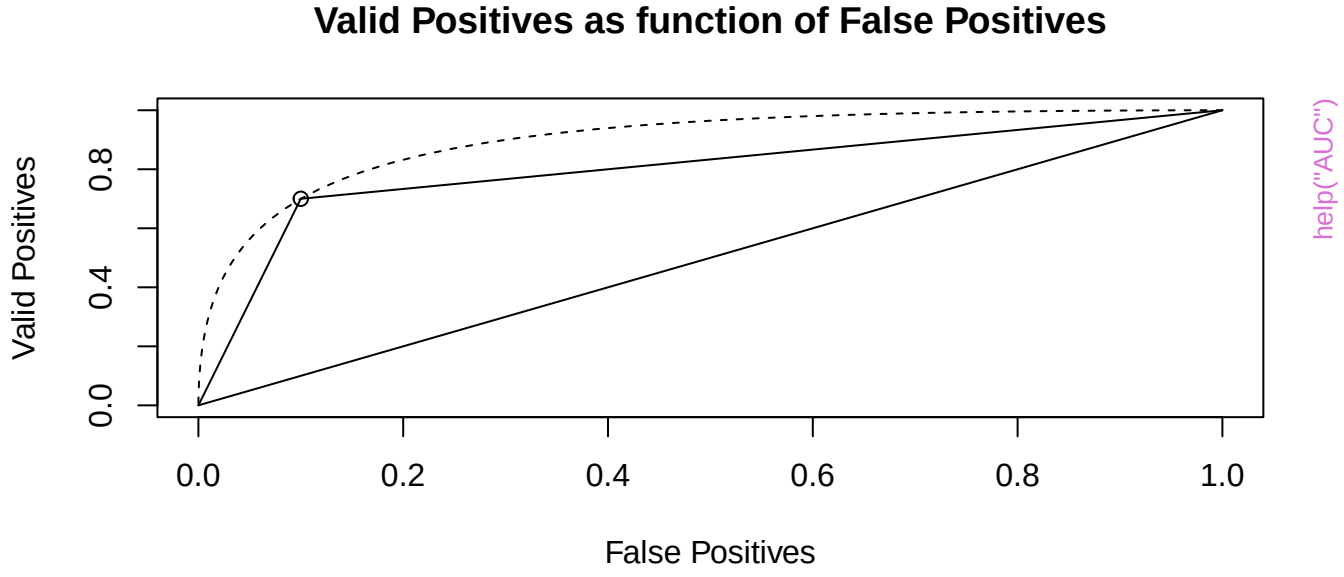
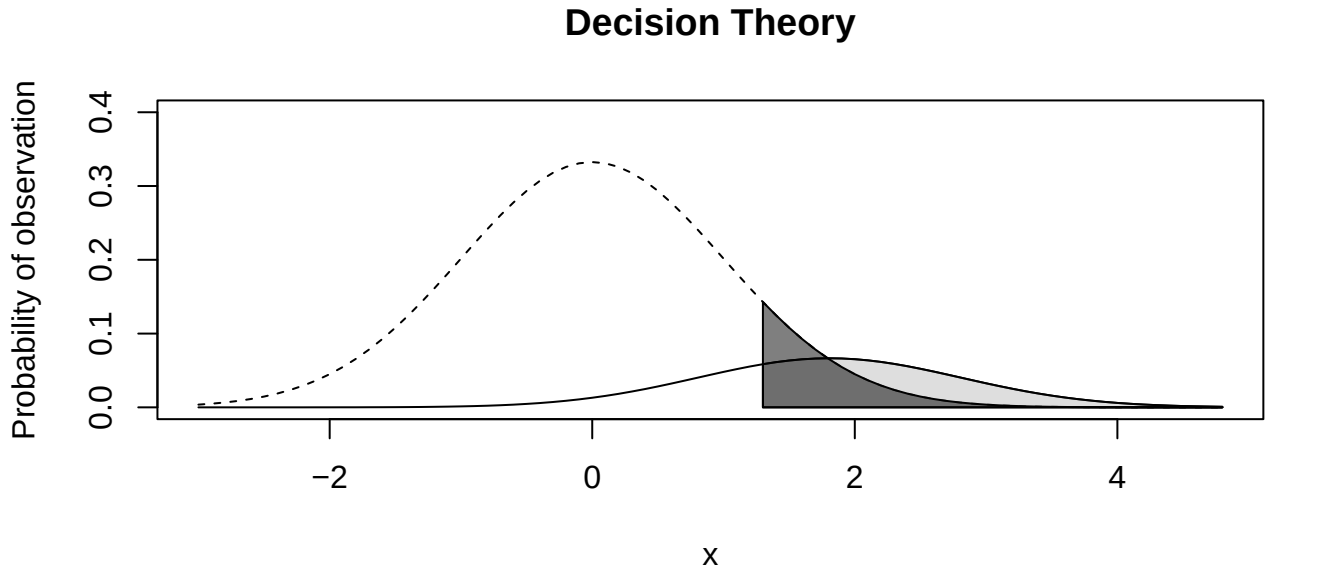

Valid Positives as function of False Positives
Valid Positives
0.0
0.4
0.8
0.0
0.2
0.4
0.6
0.8
1.0
False Positives
help("AUC")

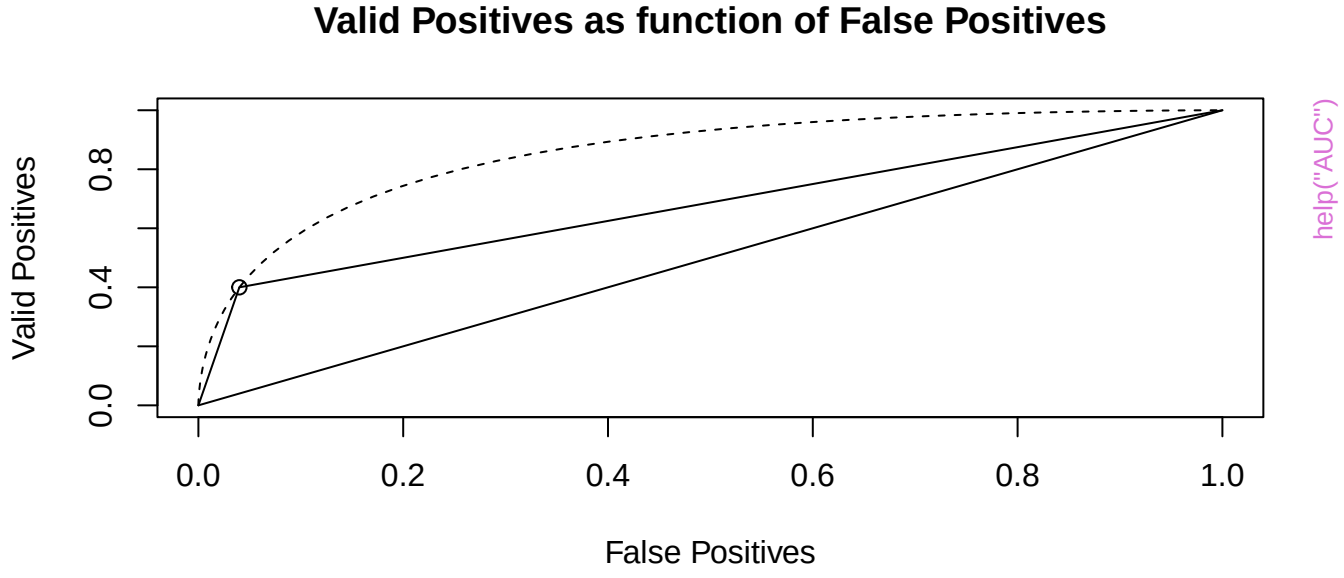

Decision Theory
Probability of observation
0.0
0.1
0.2
0.3
0.4
−3
−2
−1
0
1
2
3
4
x

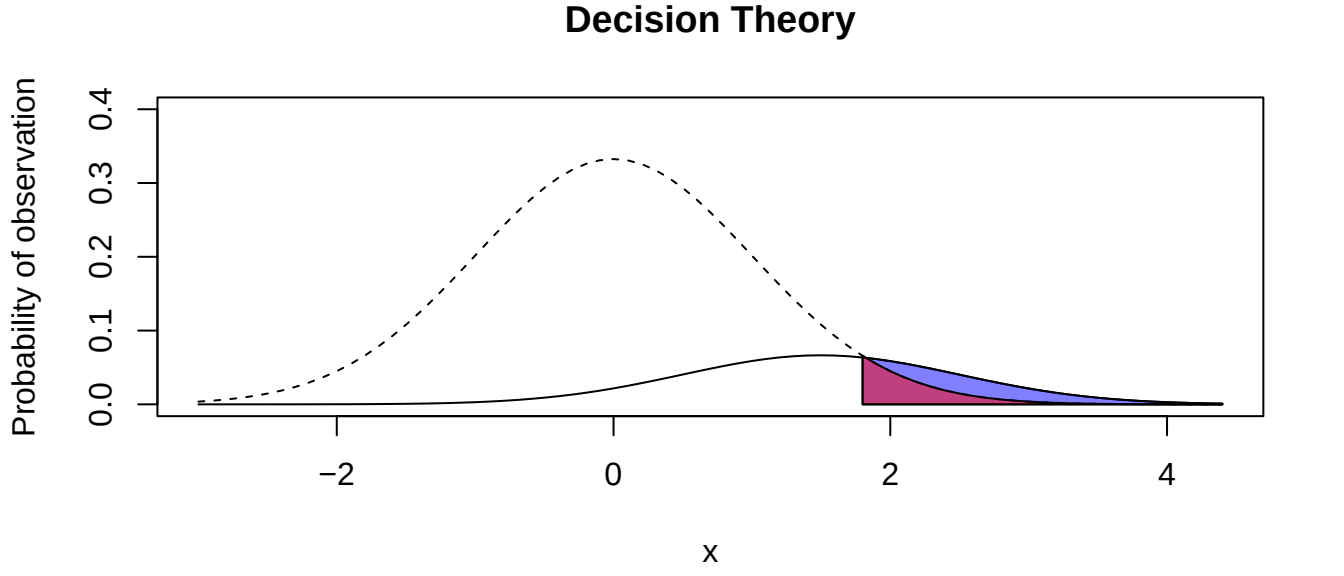

Valid Positives as function of False Positives
Valid Positives
0.0
0.4
0.8
0.0
0.2
0.4
0.6
0.8
1.0
False Positives
help("AUC")

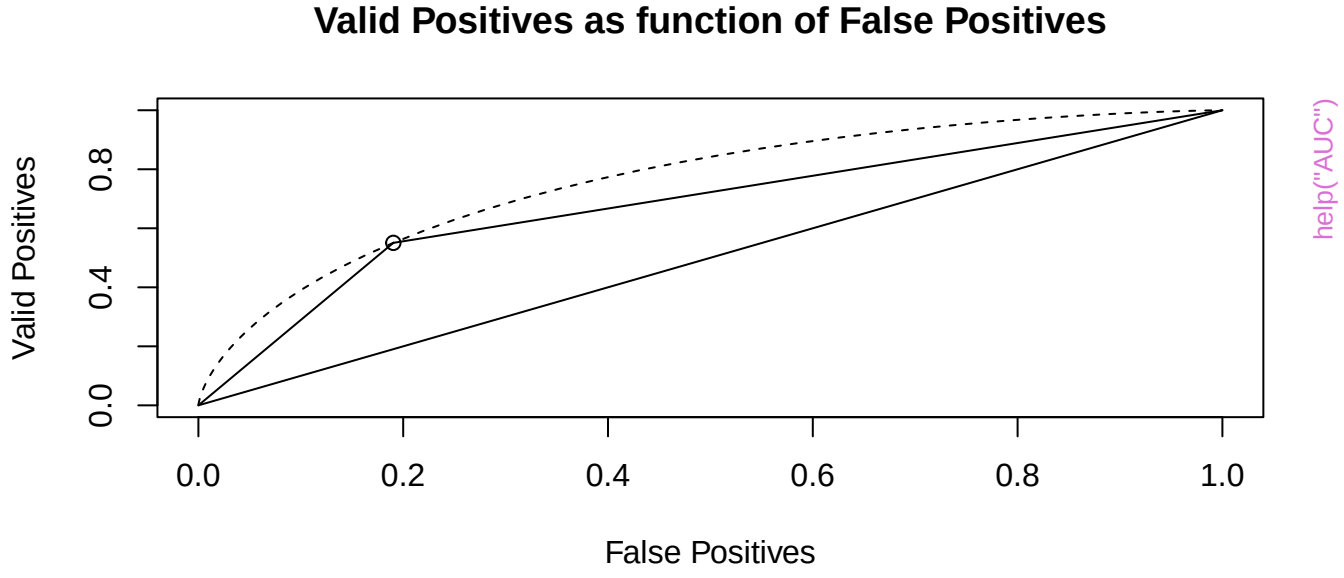

Decision Theory
Probability of observation
0.0
0.1
0.2
0.3
0.4
−2
0
2
4
x


Valid Positives as function of False Positives
Valid Positives
0.0
0.4
0.8
0.0
0.2
0.4
0.6
0.8
1.0
False Positives
help("AUC")

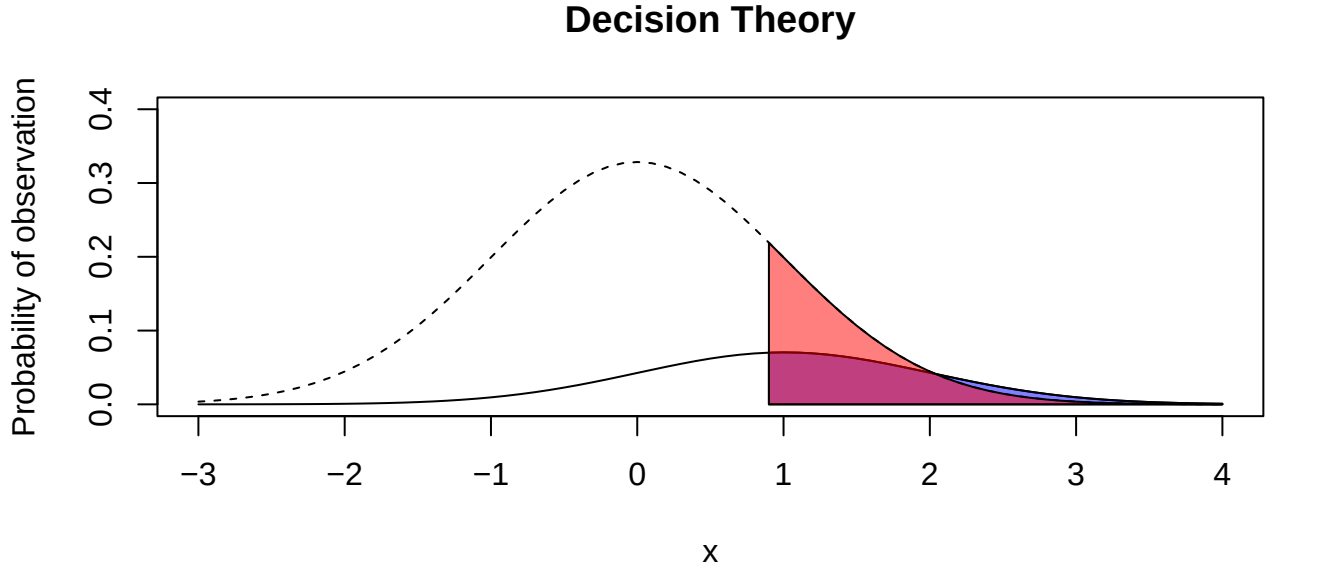

Decision Theory
Probability of observation
0.0
0.1
0.2
0.3
0.4
−2
0
2
4
x

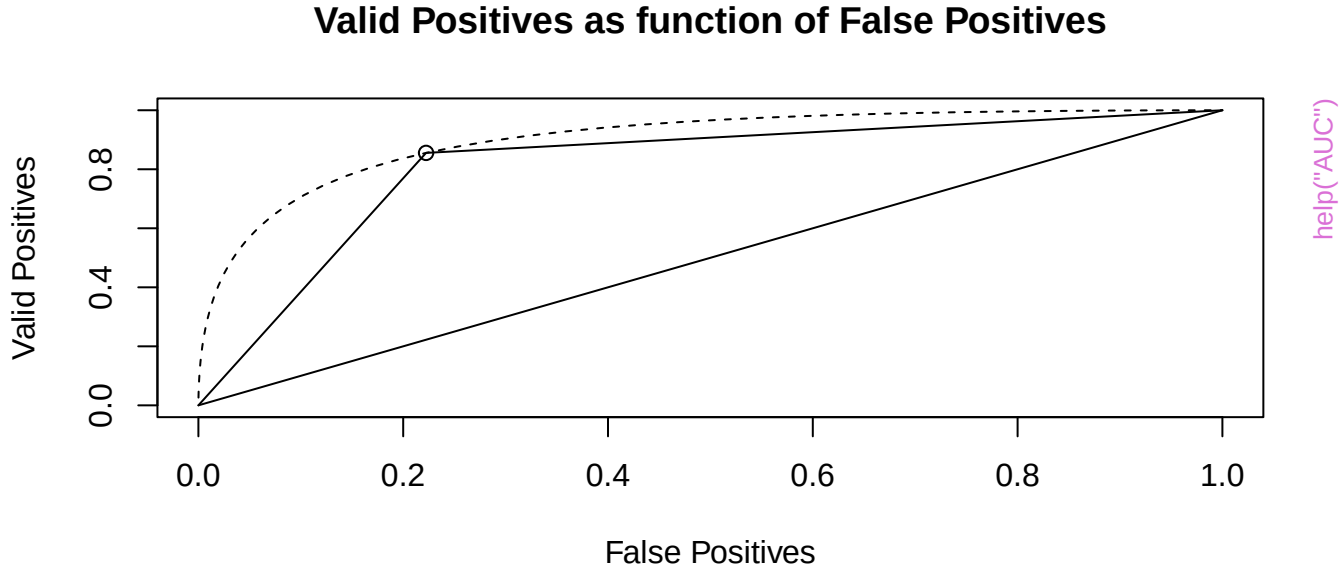

Valid Positives as function of False Positives
Valid Positives
0.0
0.4
0.8
0.0
0.2
0.4
0.6
0.8
1.0
False Positives
help("AUC")

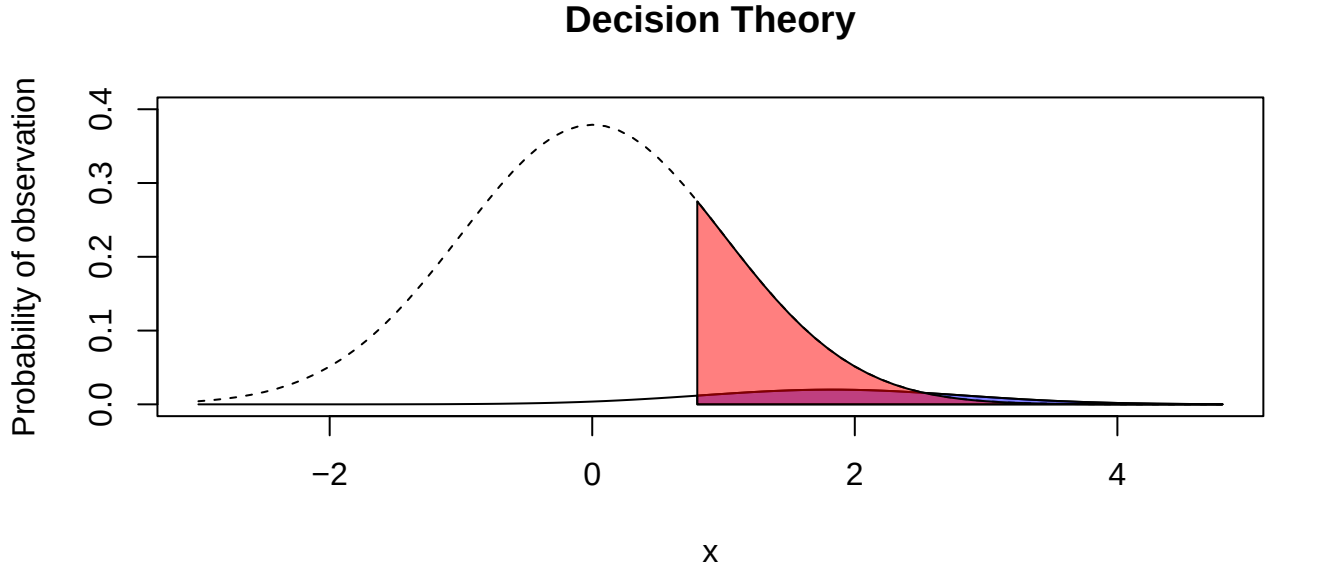

Decision Theory
Probability of observation
0.0
0.1
0.2
0.3
0.4
−2
0
2
4
x


Valid Positives as function of False Positives
Valid Positives
0.0
0.4
0.8
0.0
0.2
0.4
0.6
0.8
1.0
False Positives

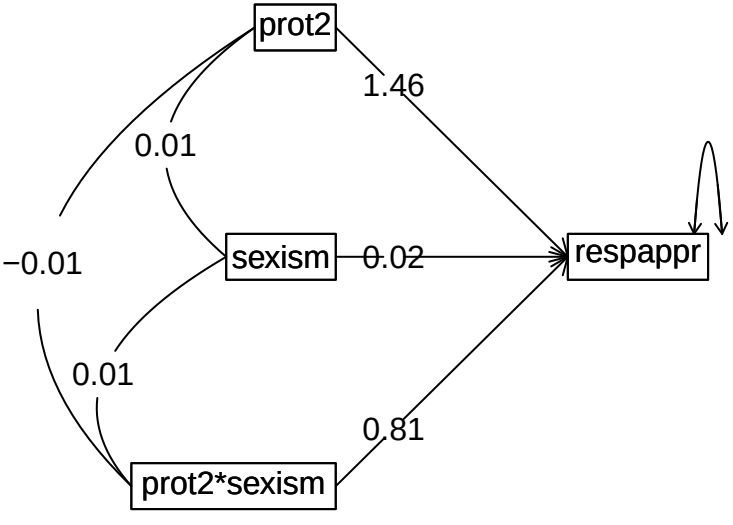
help("AUC")


Decision Theory
Probability of observation
0.0
0.1
0.2
0.3
0.4
−3
−2
−1
0
1
2
3
4
x

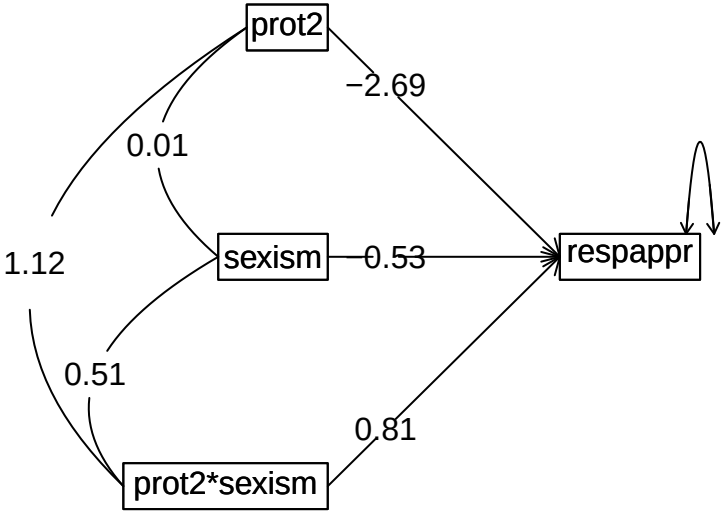

Valid Positives as function of False Positives
Valid Positives
0.0
0.4
0.8
0.0
0.2
0.4
0.6
0.8
1.0
False Positives
help("AUC")

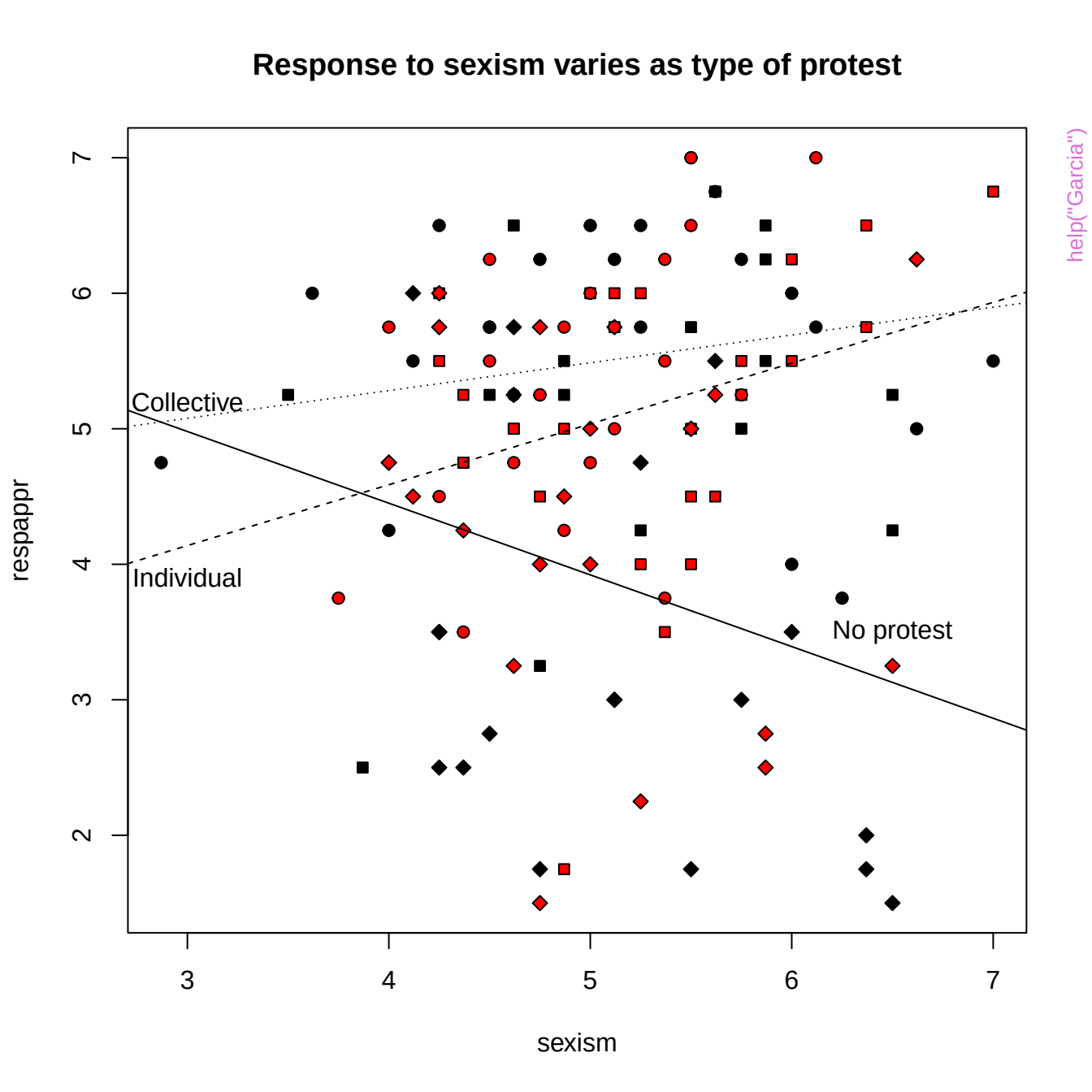

Decision Theory
Probability of observation
0.0
0.1
0.2
0.3
0.4
−2
0
2
4
x

Moderated (mean centered)

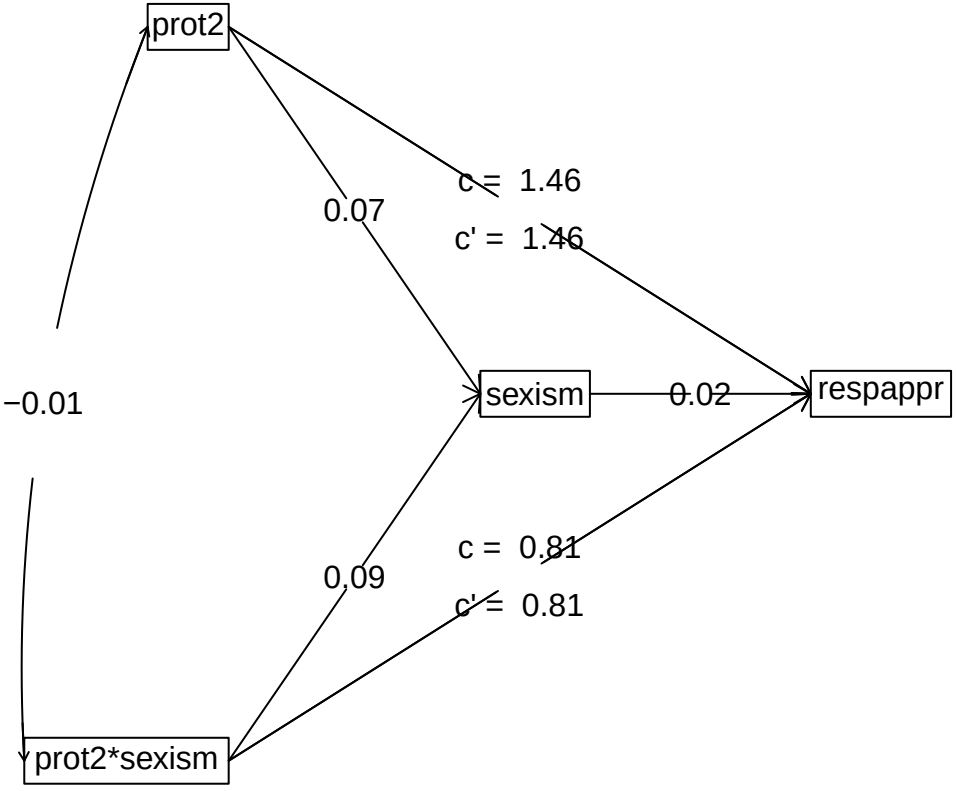


Moderated (don't center)

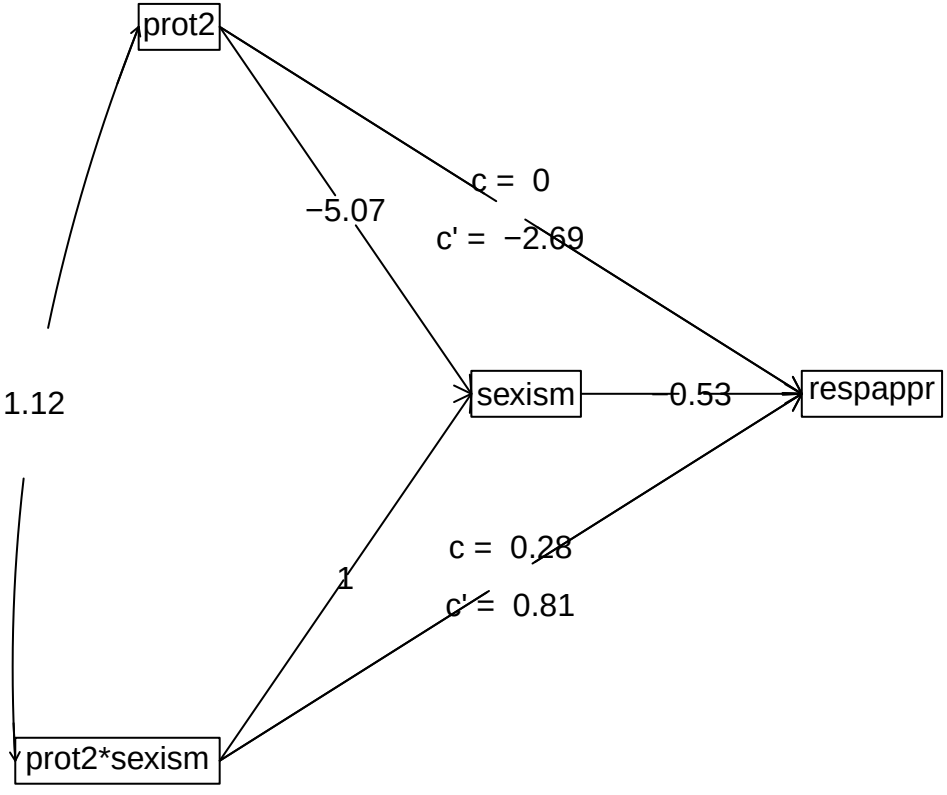


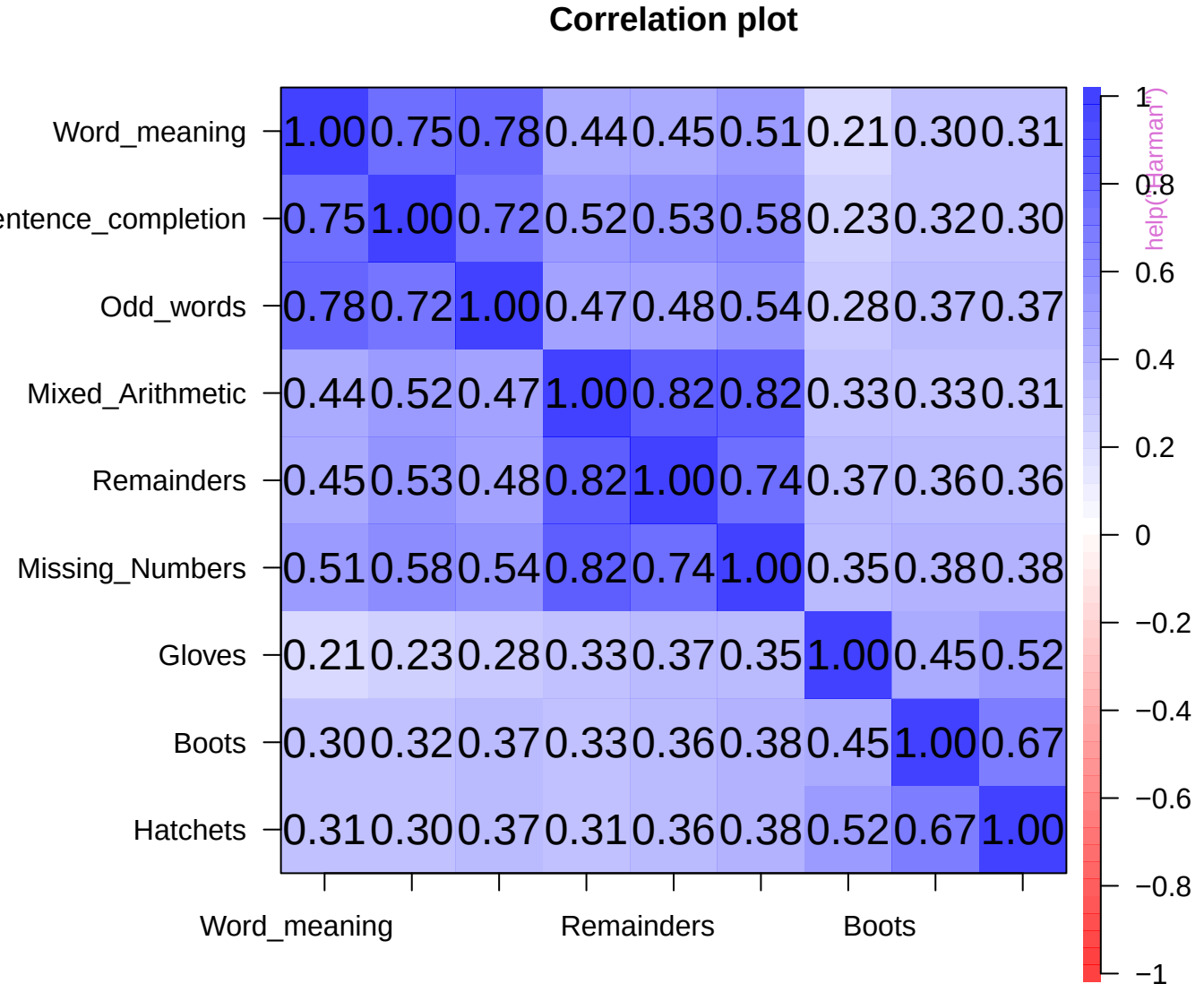

Response to sexism varies as type of protest
help("Garcia")
respappr
sexism
Collective
Individual
No protest
2
3
4
5
6
7
3
4
5
6
7

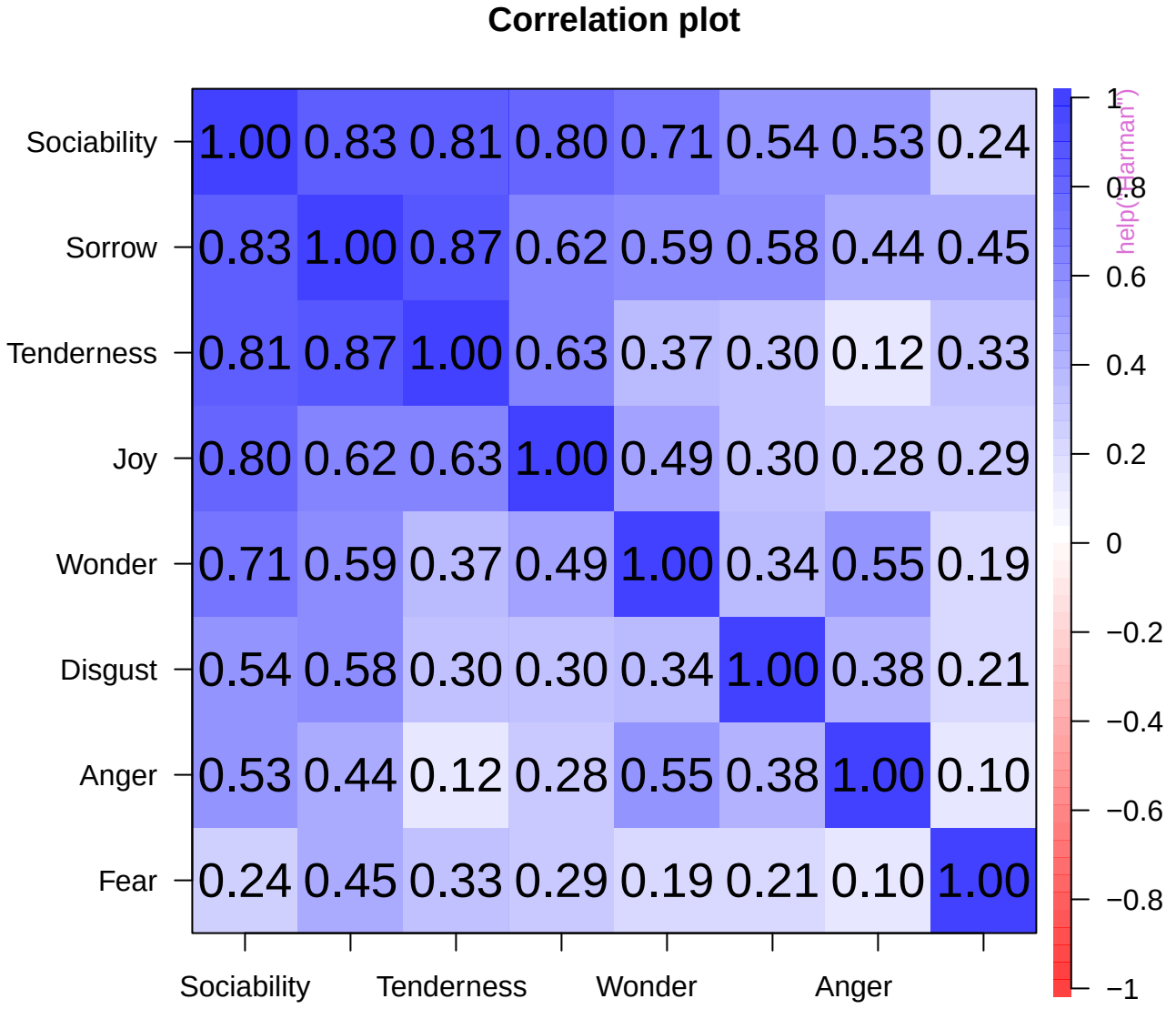
Moderated mediation (mean centered)



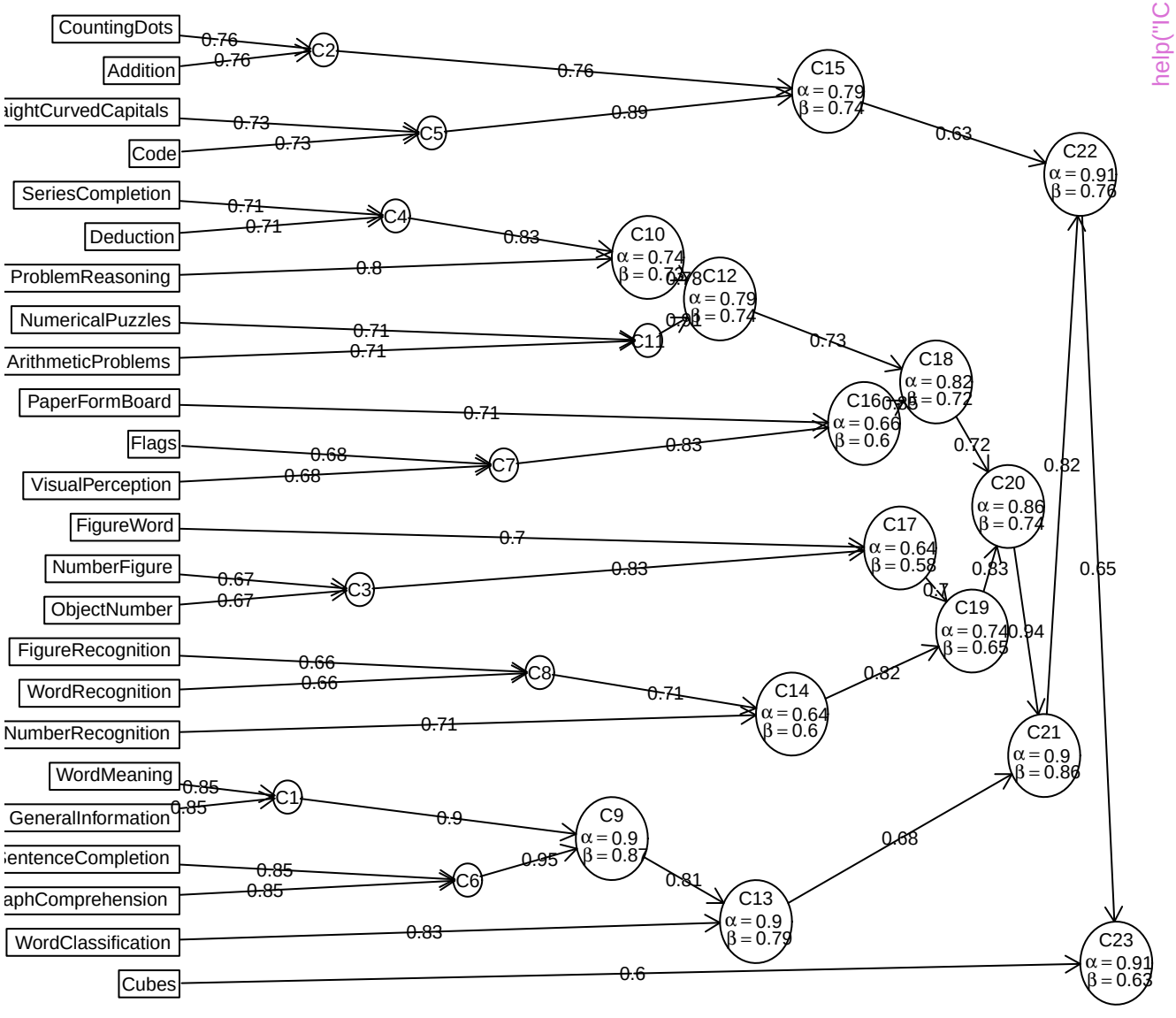
Moderated mediation (not centered



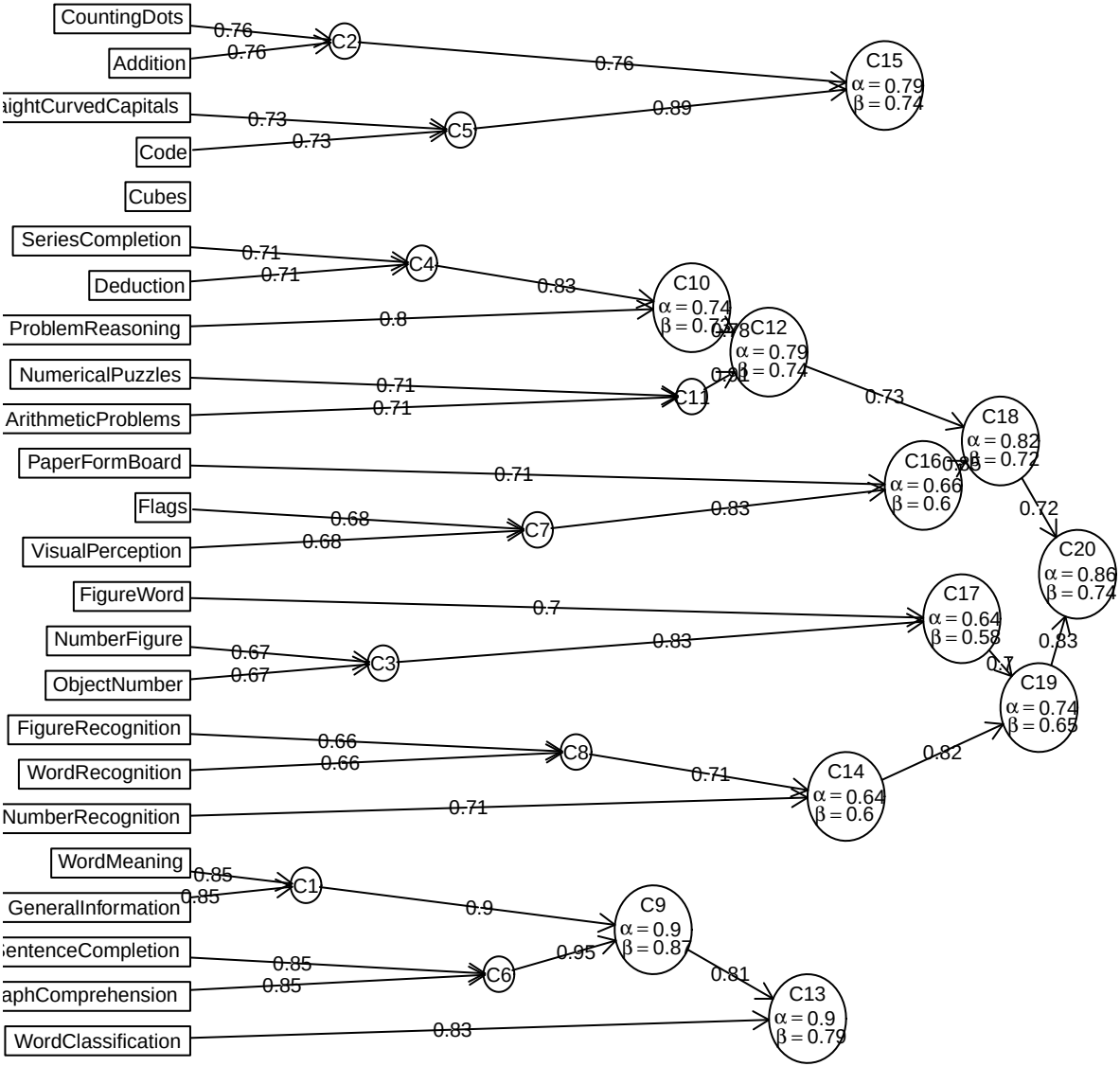

Correlation plot
Word_meaning
ntence_completion
Odd_words
Mixed_Arithmetic
Remainders
Missing_Numbers
Gloves
Boots
Hatchets
1.00 0.75 0.78 0.44 0.45 0.51 0.21 0.30 0.31
0.75 1.00 0.72 0.52 0.53 0.58 0.23 0.32 0.30
0.78 0.72 1.00 0.47 0.48 0.54 0.28 0.37 0.37
0.44 0.52 0.47 1.00 0.82 0.82 0.33 0.33 0.31
0.45 0.53 0.48 0.82 1.00 0.74 0.37 0.36 0.36
0.51 0.58 0.54 0.82 0.74 1.00 0.35 0.38 0.38
0.21 0.23 0.28 0.33 0.37 0.35 1.00 0.45 0.52
0.30 0.32 0.37 0.33 0.36 0.38 0.45 1.00 0.67
0.31 0.30 0.37 0.31 0.36 0.38 0.52 0.67 1.00
Word_meaning
Remainders
Boots
help(pairman")
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1


Correlation plot
Sociability
Sorrow
Tenderness
Joy
Wonder
Disgust
Anger
Fear
1.00 0.83 0.81 0.80 0.71 0.54 0.53 0.24
0.83 1.00 0.87 0.62 0.59 0.58 0.44 0.45
0.81 0.87 1.00 0.63 0.37 0.30 0.12 0.33
0.80 0.62 0.63 1.00 0.49 0.30 0.28 0.29
0.71 0.59 0.37 0.49 1.00 0.34 0.55 0.19
0.54 0.58 0.30 0.30 0.34 1.00 0.38 0.21
0.53 0.44 0.12 0.28 0.55 0.38 1.00 0.10
0.24 0.45 0.33 0.29 0.19 0.21 0.10 1.00
Sociability
Tenderness
Wonder
Anger
help("pairmar")
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1

ICLUST of the Harman data

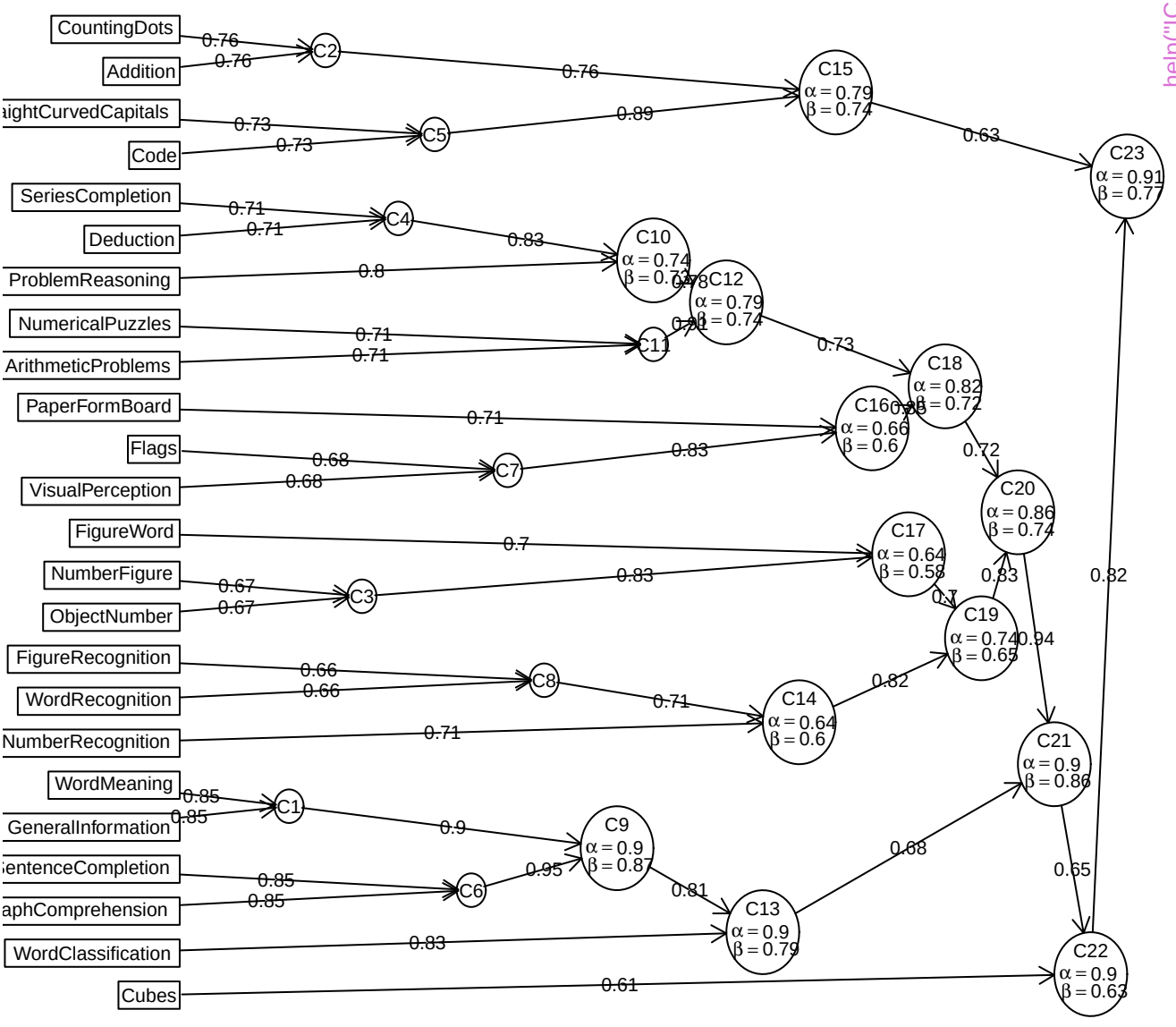


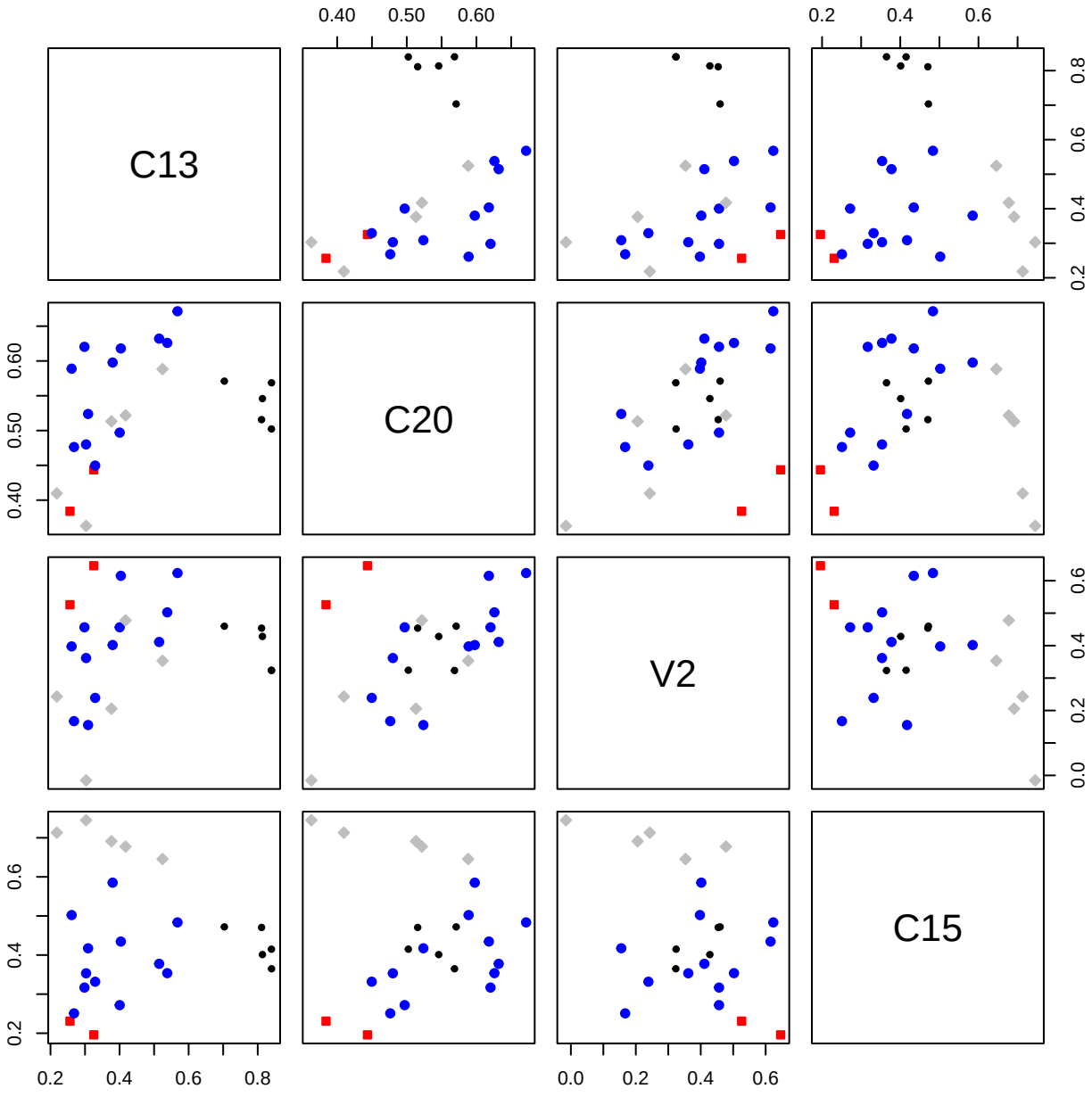
Force 4 clusters



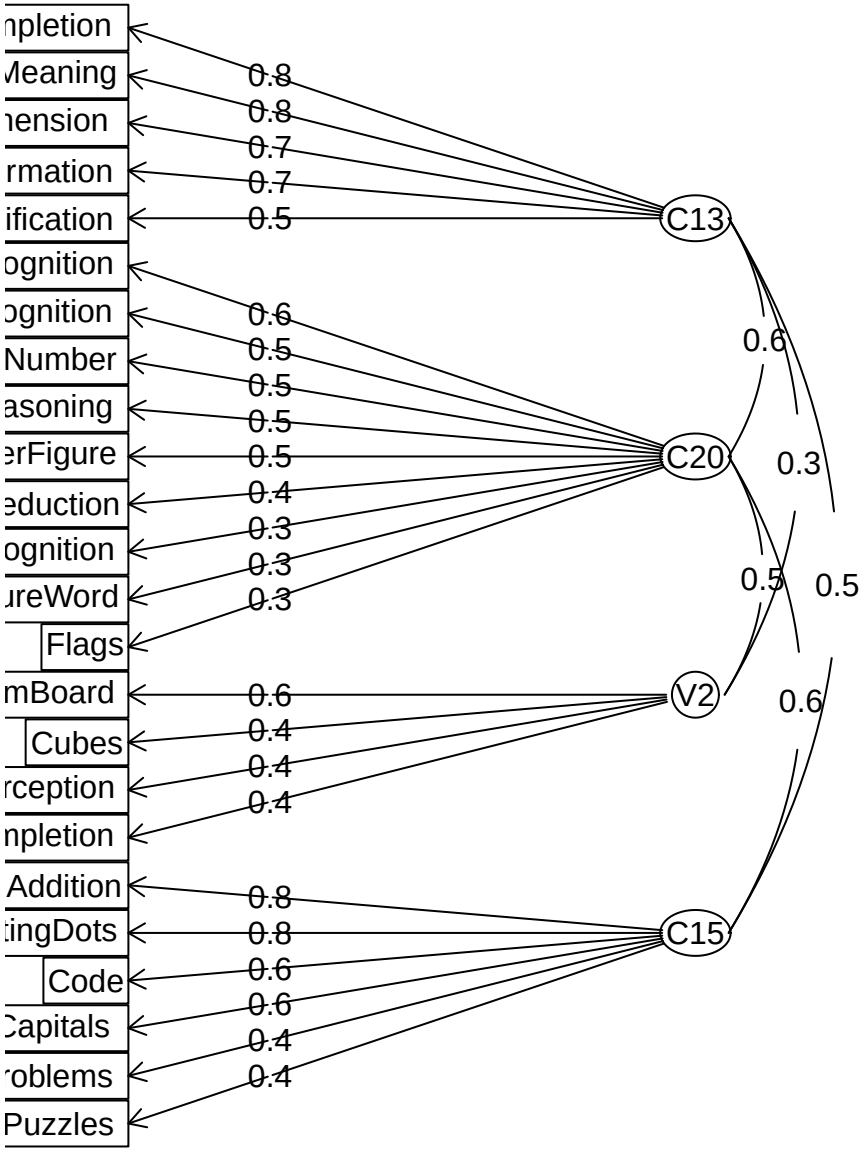
help("ICLUST")

ICLUST

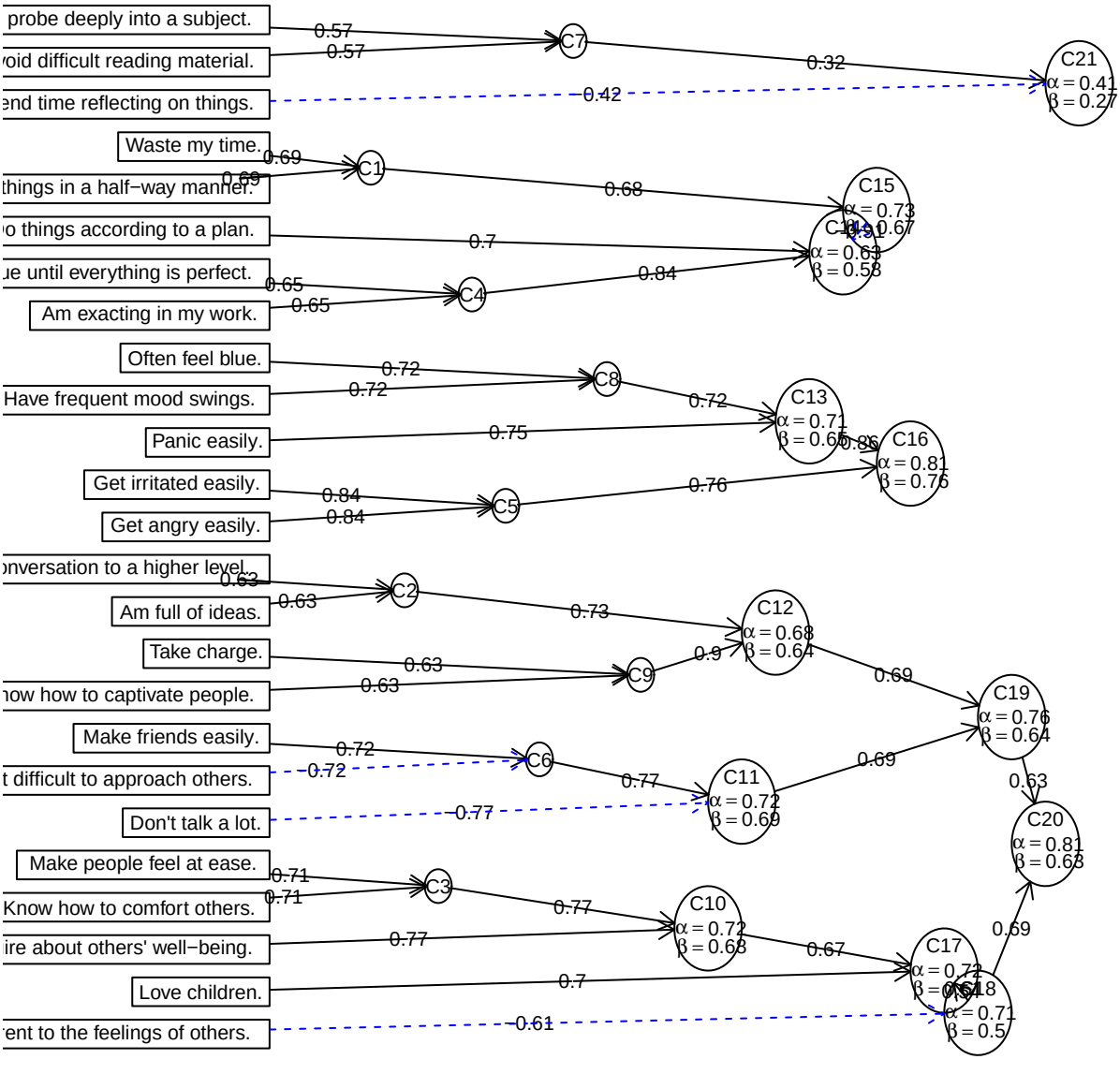

CountingDots
Addition
ightCurvedCapitals
Code
SeriesCompletion
Deduction
ProblemReasoning
NumericalPuzzles
ArithmeticProblems
PaperFormBoard
Flags
VisualPerception
FigureWord
NumberFigure
ObjectNumber
FigureRecognition
WordRecognition
NumberRecognition
WordMeaning
GeneralInformation
entenceCompletion
aphComprehension
WordClassification
Cubes
C1
C2
C3
C4
C5
C6
C7
C8
C9
α = 0.9
β = 0.87
C10
α = 0.74
β = 0.7
C11
C12
α = 0.79
β = 0.74
C13
α = 0.9
β = 0.79
C14
α = 0.64
β = 0.6
C15
α = 0.79
β = 0.74
C16
α = 0.66
β = 0.6
C17
α = 0.64
β = 0.58
C18
α = 0.82
β = 0.72
C19
α = 0.74
β = 0.65
C20
α = 0.86
β = 0.74
C21
α = 0.9
β = 0.86
C22
α = 0.9
β = 0.63
C23
α = 0.91
β = 0.77
0.76
0.76
0.73
0.73
0.89
0.63
0.71
0.71
0.83
0.8
0.71
0.71
0.73
0.71
0.68
0.68
0.83
0.7
0.67
0.67
0.83
0.66
0.66
0.71
0.71
0.82
0.85
0.85
0.9
0.85
0.85
0.95
0.81
0.83
0.68
0.61
0.65
0.82
0.94
0.83
help("ICLUST")


C13
C20
V2
C15
0.40
0.50
0.60
0.2
0.4
0.6
0.8
0.0
help("ICLUST")

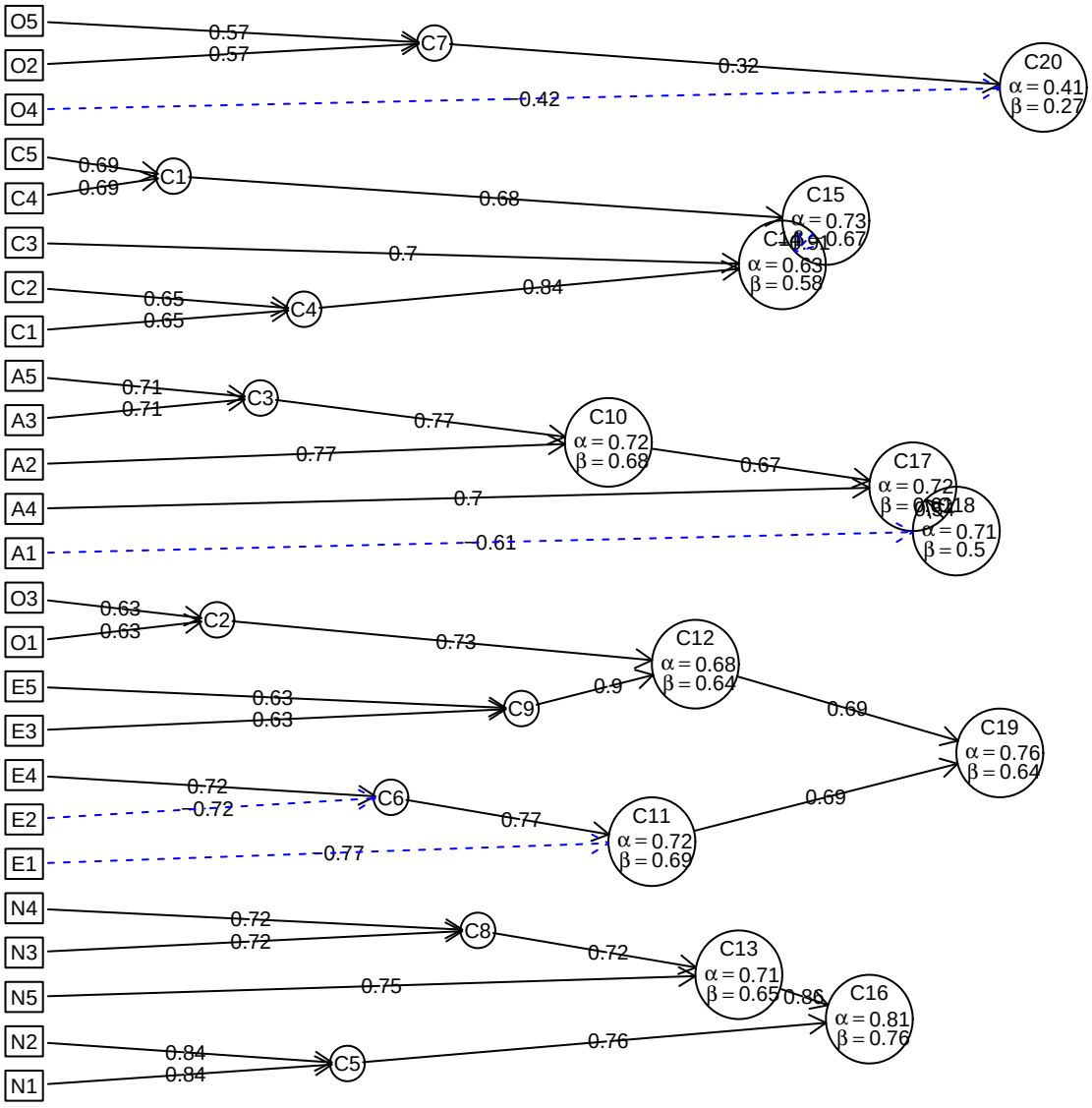
Pattern taken from iclust



ICLUST of bfi data set

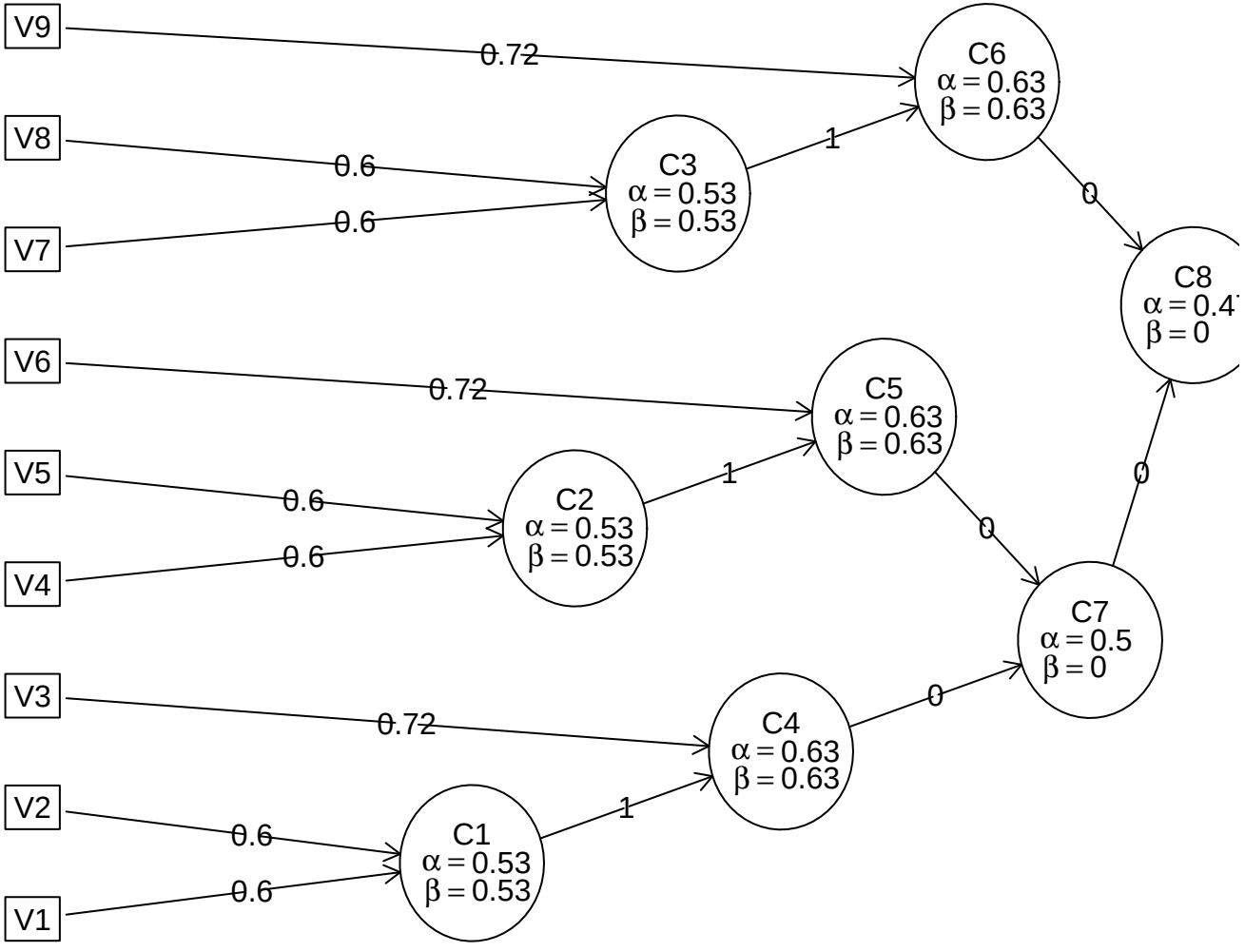


ICLUST with more stringent beta

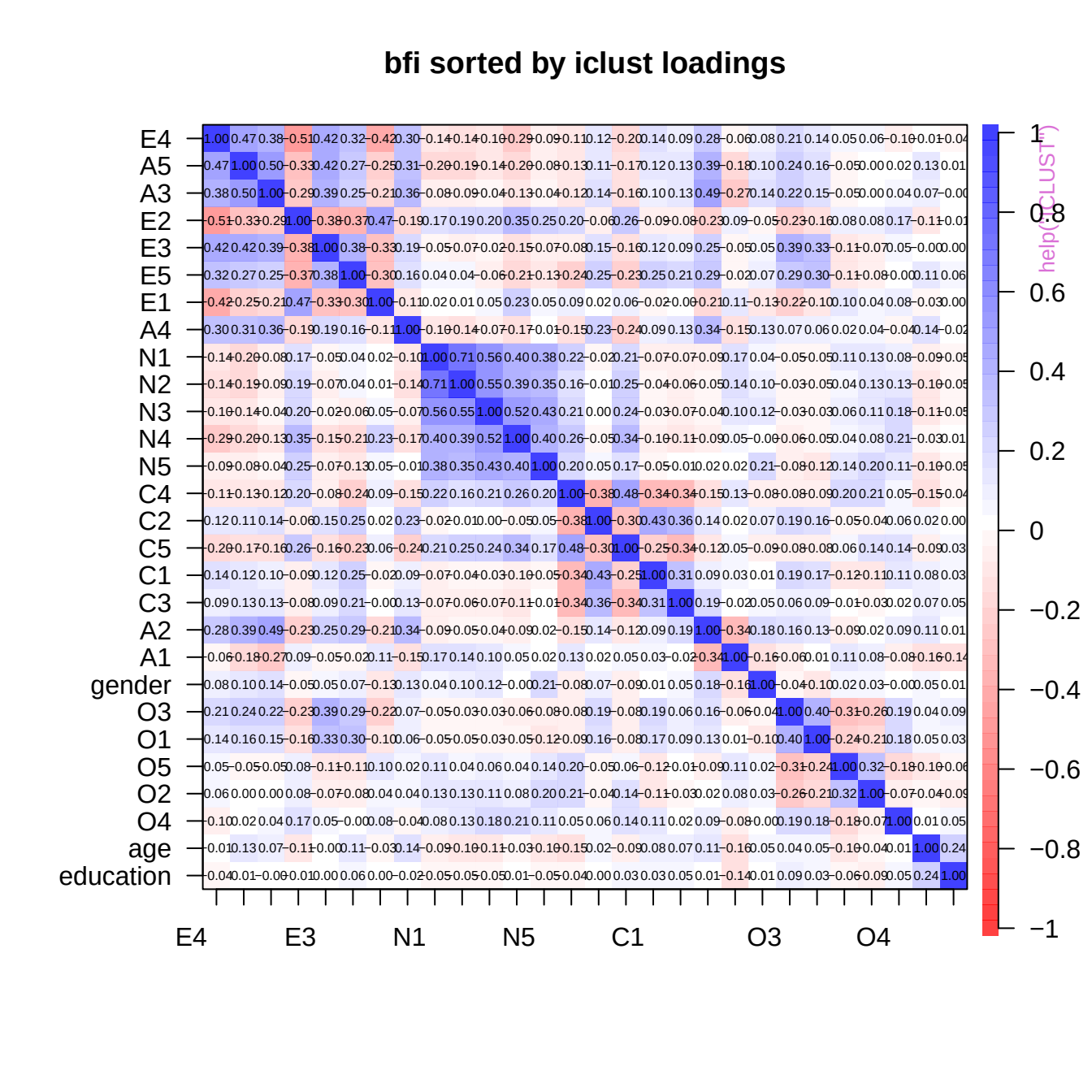


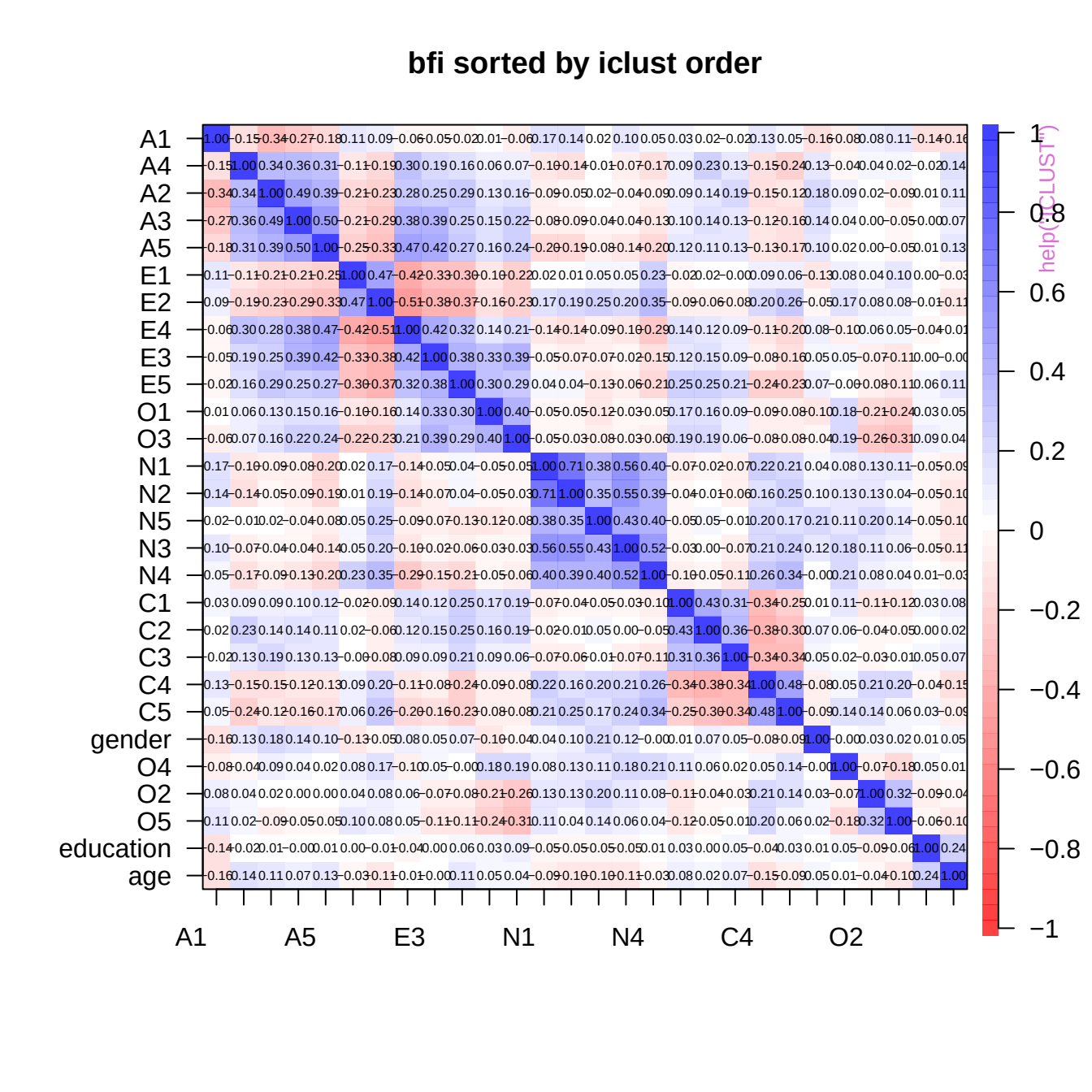
help("ICLUST")

ICLUST

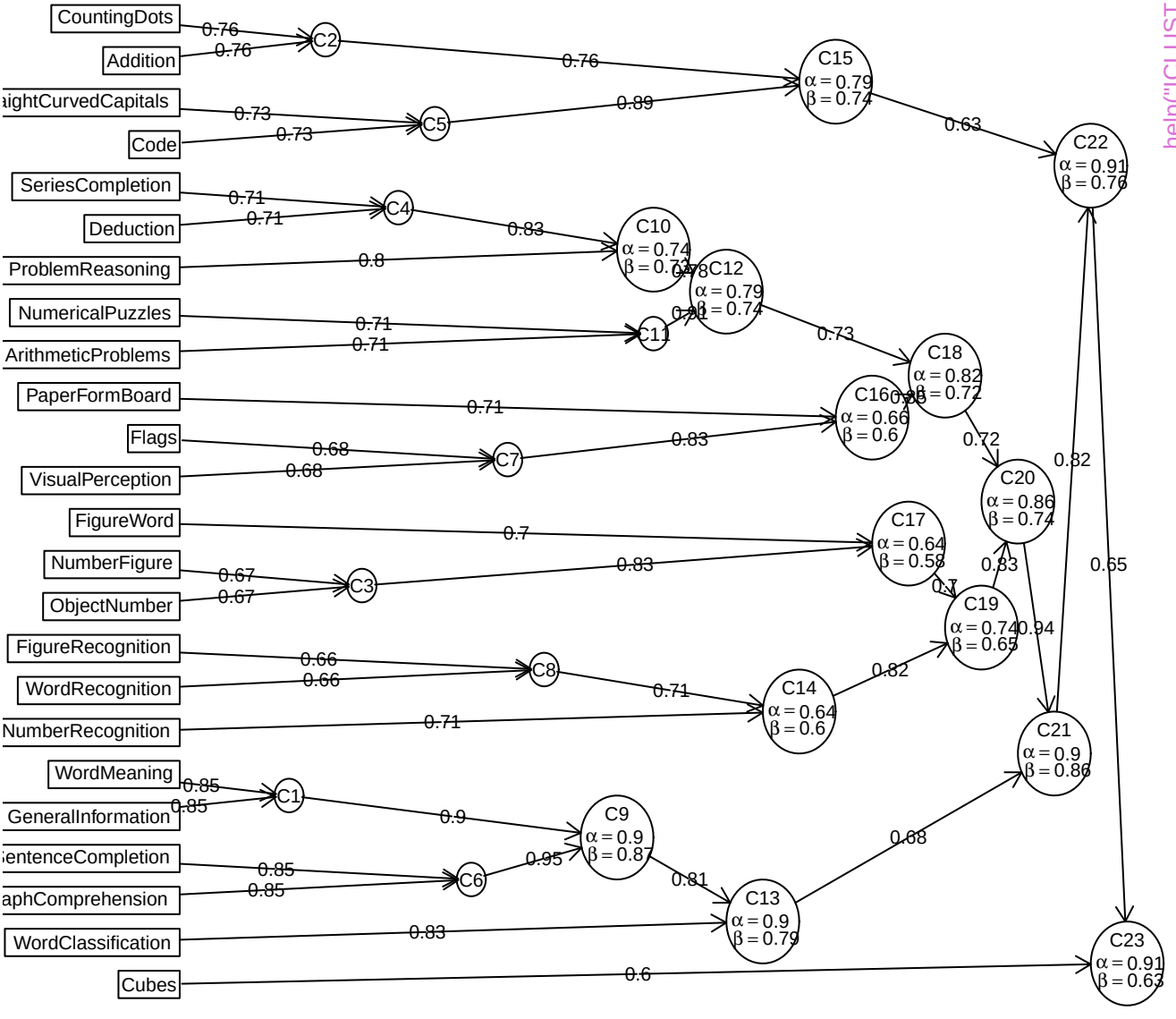


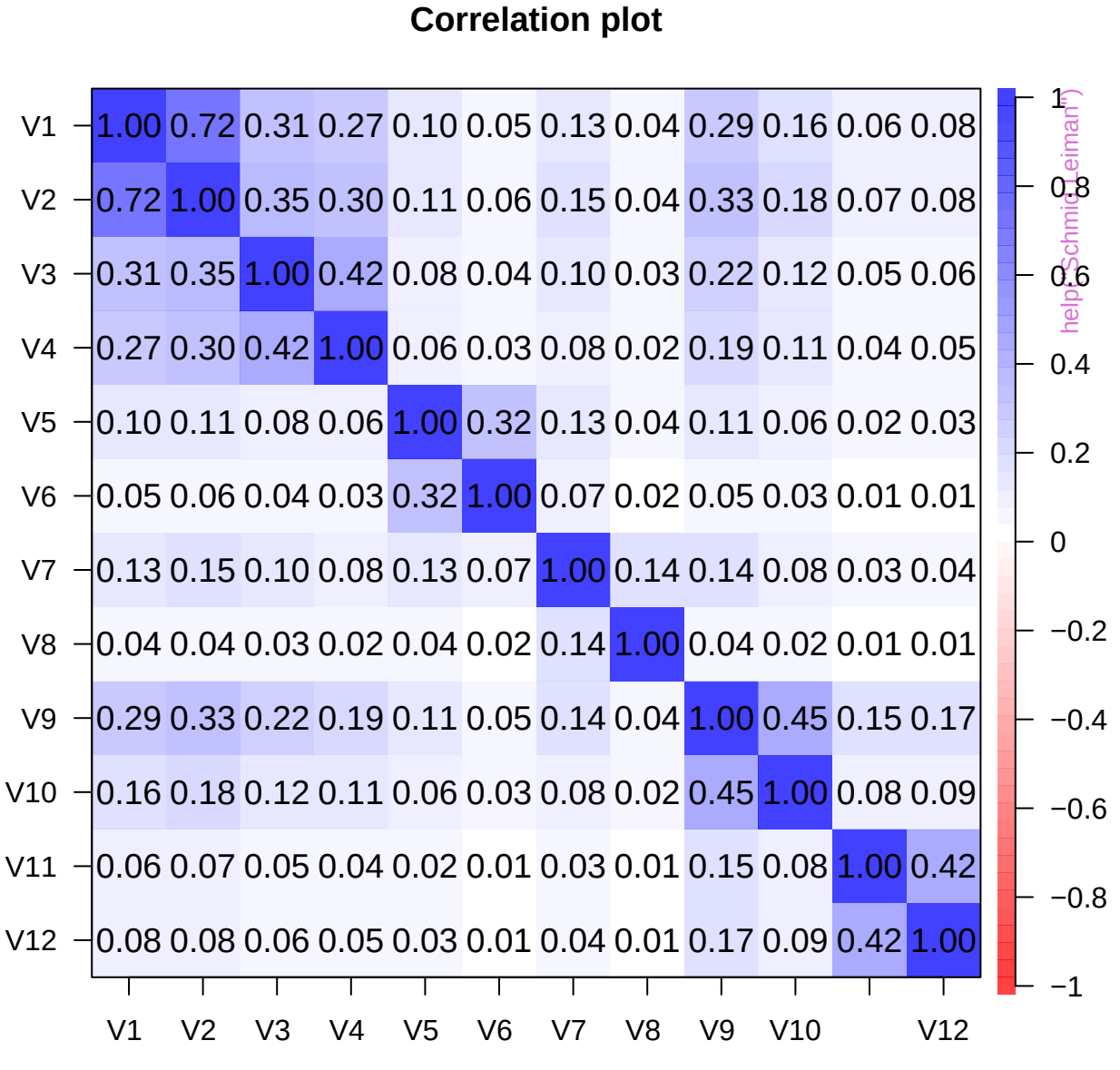
help("ICLUST")

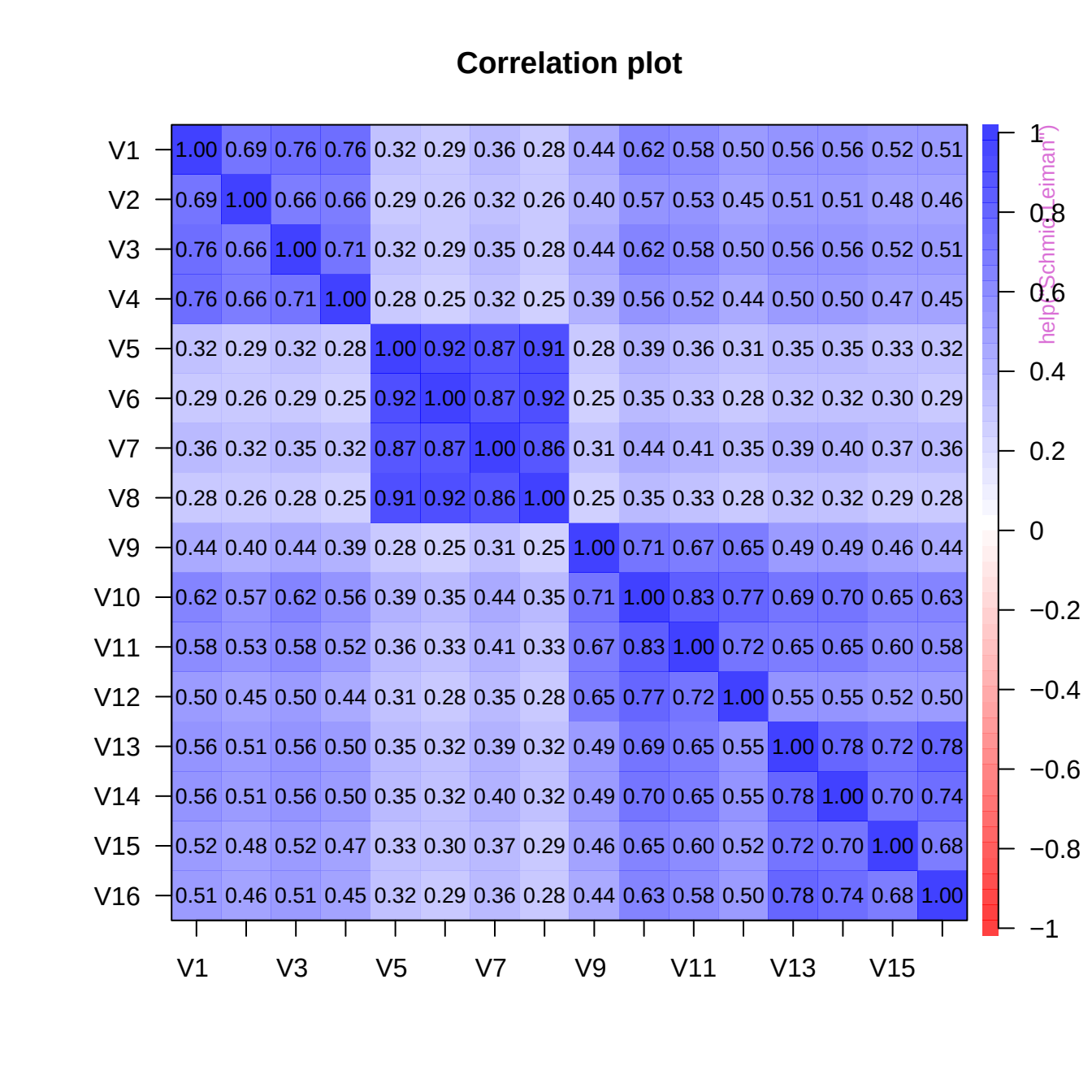

bfi sorted by iclust loadings
E4
A5
A3
E2
E3
E5
E1
A4
N1
N2
N3
N4
N5
C4
C2
C5
C1
C3
A2
A1
gender
O3
O1
O5
O2
O4
age
education
E4
E3
N1
N5
C1
O3
O4
help(ICLUST)
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1


bfi sorted by iclust order
A1
A4
A2
A3
A5
E1
E2
E4
E3
E5
O1
O3
N1
N2
N5
N3
N4
C1
C2
C3
C4
C5
gender
O4
O2
O5
education
age
A1
A5
E3
N1
N4
C4
O2
help("ICLUST")
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1

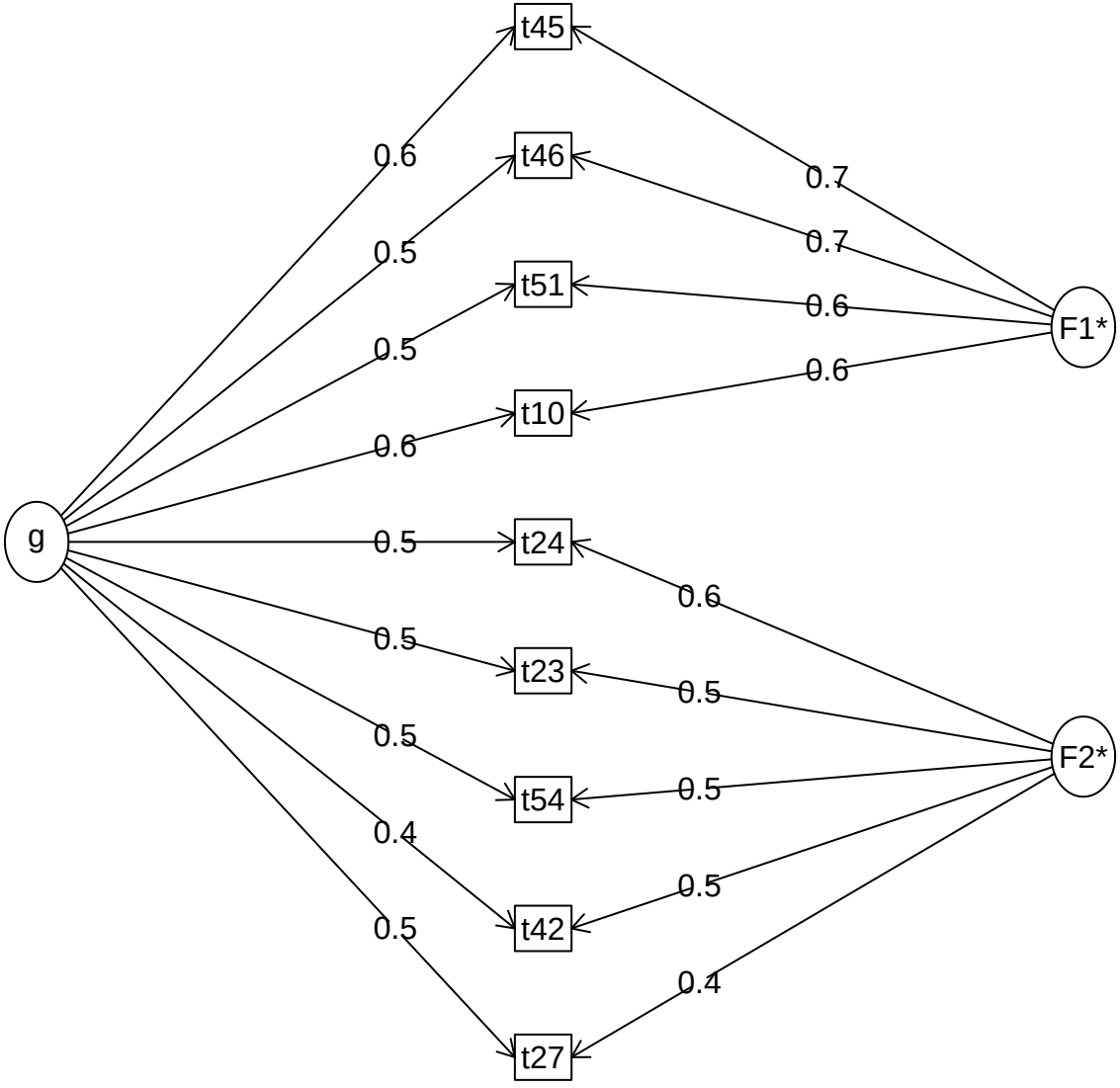
ICLUST


CountingDots
Addition
ightCurvedCapitals
Code
SeriesCompletion
Deduction
ProblemReasoning
NumericalPuzzles
ArithmeticProblems
PaperFormBoard
Flags
VisualPerception
FigureWord
NumberFigure
ObjectNumber
FigureRecognition
WordRecognition
NumberRecognition
WordMeaning
GeneralInformation
entenceCompletion
aphComprehension
WordClassification
Cubes
C1
C2
C3
C4
C5
C6
C7
C8
C9
α = 0.9
β = 0.87
C10
α = 0.74
C11
C12
α = 0.79
β = 0.74
C13
α = 0.9
β = 0.79
C14
α = 0.64
β = 0.6
C15
α = 0.79
β = 0.74
C16
α = 0.66
β = 0.6
C17
α = 0.64
β = 0.58
C18
α = 0.82
β = 0.72
C19
α = 0.74
β = 0.65
C20
α = 0.86
β = 0.74
C21
α = 0.9
β = 0.86
C22
α = 0.91
β = 0.76
C23
α = 0.91
β = 0.63
0.76
0.73
0.89
0.63
0.71
0.83
0.8
0.68
0.7
0.67
0.66
0.85
0.9
0.95
0.81
0.68
0.6
0.94
0.65
0.82
help("ICLUST.rgraph")

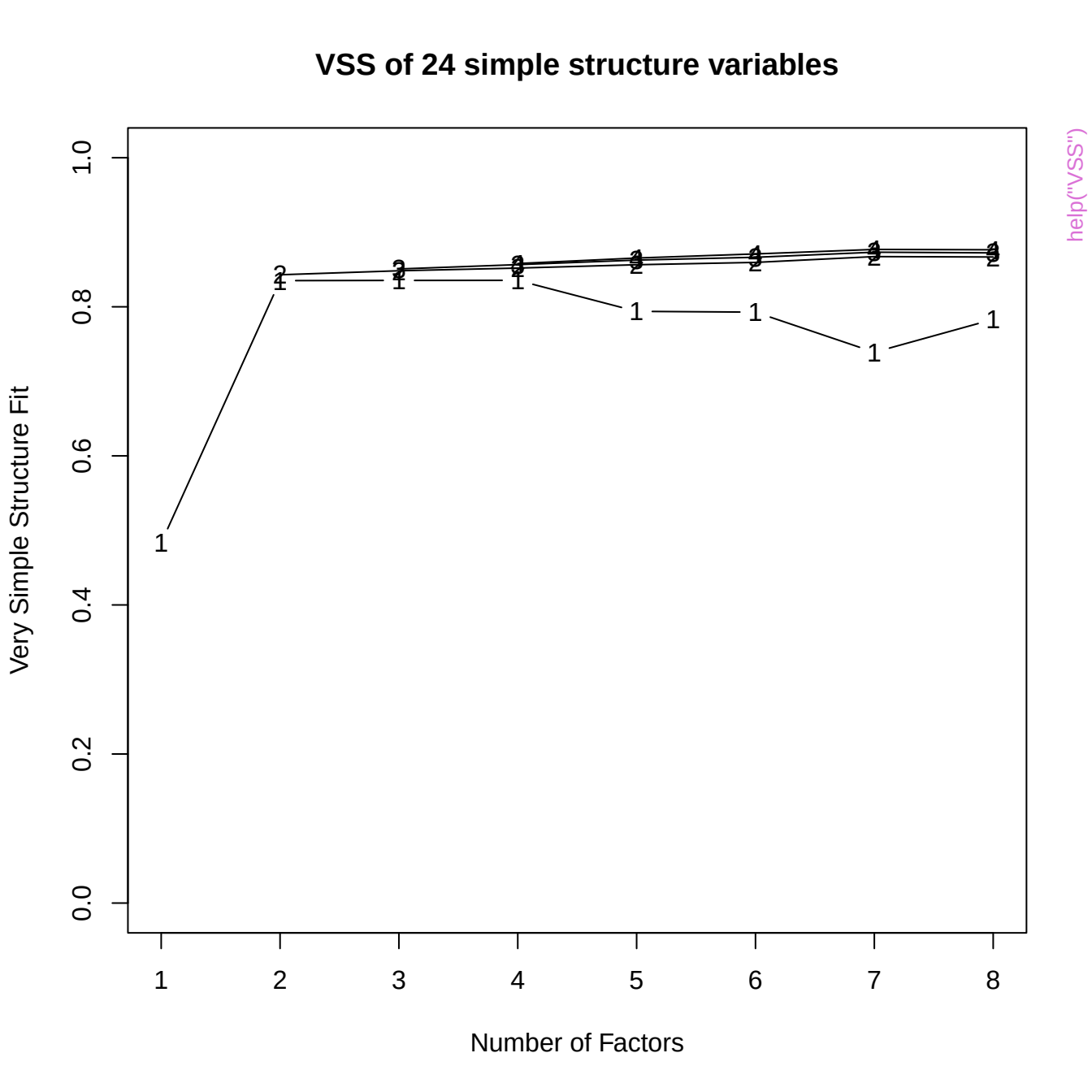

Correlation plot
V1 1.00 0.72 0.31 0.27 0.10 0.05 0.13 0.04 0.29 0.16 0.06 0.08
V2 0.72 1.00 0.35 0.30 0.11 0.06 0.15 0.04 0.33 0.18 0.07 0.08
V3 0.31 0.35 1.00 0.42 0.08 0.04 0.10 0.03 0.22 0.12 0.05 0.06
V4 0.27 0.30 0.42 1.00 0.06 0.03 0.08 0.02 0.19 0.11 0.04 0.05
V5 0.10 0.11 0.08 0.06 1.00 0.32 0.13 0.04 0.11 0.06 0.02 0.03
V6 0.05 0.06 0.04 0.03 0.32 1.00 0.07 0.02 0.05 0.03 0.01 0.01
V7 0.13 0.15 0.10 0.08 0.13 0.07 1.00 0.14 0.14 0.08 0.03 0.04
V8 0.04 0.04 0.03 0.02 0.04 0.02 0.14 1.00 0.04 0.02 0.01 0.01
V9 0.29 0.33 0.22 0.19 0.11 0.05 0.14 0.04 1.00 0.45 0.15 0.17
V10 0.16 0.18 0.12 0.11 0.06 0.03 0.08 0.02 0.45 1.00 0.08 0.09
V11 0.06 0.07 0.05 0.04 0.02 0.01 0.03 0.01 0.15 0.08 1.00 0.42
V12 0.08 0.08 0.06 0.05 0.03 0.01 0.04 0.01 0.17 0.09 0.42 1.00
V1 V2 V3 V4 V5 V6 V7 V8 V9 V10 V12
1 0.8 0.6 0.4 0.2 0 −0.2 −0.4 −0.6 −0.8 −1
help(Schmid.eimar)

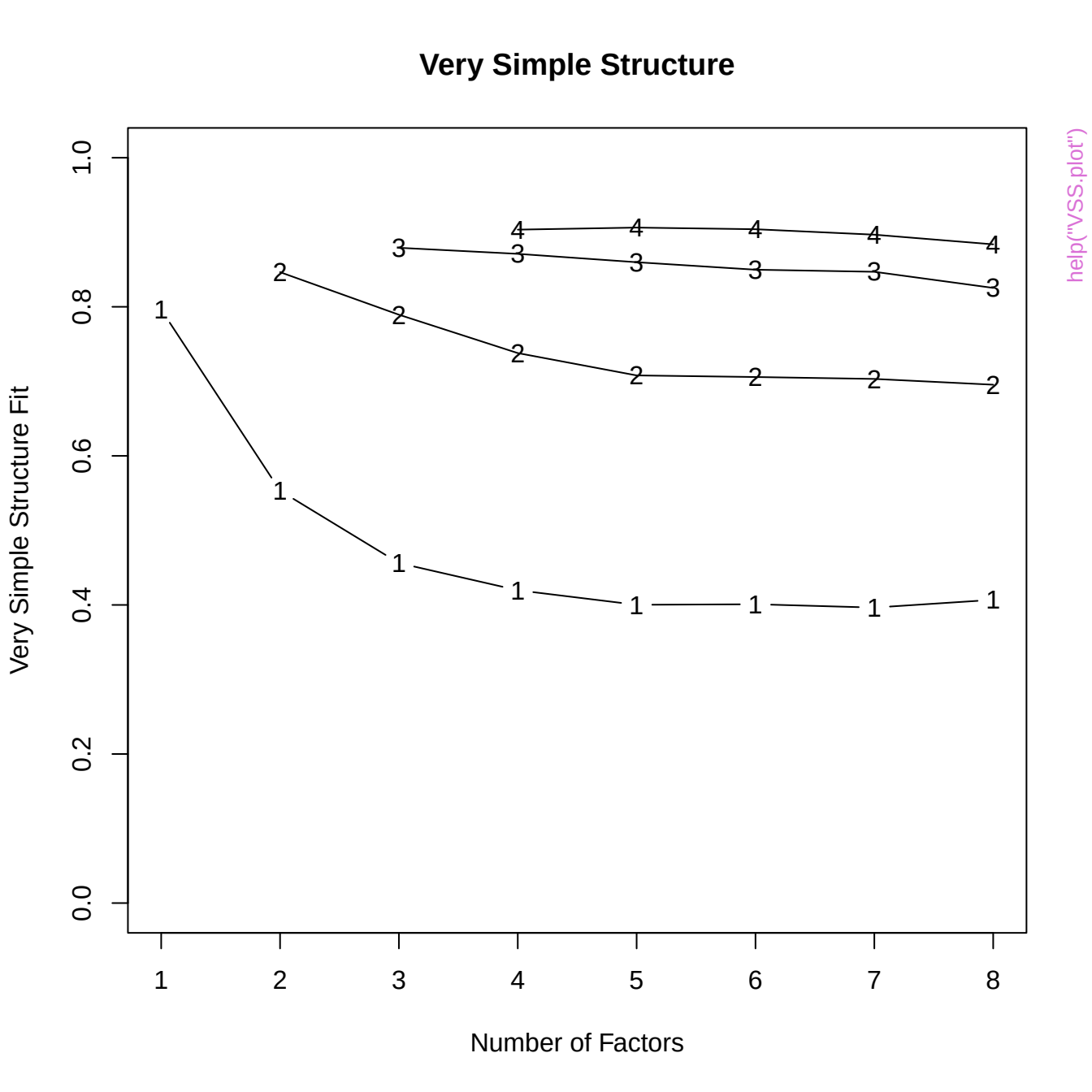

Correlation plot
V1 1.00 0.69 0.76 0.76 0.32 0.29 0.36 0.28 0.44 0.62 0.58 0.50 0.56 0.56 0.52 0.51
V2 0.69 1.00 0.66 0.66 0.29 0.26 0.32 0.26 0.40 0.57 0.53 0.45 0.51 0.51 0.48 0.46
V3 0.76 0.66 1.00 0.71 0.32 0.29 0.35 0.28 0.44 0.62 0.58 0.50 0.56 0.56 0.52 0.51
V4 0.76 0.66 0.71 1.00 0.28 0.25 0.32 0.25 0.39 0.56 0.52 0.44 0.50 0.50 0.47 0.45
V5 0.32 0.29 0.32 0.28 1.00 0.92 0.87 0.91 0.28 0.39 0.36 0.31 0.35 0.35 0.33 0.32
V6 0.29 0.26 0.29 0.25 0.92 1.00 0.87 0.92 0.25 0.35 0.33 0.28 0.32 0.32 0.30 0.29
V7 0.36 0.32 0.35 0.32 0.87 0.87 1.00 0.86 0.31 0.44 0.41 0.35 0.39 0.40 0.37 0.36
V8 0.28 0.26 0.28 0.25 0.91 0.92 0.86 1.00 0.25 0.35 0.33 0.28 0.32 0.32 0.29 0.28
V9 0.44 0.40 0.44 0.39 0.28 0.25 0.31 0.25 1.00 0.71 0.67 0.65 0.49 0.49 0.46 0.44
V10 0.62 0.57 0.62 0.56 0.39 0.35 0.44 0.35 0.71 1.00 0.83 0.77 0.69 0.70 0.65 0.63
V11 0.58 0.53 0.58 0.52 0.36 0.33 0.41 0.33 0.67 0.83 1.00 0.72 0.65 0.65 0.60 0.58
V12 0.50 0.45 0.50 0.44 0.31 0.28 0.35 0.28 0.65 0.77 0.72 1.00 0.55 0.55 0.52 0.50
V13 0.56 0.51 0.56 0.50 0.35 0.32 0.39 0.32 0.49 0.69 0.65 0.55 1.00 0.78 0.72 0.78
V14 0.56 0.51 0.56 0.50 0.35 0.32 0.40 0.32 0.49 0.70 0.65 0.55 0.78 1.00 0.70 0.74
V15 0.52 0.48 0.52 0.47 0.33 0.30 0.37 0.29 0.46 0.65 0.60 0.52 0.72 0.70 1.00 0.68
V16 0.51 0.46 0.51 0.45 0.32 0.29 0.36 0.28 0.44 0.63 0.58 0.50 0.78 0.74 0.68 1.00
V1 V3 V5 V7 V9 V11 V13 V15
1 0.8 0.6 0.4 0.2 0 −0.2 −0.4 −0.6 −0.8 −1
help(Schmid.Leiman)

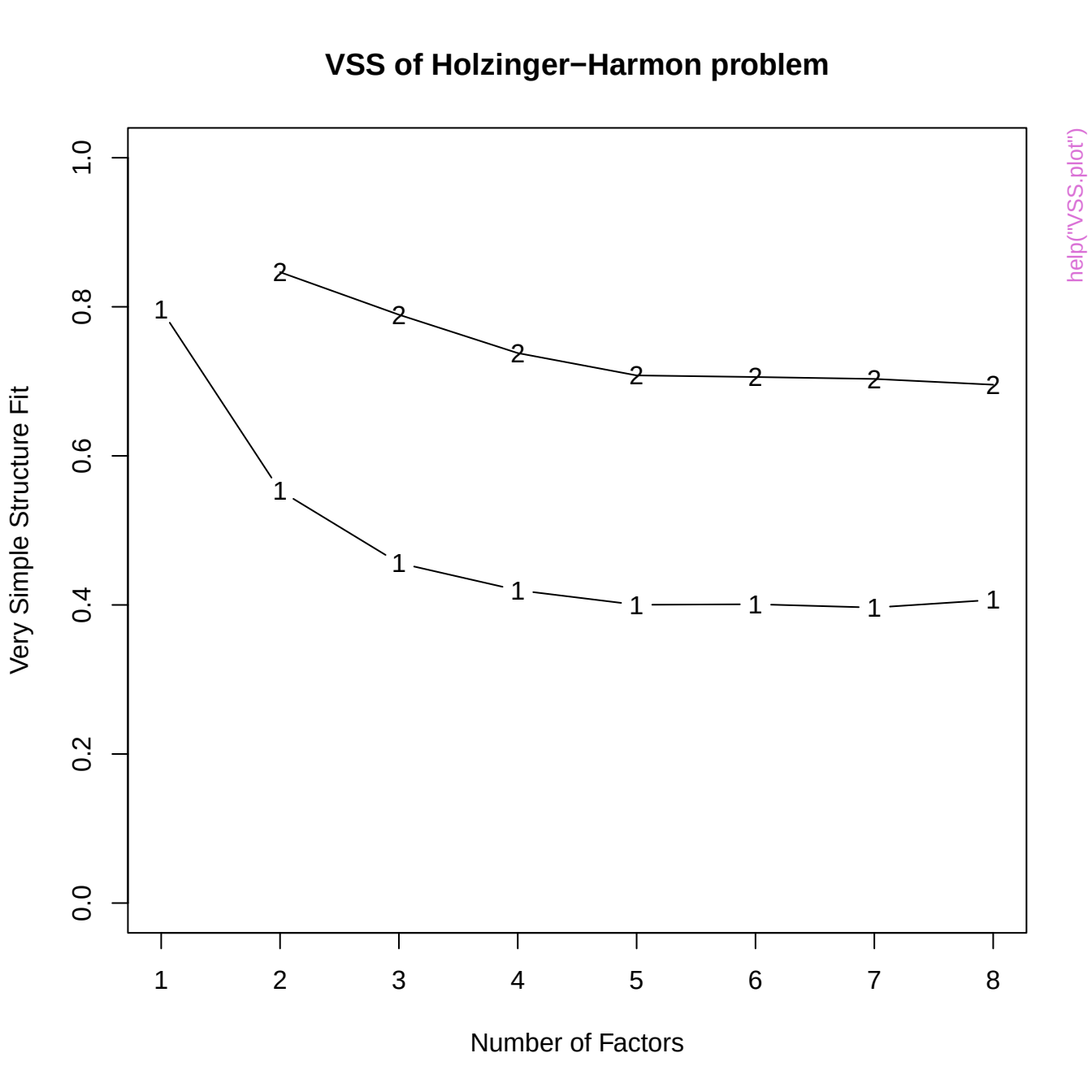
Omega

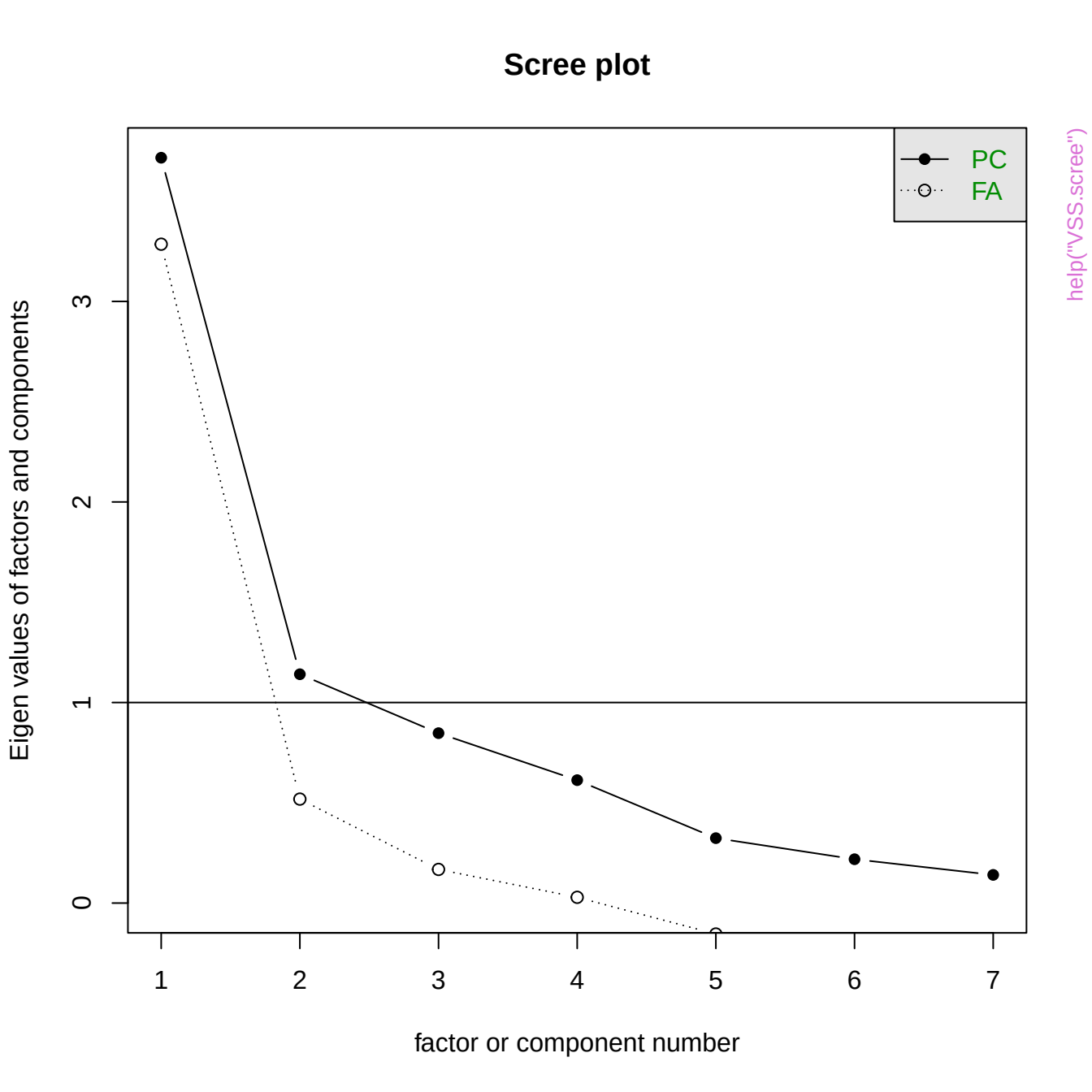


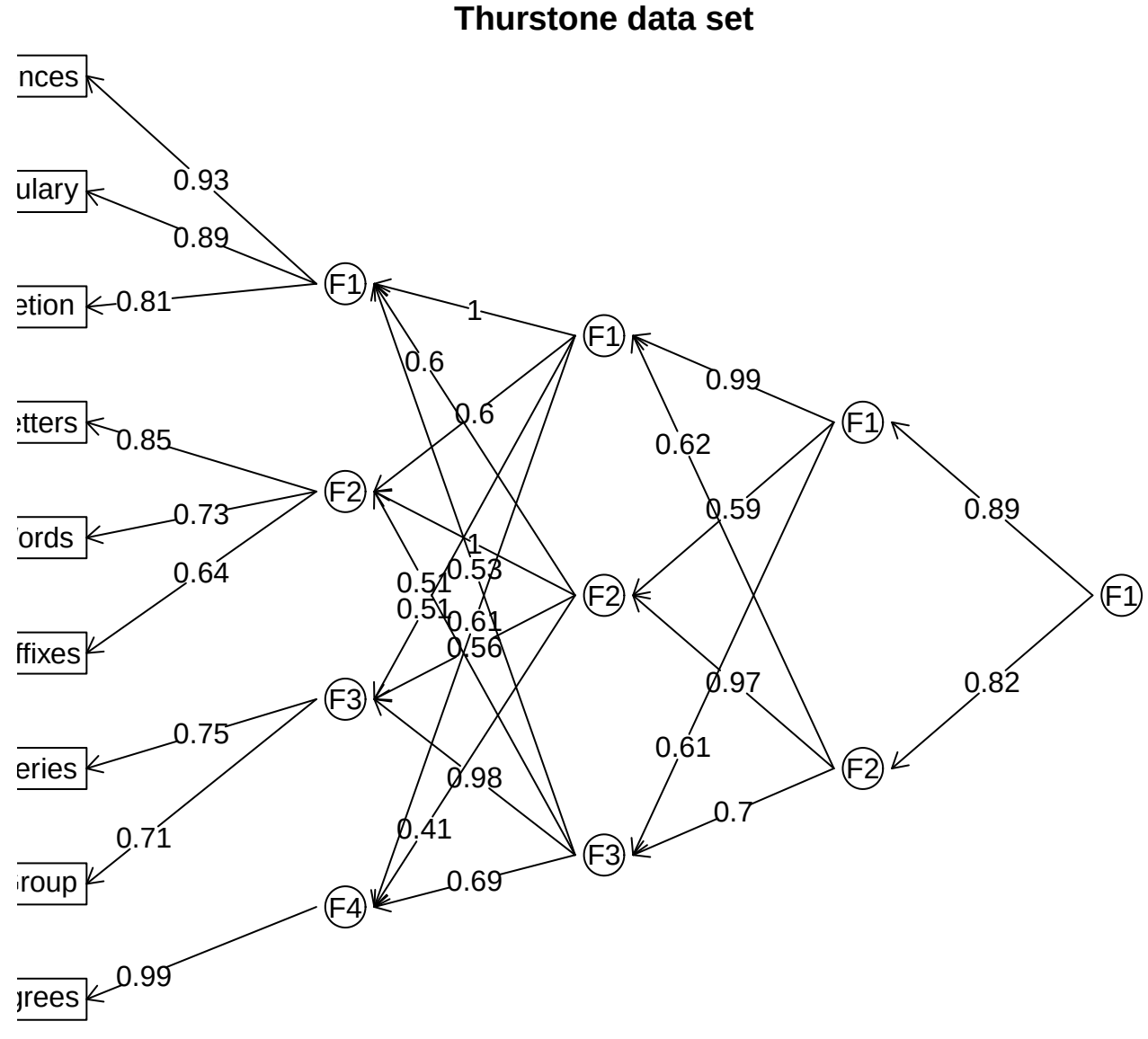
help("Tucker")

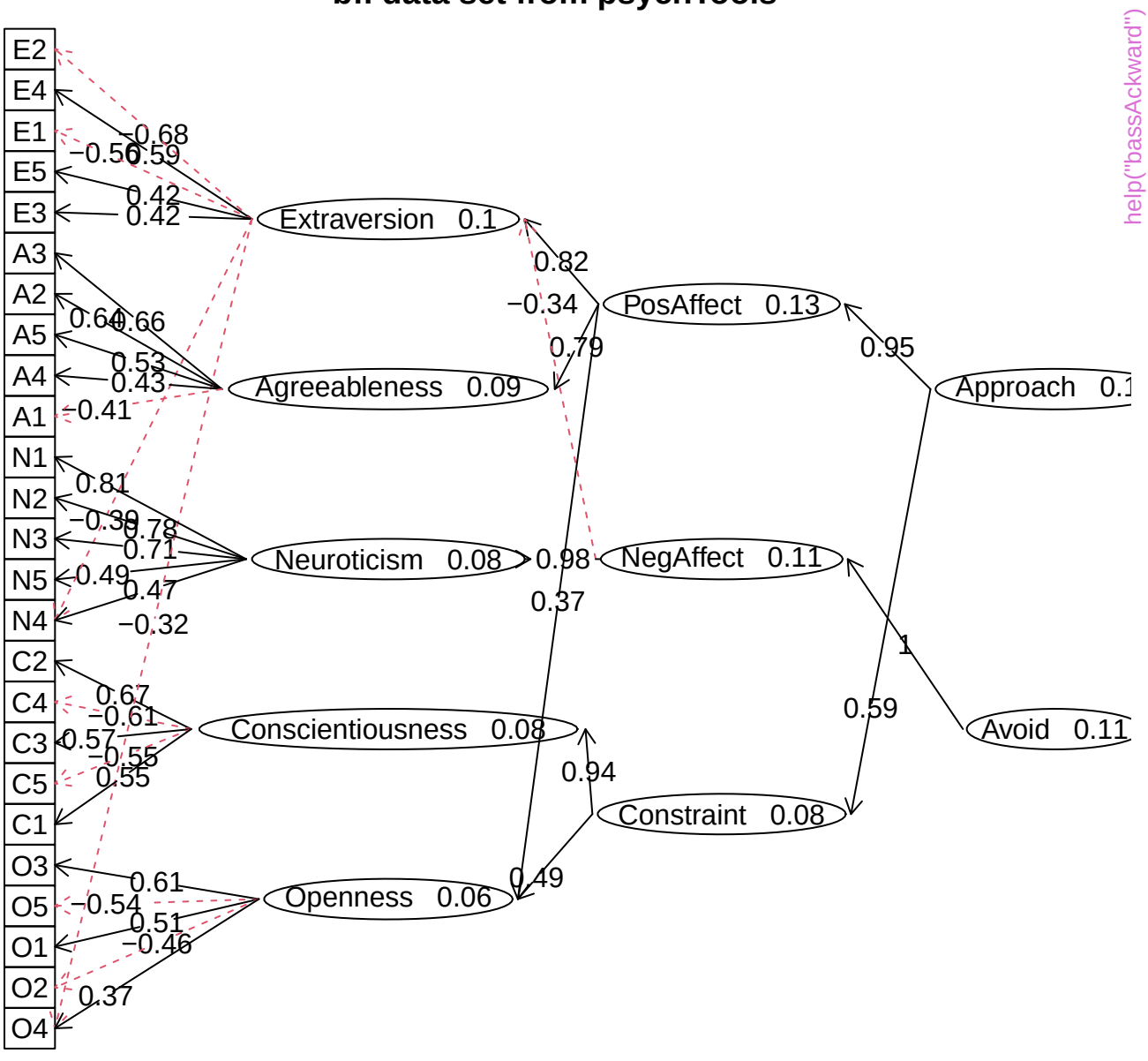

VSS of 24 simple structure variables
Very Simple Structure Fit
Number of Factors
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6
7
8
help("VSS")

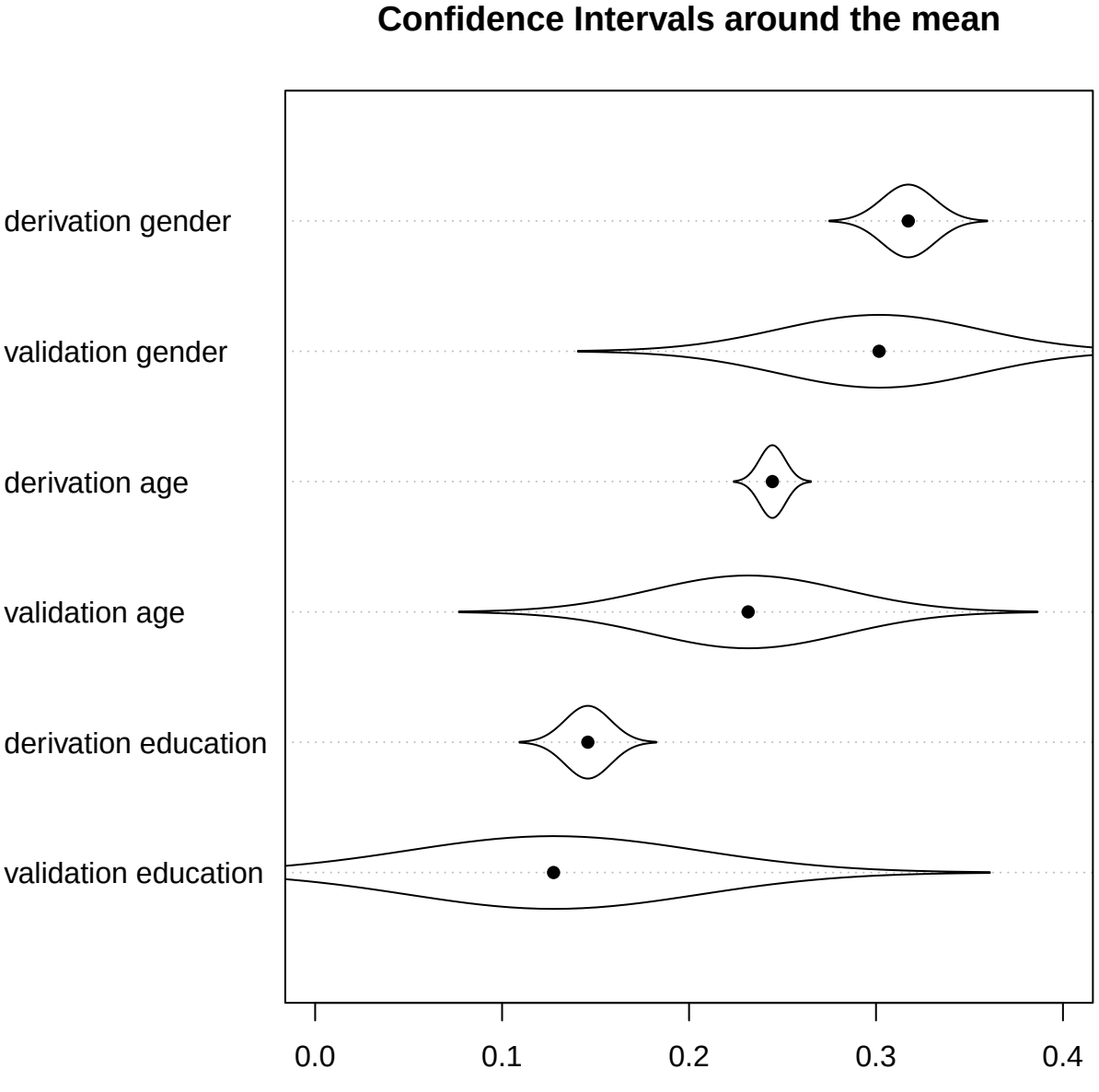

Very Simple Structure
Very Simple Structure Fit
Number of Factors
help("VSS.plot")
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6
7
8

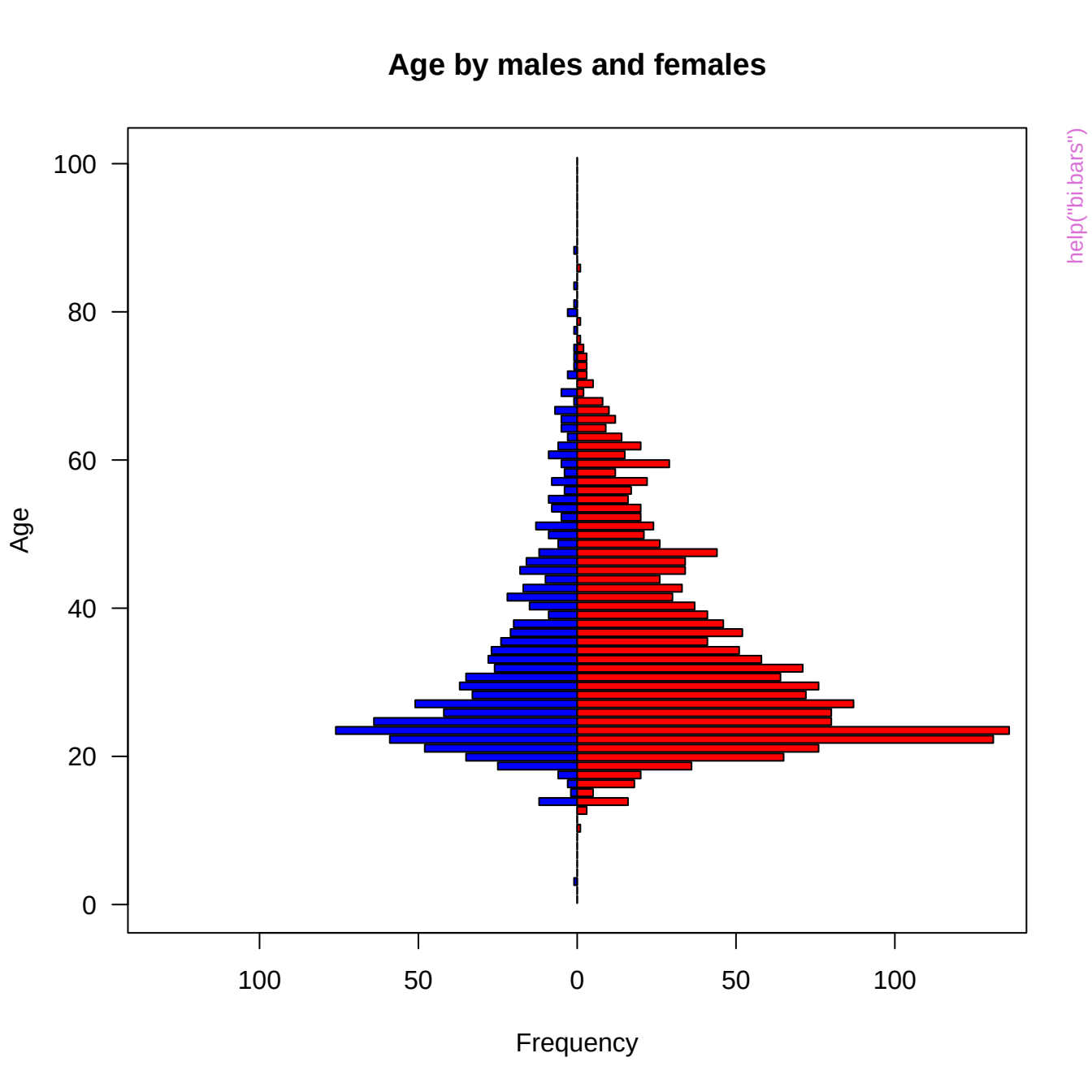

VSS of Holzinger−Harmon problem
Very Simple Structure Fit
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6
7
8
Number of Factors
help("VSS.plot")

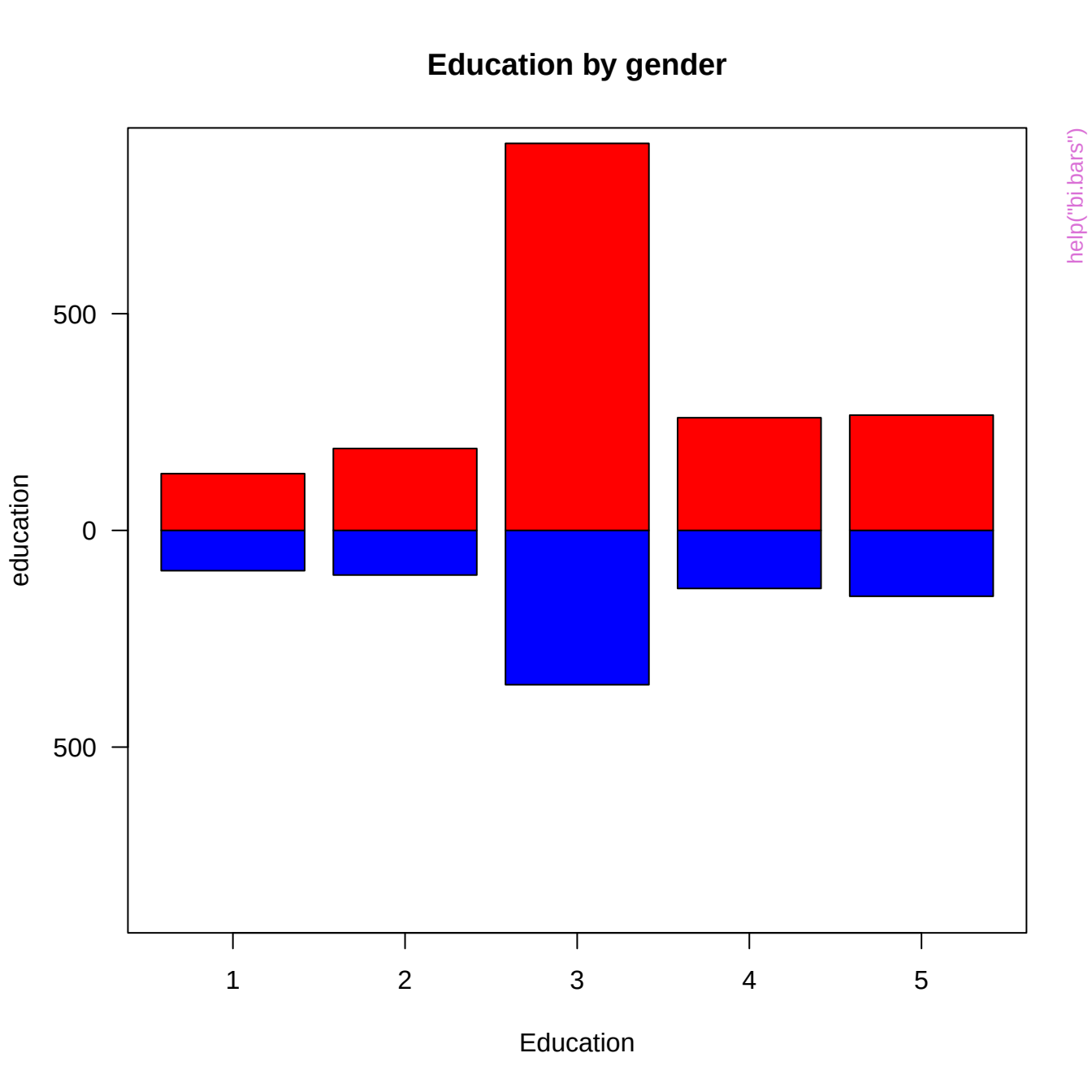

Scree plot
PC
FA
help("VSS.scree")
Eigen values of factors and components
0
1
2
3
1
2
3
4
5
6
7
factor or component number


Thurstone data set
help("bassAckward")
nces
ulary
etion
tters
ords
ffixes
eries
roup
grees
0.93
0.89
0.81
0.85
0.73
0.64
0.75
0.71
0.99
F1
F2
F3
F4
1
0.6
0.6
1
0.53
0.51
0.51
0.61
0.56
0.98
0.41
0.69
F1
F2
F3
0.99
0.62
0.59
0.97
0.61
0.7
F1
F2
0.89
0.82
F1

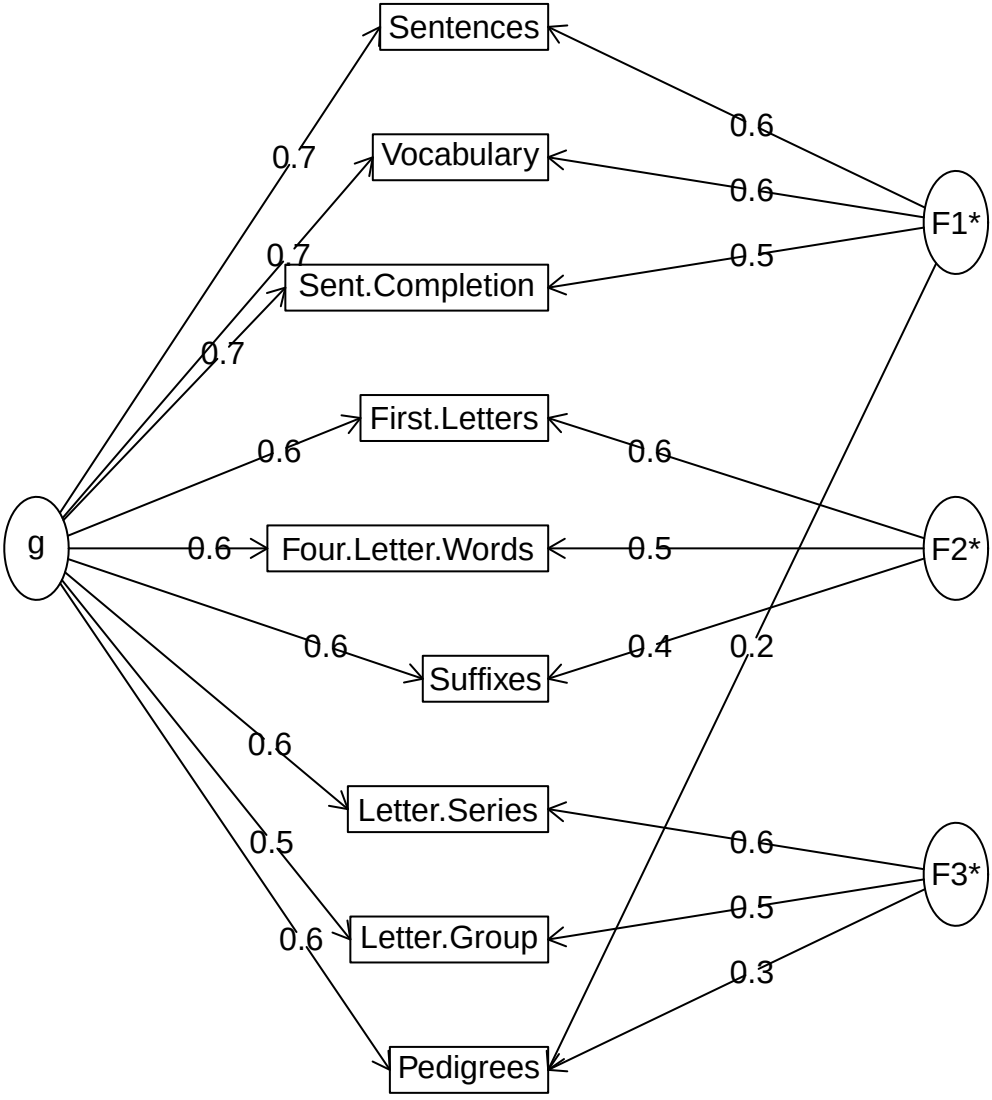

bfi data set from psychTools
E2
E4
E1
E5
E3
A3
A2
A5
A4
A1
N1
N2
N3
N5
N4
C2
C4
C3
C5
C1
O3
O5
O1
O2
O4
−0.68
−0.56
0.59
0.42
0.42
0.64
0.66
0.53
0.43
−0.41
0.81
−0.38
0.78
0.71
0.49
0.47
−0.32
0.67
−0.61
0.57
−0.55
0.55
0.61
−0.54
0.51
−0.46
0.37
Extraversion 0.1
Agreeableness 0.09
Neuroticism 0.08
Conscientiousness 0.08
Openness 0.06
0.82
−0.34
0.79
0.98
0.37
0.94
0.49
PosAffect 0.13
NegAffect 0.11
Constraint 0.08
0.95
1
0.59
Approach 0.1
Avoid 0.11
help("bassAckward")

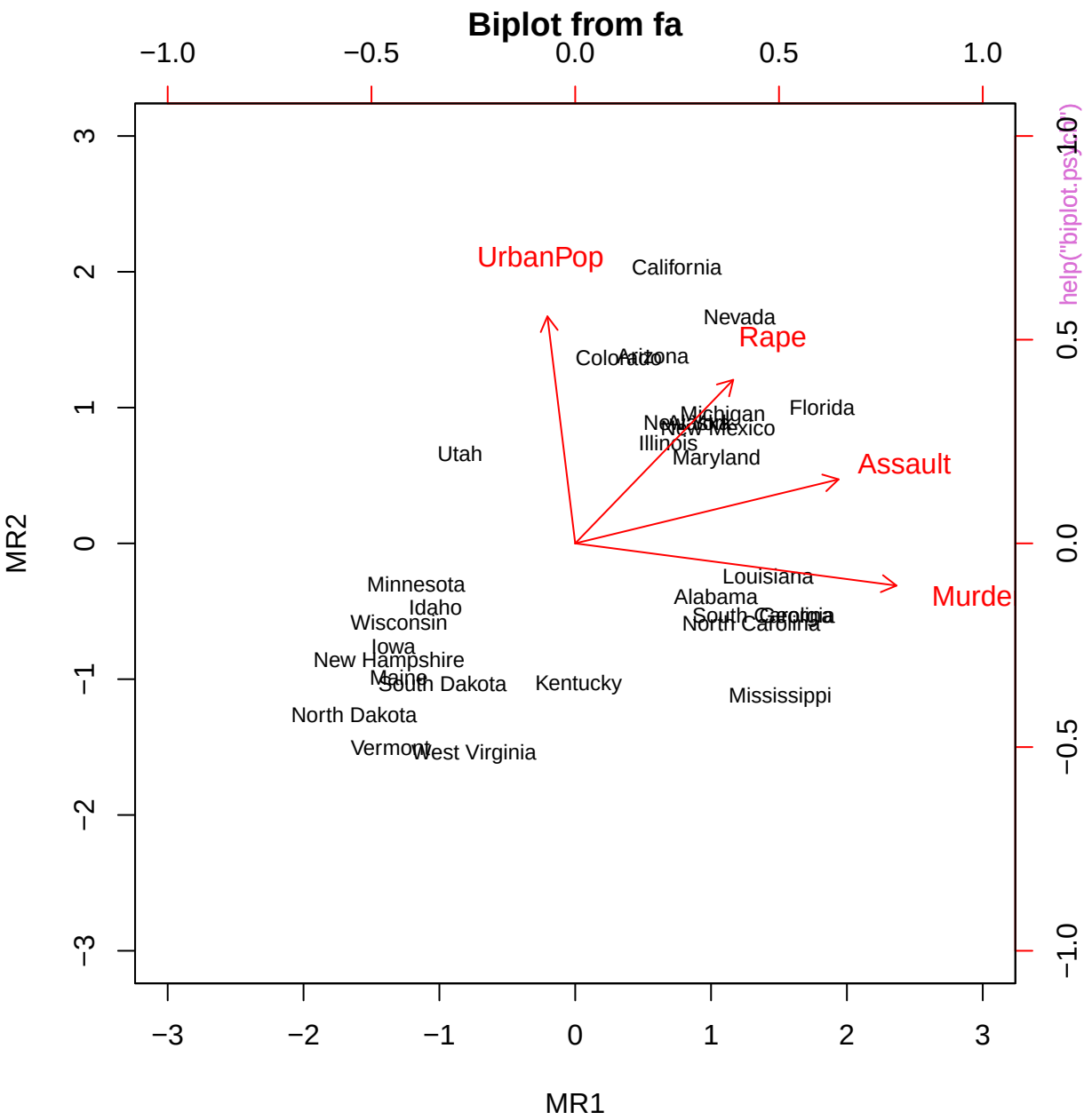

Confidence Intervals around the mean
derivation gender
validation gender
derivation age
validation age
derivation education
validation education
0.0
0.1
0.2
0.3
0.4
help("best.scales")

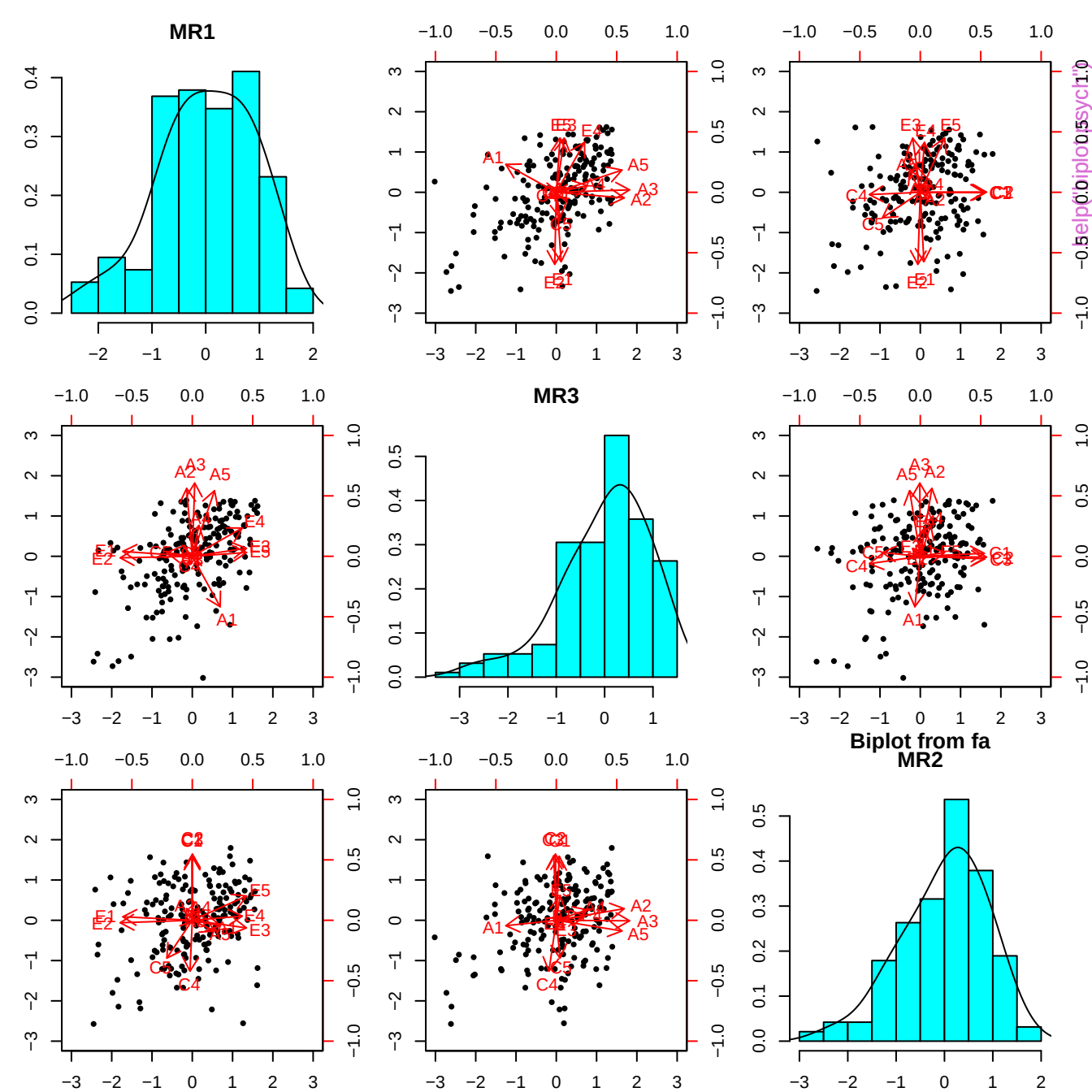

Age by males and females
help("bi.bars")
Age
100
80
60
40
20
0
100
50
0
50
100
Frequency

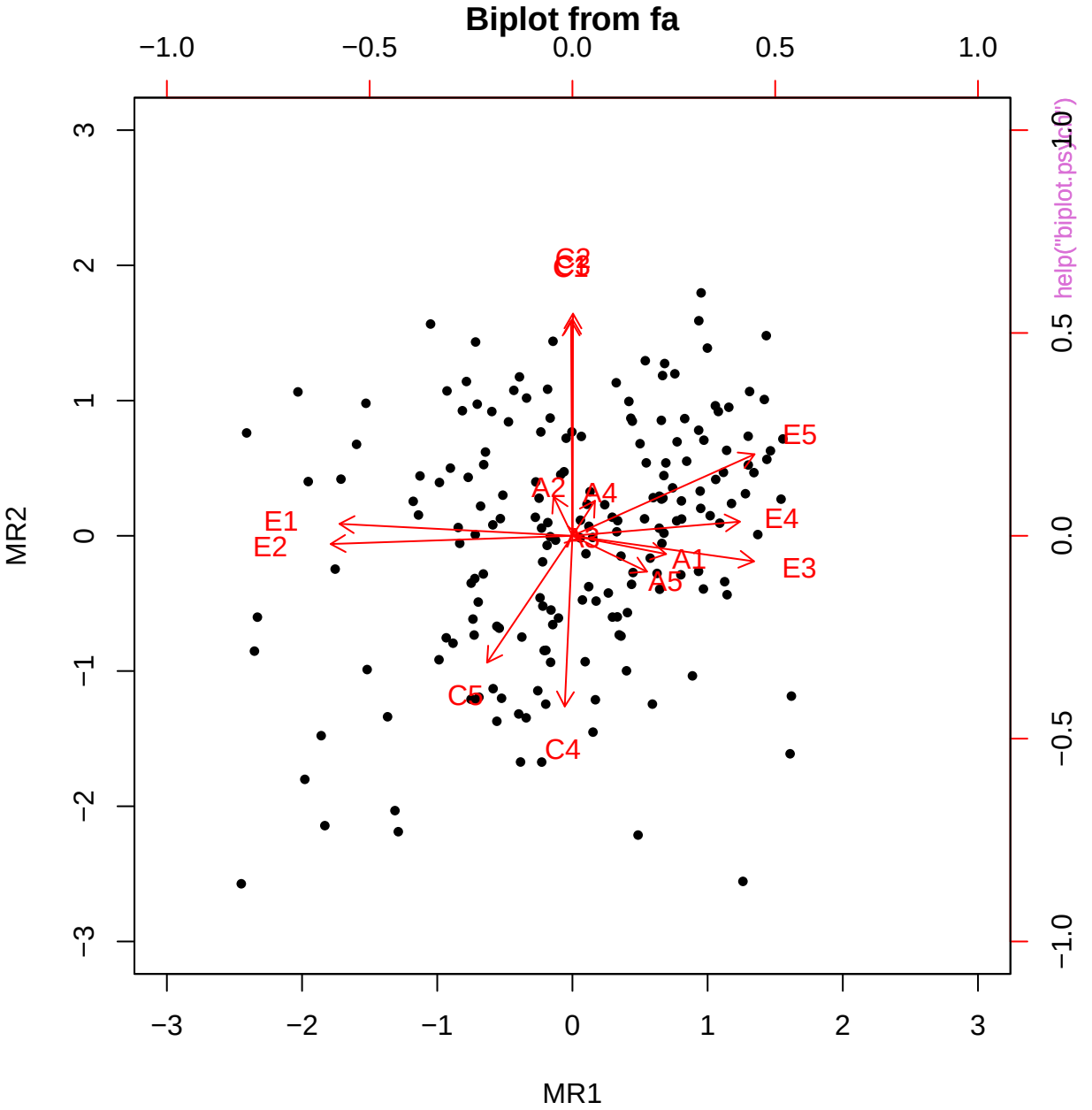

Education by gender
help("bi.bars")
500
0
500
education
1
2
3
4
5
Education

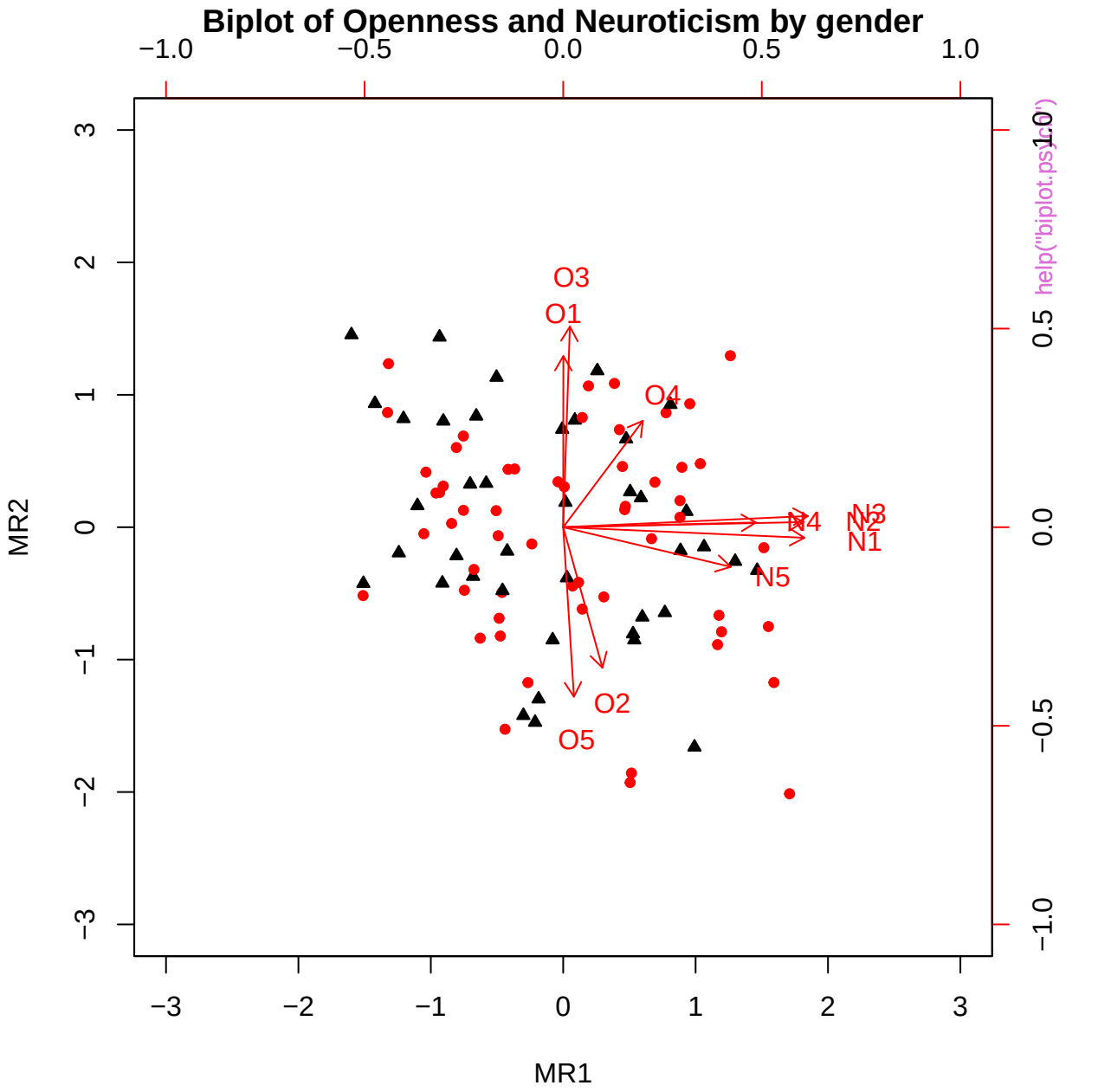
9 variables from Thurstone

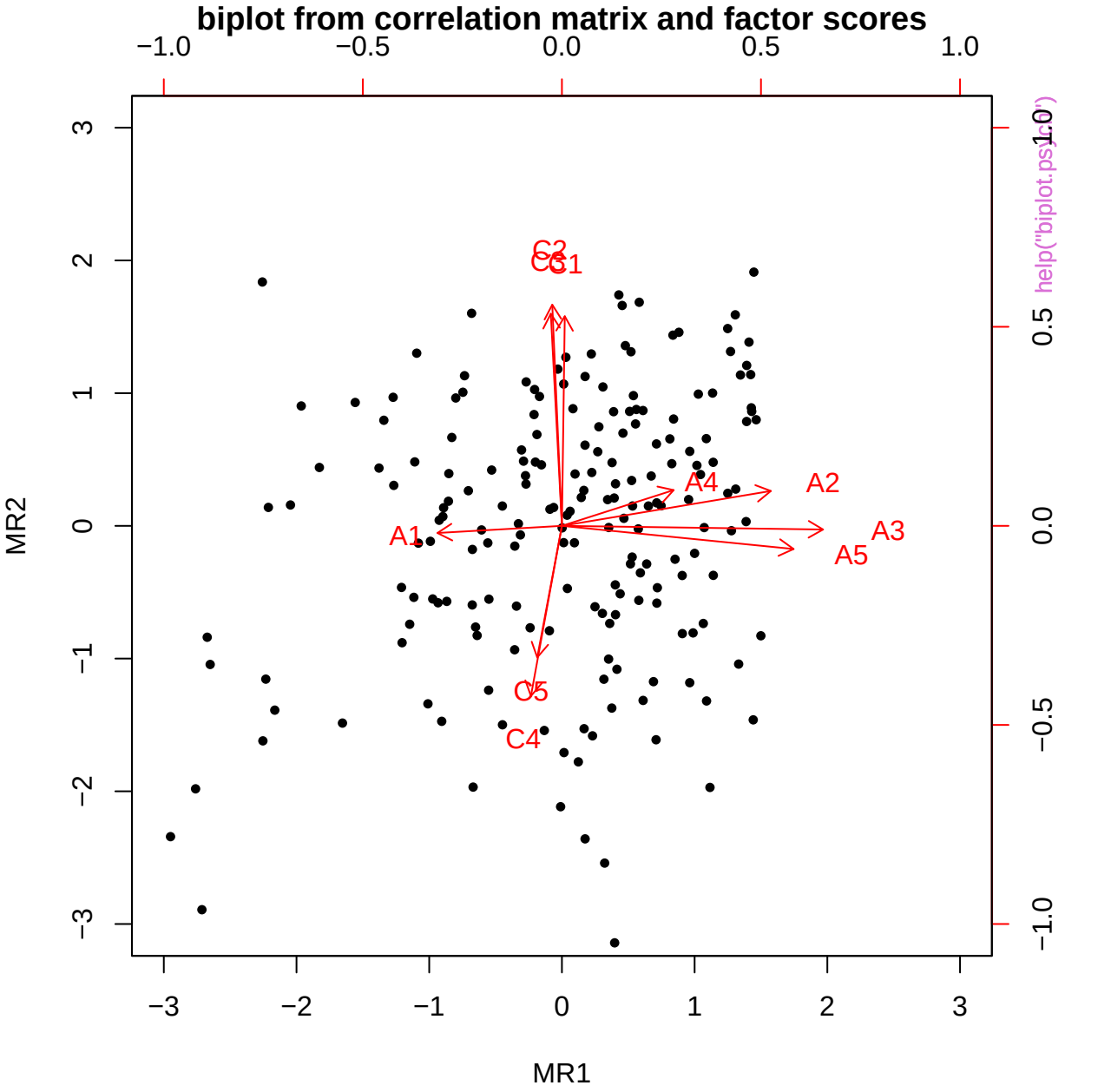


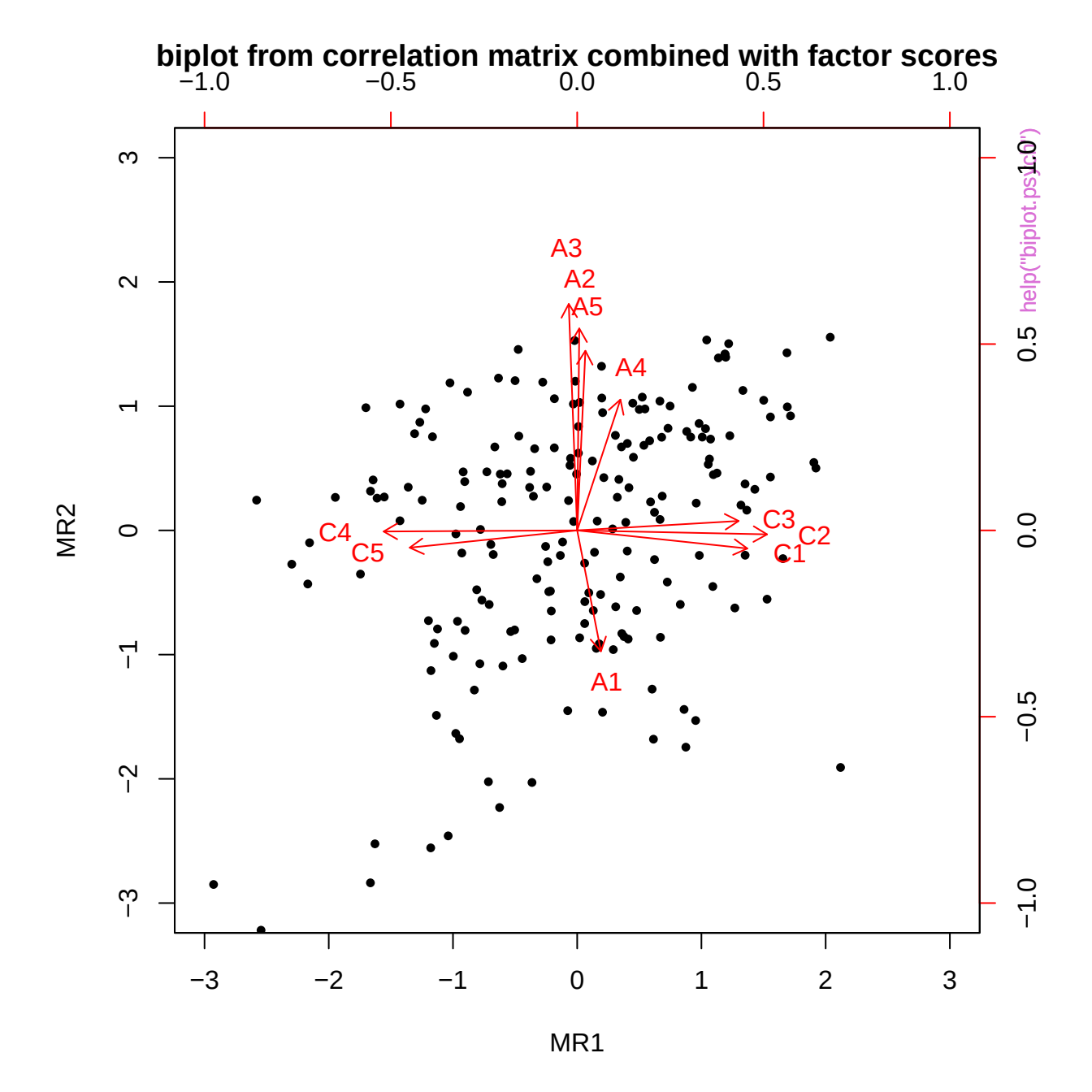

Biplot from fa
−1.0
−0.5
0.0
0.5
1.0
3
2
1
0
−1
−2
−3
MR2
MR1
−3
−2
−1
0
1
2
3
1.0
0.5
0.0
−0.5
−1.0
help("biplot.psych")
UrbanPop
Rape
Assault
Murde
California
Nevada
Colorado
Arizona
Florida
Michigan
New Mexico
Illinois
Utah
Maryland
Louisiana
Alabama
North Carolina
Minnesota
Idaho
Wisconsin
Iowa
New Hampshire
Maine
South Dakota
Kentucky
Mississippi
North Dakota
Vermont
West Virginia

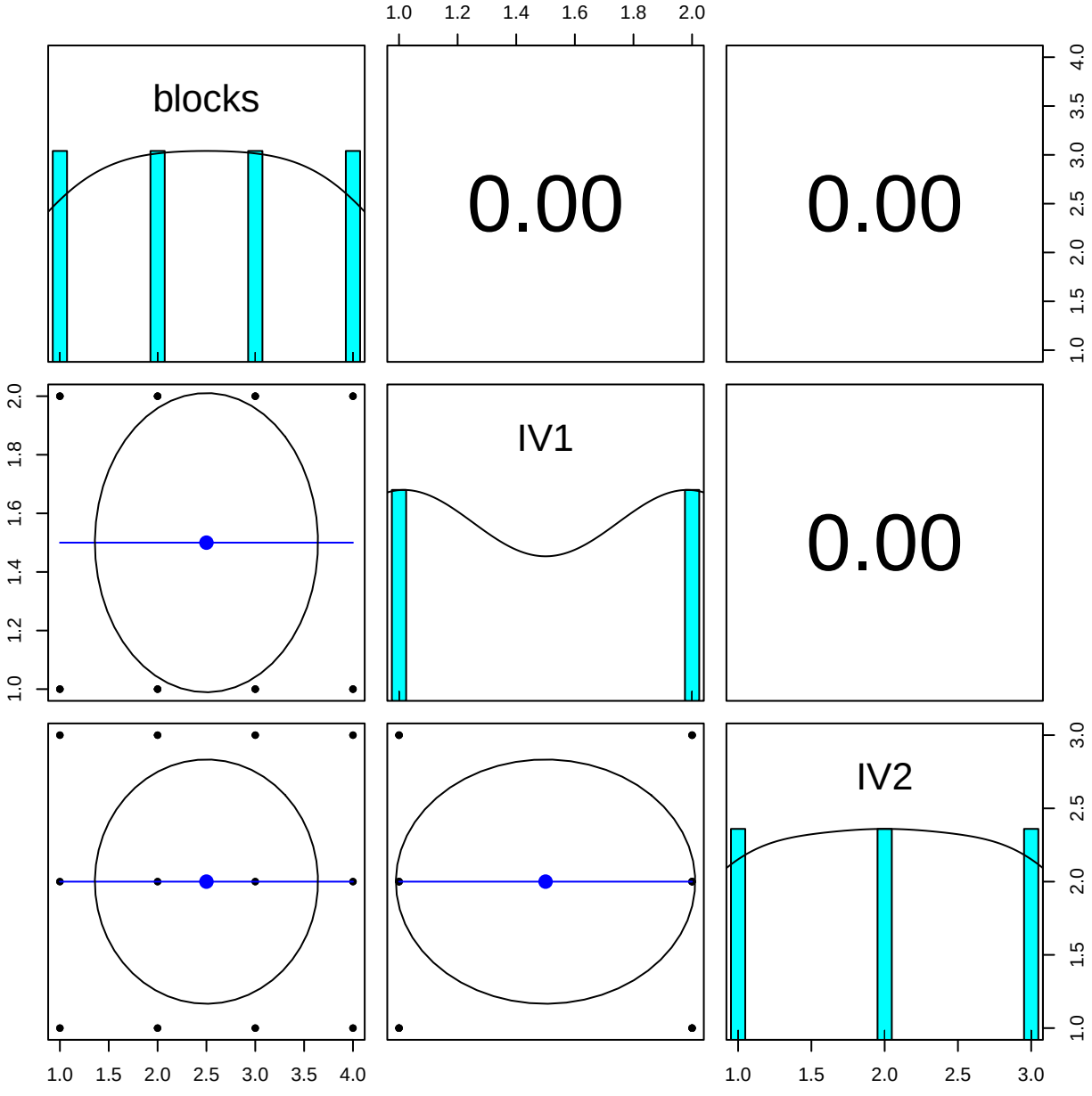

MR1
MR3
Biplot from fa
MR2
A1
A2
A3
A5
C1
C2
C4
C5
E1
E2
E3
E4
E5


Biplot from fa
−1.0
−0.5
0.0
0.5
1.0
MR2
MR1
−3
−2
−1
0
1
2
3
help("biplot.psych")
C2
C3
C1
E5
A2
A4
A3
E1
E2
E4
A1
A5
E3
C5
C4

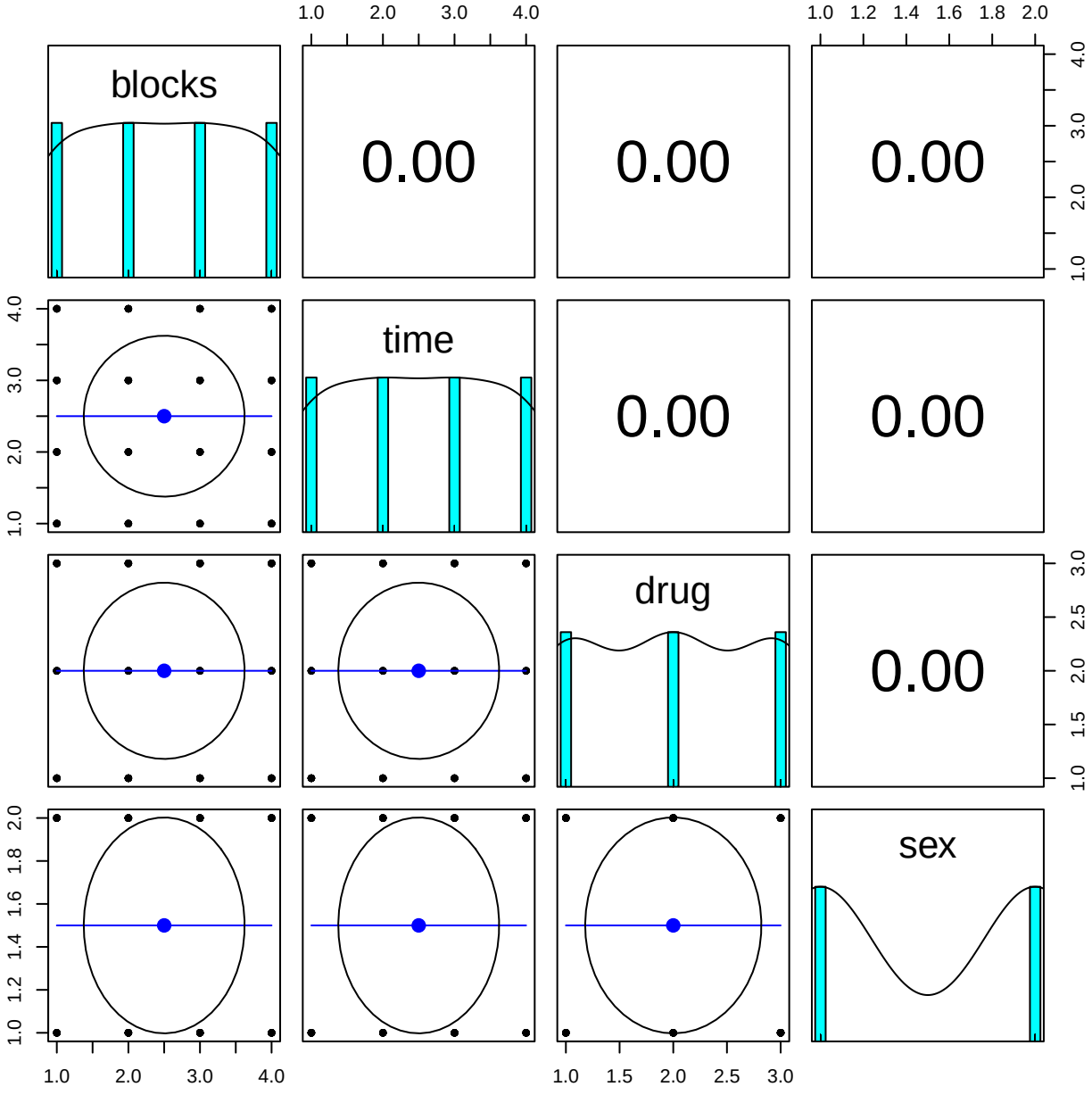

Biplot of Openness and Neuroticism by gender
−1.0
−0.5
0.0
0.5
1.0
help("biplot.psych")
3
2
1
0
−1
−2
−3
MR2
O3
O1
O4
N3
N4
N2
N1
N5
O2
O5
−3
−2
−1
0
1
2
3
MR1

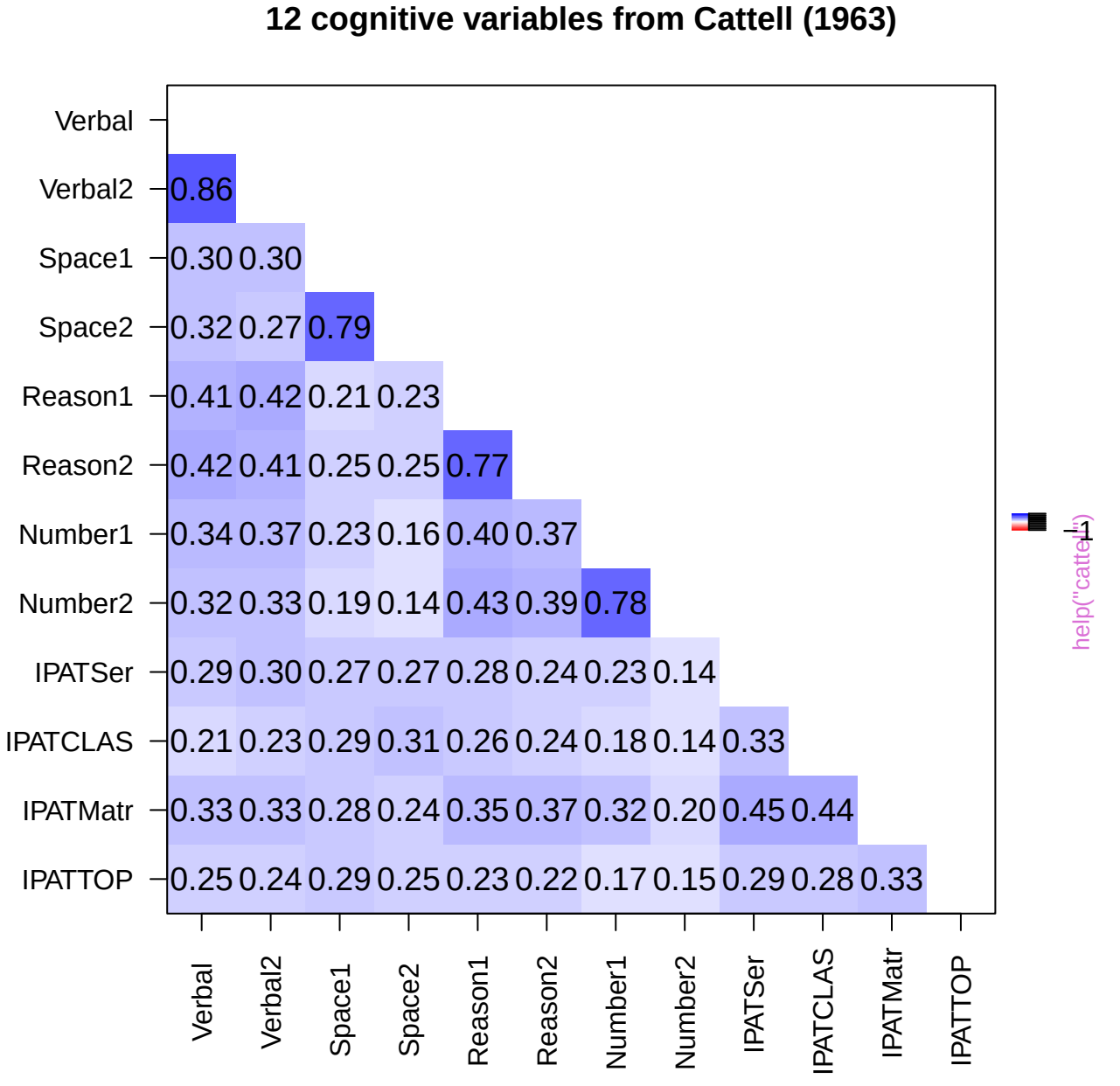

biplot from correlation matrix and factor scores
−1.0
−0.5
0.0
0.5
1.0
3
2
1
0
−1
−2
−3
MR2
C2
C3
C1
A4
A2
A1
A3
A5
C5
C4
MR1
help("biplot.psych")

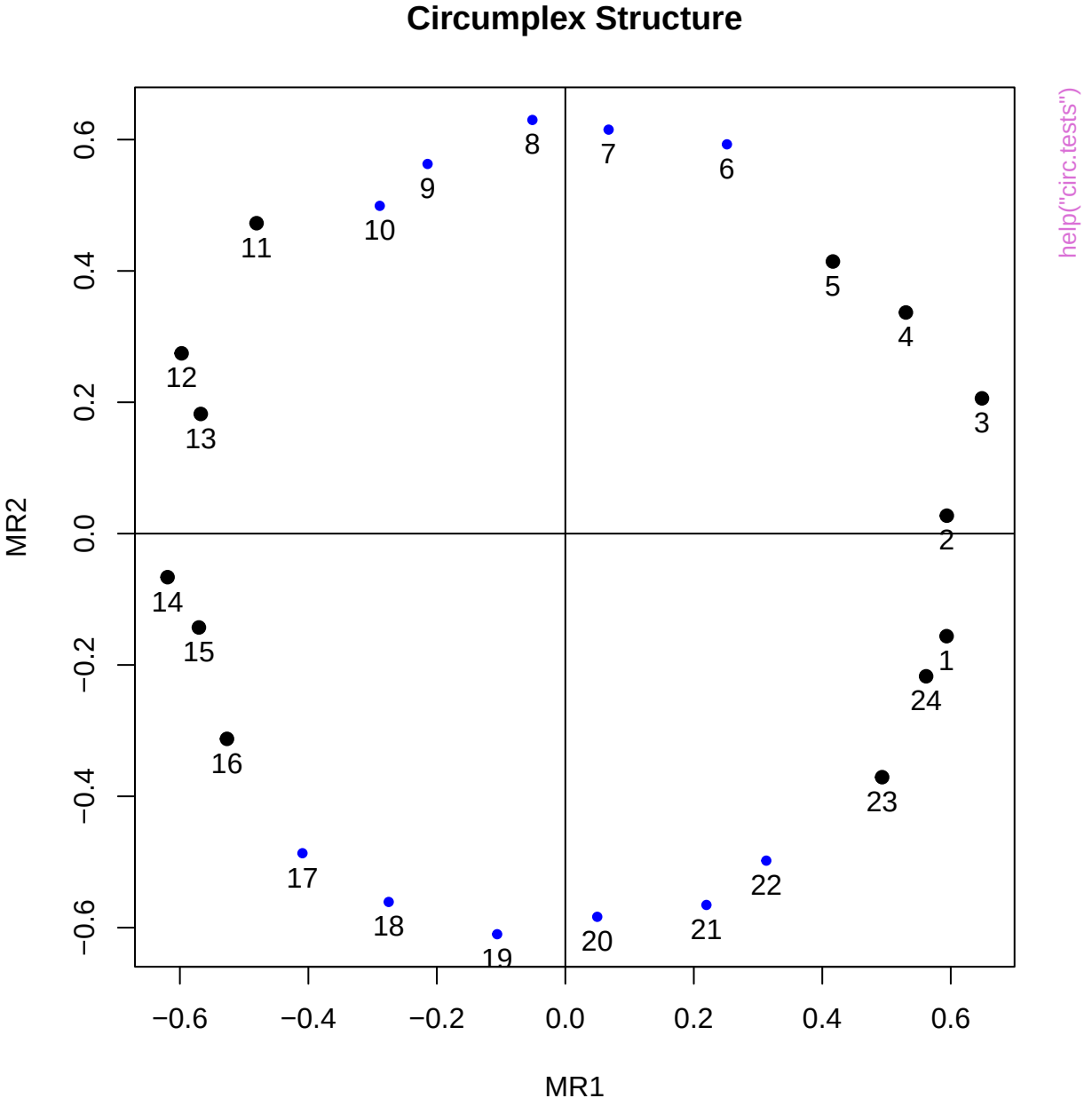

biplot from correlation matrix combined with factor scores
−1.0
−0.5
0.0
0.5
1.0
help("biplot.psych")
A3
A2
A5
A4
C3
C2
C4
C5
C1
A1
MR2
MR1
3
2
1
0
−1
−2
−3

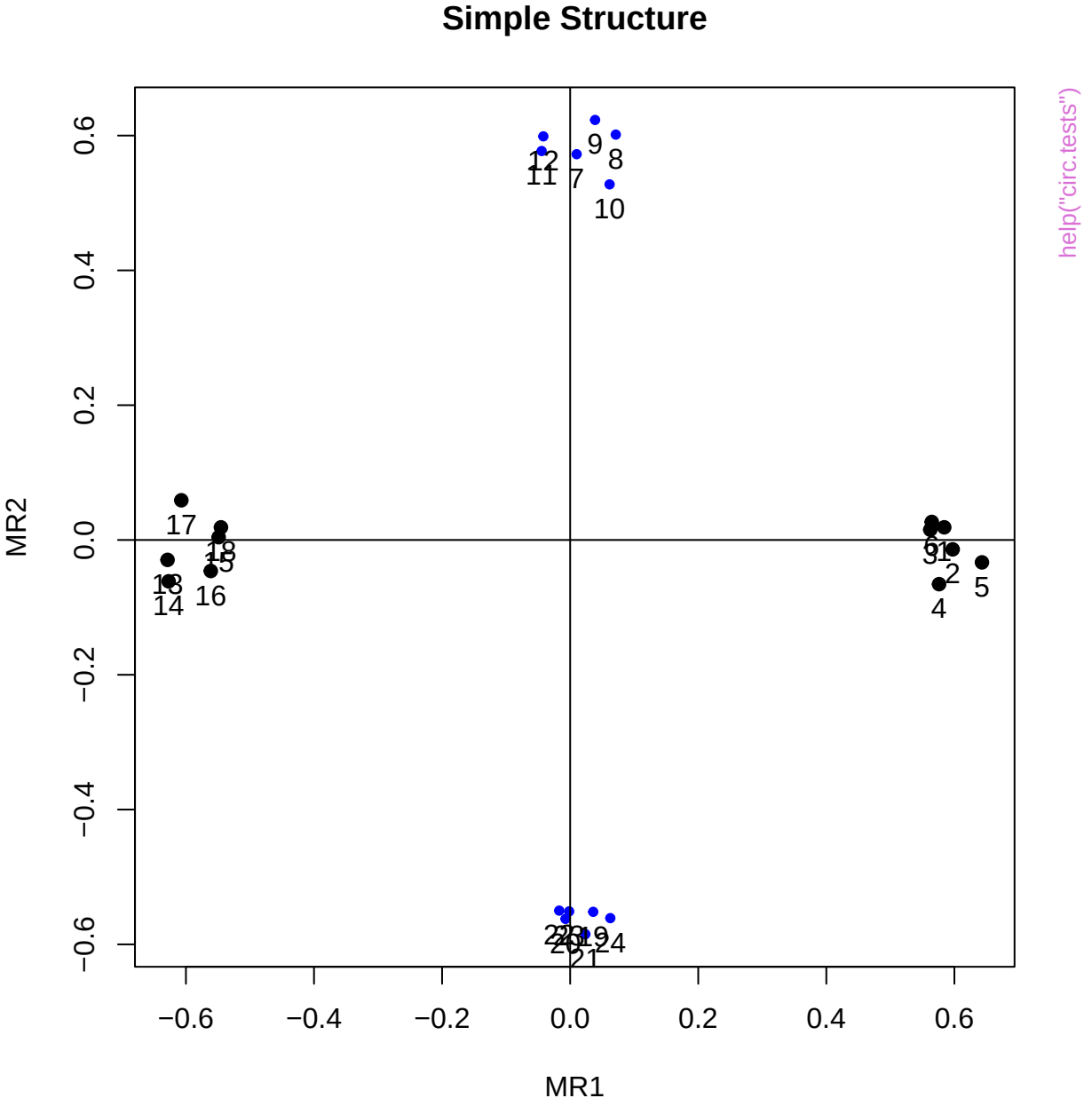


help("block.random")

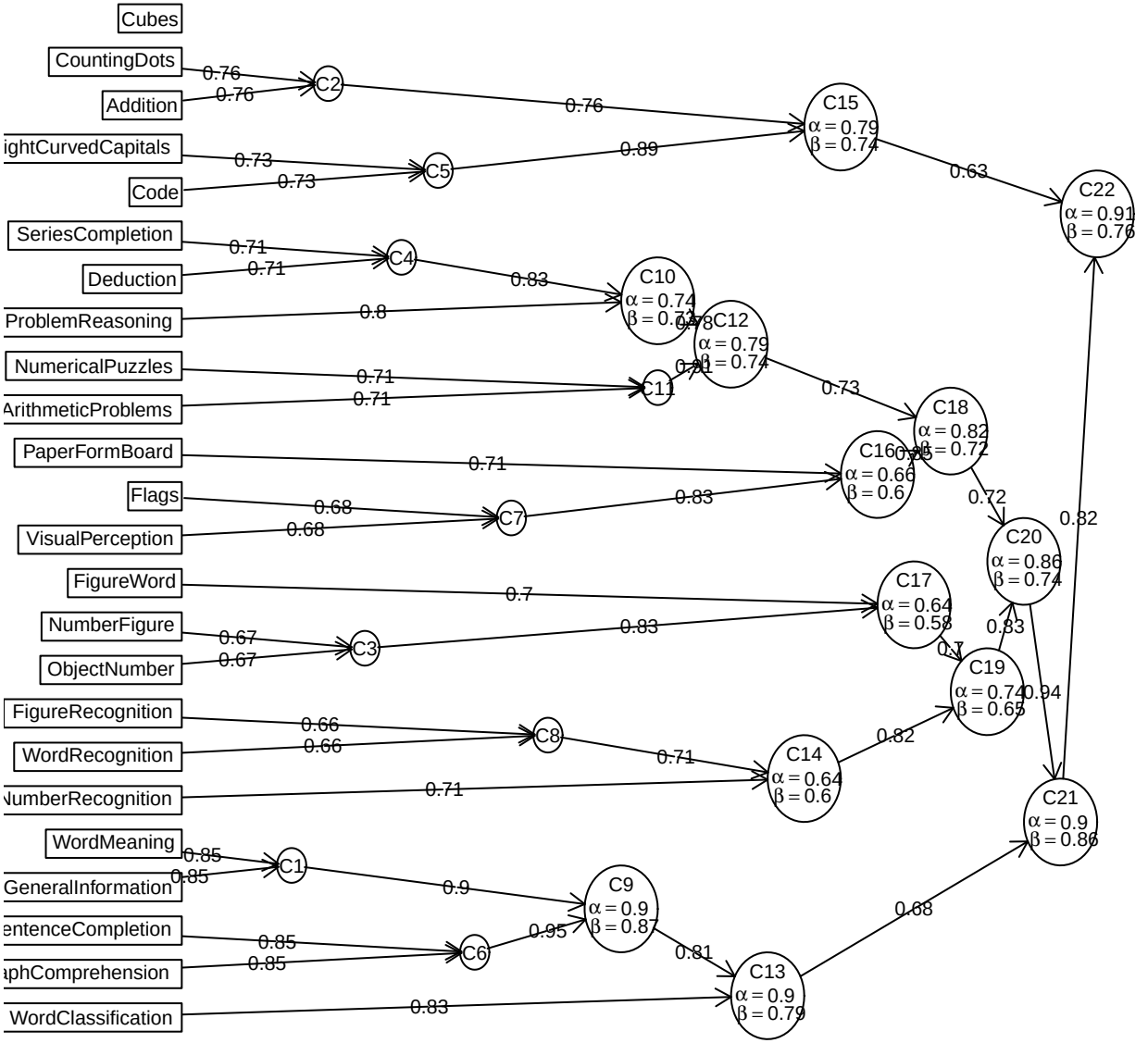

blocks
time
drug
sex
0.00
0.00
0.00
0.00
0.00
0.00
1.0 2.0 3.0 4.0
1.0 1.2 1.4 1.6 1.8 2.0
1.0 1.5 2.0 2.5 3.0
help("block.random")

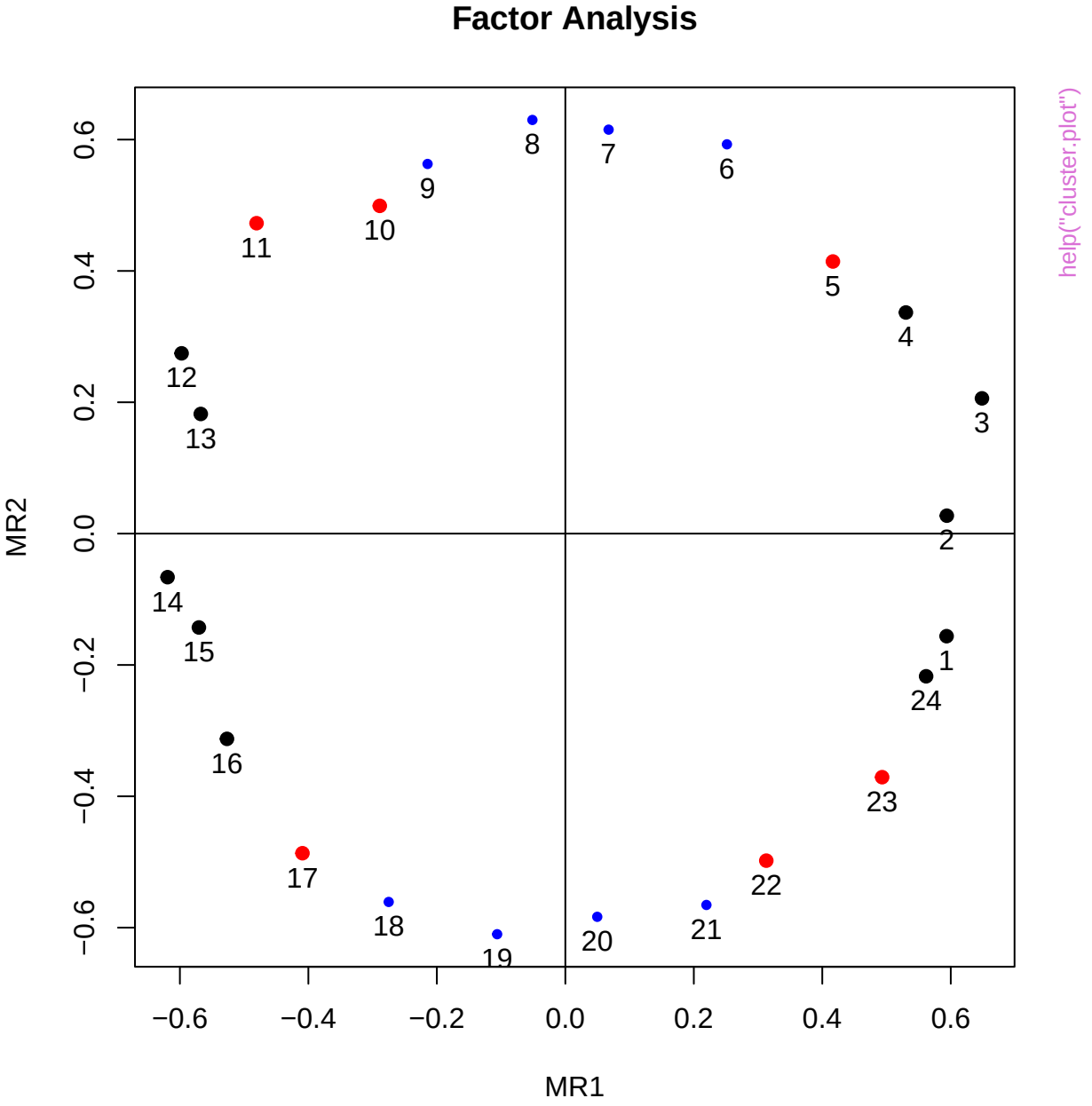

12 cognitive variables from Cattell (1963)
Verbal
Verbal2
Space1
Space2
Reason1
Reason2
Number1
Number2
IPATSer
IPATCLAS
IPATMatr
IPATTOP
0.86
0.30 0.30
0.32 0.27 0.79
0.41 0.42 0.21 0.23
0.42 0.41 0.25 0.25 0.77
0.34 0.37 0.23 0.16 0.40 0.37
0.32 0.33 0.19 0.14 0.43 0.39 0.78
0.29 0.30 0.27 0.27 0.28 0.24 0.23 0.14
0.21 0.23 0.29 0.31 0.26 0.24 0.18 0.14 0.33
0.33 0.33 0.28 0.24 0.35 0.37 0.32 0.20 0.45 0.44
0.25 0.24 0.29 0.25 0.23 0.22 0.17 0.15 0.29 0.28 0.33
1
help("cattell")


Circumplex Structure
help("circ.tests")
MR2
MR1
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
8
7
6
9
10
11
5
4
12
3
13
2
14
15
1
24
16
23
17
22
18
20
21
19

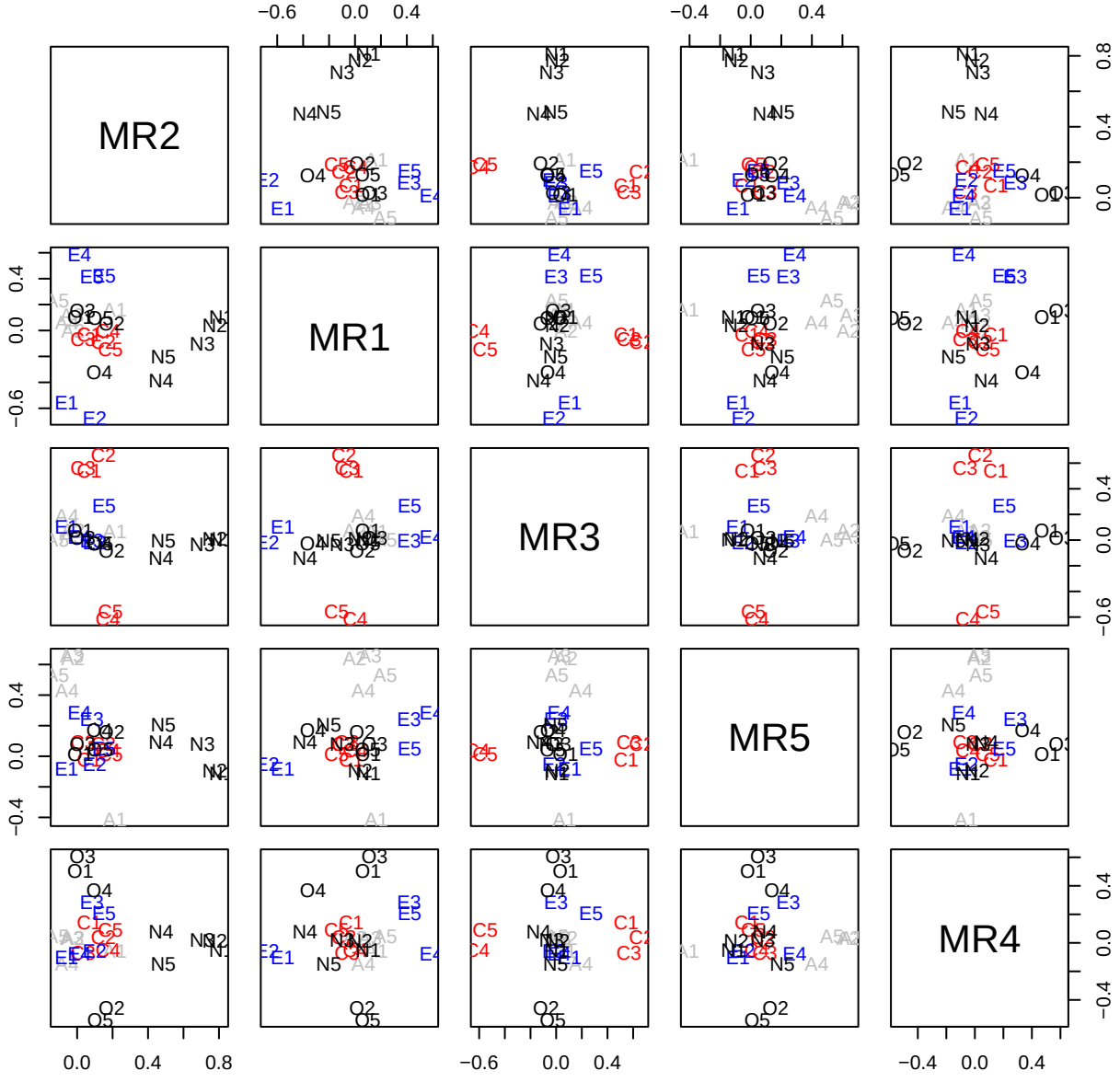

Simple Structure
help("circ.tests")
MR2
MR1
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6

ICLUST


Cubes
CountingDots
Addition
ightCurvedCapitals
Code
SeriesCompletion
Deduction
ProblemReasoning
NumericalPuzzles
ArithmeticProblems
PaperFormBoard
Flags
VisualPerception
FigureWord
NumberFigure
ObjectNumber
FigureRecognition
WordRecognition
NumberRecognition
WordMeaning
GeneralInformation
entenceCompletion
aphComprehension
WordClassification
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
C18
C19
C20
C21
C22
α = 0.79
β = 0.74
α = 0.91
β = 0.76
α = 0.74
α = 0.66
β = 0.6
α = 0.82
α = 0.64
β = 0.58
α = 0.86
β = 0.74
α = 0.74
β = 0.65
α = 0.9
β = 0.87
α = 0.9
β = 0.79
α = 0.64
β = 0.6
α = 0.9
β = 0.86
0.76
0.73
0.89
0.63
0.71
0.83
0.8
0.78
0.81
0.73
0.72
0.82
0.68
0.7
0.67
0.66
0.85
0.95
0.94
help("cluster.fit")

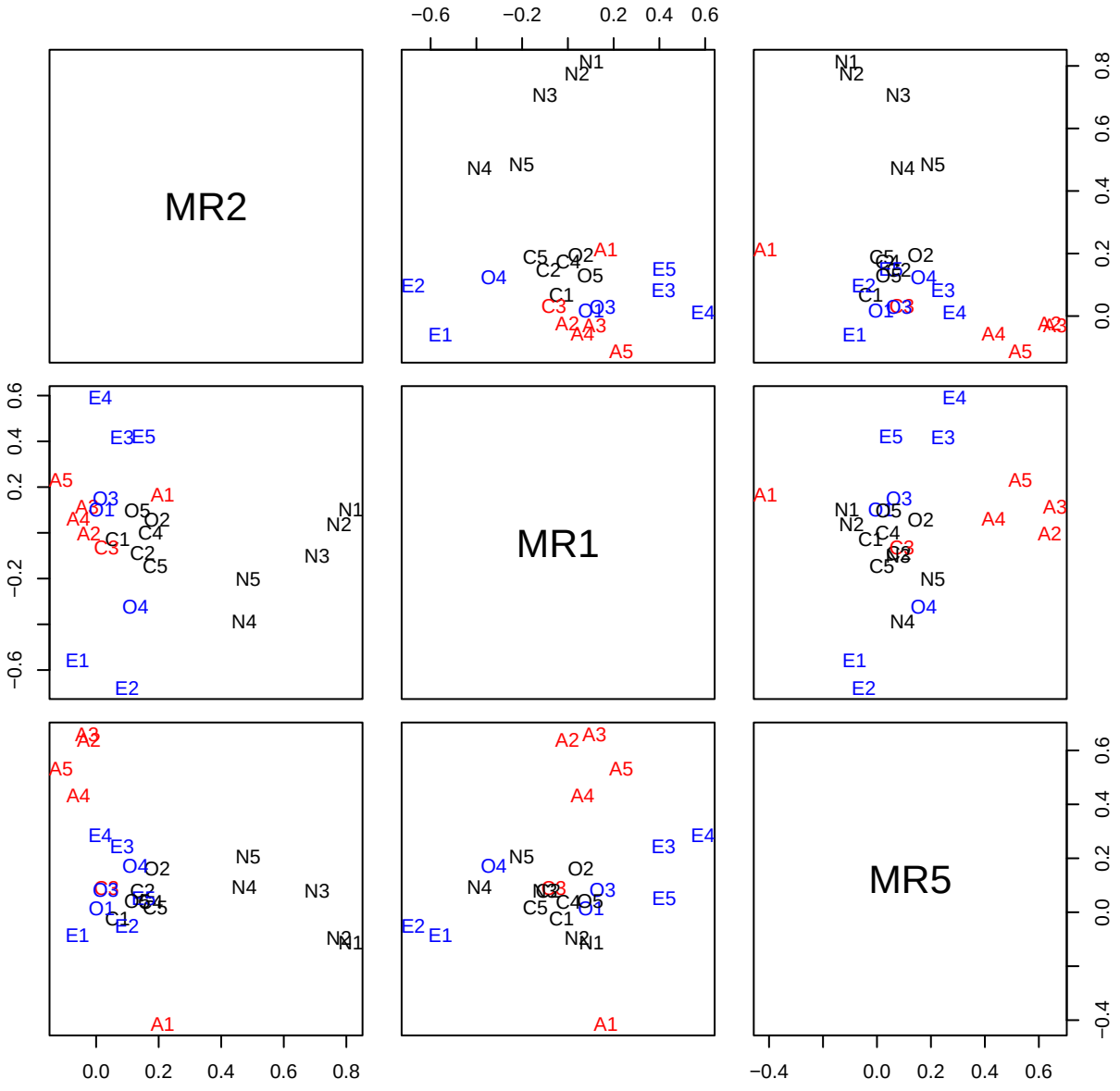

Factor Analysis
MR2
MR1
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
help("cluster.plot")

Factor Analysis

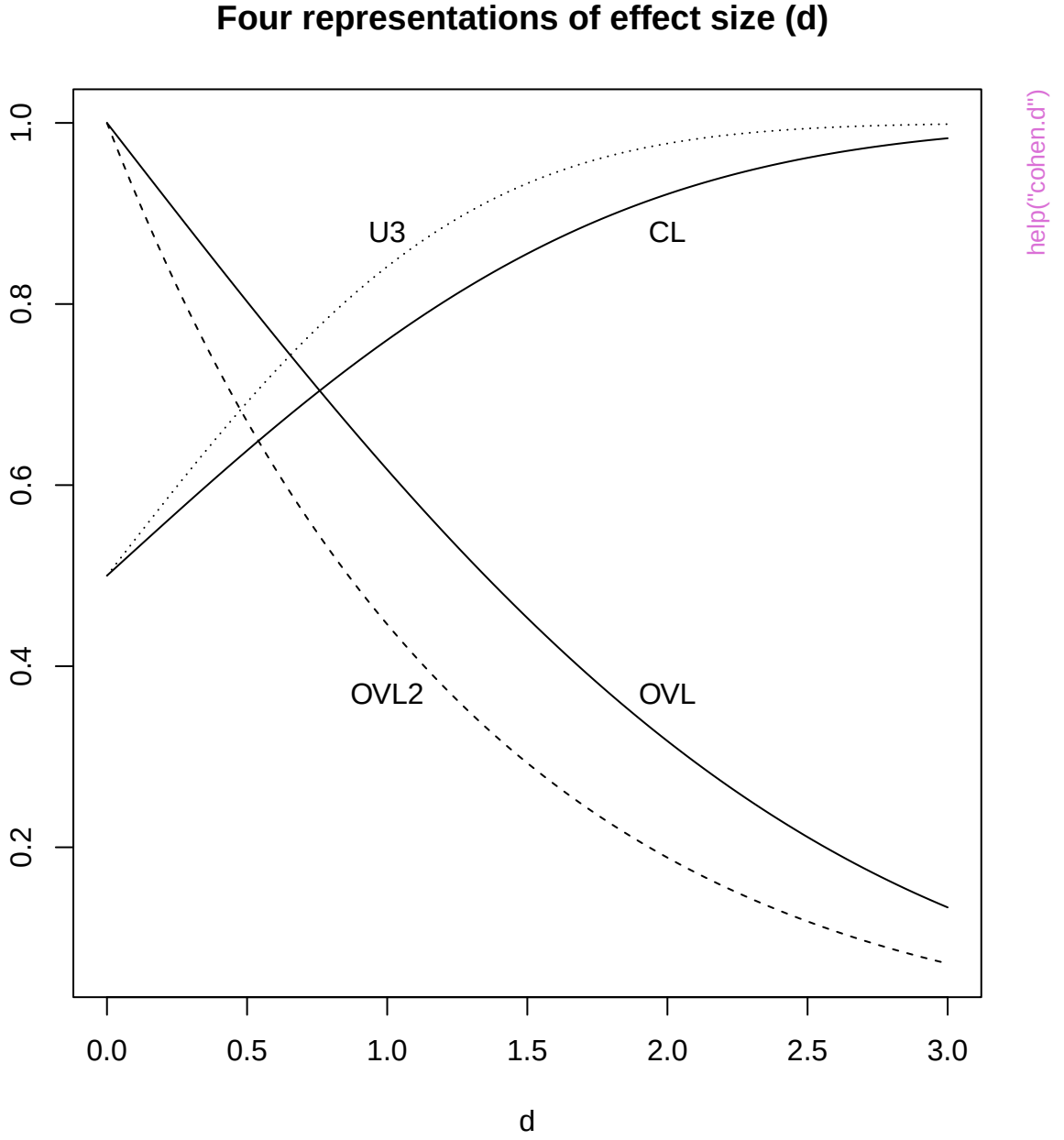


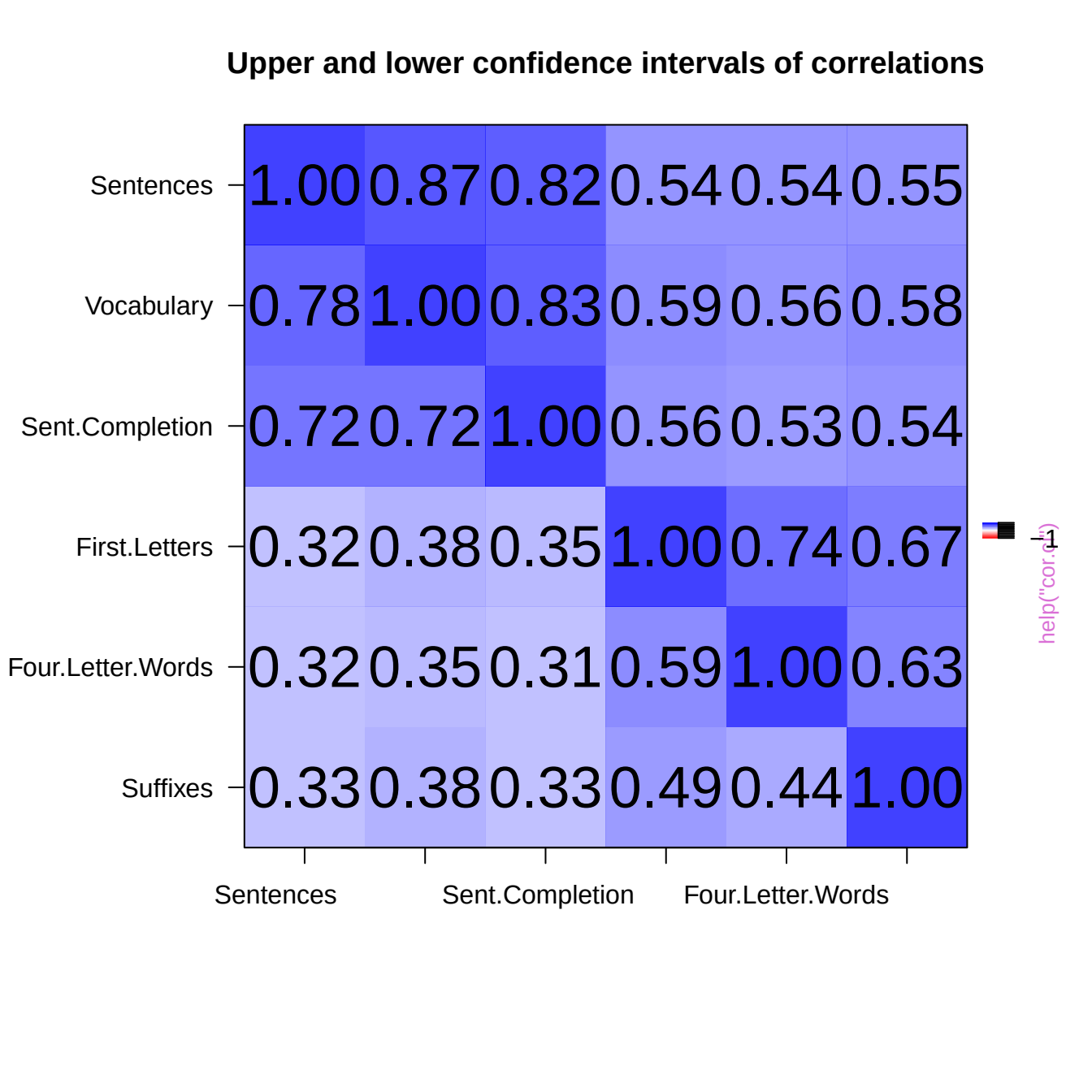
help("cluster.plot")

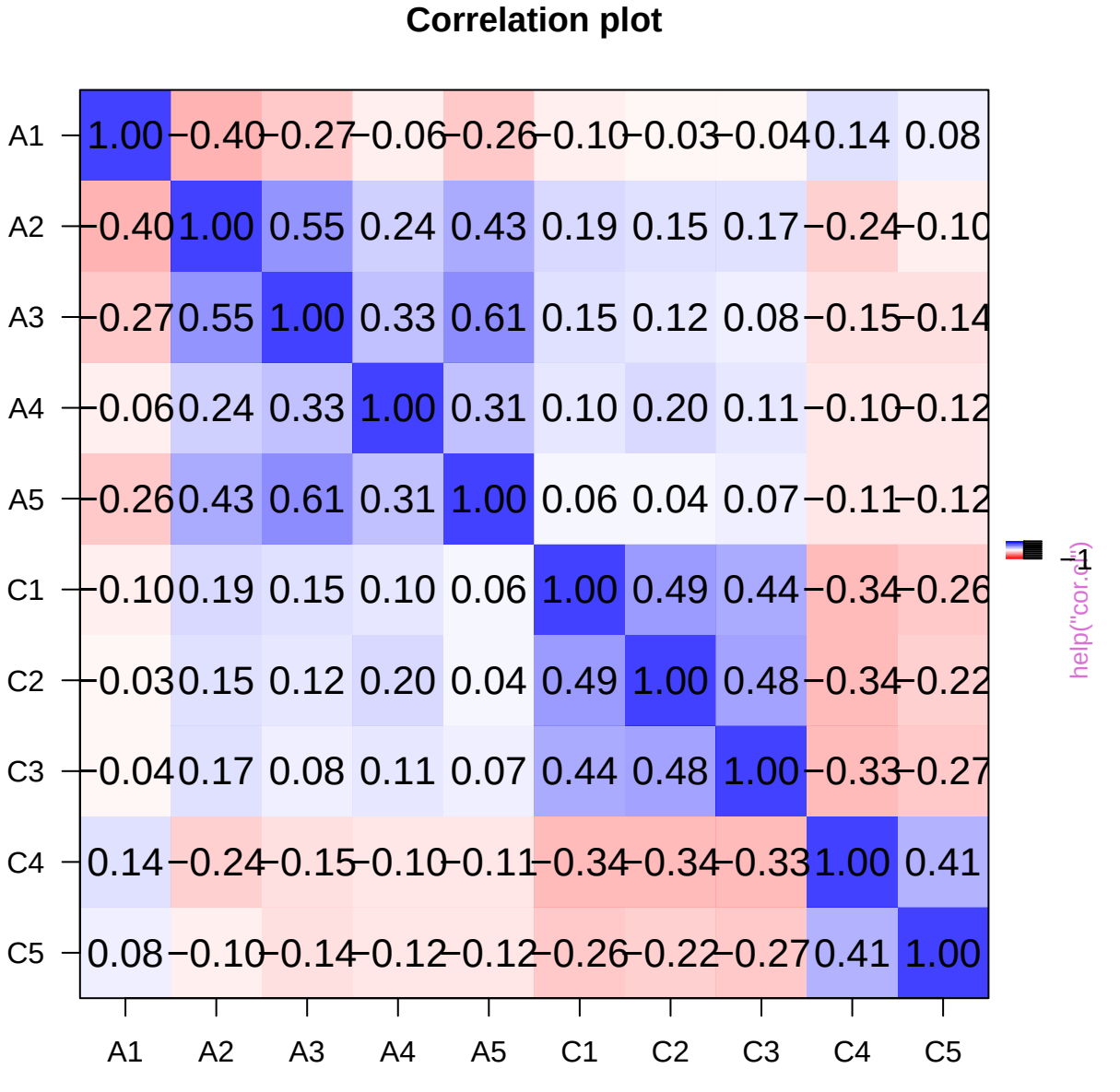
Factor Analysis

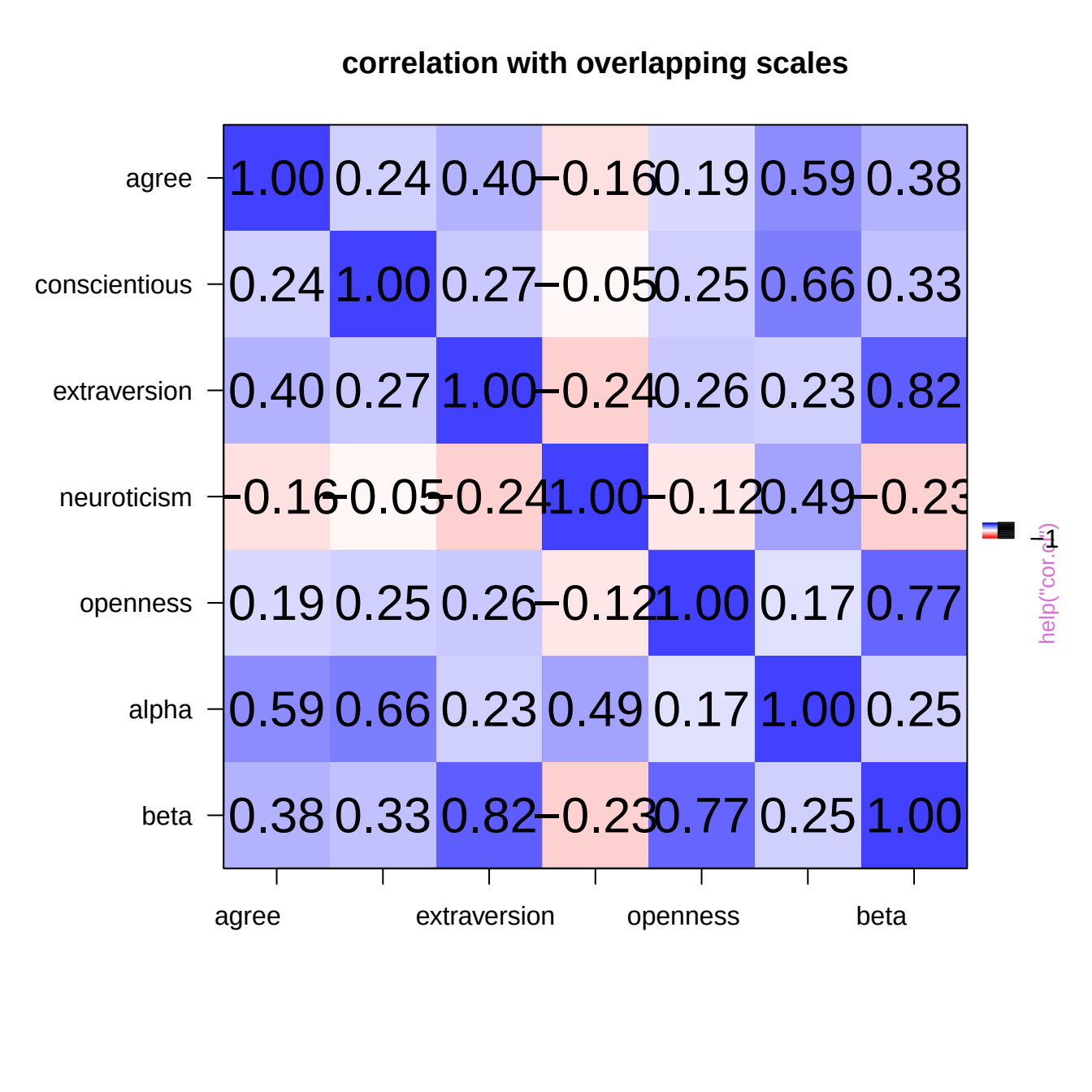


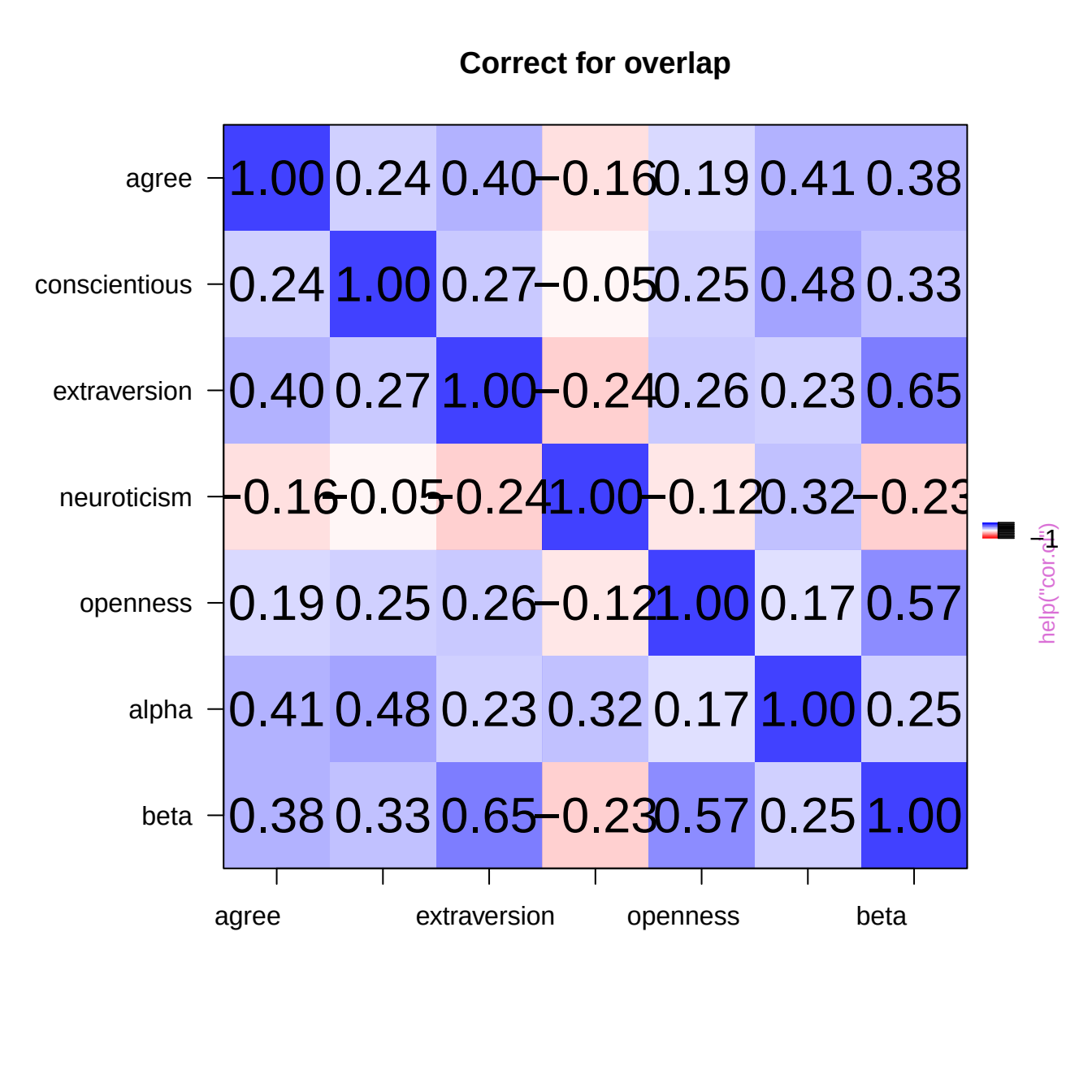
help("cluster.plot")

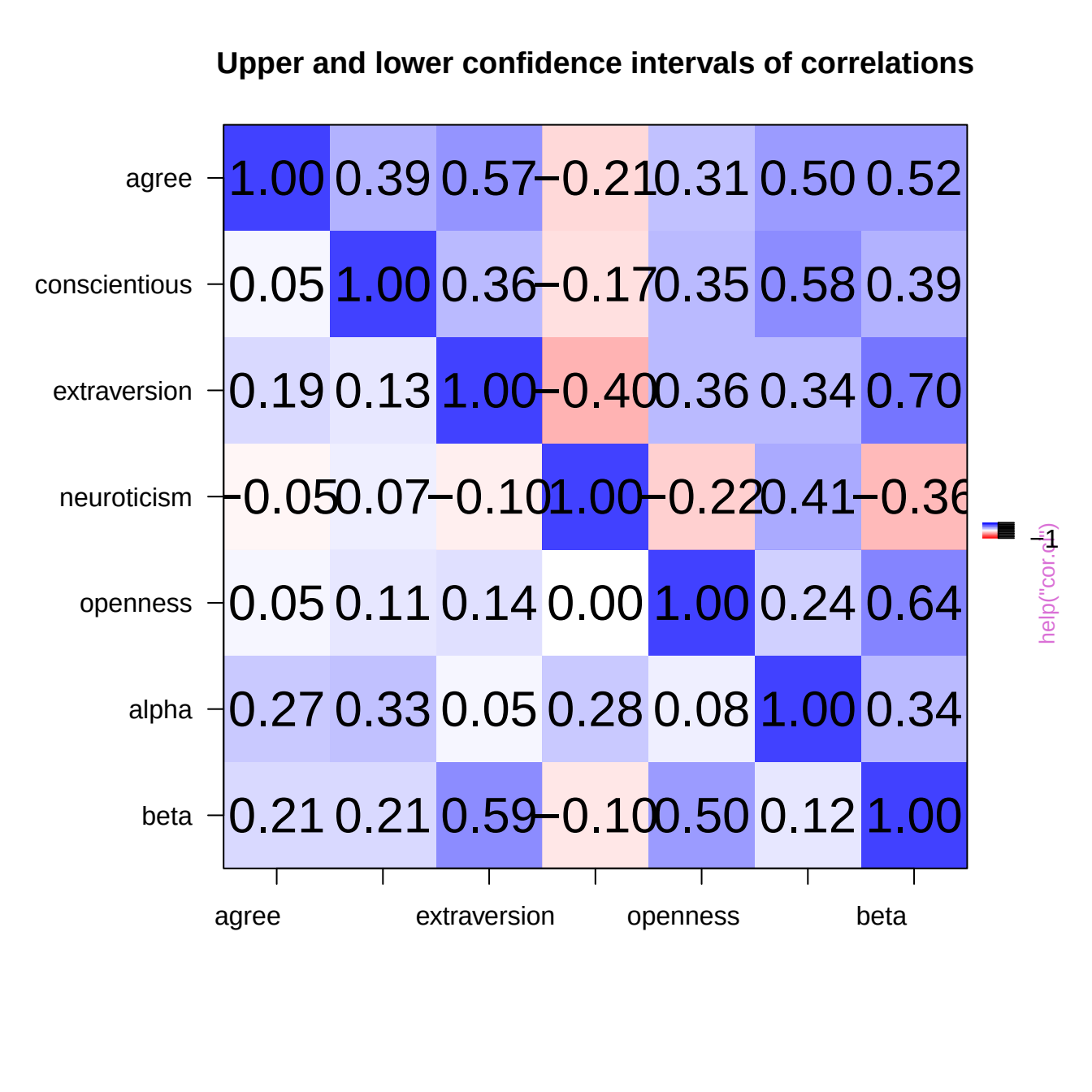

Four representations of effect size (d)
help("cohen.d")
U3
CL
OVL2
OVL
1.0
0.8
0.6
0.4
0.2
0.0
0.5
1.0
1.5
2.0
2.5
3.0
d

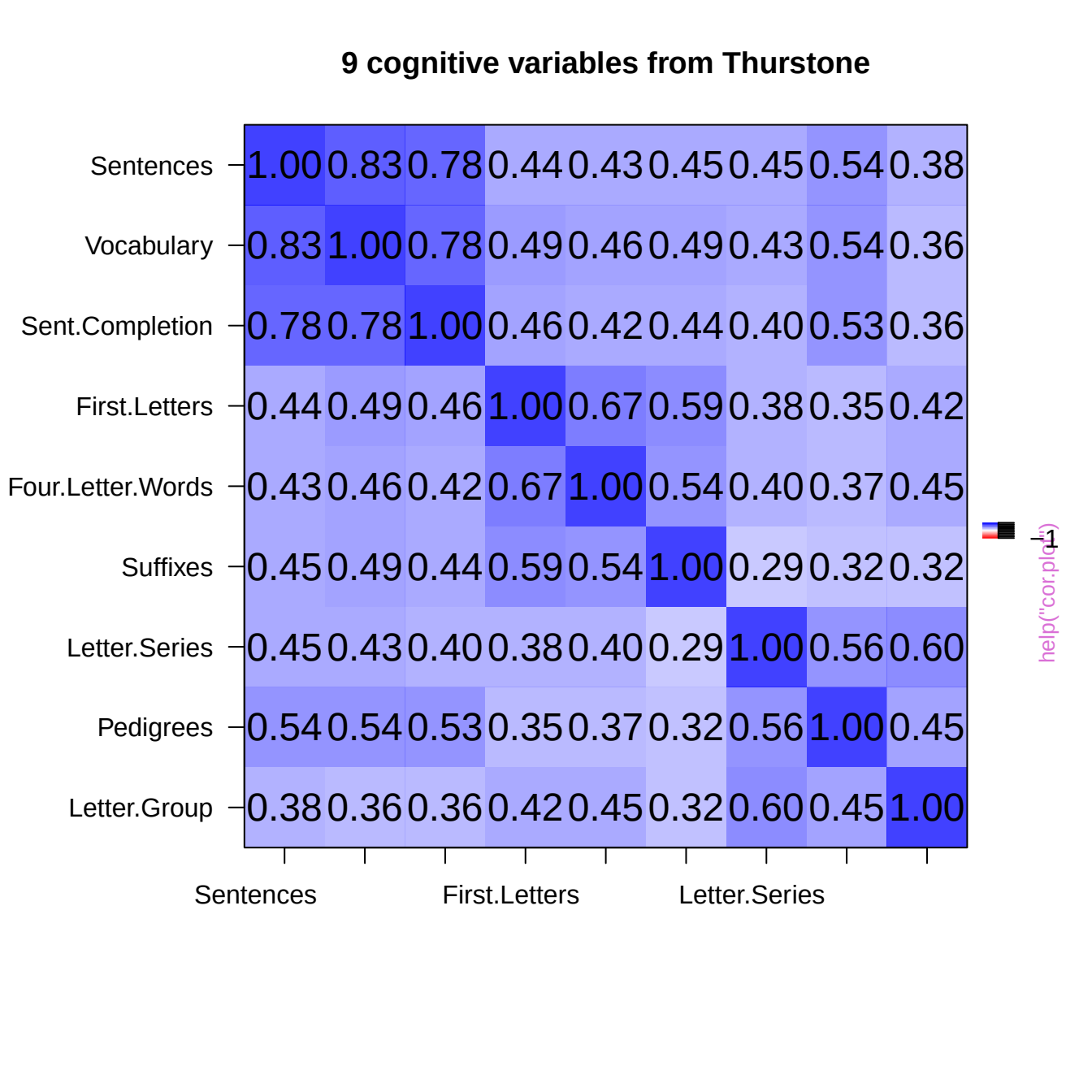

Upper and lower confidence intervals of correlations
Sentences
Vocabulary
Sent.Completion
First.Letters
Four.Letter.Words
Suffixes
1.00 0.87 0.82 0.54 0.54 0.55
0.78 1.00 0.83 0.59 0.56 0.58
0.72 0.72 1.00 0.56 0.53 0.54
0.32 0.38 0.35 1.00 0.74 0.67
0.32 0.35 0.31 0.59 1.00 0.63
0.33 0.38 0.33 0.49 0.44 1.00
Sentences
Sent.Completion
Four.Letter.Words
1
help("cor.ci")

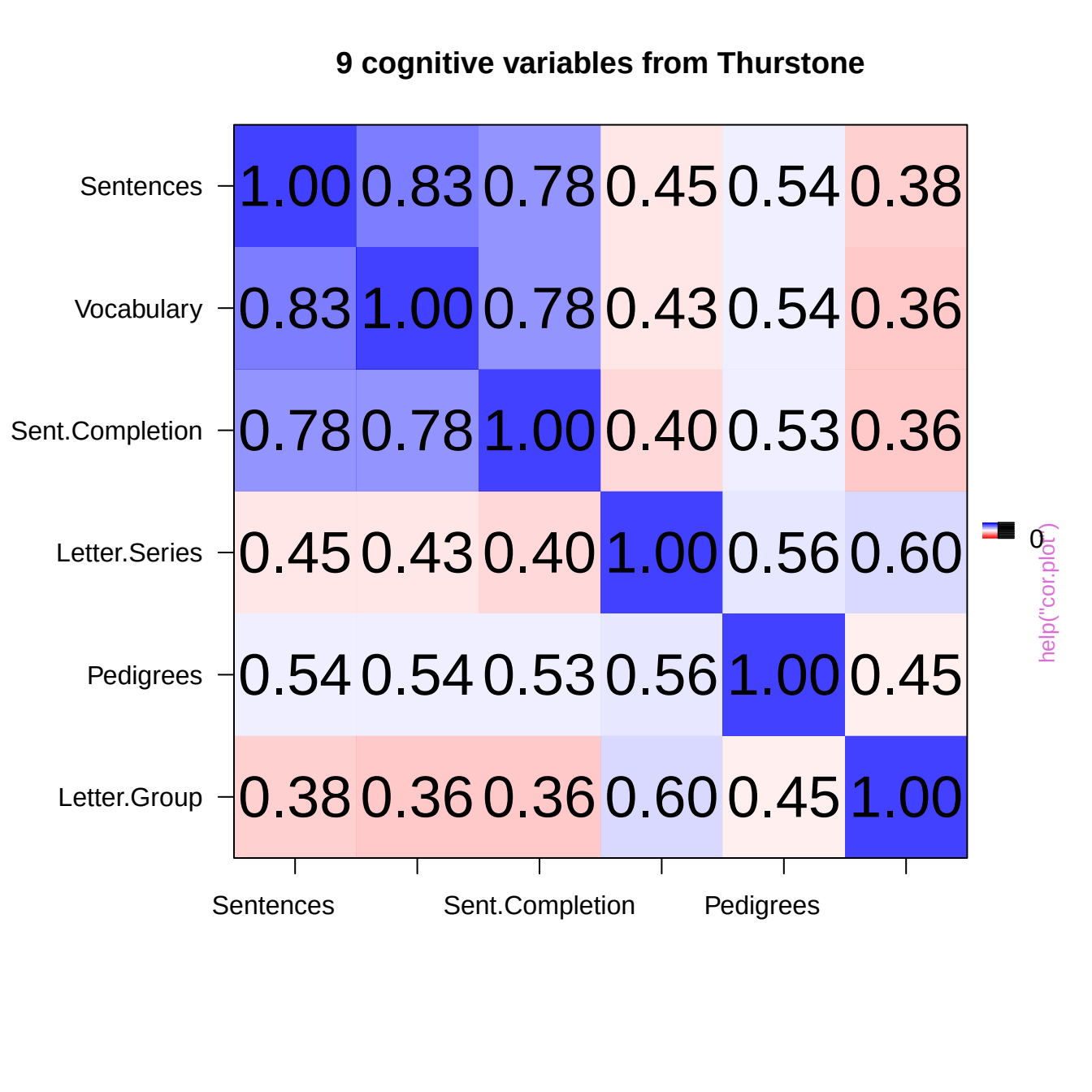

Correlation plot
A1 1.00 0.40 0.27 0.06 0.26 0.10 0.03 0.04 0.14 0.08
A2 0.40 1.00 0.55 0.24 0.43 0.19 0.15 0.17 0.24 0.10
A3 0.27 0.55 1.00 0.33 0.61 0.15 0.12 0.08 0.15 0.14
A4 0.06 0.24 0.33 1.00 0.31 0.10 0.20 0.11 0.10 0.12
A5 0.26 0.43 0.61 0.31 1.00 0.06 0.04 0.07 0.11 0.12
C1 0.10 0.19 0.15 0.10 0.06 1.00 0.49 0.44 0.34 0.26
C2 0.03 0.15 0.12 0.20 0.04 0.49 1.00 0.48 0.34 0.22
C3 0.04 0.17 0.08 0.11 0.07 0.44 0.48 1.00 0.33 0.27
C4 0.14 0.24 0.15 0.10 0.11 0.34 0.34 0.33 1.00 0.41
C5 0.08 0.10 0.14 0.12 0.12 0.26 0.22 0.27 0.41 1.00
A1 A2 A3 A4 A5 C1 C2 C3 C4 C5
1
help("cor.pl")

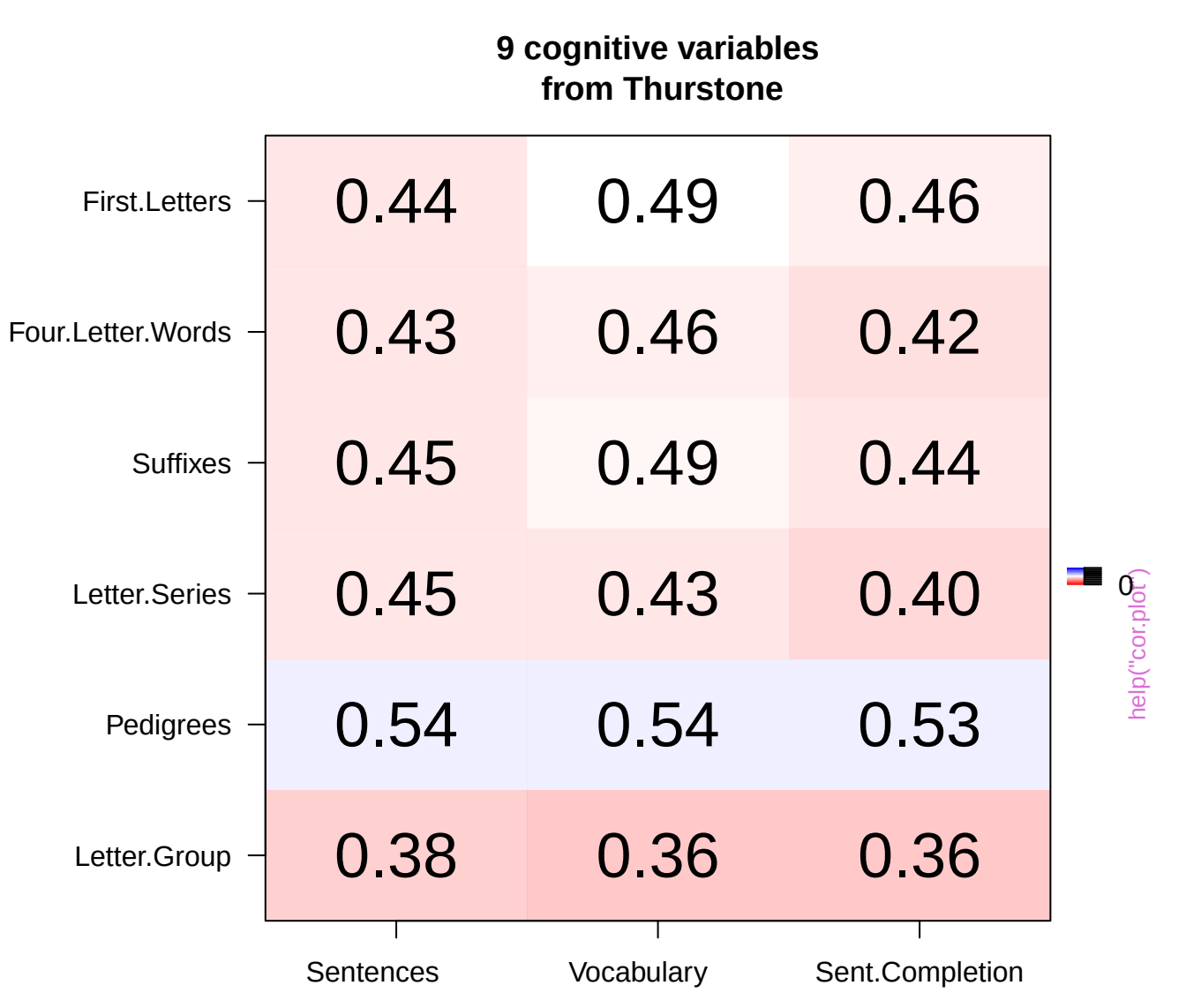

correlation with overlapping scales
agree
conscientious
extraversion
neuroticism
openness
alpha
beta
1.00 0.24 0.40 -0.16 0.19 0.59 0.38
0.24 1.00 0.27 -0.05 0.25 0.66 0.33
0.40 0.27 1.00 -0.24 0.26 0.23 0.82
-0.16 -0.05 -0.24 1.00 -0.12 0.49 -0.23
0.19 0.25 0.26 -0.12 1.00 0.17 0.77
0.59 0.66 0.23 0.49 0.17 1.00 0.25
0.38 0.33 0.82 -0.23 0.77 0.25 1.00
agree
extraversion
openness
beta
1
help("cor.ci")

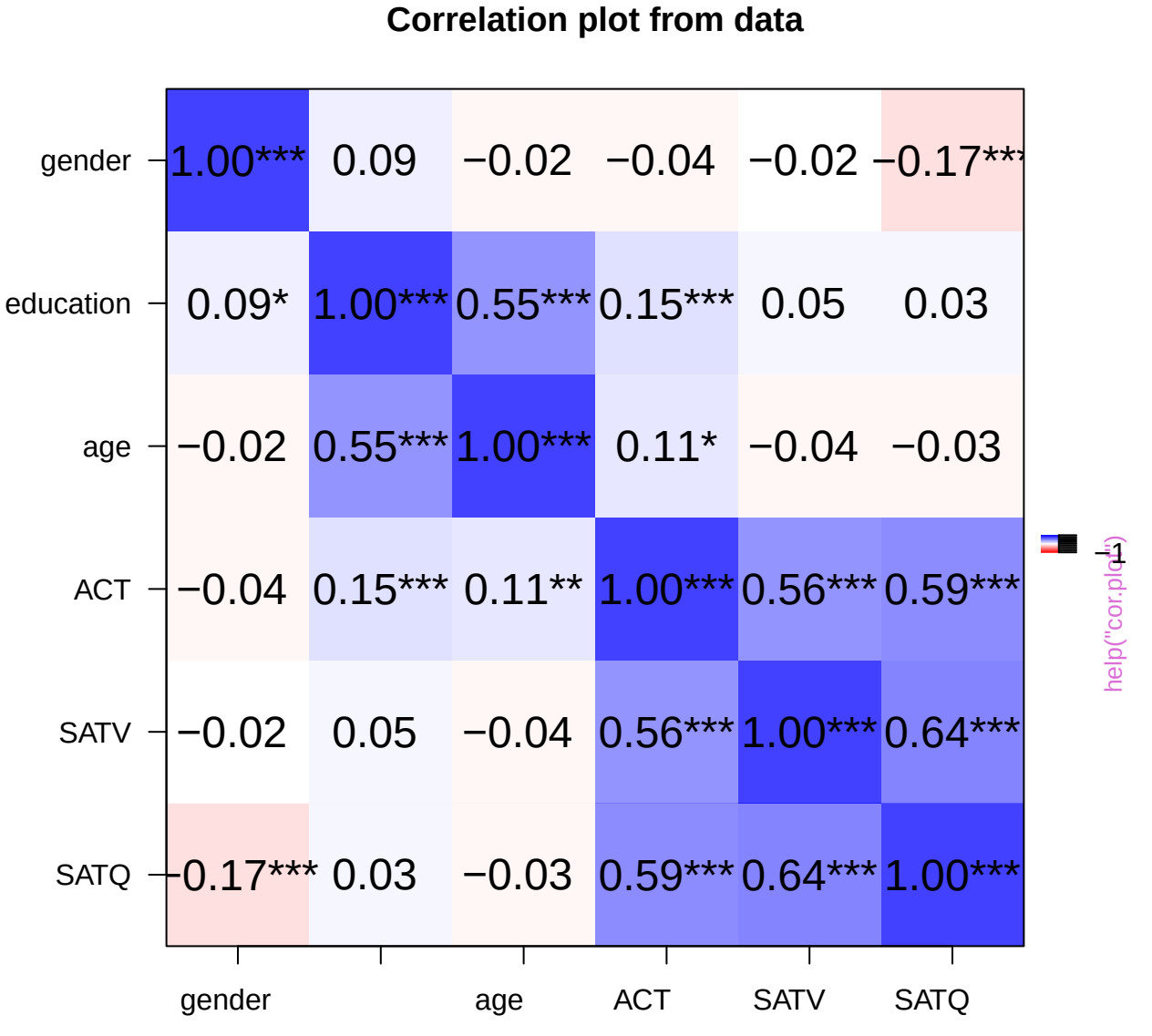

Correct for overlap
agree
conscientious
extraversion
neuroticism
openness
alpha
beta
1.00 0.24 0.40 −0.16 0.19 0.41 0.38
0.24 1.00 0.27 −0.05 0.25 0.48 0.33
0.40 0.27 1.00 −0.24 0.26 0.23 0.65
−0.16 −0.05 −0.24 1.00 −0.12 0.32 −0.23
0.19 0.25 0.26 −0.12 1.00 0.17 0.57
0.41 0.48 0.23 0.32 0.17 1.00 0.25
0.38 0.33 0.65 −0.23 0.57 0.25 1.00
agree
extraversion
openness
beta
−1
help("cor.ci")

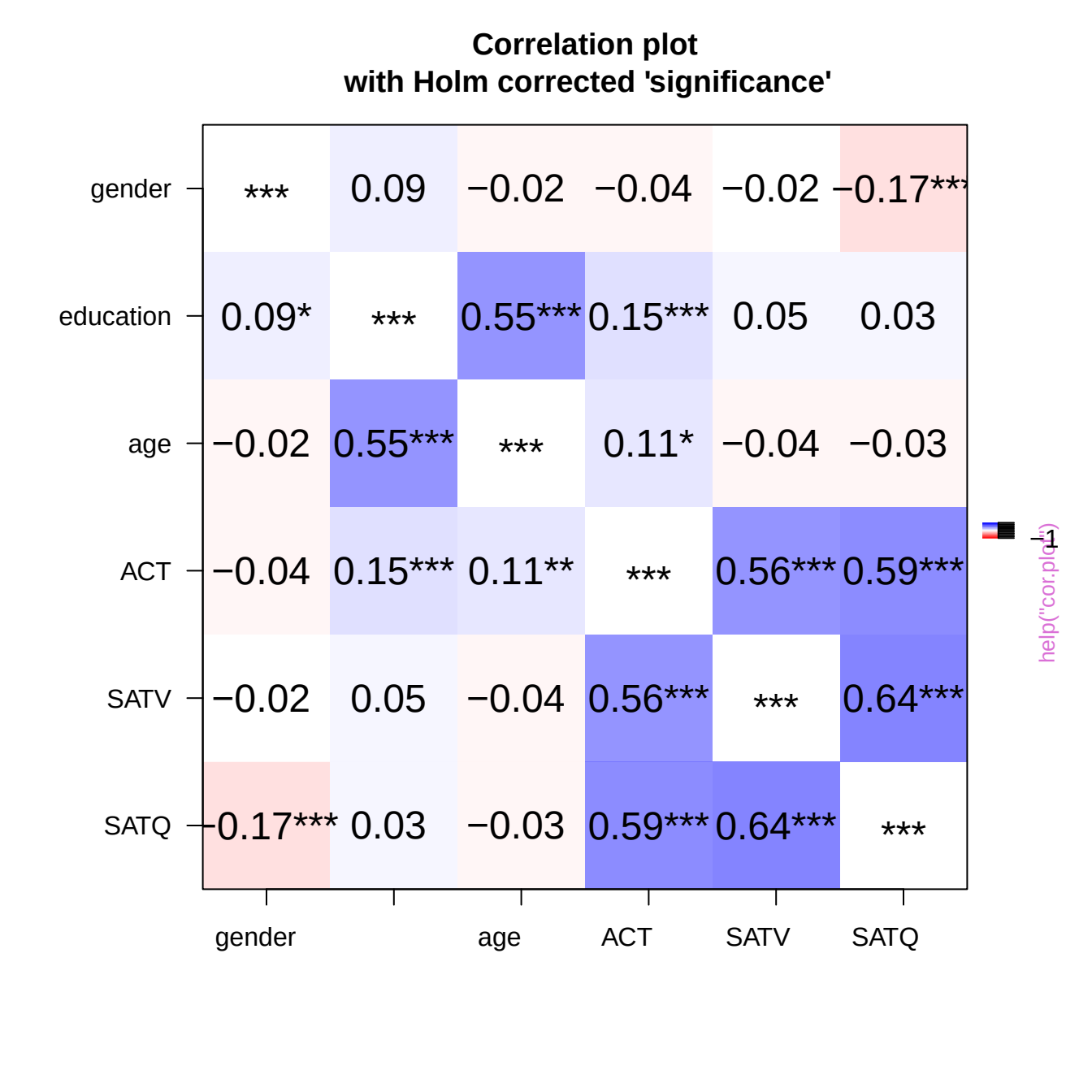

Upper and lower confidence intervals of correlations
agree
conscientious
extraversion
neuroticism
openness
alpha
beta
1.00 0.39 0.57 −0.21 0.31 0.50 0.52
0.05 1.00 0.36 −0.17 0.35 0.58 0.39
0.19 0.13 1.00 −0.40 0.36 0.34 0.70
−0.05 0.07 −0.10 1.00 −0.22 0.41 −0.36
0.05 0.11 0.14 0.00 1.00 0.24 0.64
0.27 0.33 0.05 0.28 0.08 1.00 0.34
0.21 0.21 0.59 −0.10 0.50 0.12 1.00
agree
extraversion
openness
beta
−1
help("cor.ci")

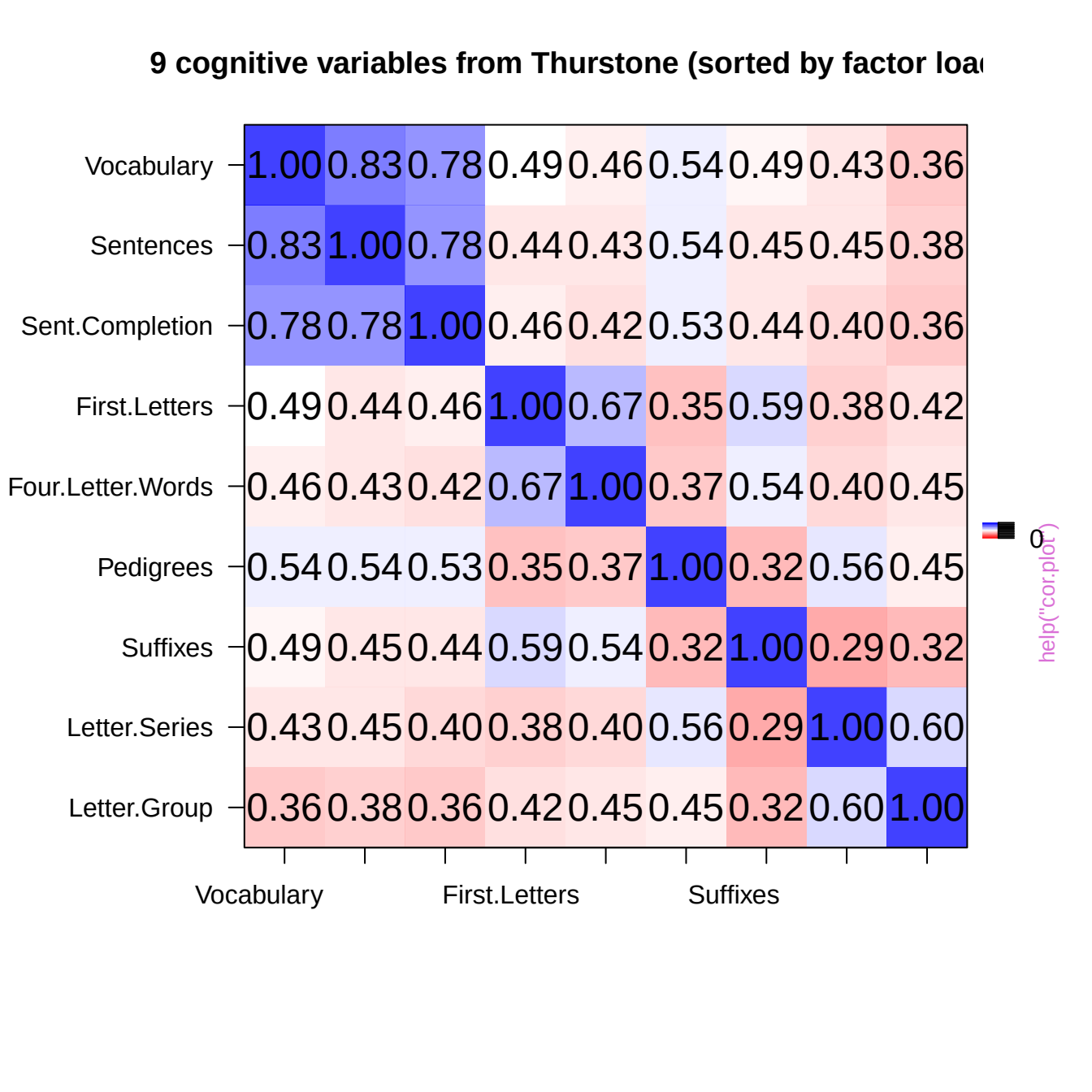

9 cognitive variables from Thurstone
Sentences
Vocabulary
Sent.Completion
First.Letters
Four.Letter.Words
Suffixes
Letter.Series
Pedigrees
Letter.Group
1.00 0.83 0.78 0.44 0.43 0.45 0.45 0.54 0.38
0.83 1.00 0.78 0.49 0.46 0.49 0.43 0.54 0.36
0.78 0.78 1.00 0.46 0.42 0.44 0.40 0.53 0.36
0.44 0.49 0.46 1.00 0.67 0.59 0.38 0.35 0.42
0.43 0.46 0.42 0.67 1.00 0.54 0.40 0.37 0.45
0.45 0.49 0.44 0.59 0.54 1.00 0.29 0.32 0.32
0.45 0.43 0.40 0.38 0.40 0.29 1.00 0.56 0.60
0.54 0.54 0.53 0.35 0.37 0.32 0.56 1.00 0.45
0.38 0.36 0.36 0.42 0.45 0.32 0.60 0.45 1.00
Sentences
First.Letters
Letter.Series
1
help("cor.plot")


9 cognitive variables from Thurstone
Sentences
Vocabulary
Sent.Completion
Letter.Series
Pedigrees
Letter.Group
1.00 0.83 0.78 0.45 0.54 0.38
0.83 1.00 0.78 0.43 0.54 0.36
0.78 0.78 1.00 0.40 0.53 0.36
0.45 0.43 0.40 1.00 0.56 0.60
0.54 0.54 0.53 0.56 1.00 0.45
0.38 0.36 0.36 0.60 0.45 1.00
Sentences
Sent.Completion
Pedigrees
0
help("cor.plot")

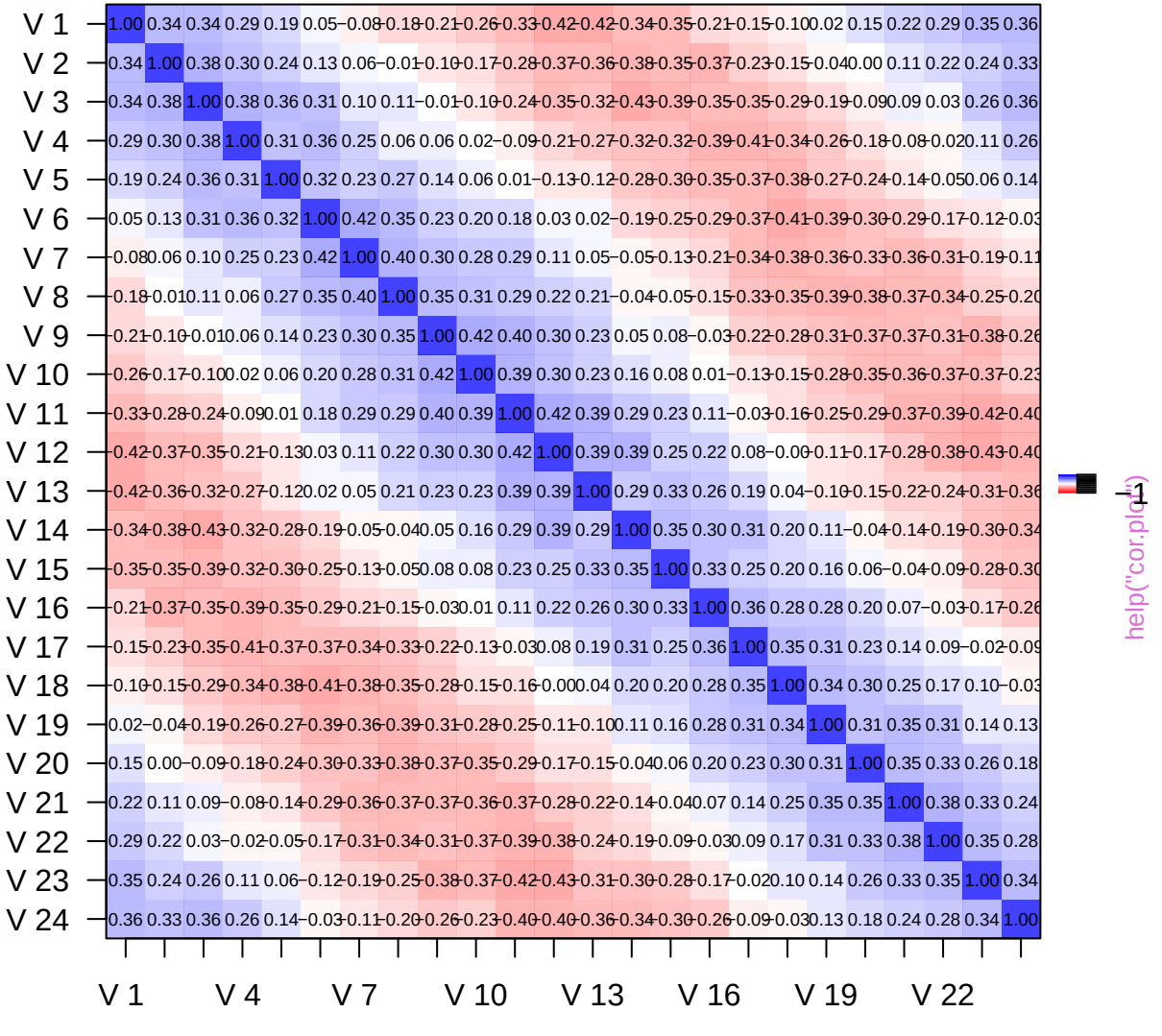

9 cognitive variables
from Thurstone
First.Letters
Four.Letter.Words
Suffixes
Letter.Series
Pedigrees
Letter.Group
0.44
0.49
0.46
0.43
0.46
0.42
0.45
0.49
0.44
0.45
0.43
0.40
0.54
0.54
0.53
0.38
0.36
0.36
Sentences
Vocabulary
Sent.Completion
0
help("cor.plot")

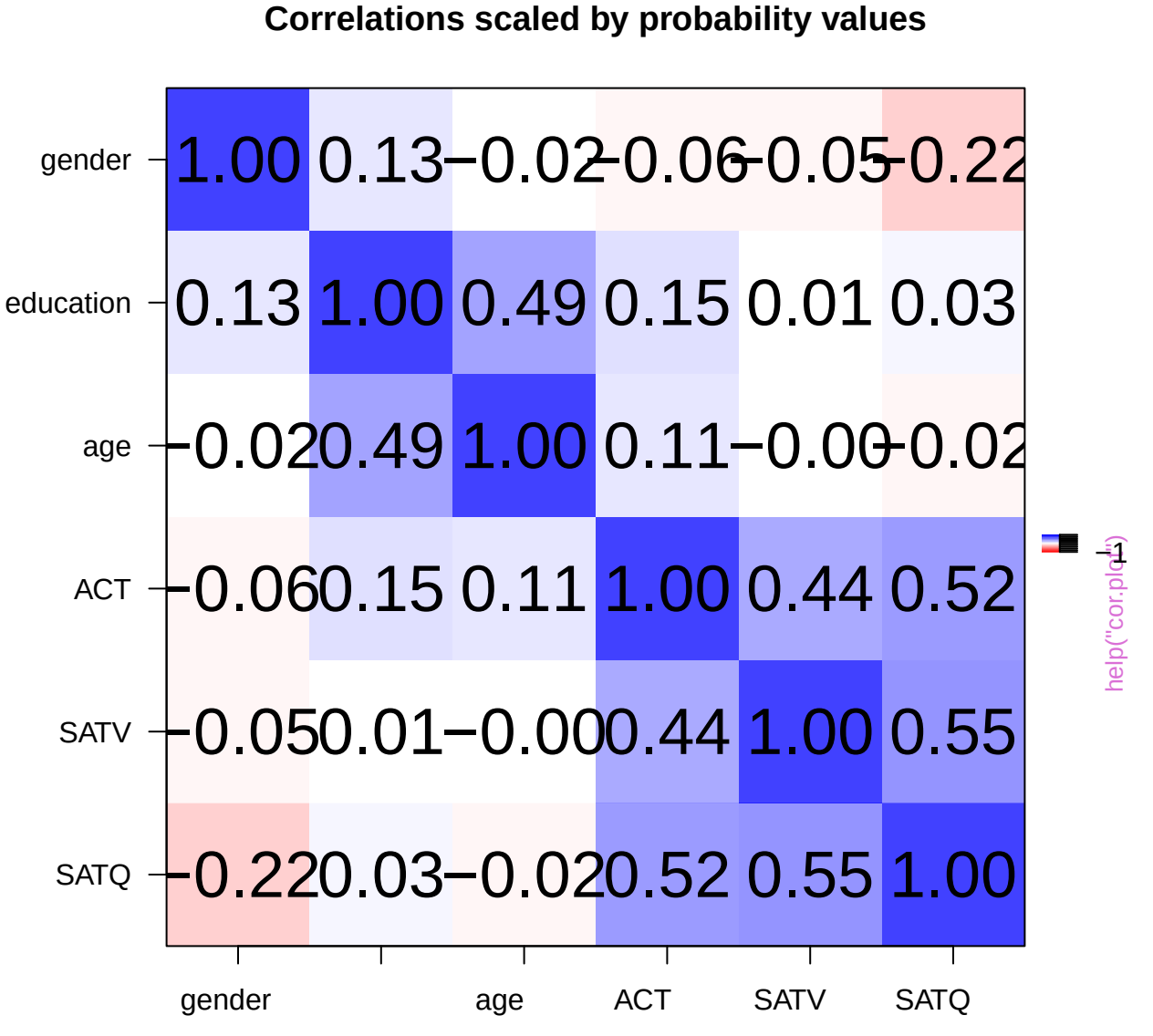

Correlation plot from data
gender
education
age
ACT
SATV
SATQ
1.00***
0.09
−0.02
−0.04
−0.02
−0.17***
0.09*
1.00***
0.55***
0.15***
0.05
0.03
−0.02
0.55***
1.00***
0.11*
−0.04
−0.03
−0.04
0.15***
0.11**
1.00***
0.56***
0.59***
−0.02
0.05
−0.04
0.56***
1.00***
0.64***
−0.17***
0.03
−0.03
0.59***
0.64***
1.00***
gender
age
ACT
SATV
SATQ
−1
help("cor.plot")

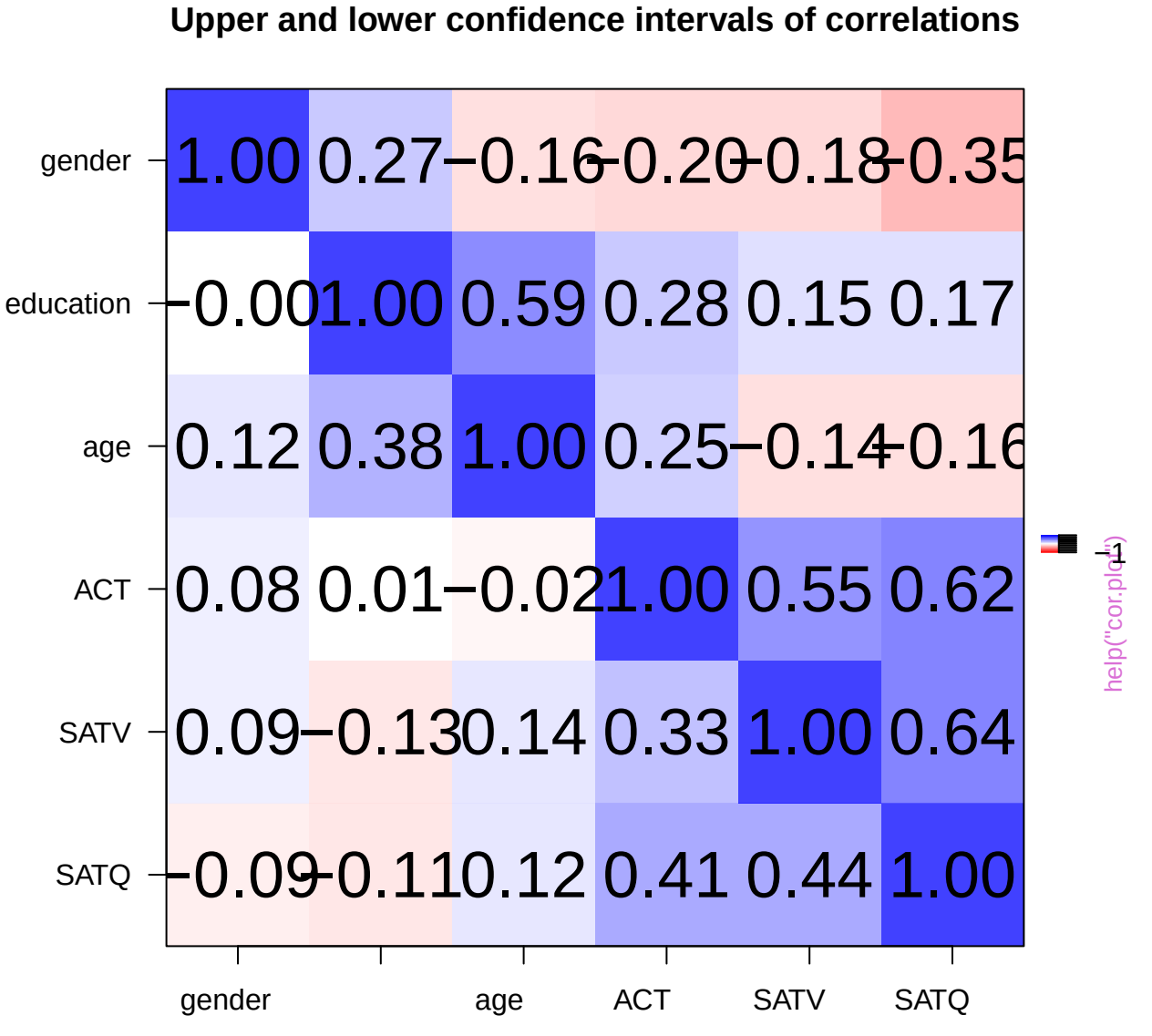

Correlation plot
with Holm corrected 'significance'
gender
education
age
ACT
SATV
SATQ
***
0.09
−0.02
−0.04
−0.02
−0.17***
0.09*
***
0.55***
0.15***
0.05
0.03
−0.02
0.55***
***
0.11*
−0.04
−0.03
−0.04
0.15***
0.11**
***
0.56***
0.59***
−0.02
0.05
−0.04
0.56***
***
0.64***
−0.17***
0.03
−0.03
0.59***
0.64***
***
gender
age
ACT
SATV
SATQ
−1
help("cor.plot")

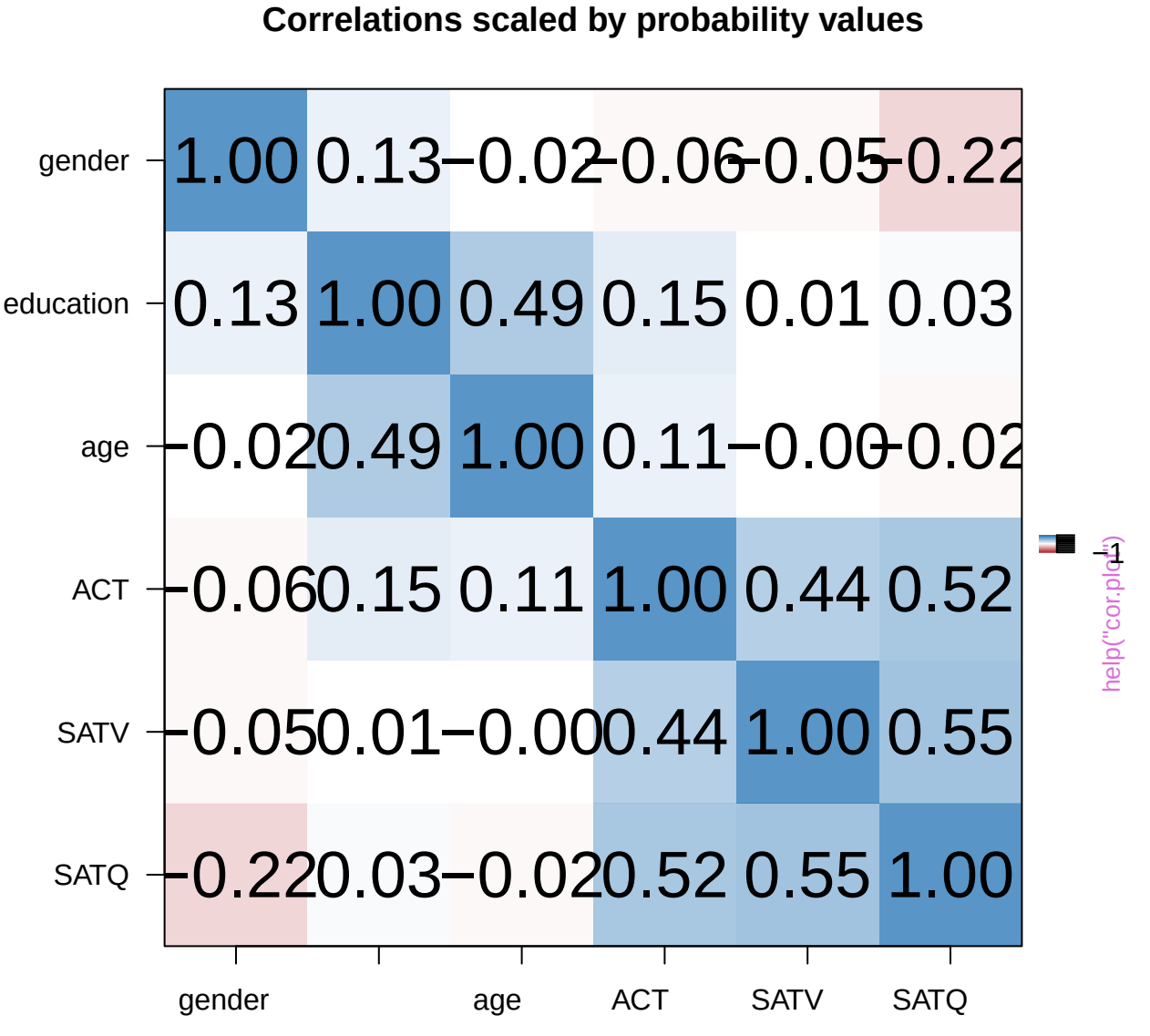

9 cognitive variables from Thurstone (sorted by factor loa
Vocabulary
Sentences
Sent.Completion
First.Letters
Four.Letter.Words
Pedigrees
Suffixes
Letter.Series
Letter.Group
1.00 0.83 0.78 0.49 0.46 0.54 0.49 0.43 0.36
0.83 1.00 0.78 0.44 0.43 0.54 0.45 0.45 0.38
0.78 0.78 1.00 0.46 0.42 0.53 0.44 0.40 0.36
0.49 0.44 0.46 1.00 0.67 0.35 0.59 0.38 0.42
0.46 0.43 0.42 0.67 1.00 0.37 0.54 0.40 0.45
0.54 0.54 0.53 0.35 0.37 1.00 0.32 0.56 0.45
0.49 0.45 0.44 0.59 0.54 0.32 1.00 0.29 0.32
0.43 0.45 0.40 0.38 0.40 0.56 0.29 1.00 0.60
0.36 0.38 0.36 0.42 0.45 0.45 0.32 0.60 1.00
Vocabulary
First.Letters
Suffixes
0
help("cor.plot")

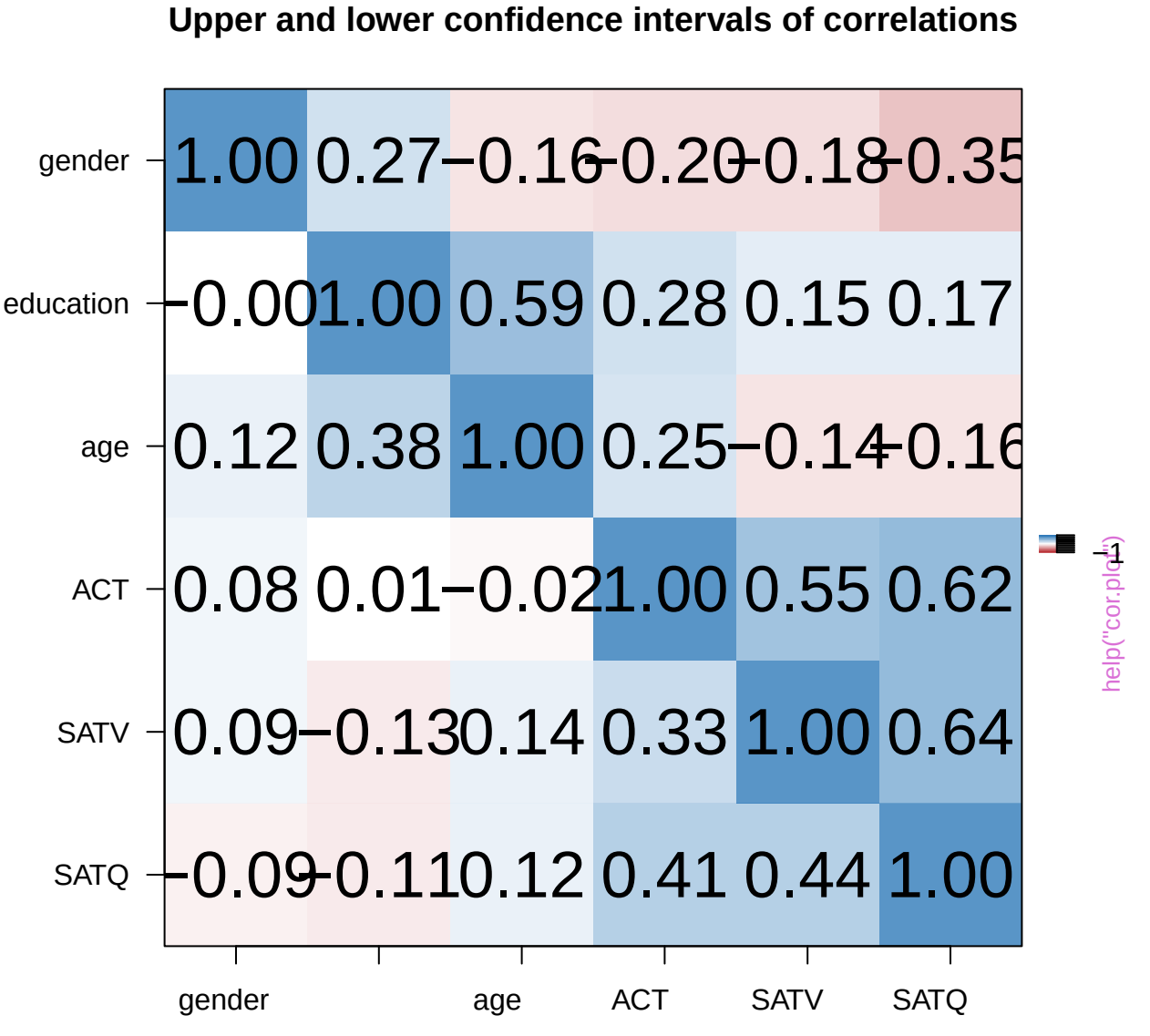
24 variables in a circumplex

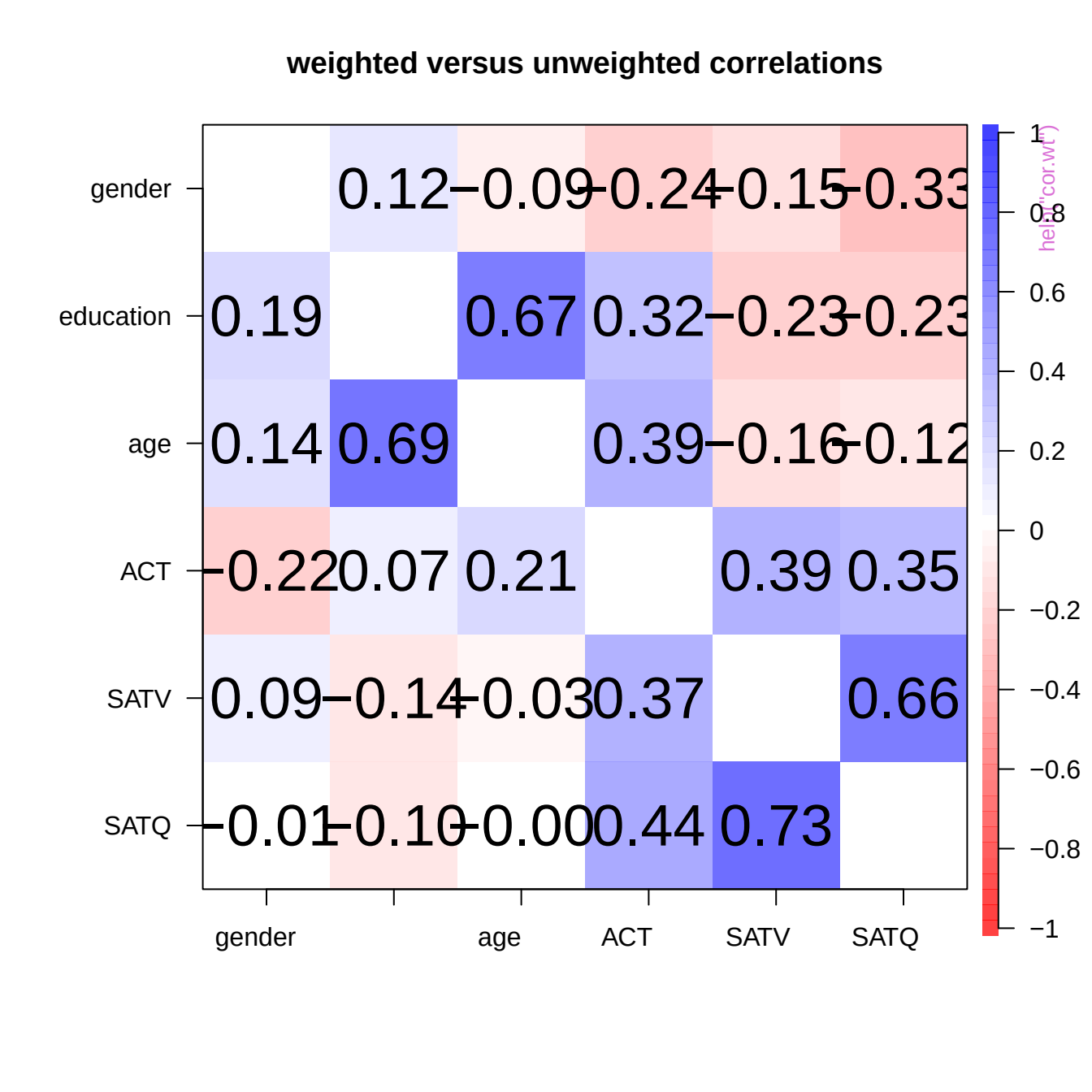


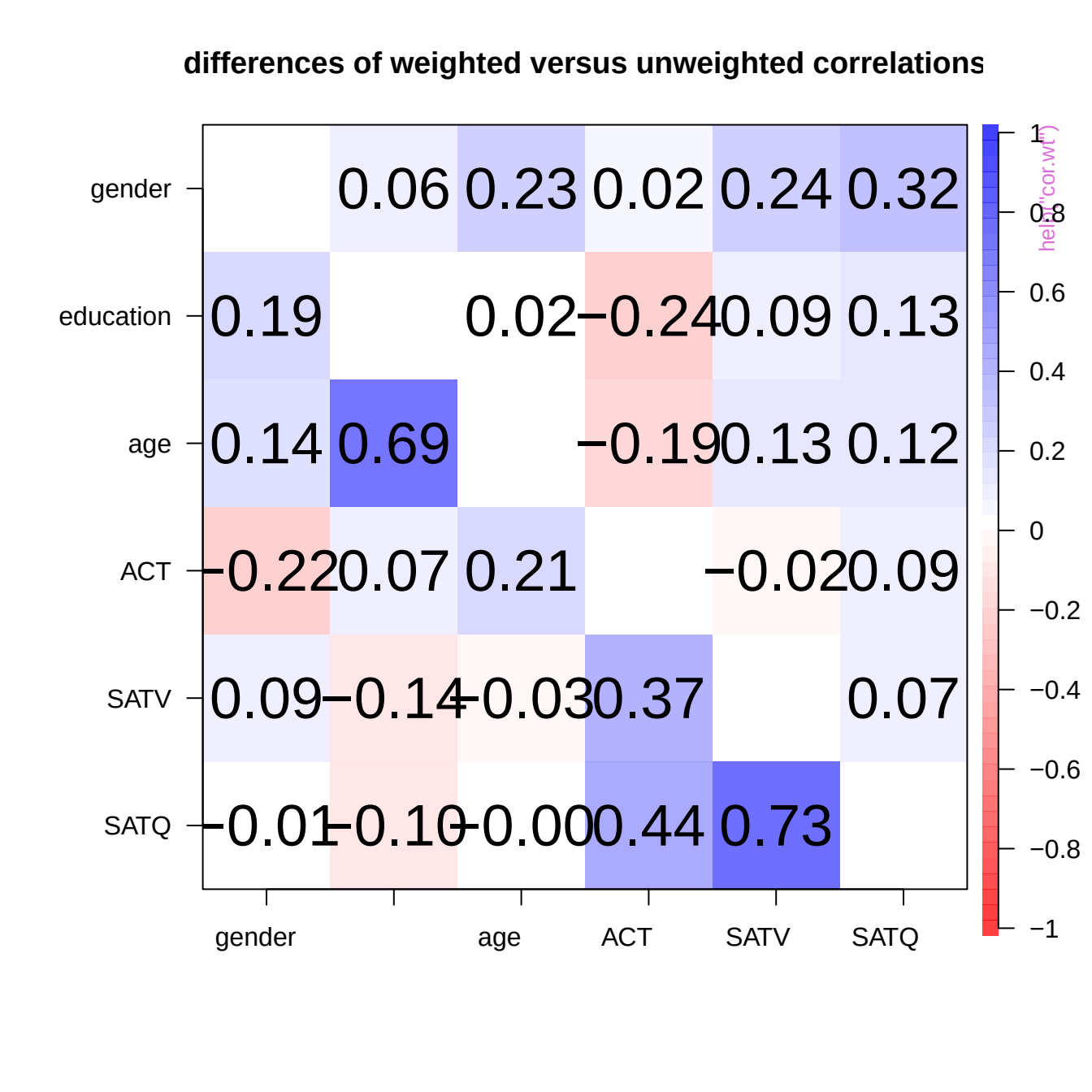

Correlations scaled by probability values
gender
education
age
ACT
SATV
SATQ
1.00 0.13 −0.02 −0.06 −0.05 −0.22
0.13 1.00 0.49 0.15 0.01 0.03
−0.02 0.49 1.00 0.11 −0.00 −0.02
−0.06 0.15 0.11 1.00 0.44 0.52
−0.05 0.01 −0.00 0.44 1.00 0.55
−0.22 0.03 −0.02 0.52 0.55 1.00
gender
age
ACT
SATV
SATQ
1
help("cor.plot")

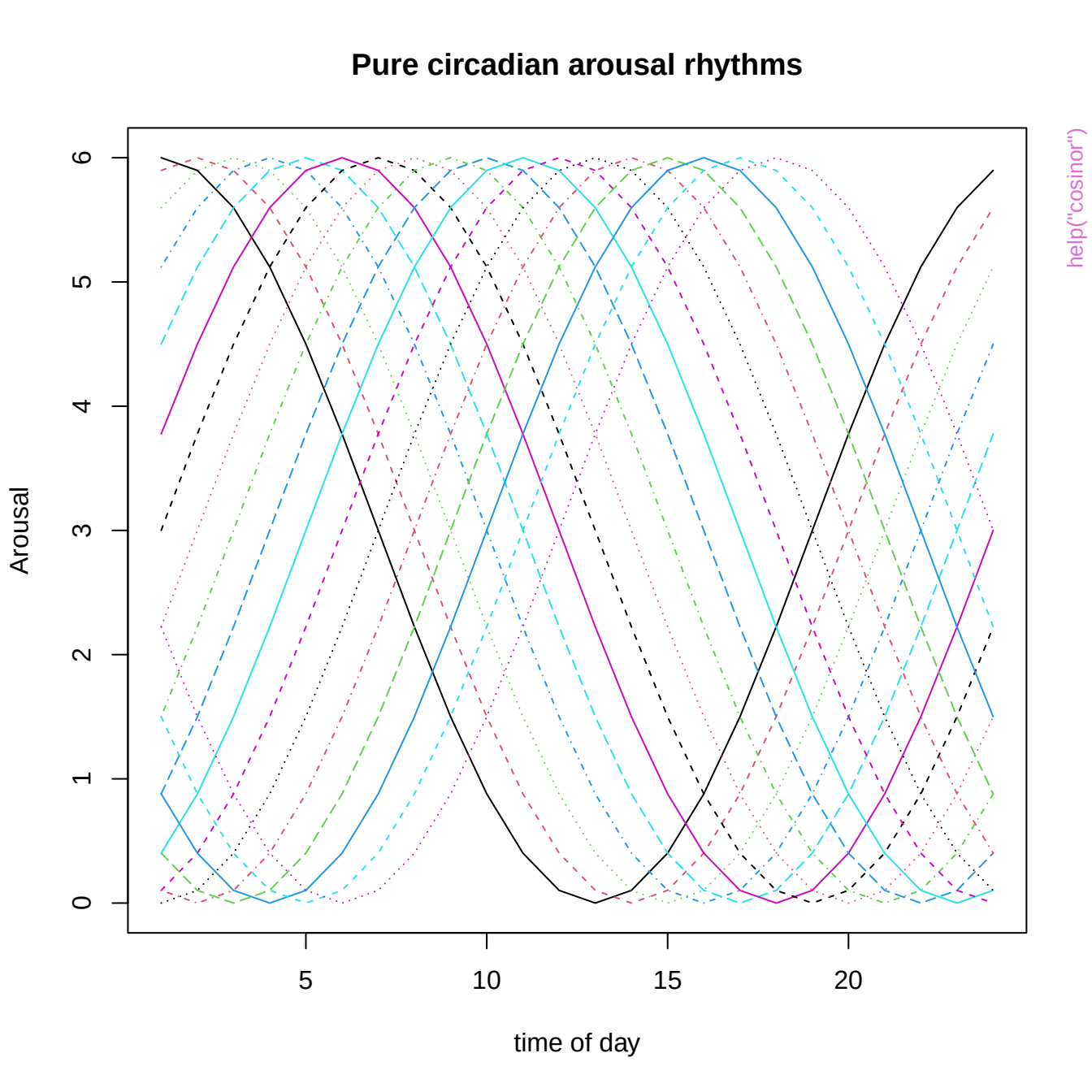

Upper and lower confidence intervals of correlations
gender
education
age
ACT
SATV
SATQ
1.00 0.27 −0.16 −0.20 −0.18 −0.35
−0.00 1.00 0.59 0.28 0.15 0.17
0.12 0.38 1.00 0.25 −0.14 −0.16
0.08 0.01 −0.02 1.00 0.55 0.62
0.09 −0.13 0.14 0.33 1.00 0.64
−0.09 −0.11 0.12 0.41 0.44 1.00
gender
age
ACT
SATV
SATQ
1
help("cor.plot")

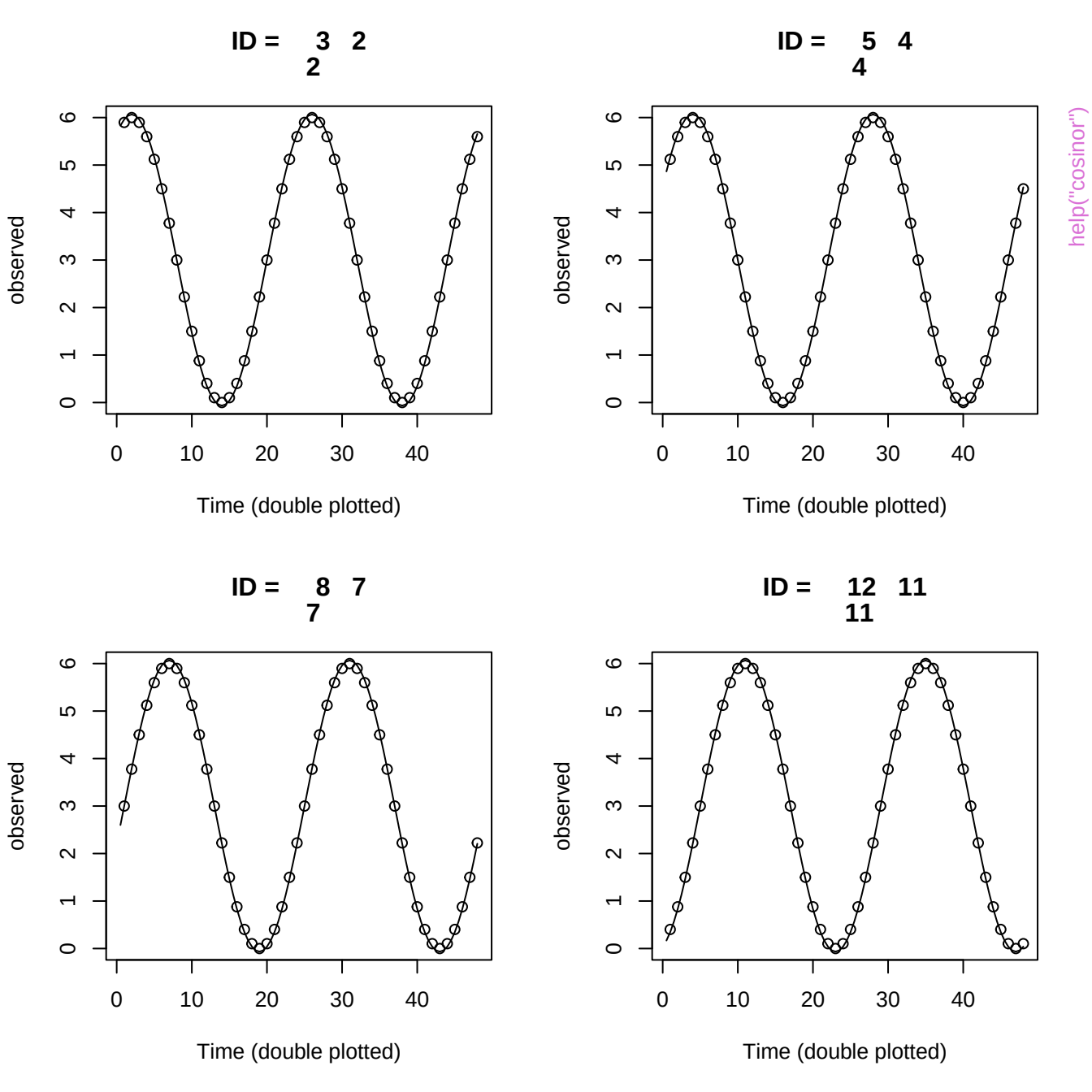

Correlations scaled by probability values
gender
education
age
ACT
SATV
SATQ
1.00 0.13 −0.02 −0.06 −0.05 −0.22
0.13 1.00 0.49 0.15 0.01 0.03
−0.02 0.49 1.00 0.11 −0.00 −0.02
−0.06 0.15 0.11 1.00 0.44 0.52
−0.05 0.01 −0.00 0.44 1.00 0.55
−0.22 0.03 −0.02 0.52 0.55 1.00
gender
age
ACT
SATV
SATQ
1
help("cor.plot")

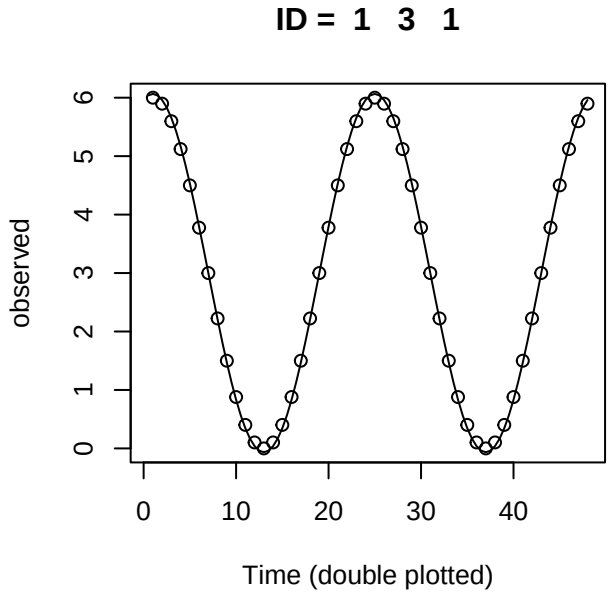

Upper and lower confidence intervals of correlations
gender
education
age
ACT
SATV
SATQ
1.00 0.27 −0.16 −0.20 −0.18 −0.35
−0.00 1.00 0.59 0.28 0.15 0.17
0.12 0.38 1.00 0.25 −0.14 −0.16
0.08 0.01 −0.02 1.00 0.55 0.62
0.09 −0.13 0.14 0.33 1.00 0.64
−0.09 −0.11 0.12 0.41 0.44 1.00
gender
age
ACT
SATV
SATQ
1
help("cor.plot")

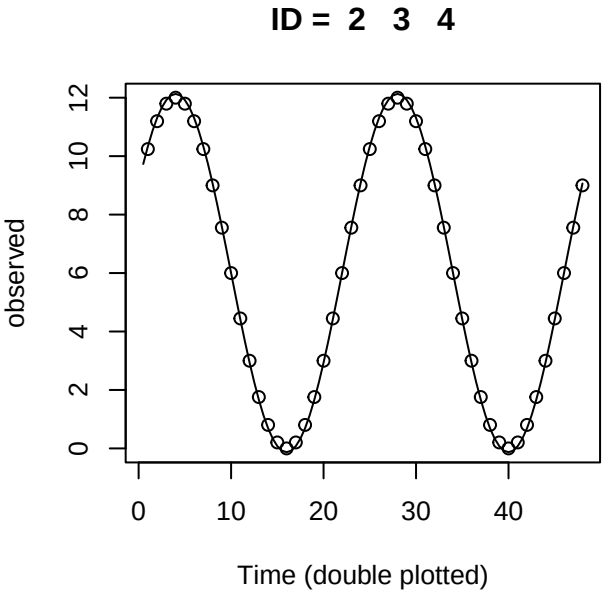

weighted versus unweighted correlations
gender
education
age
ACT
SATV
SATQ
0.12 −0.09 −0.24 −0.15 −0.33
0.19 0.67 0.32 −0.23 −0.23
0.14 0.69 0.39 −0.16 −0.12
−0.22 0.07 0.21 0.39 0.35
0.09 −0.14 −0.03 0.37 0.66
−0.01 −0.10 −0.00 0.44 0.73
gender
age
ACT
SATV
SATQ
help("cor.wt")
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1

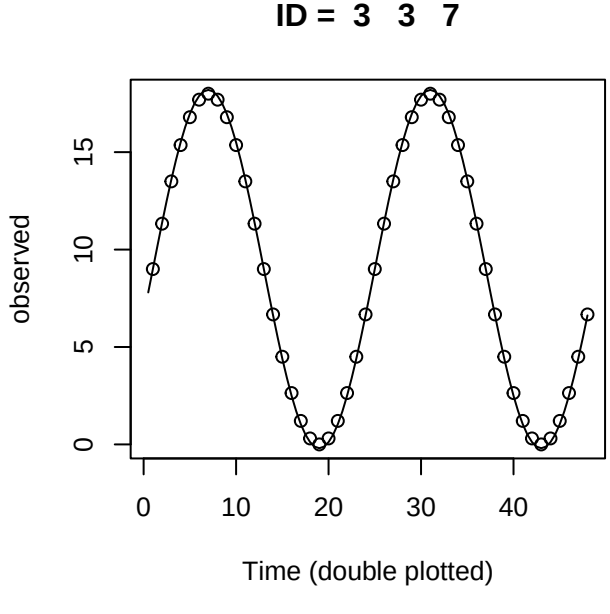

differences of weighted versus unweighted correlations
gender
education
age
ACT
SATV
SATQ
0.06 0.23 0.02 0.24 0.32
0.19 0.02 −0.24 0.09 0.13
0.14 0.69 −0.19 0.13 0.12
−0.22 0.07 0.21 −0.02 0.09
0.09 −0.14 −0.03 0.37 0.07
−0.01 −0.10 −0.00 0.44 0.73
gender
age
ACT
SATV
SATQ
help("cor.wt")
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1

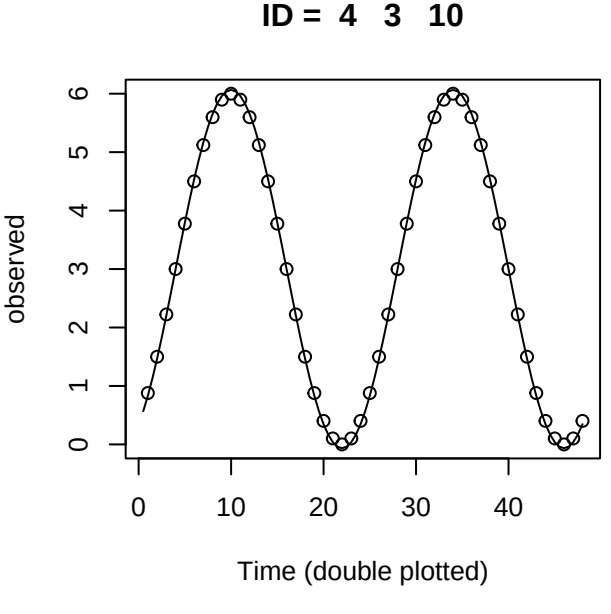

Pure circadian arousal rhythms
Arousal
0
1
2
3
4
5
6
5
10
15
20
time of day
help("cosinor")


ID = 3 2
2
observed
Time (double plotted)
ID = 5 4
4
observed
Time (double plotted)
ID = 8 7
7
observed
Time (double plotted)
ID = 12 11
11
observed
Time (double plotted)
help("cosinor")

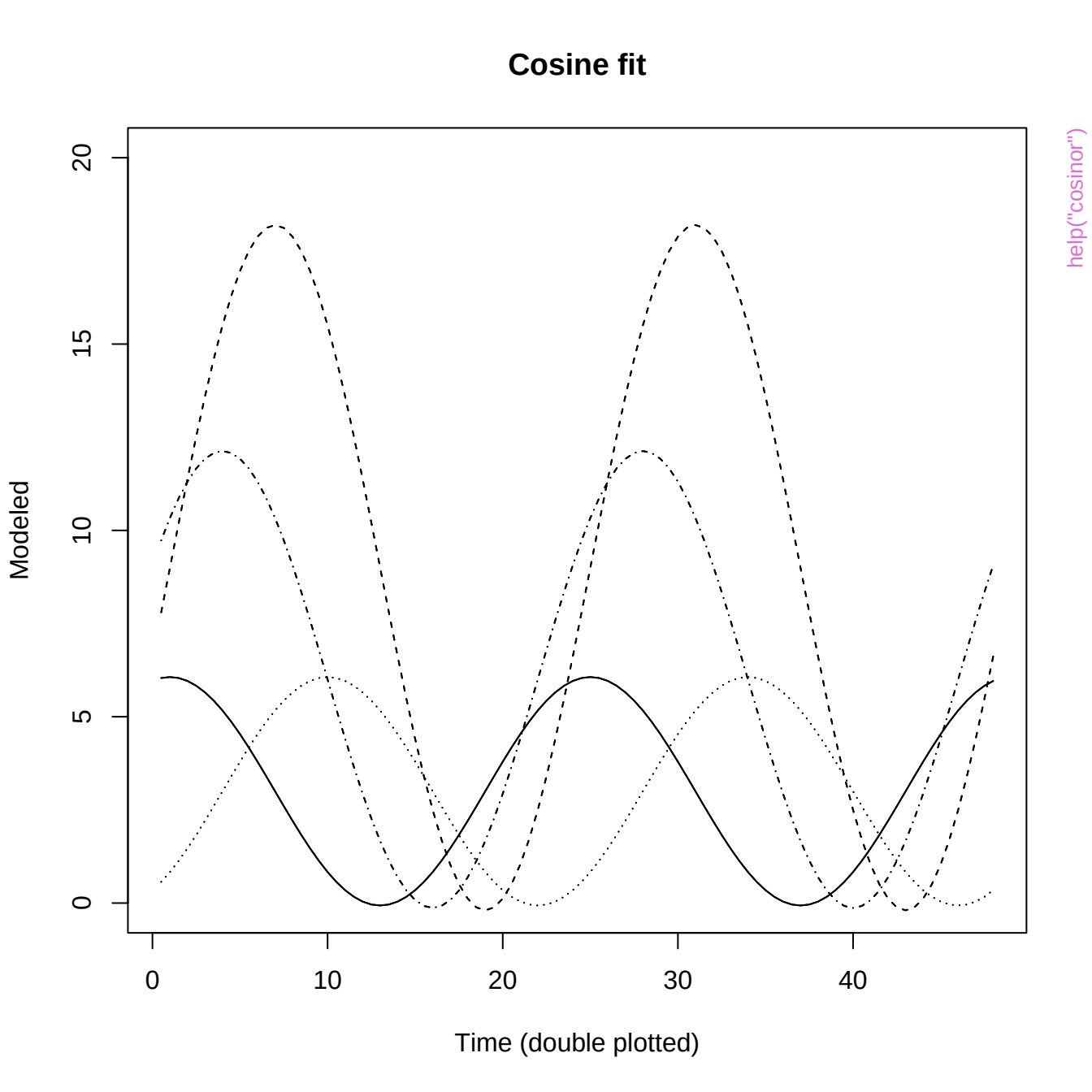


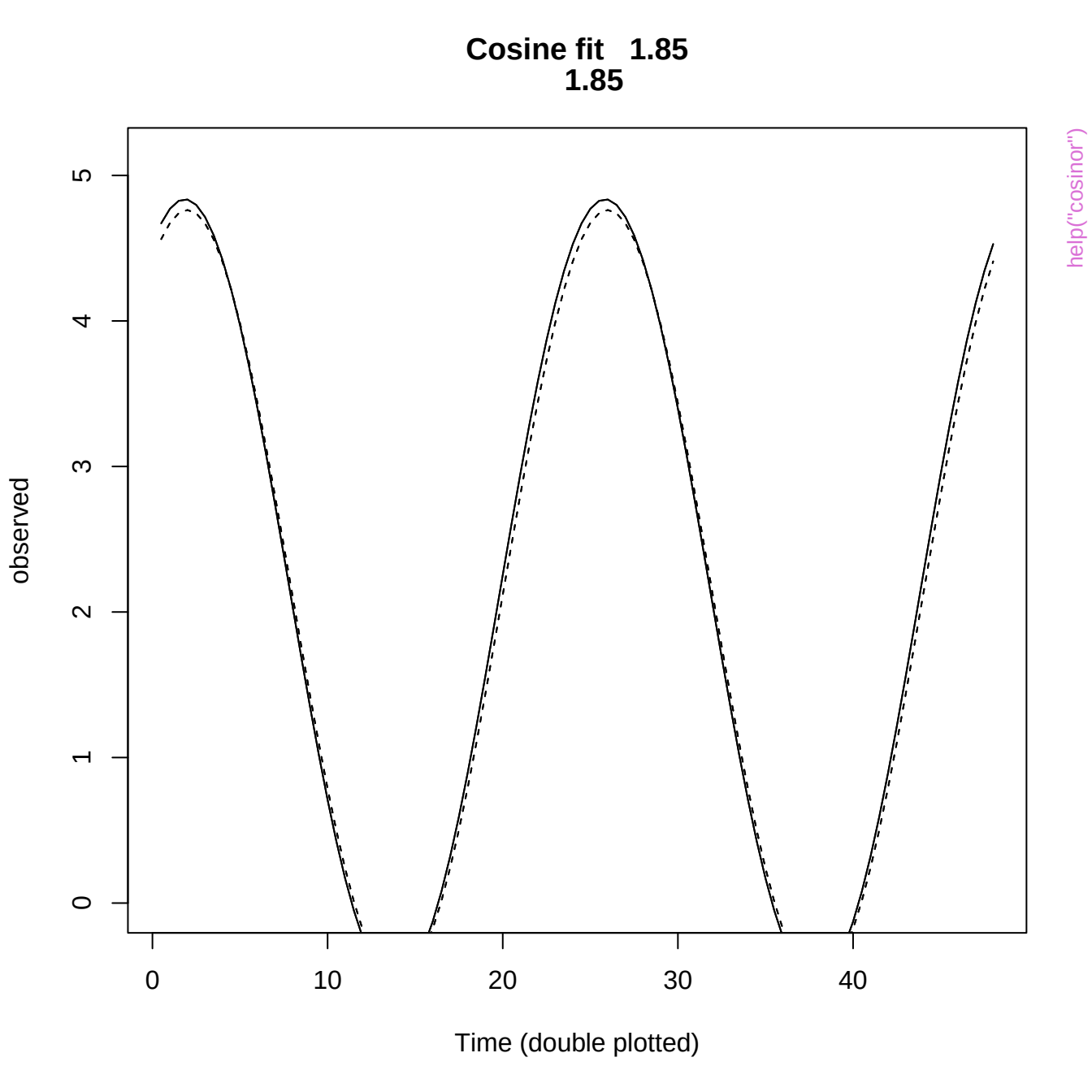


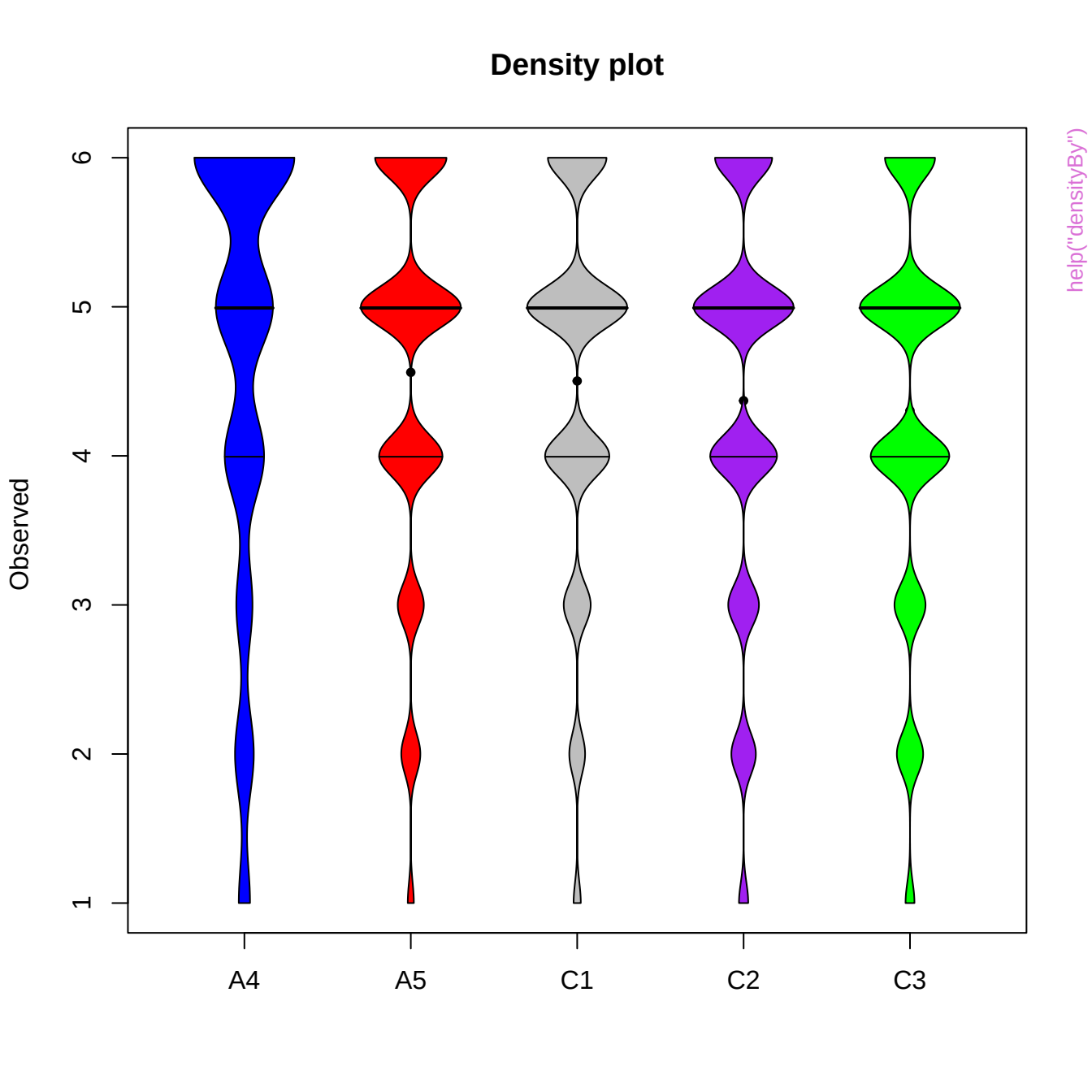


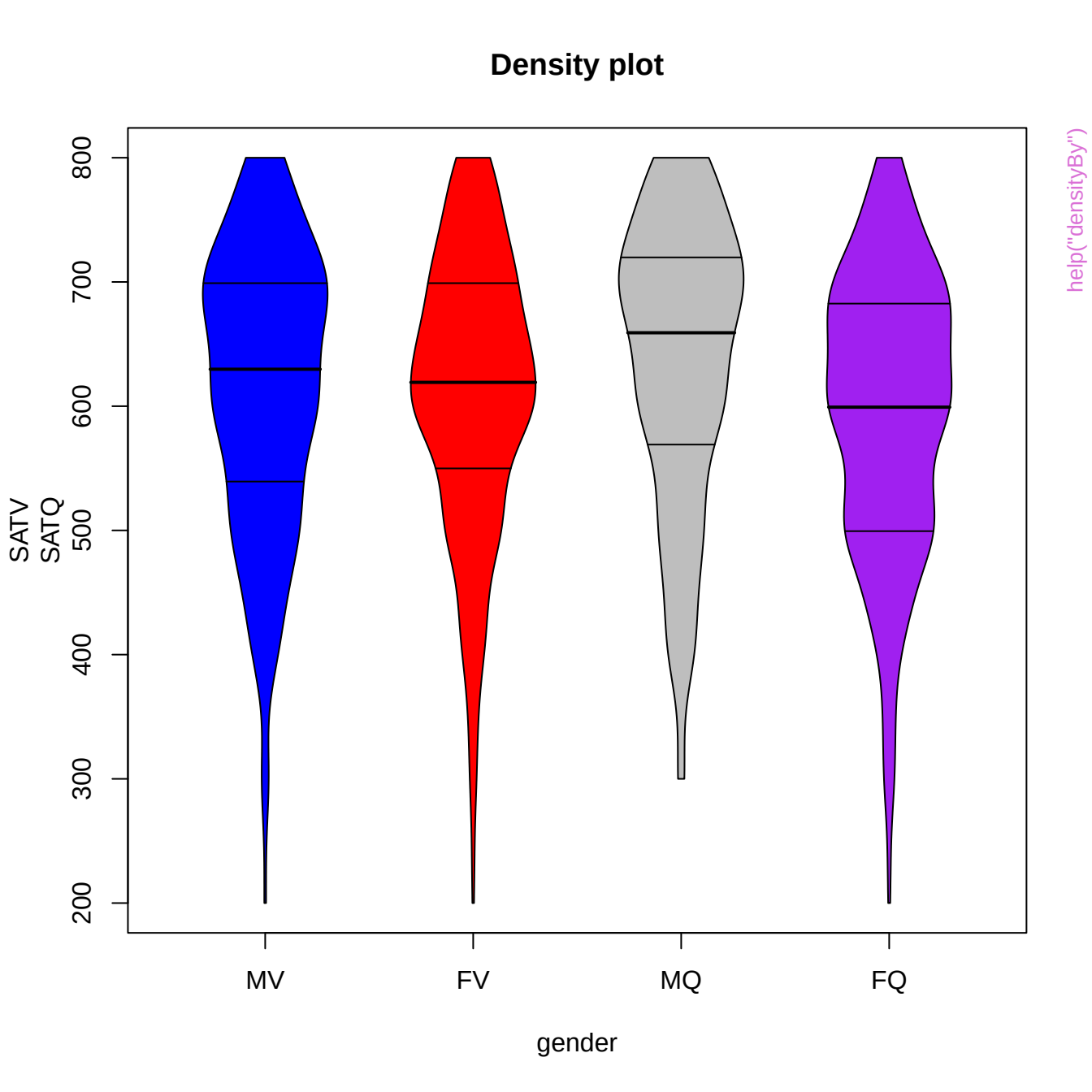


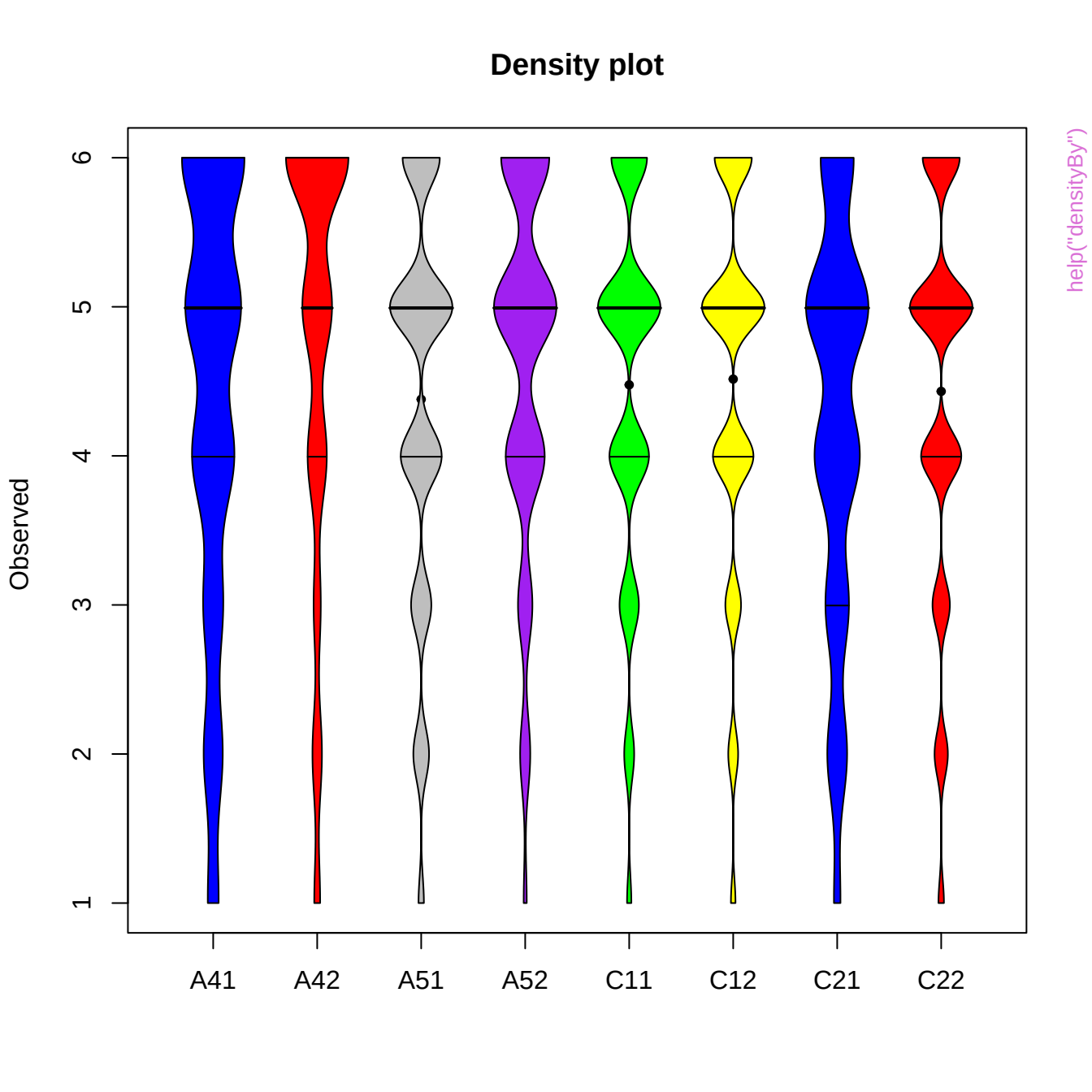
help("cosinor")

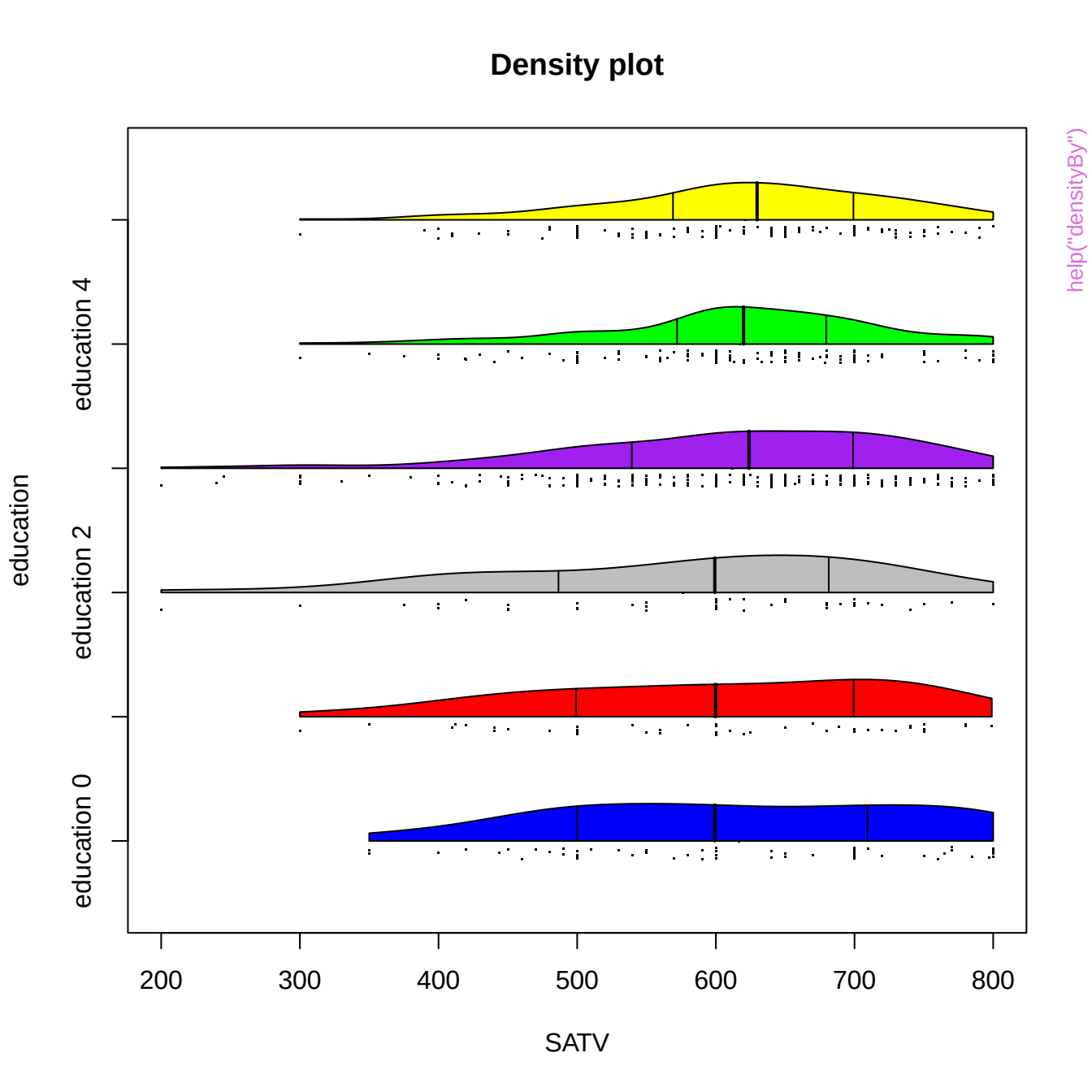

Cosine fit
Modeled
Time (double plotted)
0
5
10
15
20
0
10
20
30
40
help("cosinor")

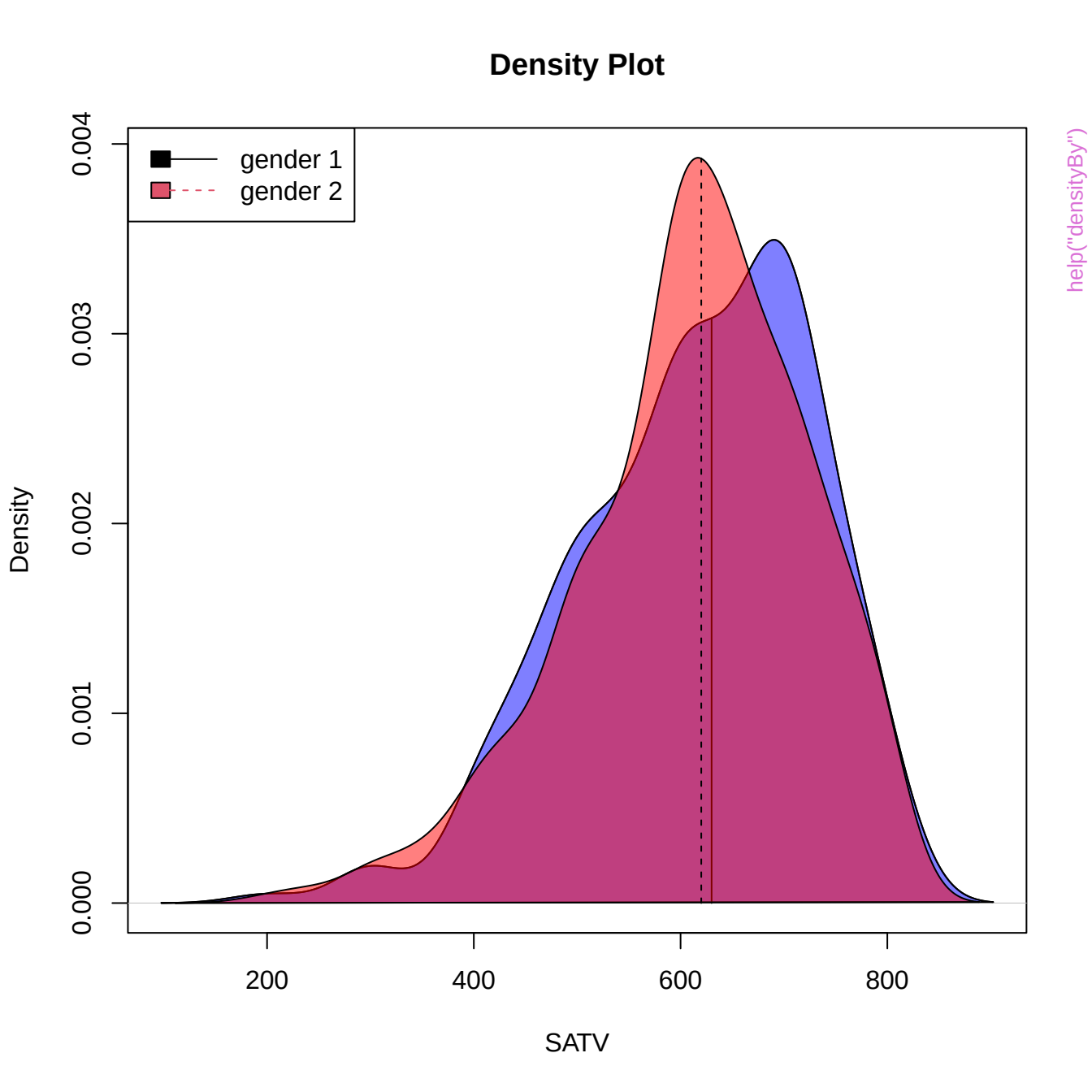

Cosine fit 1.85
1.85
observed
Time (double plotted)
0
1
2
3
4
5
0
10
20
30
40
help("cosinor")


Density plot
Observed
1
2
3
4
5
6
A4
A5
C1
C2
C3
help("densityBy")

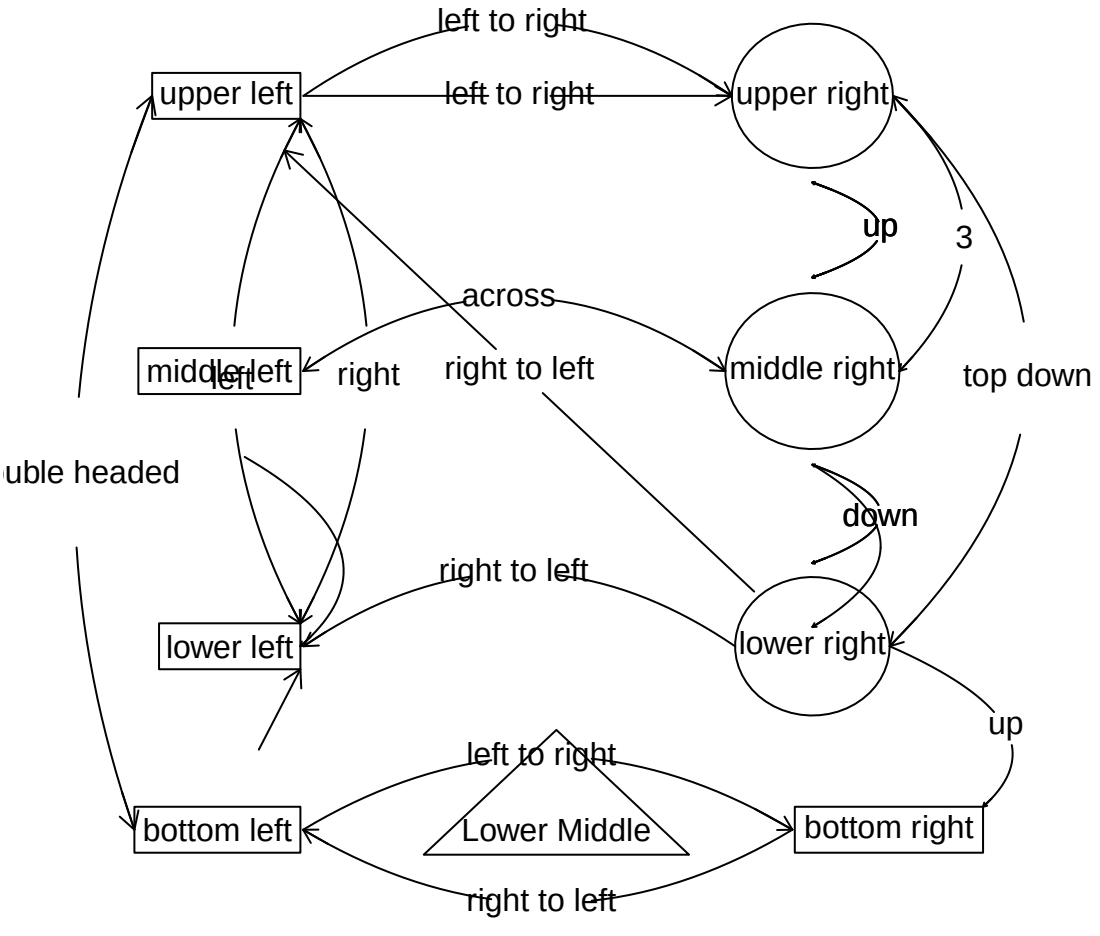

Density plot
SATV
SATQ
200
300
400
500
600
700
800
MV
FV
MQ
FQ
gender
help("densityBy")


Density plot
Observed
1
2
3
4
5
6
A41
A42
A51
A52
C11
C12
C21
C22
help("densityBy")


Density plot
education
education 4
education 2
education 0
200
300
400
500
600
700
800
SATV
help("densityBy")

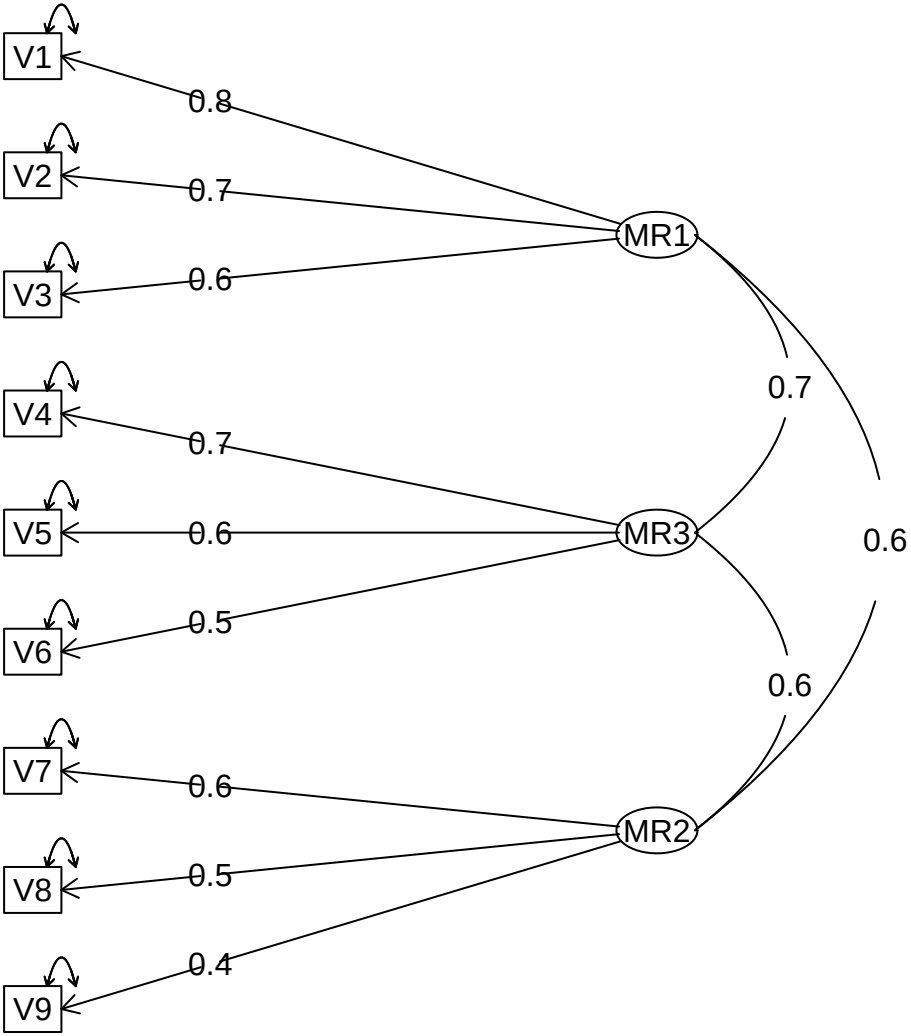

Density Plot
gender 1
gender 2
0.004
0.003
0.002
0.001
0.000
Density
200
400
600
800
SATV
help("densityBy")

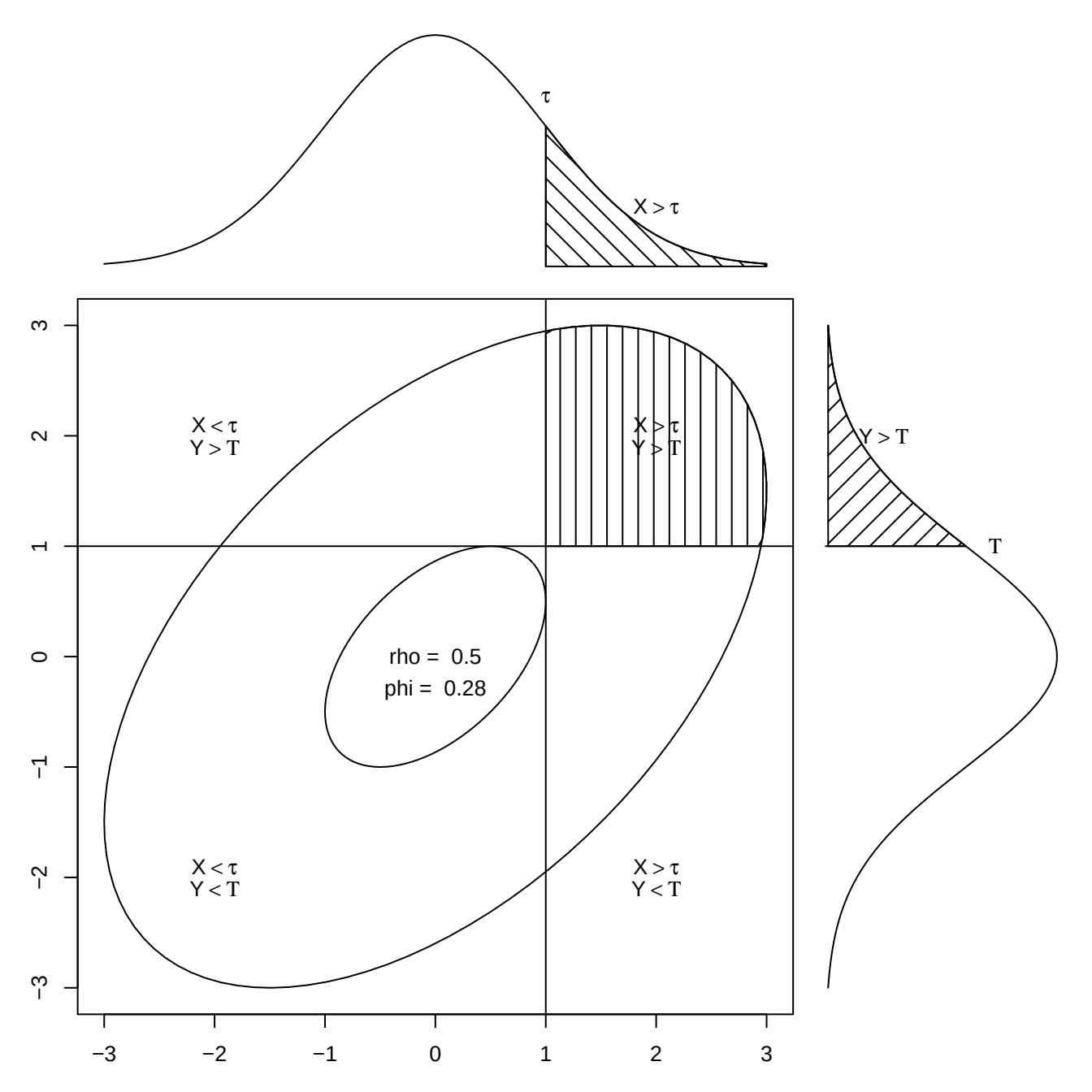
Demonstration of diagram functions

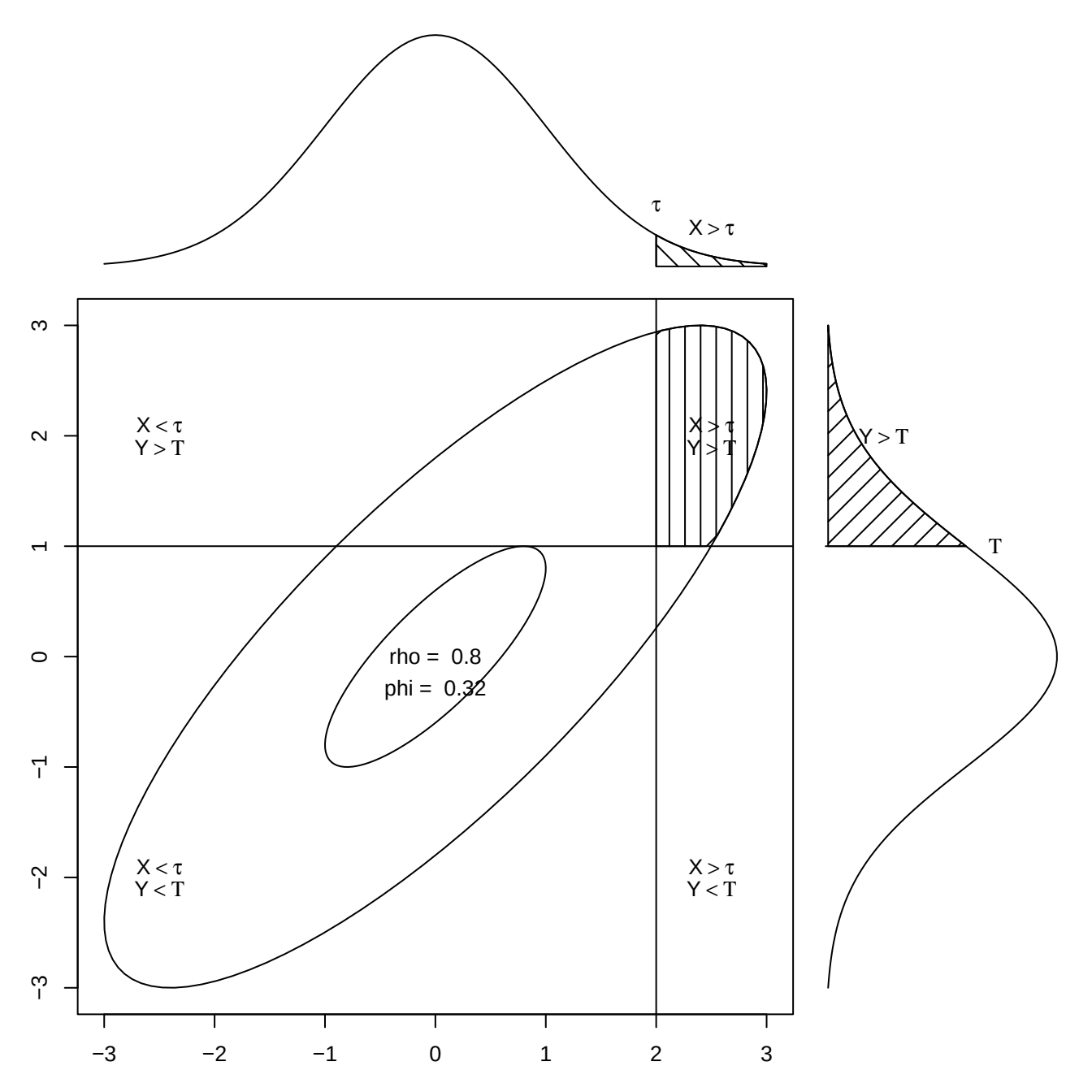


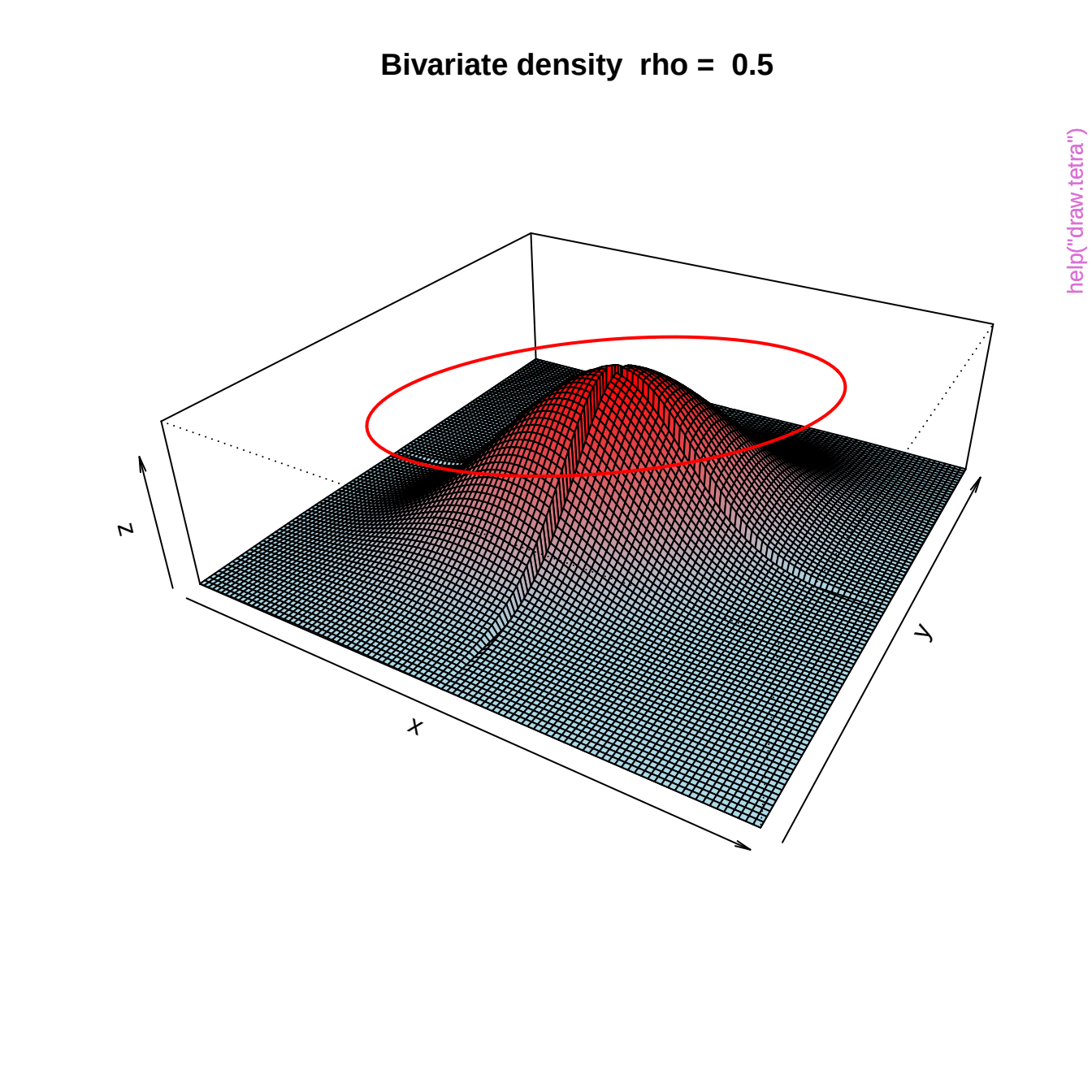
help("diagram")

Factor Analysis

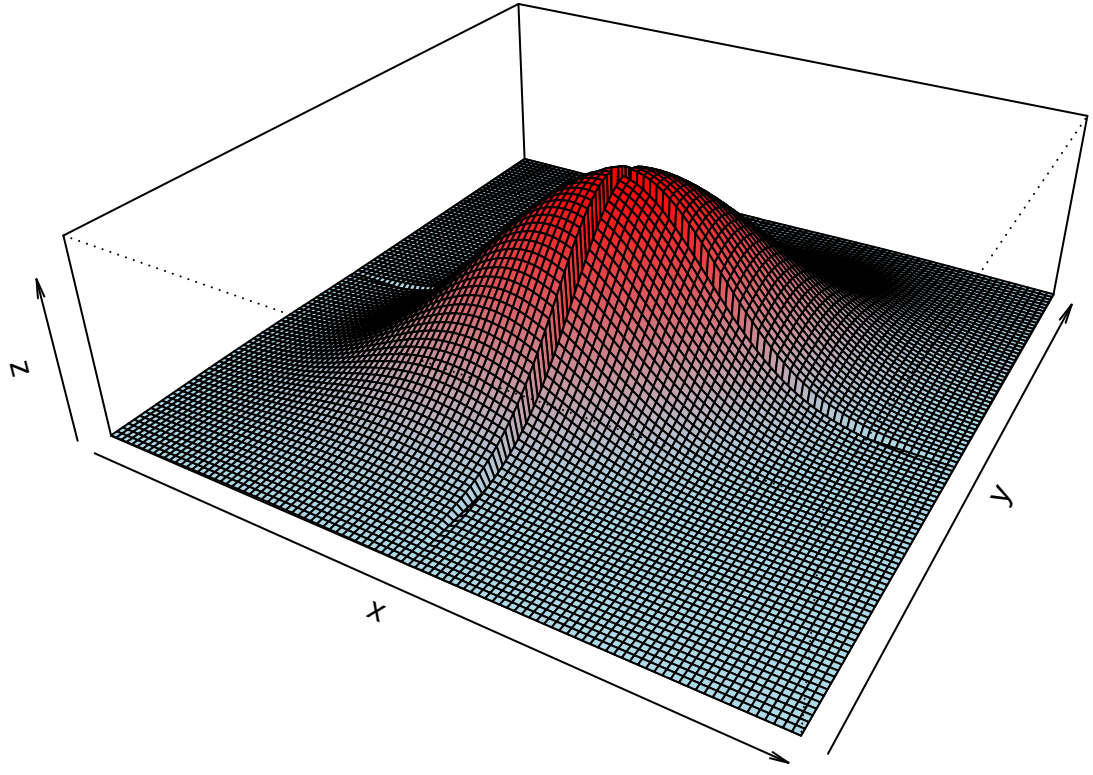



τ
X > τ
X < τ
Y > T
X > τ
Y > T
Y > T
T
rho = 0.5
phi = 0.28
X < τ
Y < T
X > τ
Y < T
3
2
1
0
−1
−2
−3
−3
−2
−1
0
1
2
3

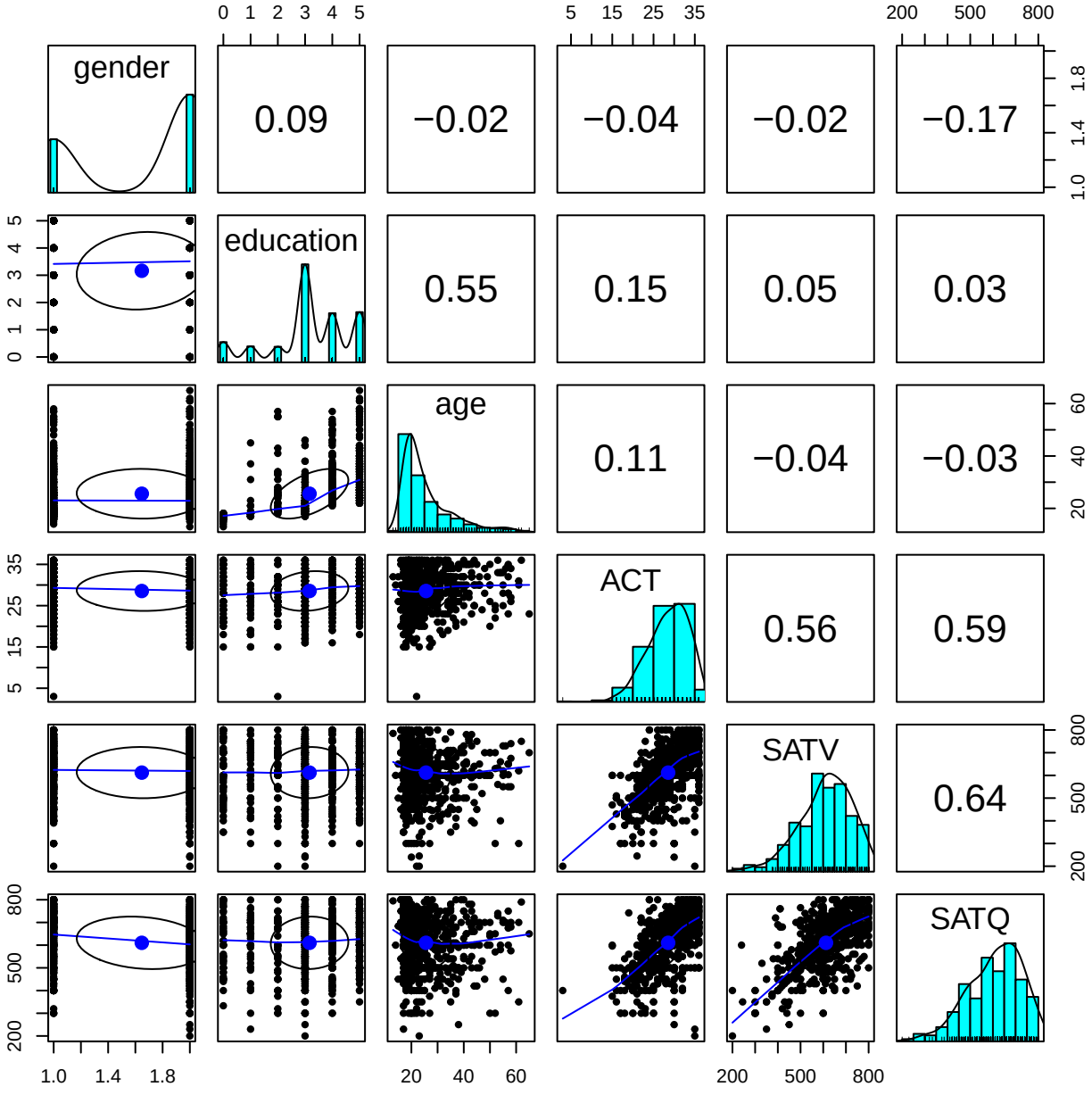

τ
X > τ
X < τ
Y > T
X > τ
Y > T
Y > T
T
rho = 0.8
phi = 0.32
X < τ
Y < T
X > τ
Y < T
3
2
1
0
−1
−2
−3
−3
−2
−1
0
1
2
3

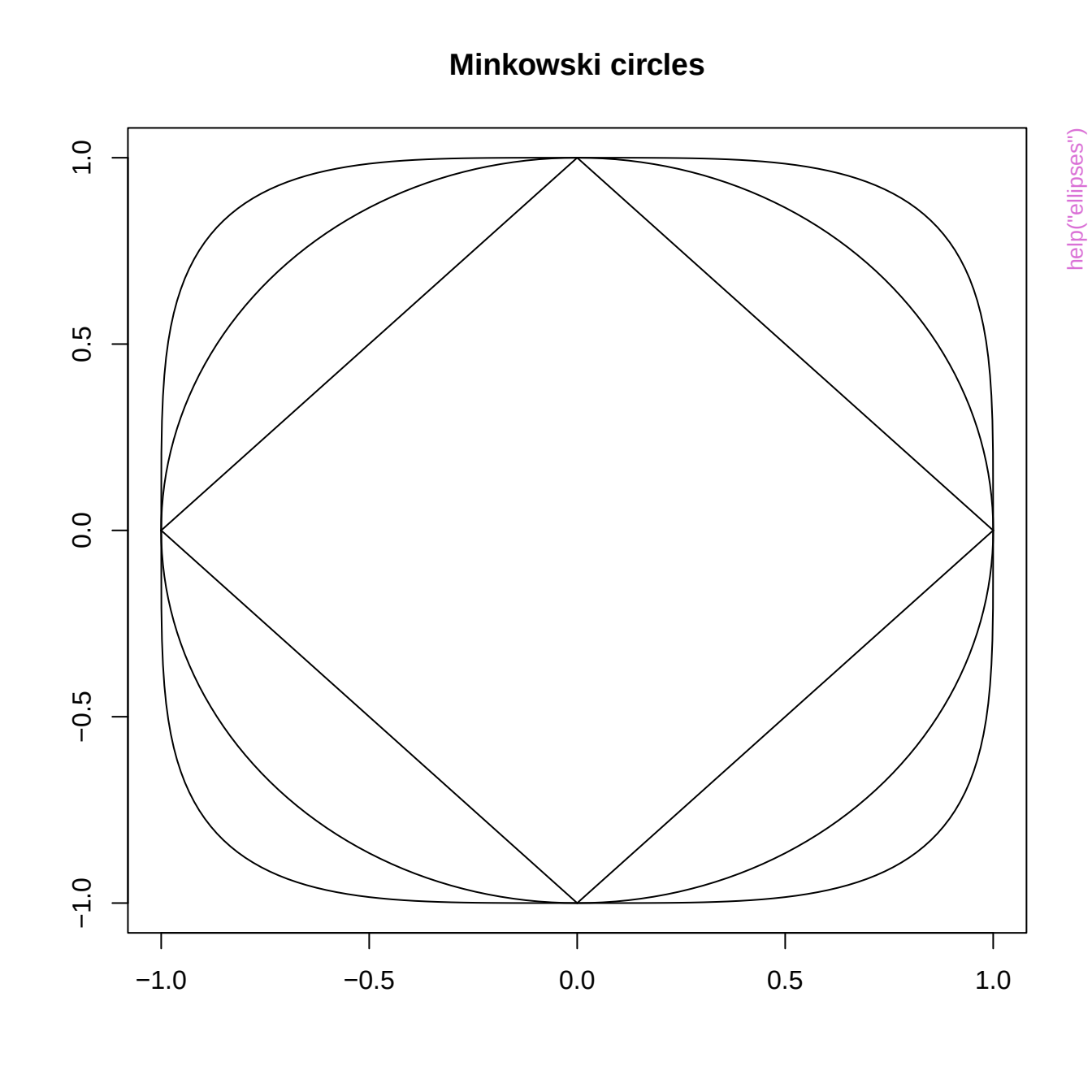

Bivariate density rho = 0.5
help("draw.tetra")
z
x
y

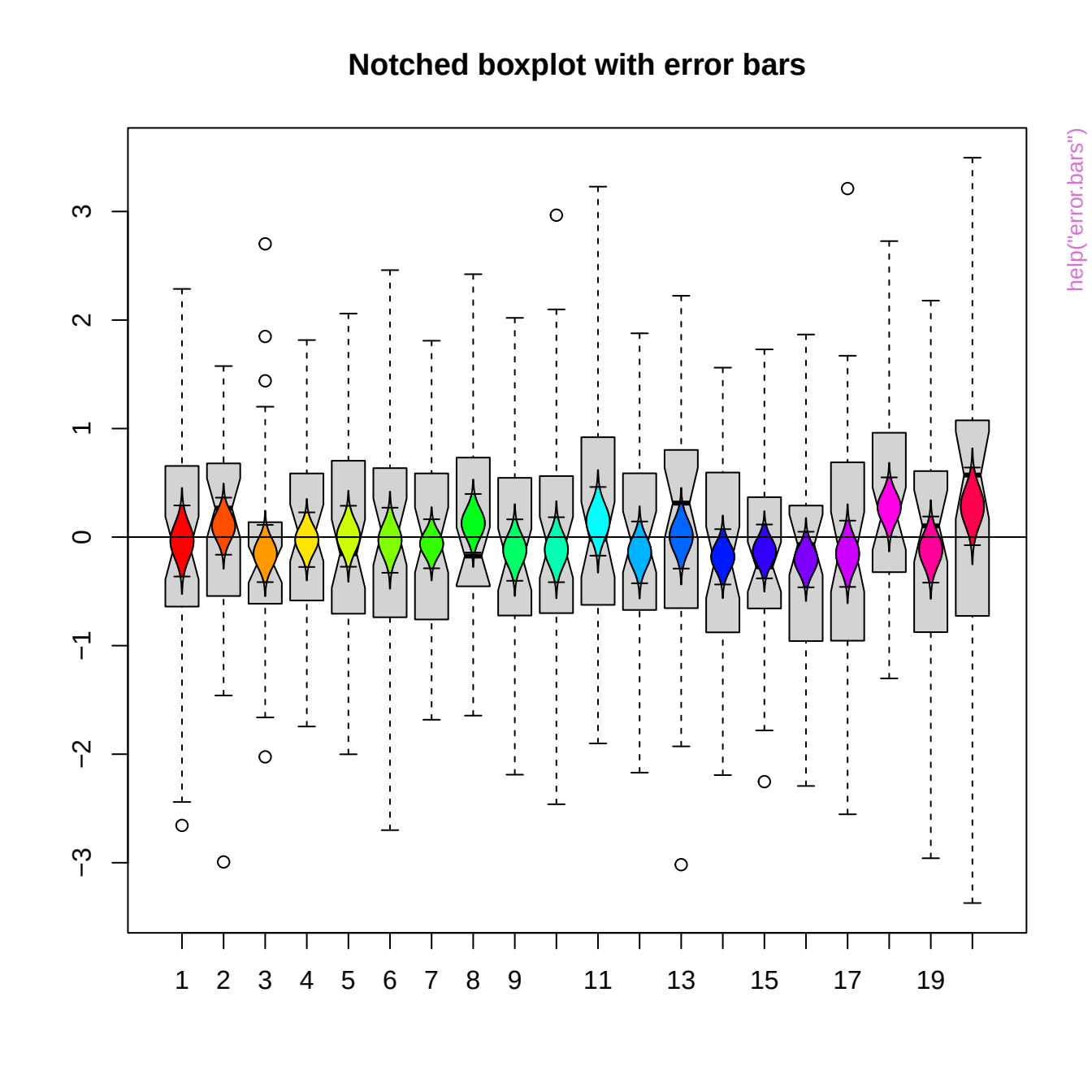
Bivariate density rho = 0.5

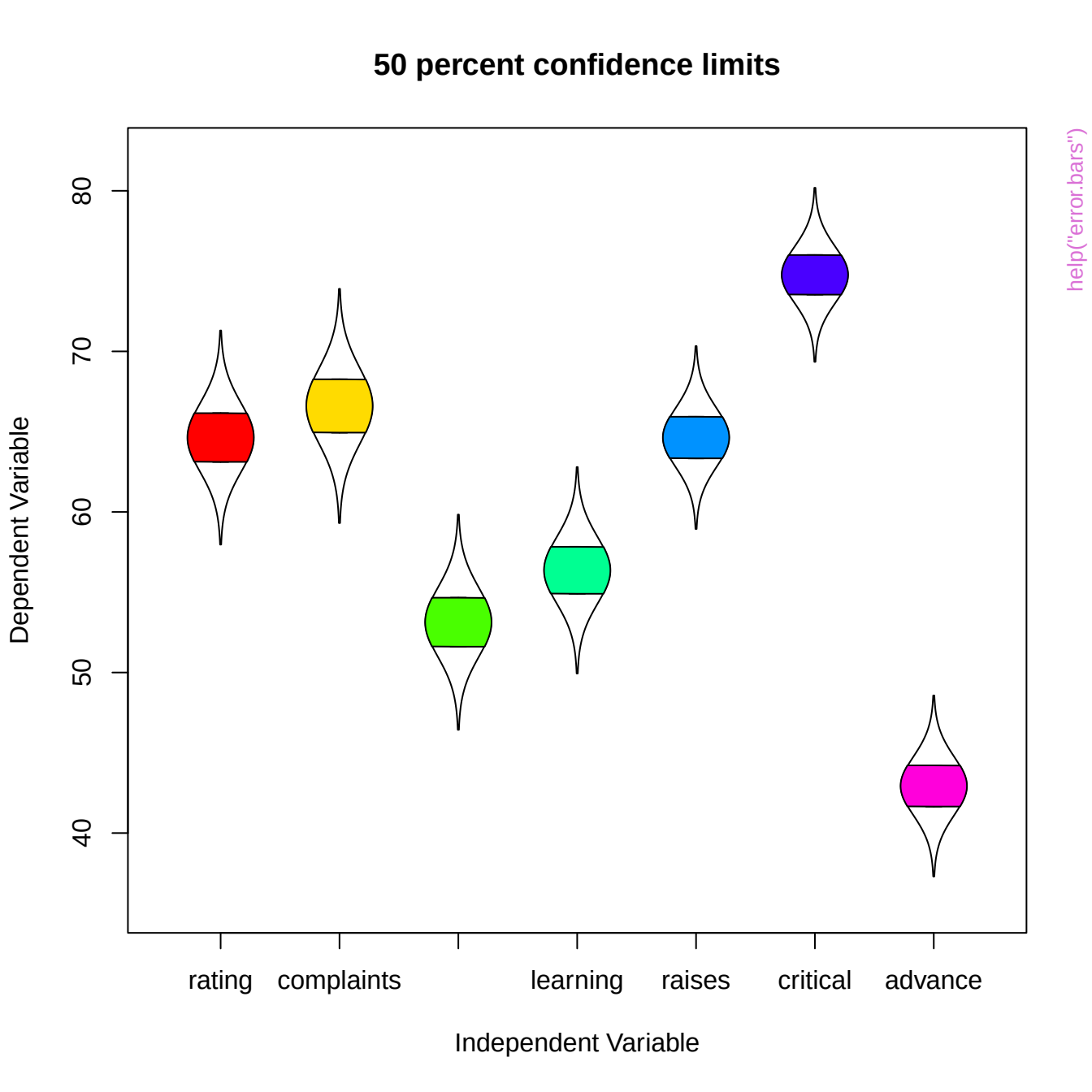


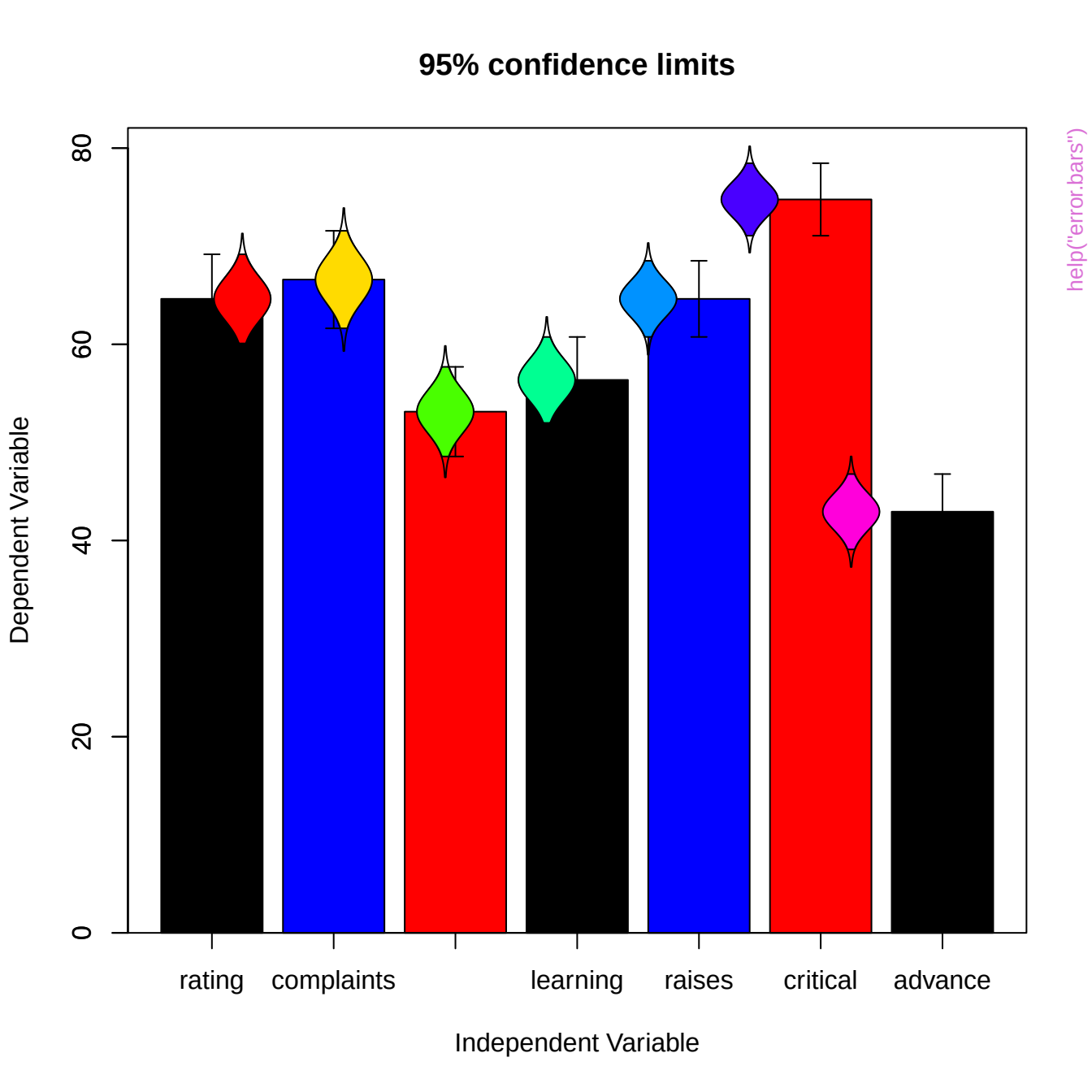
help("draw.tetra")

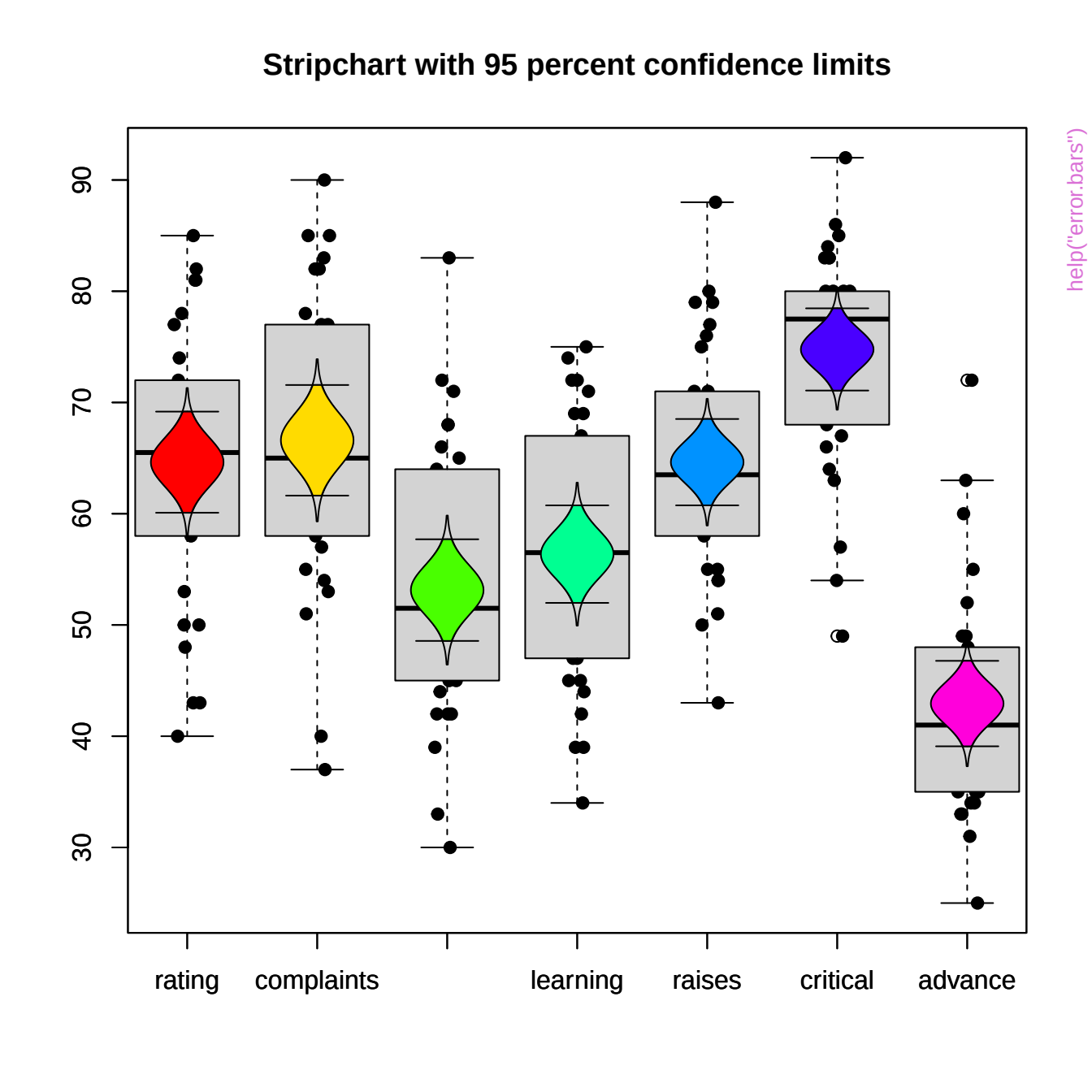

gender
education
age
ACT
SATV
SATQ
0.09
−0.02
−0.04
−0.02
−0.17
0.55
0.15
0.05
0.03
0.11
−0.04
−0.03
0.56
0.59
0.64
help("ellipses")

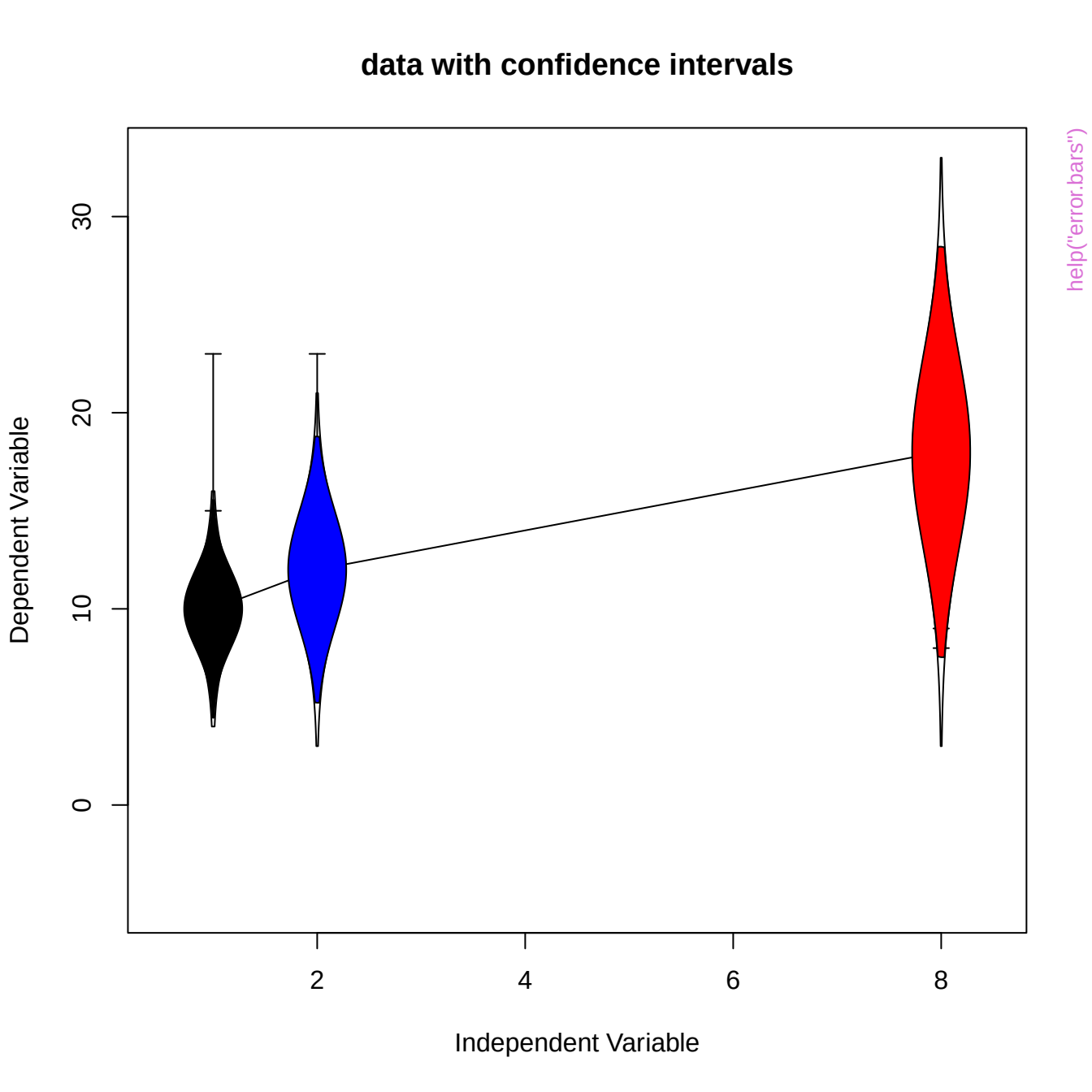

Minkowski circles
1.0
0.5
0.0
−0.5
−1.0
−1.0
−0.5
0.0
0.5
1.0
help("ellipses")

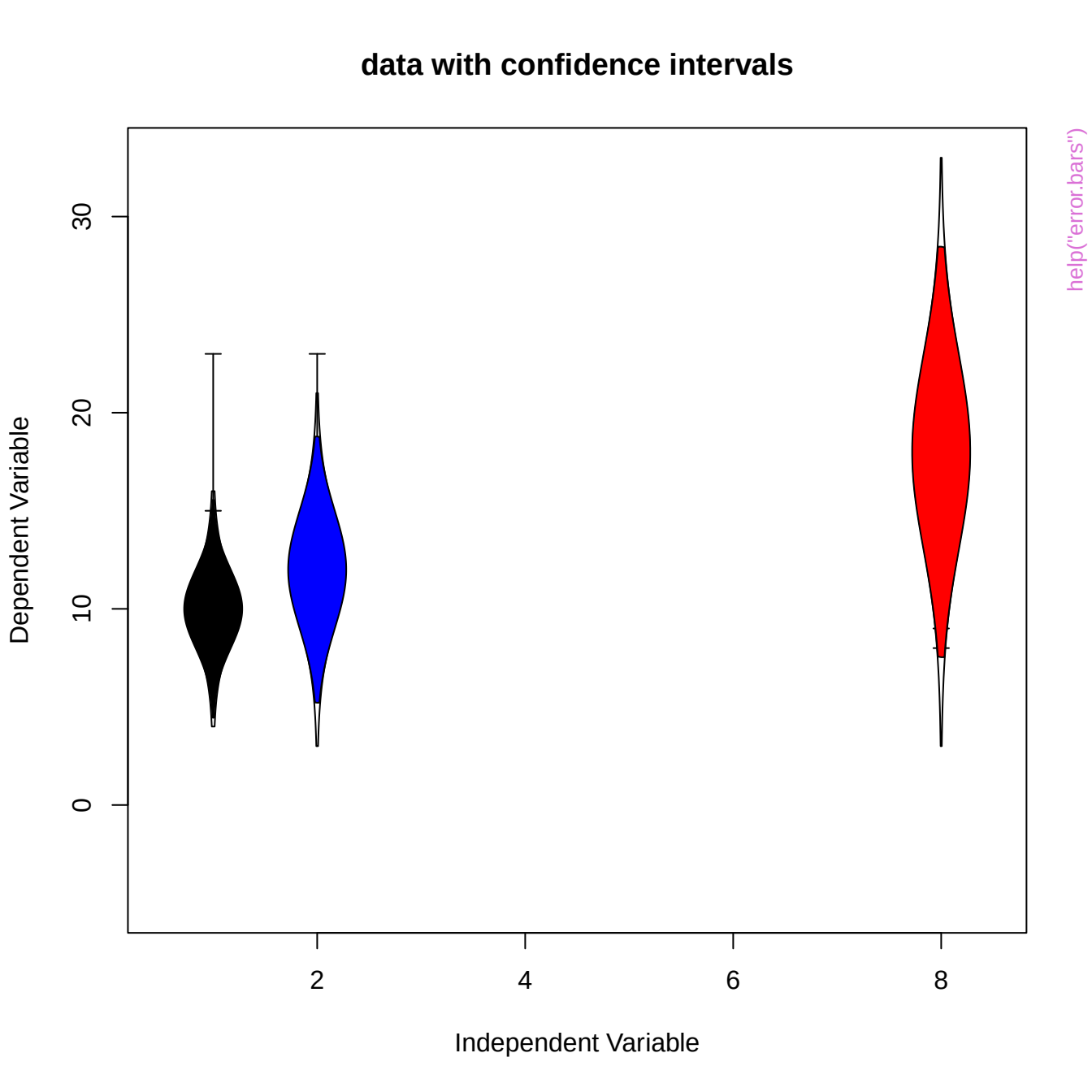

Notched boxplot with error bars
help("error.bars")
3
2
1
0
−1
−2
−3
1
2
3
4
5
6
7
8
9
11
13
15
17
19

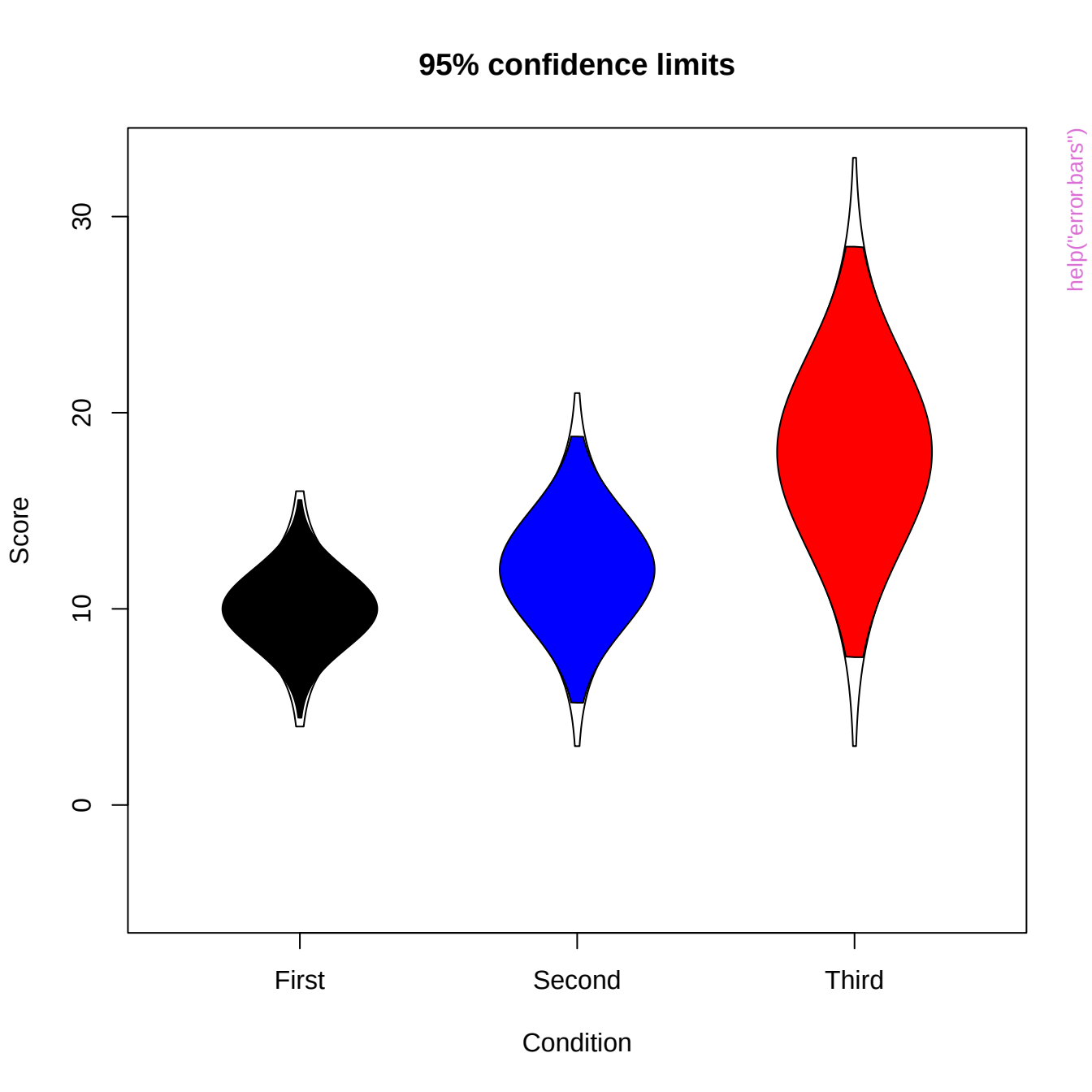

50 percent confidence limits
Dependent Variable
40
50
60
70
80
rating
complaints
learning
raises
critical
advance
Independent Variable
help("error.bars")

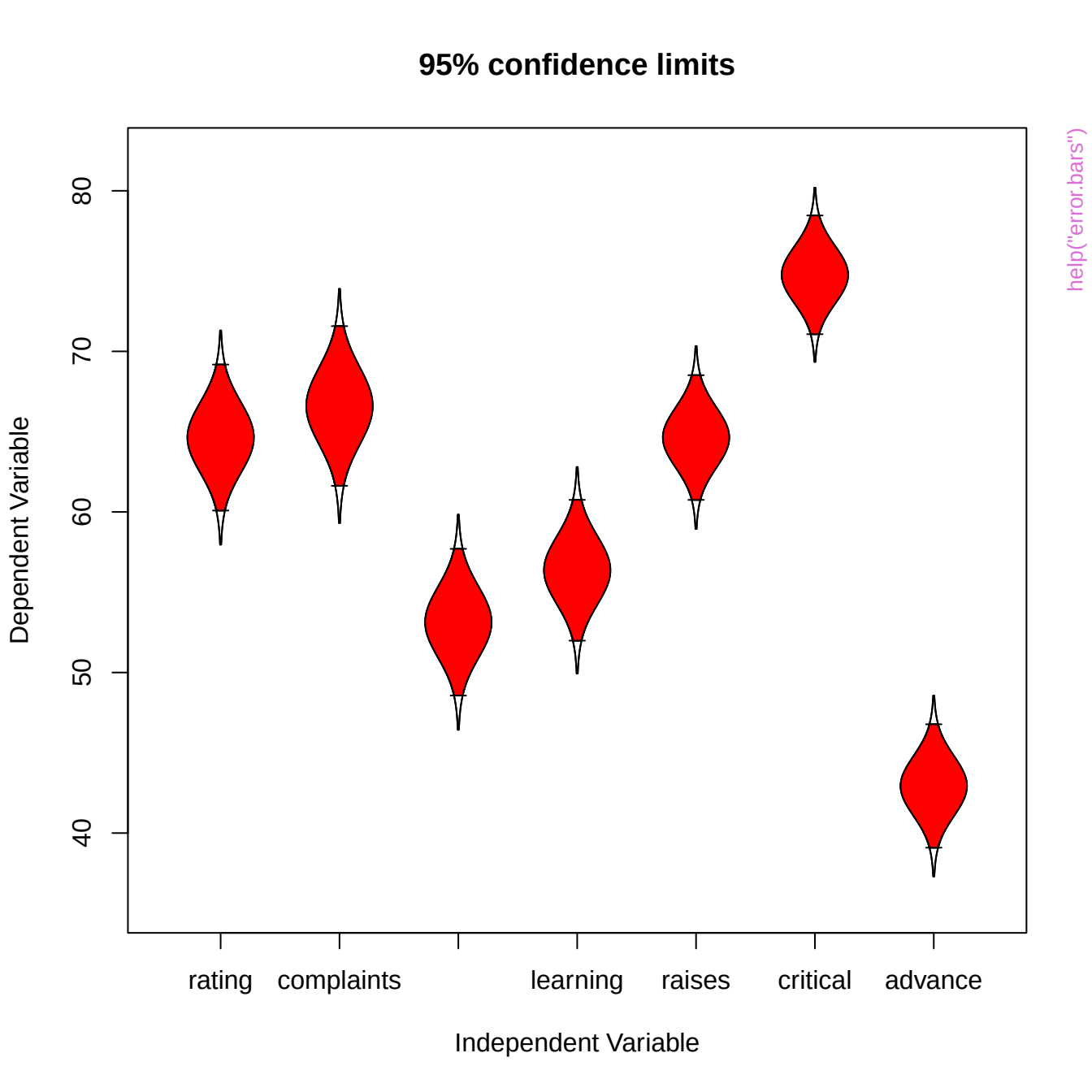

95% confidence limits
Dependent Variable
0
20
40
60
80
rating
complaints
learning
raises
critical
advance
Independent Variable
help("error.bars")

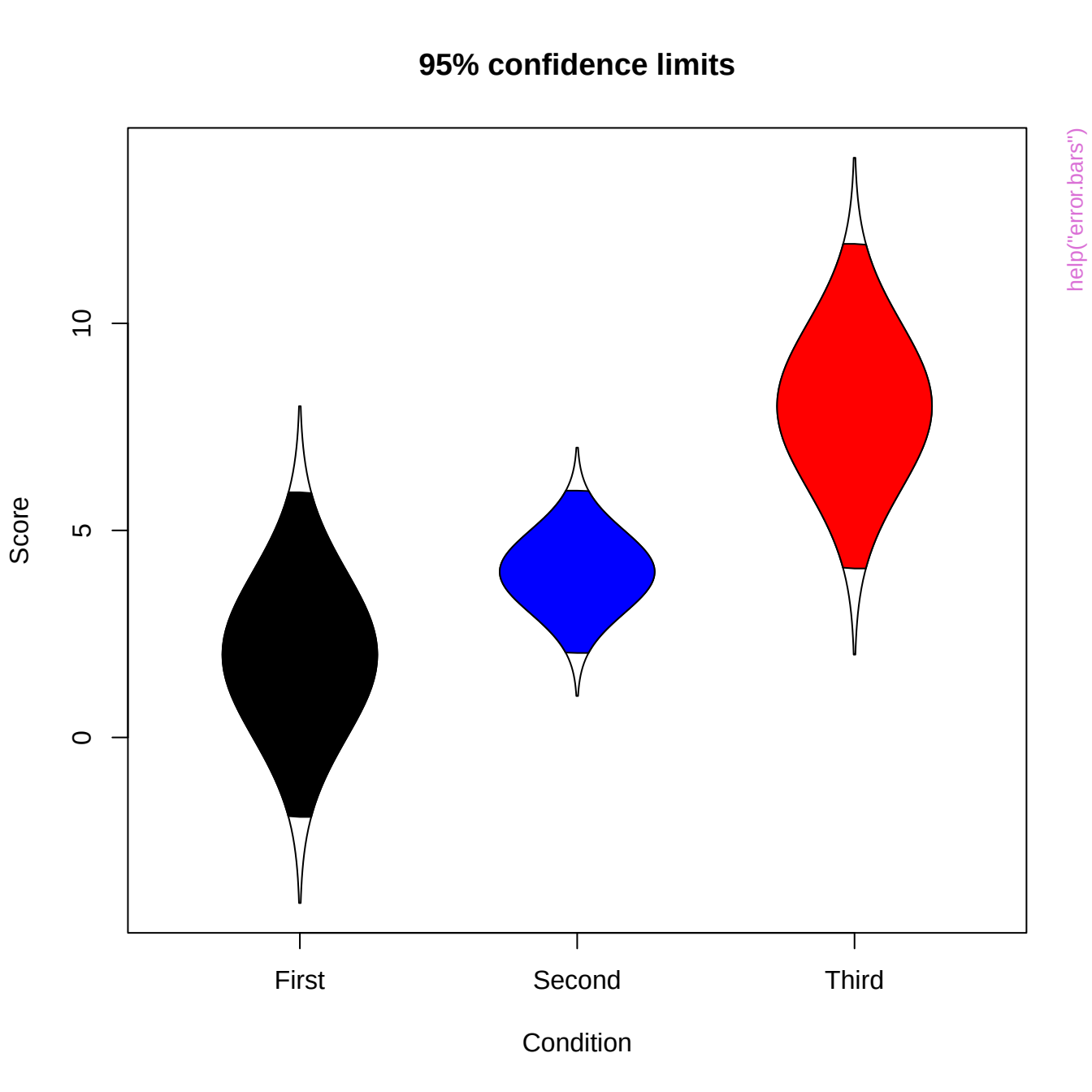

Stripchart with 95 percent confidence limits
help("error.bars")
90
80
70
60
50
40
30
rating
complaints
learning
raises
critical
advance

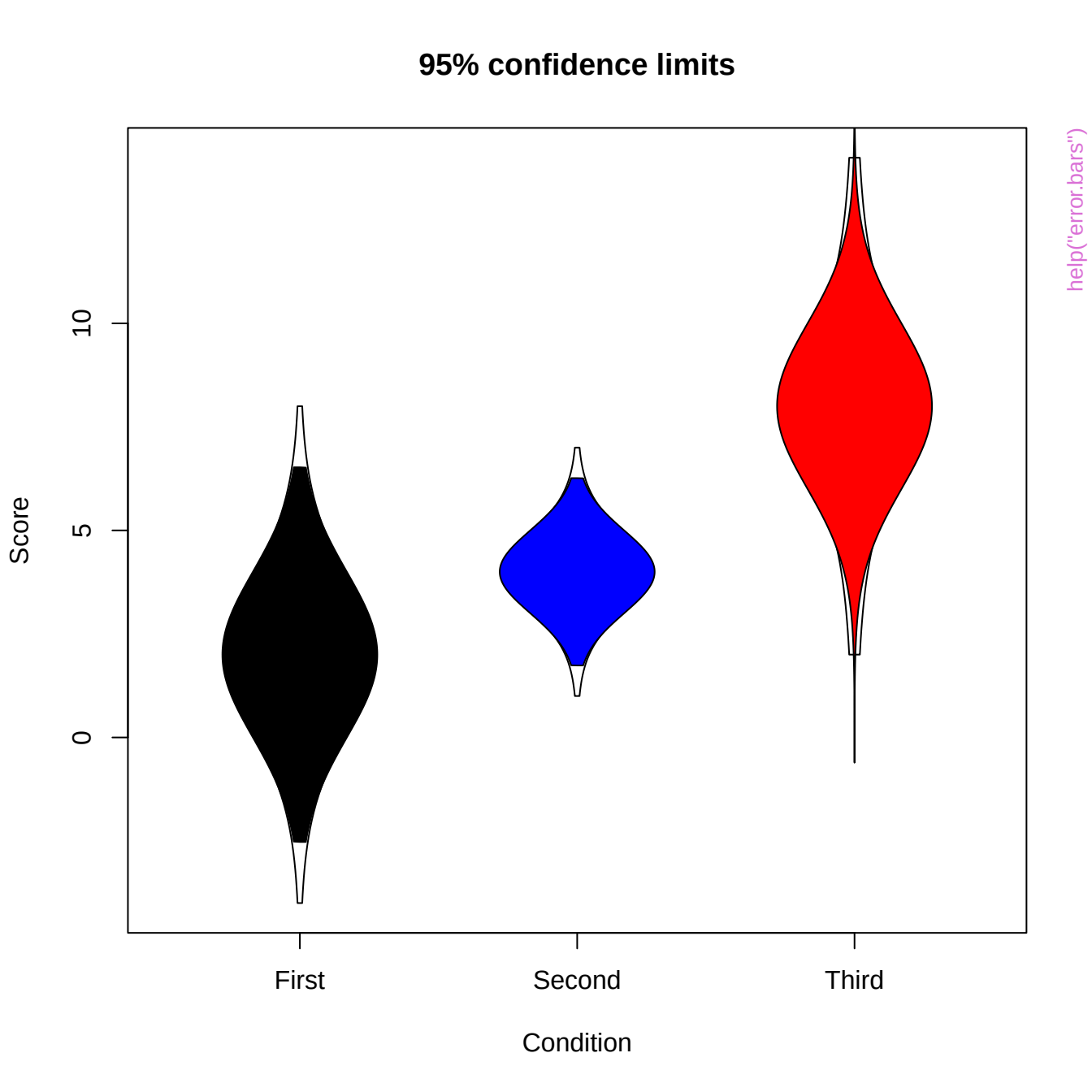

data with confidence intervals
Dependent Variable
0
10
20
30
2
4
6
8
Independent Variable
help("error.bars")

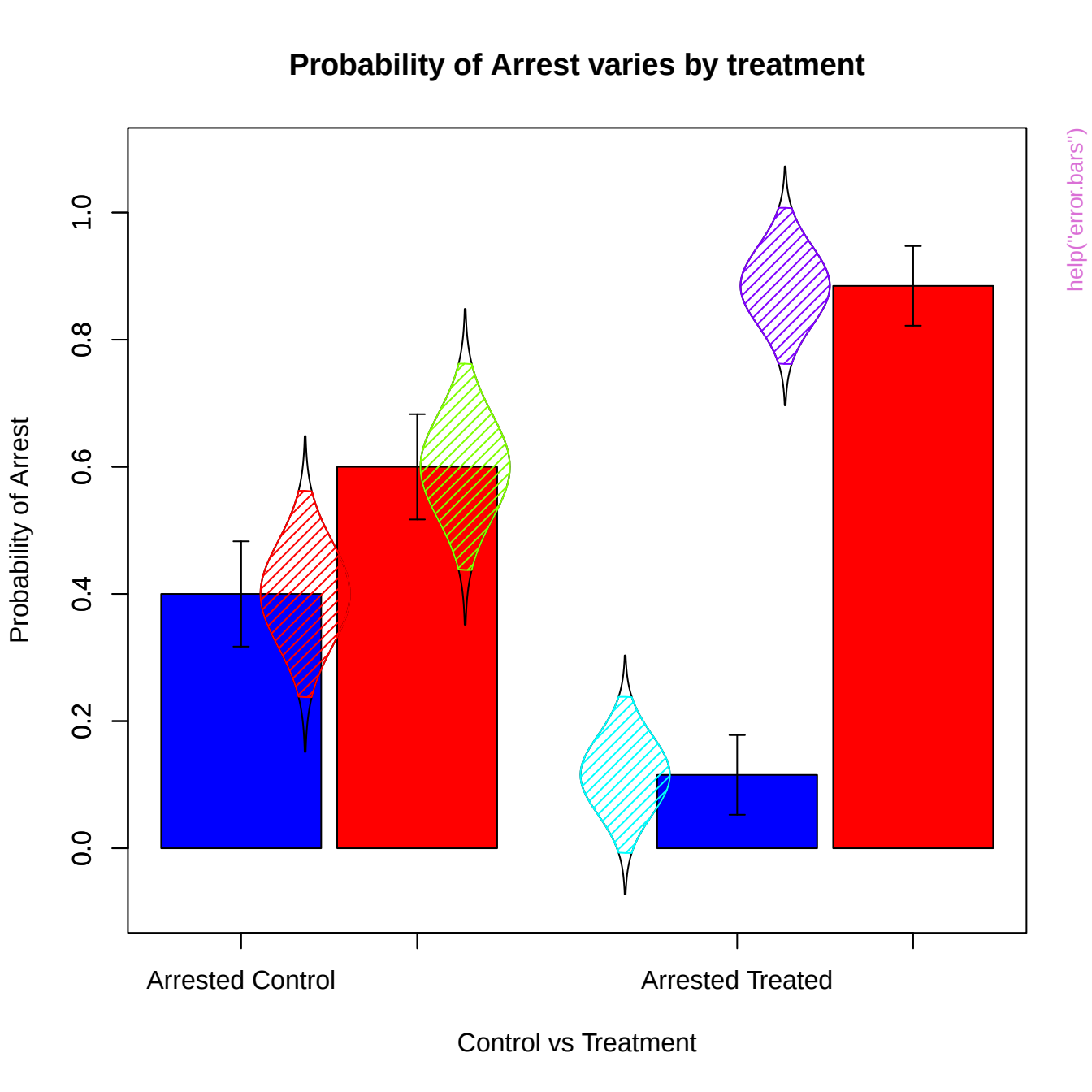

data with confidence intervals
help("error.bars")
Dependent Variable
0
10
20
30
2
4
6
8
Independent Variable

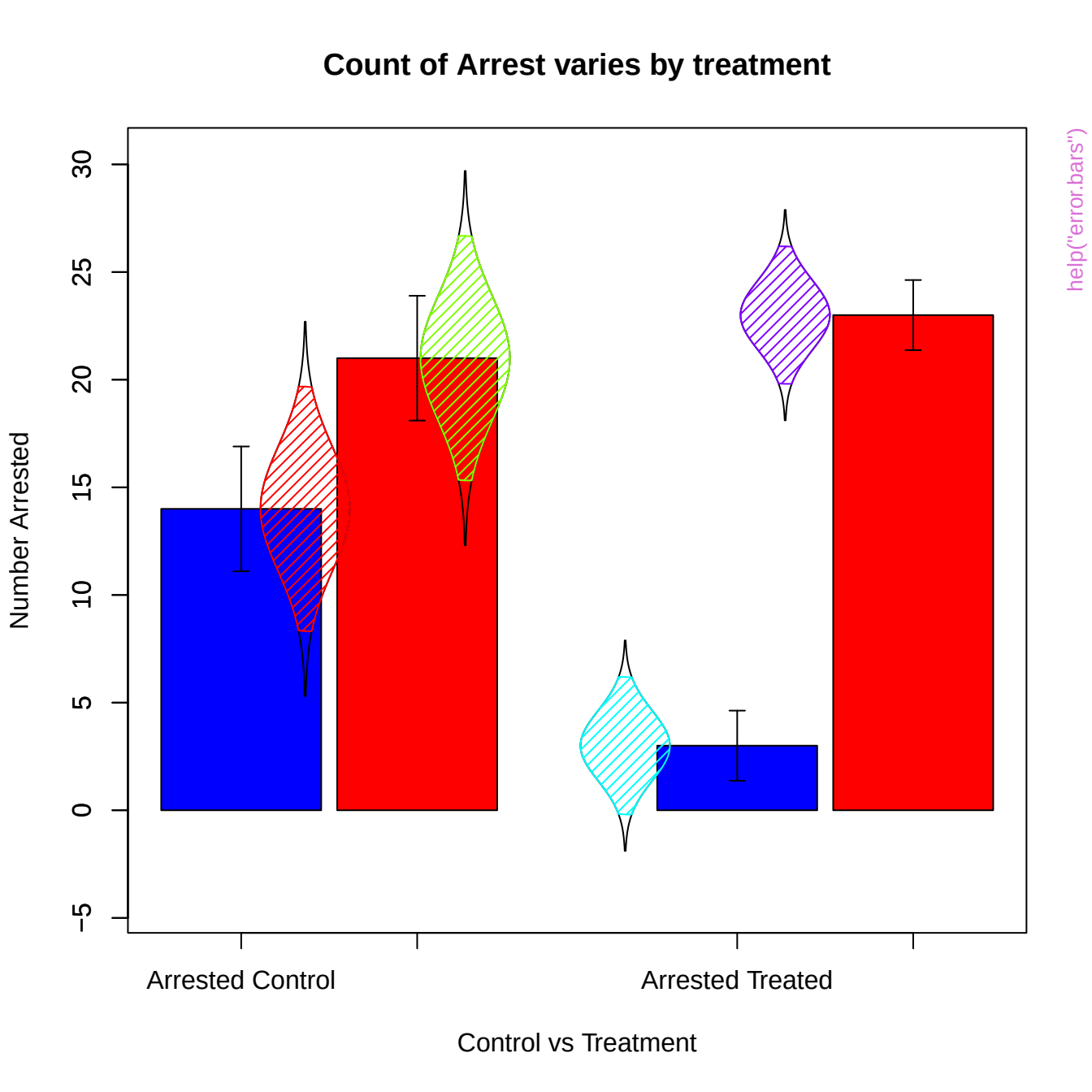

95% confidence limits
help("error.bars")
Score
0
10
20
30
First
Second
Third
Condition

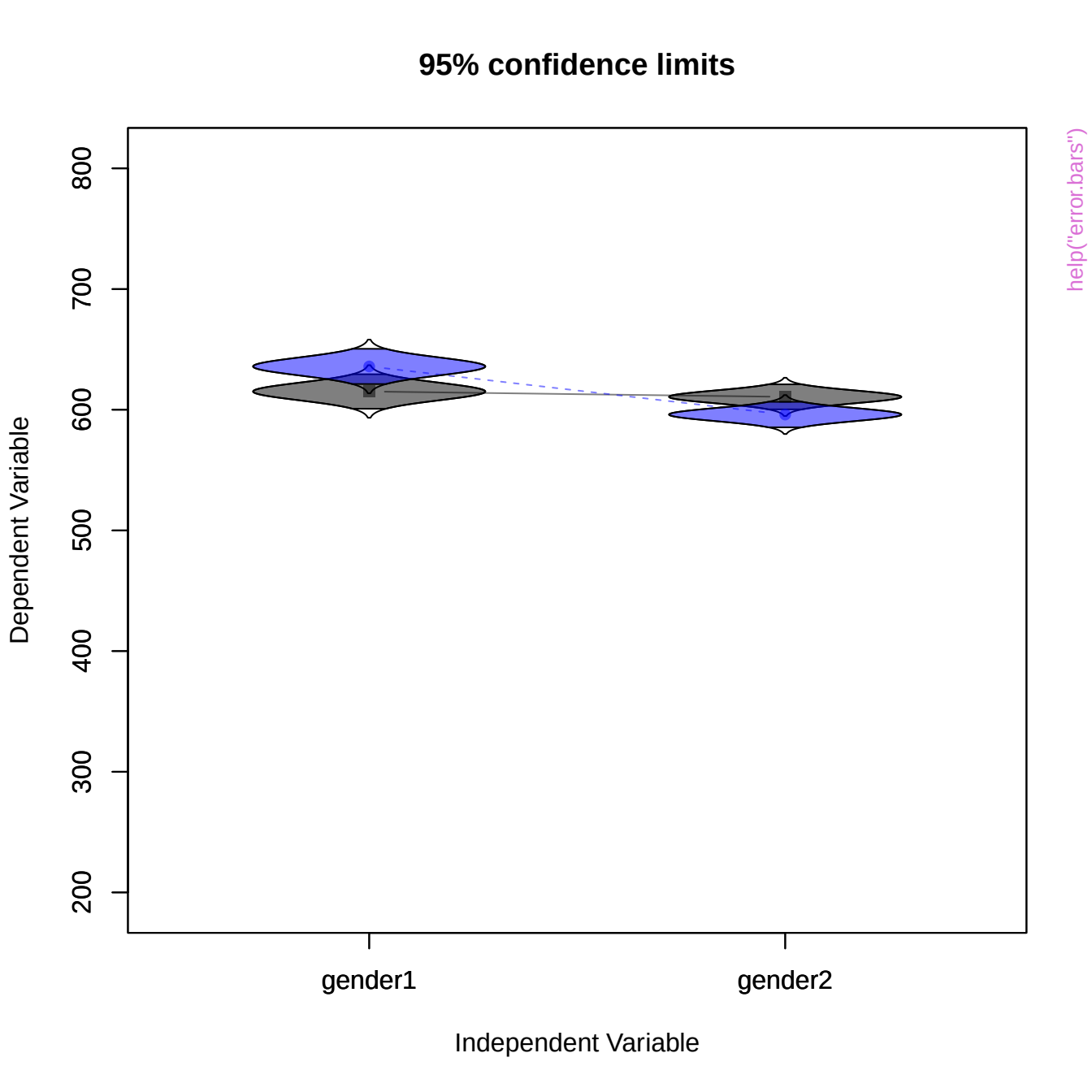

95% confidence limits
Dependent Variable
40
50
60
70
80
rating
complaints
learning
raises
critical
advance
Independent Variable
help("error.bars")

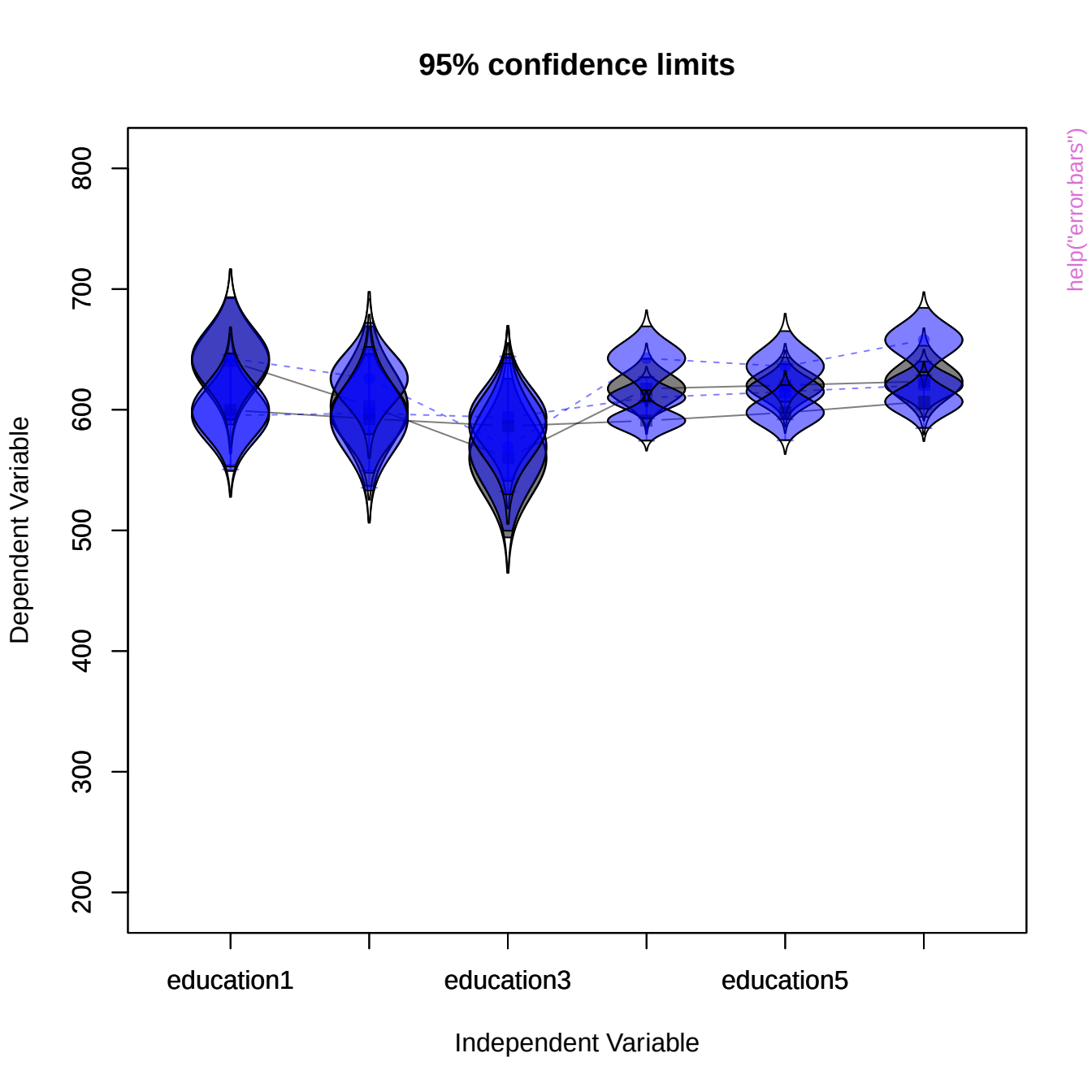

95% confidence limits
help("error.bars")
Score
0
5
10
First
Second
Third
Condition

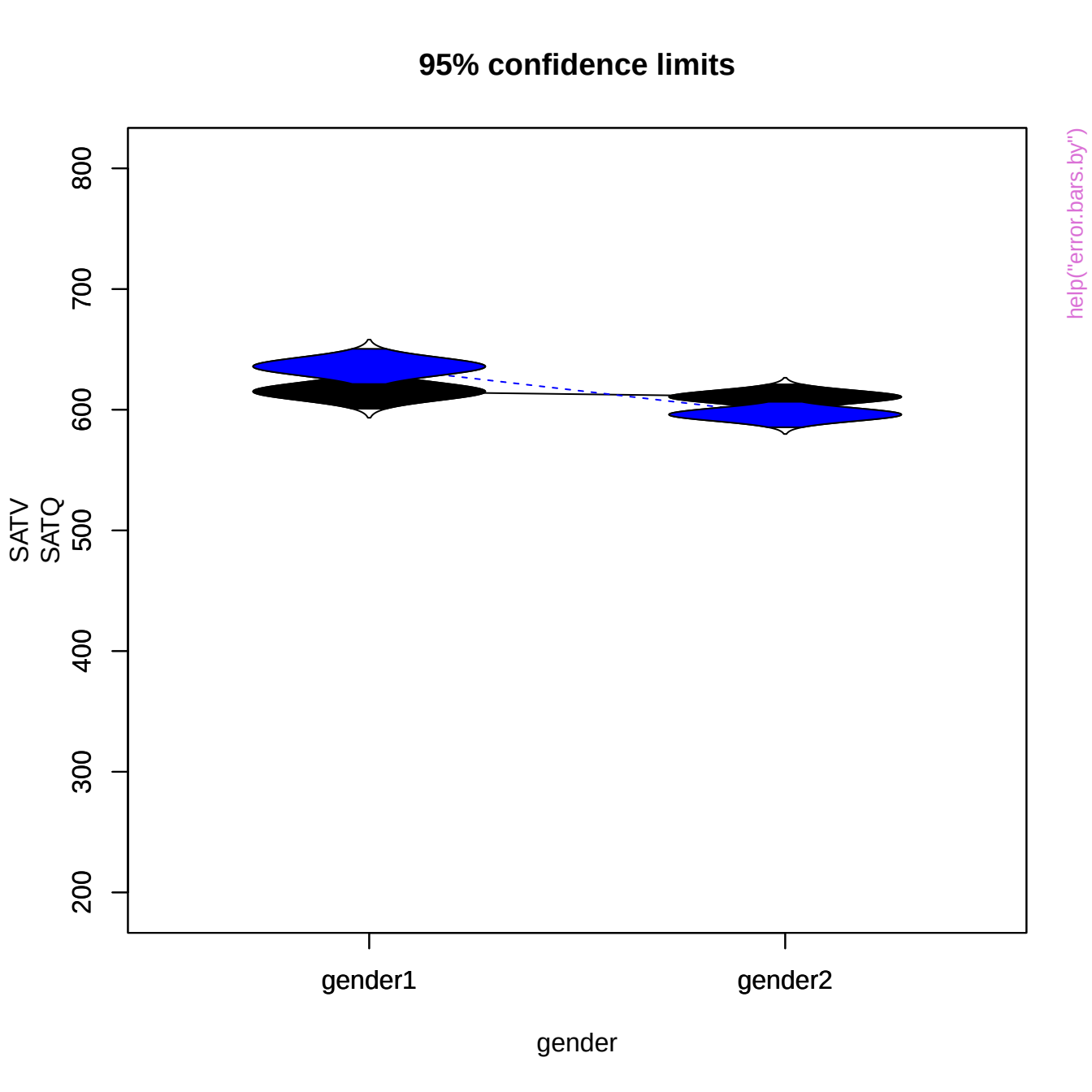

95% confidence limits
help("error.bars")
Score
0
5
10
First
Second
Third
Condition

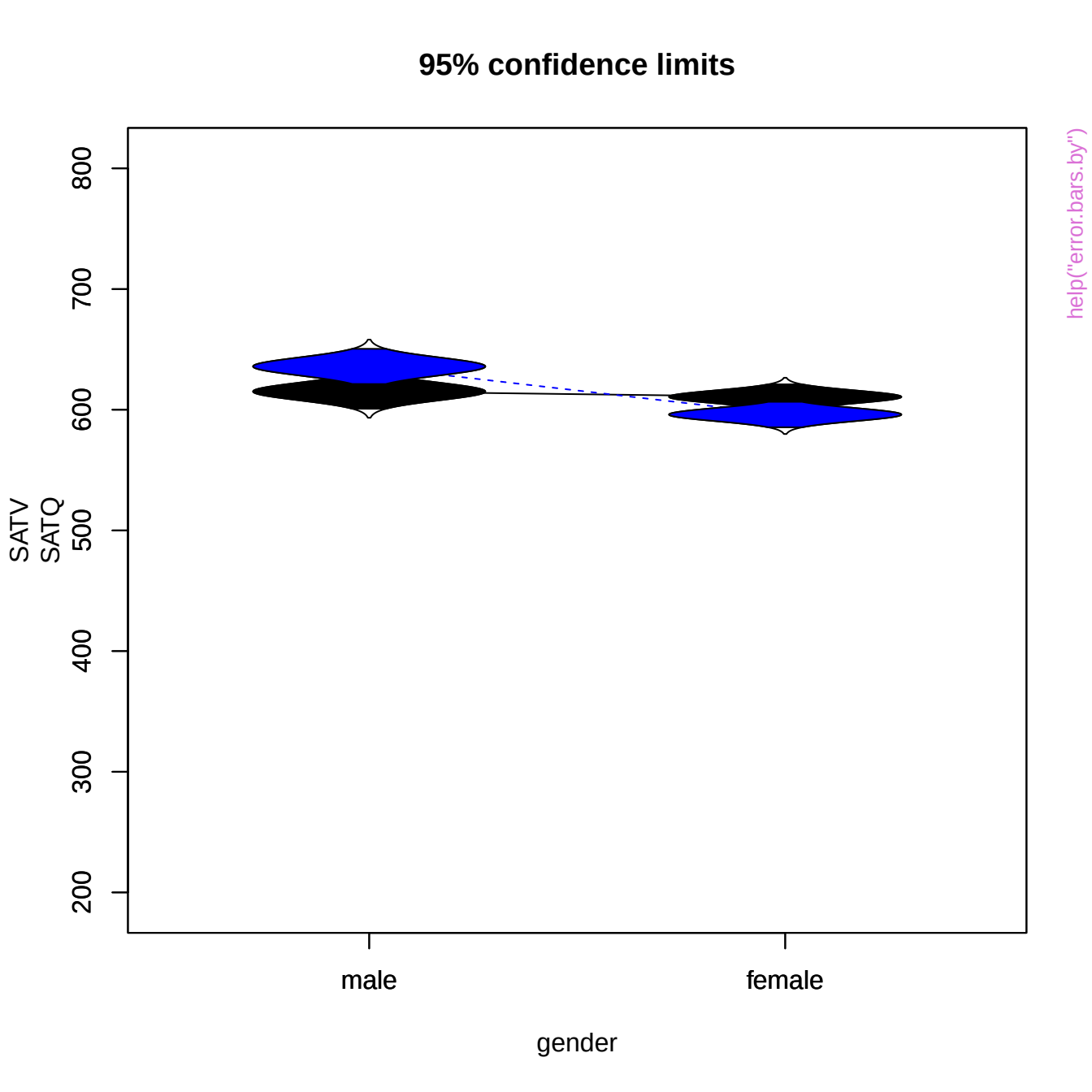

Probability of Arrest varies by treatment
help("error.bars")
Probability of Arrest
0.0
0.2
0.4
0.6
0.8
1.0
Arrested Control
Arrested Treated
Control vs Treatment

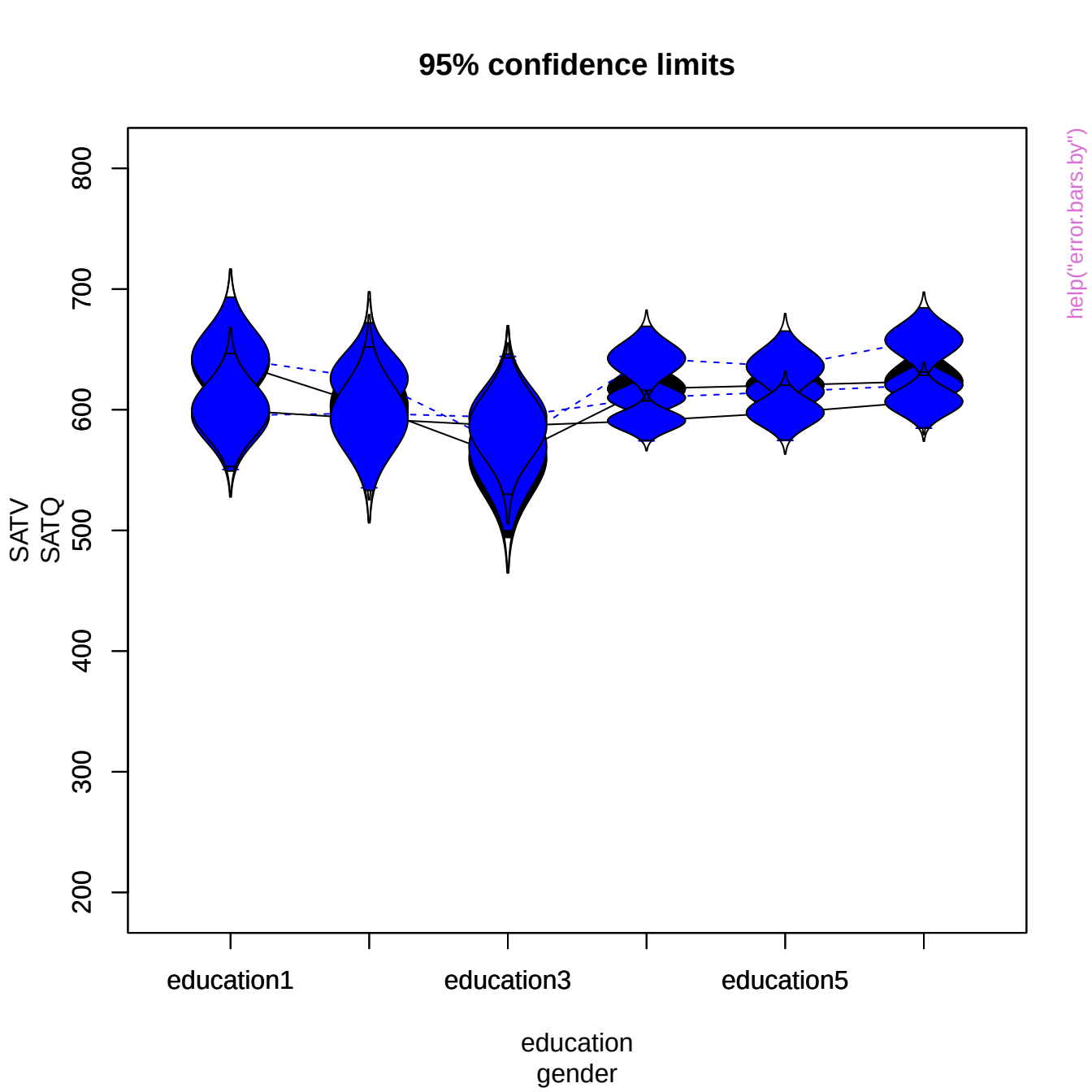

Count of Arrest varies by treatment
Number Arrested
30
25
20
15
10
5
0
−5
Arrested Control
Arrested Treated
Control vs Treatment
help("error.bars")

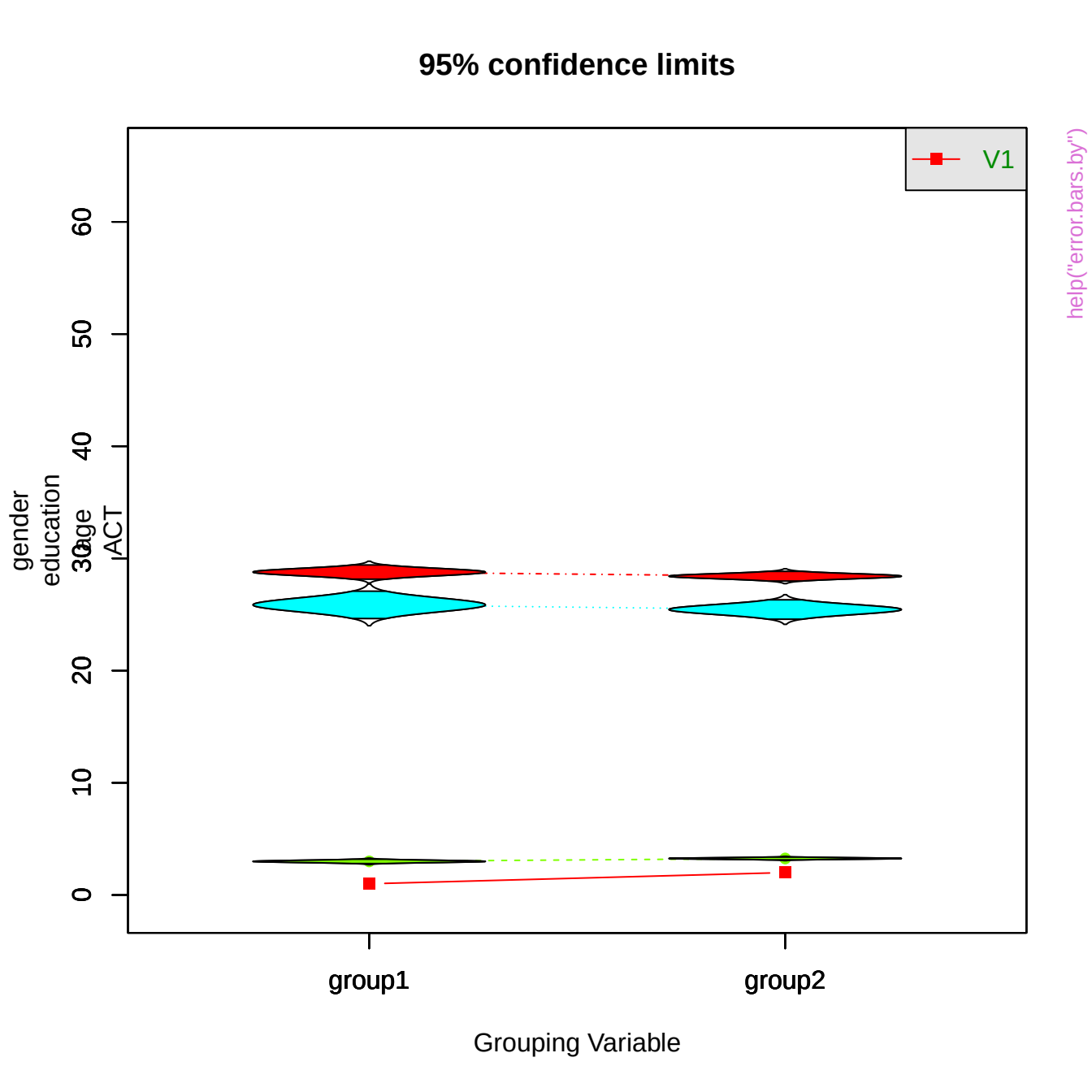

95% confidence limits
help("error.bars")
Dependent Variable
800
700
600
500
400
300
200
gender1
gender2
Independent Variable

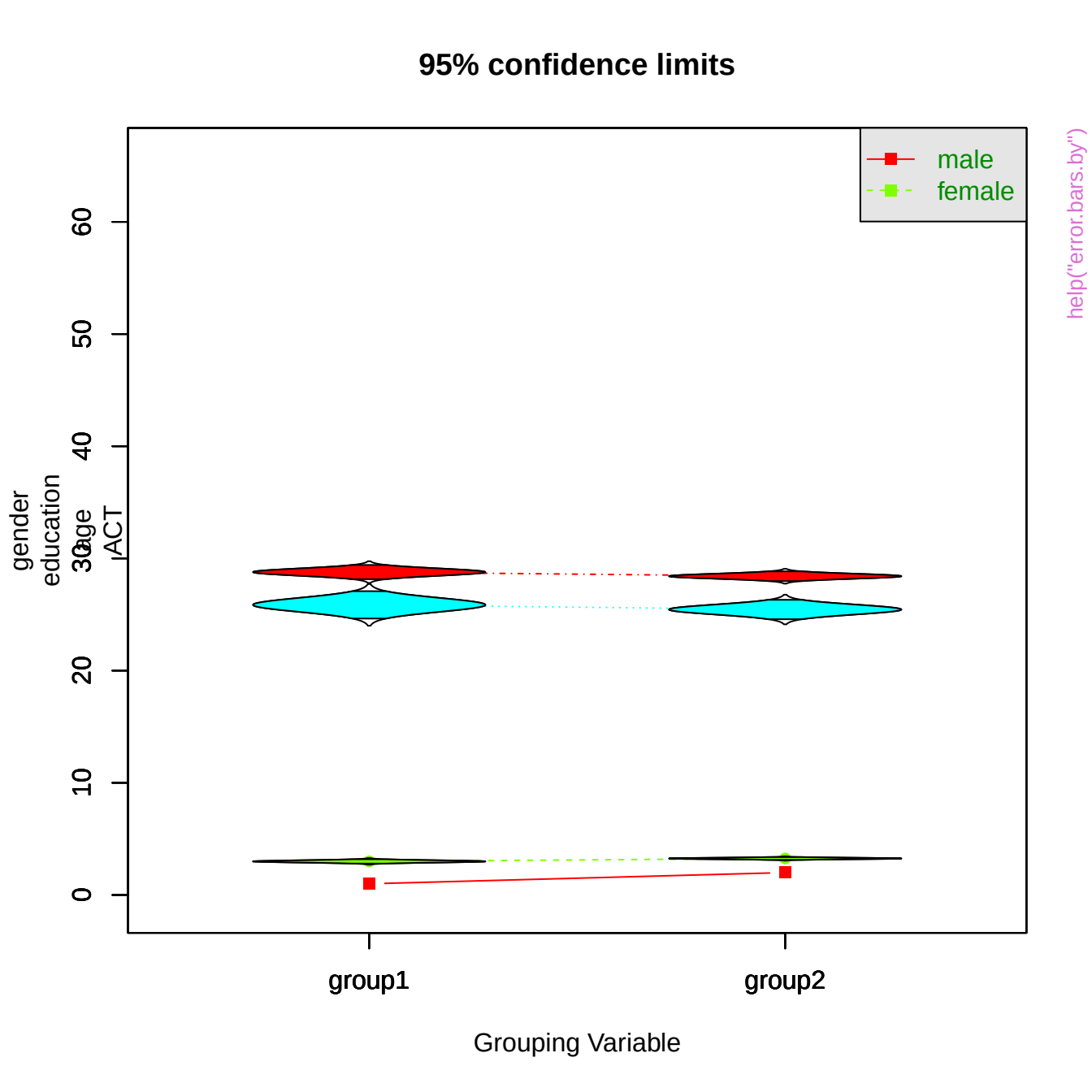

95% confidence limits
Dependent Variable
800
700
600
500
400
300
200
education1
education3
education5
Independent Variable
help("error.bars")

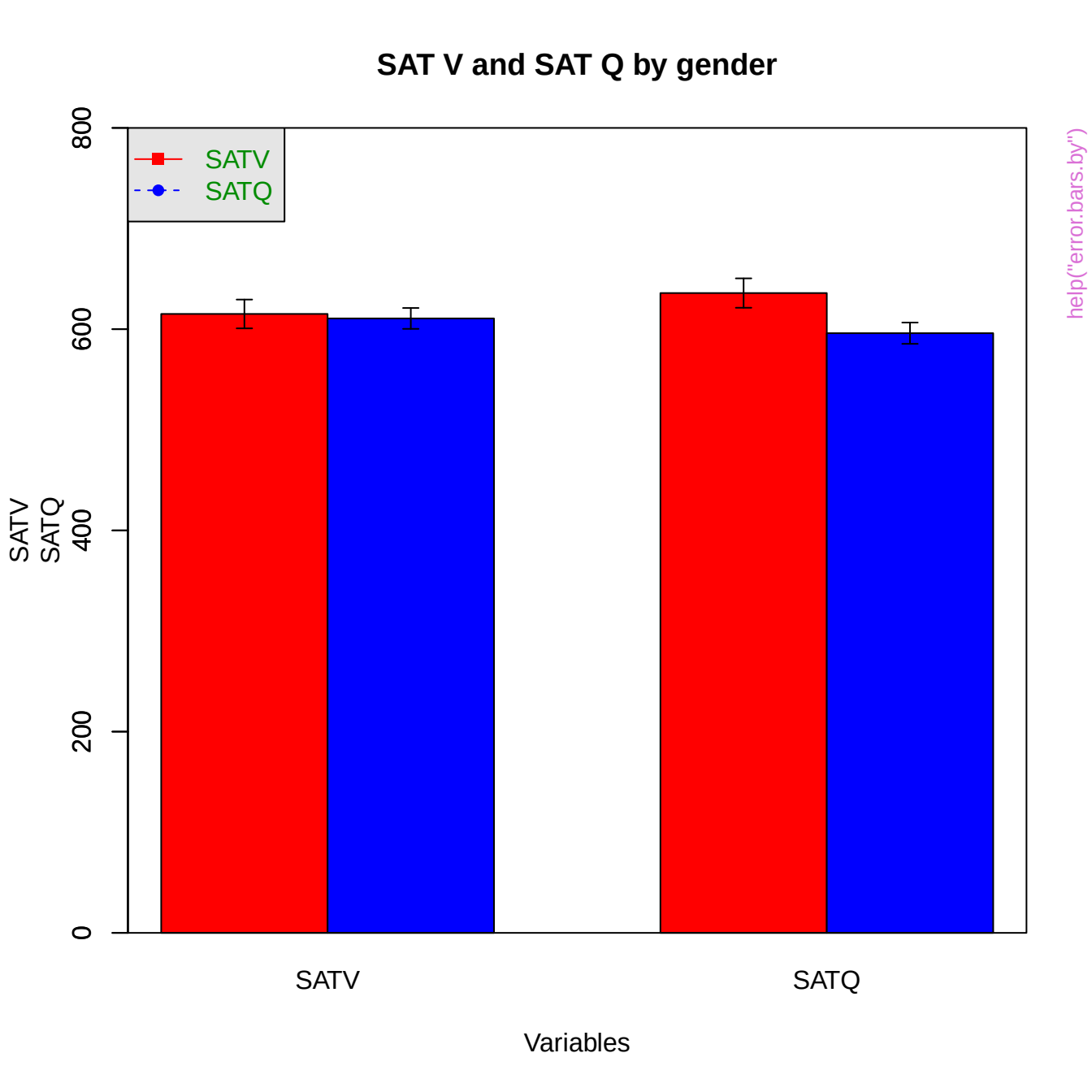

95% confidence limits
SATV
SATQ
800
700
600
500
400
300
200
gender1
gender2
gender
help("error.bars.by")

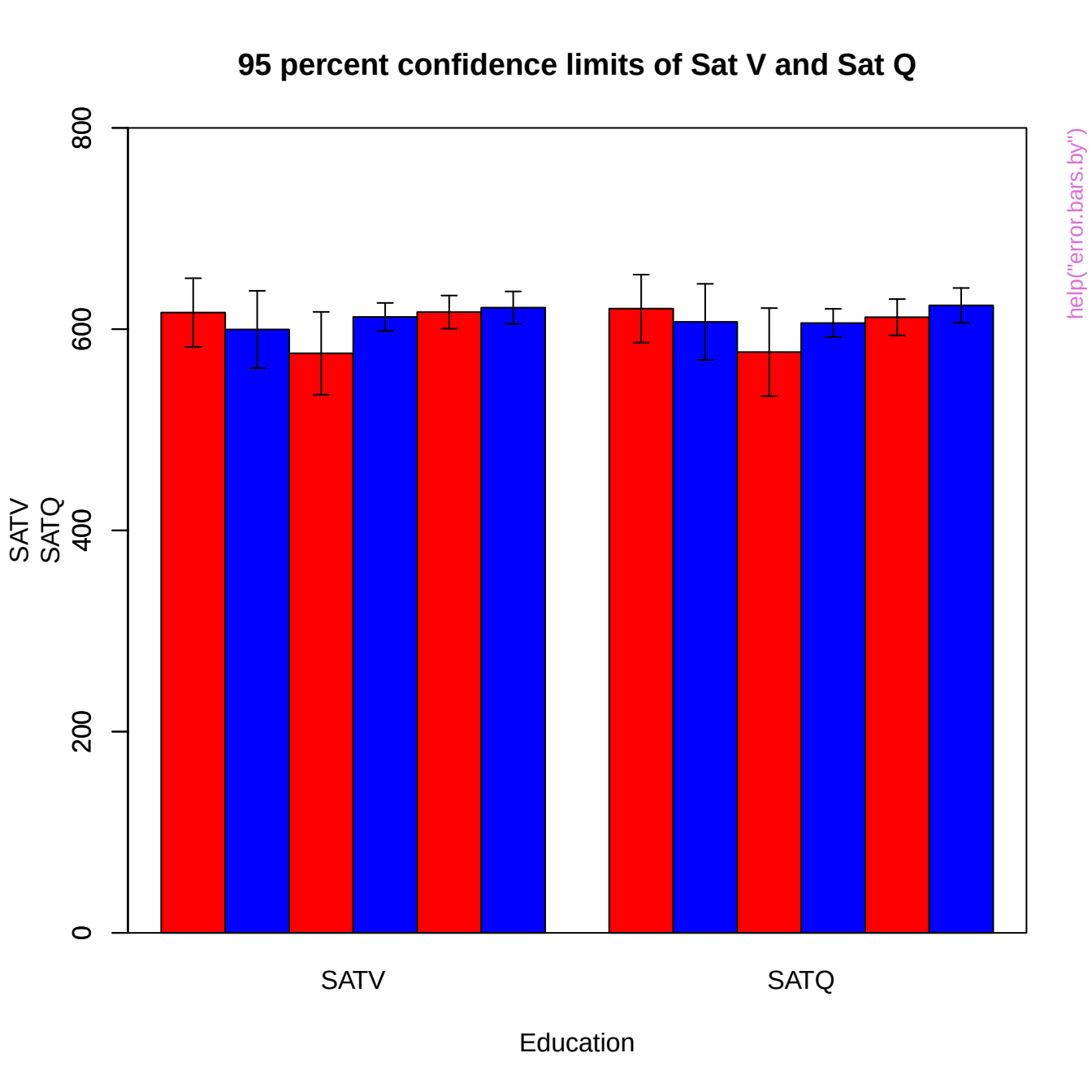

95% confidence limits
SATV
SATQ
800
700
600
500
400
300
200
male
female
gender
help("error.bars.by")

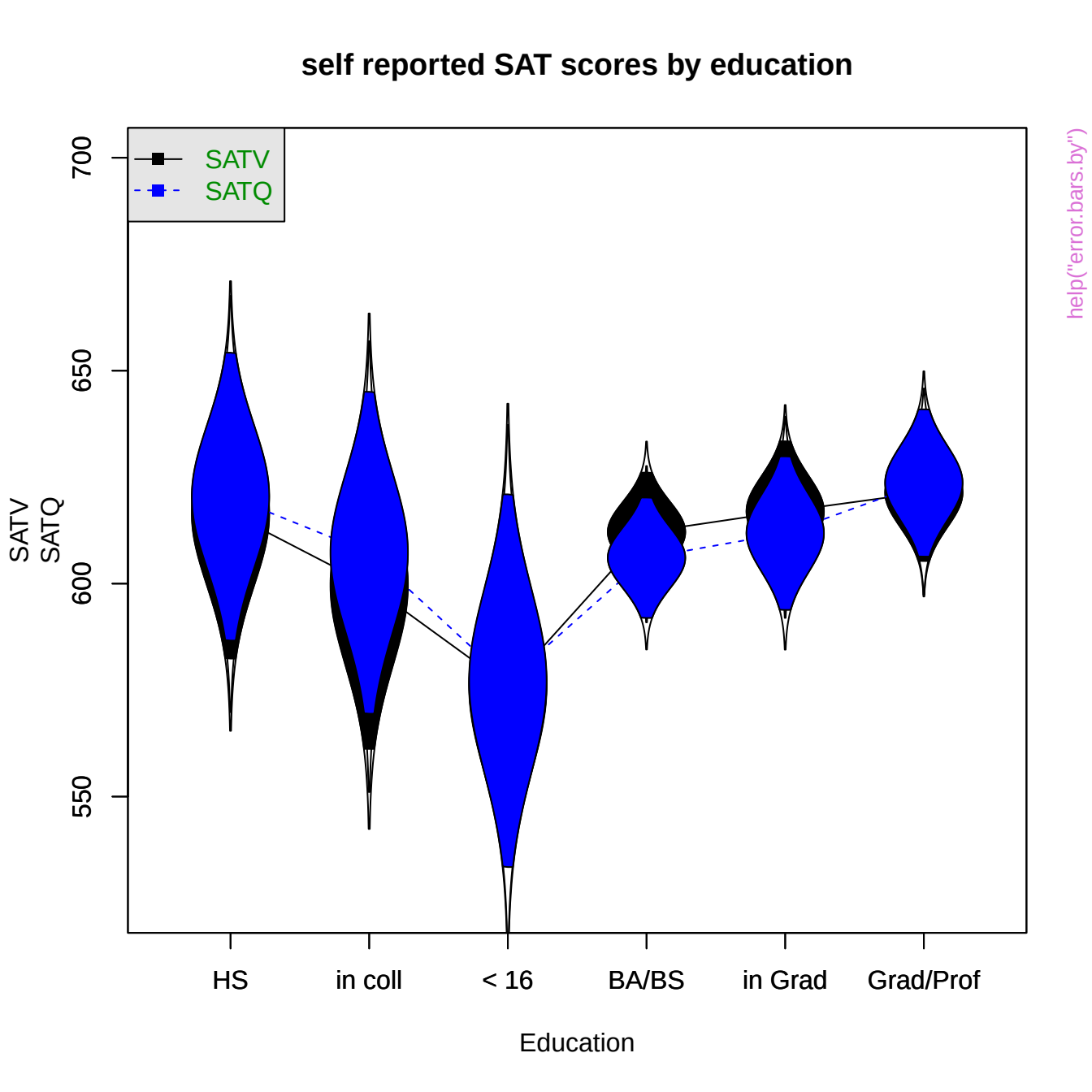

95% confidence limits
SATV
SATQ
800
700
600
500
400
300
200
education1
education3
education5
education
gender
help("error.bars.by")

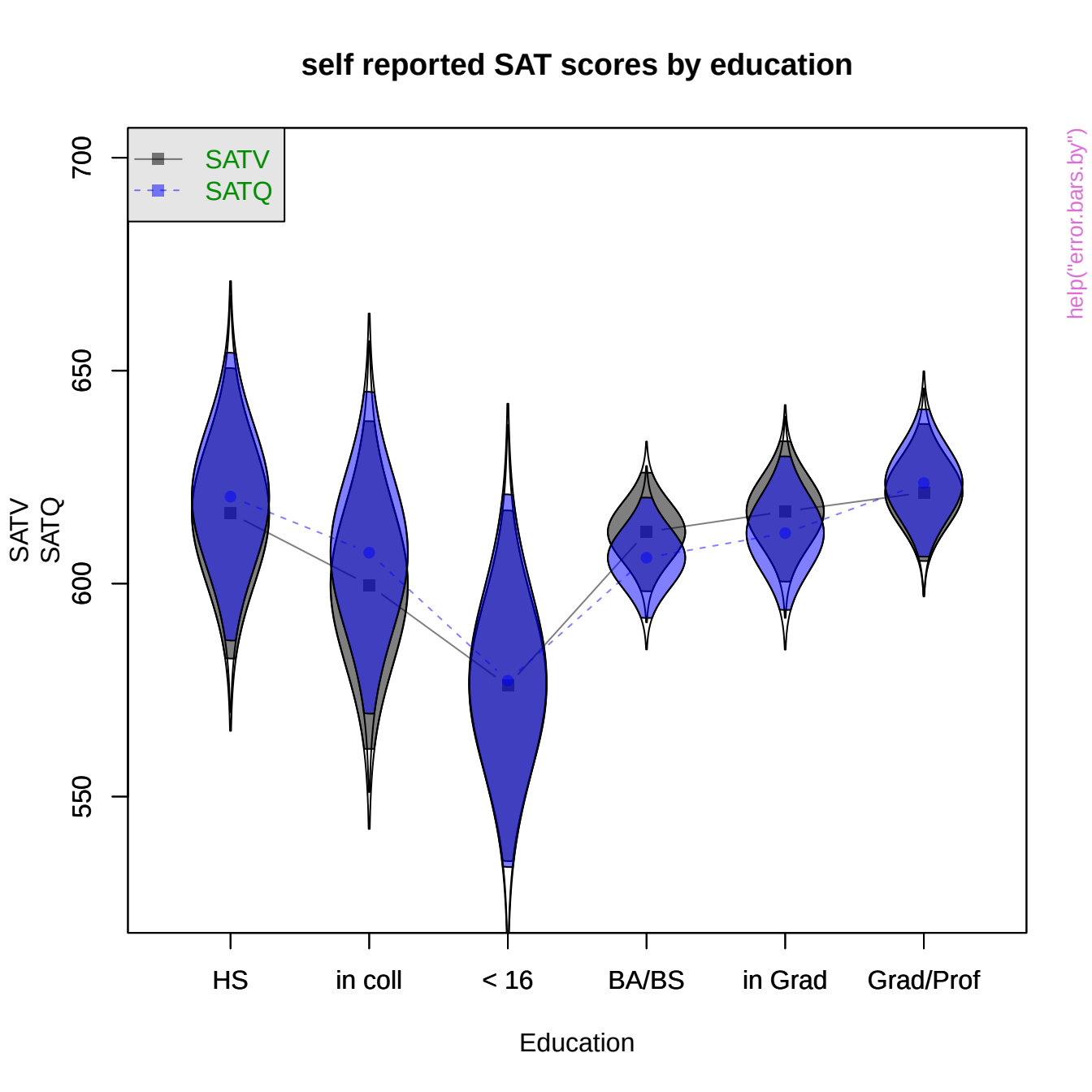

95% confidence limits
V1
help("error.bars.by")
gender
education
age
ACT
0
10
20
30
40
50
60
group1
group2
Grouping Variable

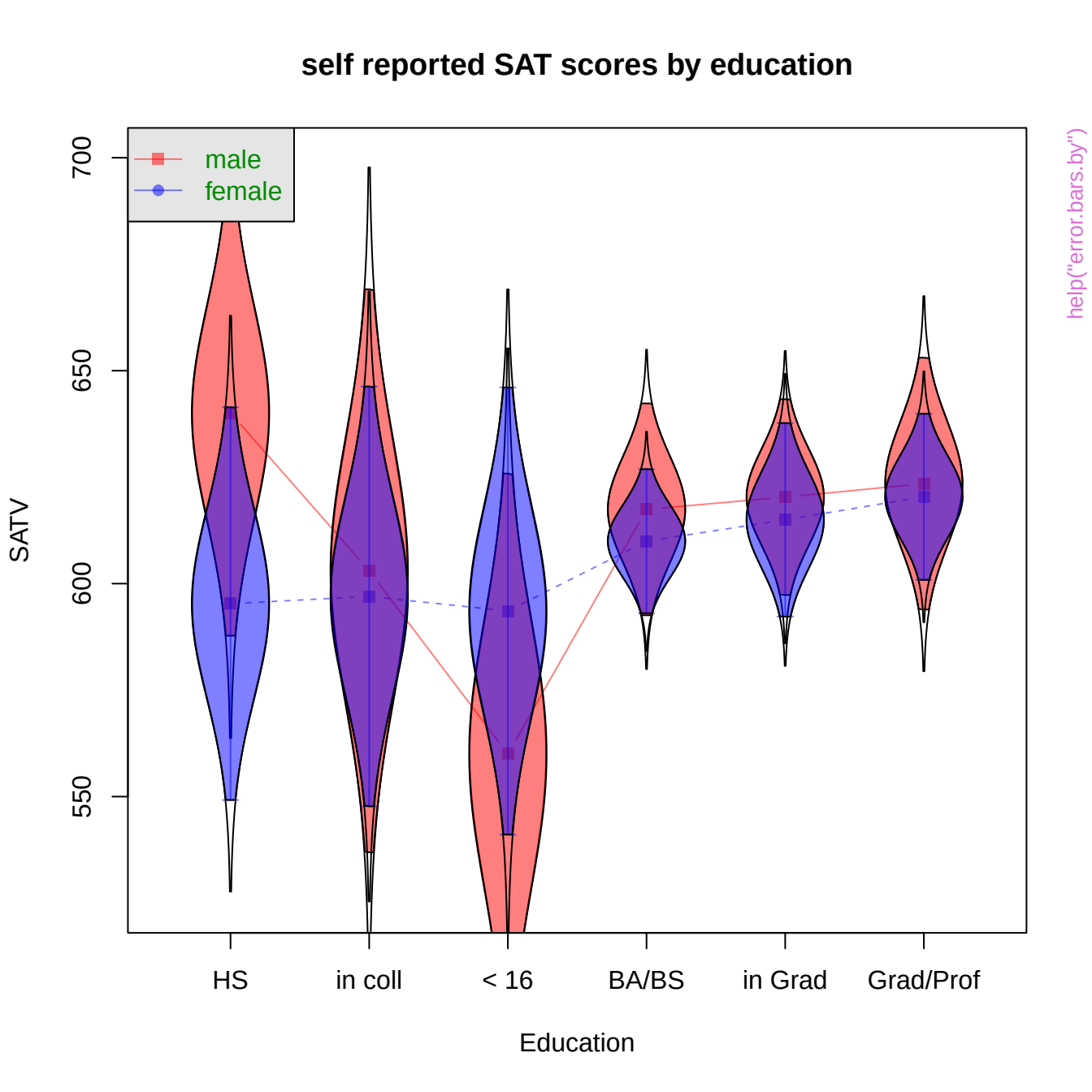

95% confidence limits
male
female
help("error.bars.by")
gender
education
age
ACT
0
10
20
30
40
50
60
group1
group2
Grouping Variable

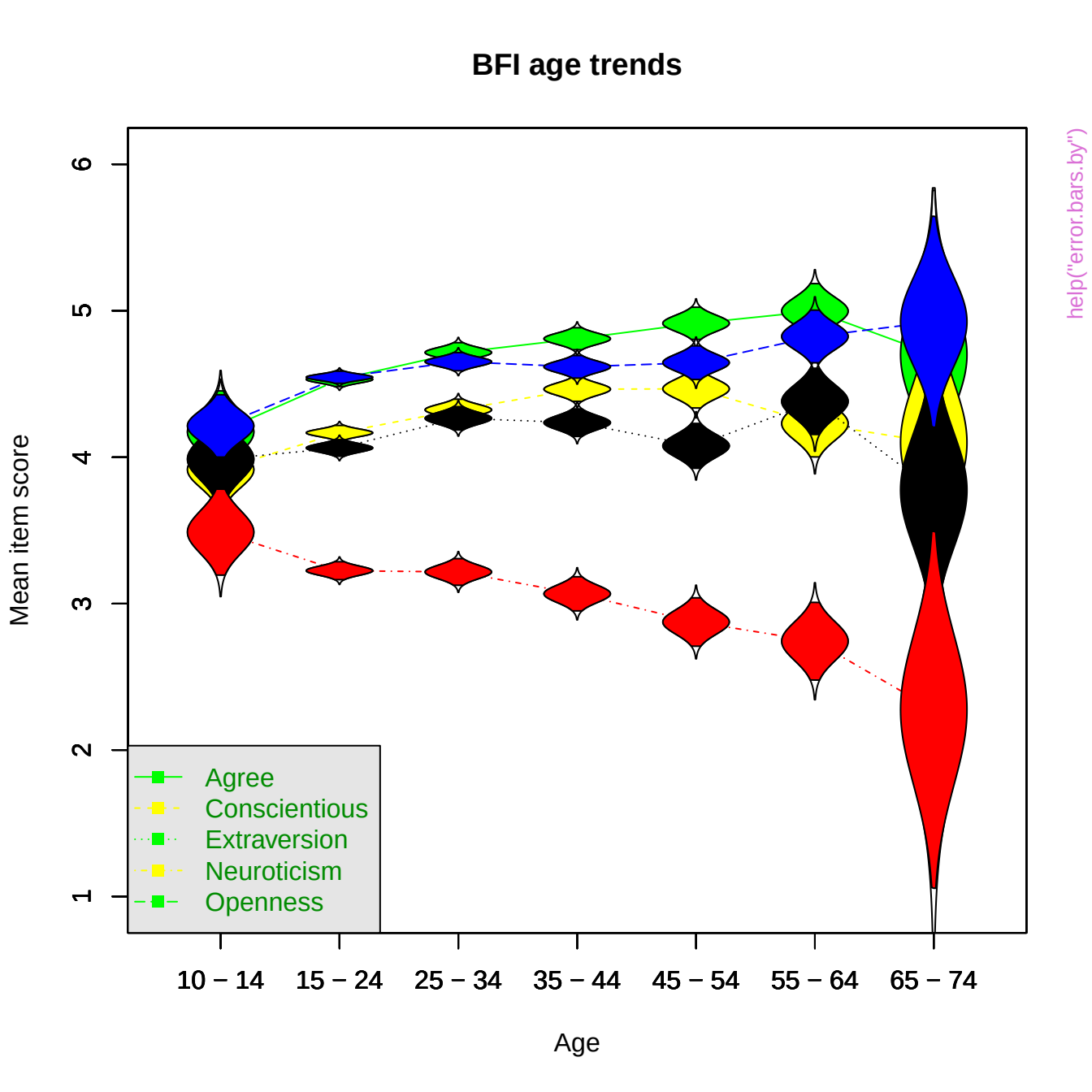

SAT V and SAT Q by gender
SATV
SATQ
800
600
400
200
0
SATV
SATQ
SATV
SATQ
Variables
help("error.bars.by")

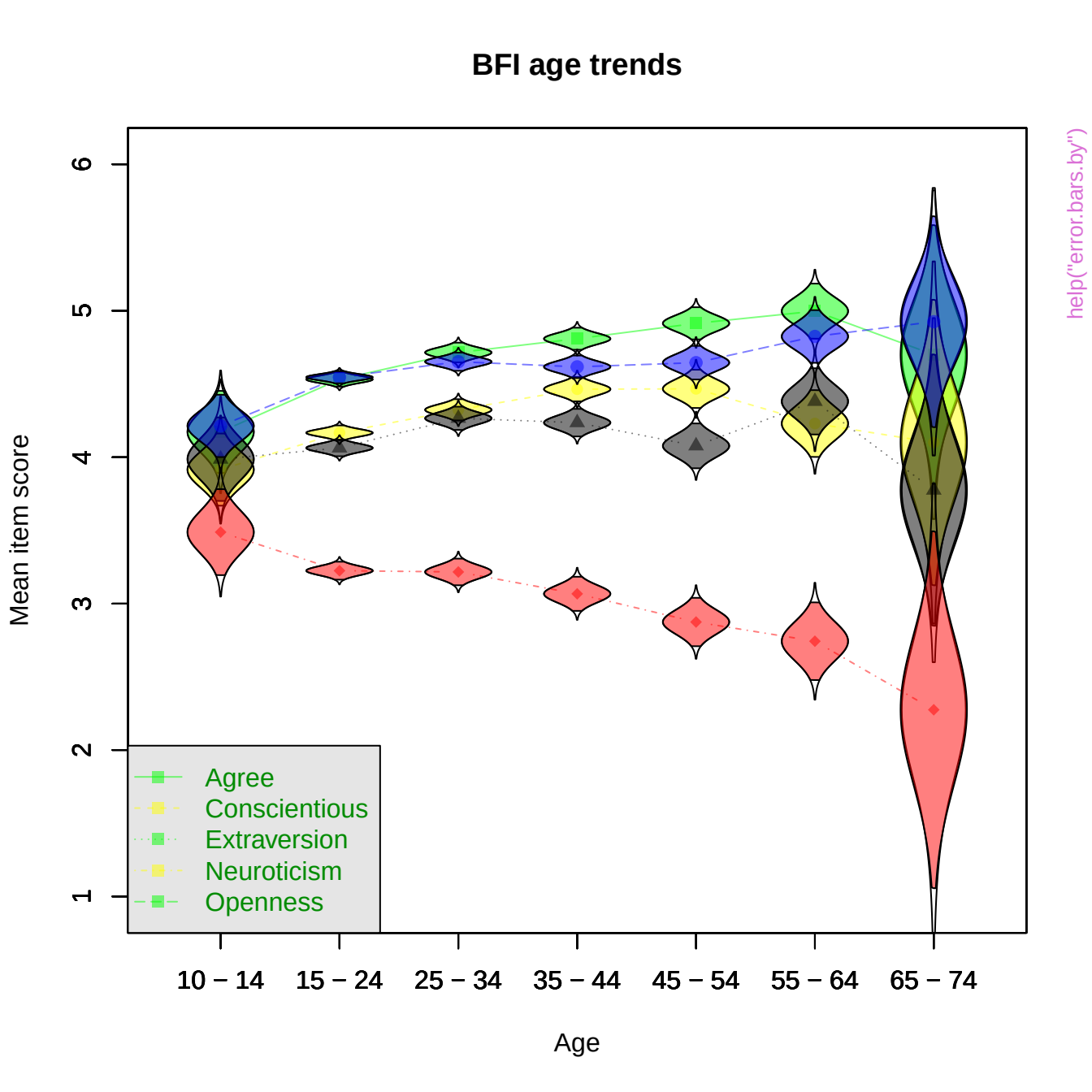

95 percent confidence limits of Sat V and Sat Q
SATV
SATQ
0
200
400
600
800
SATV
SATQ
Education
help("error.bars.by")

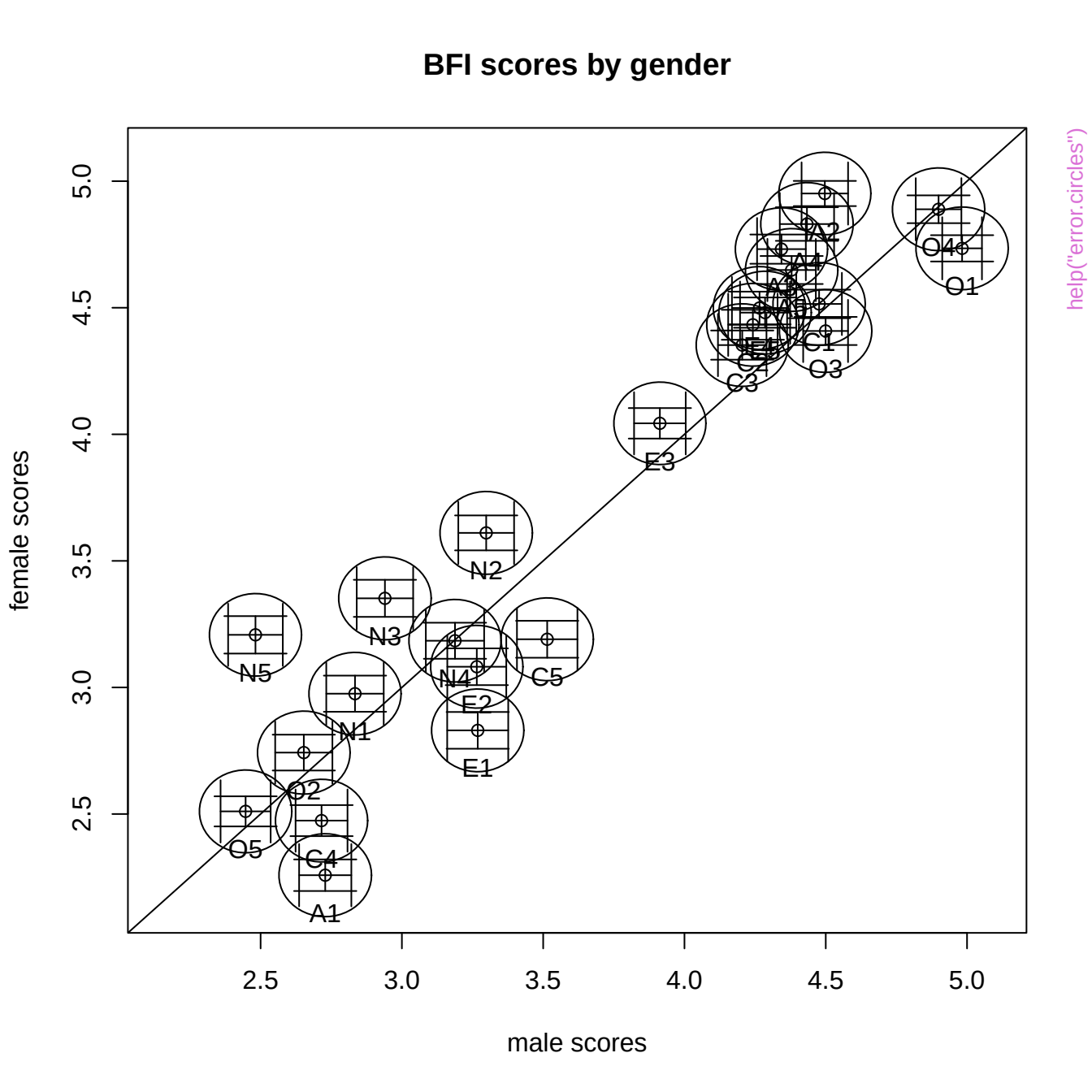

self reported SAT scores by education
SATV
SATQ
700
650
600
550
SATV
SATQ
HS
in coll
< 16
BA/BS
in Grad
Grad/Prof
Education
help("error.bars.by")

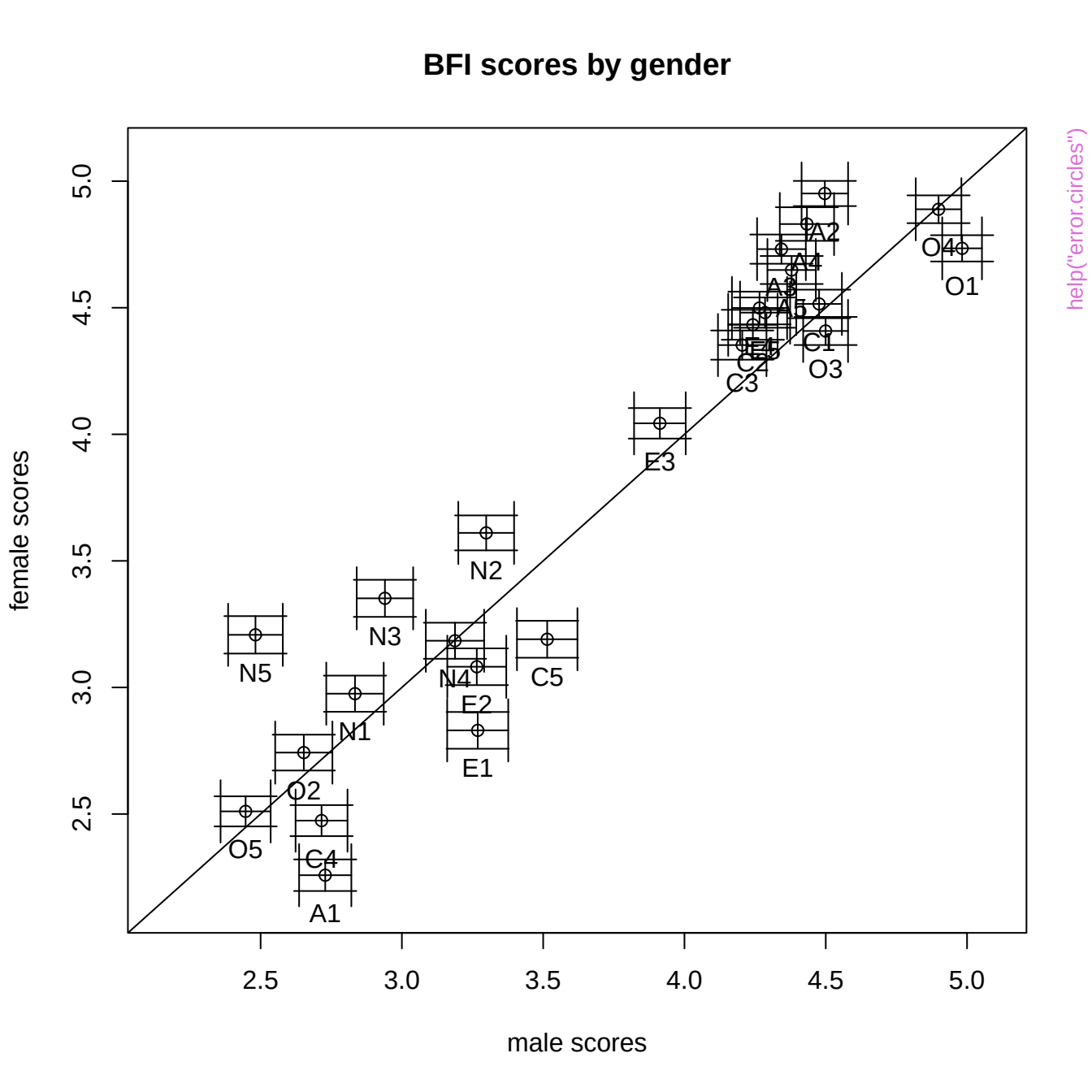

self reported SAT scores by education
SATV
SATQ
700
650
600
550
SATV
SATQ
HS
in coll
< 16
BA/BS
in Grad
Grad/Prof
Education
help("error.bars.by")

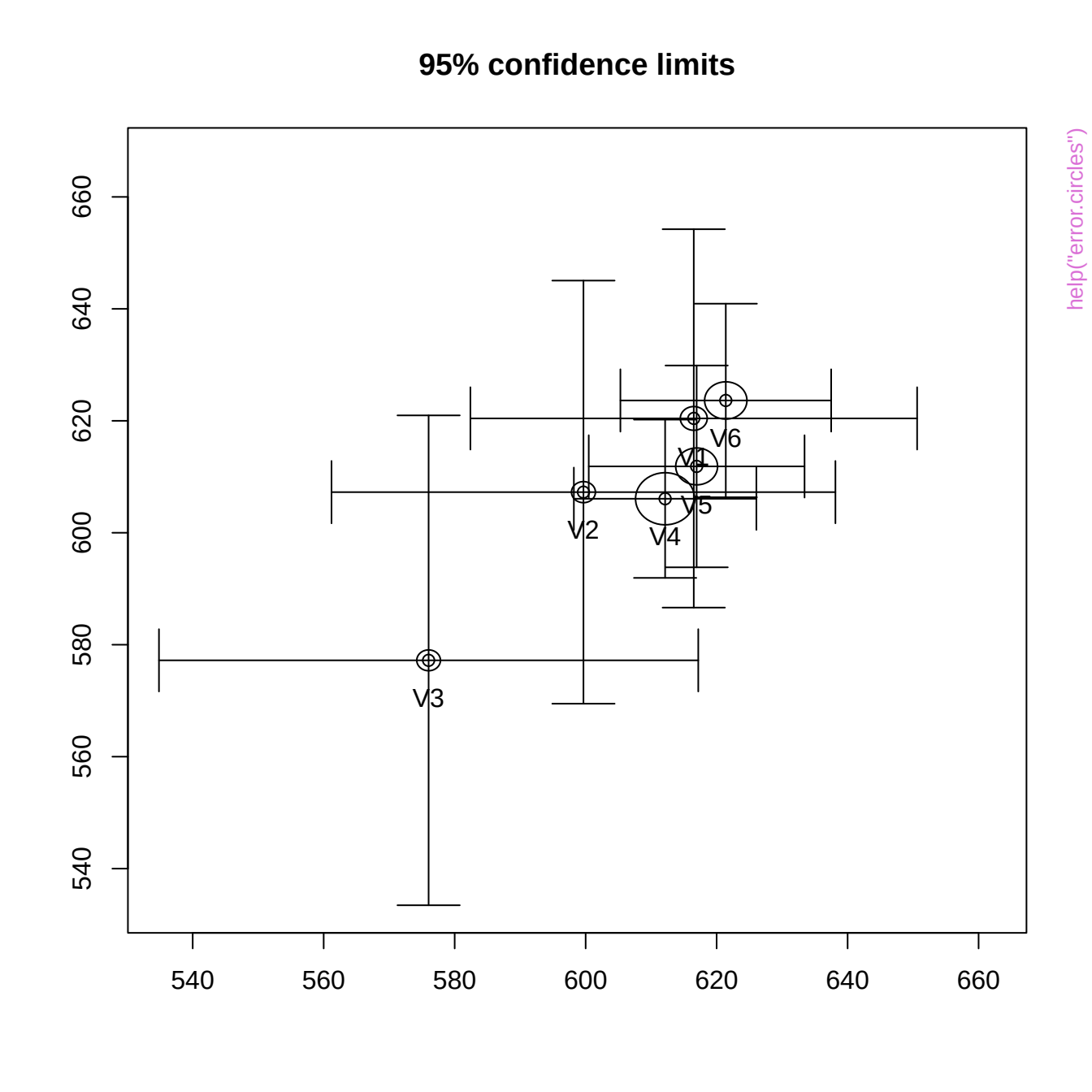

self reported SAT scores by education
male
female
SATV
700
650
600
550
HS
in coll
< 16
BA/BS
in Grad
Grad/Prof
Education
help("error.bars.by")

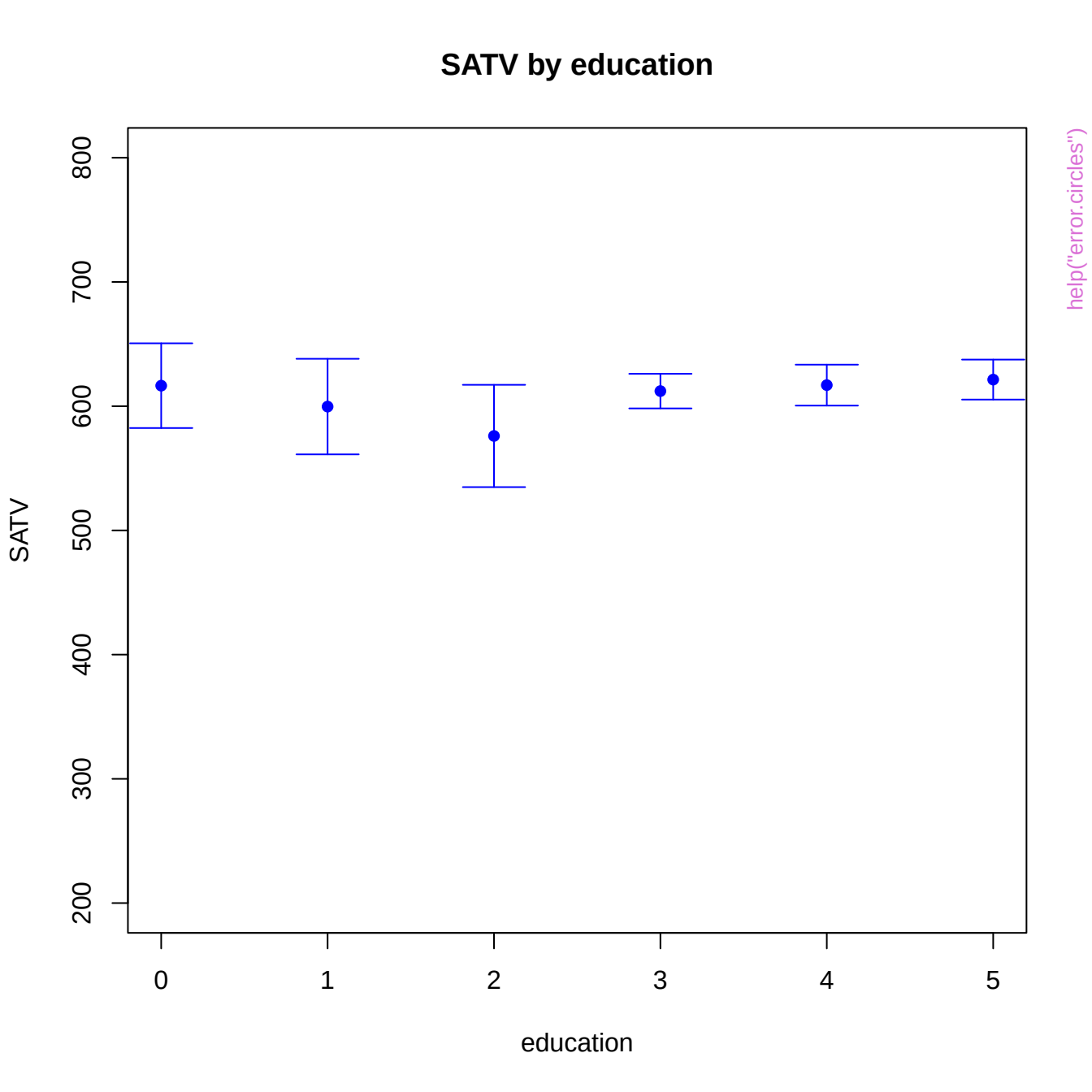

BFI age trends
Mean item score
1
2
3
4
5
6
10 − 14
15 − 24
25 − 34
35 − 44
45 − 54
55 − 64
65 − 74
Age
Agree
Conscientious
Extraversion
Neuroticism
Openness
help("error.bars.by")

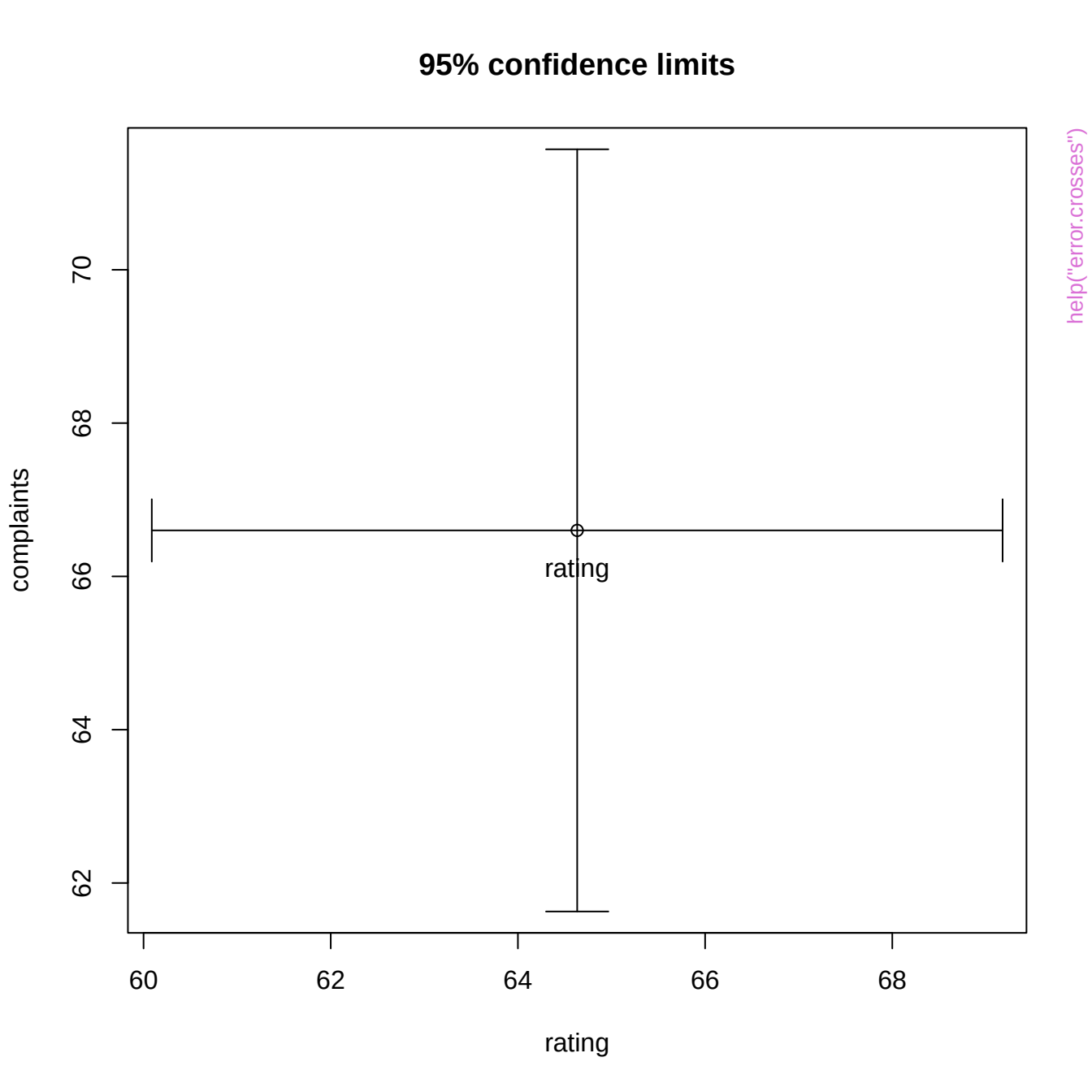

BFI age trends
Mean item score
1
2
3
4
5
6
Agree
Conscientious
Extraversion
Neuroticism
Openness
10 − 14
15 − 24
25 − 34
35 − 44
45 − 54
55 − 64
65 − 74
Age
help("error.bars.by")

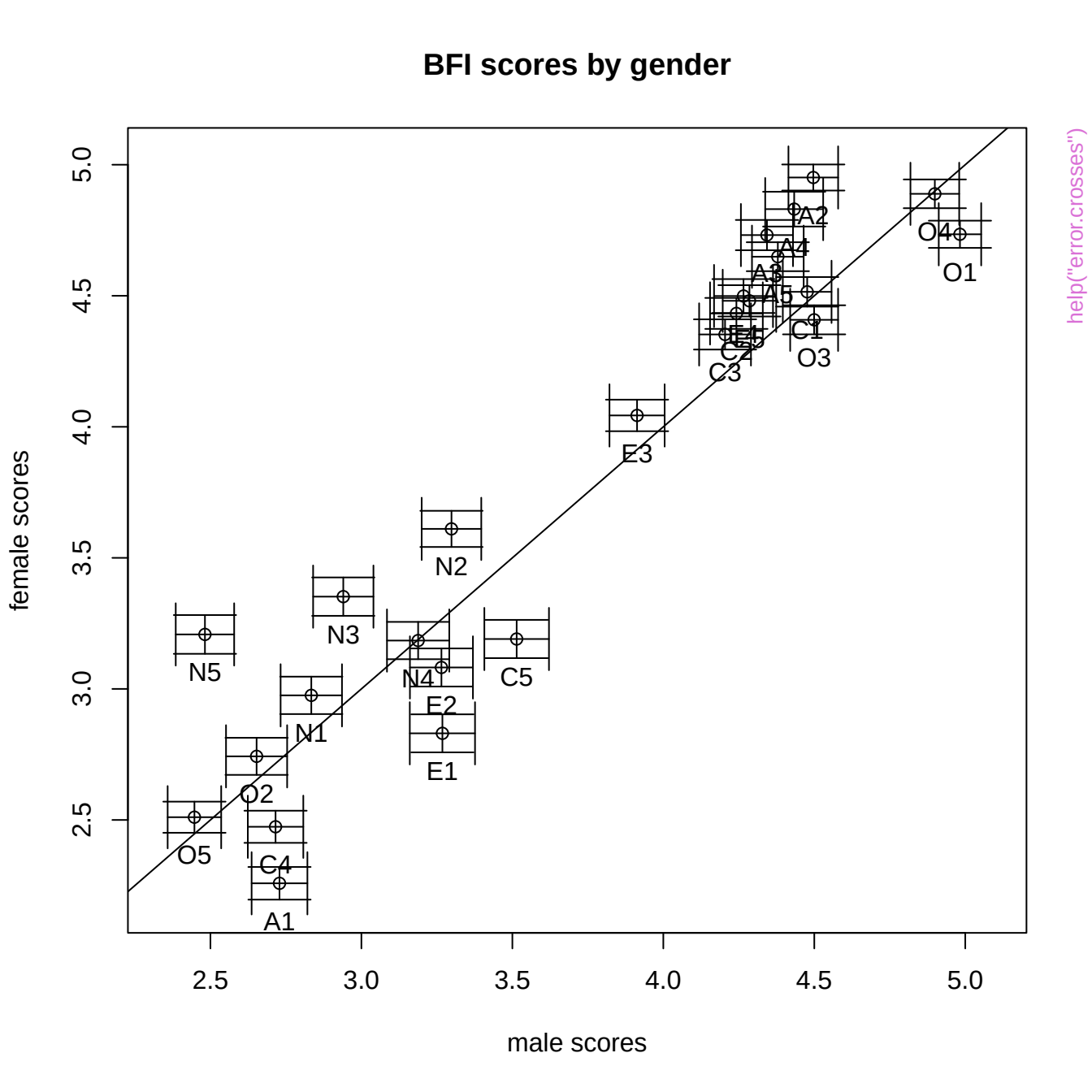

BFI scores by gender
female scores
male scores
2.5
3.0
3.5
4.0
4.5
5.0
A1
A2
A3
A4
A5
C1
C2
C3
C4
C5
E1
E2
E3
E4
E5
N1
N2
N3
N4
N5
O1
O2
O3
O4
O5
help("error.circles")

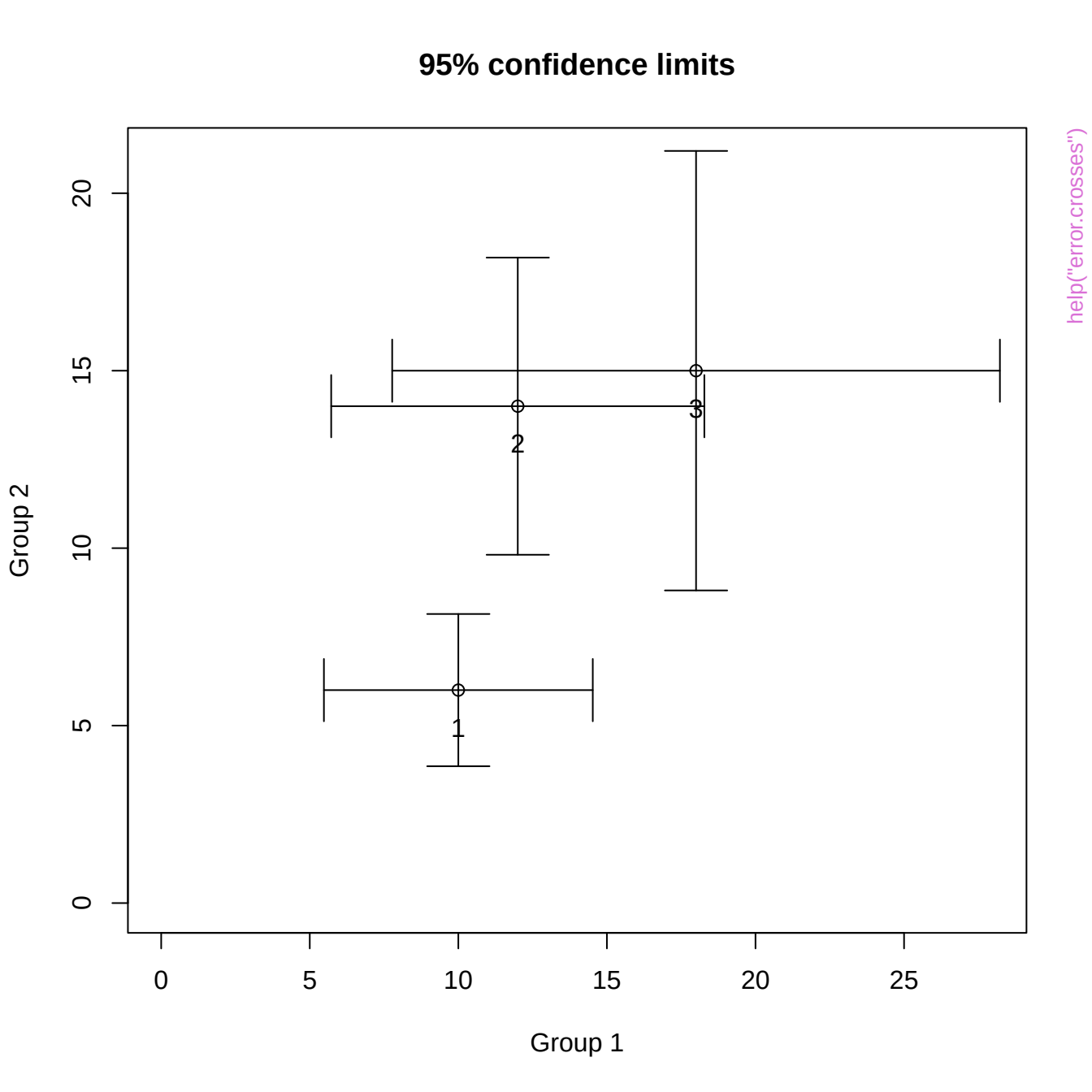

BFI scores by gender
female scores
male scores
2.5
3.0
3.5
4.0
4.5
5.0
A2
A4
A3
A5
C1
C2
C3
E4
E5
O3
O4
O1
E3
N2
N3
N5
N4
C5
E2
E1
N1
O2
O5
C4
A1
help("error.circles")

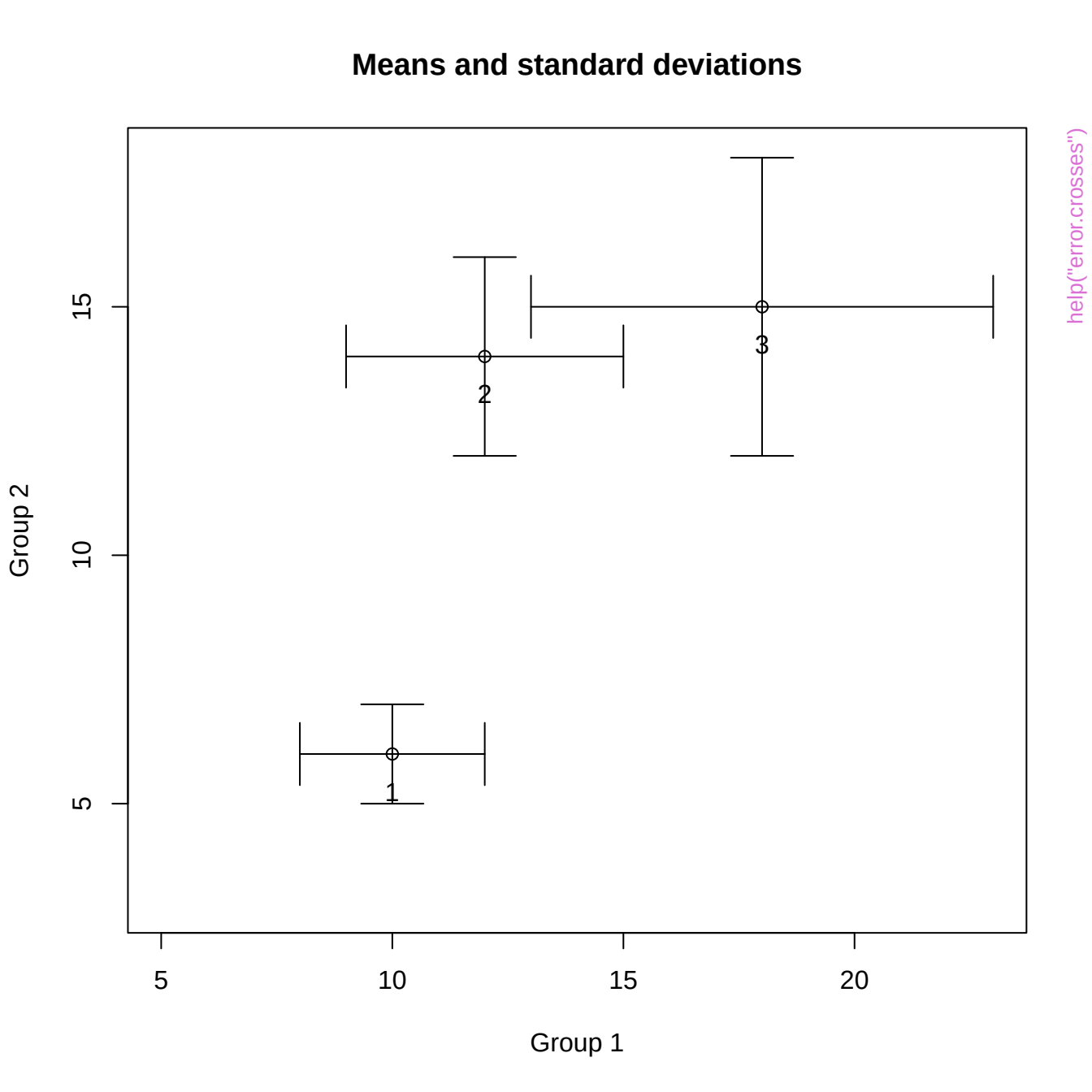

95% confidence limits
V1
V2
V3
V4
V5
V6
540
560
580
600
620
640
660
help("error.circles")

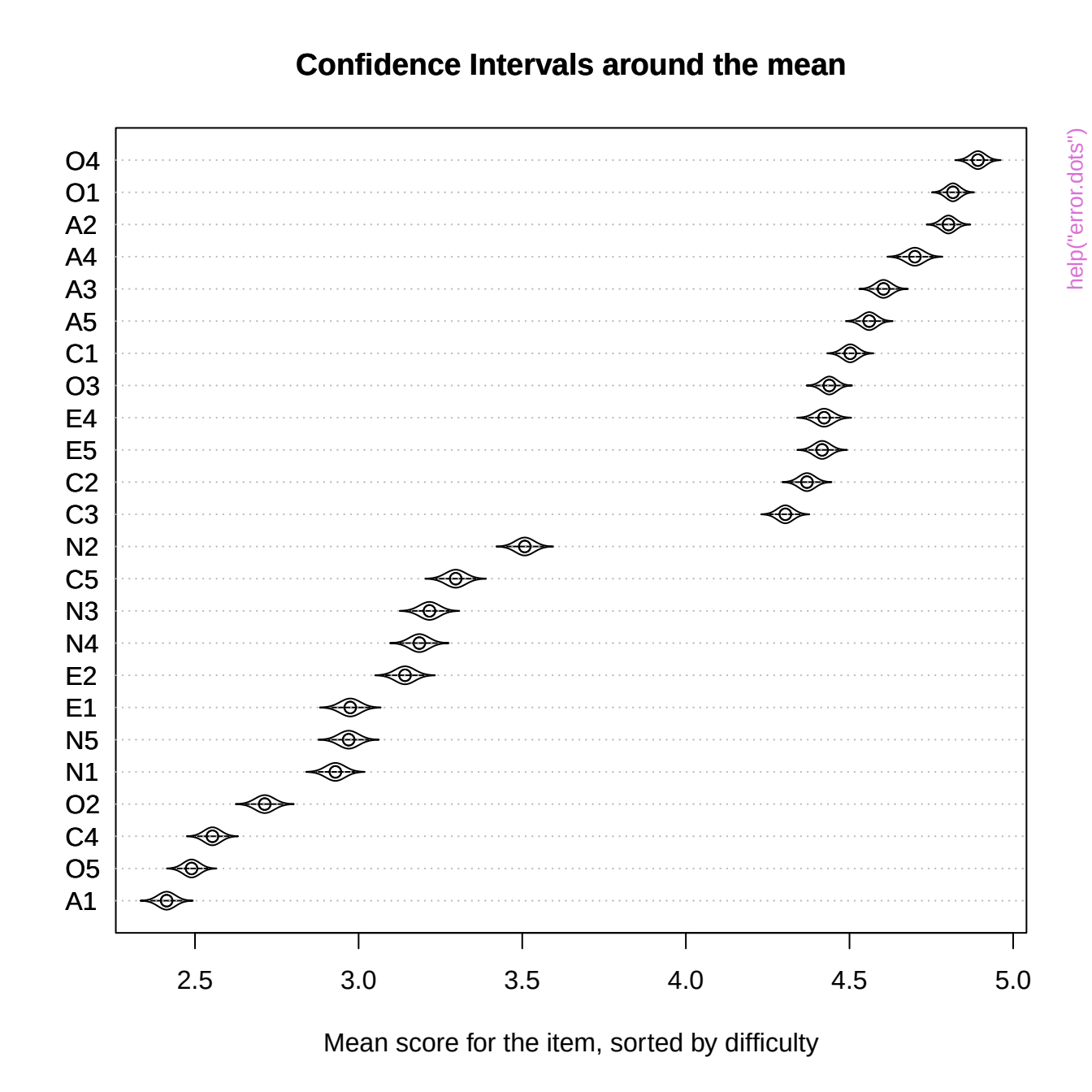

SATV by education
SATV
800
700
600
500
400
300
200
0
1
2
3
4
5
education
help("error.circles")

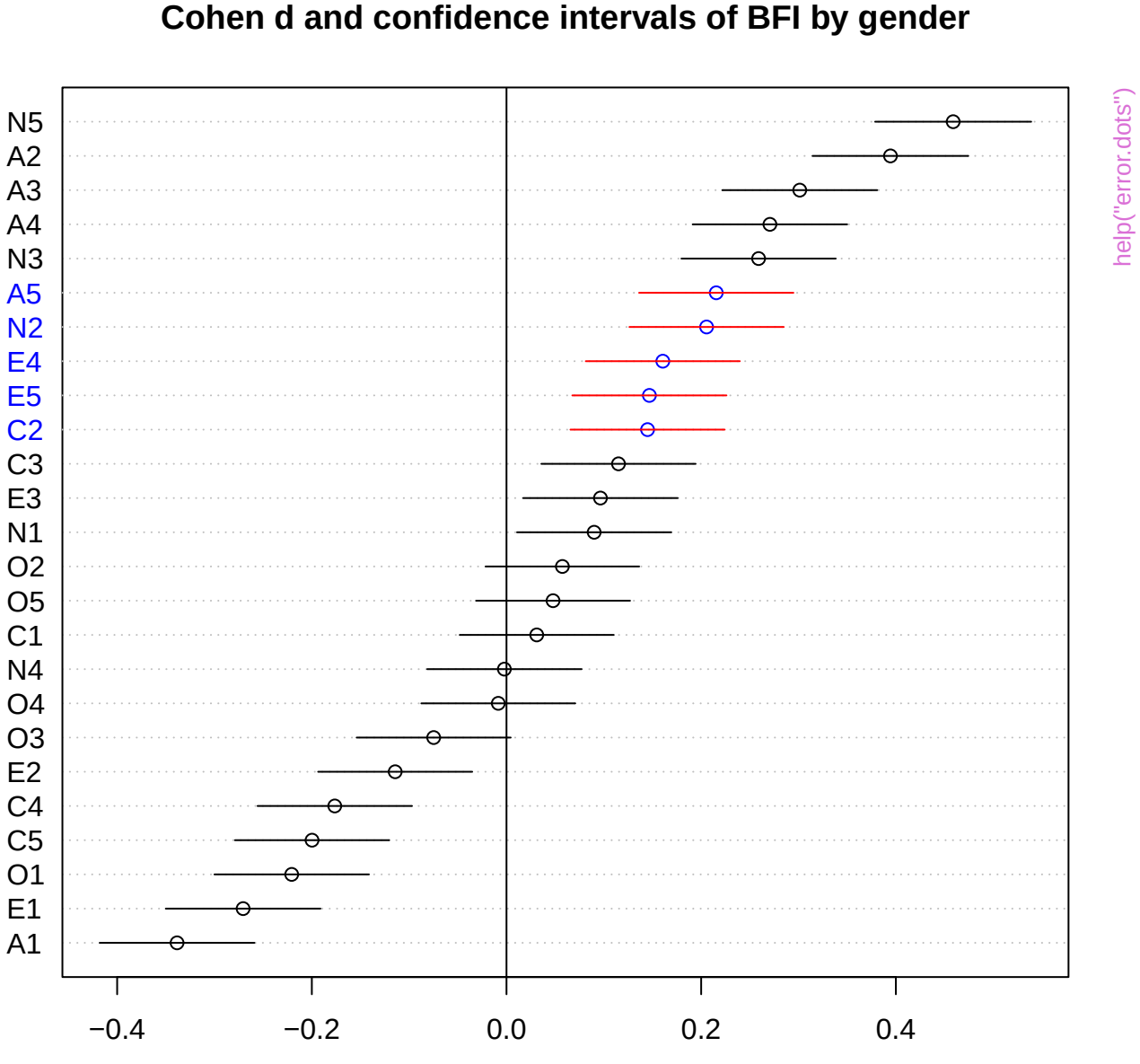

95% confidence limits
complaints
70
68
66
64
62
rating
60
62
64
66
68
rating
help("error.crosses")

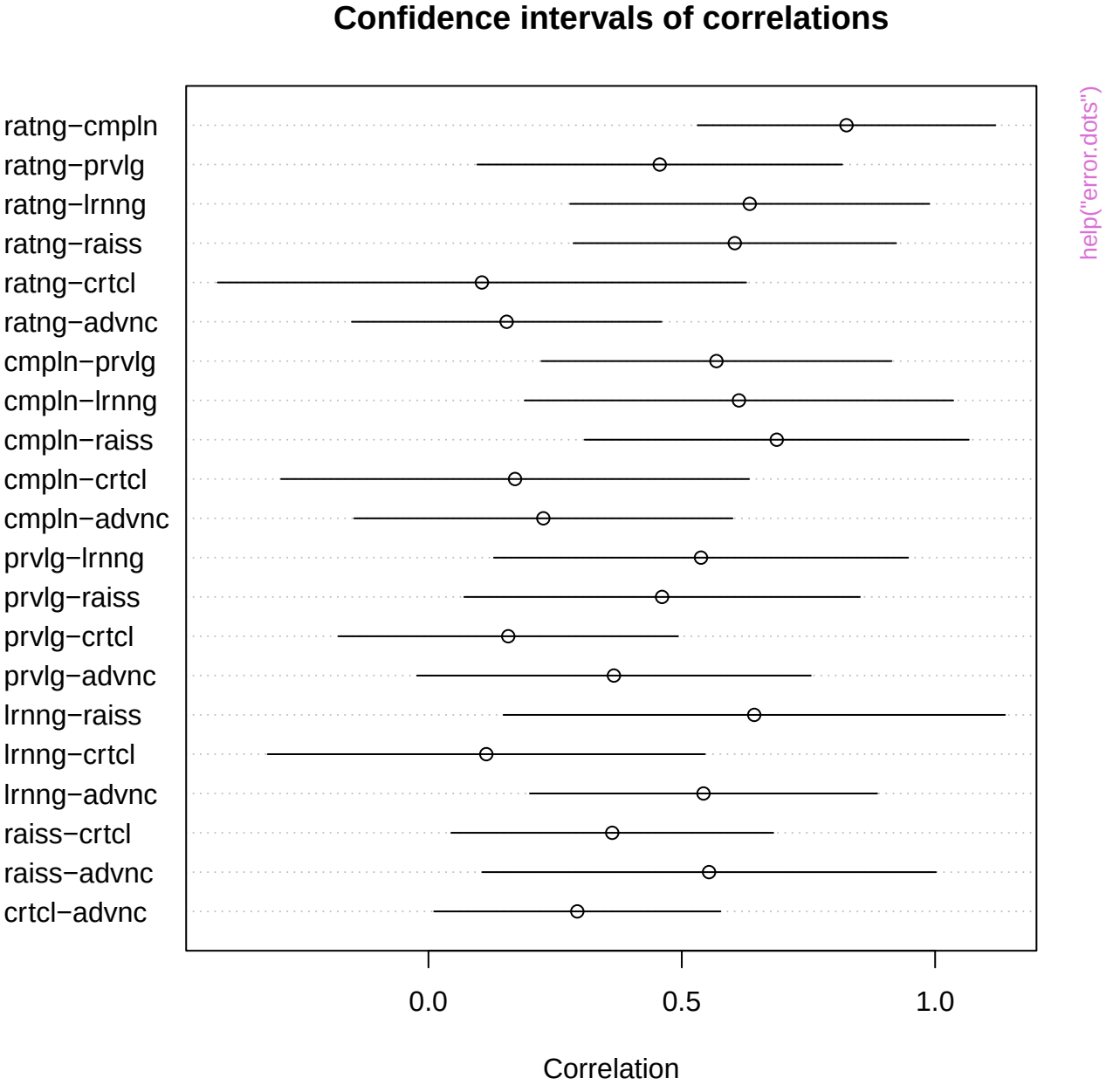

BFI scores by gender
female scores
male scores
2.5
3.0
3.5
4.0
4.5
5.0
A1
A2
A3
A4
A5
C1
C2
C3
C4
C5
E1
E2
E3
E4
E5
N1
N2
N3
N4
N5
O1
O2
O3
O4
O5
help("error.crosses")

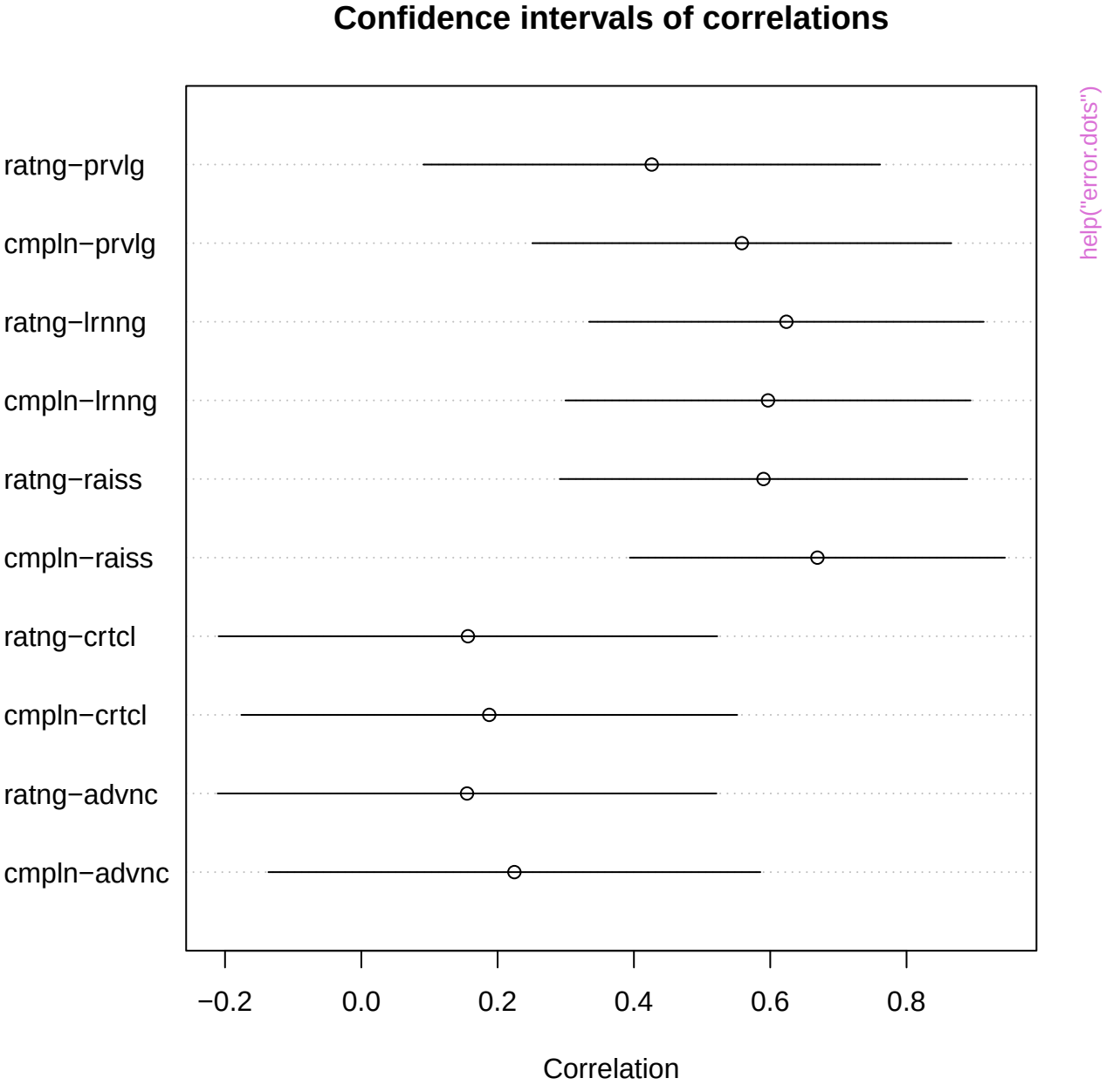

95% confidence limits
Group 2
Group 1
0
5
10
15
20
25
1
2
3
help("error.crosses")


Means and standard deviations
help("error.crosses")
Group 2
15
10
5
1
2
3
5
10
15
20
Group 1

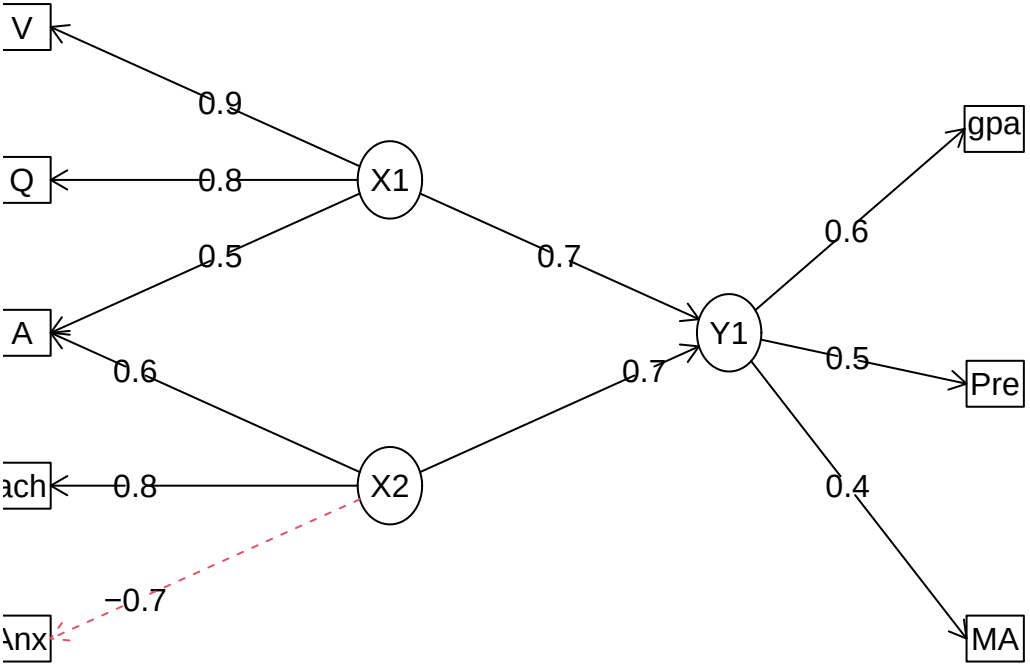

Confidence Intervals around the mean
O4
O1
A2
A4
A3
A5
C1
O3
E4
E5
C2
C3
N2
C5
N3
N4
E2
E1
N5
N1
O2
C4
O5
A1
2.5
3.0
3.5
4.0
4.5
5.0
Mean score for the item, sorted by difficulty
help("error.dots")


Cohen d and confidence intervals of BFI by gender
N5
A2
A3
A4
N3
A5
N2
E4
E5
C2
C3
E3
N1
O2
O5
C1
N4
O4
O3
E2
C4
C5
O1
E1
A1
−0.4
−0.2
0.0
0.2
0.4
help("error.dots")


Confidence intervals of correlations
ratng−cmpln
ratng−prvlg
ratng−lrnng
ratng−raiss
ratng−crtcl
ratng−advnc
cmpln−prvlg
cmpln−lrnng
cmpln−raiss
cmpln−crtcl
cmpln−advnc
prvlg−lrnng
prvlg−raiss
prvlg−crtcl
prvlg−advnc
lrnng−raiss
lrnng−crtcl
lrnng−advnc
raiss−crtcl
raiss−advnc
crtcl−advnc
0.0
0.5
1.0
Correlation
help("error.dots")

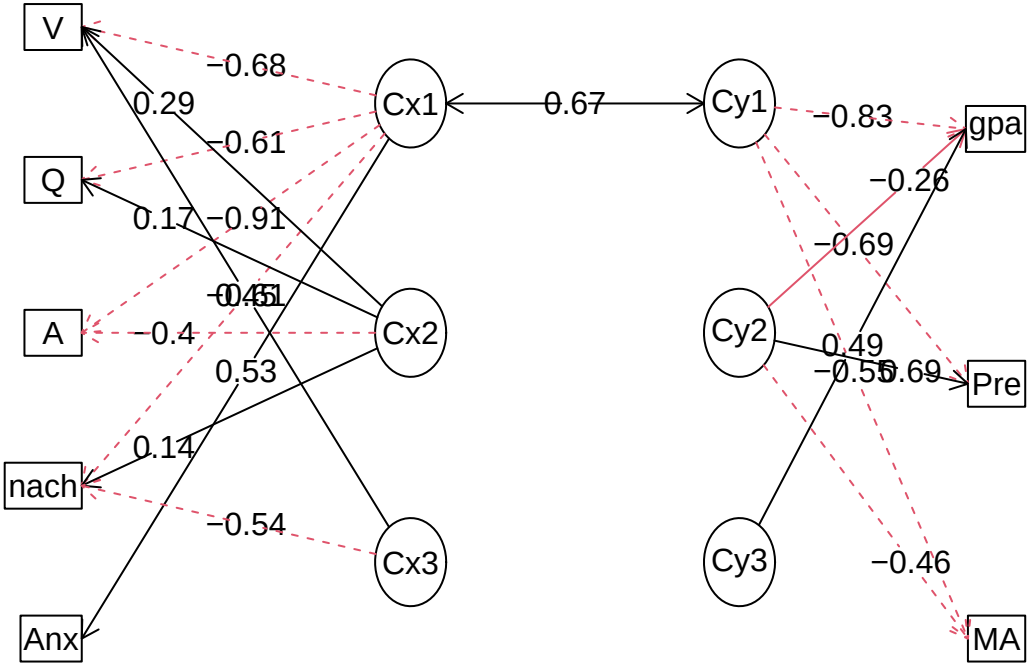

Confidence intervals of correlations
ratng−prvlg
cmpln−prvlg
ratng−lrnng
cmpln−lrnng
ratng−raiss
cmpln−raiss
ratng−crtcl
cmpln−crtcl
ratng−advnc
cmpln−advnc
−0.2
0.0
0.2
0.4
0.6
0.8
Correlation
help("error.dots")

Exploratory Structural Model

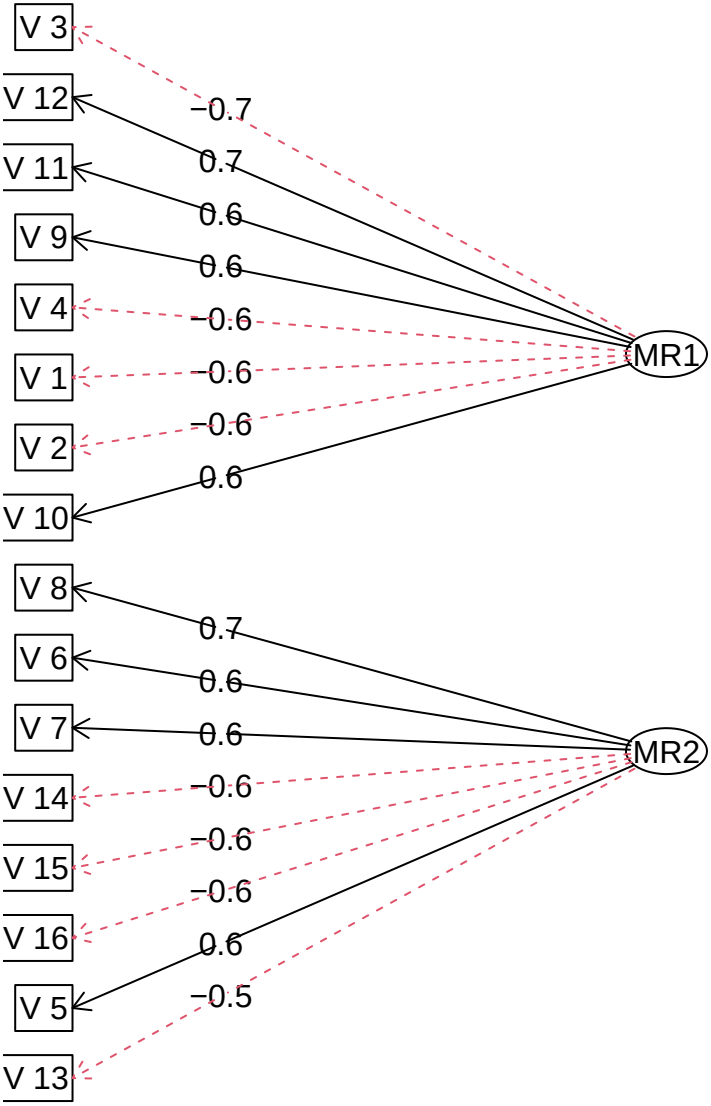


help("esem")

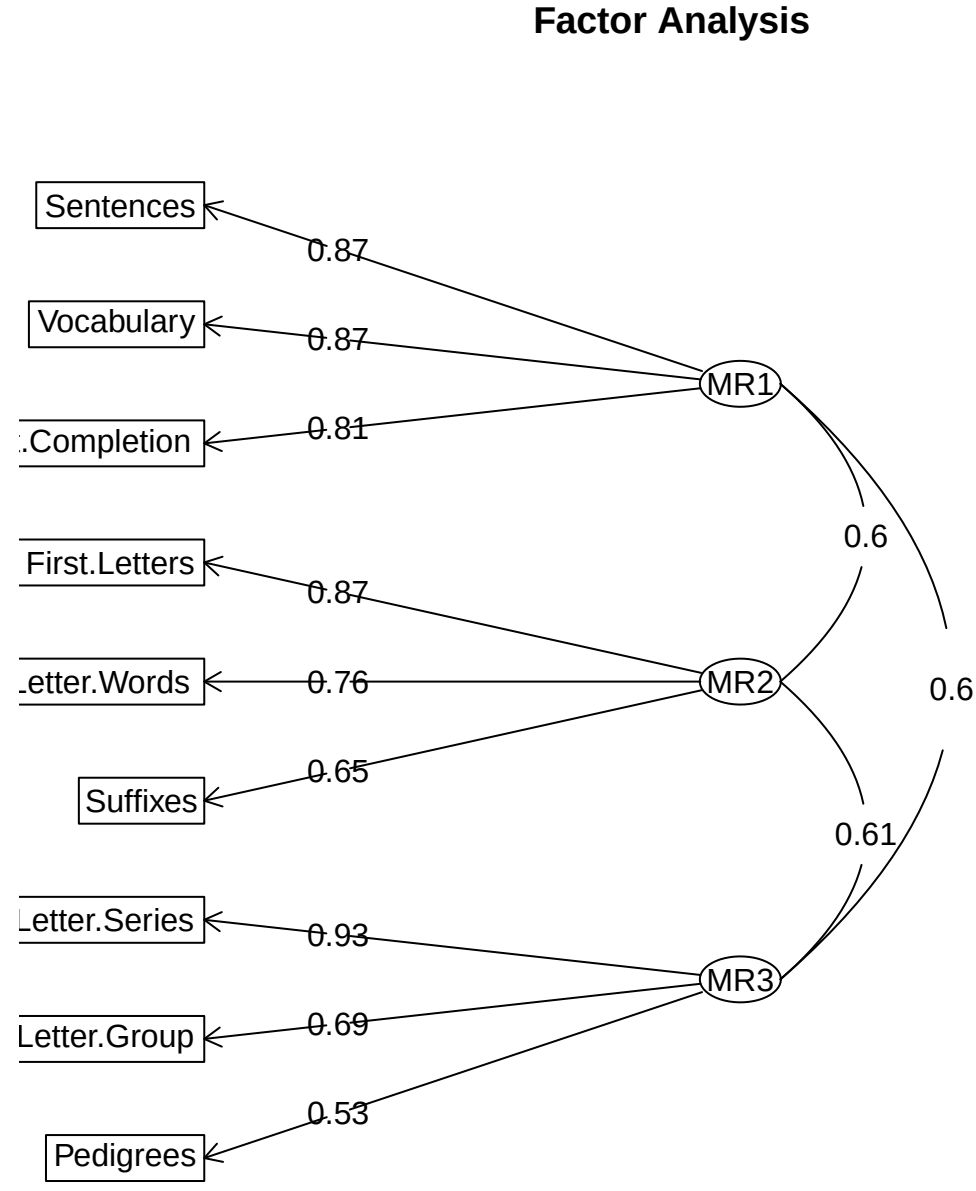
Canonical Correlation

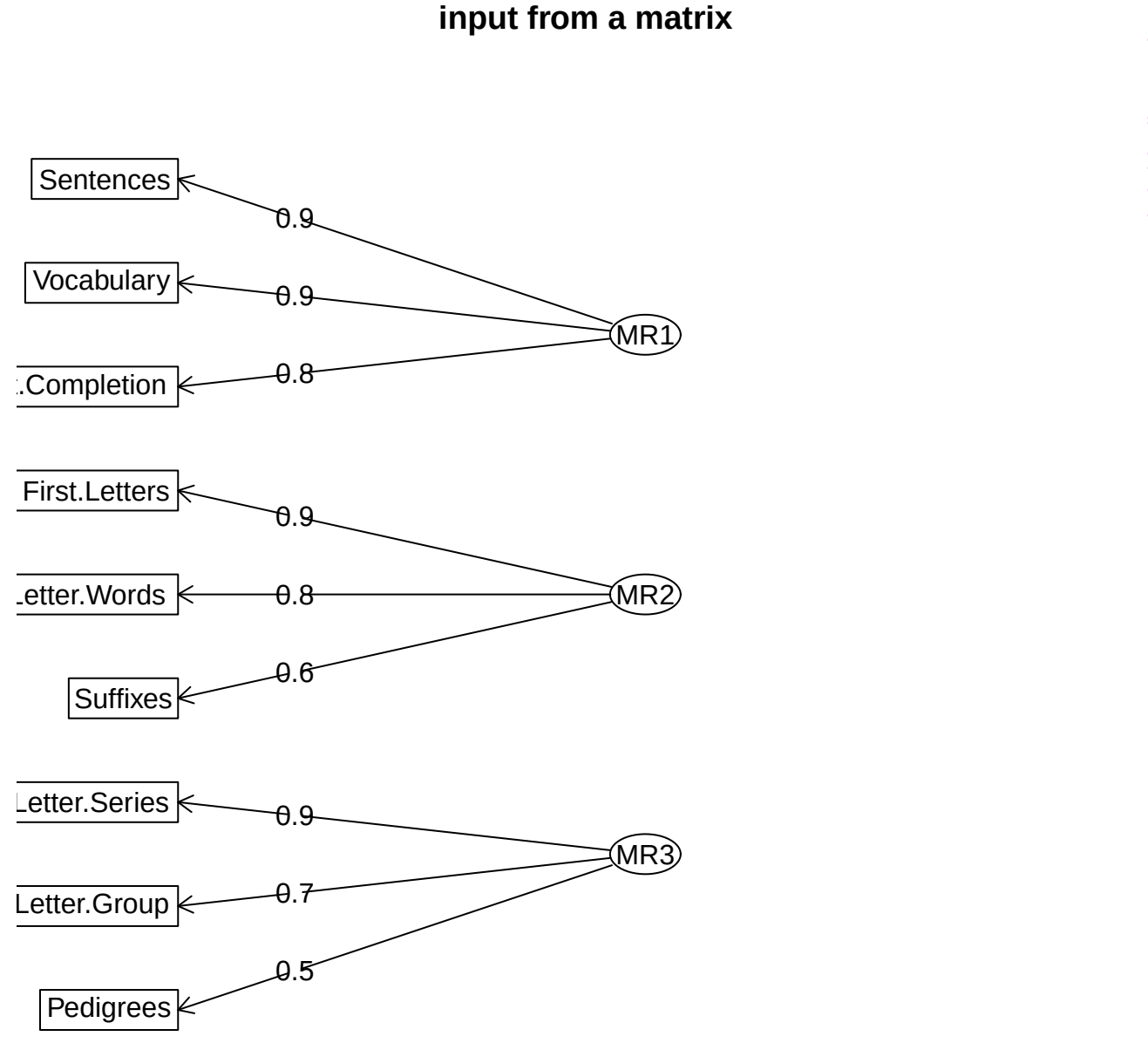


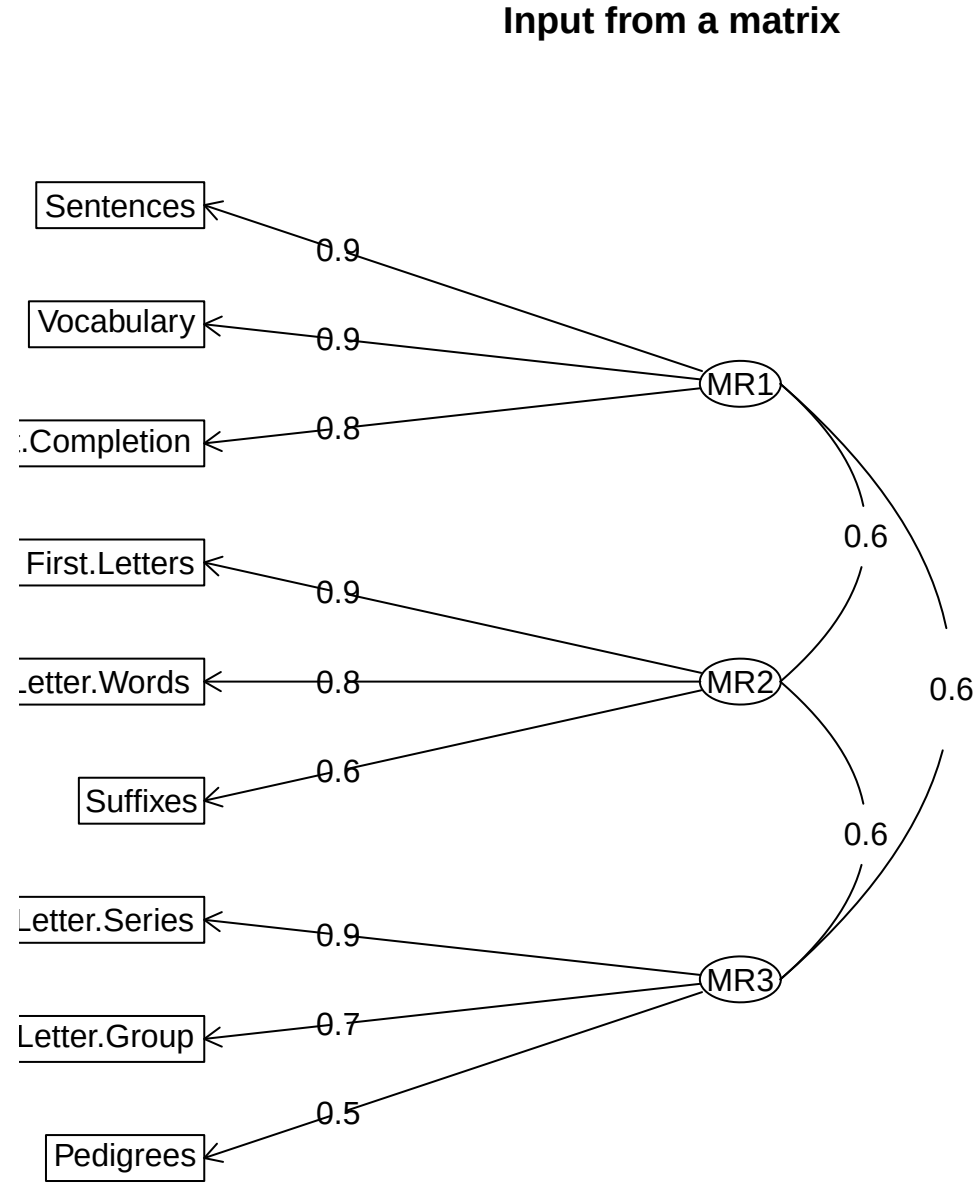
Factor Analysis



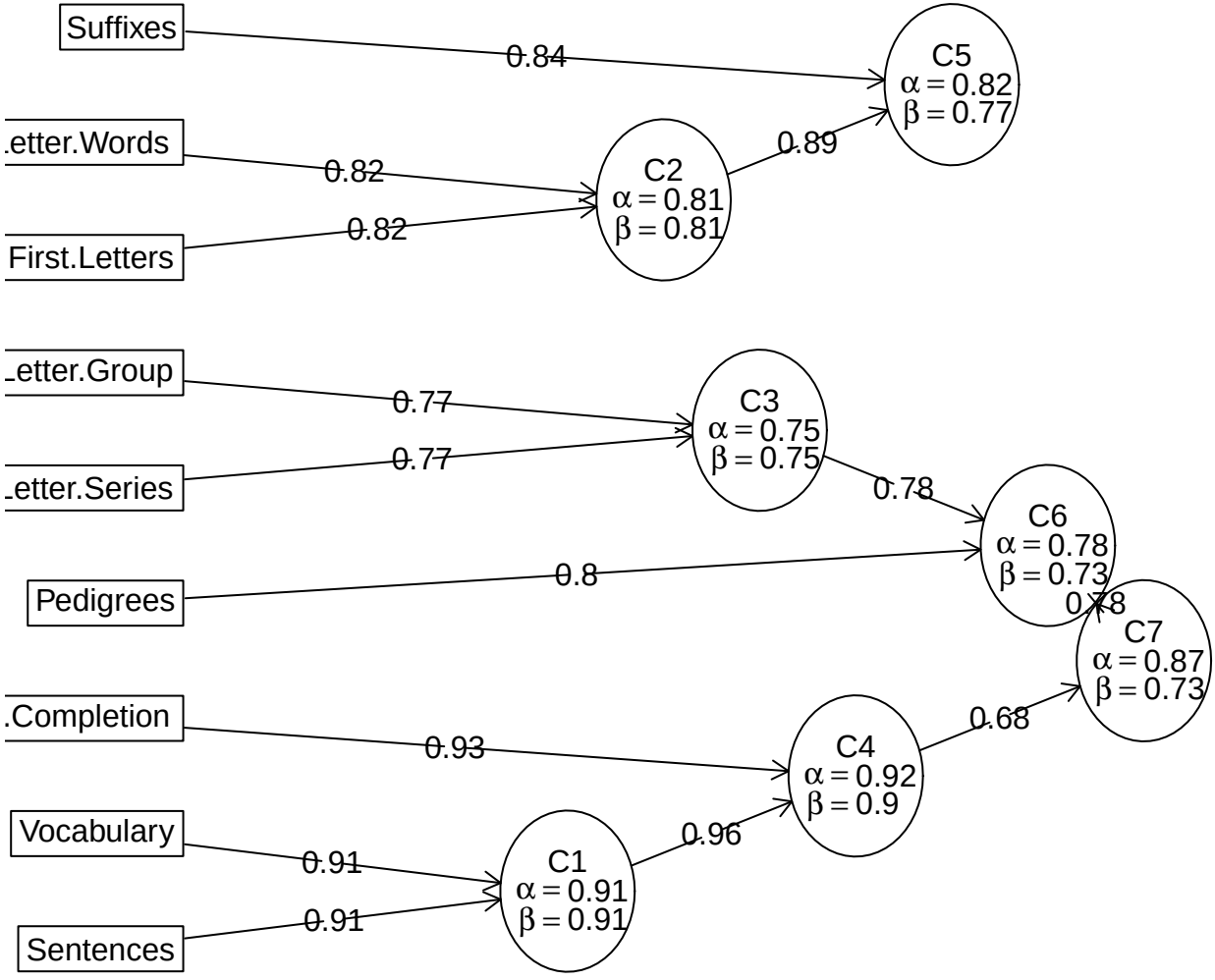
help("fa.diagram")


Factor Analysis
Sentences
Vocabulary
.Completion
First.Letters
Letter.Words
Suffixes
Letter.Series
Letter.Group
Pedigrees
0.87
0.87
0.81
0.87
0.76
0.65
0.93
0.69
0.53
MR1
MR2
MR3
0.6
0.6
0.61
help("fa.diagram")

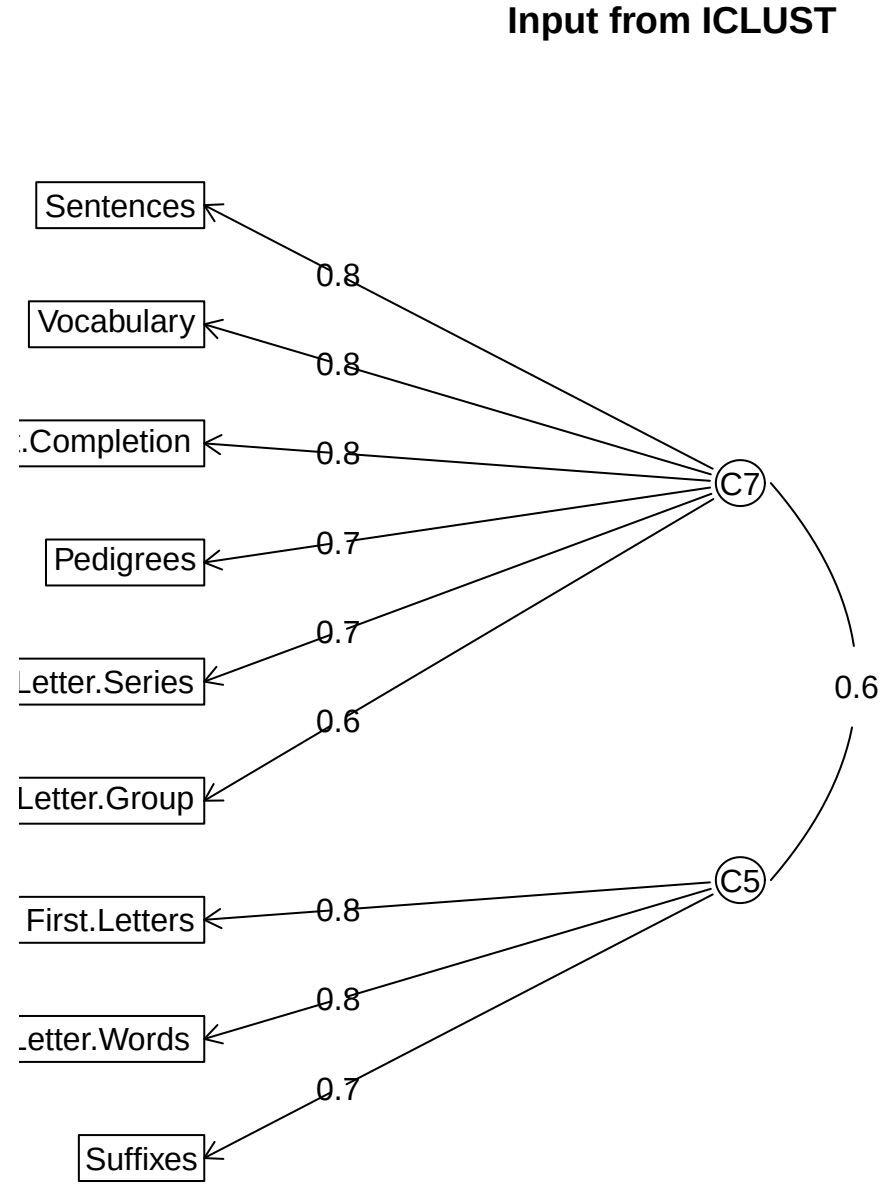

input from a matrix
Sentences
Vocabulary
.Completion
First.Letters
Letter.Words
Suffixes
Letter.Series
Letter.Group
Pedigrees
MR1
MR2
MR3
0.9
0.9
0.8
0.9
0.8
0.6
0.9
0.7
0.5
help("fa.diagram")


Input from a matrix
Sentences
Vocabulary
.Completion
First.Letters
Letter.Words
Suffixes
Letter.Series
Letter.Group
Pedigrees
0.9
0.9
0.8
0.9
0.8
0.6
0.9
0.7
0.5
MR1
MR2
MR3
0.6
0.6
0.6
help("fa.diagram")

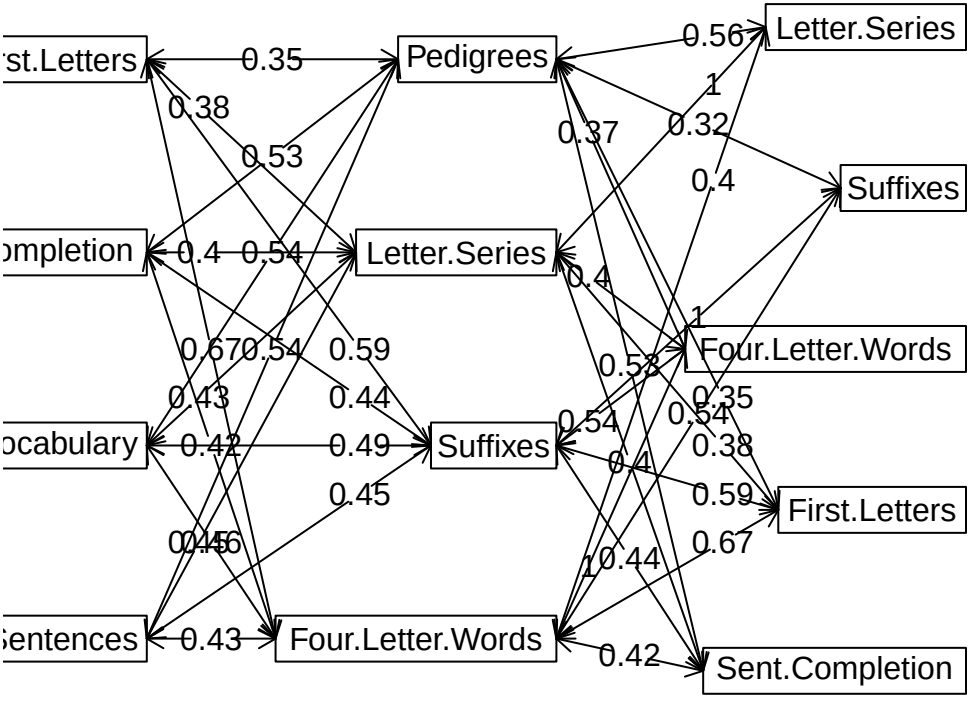
Two cluster solution of Thurstone



help("fa.diagram")

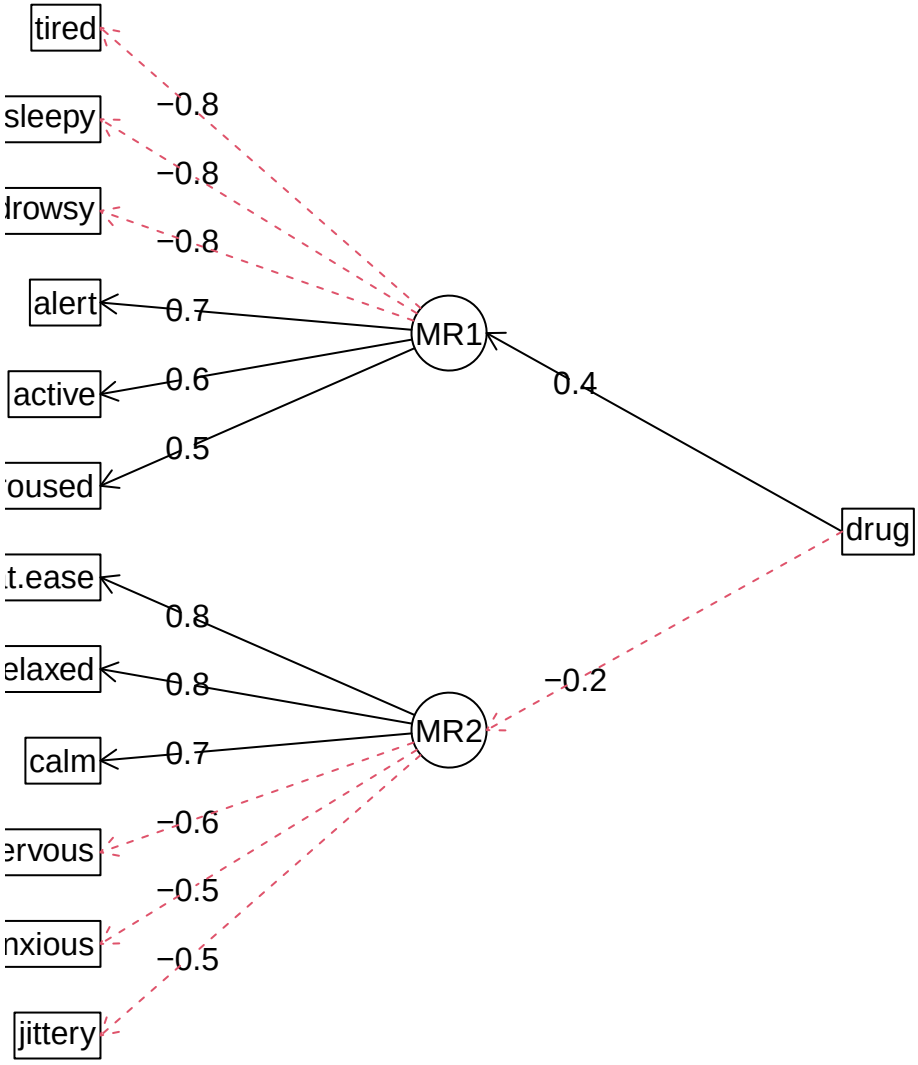

Input from ICLUST
Sentences
Vocabulary
.Completion
Pedigrees
Letter.Series
Letter.Group
First.Letters
Letter.Words
Suffixes
C7
C5
0.8
0.8
0.8
0.7
0.7
0.6
0.6
0.8
0.8
0.7
help("fa.diagram")

Heterarchy diagram



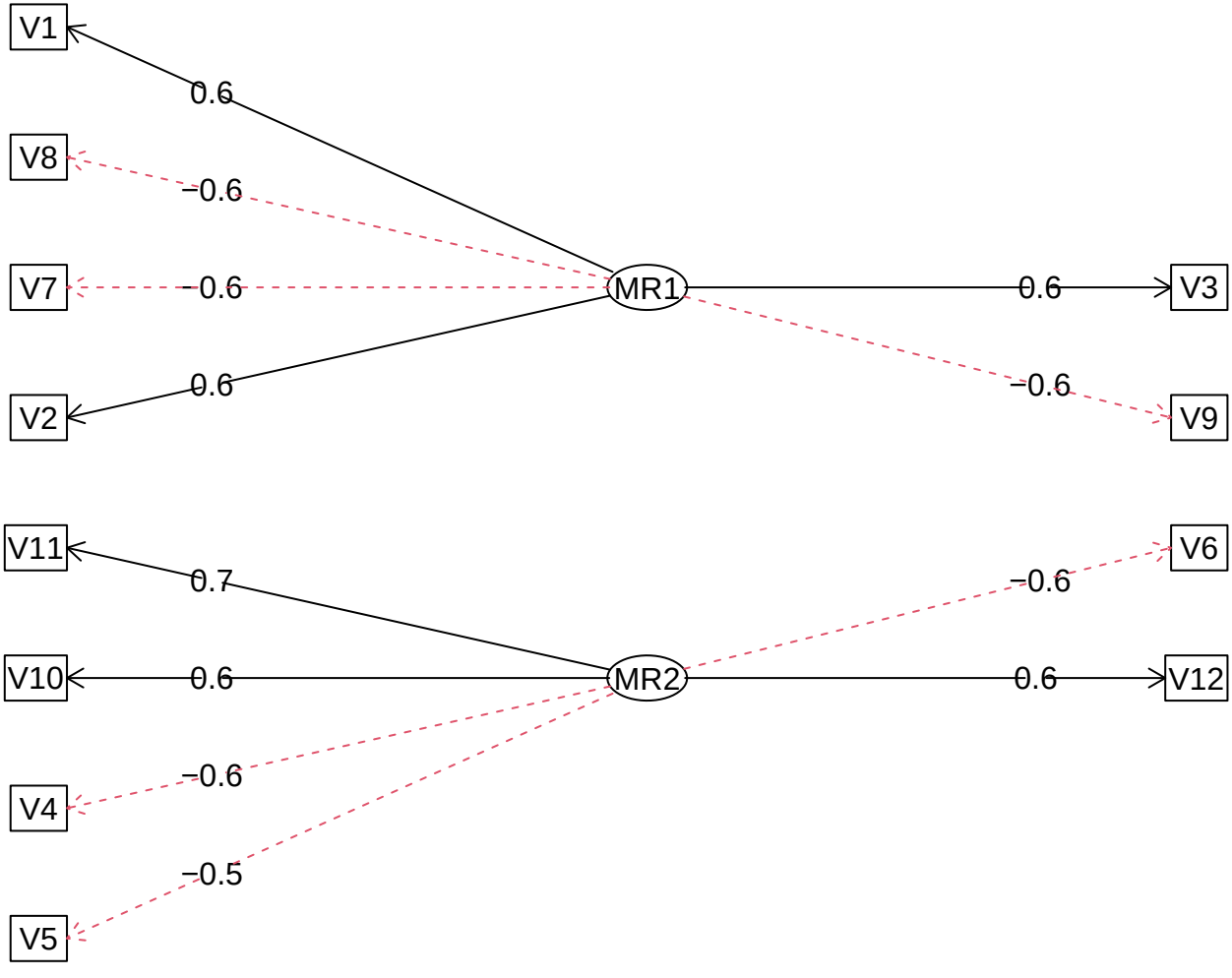
help("fa.diagram")

Factor analysis and extension



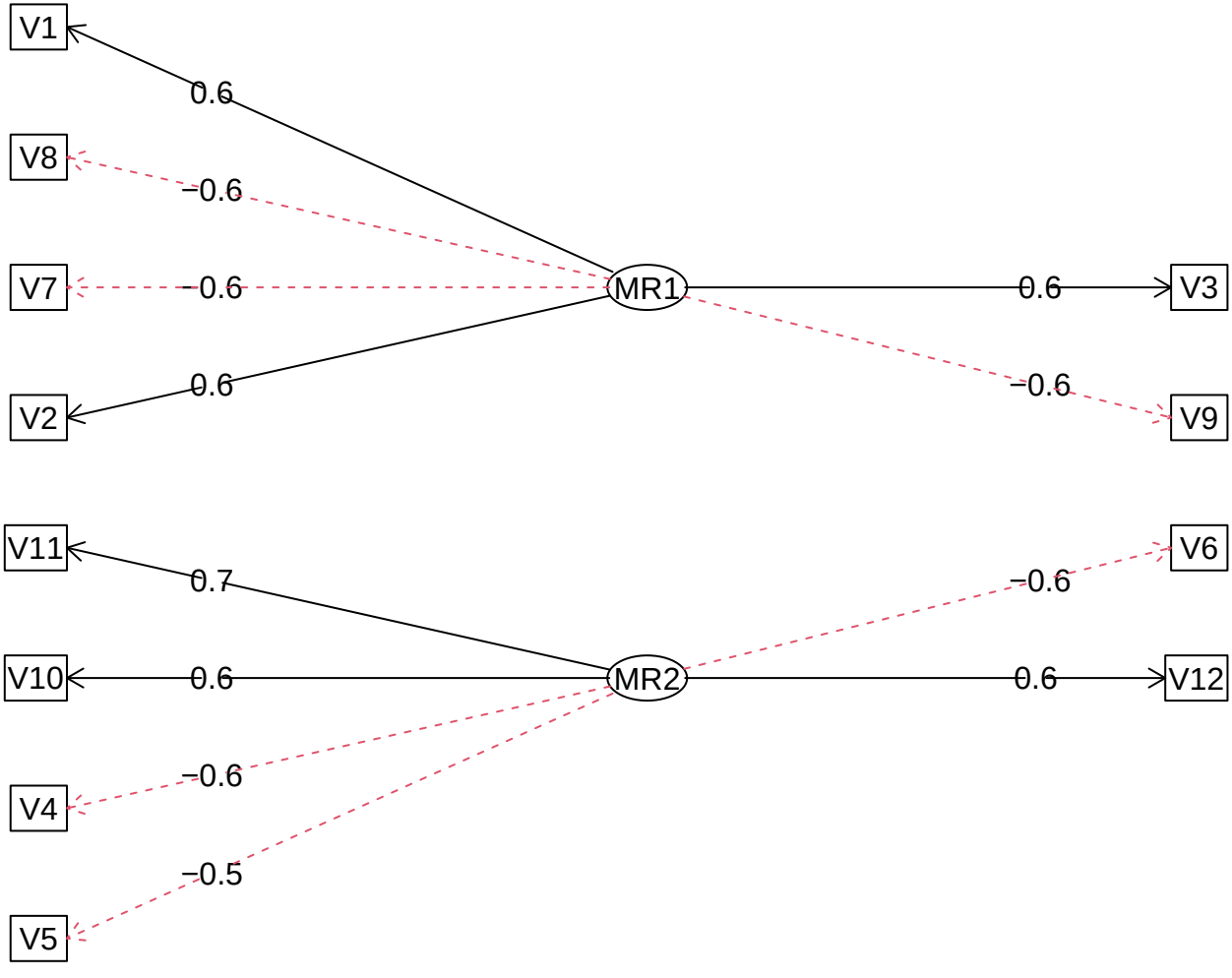
help("fa.diagram")

Factor analysis and extension



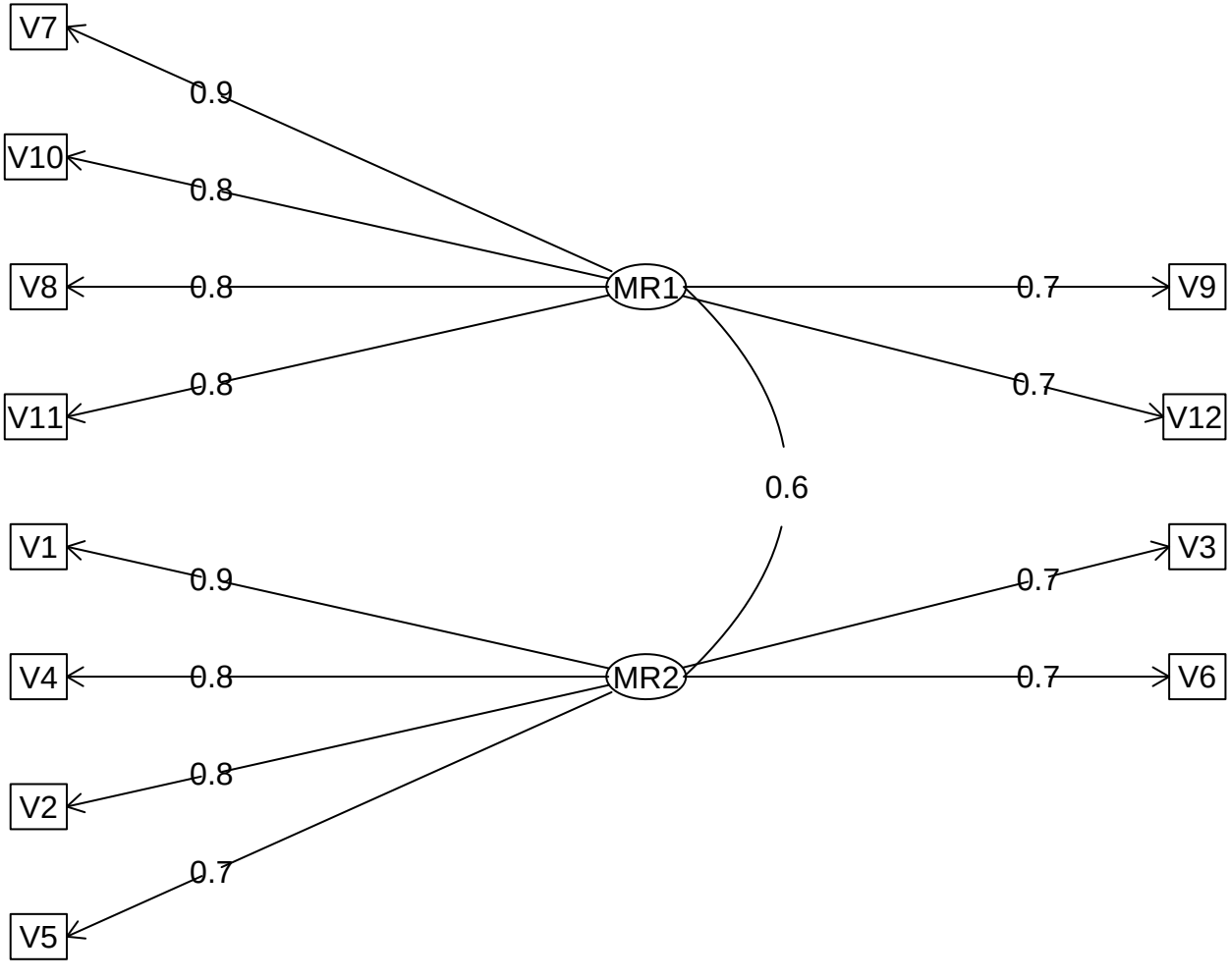
help("fa.extension")

Factor analysis and extension

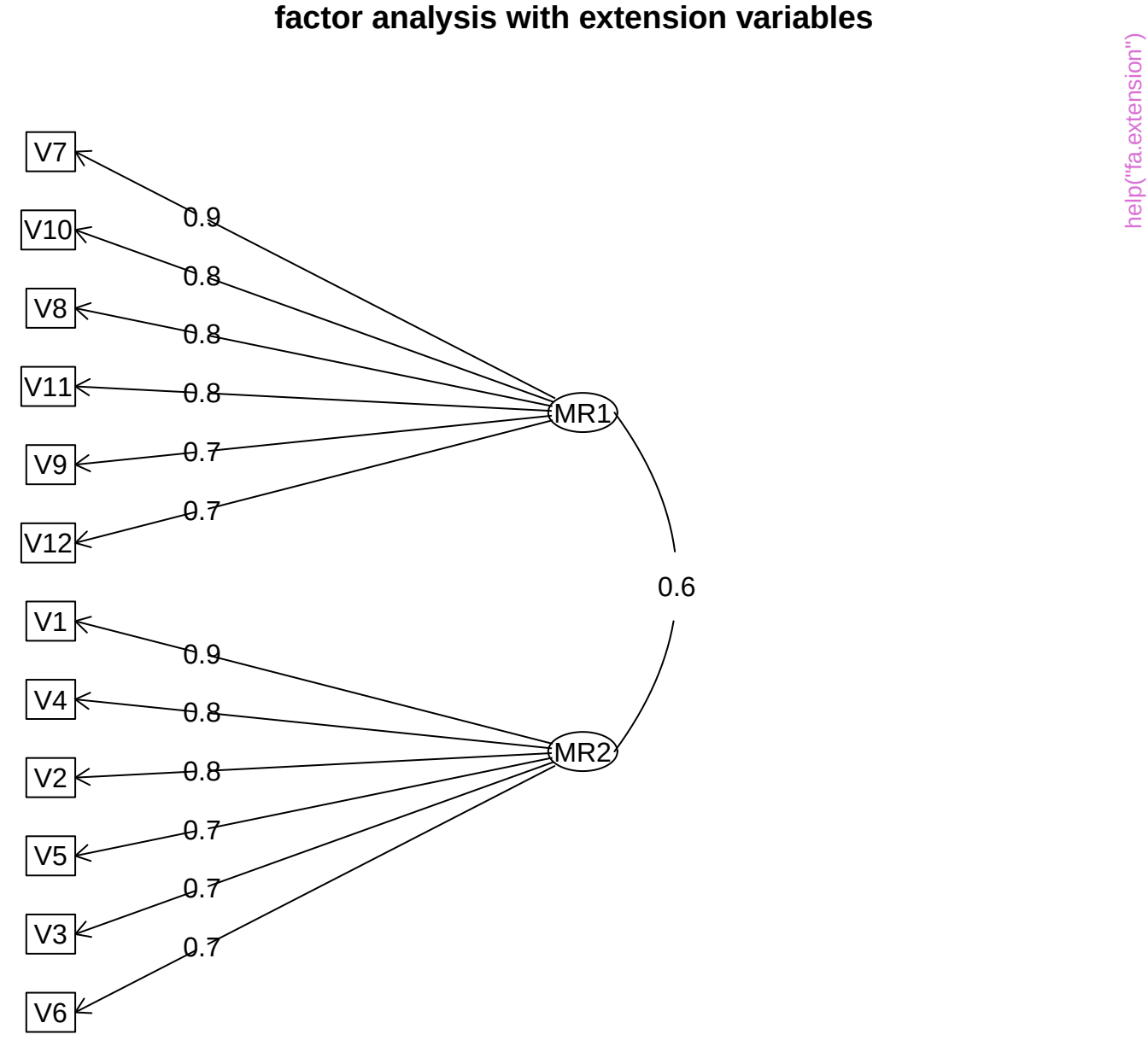


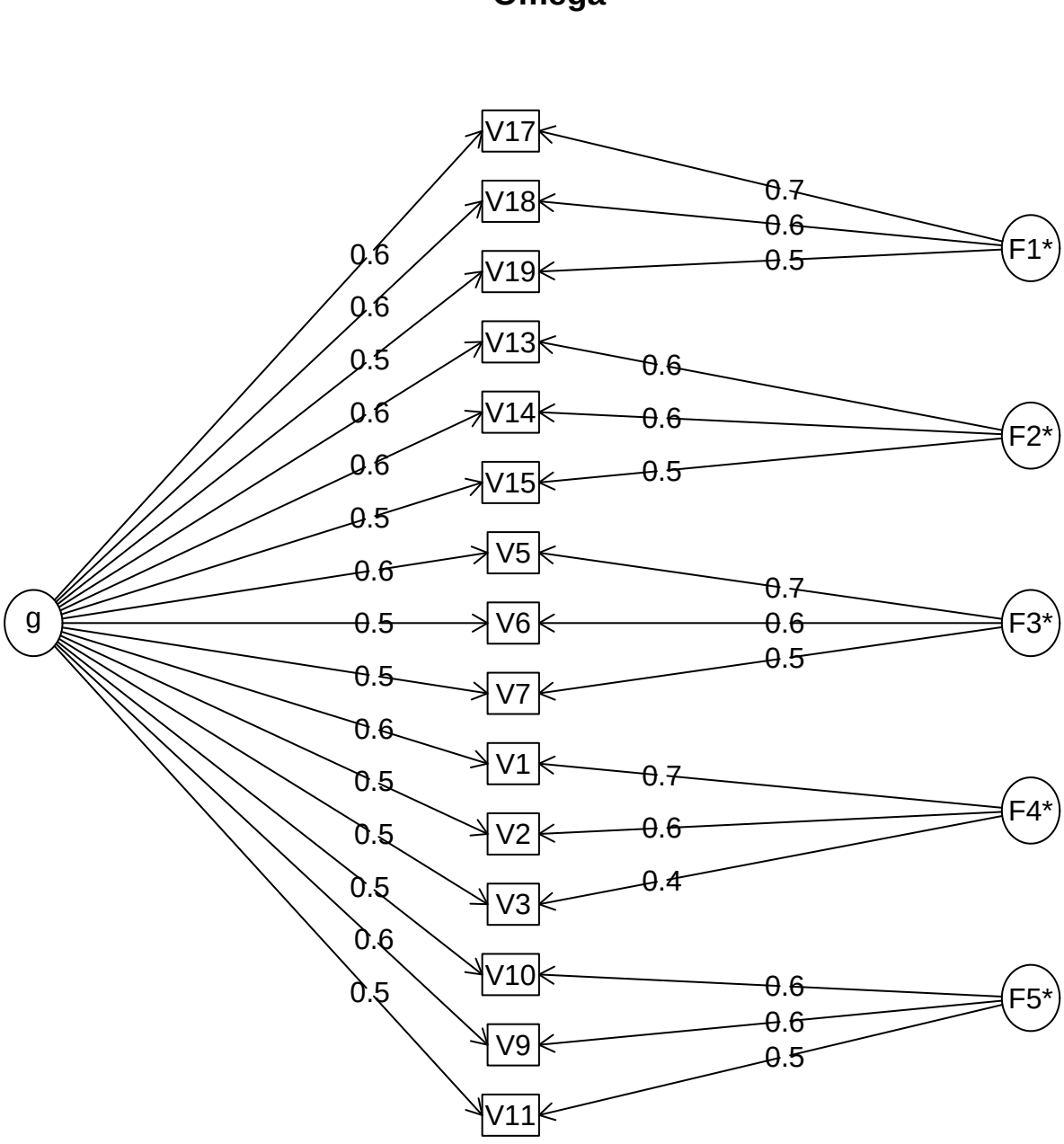
help("fa.extension")

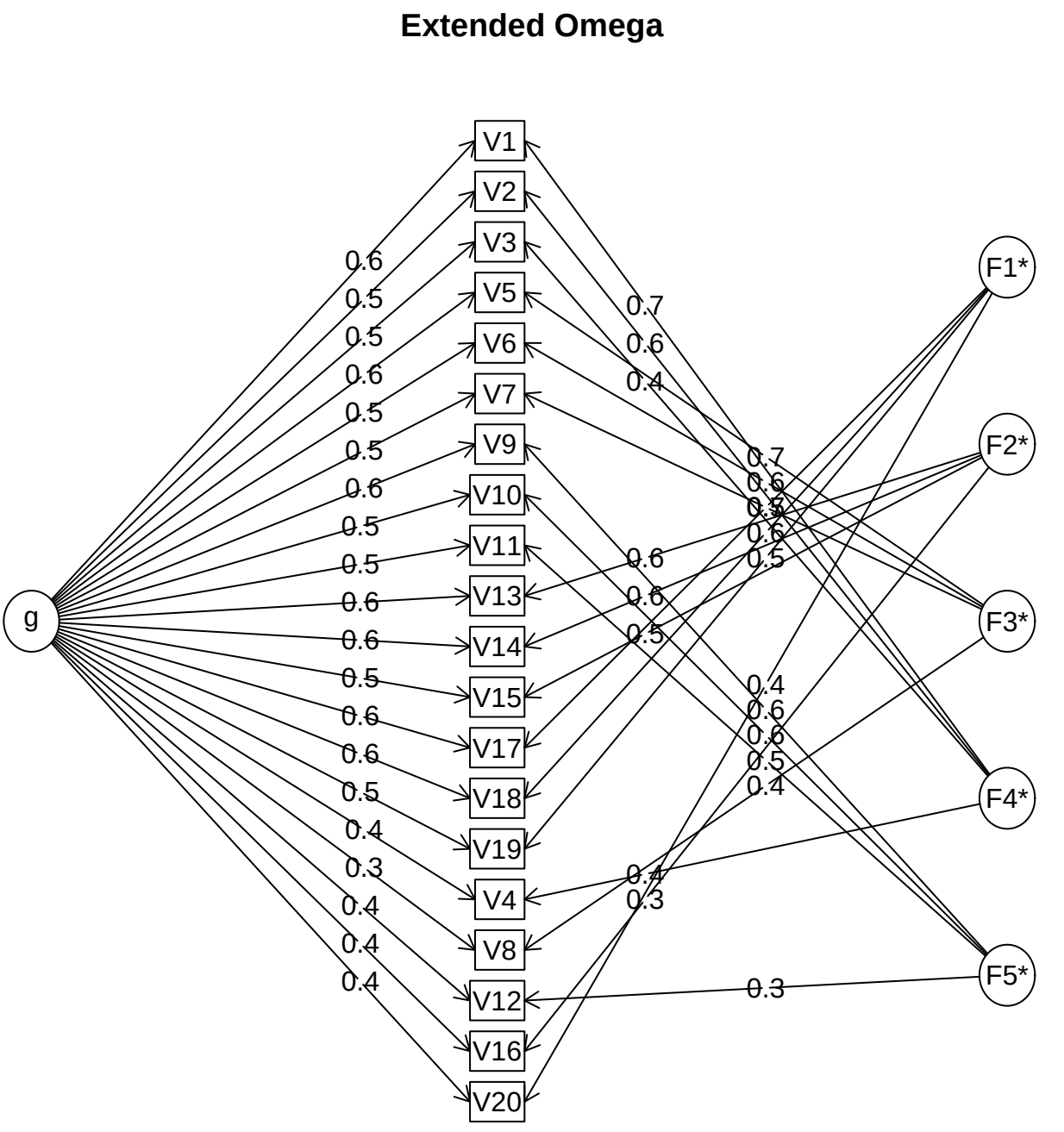
Factor analysis and extension



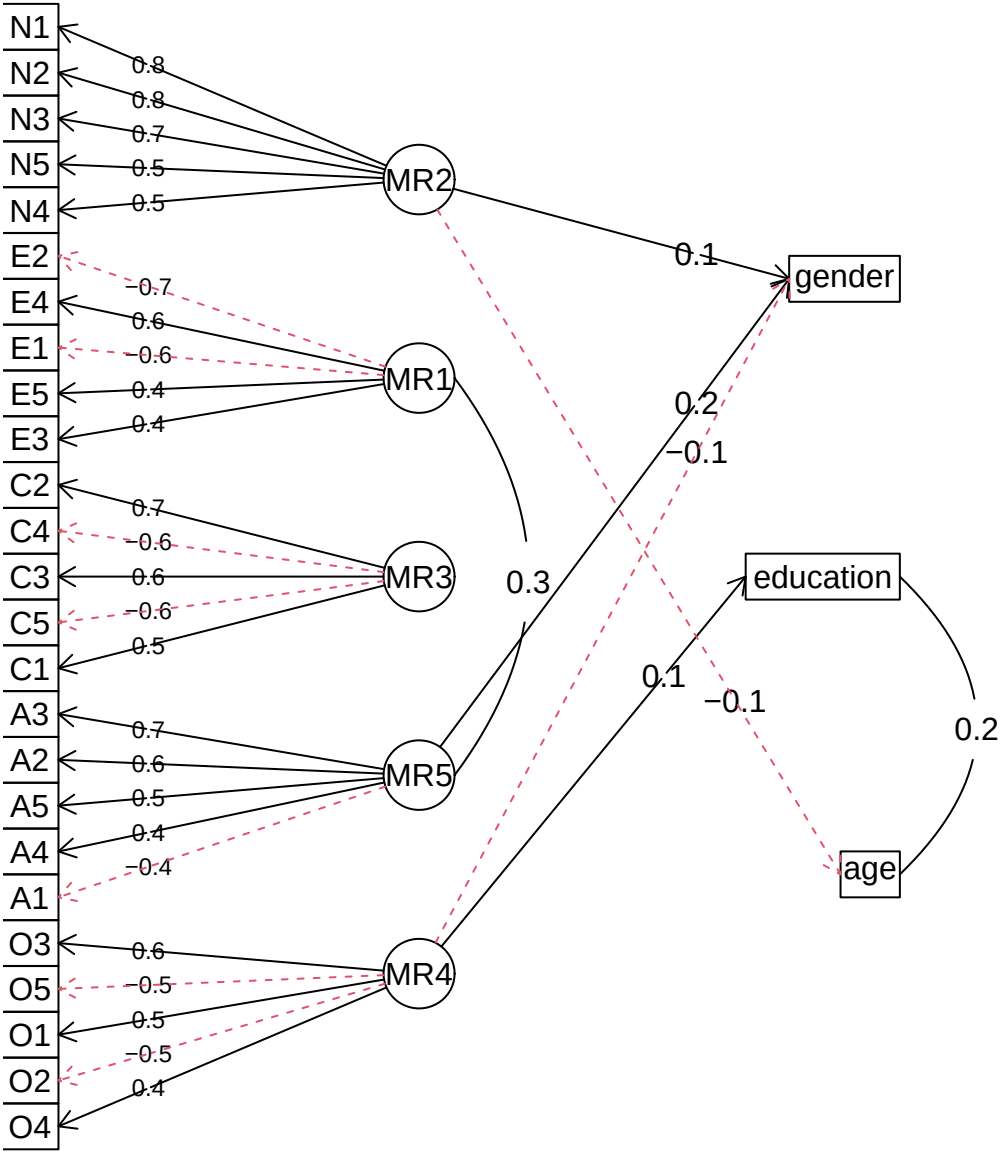
help("fa.extension")


factor analysis with extension variables
help("fa.extension")
V7
V10
V8
V11
V9
V12
V1
V4
V2
V5
V3
V6
0.9
0.8
0.8
0.8
0.7
0.7
0.9
0.8
0.8
0.7
0.7
0.7
MR1
MR2
0.6

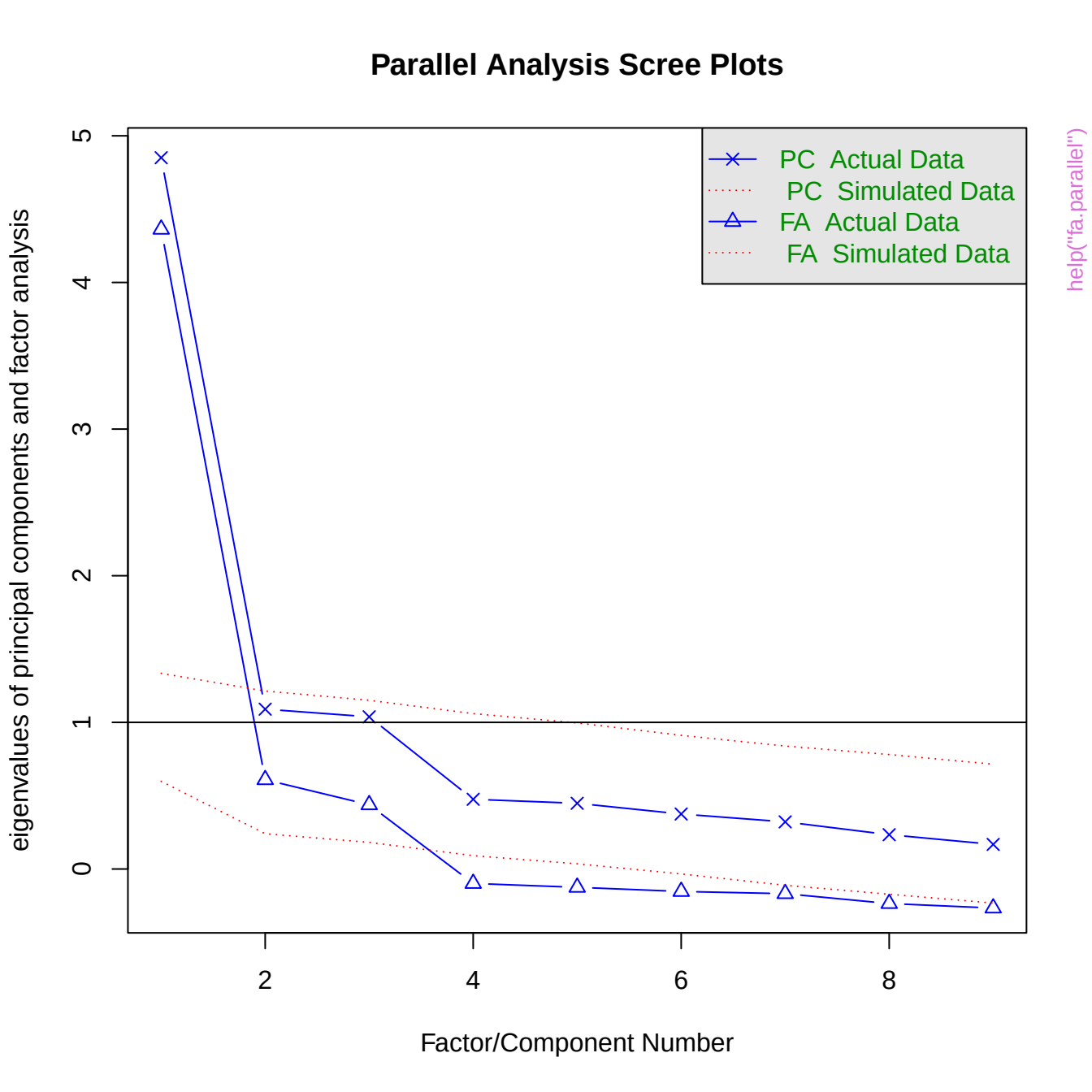

Omega
help("fa.extension")
g
V17
V18
V19
V13
V14
V15
V5
V6
V7
V1
V2
V3
V10
V9
V11
F1*
F2*
F3*
F4*
F5*
0.6
0.6
0.5
0.6
0.6
0.5
0.6
0.5
0.5
0.6
0.5
0.5
0.6
0.5
0.7
0.6
0.5
0.6
0.6
0.5
0.7
0.6
0.5
0.7
0.6
0.4
0.6
0.6
0.5


Extended Omega
help("fa.extension")
g
V1
V2
V3
V5
V6
V7
V9
V10
V11
V13
V14
V15
V17
V18
V19
V4
V8
V12
V16
V20
F1*
F2*
F3*
F4*
F5*
0.6
0.5
0.5
0.6
0.5
0.5
0.6
0.5
0.5
0.6
0.6
0.5
0.6
0.6
0.5
0.4
0.3
0.4
0.4
0.4
0.7
0.6
0.4
0.7
0.6
0.6
0.5
0.6
0.6
0.5
0.4
0.6
0.6
0.5
0.4
0.4
0.3
0.3

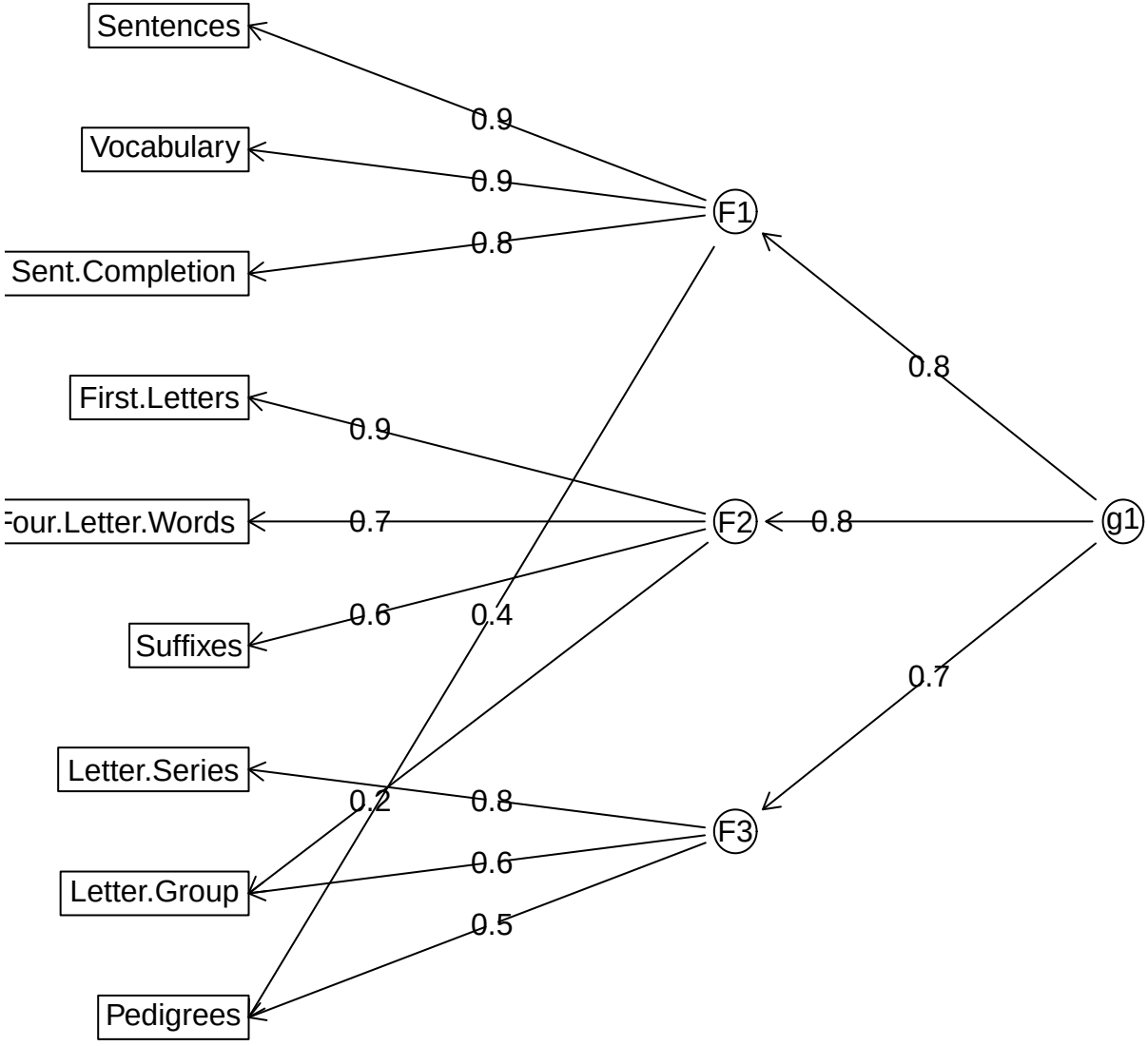
Factor analysis regression

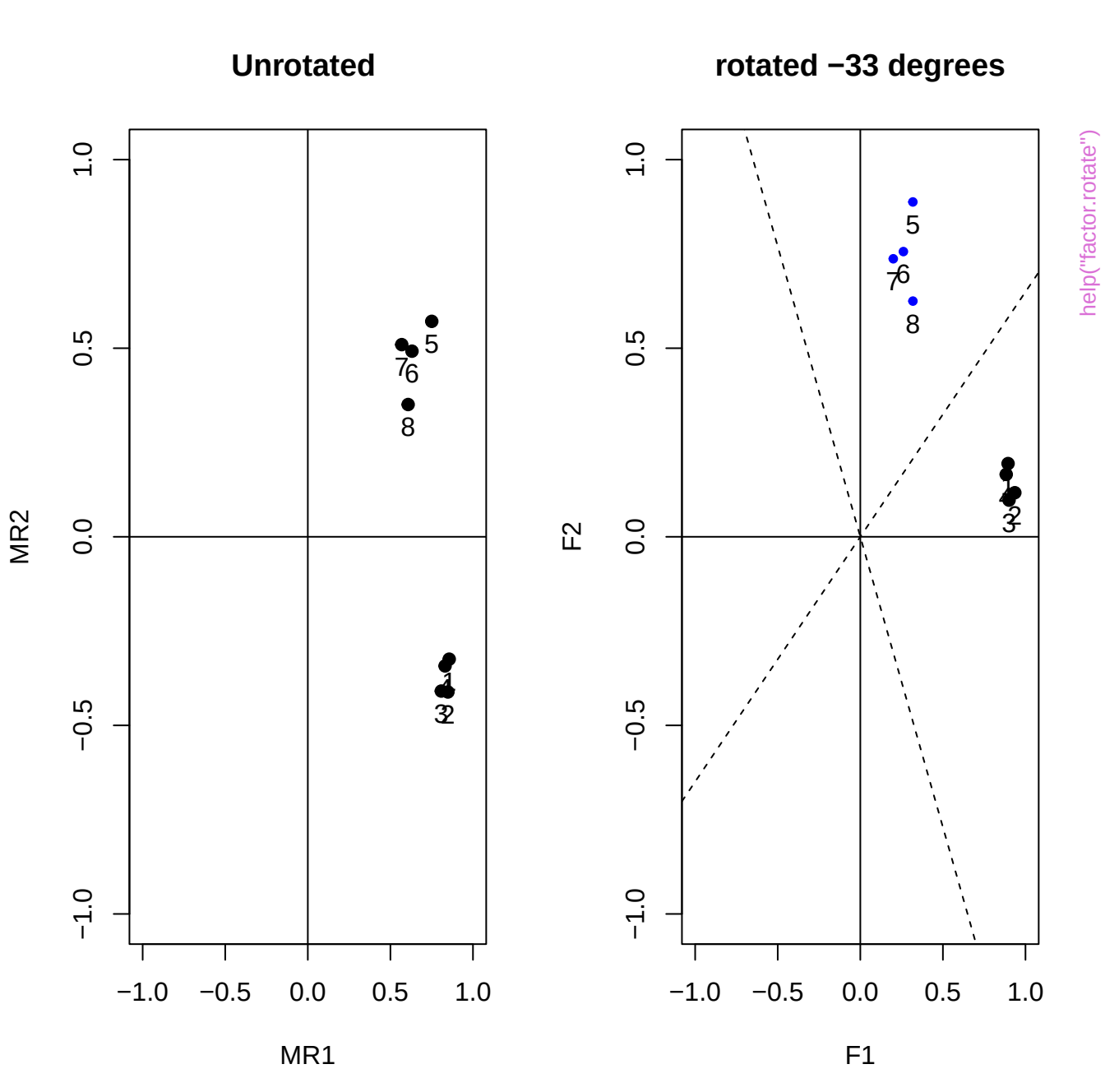


help("fa.extension")


Parallel Analysis Scree Plots
PC Actual Data
PC Simulated Data
FA Actual Data
FA Simulated Data
eigenvalues of principal components and factor analysis
Factor/Component Number
0
1
2
3
4
5
2
4
6
8
help("fa.parallel")

Hierarchical (multilevel) Structure



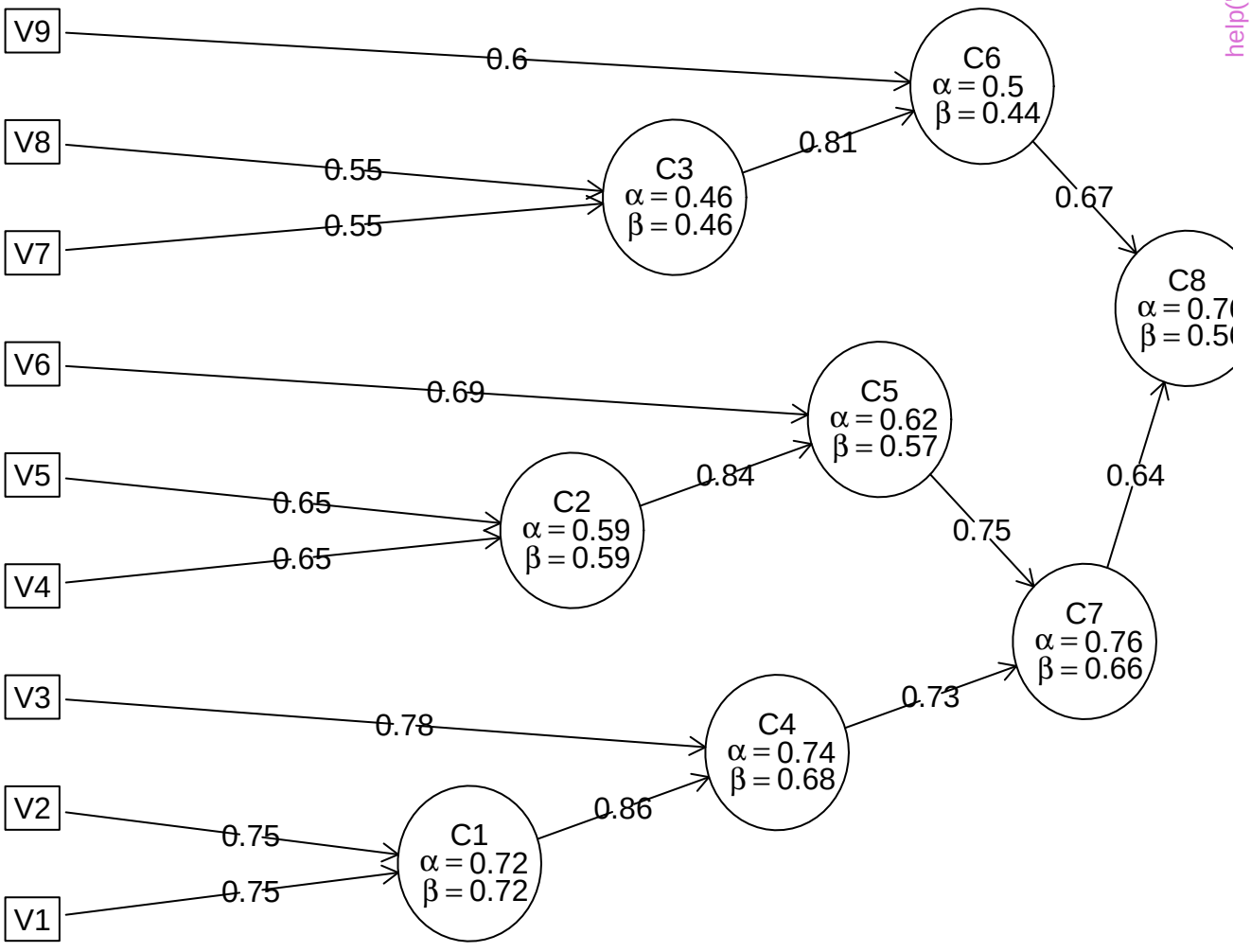

Unrotated
MR2
MR1
1.0
0.5
0.0
−0.5
−1.0
−1.0
−0.5
0.0
0.5
1.0
5
7
6
8
1
2
3
4
rotated −33 degrees
F2
F1
help("factor.rotate")

help("guttman")

help("guttman")

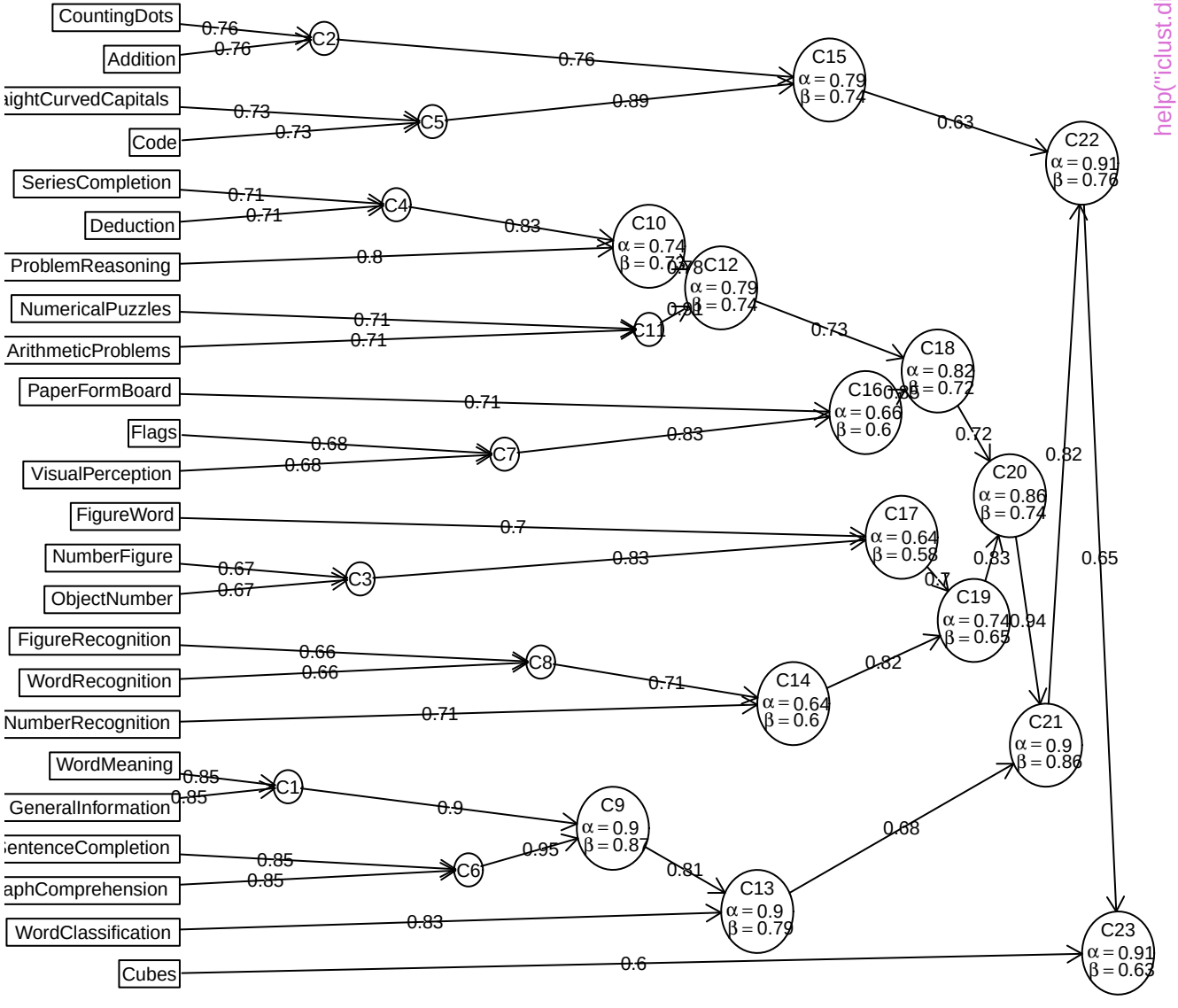
```
help("guttman")
```

ICLUST



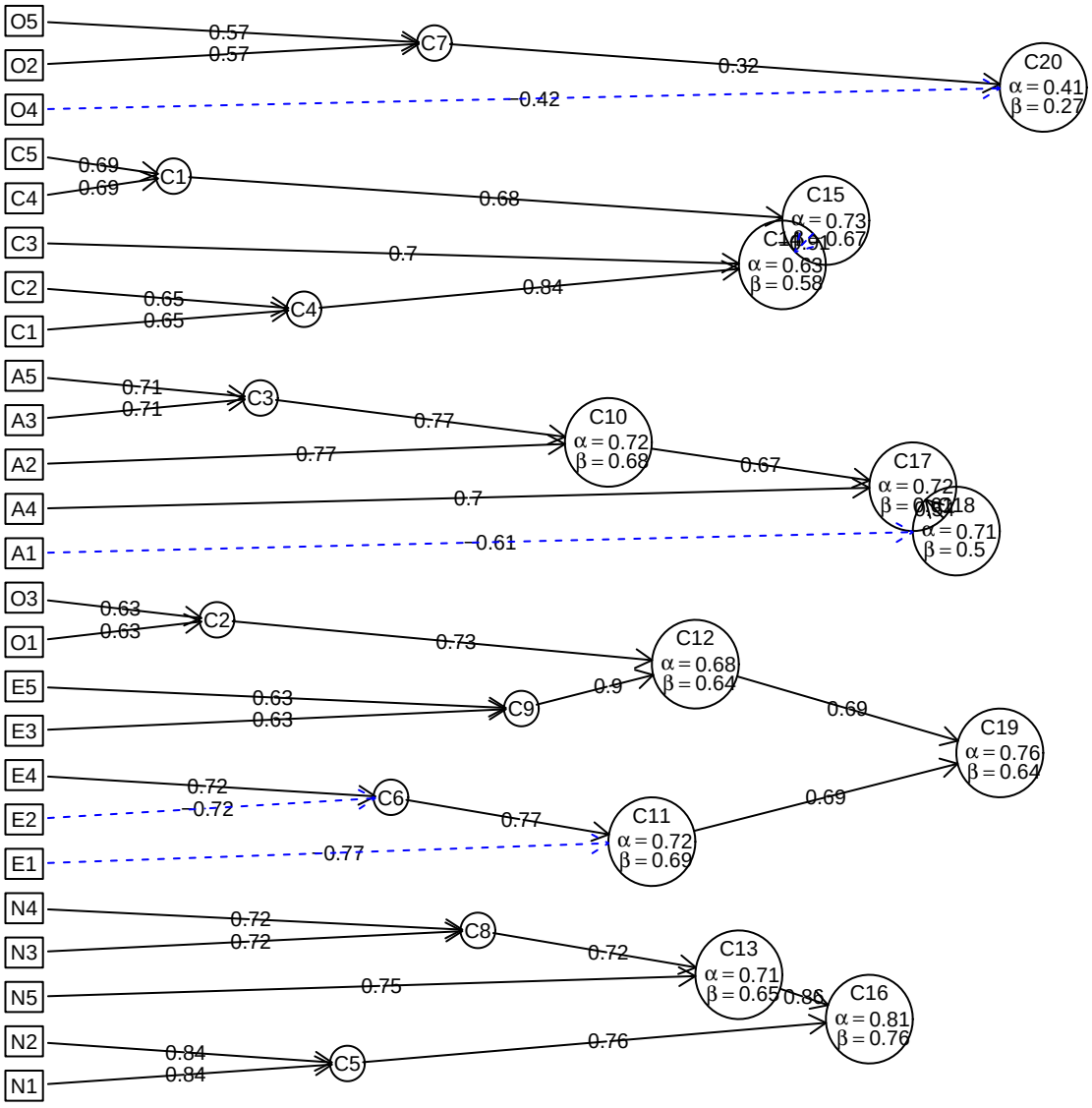
help("iclust.diagram")

ICLUST



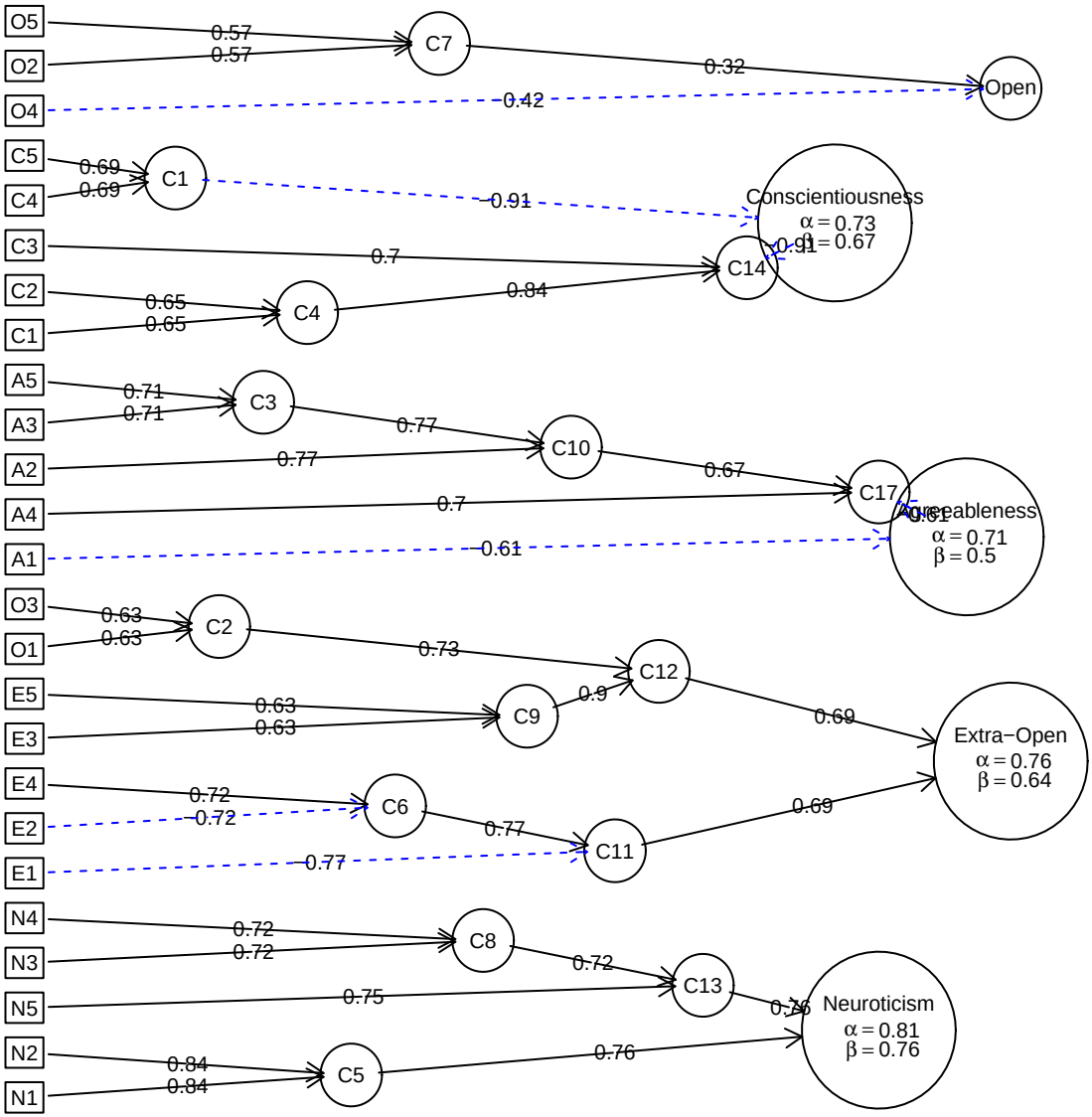
help("iclust.diagram")

ICLUST

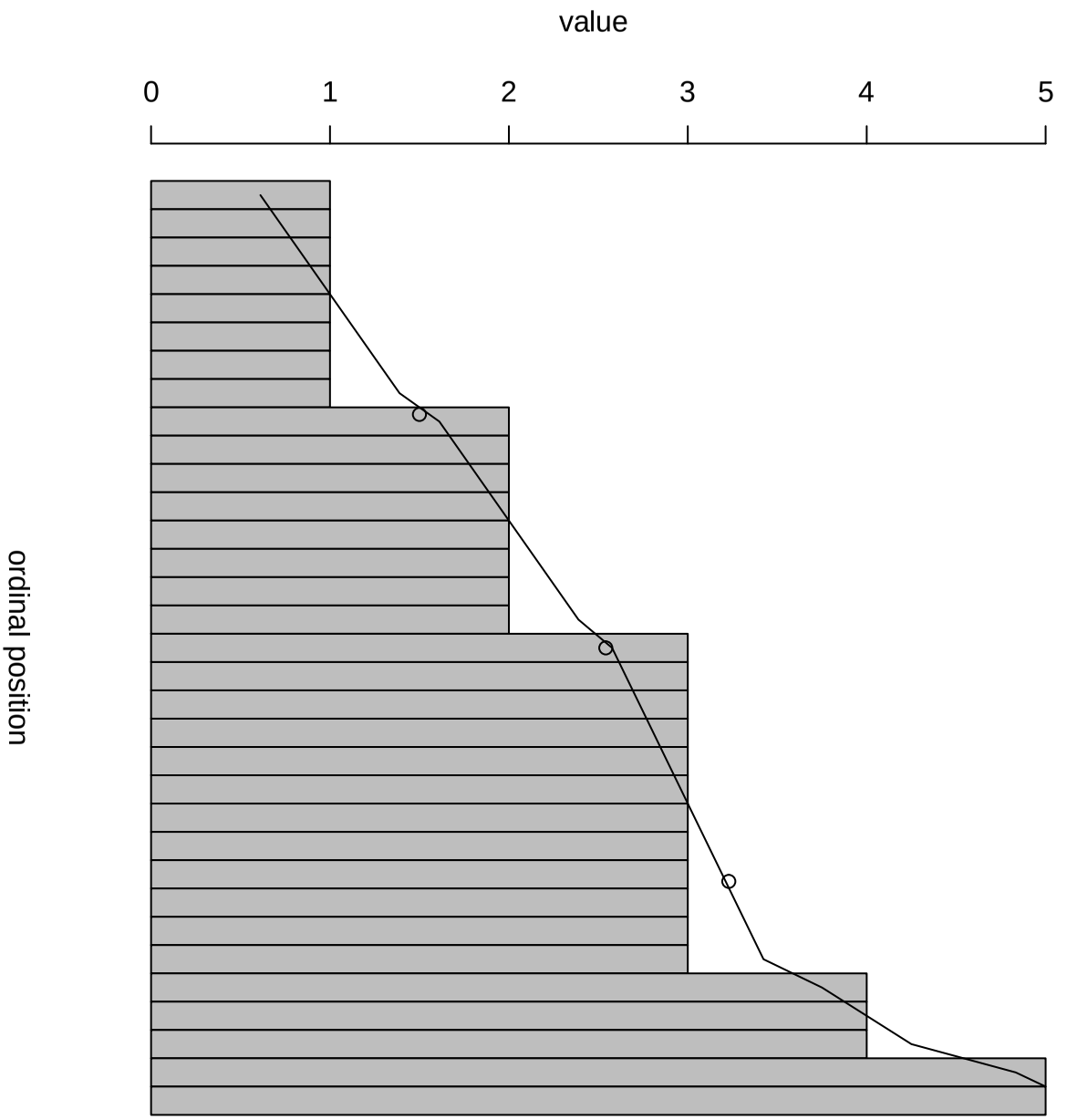


help("iclust.diagram")

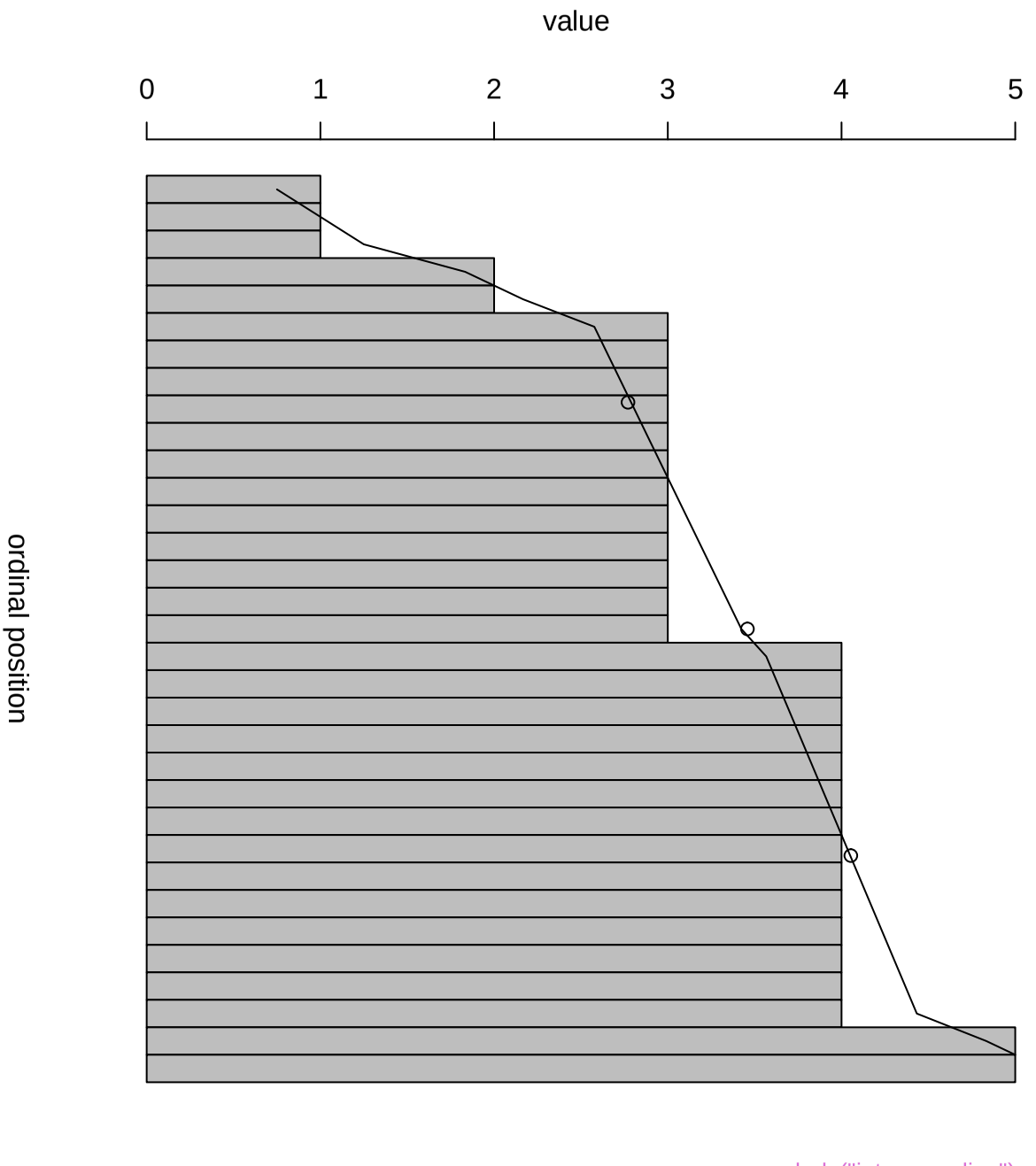
ICLUST diagram



help("iclust.diagram")

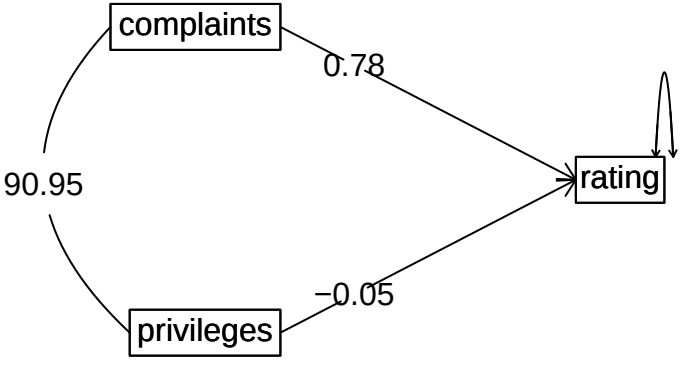


help("interp.median")



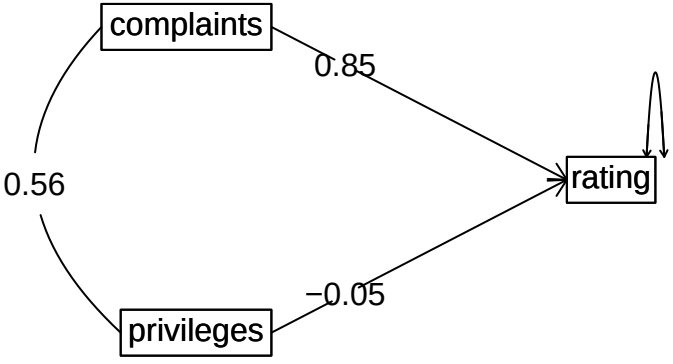
help("interp.median")

Regression Models

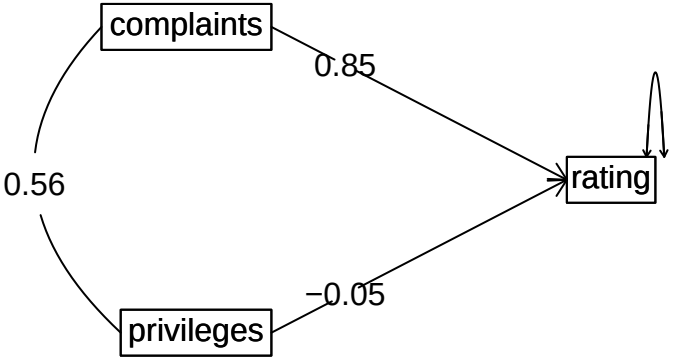


help("lmCor")

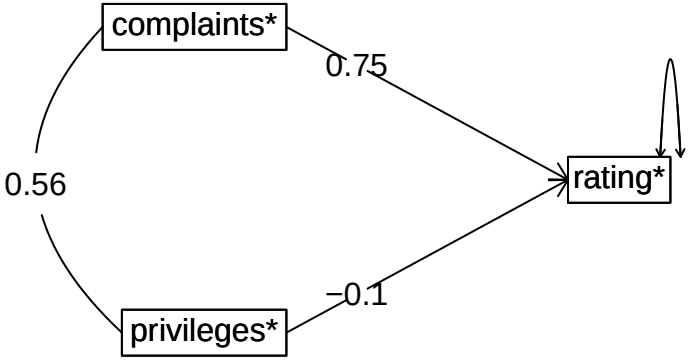
Regression Models



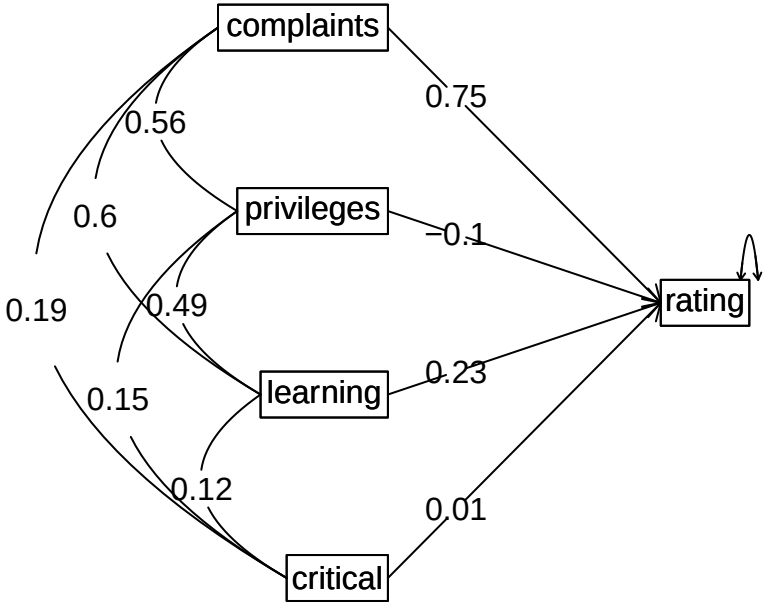
Regression Models



Regression Models

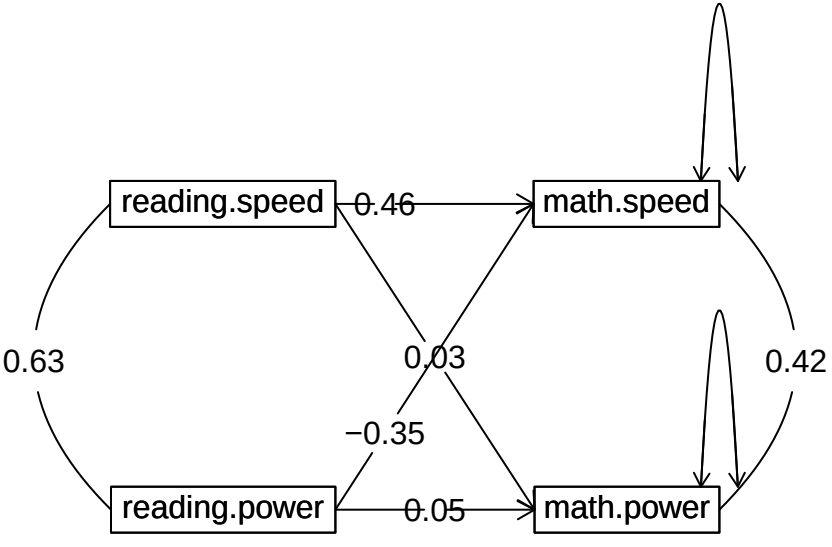


Regression Models



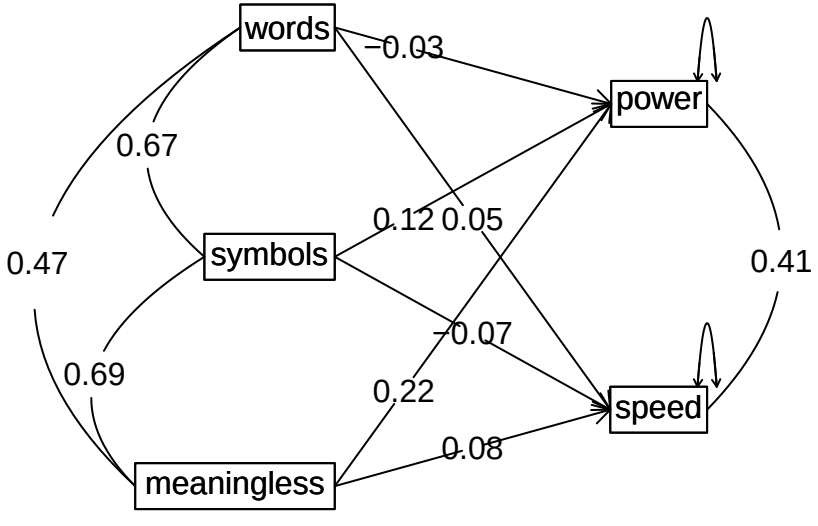
help("lmCor")

Regression Models



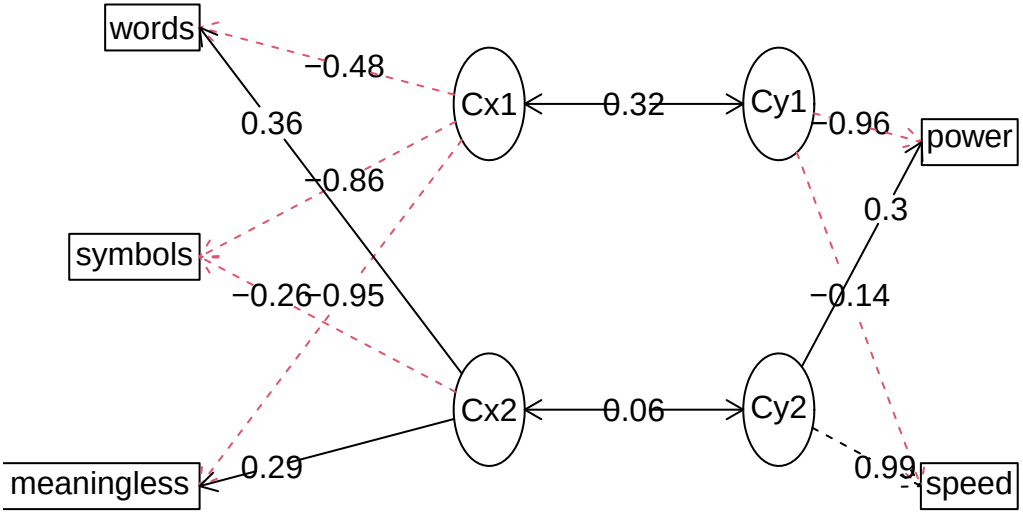
help("lmCor")

Regression Models

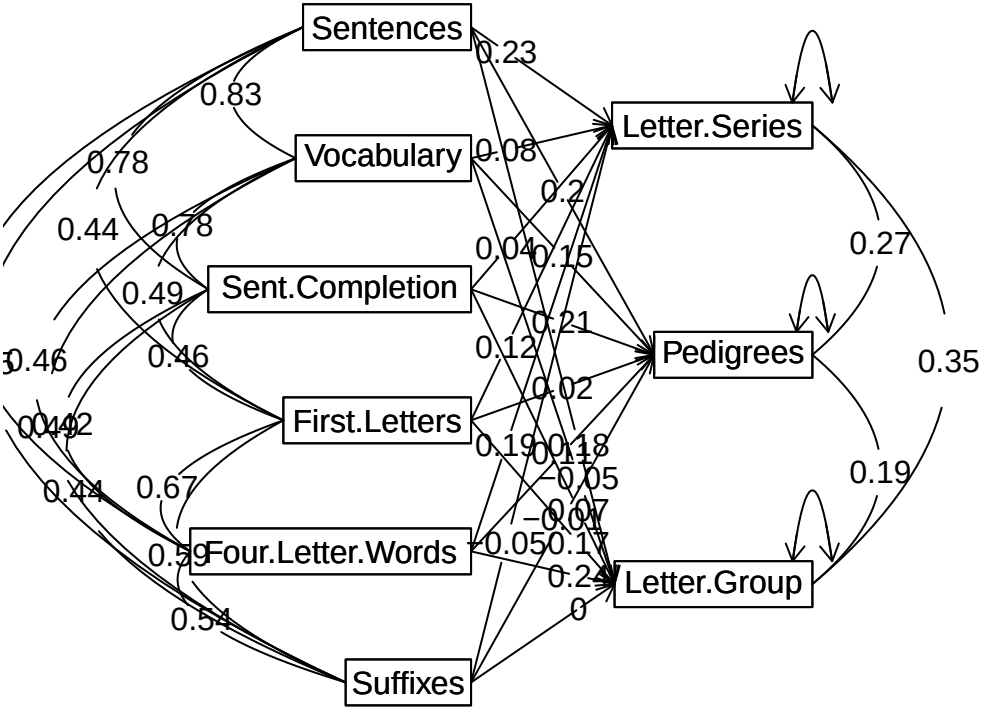


help("lmCor")

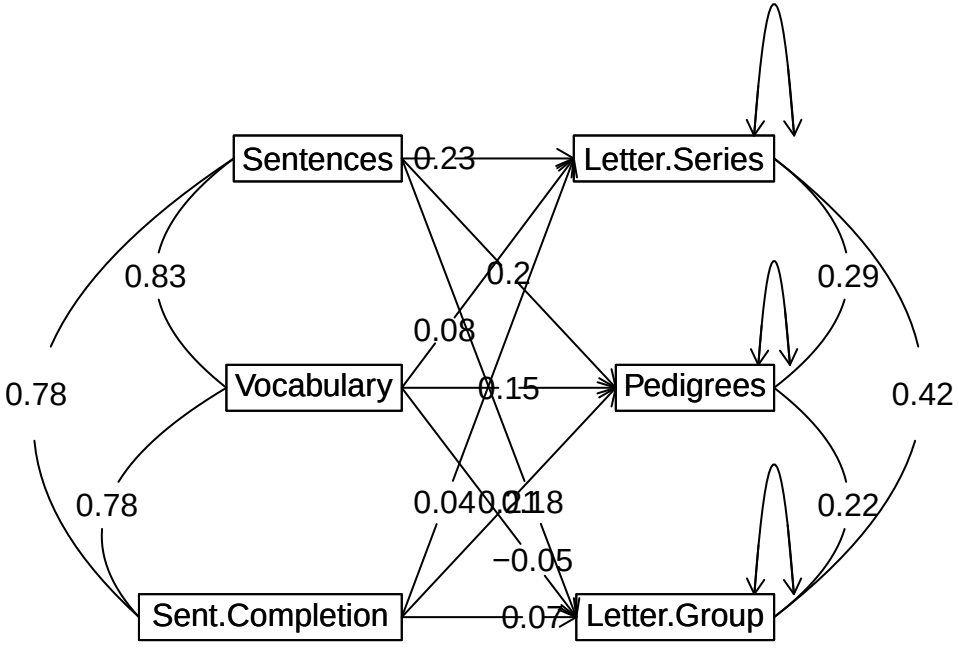
Canonical Correlation



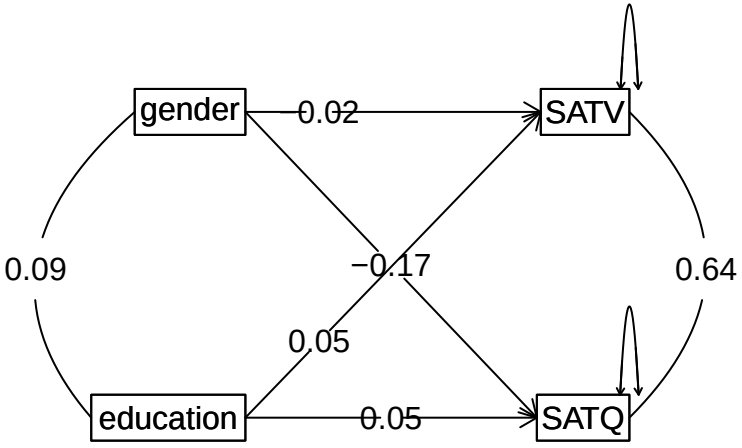
Regression Models



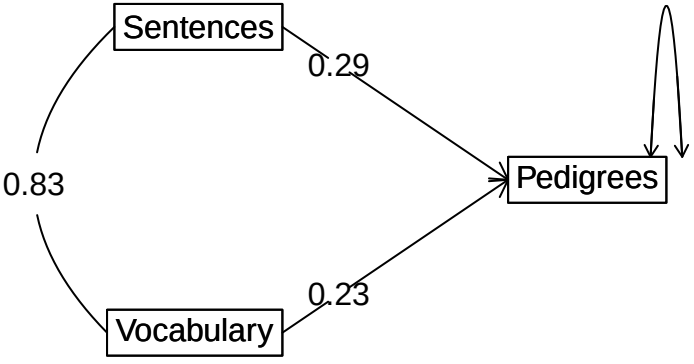
Regression Models



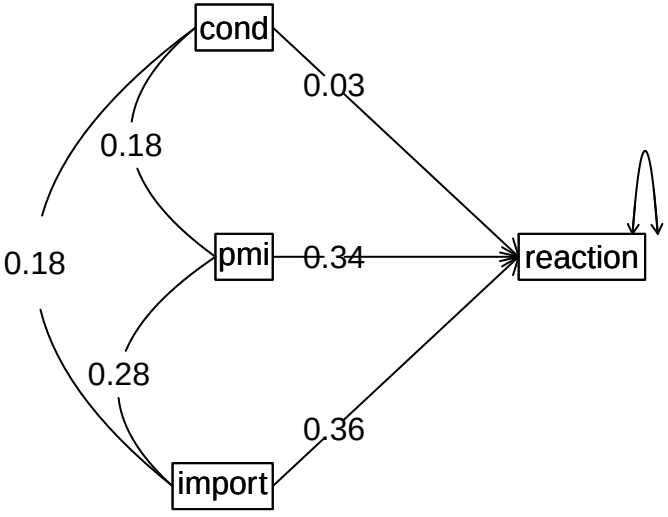
Regression Models



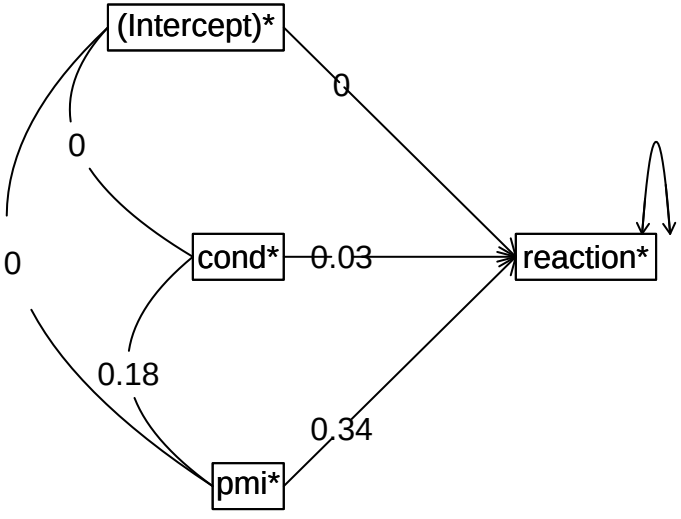
Regression Models



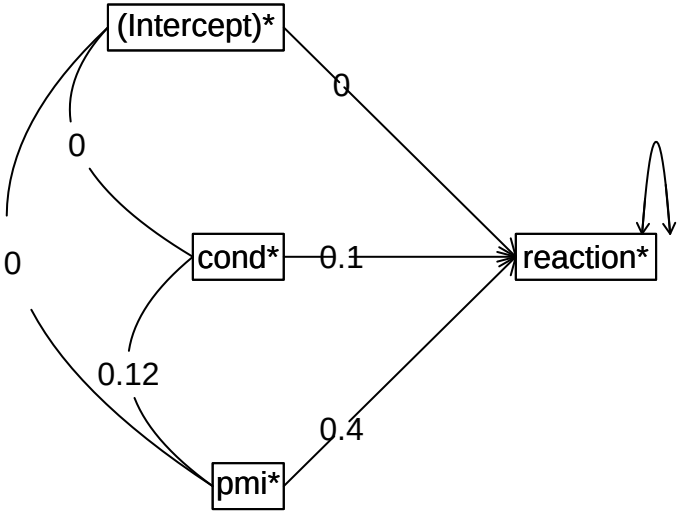
Regression Models



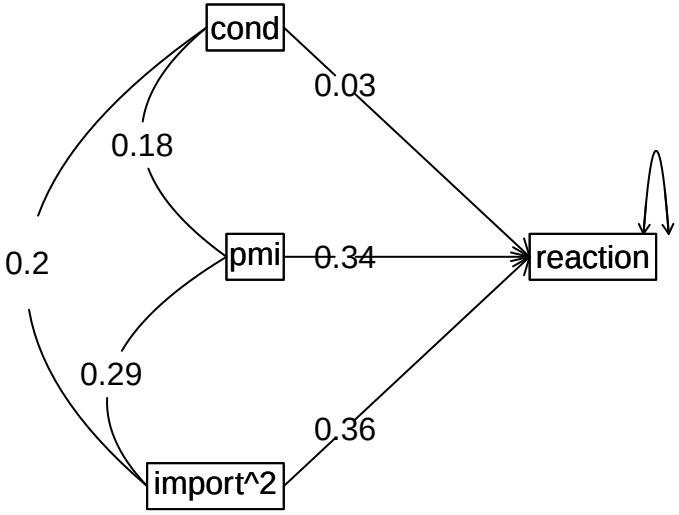
Partial out importance

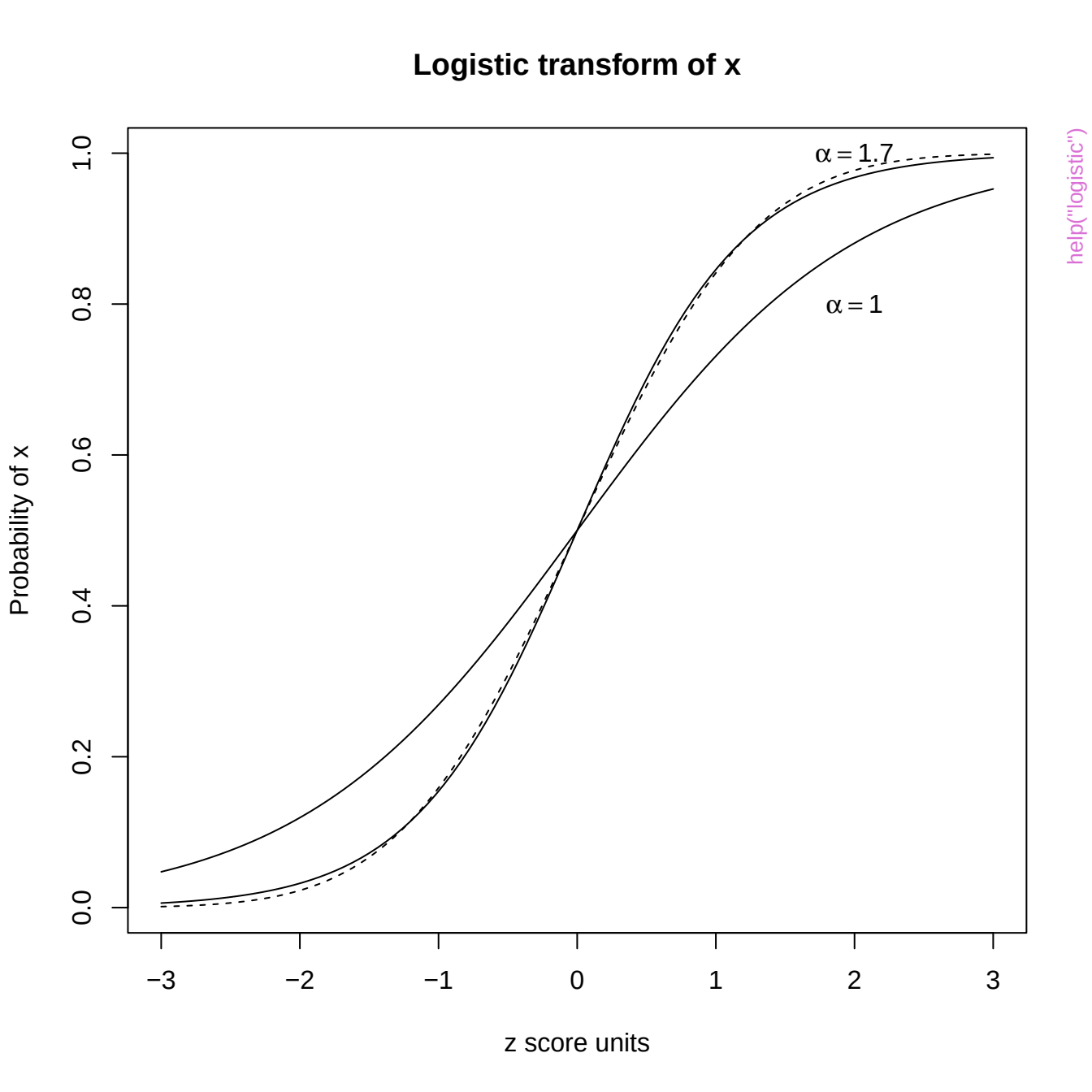


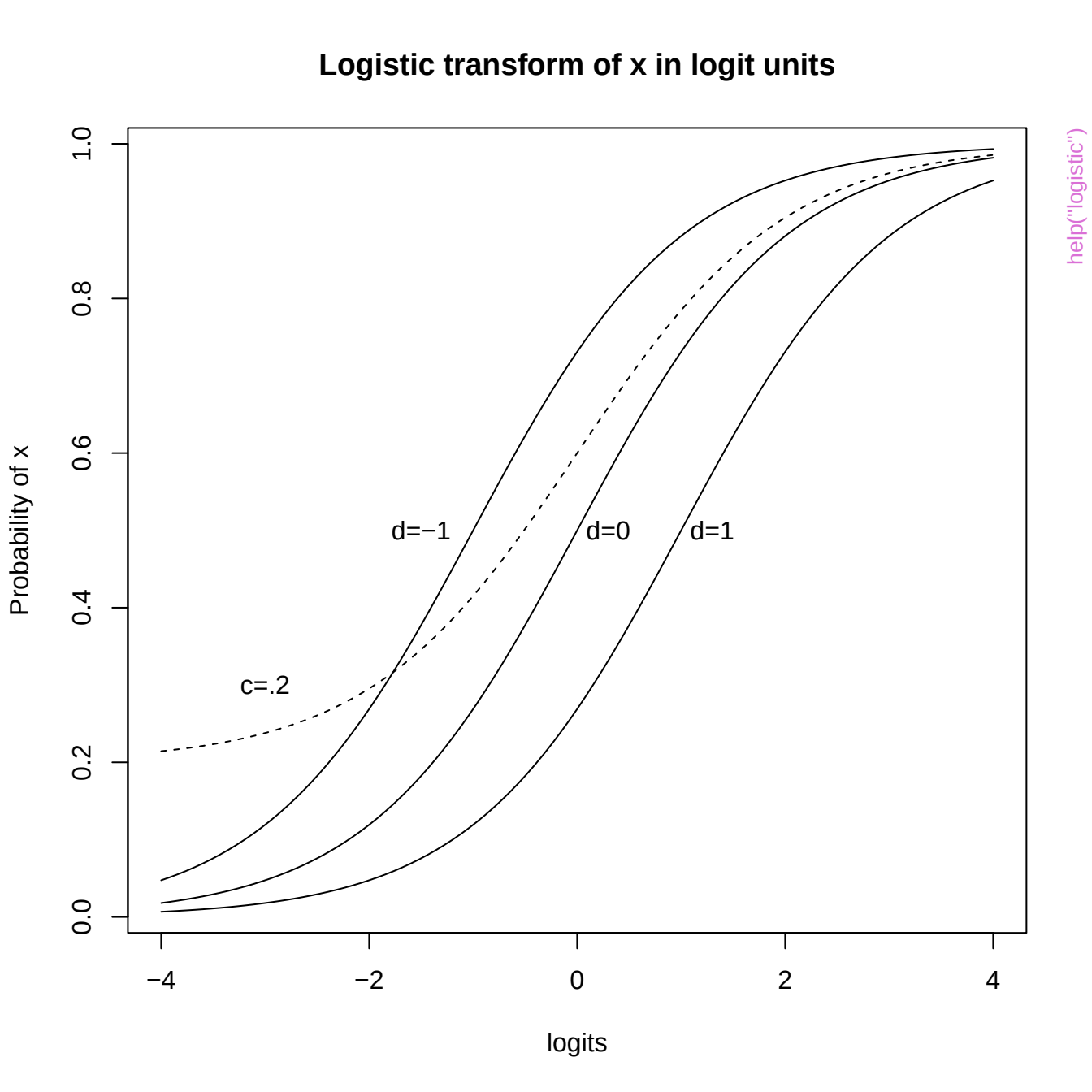
Partial out importance

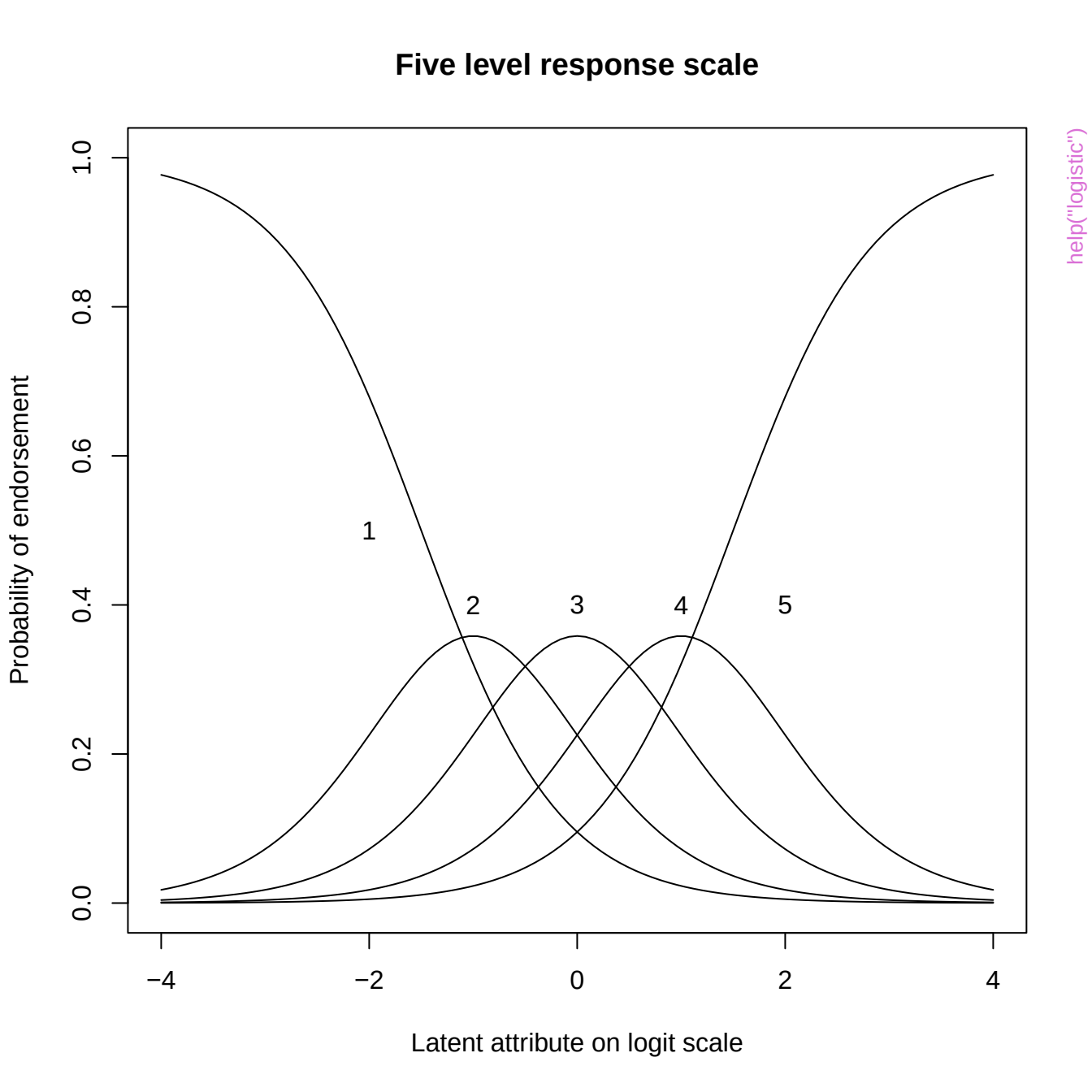


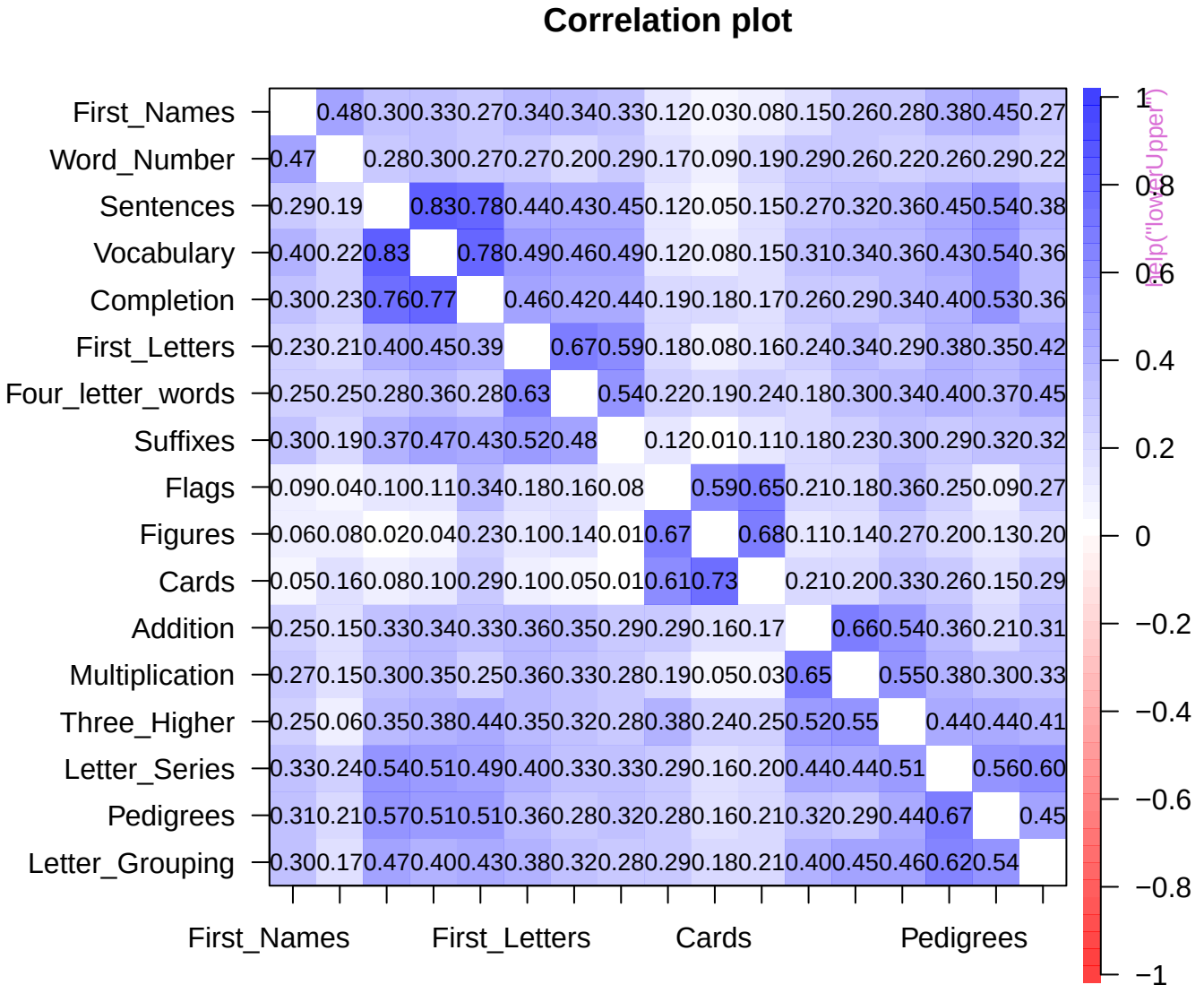
Regression Models

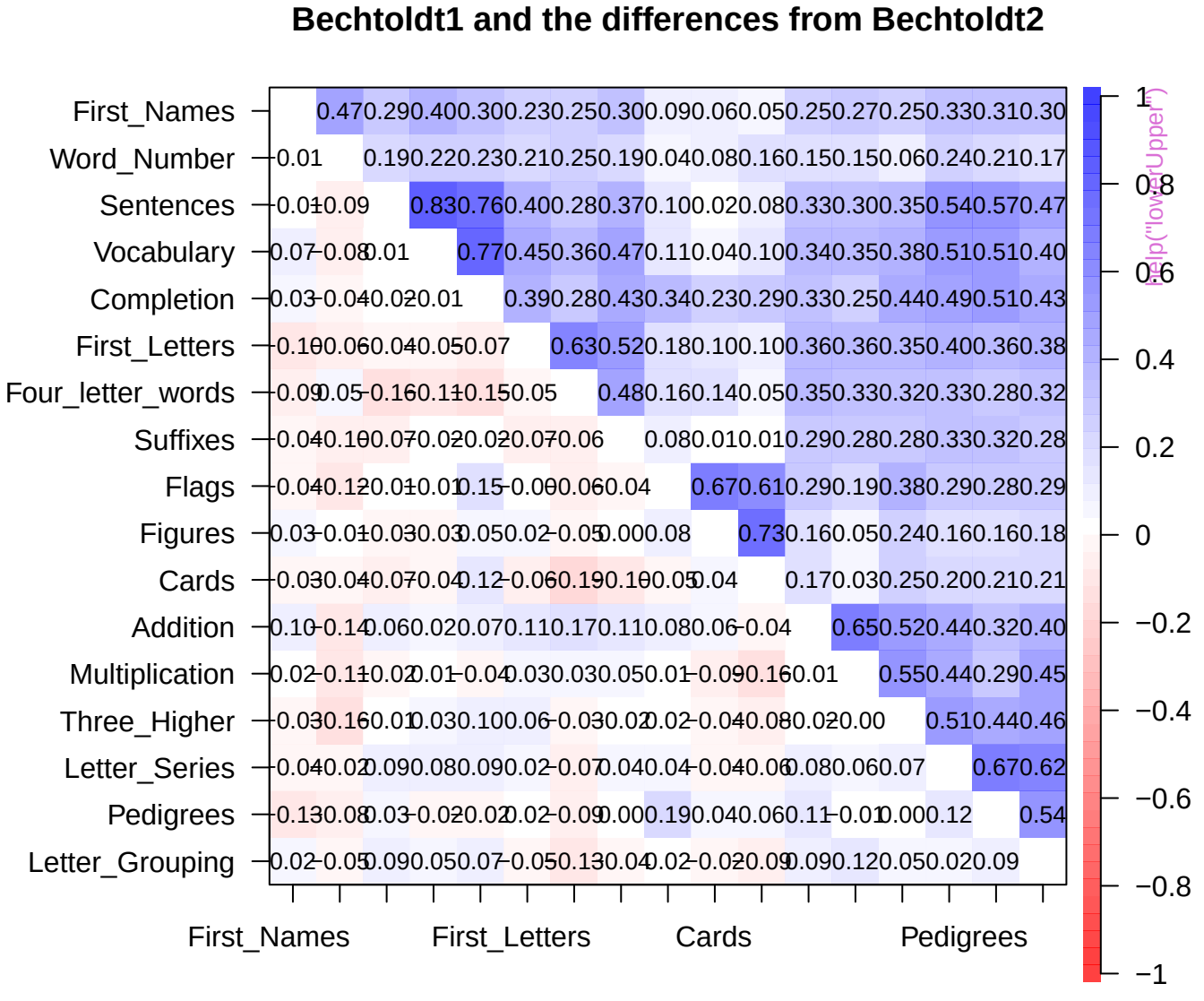


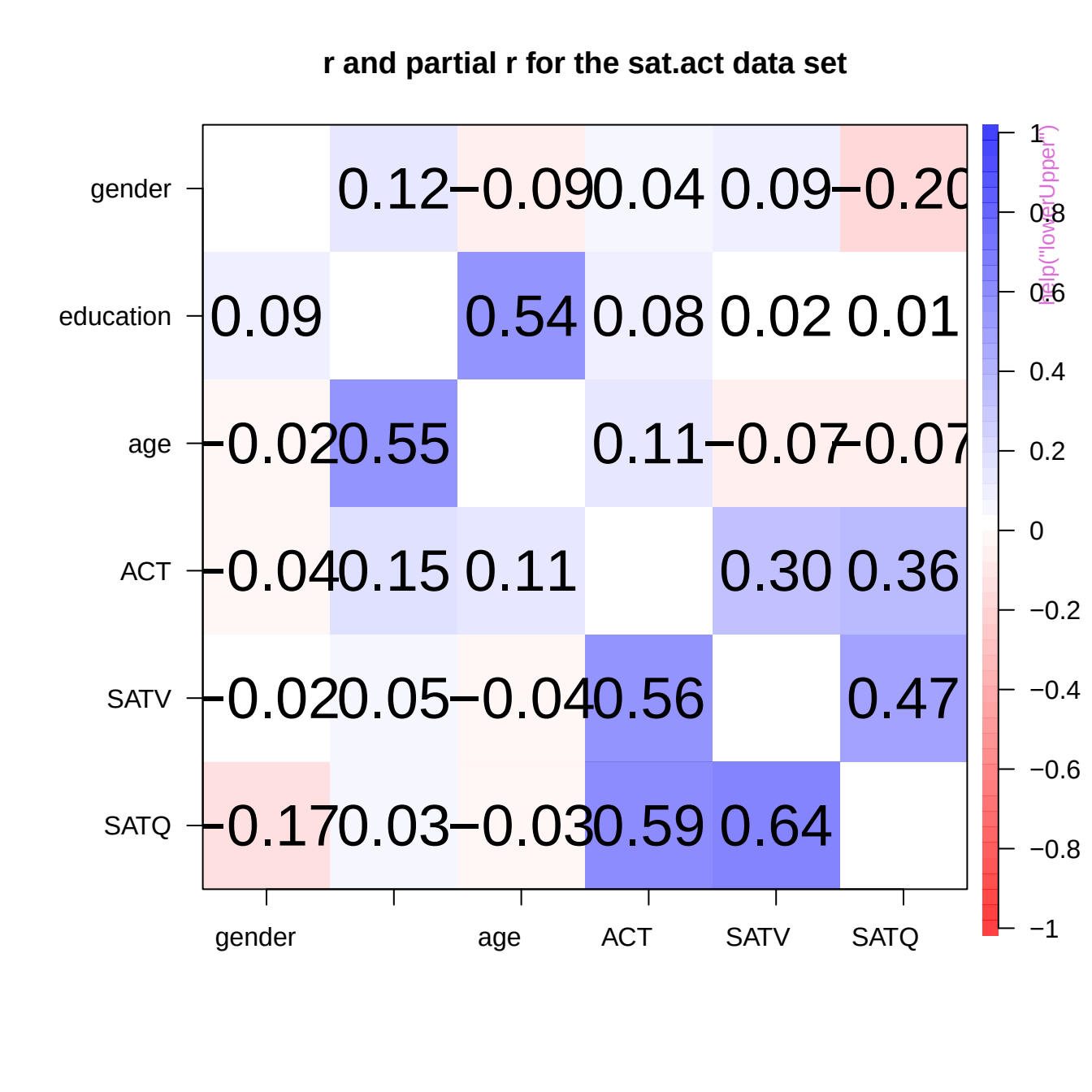

Logistic transform of x
Probability of x
z score units
α = 1.7
α = 1
0.0
0.2
0.4
0.6
0.8
1.0
−3
−2
−1
0
1
2
3
help("logistic")

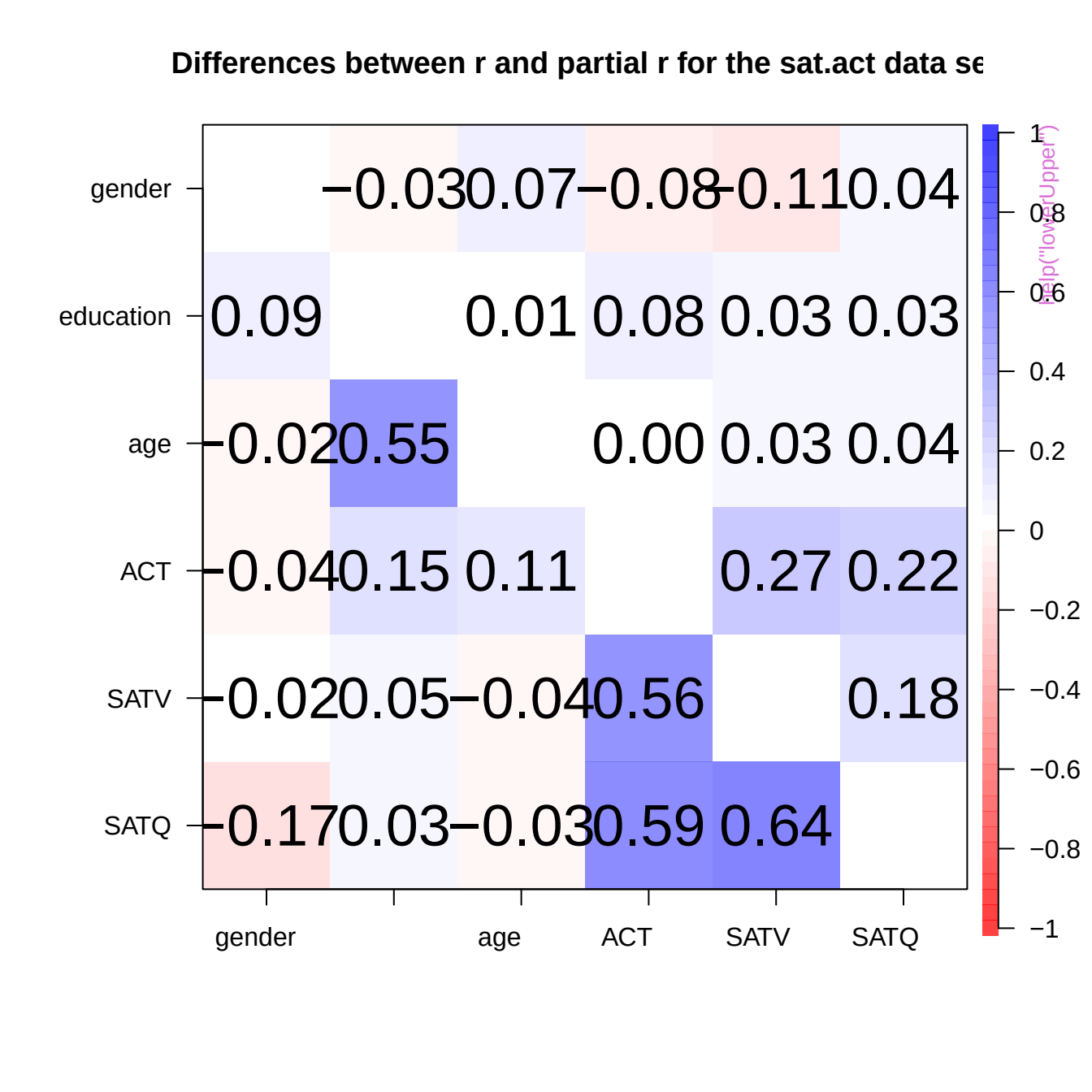

Logistic transform of x in logit units
Probability of x
0.0
0.2
0.4
0.6
0.8
1.0
−4
−2
0
2
4
logits
d=−1
d=0
d=1
c=.2
help("logistic")

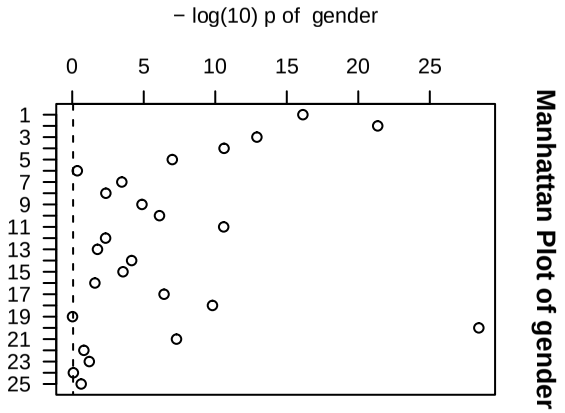

Five level response scale
help("logistic")
Probability of endorsement
1.0
0.8
0.6
0.4
0.2
0.0
1
2
3
4
5
−4
−2
0
2
4
Latent attribute on logit scale

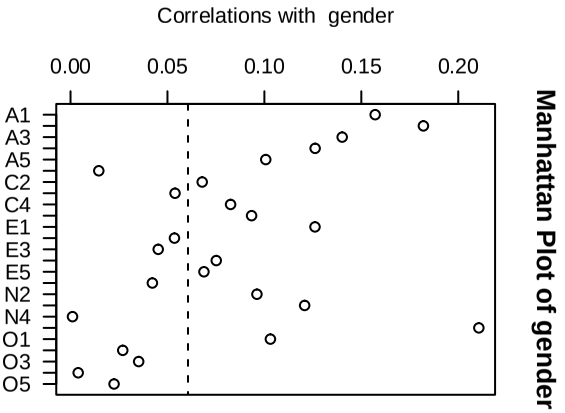

Correlation plot
First_Names
Word_Number
Sentences
Vocabulary
Completion
First_Letters
Four_letter_words
Suffixes
Flags
Figures
Cards
Addition
Multiplication
Three_Higher
Letter_Series
Pedigrees
Letter_Grouping
First_Names
First_Letters
Cards
Pedigrees
help("lowerUpper")
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1

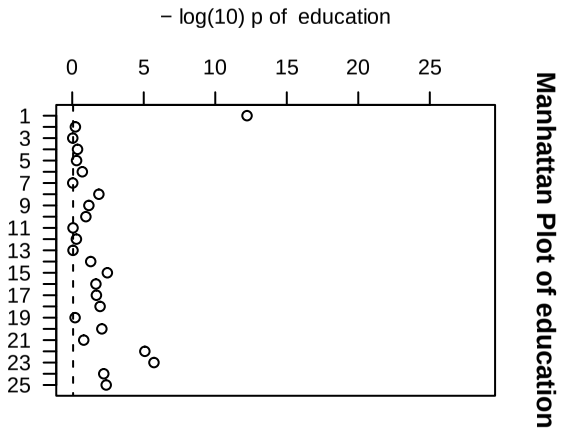

Bechtoldt1 and the differences from Bechtoldt2
First_Names
Word_Number
Sentences
Vocabulary
Completion
First_Letters
Four_letter_words
Suffixes
Flags
Figures
Cards
Addition
Multiplication
Three_Higher
Letter_Series
Pedigrees
Letter_Grouping
First_Names
First_Letters
Cards
Pedigrees
help("lowerUpper")
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1

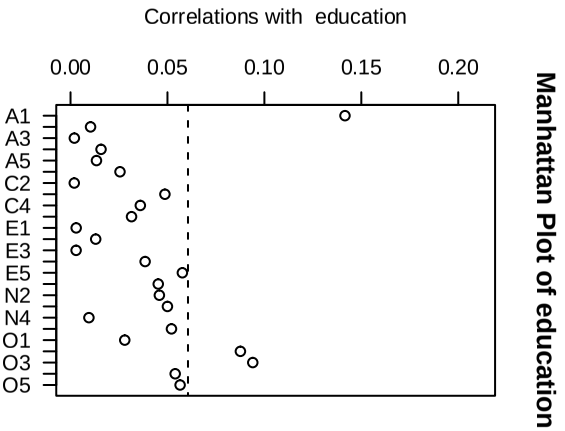

r and partial r for the sat.act data set
gender
education
age
ACT
SATV
SATQ
0.12 −0.09 0.04 0.09 −0.20
0.09 0.54 0.08 0.02 0.01
−0.02 0.55 0.11 −0.07 −0.07
−0.04 0.15 0.11 0.30 0.36
−0.02 0.05 −0.04 0.56 0.47
−0.17 0.03 −0.03 0.59 0.64
gender
age
ACT
SATV
SATQ
lowerUpper
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1

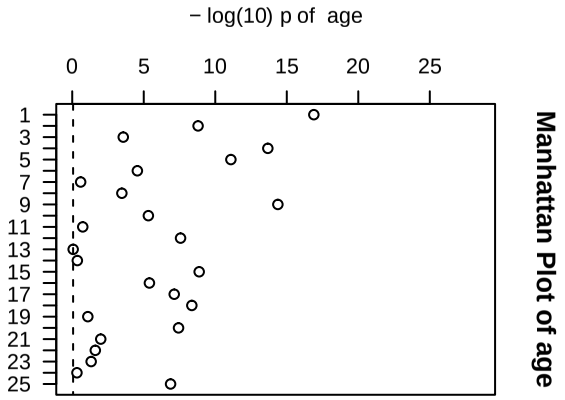

Differences between r and partial r for the sat.act data se
gender
education
age
ACT
SATV
SATQ
−0.03 0.07 −0.08 −0.11 0.04
0.09 0.01 0.08 0.03 0.03
−0.02 0.55 0.00 0.03 0.04
−0.04 0.15 0.11 0.27 0.22
−0.02 0.05 −0.04 0.56 0.18
−0.17 0.03 −0.03 0.59 0.64
gender
age
ACT
SATV
SATQ
help("lowerUpper")
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1

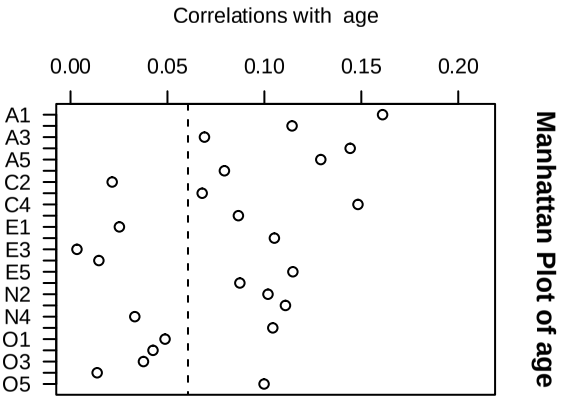




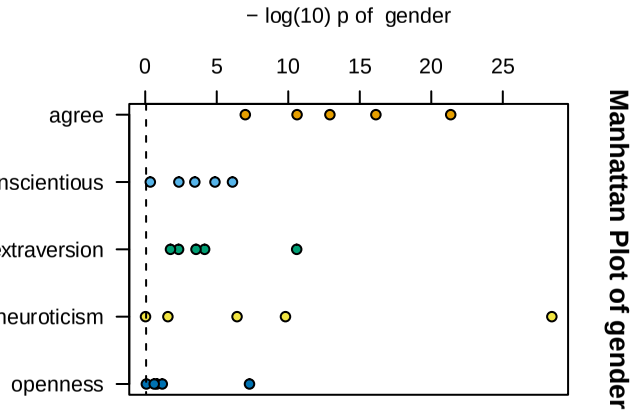


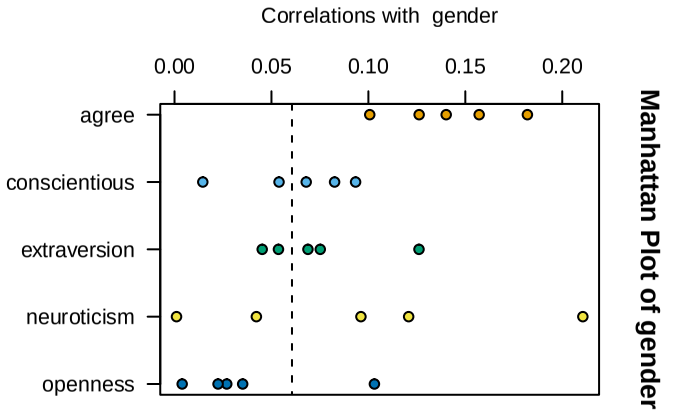


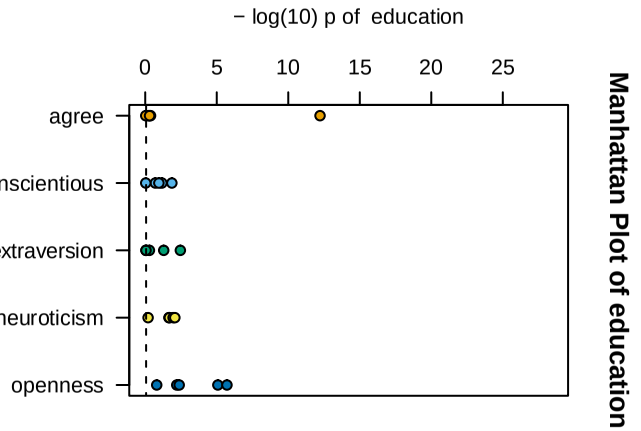


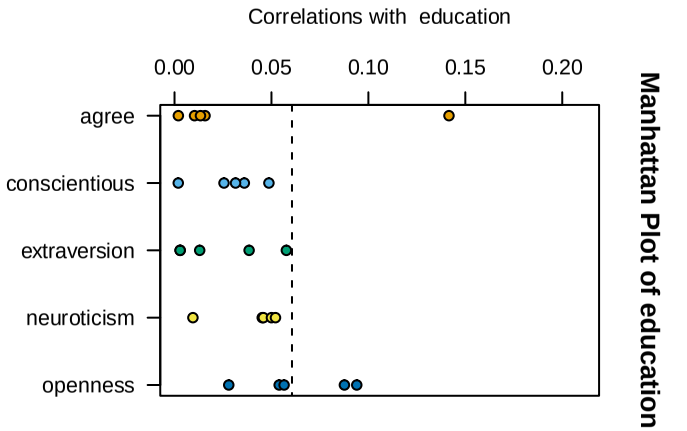


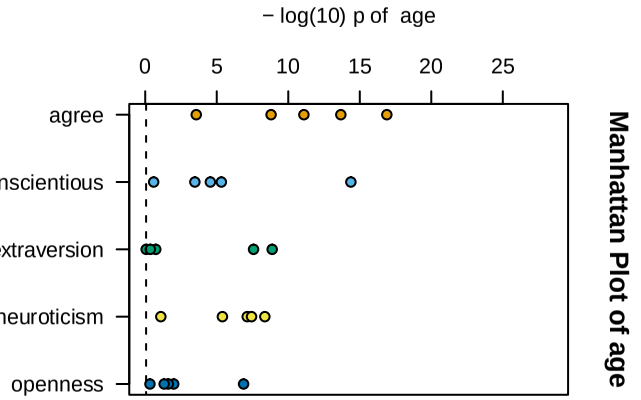
help("manhattan")

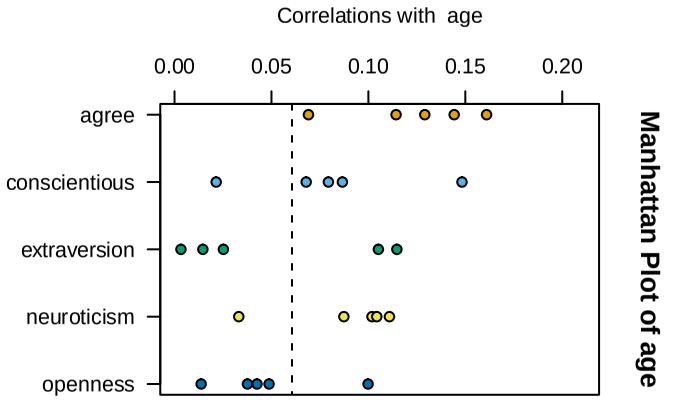




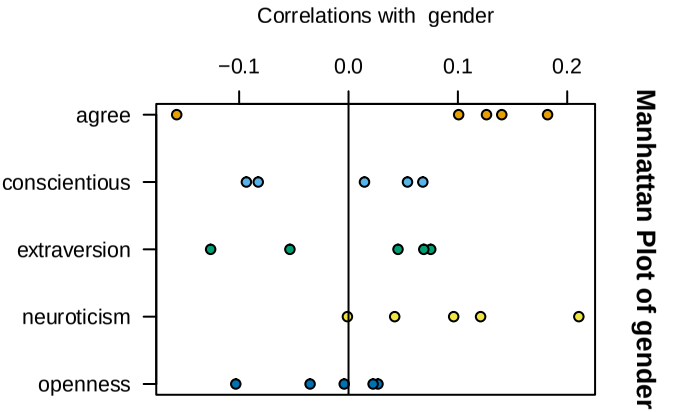


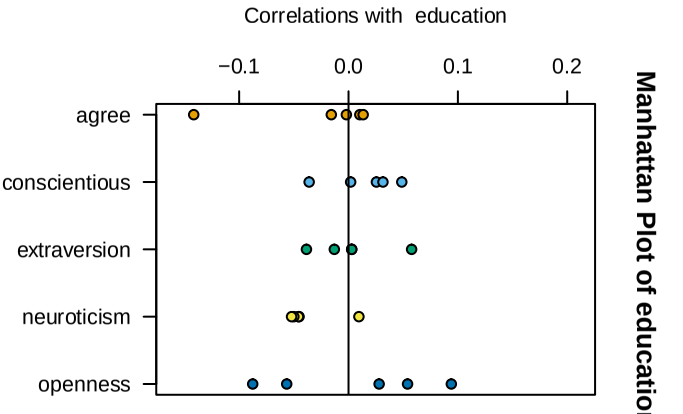


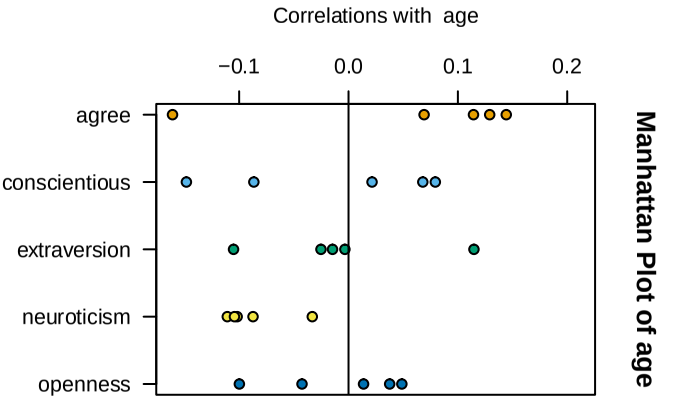




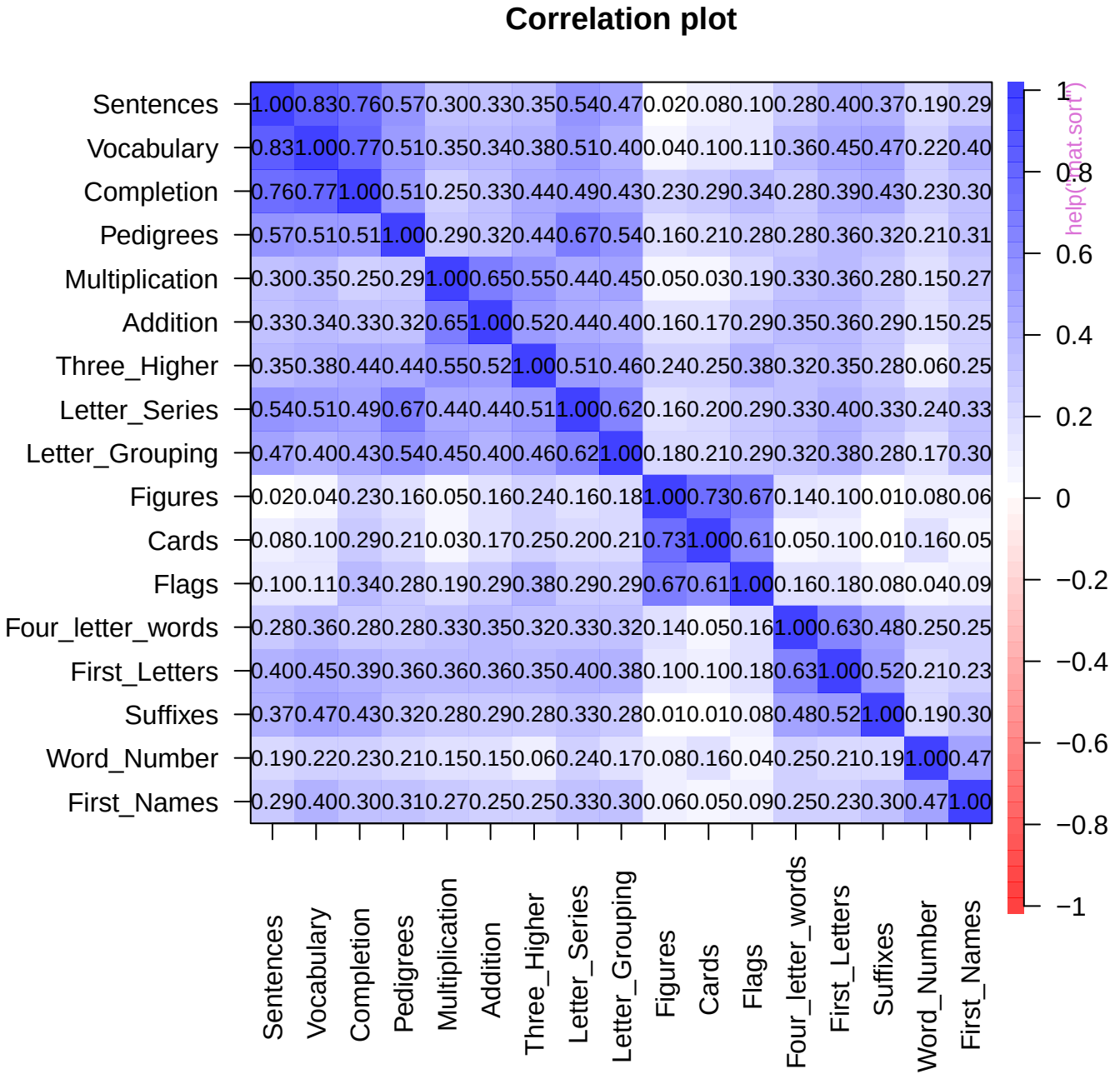
help("manhattan")



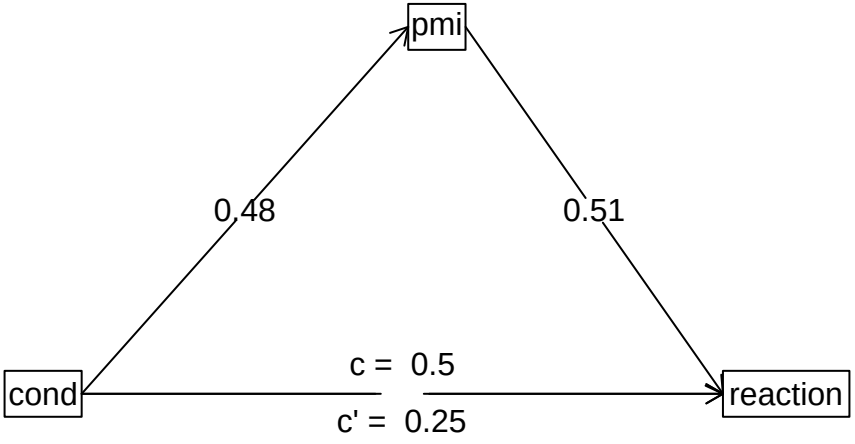




help("manhattan")

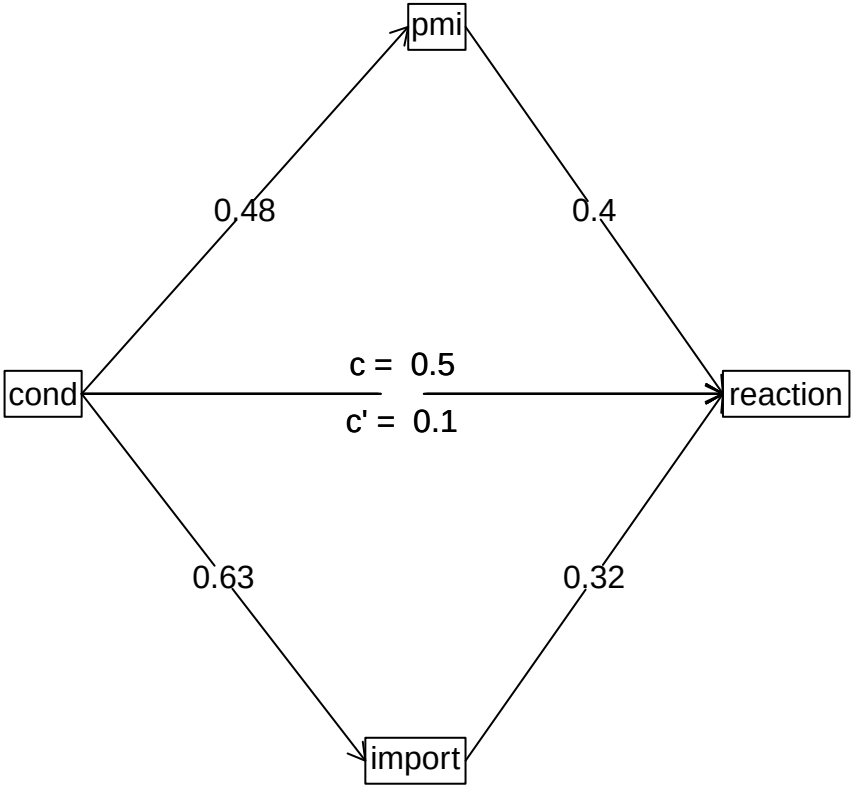

Correlation plot
Sentences 1.00 0.83 0.76 0.57 0.30 0.33 0.35 0.54 0.47 0.02 0.08 0.10 0.28 0.40 0.37 0.19 0.29
Vocabulary 0.83 1.00 0.77 0.51 0.35 0.34 0.38 0.51 0.40 0.04 0.10 0.11 0.36 0.45 0.47 0.22 0.40
Completion 0.76 0.77 1.00 0.51 0.25 0.33 0.44 0.49 0.43 0.23 0.29 0.34 0.28 0.39 0.43 0.23 0.30
Pedigrees 0.57 0.51 0.51 1.00 0.29 0.32 0.44 0.67 0.54 0.16 0.21 0.28 0.28 0.36 0.32 0.21 0.31
Multiplication 0.30 0.35 0.25 0.29 1.00 0.65 0.55 0.44 0.45 0.05 0.03 0.19 0.33 0.36 0.28 0.15 0.27
Addition 0.33 0.34 0.33 0.32 0.65 1.00 0.52 0.44 0.40 0.16 0.17 0.29 0.35 0.36 0.29 0.15 0.25
Three_Higher 0.35 0.38 0.44 0.44 0.55 0.52 1.00 0.51 0.46 0.24 0.25 0.38 0.32 0.35 0.28 0.06 0.25
Letter_Series 0.54 0.51 0.49 0.67 0.44 0.44 0.51 1.00 0.62 0.16 0.20 0.29 0.33 0.40 0.33 0.24 0.33
Letter_Grouping 0.47 0.40 0.43 0.54 0.45 0.40 0.46 0.62 1.00 0.18 0.21 0.29 0.32 0.38 0.28 0.17 0.30
Figures 0.02 0.04 0.23 0.16 0.05 0.16 0.24 0.16 0.18 1.00 0.73 0.67 0.14 0.10 0.01 0.08 0.06
Cards 0.08 0.10 0.29 0.21 0.03 0.17 0.25 0.20 0.21 0.73 1.00 0.61 0.05 0.10 0.01 0.16 0.05
Flags 0.10 0.11 0.34 0.28 0.19 0.29 0.38 0.29 0.29 0.67 0.61 1.00 0.16 0.18 0.08 0.04 0.09
Four_letter_words 0.28 0.36 0.28 0.28 0.33 0.35 0.32 0.33 0.32 0.14 0.05 0.16 1.00 0.63 0.48 0.25 0.25
First_Letters 0.40 0.45 0.39 0.36 0.36 0.36 0.35 0.40 0.38 0.10 0.10 0.18 0.63 1.00 0.52 0.21 0.23
Suffixes 0.37 0.47 0.43 0.32 0.28 0.29 0.28 0.33 0.28 0.01 0.01 0.08 0.48 0.52 1.00 0.19 0.30
Word_Number 0.19 0.22 0.23 0.21 0.15 0.15 0.06 0.24 0.17 0.08 0.16 0.04 0.25 0.21 0.19 1.00 0.47
First_Names 0.29 0.40 0.30 0.31 0.27 0.25 0.25 0.33 0.30 0.06 0.05 0.09 0.25 0.23 0.30 0.47 1.00
Sentences
Vocabulary
Completion
Pedigrees
Multiplication
Addition
Three_Higher
Letter_Series
Letter_Grouping
Figures
Cards
Flags
Four_letter_words
First_Letters
Suffixes
Word_Number
First_Names
help("pat.sort")
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1

Mediation



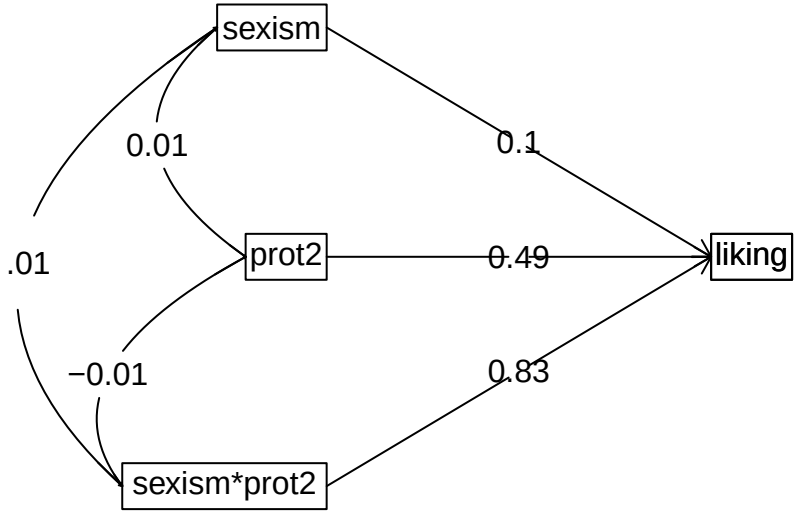
help("mediate")

Mediation



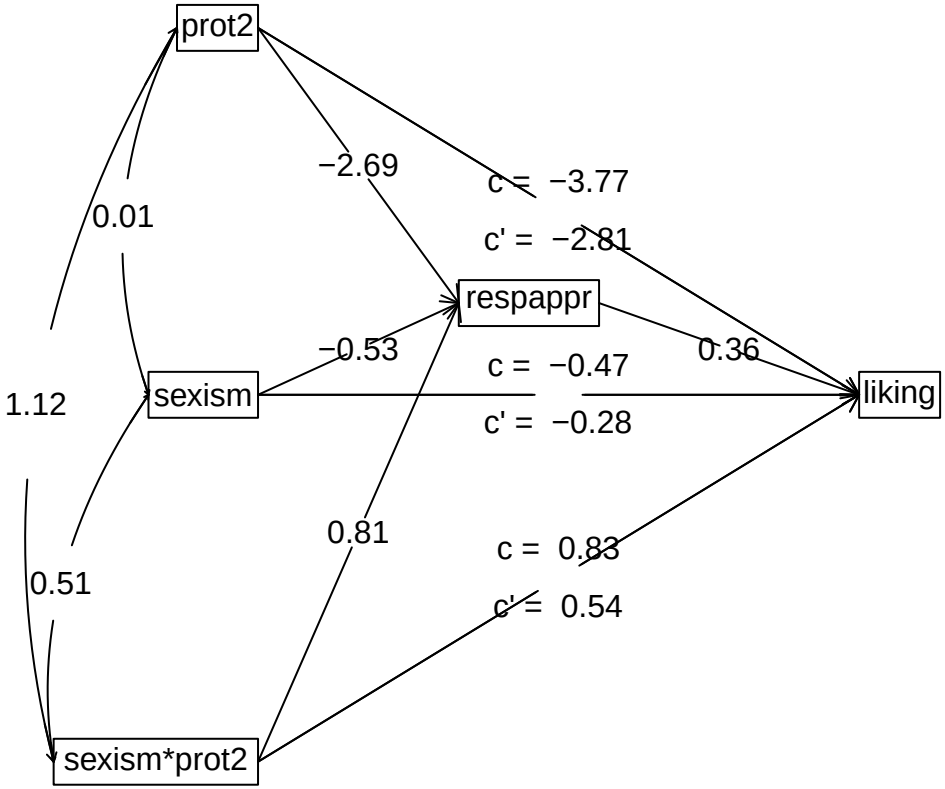
help("mediate")

Moderation model

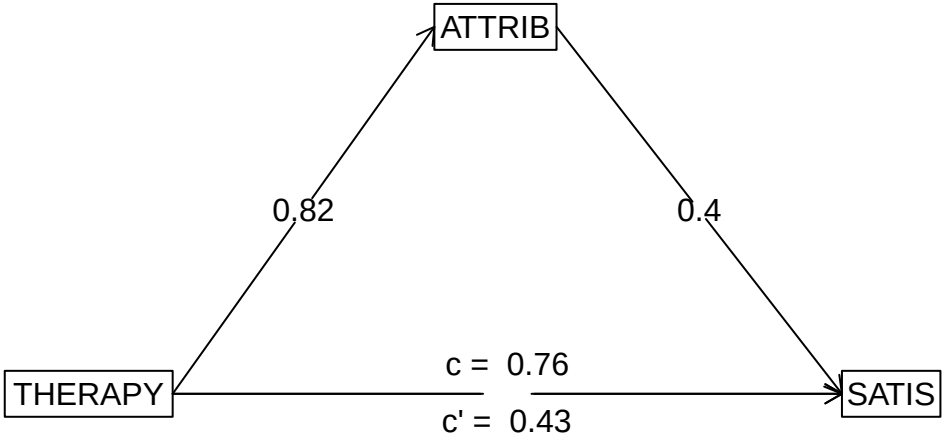


help("mediate")

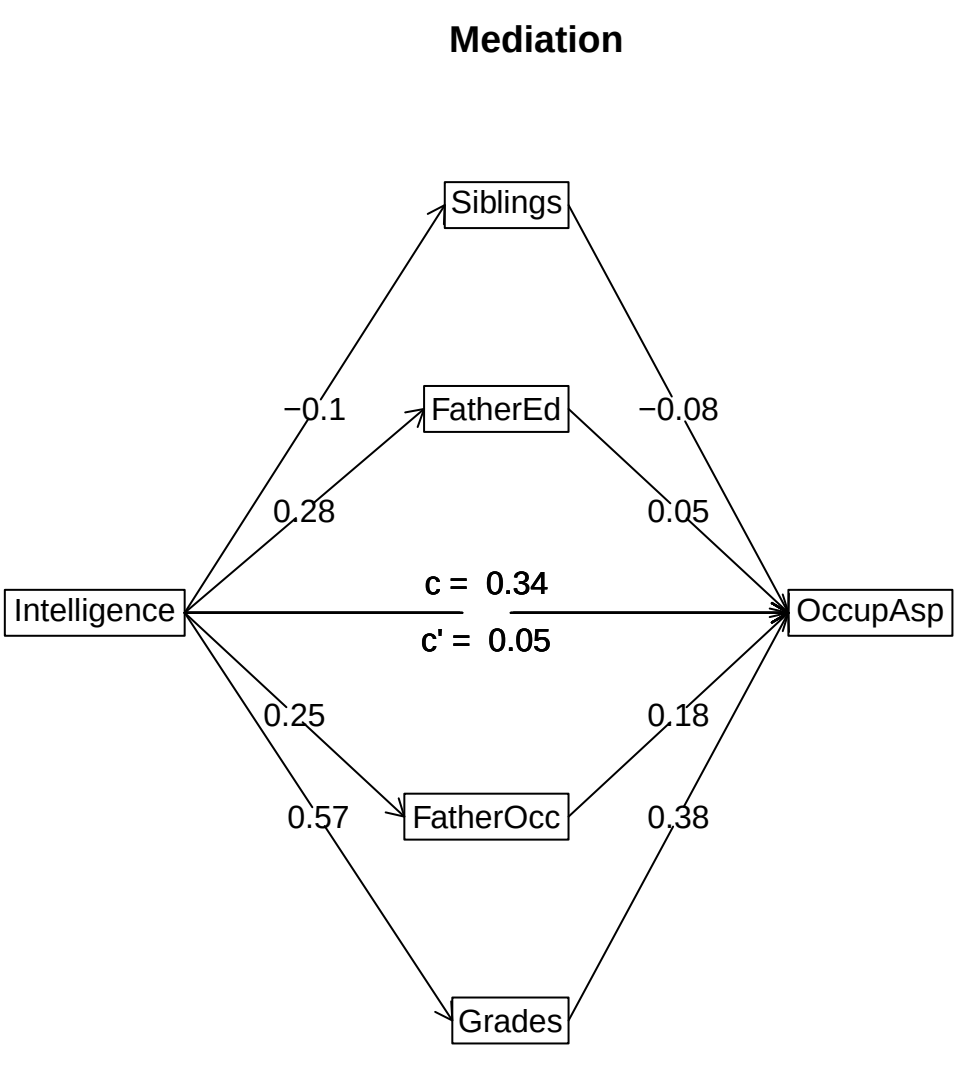
Mediation



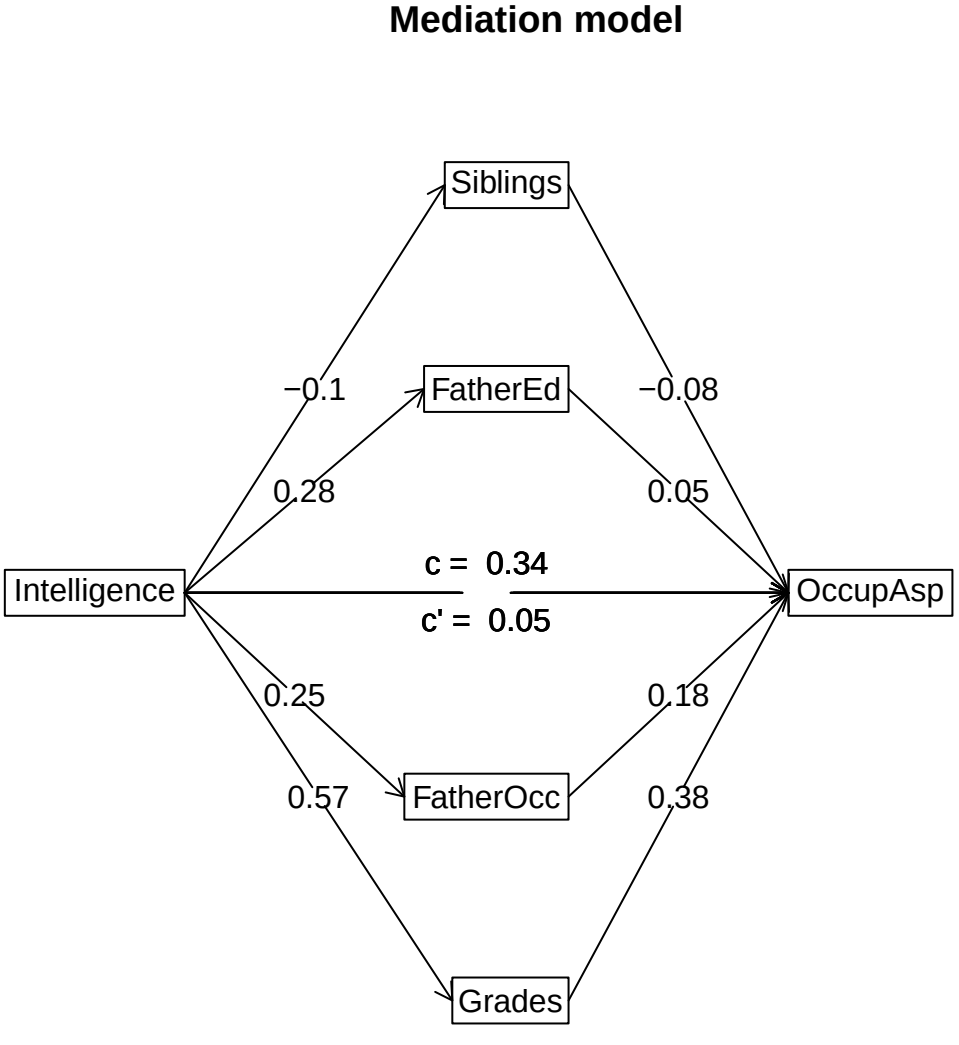
Mediation



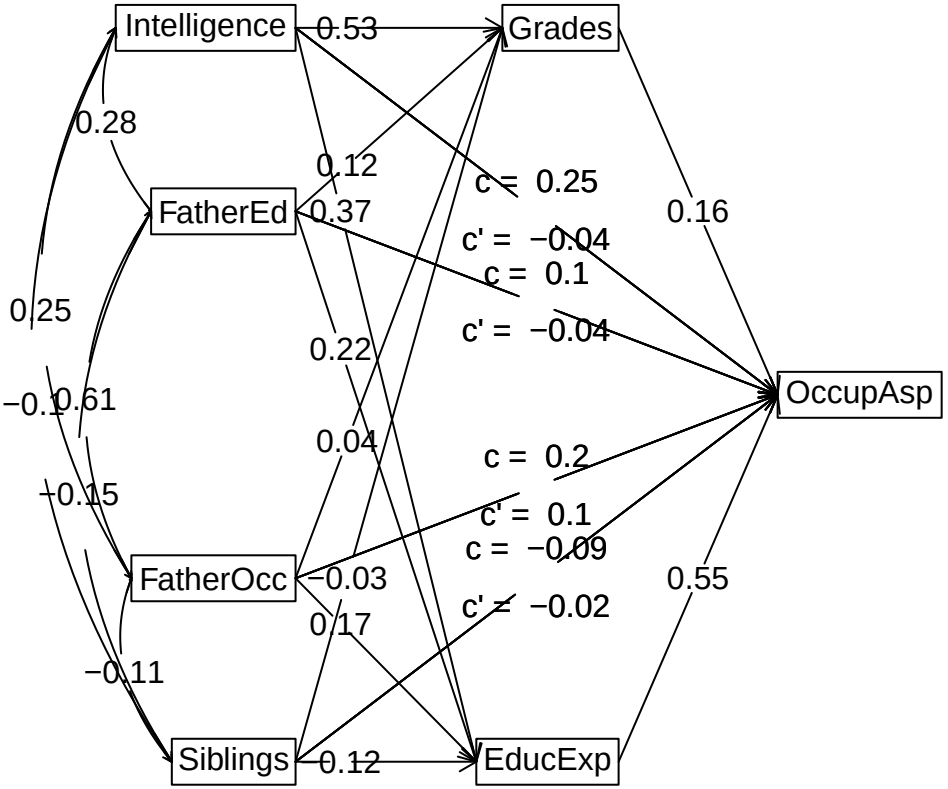
help("mediate")



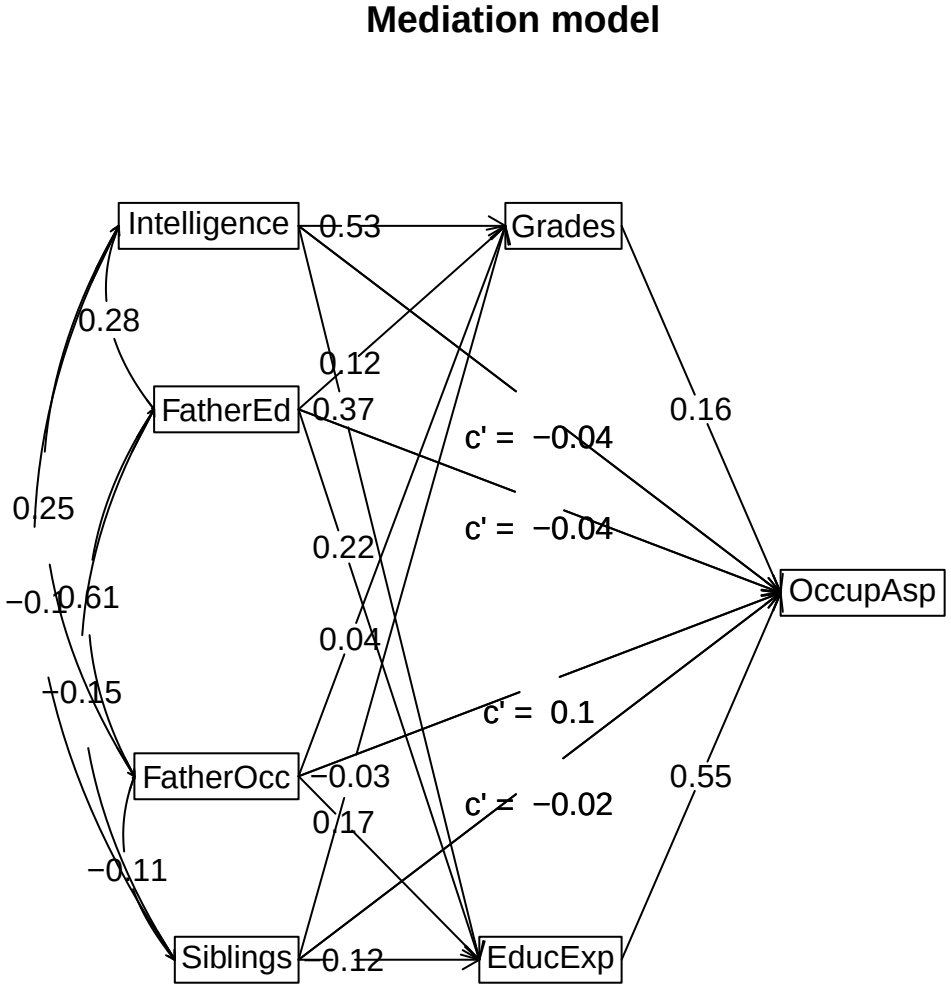
help("mediate")

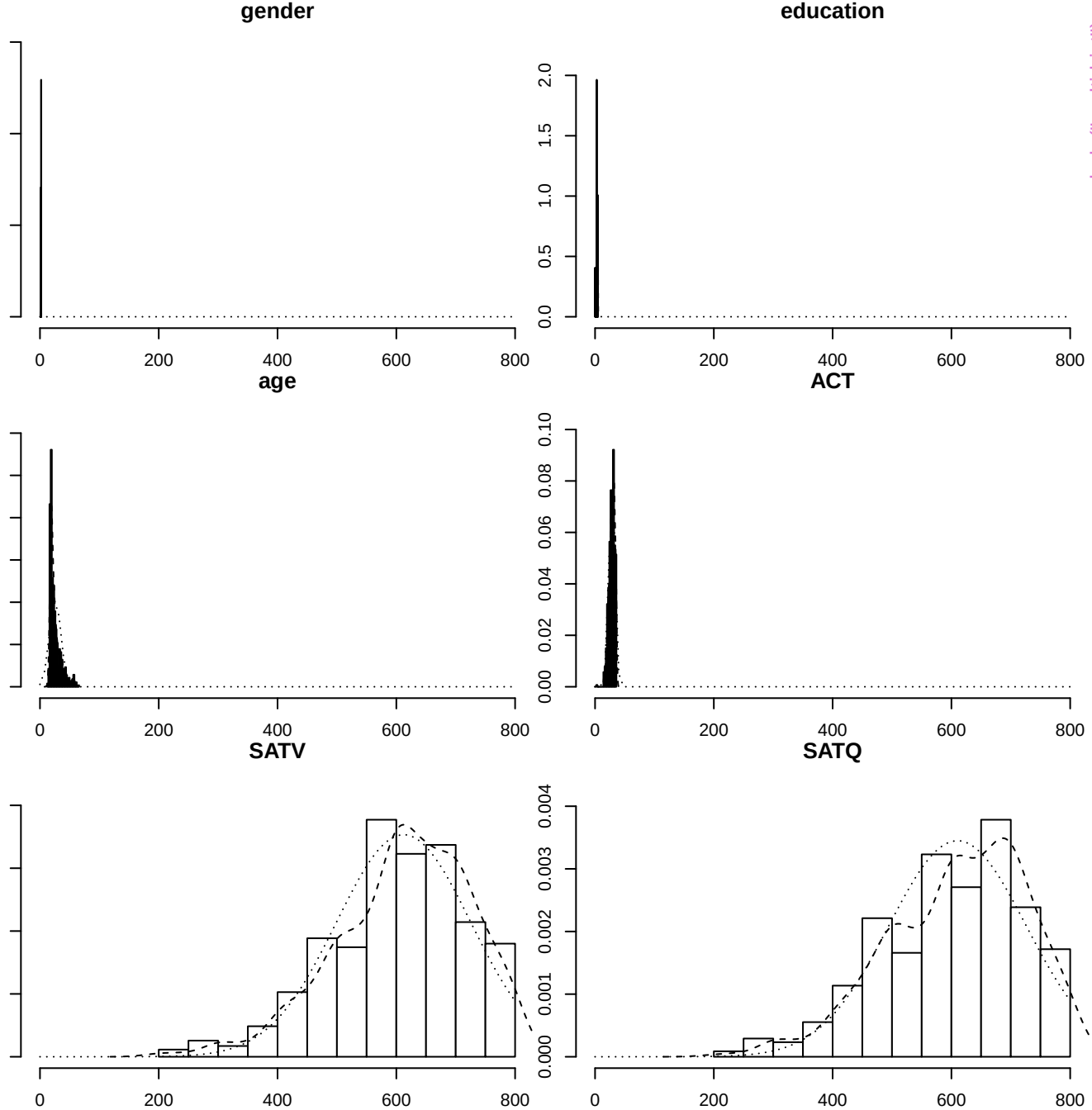


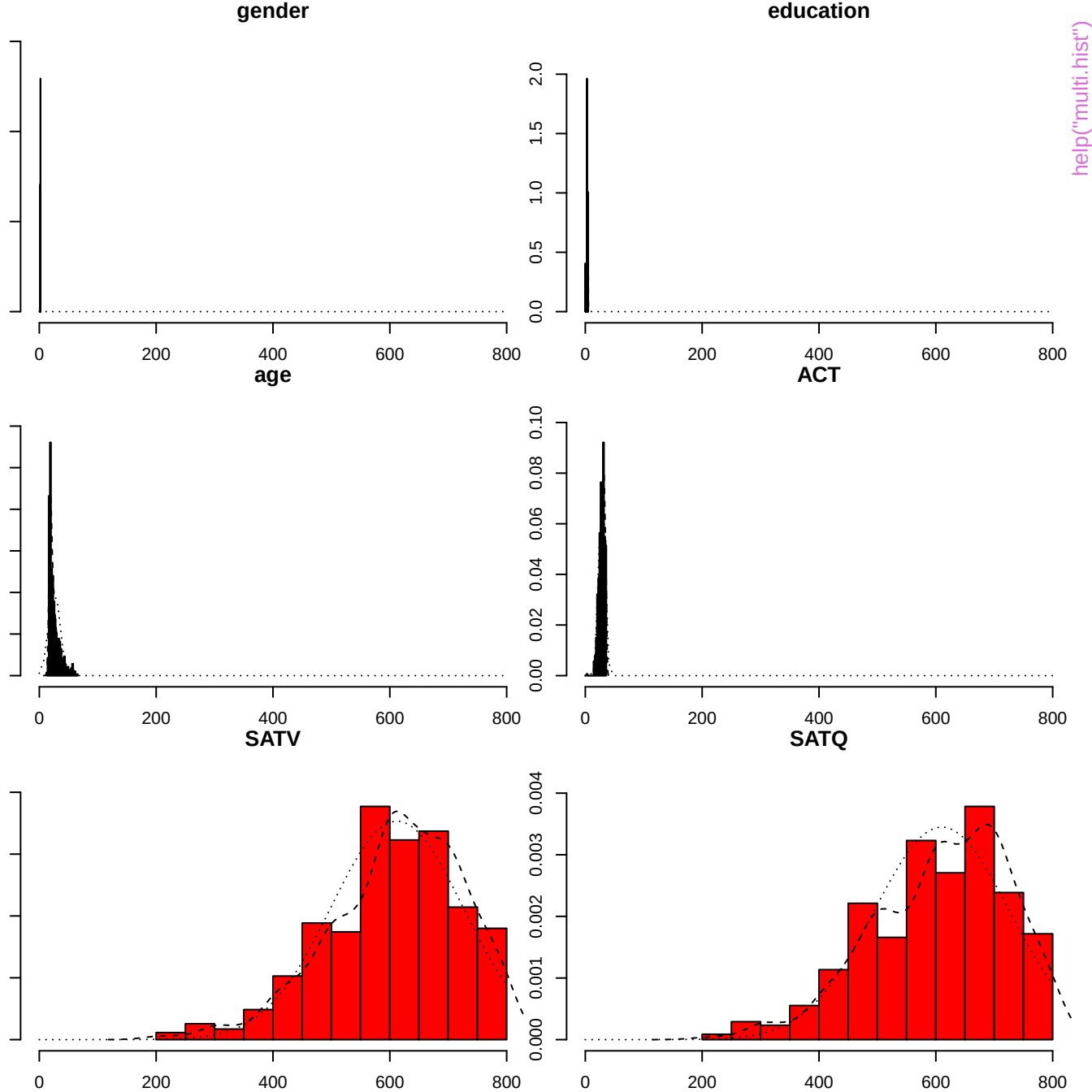
Mediation

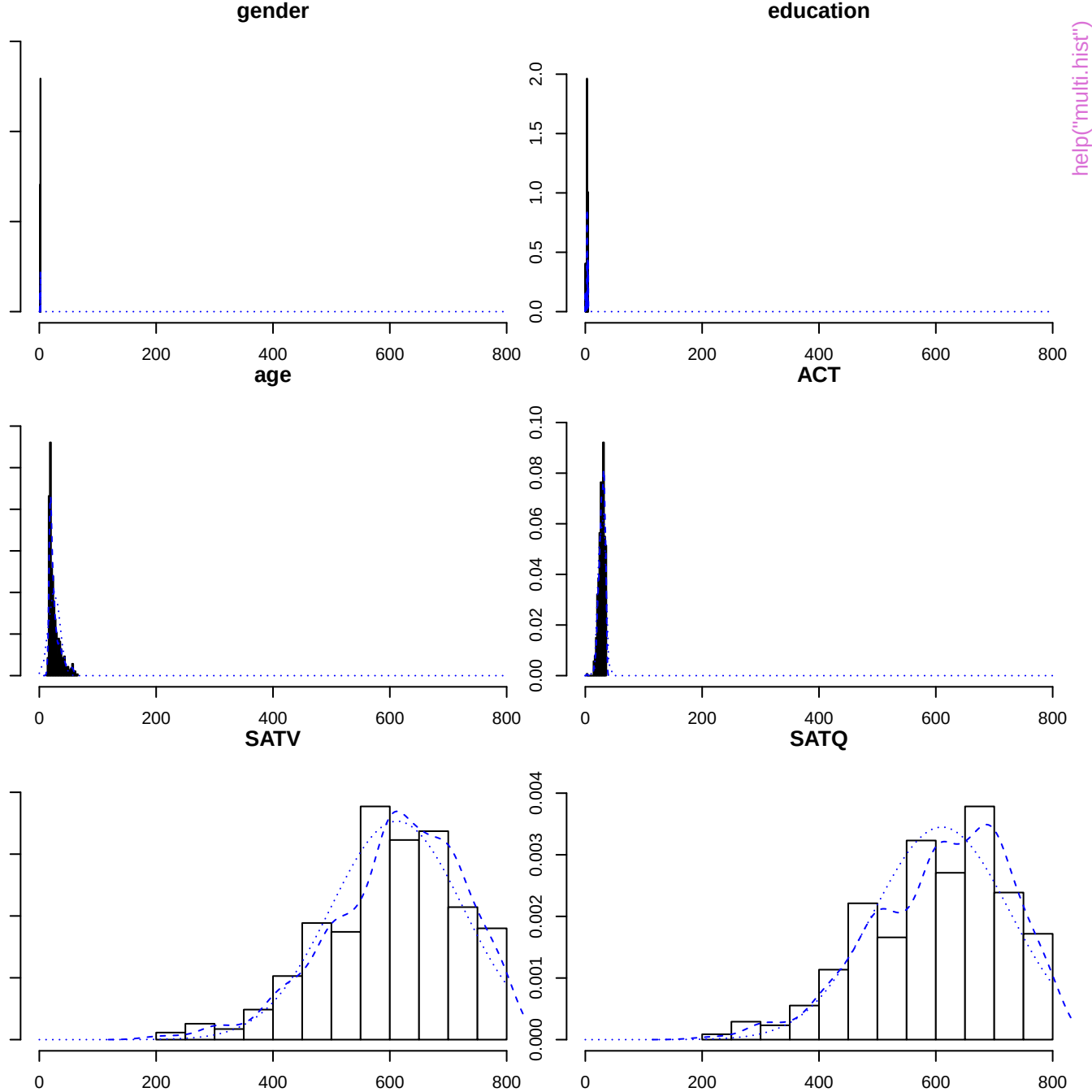


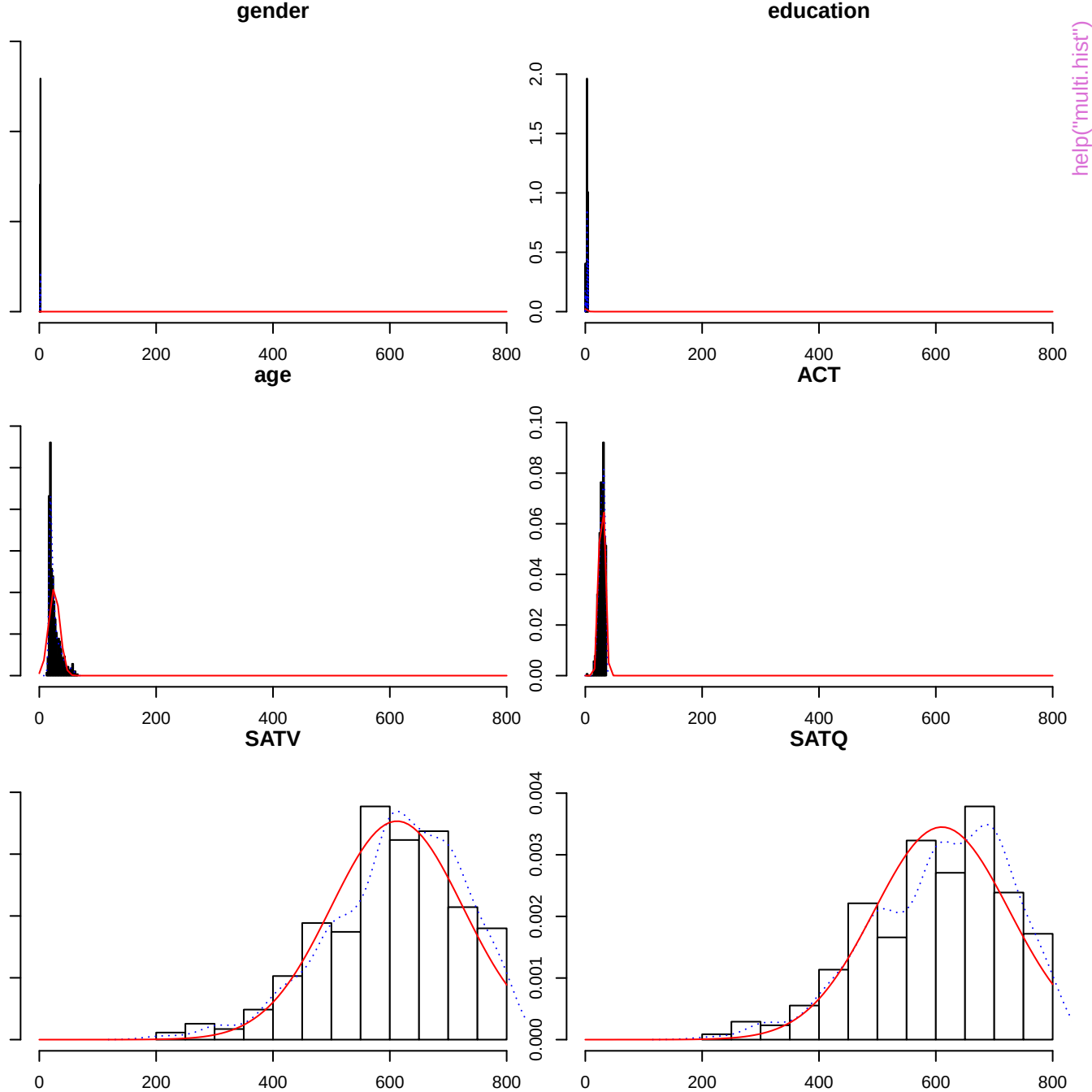
help("mediate")

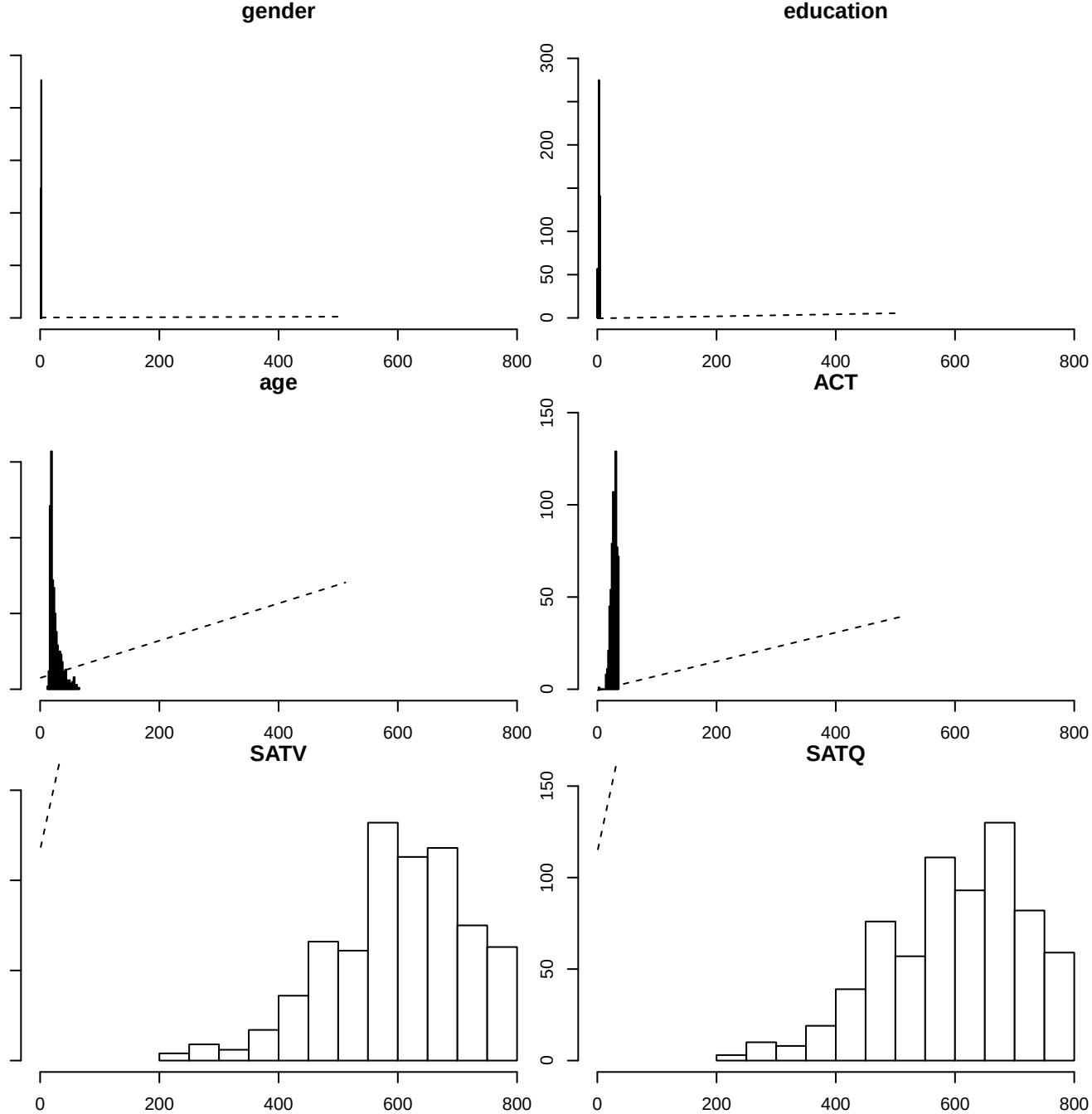

Mediation model
Intelligence
Grades
FatherEd
OccupAsp
FatherOcc
Siblings
EducExp
0.53
0.28
0.12
0.37
0.16
c' = −0.04
c' = −0.04
0.25
0.22
−0.1
0.61
0.04
−0.15
c' = 0.1
−0.03
0.55
c' = −0.02
0.17
−0.11
0.12
help("mediate")

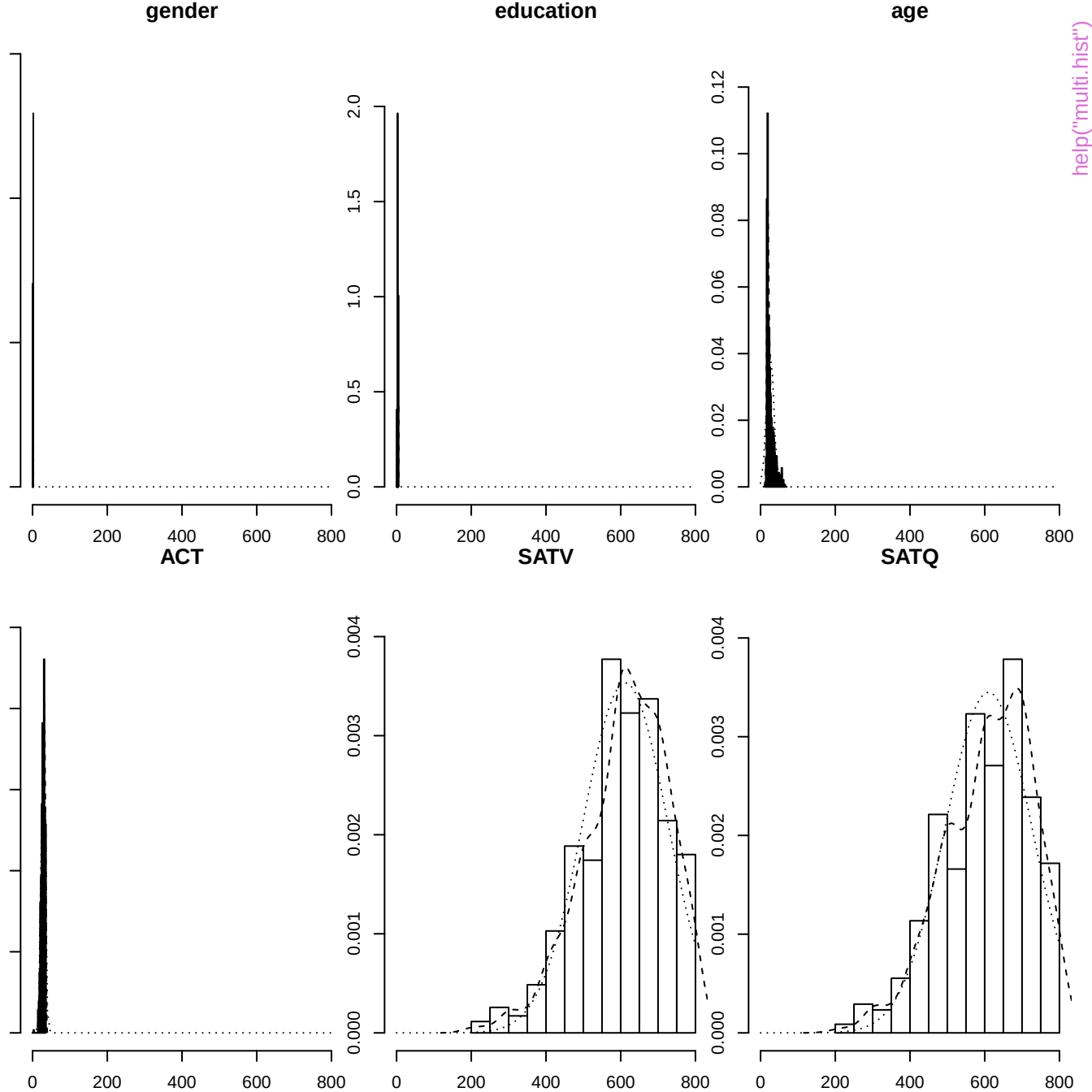

gender
education
age
ACT
SATV
SATQ
help("multi.hist")
0.0
0.5
1.0
1.5
2.0
0.00
0.02
0.04
0.06
0.08
0.10
0.000
0.001
0.002
0.003
0.004
0
200
400
600
800

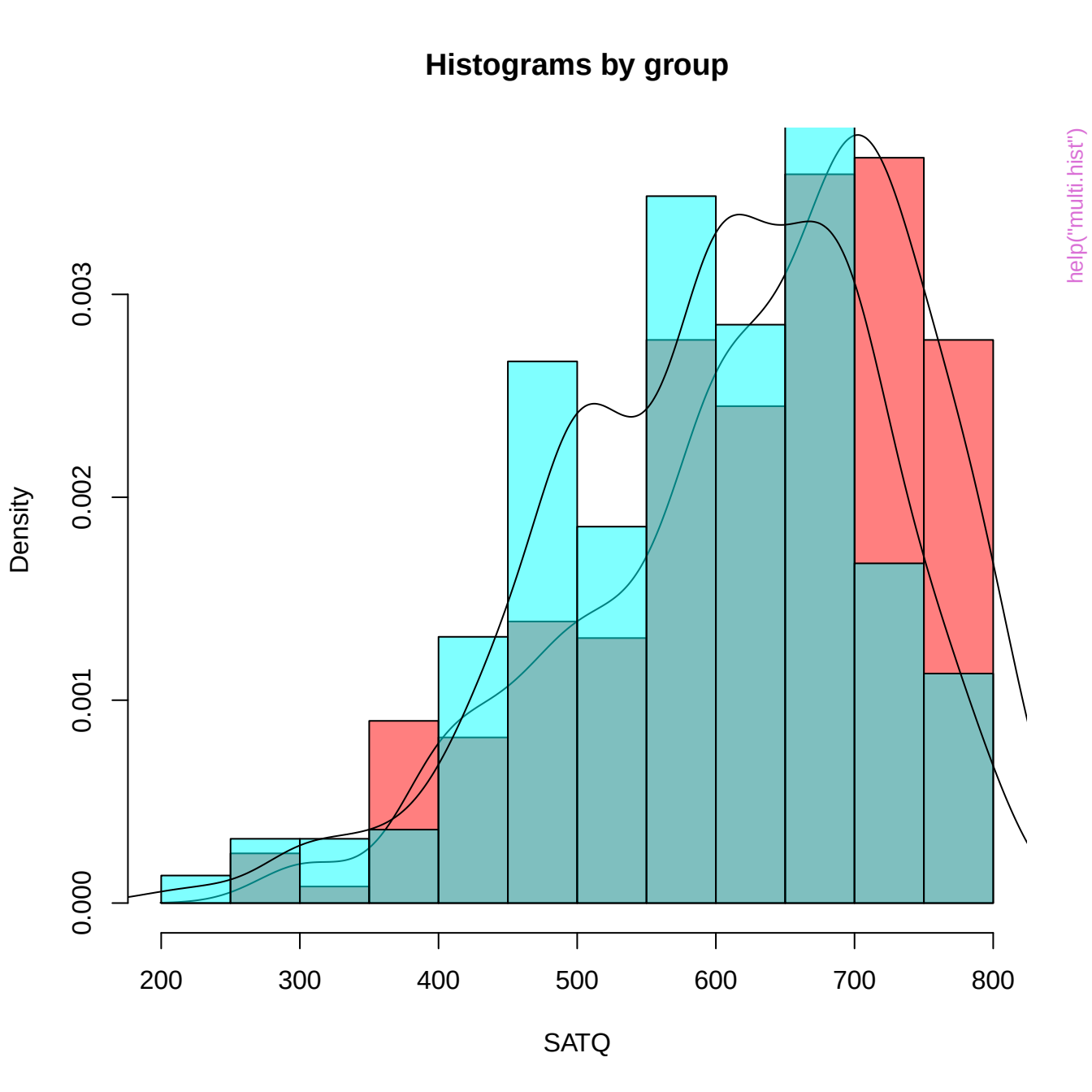

gender
education
age
ACT
SATV
SATQ
help("multi.hist")

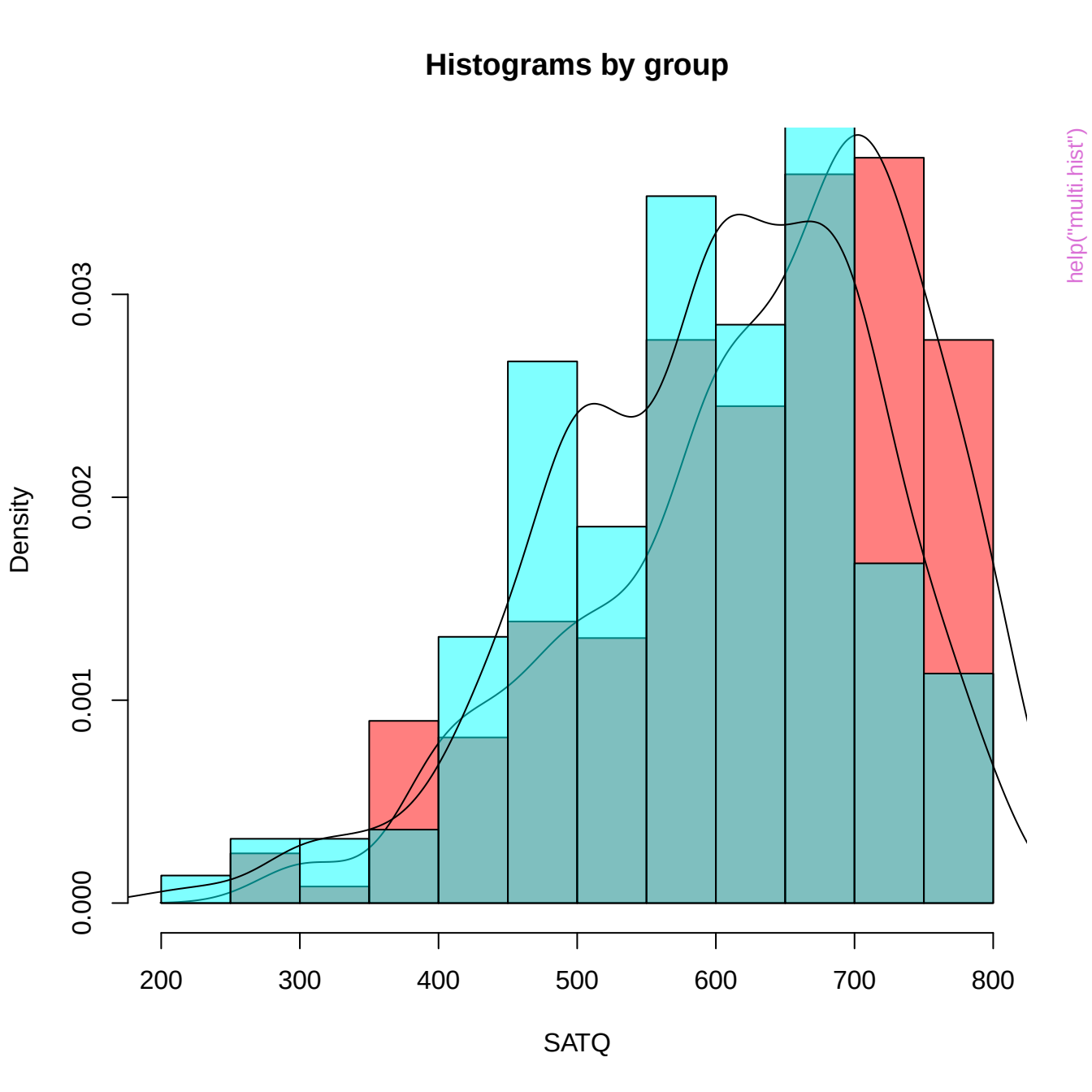

gender
education
age
ACT
SATV
SATQ
help("multi.hist")
0
200
400
600
800
0.0
0.5
1.0
1.5
2.0
0.00
0.02
0.04
0.06
0.08
0.10
0.000
0.001
0.002
0.003
0.004


gender
education
age
ACT
SATV
SATQ
0.0
0.5
1.0
1.5
2.0
0.00
0.02
0.04
0.06
0.08
0.10
0.000
0.001
0.002
0.003
0.004
0
200
400
600
800
help("multi.hist")

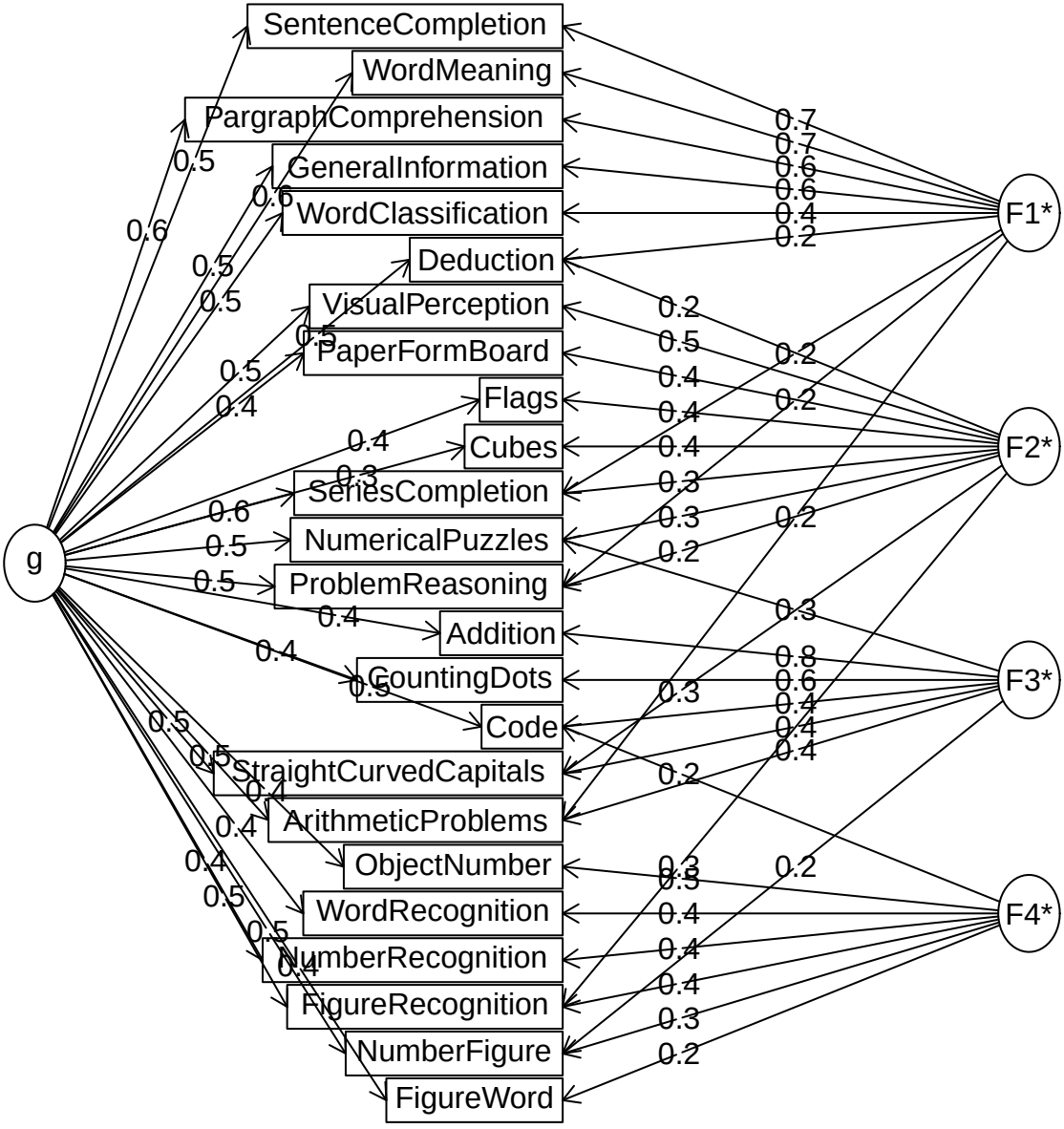

gender
education
age
ACT
SATV
SATQ
0
50
100
200
300
0
200
400
600
800
help("multi.hist")


gender
education
age
ACT
SATV
SATQ
help("multi.hist")


Histograms by group
help("multi.hist")
Density
0.000
0.001
0.002
0.003
200
300
400
500
600
700
800
SATQ

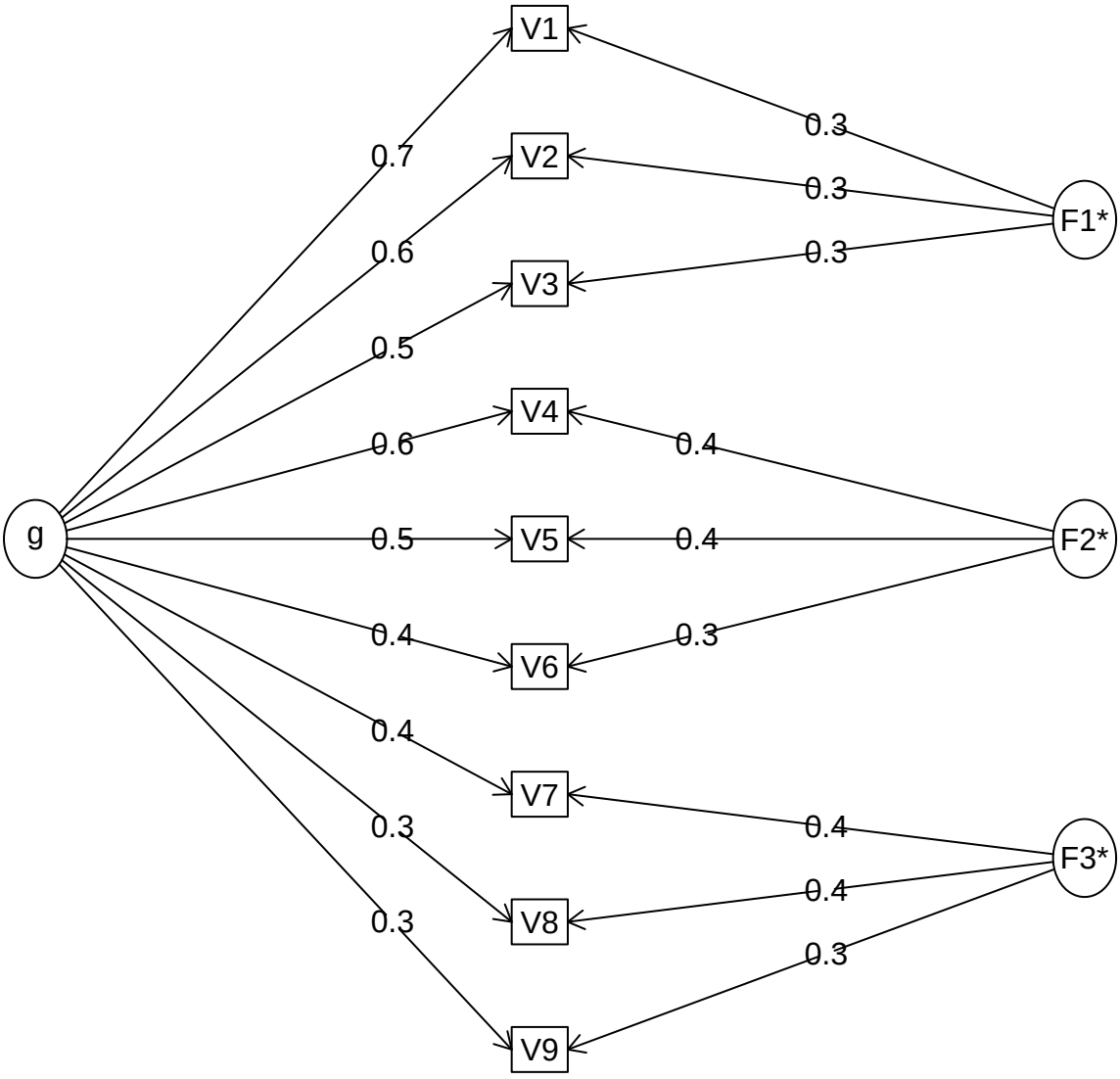

Histograms by group
help("multi.hist")
Density
0.000
0.001
0.002
0.003
200
300
400
500
600
700
800
SATQ

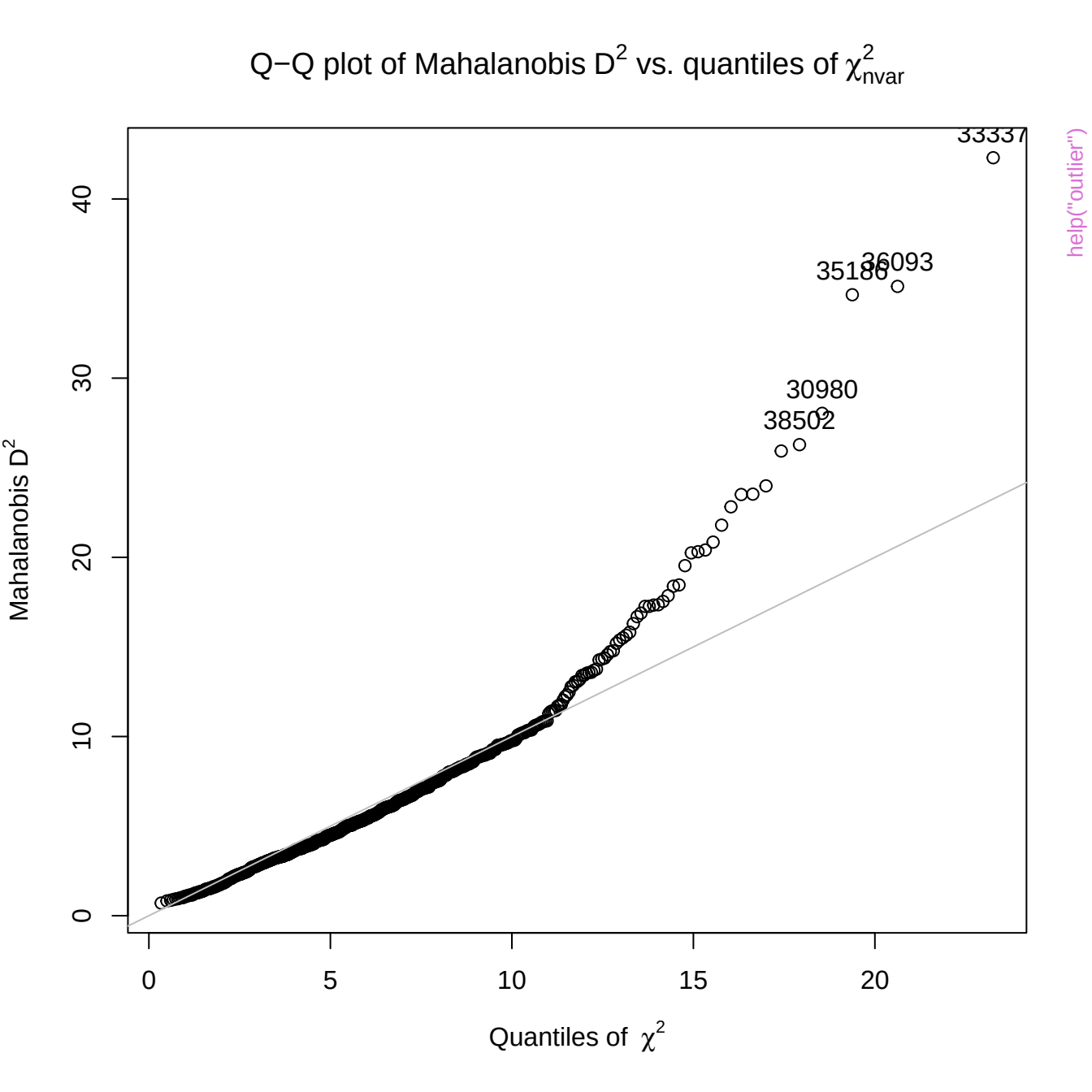
Omega

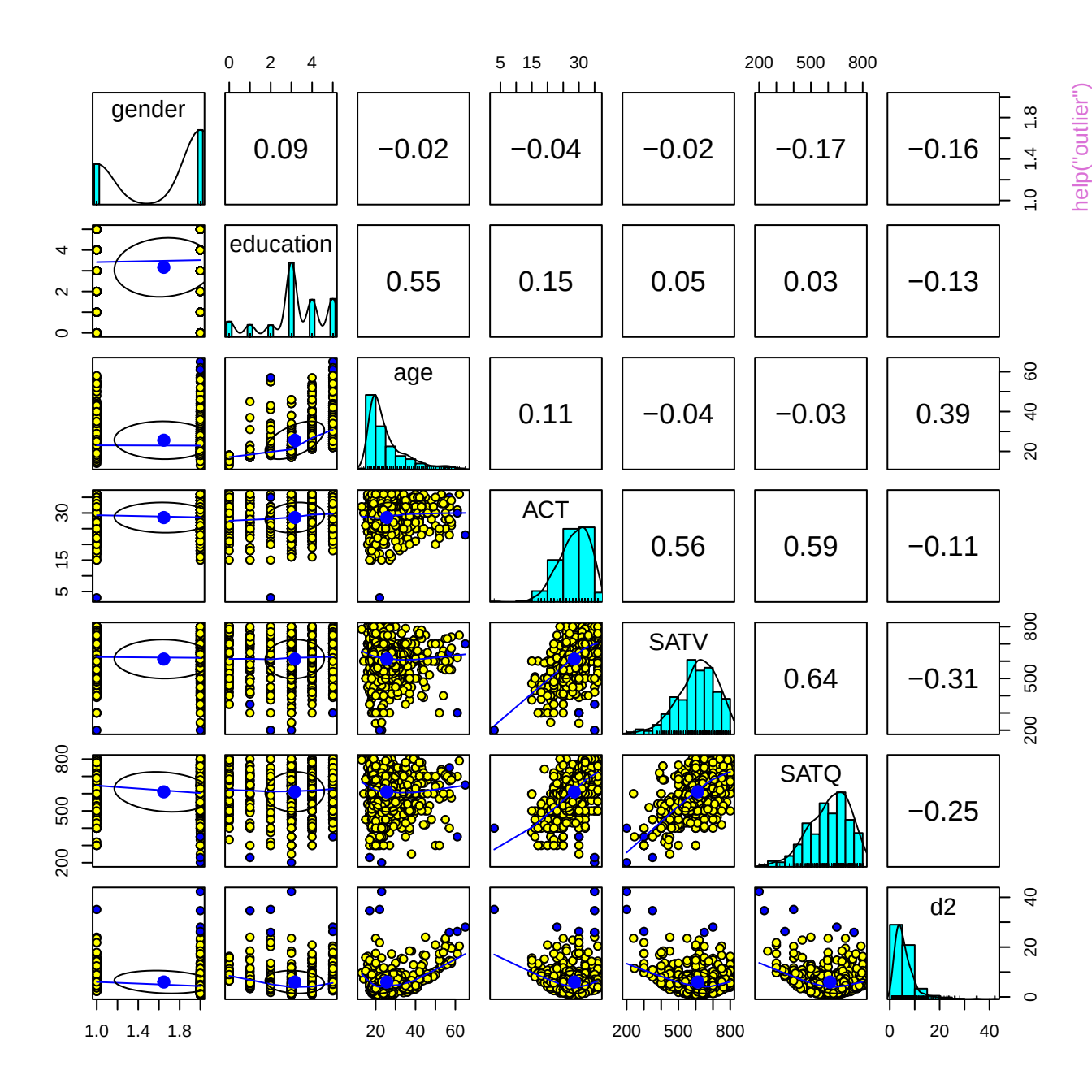


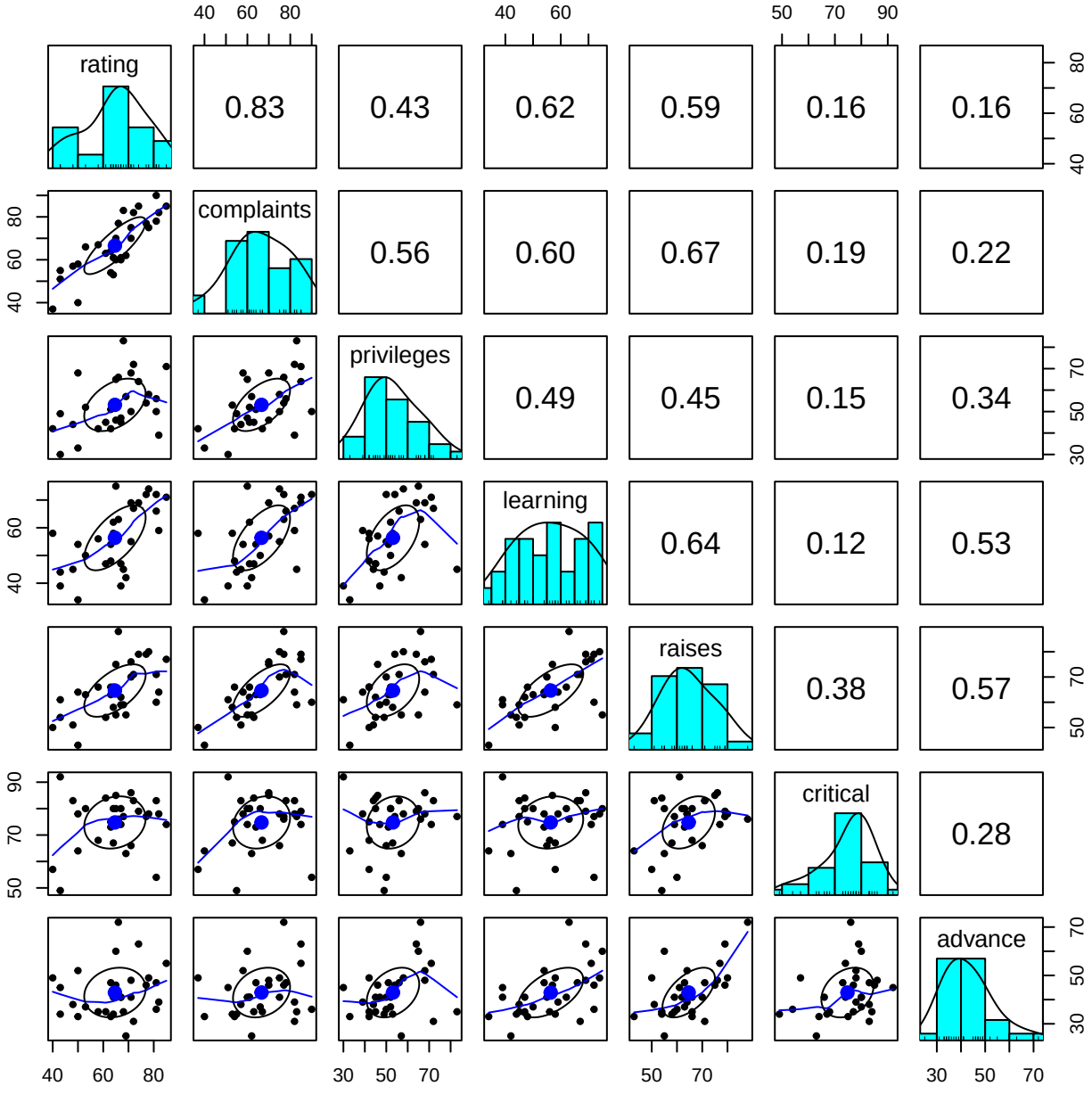
help("omega.graph")

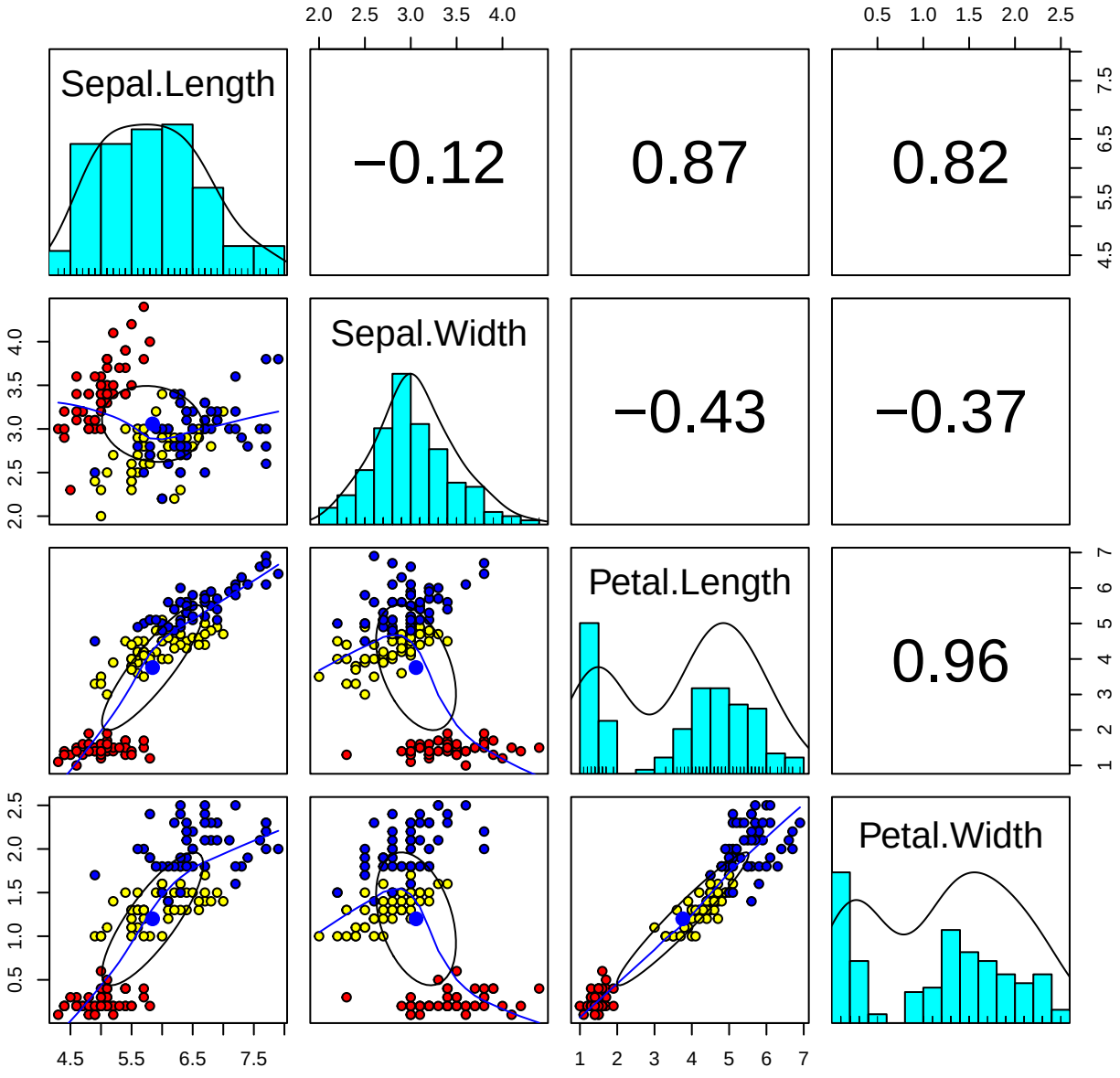
Omega

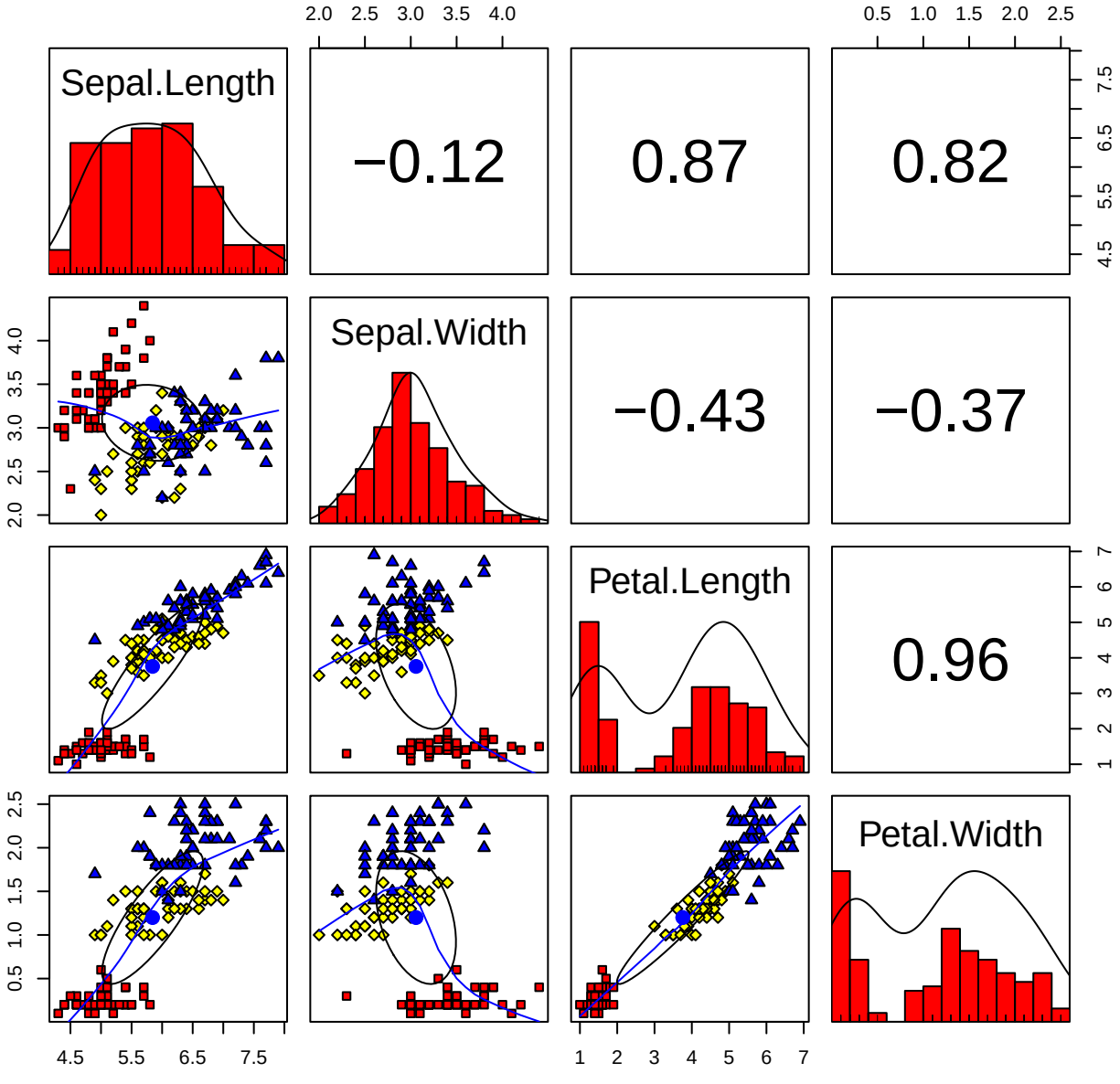


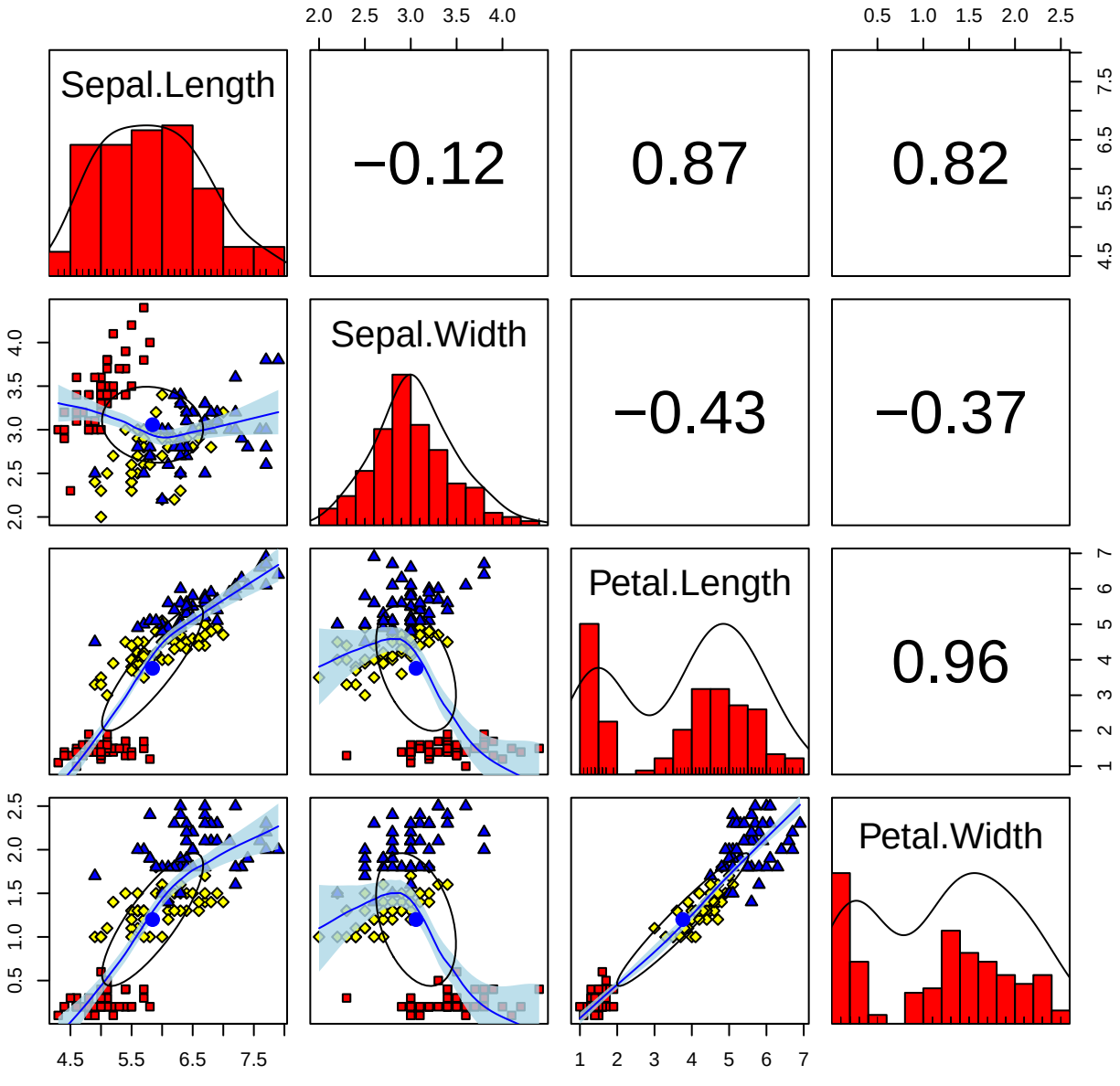

Q−Q plot of Mahalanobis D2 vs. quantiles of χ2nvar
Mahalanobis D2
Quantiles of χ2
0
10
20
30
40
0
5
10
15
20
33337
36093
35186
30980
38502
help("outlier")

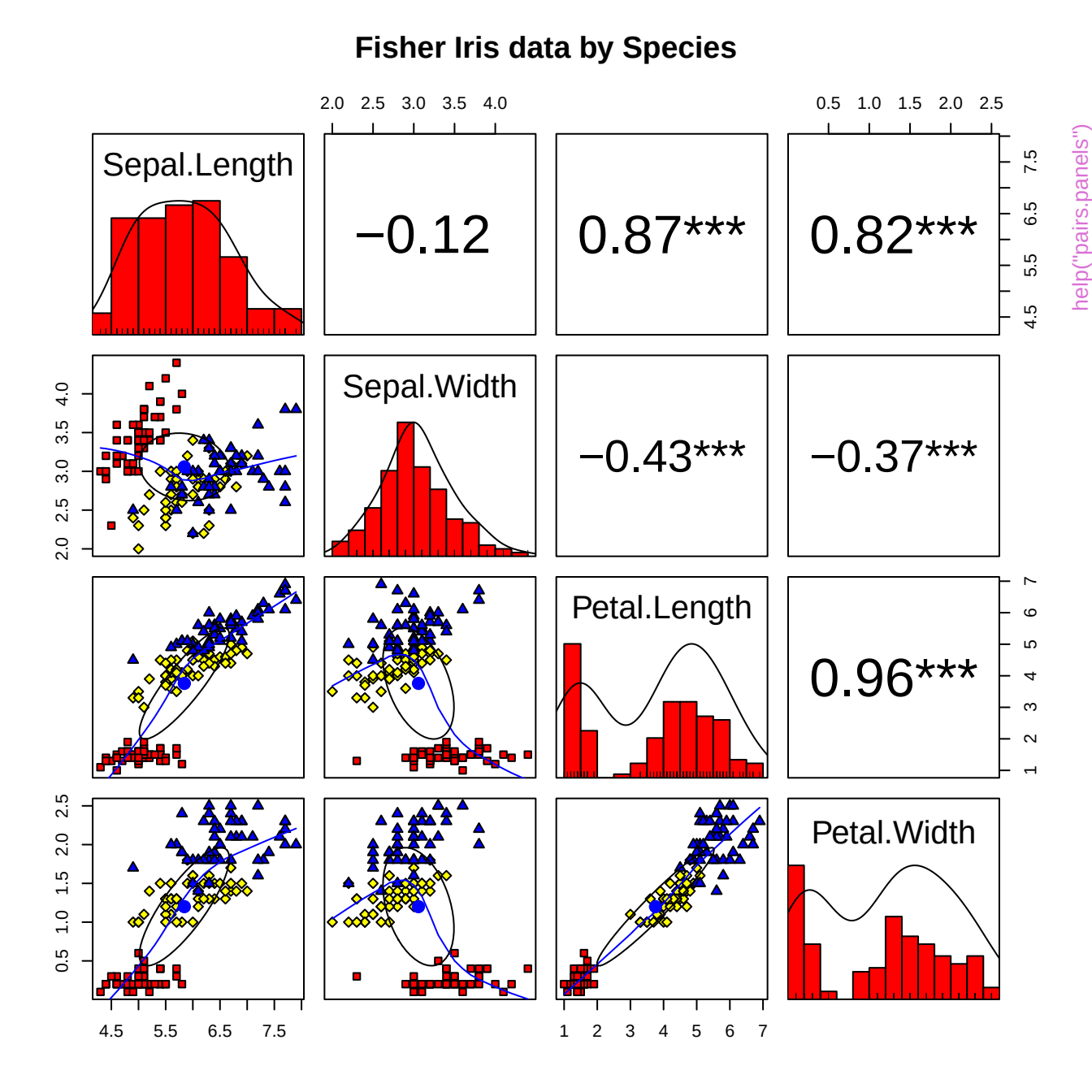

gender
education
age
ACT
SATV
SATQ
d2
0.09
−0.02
−0.04
−0.02
−0.17
−0.16
0.55
0.15
0.05
0.03
−0.13
0.11
−0.04
−0.03
0.39
0.56
0.59
−0.11
0.64
−0.31
−0.25
help("outlier")

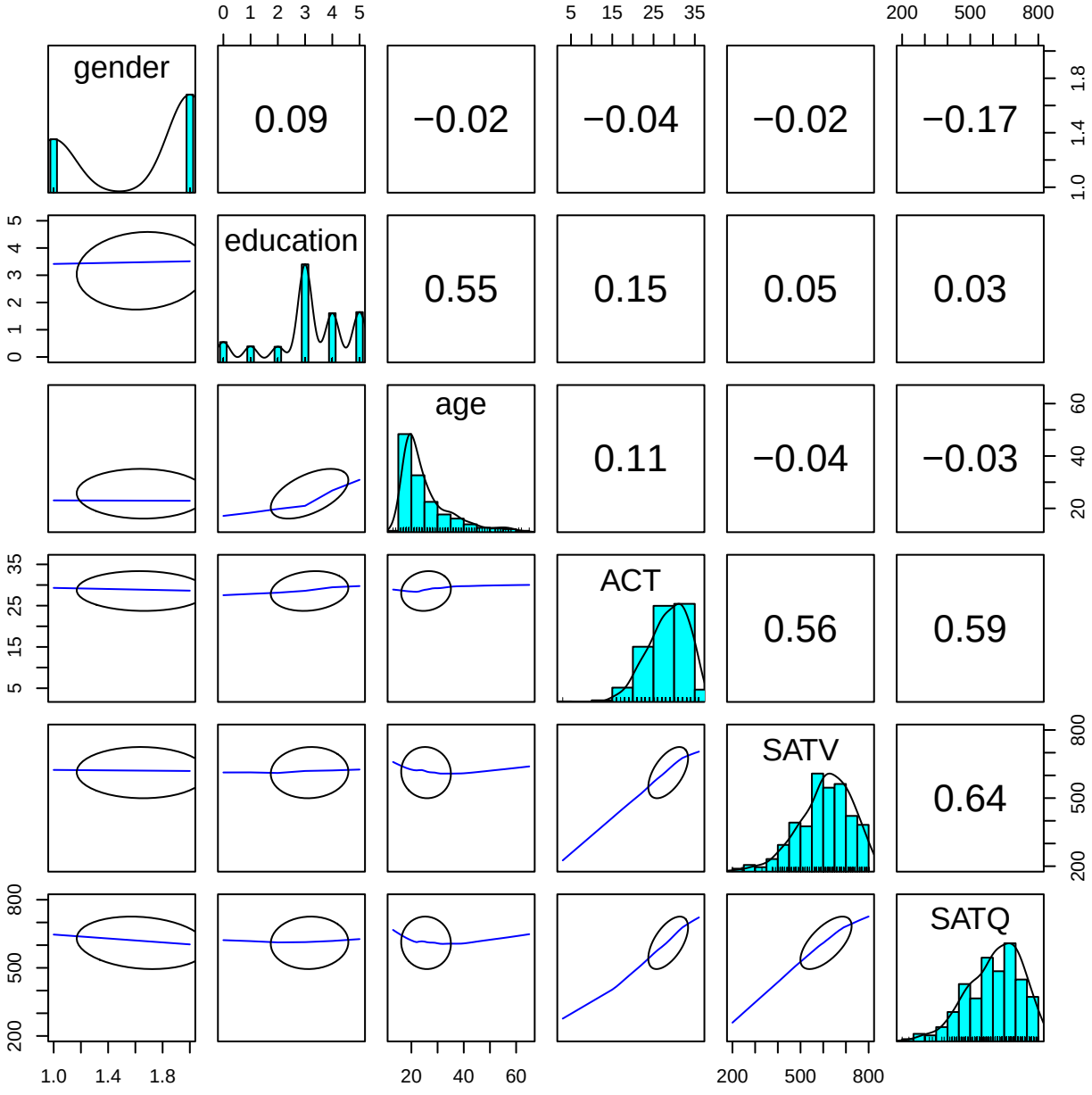

rating
complaints
privileges
learning
raises
critical
advance
0.83
0.43
0.62
0.59
0.16
0.16
0.56
0.60
0.67
0.19
0.22
0.49
0.45
0.15
0.34
0.64
0.12
0.53
0.38
0.57
0.28
help("pairs.panels")

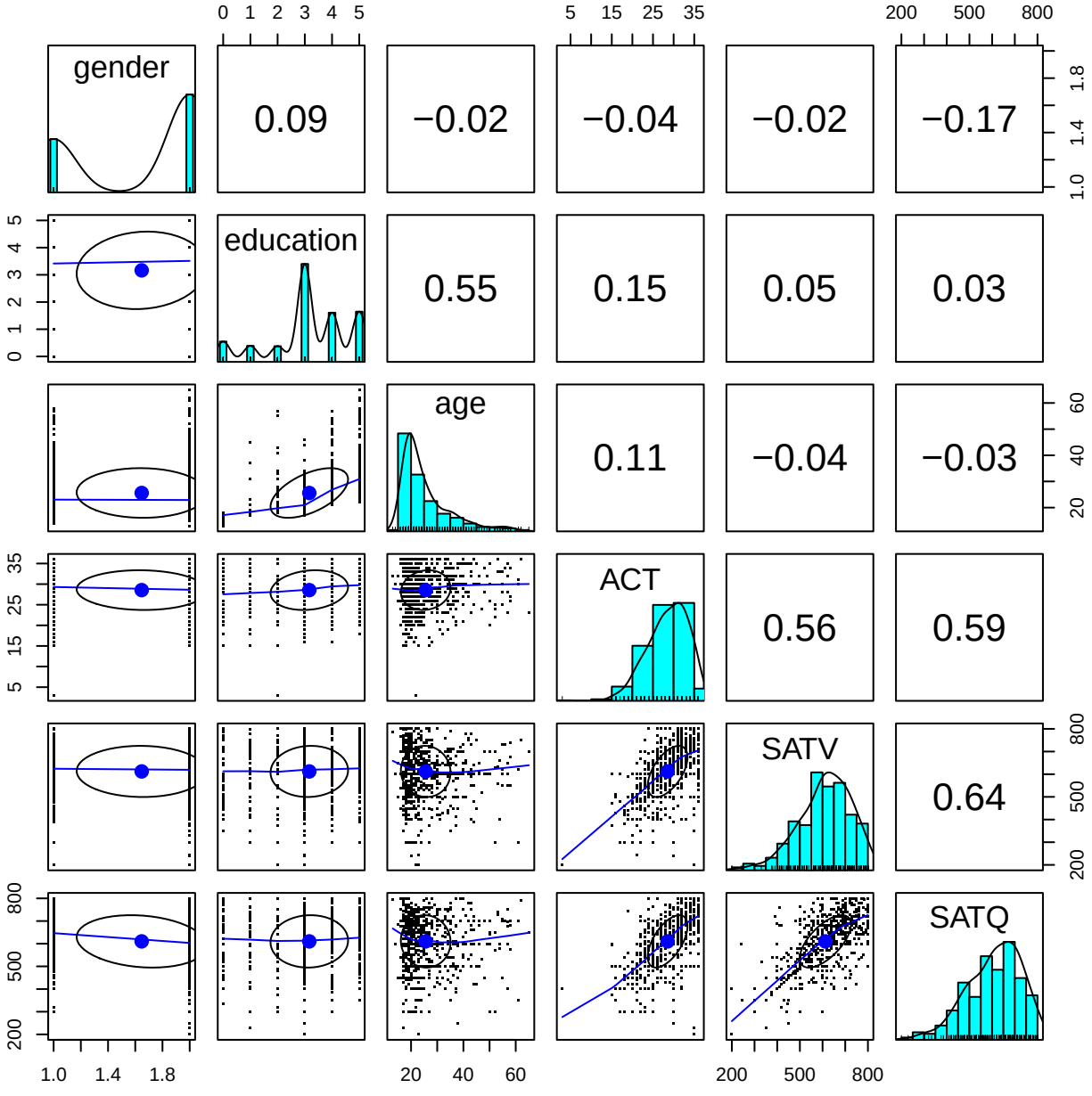

Fisher Iris data by Species
Sepal.Length
Sepal.Width
Petal.Length
Petal.Width
−0.12
0.87
0.82
−0.43
−0.37
0.96
help("pairs.panels")

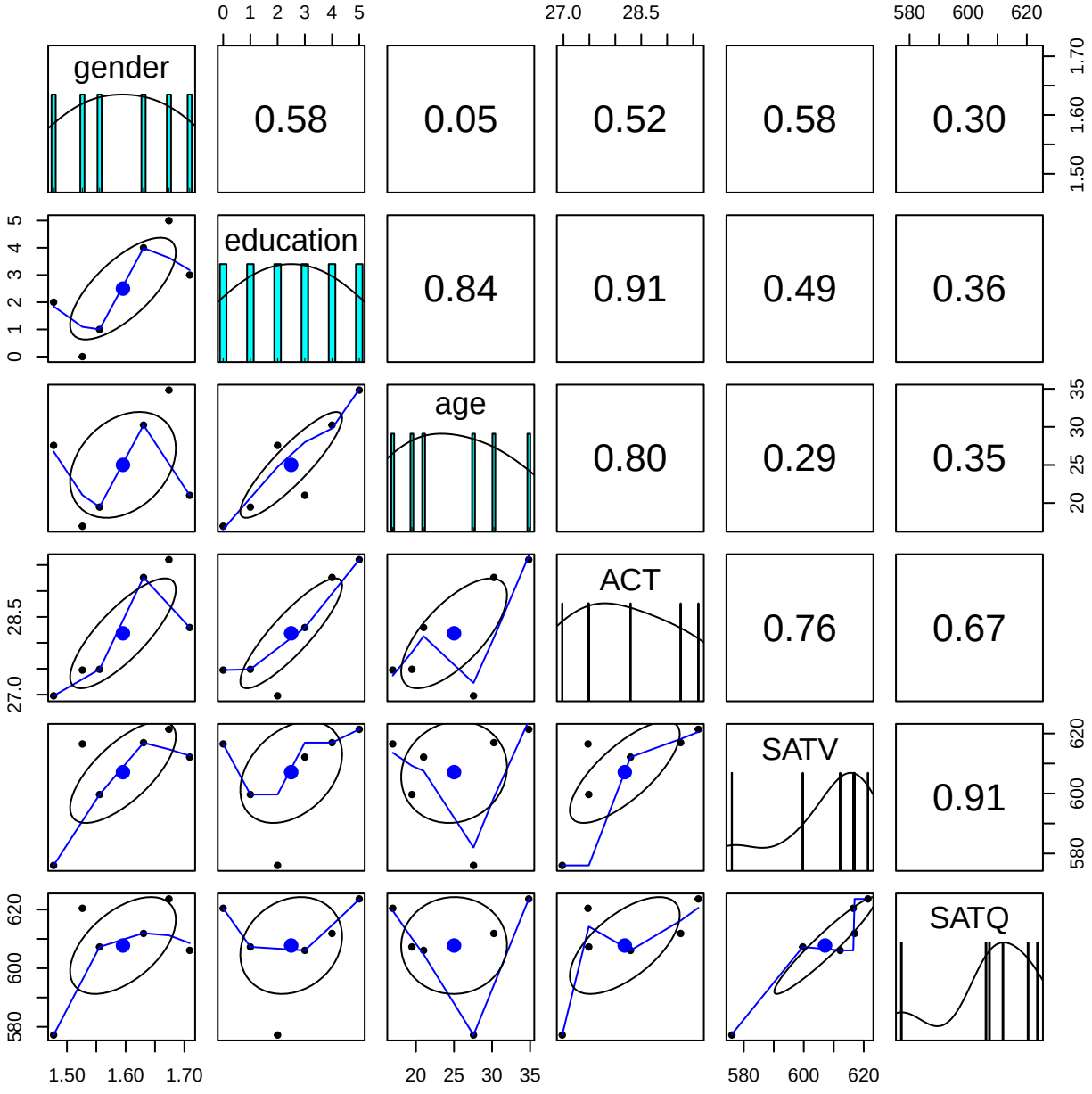

Fisher Iris data by Species
Sepal.Length
Sepal.Width
Petal.Length
Petal.Width
−0.12
0.87
0.82
−0.43
−0.37
0.96
help("pairs.panels")

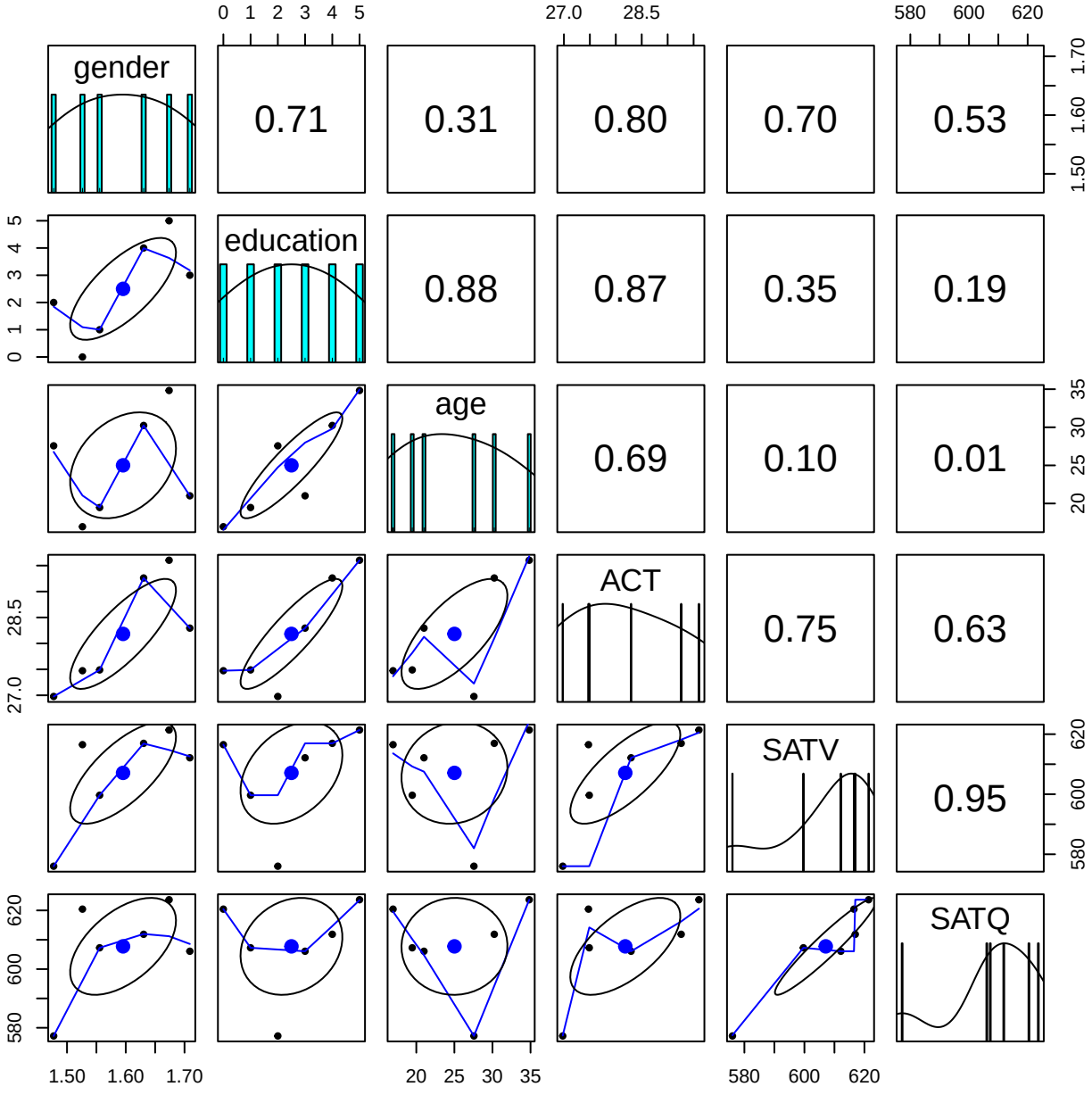

Fisher Iris data by Species
Sepal.Length
Sepal.Width
Petal.Length
Petal.Width
−0.12
0.87
0.82
−0.43
−0.37
0.96
help("pairs.panels")

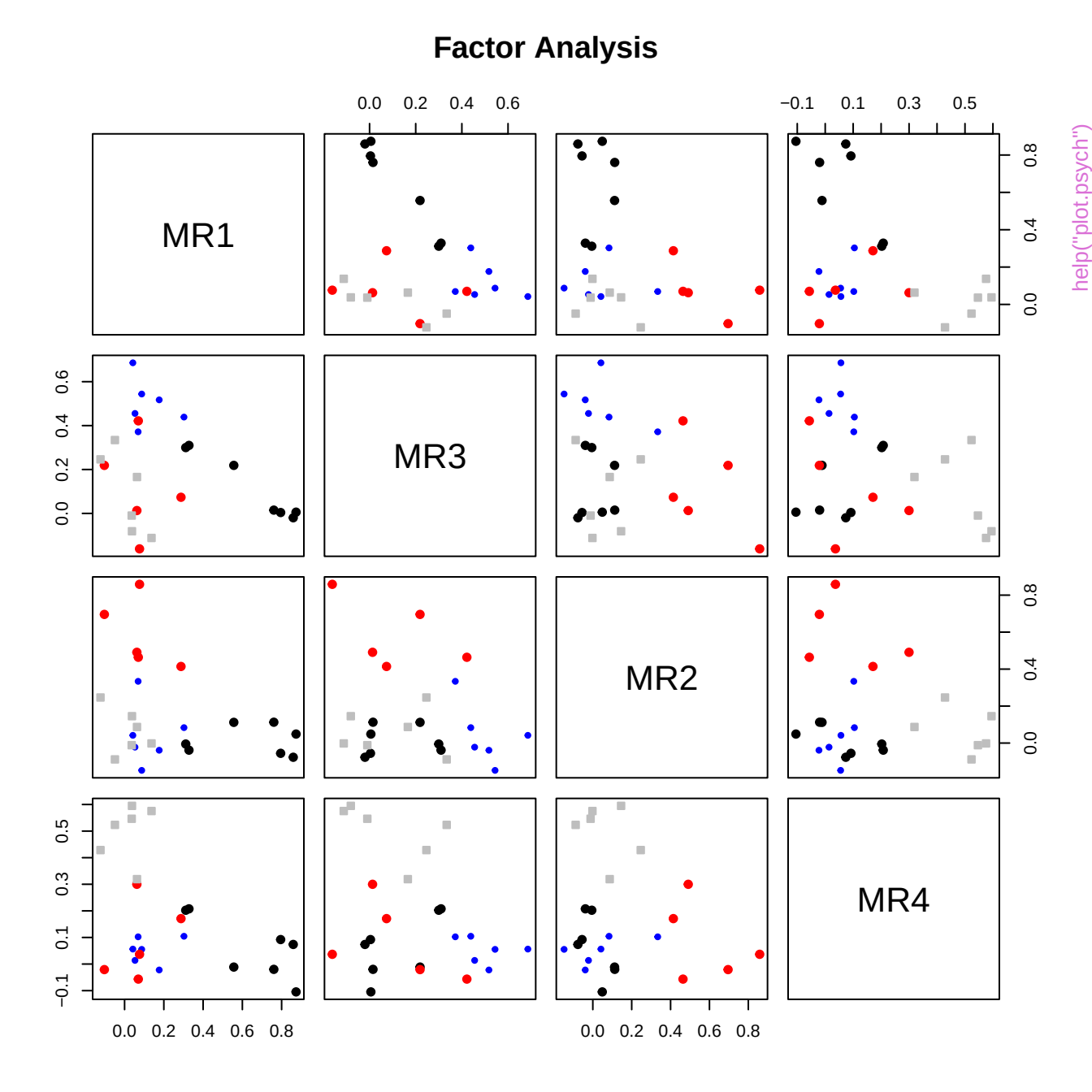

Fisher Iris data by Species
Sepal.Length
Sepal.Width
Petal.Length
Petal.Width
−0.12
0.87***
0.82***
−0.43***
−0.37***
0.96***
help("pairs.panels")

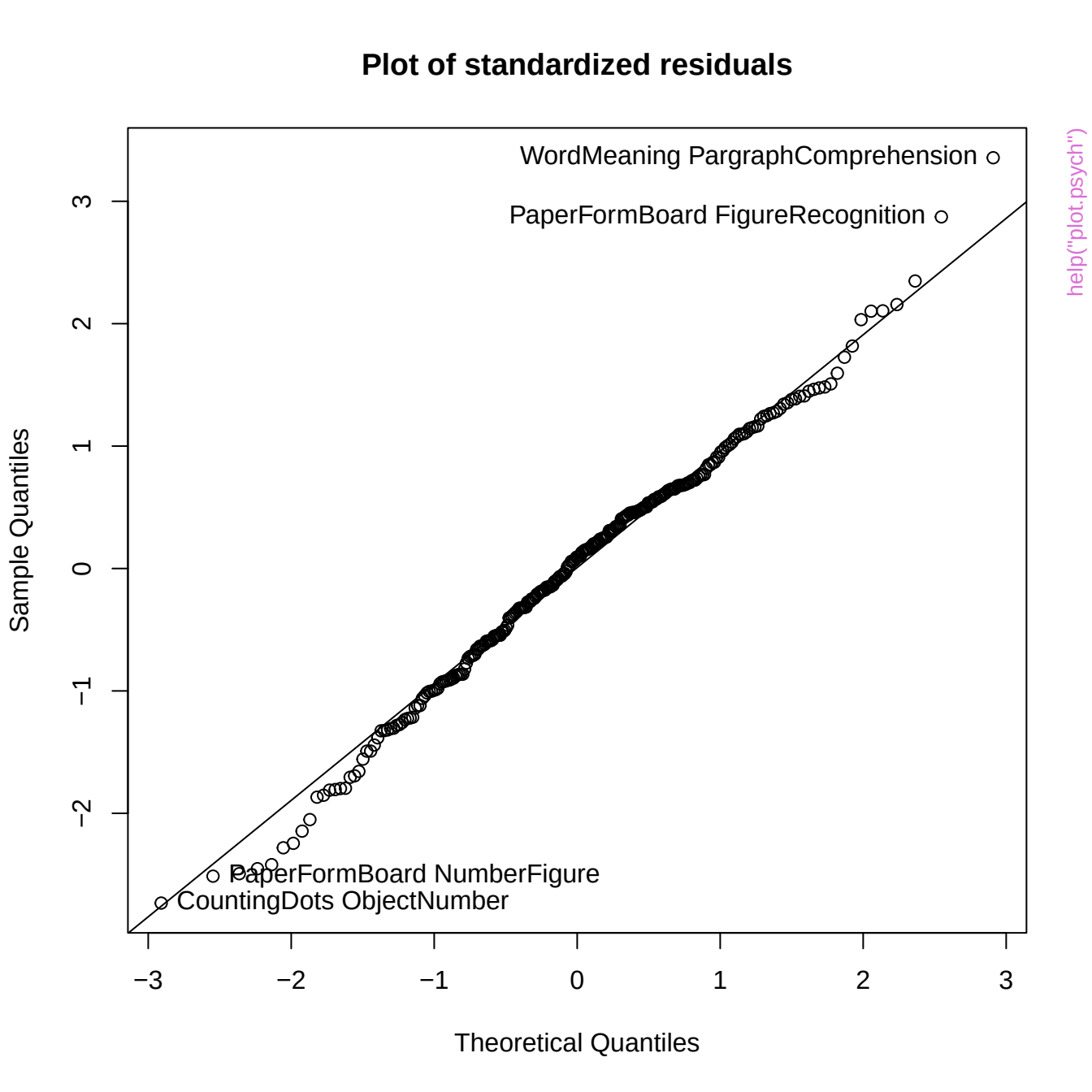

gender
education
age
ACT
SATV
SATQ
0.09
−0.02
−0.04
−0.02
−0.17
0.55
0.15
0.05
0.03
0.11
−0.04
−0.03
0.56
0.59
0.64
help("pairs.panels")

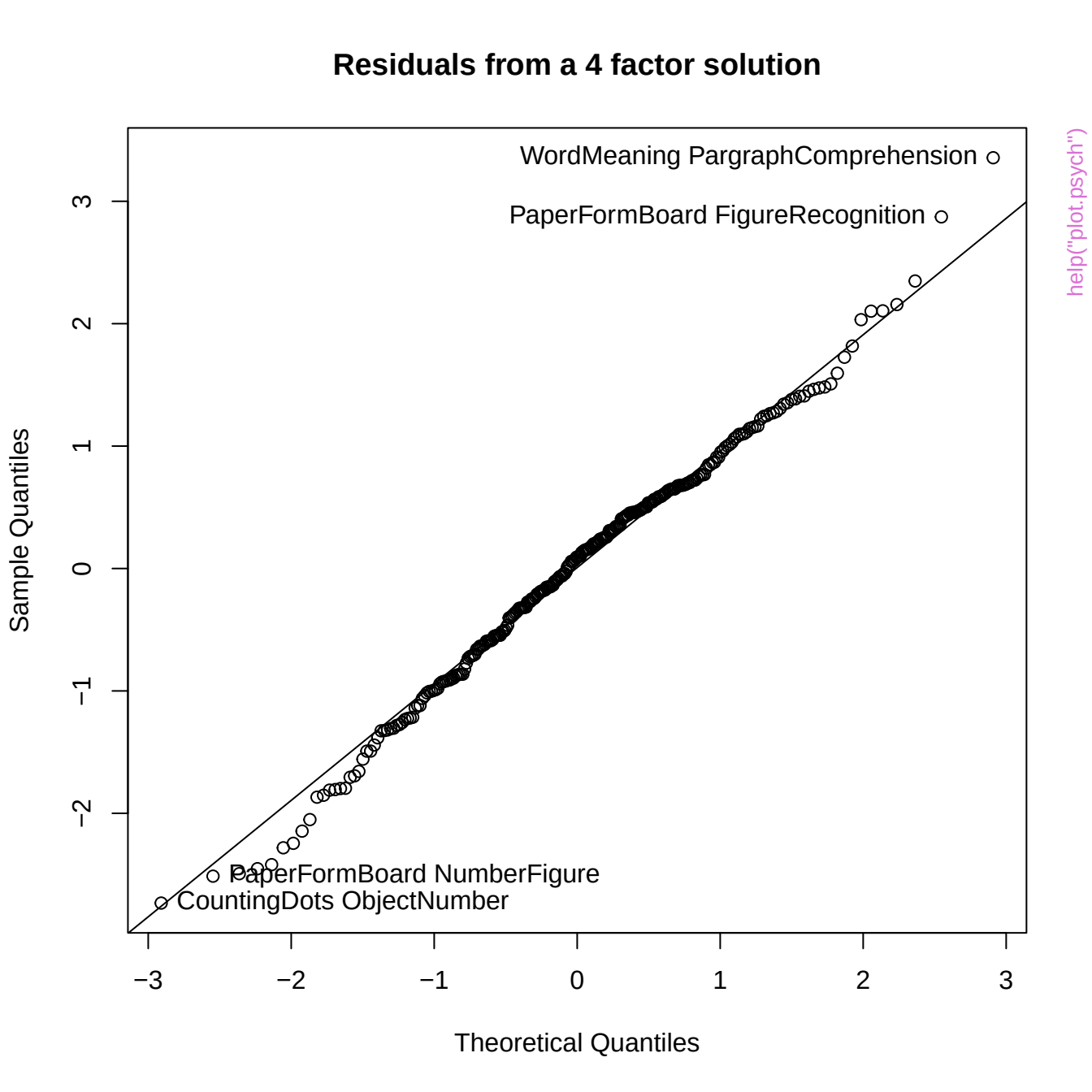

gender
education
age
ACT
SATV
SATQ
0.09
−0.02
−0.04
−0.02
−0.17
0.55
0.15
0.05
0.03
0.11
−0.04
−0.03
0.56
0.59
0.64
help("pairs.panels")


gender
education
age
ACT
SATV
SATQ
0.58
0.05
0.52
0.58
0.30
0.84
0.91
0.49
0.36
0.80
0.29
0.35
0.76
0.67
0.91
0 1 2 3 4 5
27.0 28.5
580 600 620
1.50 1.60 1.70
20 25 30 35
help("pairs.panels")

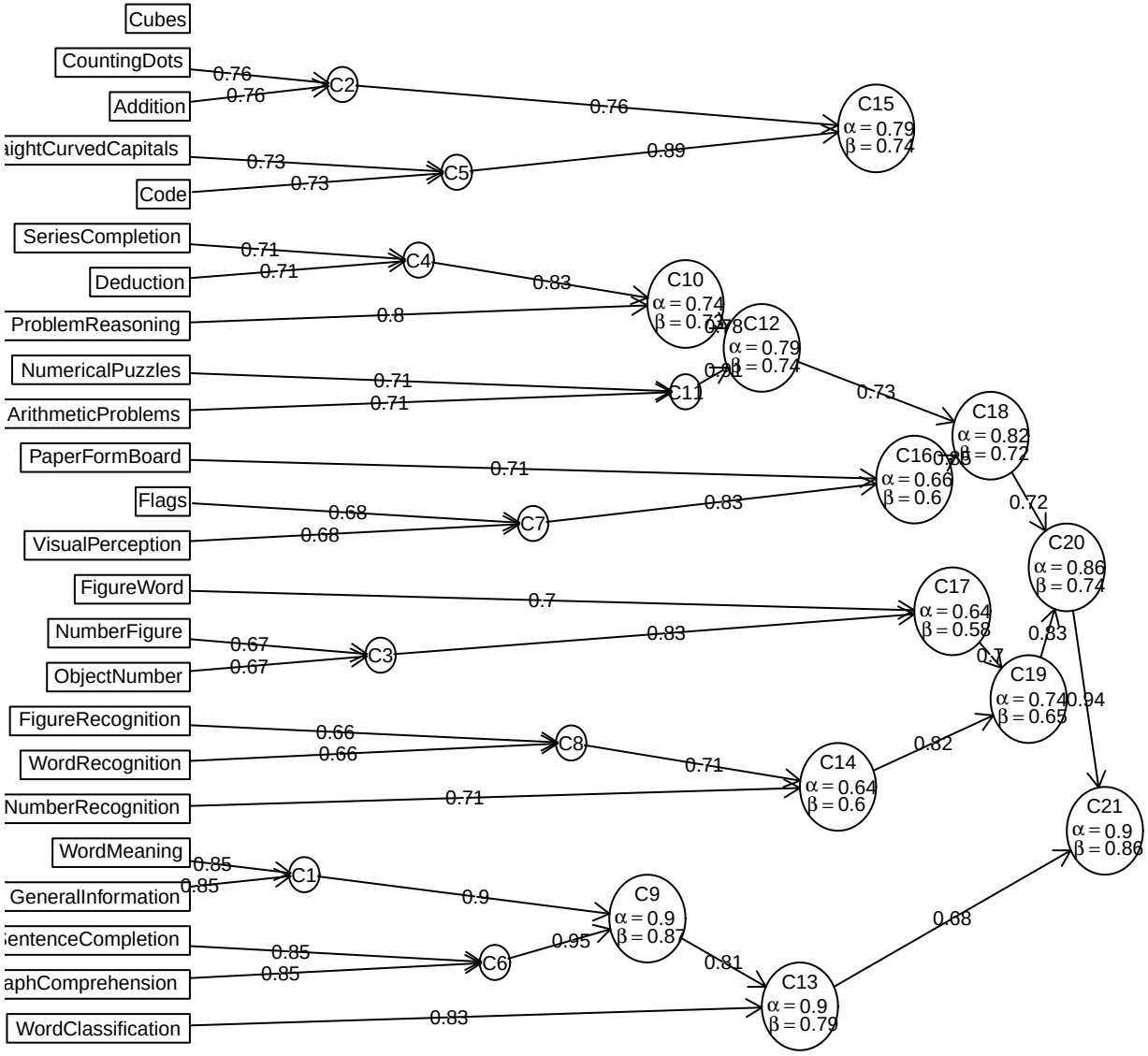

gender
education
age
ACT
SATV
SATQ
0.71
0.31
0.80
0.70
0.53
0.88
0.87
0.35
0.19
0.69
0.10
0.01
0.75
0.63
0.95
help("pairs.panels")

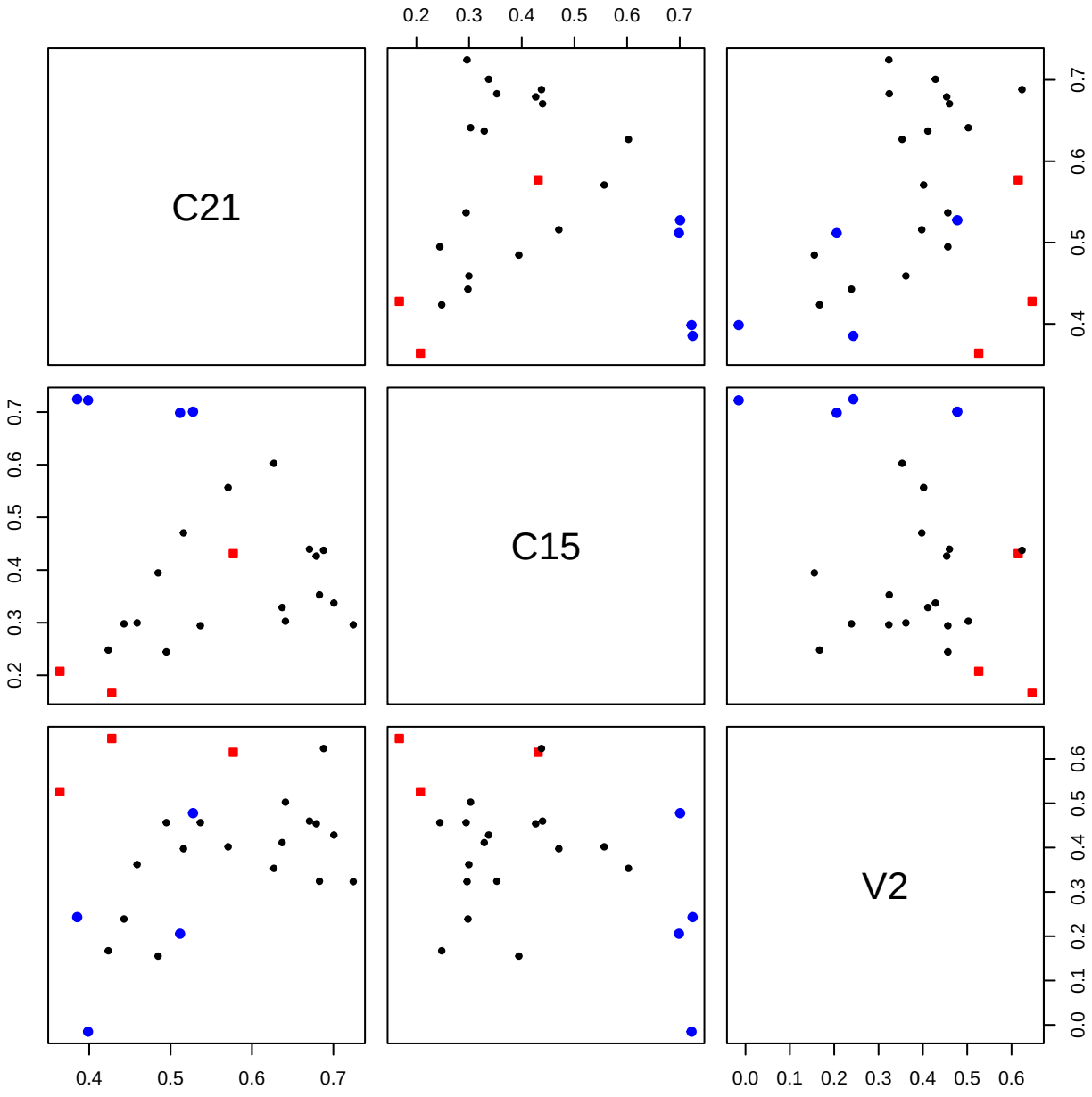

Factor Analysis
MR1
MR3
MR2
MR4
help("plot.psych")


Plot of standardized residuals
WordMeaning PargraphComprehension
PaperFormBoard FigureRecognition
PaperFormBoard NumberFigure
CountingDots ObjectNumber
Sample Quantiles
Theoretical Quantiles
−3
−2
−1
0
1
2
3
help("plot.psych")

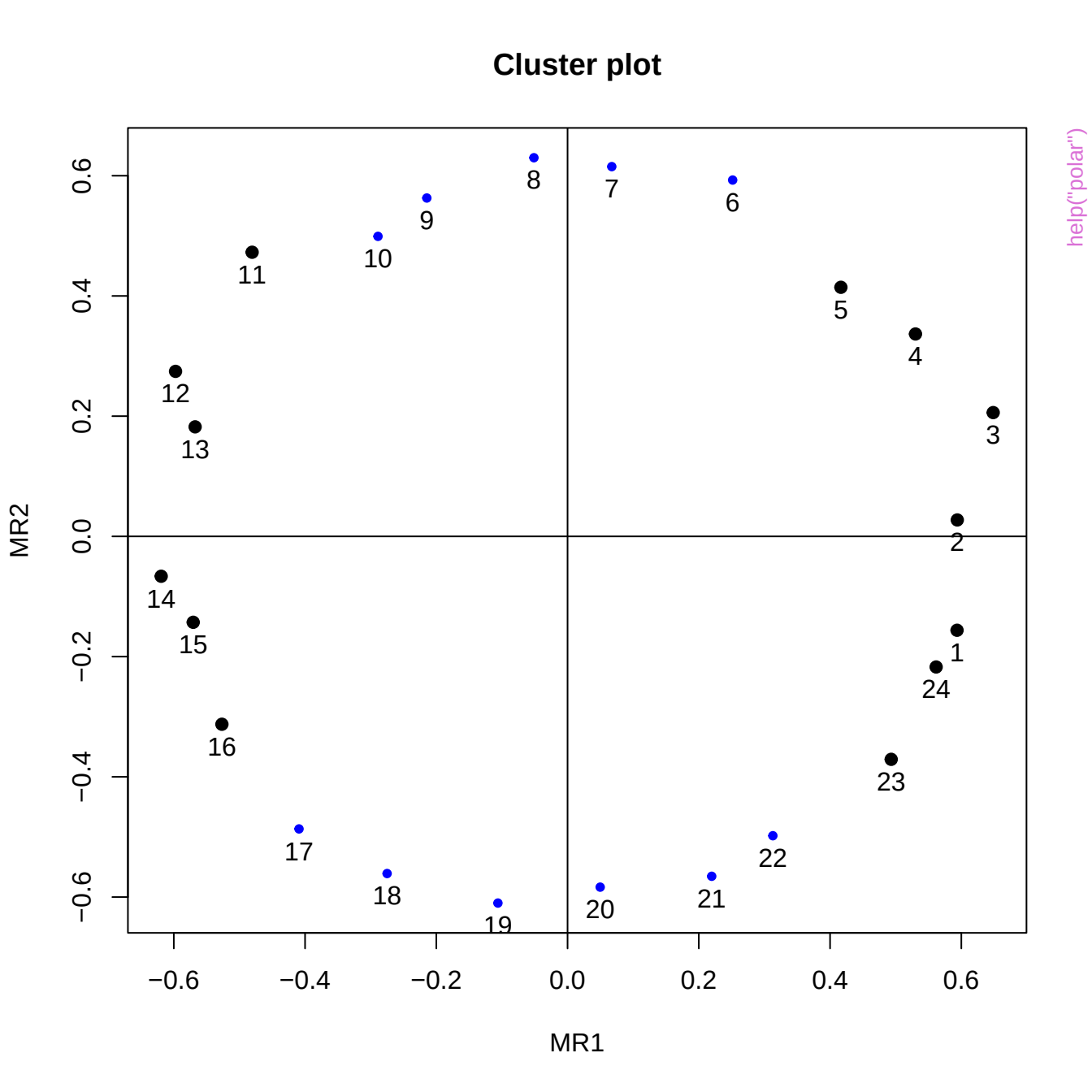

Residuals from a 4 factor solution
WordMeaning PargraphComprehension
PaperFormBoard FigureRecognition
PaperFormBoard NumberFigure
CountingDots ObjectNumber
Sample Quantiles
Theoretical Quantiles
−3
−2
−1
0
1
2
3
help("plot.psych")

ICLUST


Cubes
CountingDots
Addition
ightCurvedCapitals
Code
SeriesCompletion
Deduction
ProblemReasoning
NumericalPuzzles
ArithmeticProblems
PaperFormBoard
Flags
VisualPerception
FigureWord
NumberFigure
ObjectNumber
FigureRecognition
WordRecognition
NumberRecognition
WordMeaning
GeneralInformation
entenceCompletion
aphComprehension
WordClassification
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
C18
C19
C20
C21
α = 0.79
β = 0.74
α = 0.74
α = 0.66
β = 0.6
α = 0.82
β = 0.72
α = 0.86
β = 0.74
α = 0.64
β = 0.58
α = 0.74
β = 0.65
α = 0.64
β = 0.6
α = 0.9
β = 0.87
α = 0.9
β = 0.79
α = 0.9
β = 0.86
0.76
0.73
0.89
0.71
0.83
0.8
0.78
0.91
0.68
0.7
0.67
0.66
0.85
0.95
0.81
0.88
0.94
help("plot.psych")



help("plot.psych")


Cluster plot
MR2
MR1
help("polar")
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
8
7
6
9
10
11
5
4
12
3
13
2
14
15
1
24
16
23
17
22
18
20
21
19

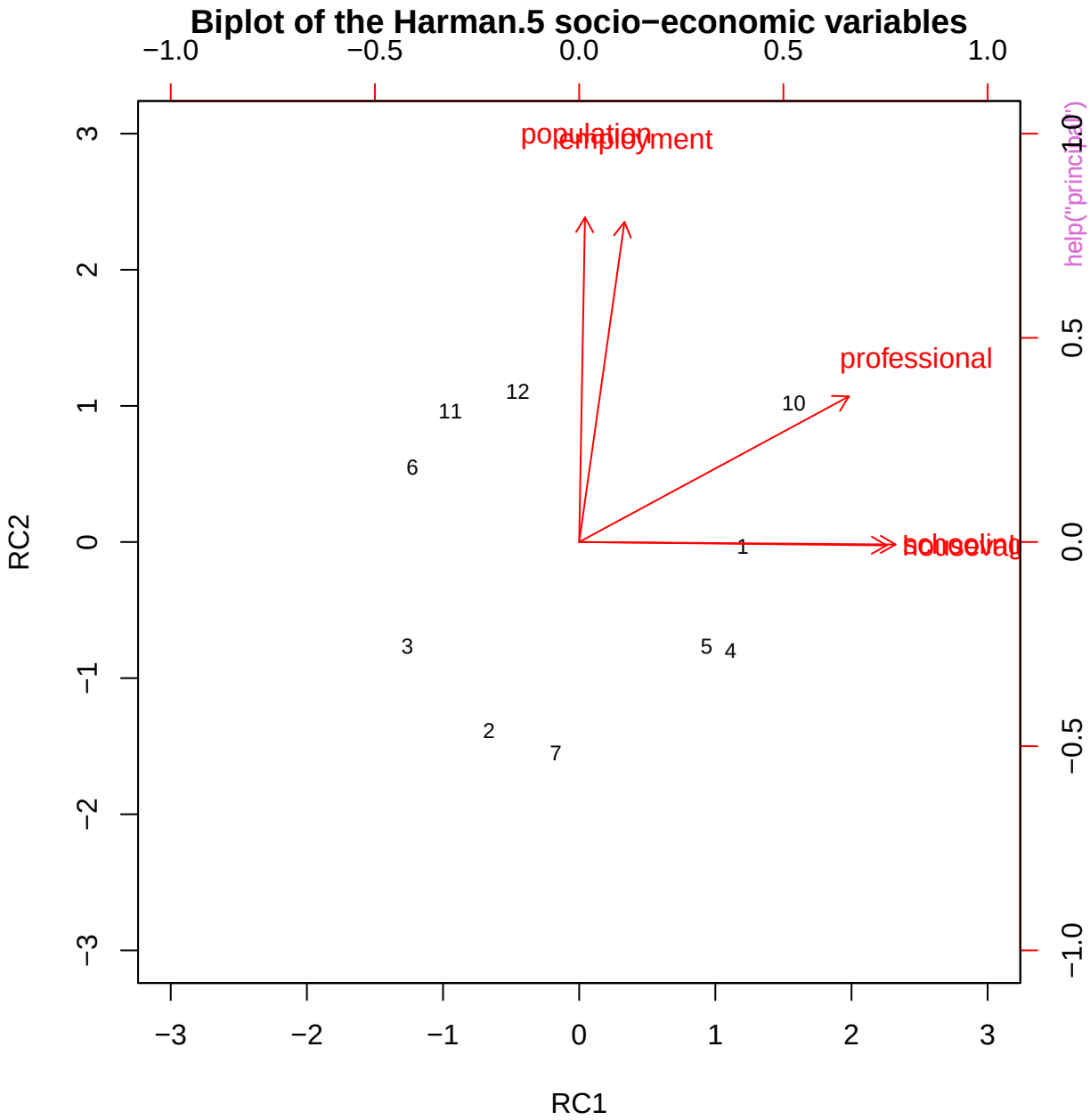
help("predicted.validity")

help("predicted.validity")

help("predicted.validity")

help("predicted.validity")

help("predicted.validity")


Biplot of the Harman.5 socio−economic variables
−1.0
−0.5
0.0
0.5
1.0
population
employment
professional
housevalue
schooling
12
11
10
6
1
3
5
4
2
7
RC2
RC1
help("princomp")

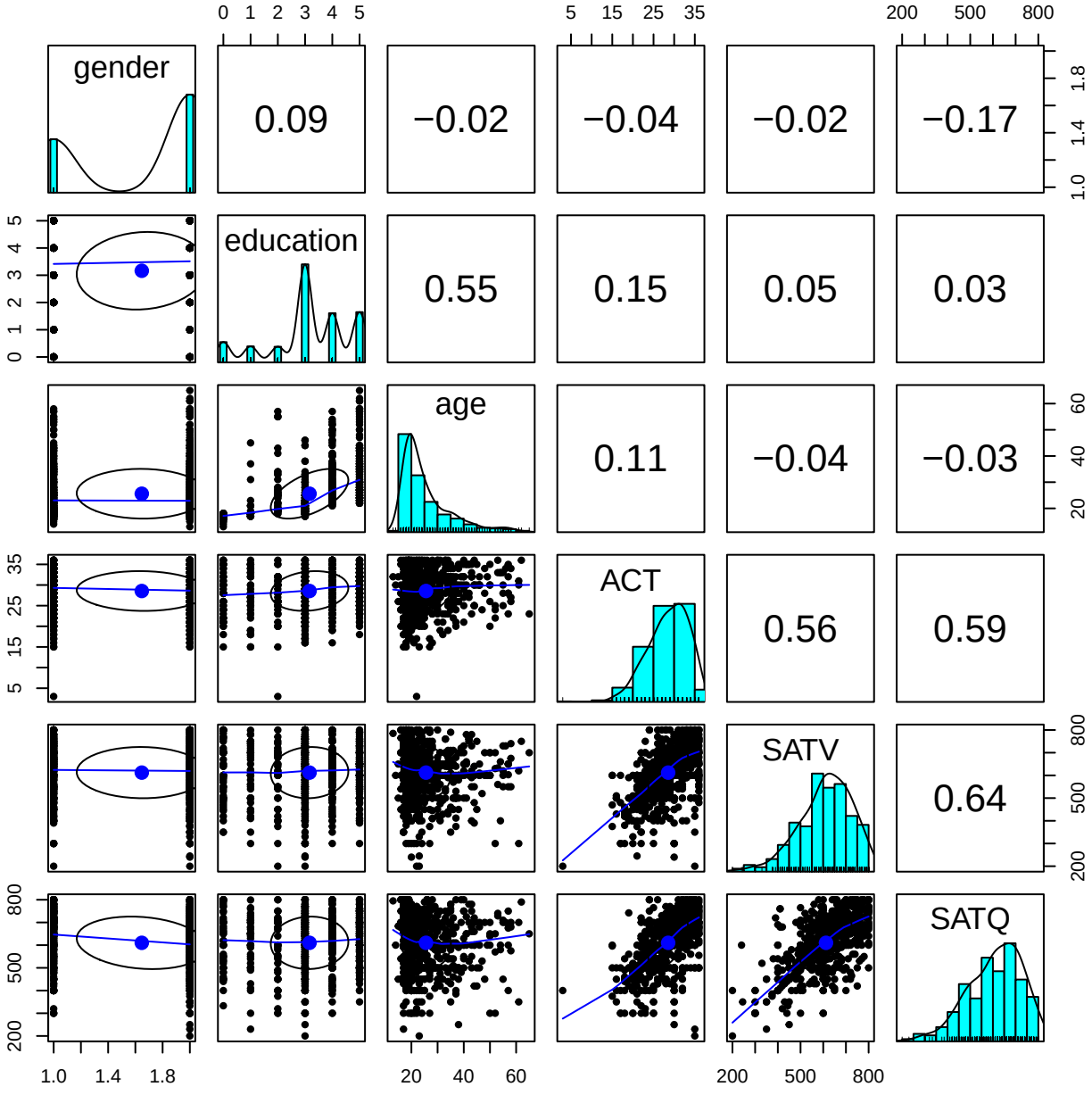
help("reliability")

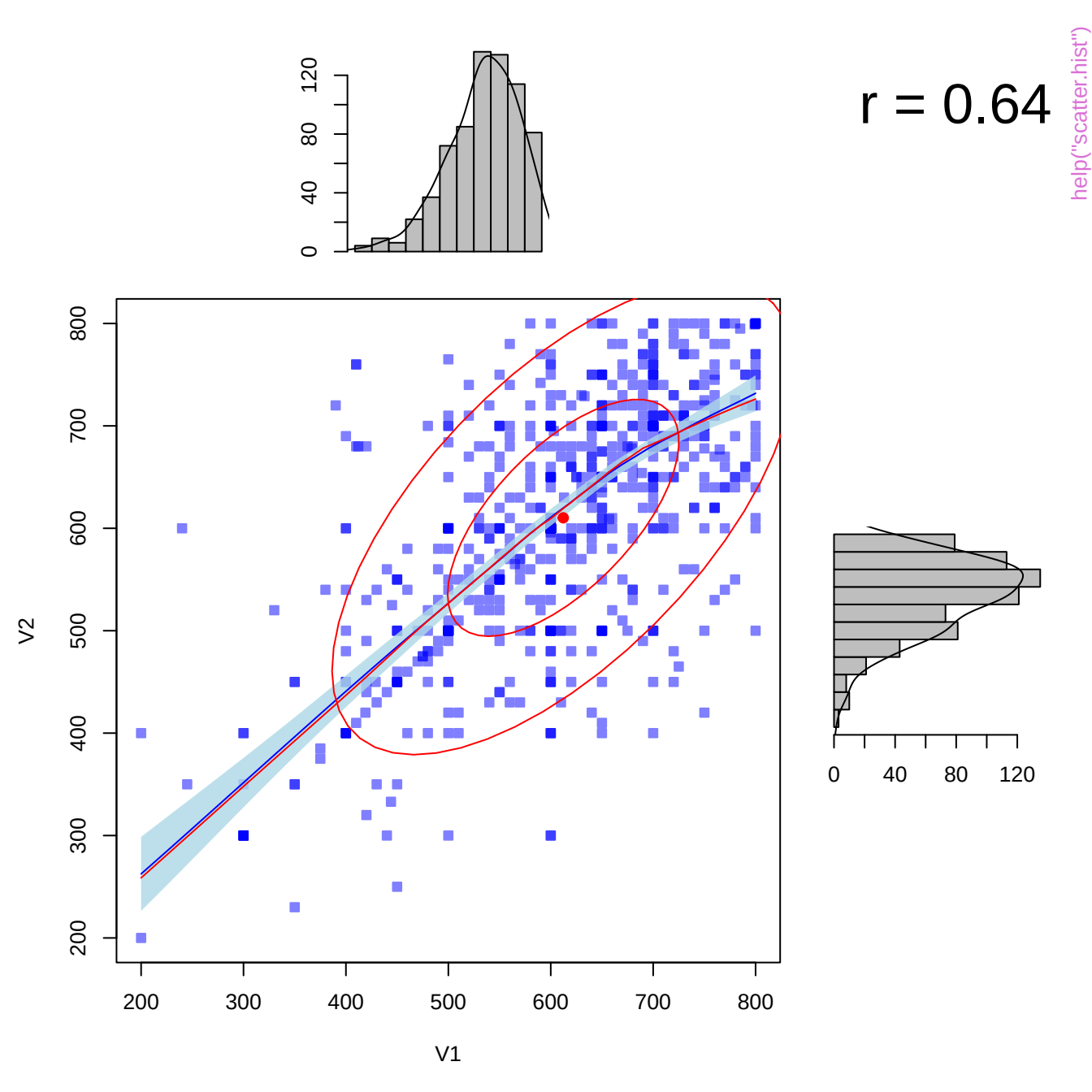
help("reliability")

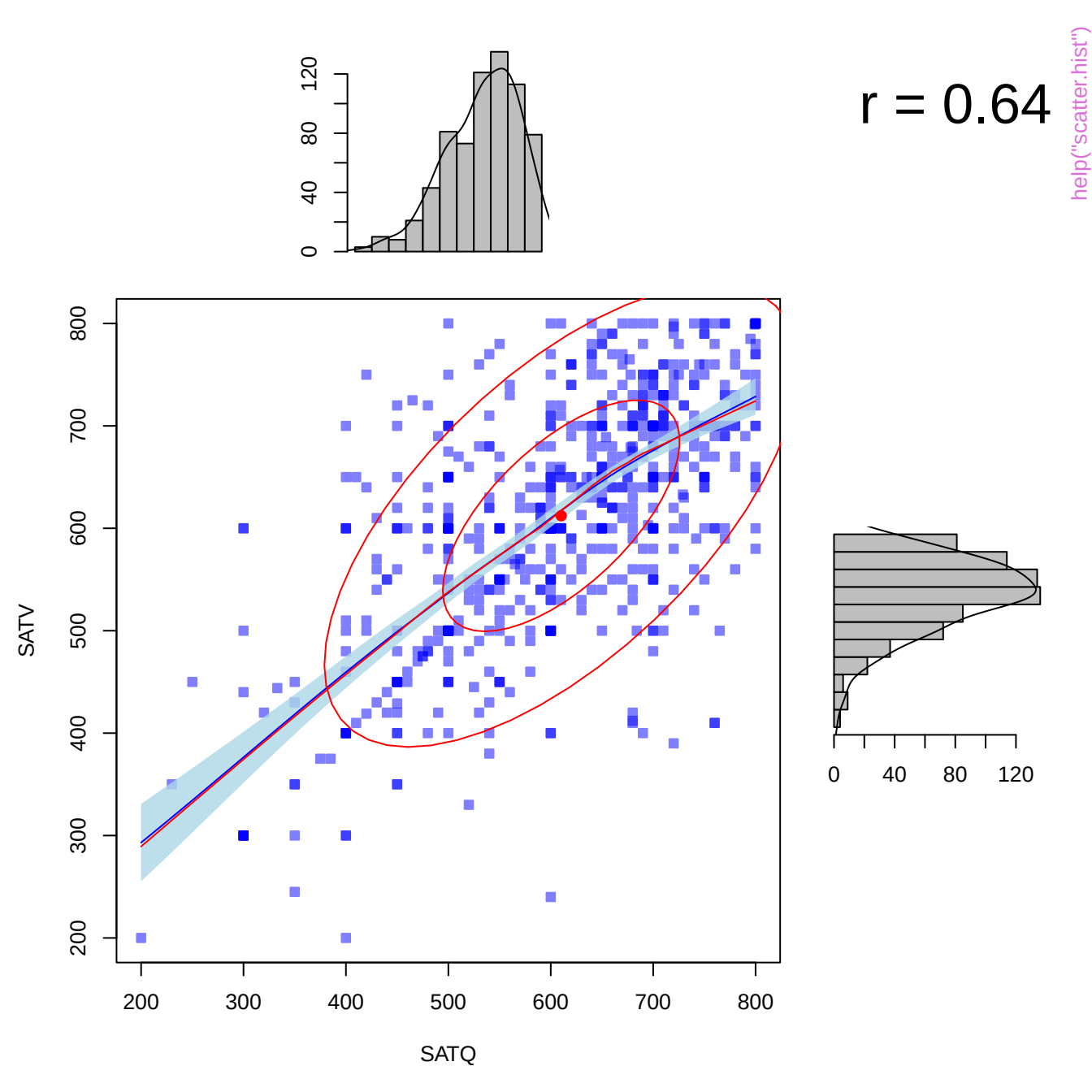
help("reliability")

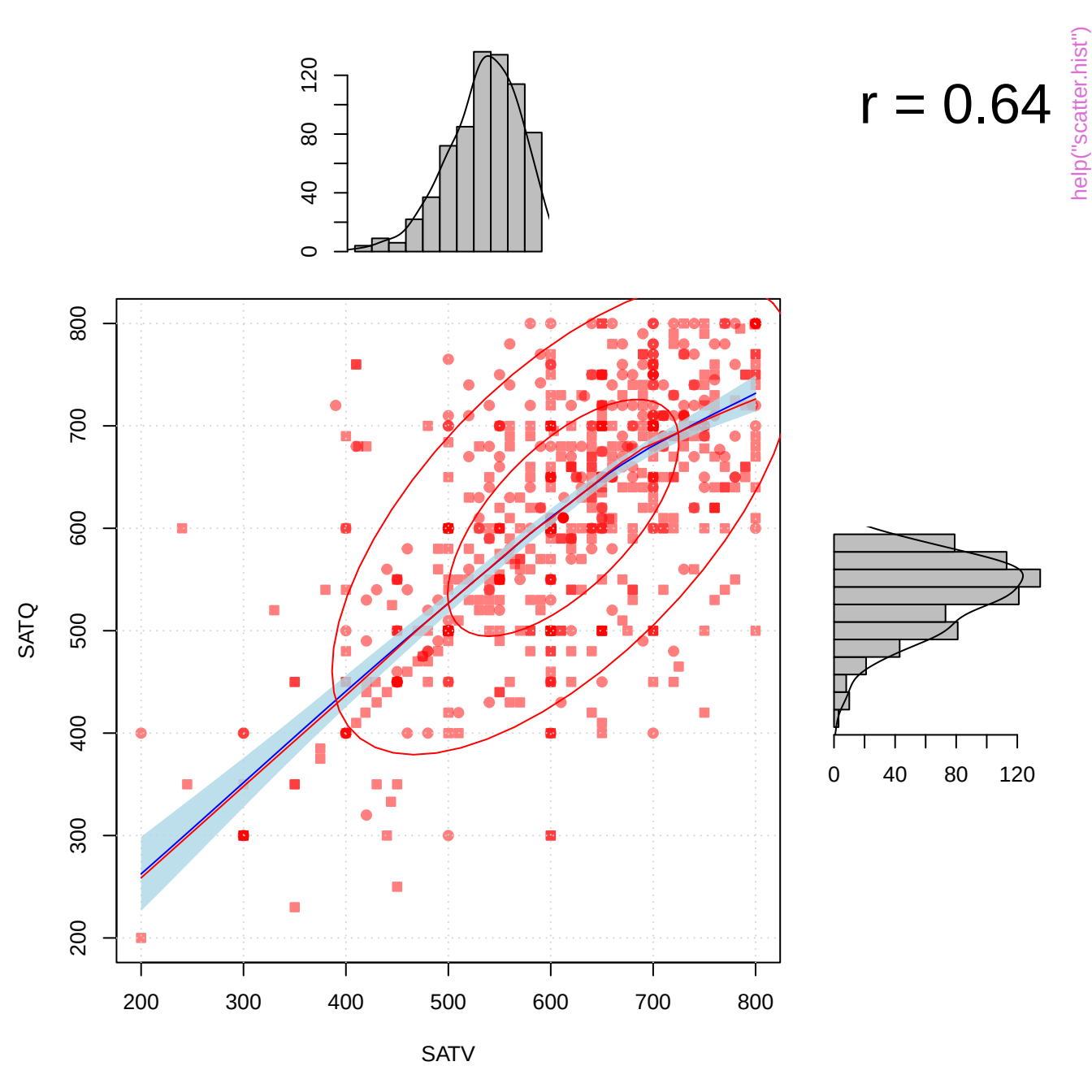
help("reliability")

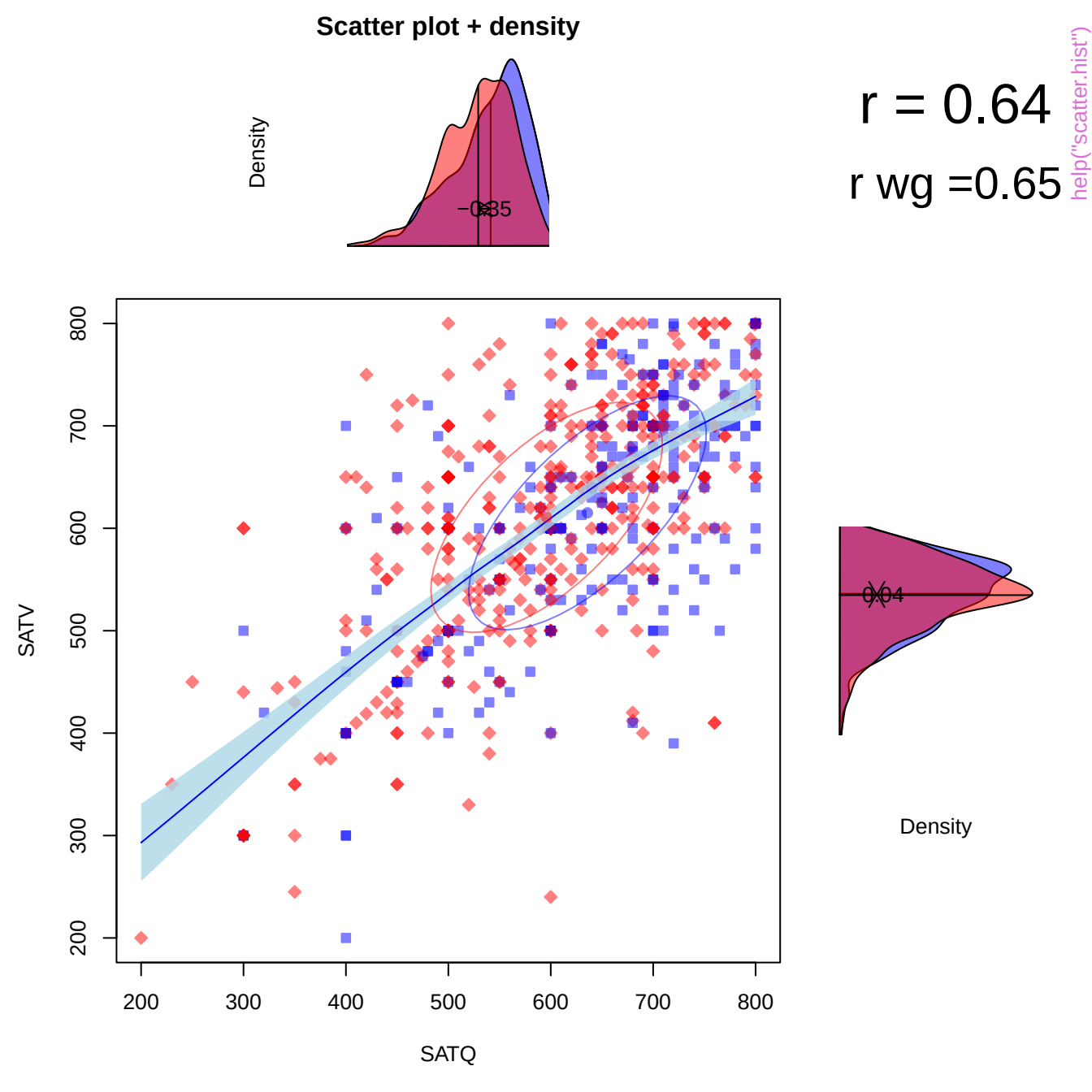
help("reliability")

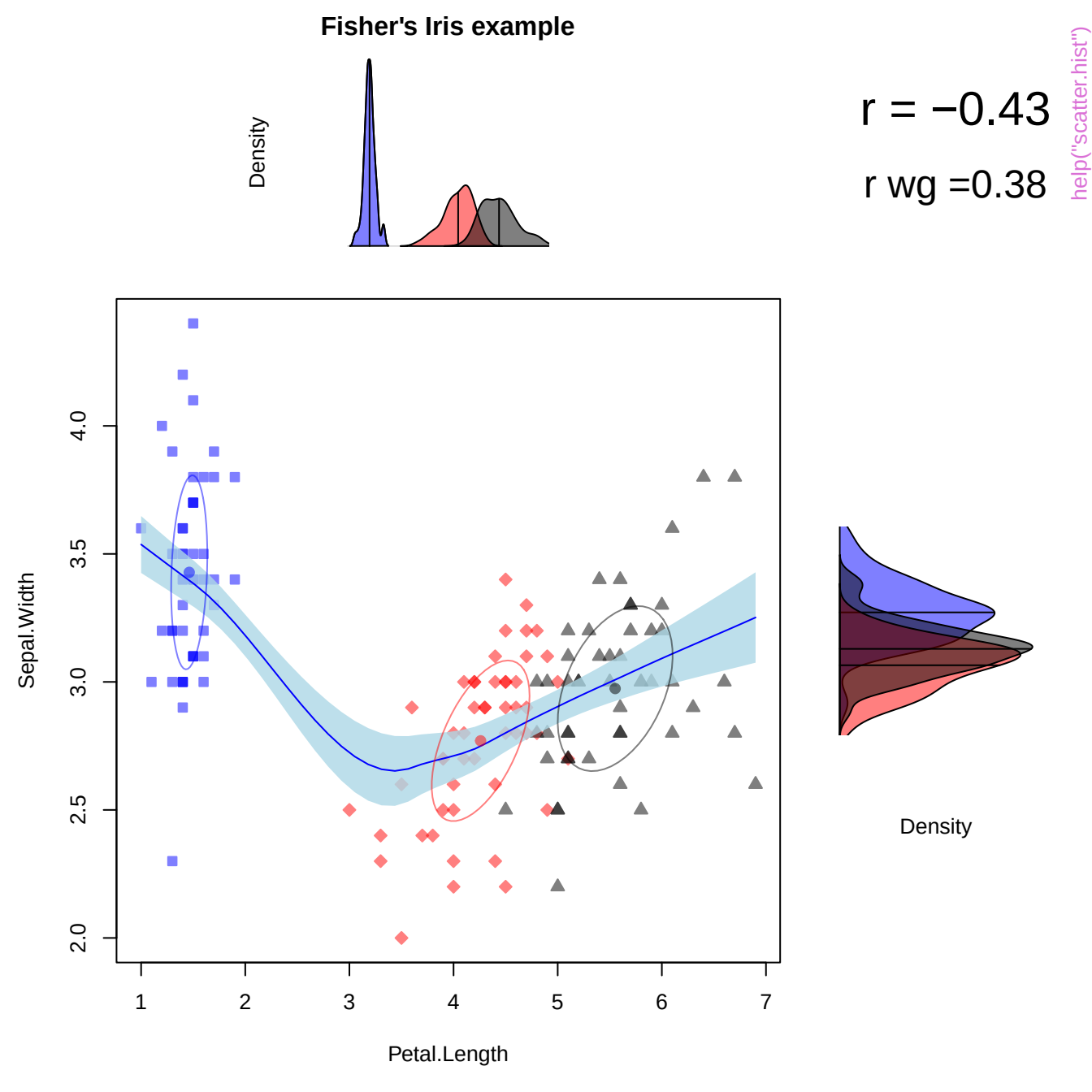

gender
education
age
ACT
SATV
SATQ
0.09
−0.02
−0.04
−0.02
−0.17
0.55
0.15
0.05
0.03
0.11
−0.04
−0.03
0.56
0.59
0.64
help("sat.act")

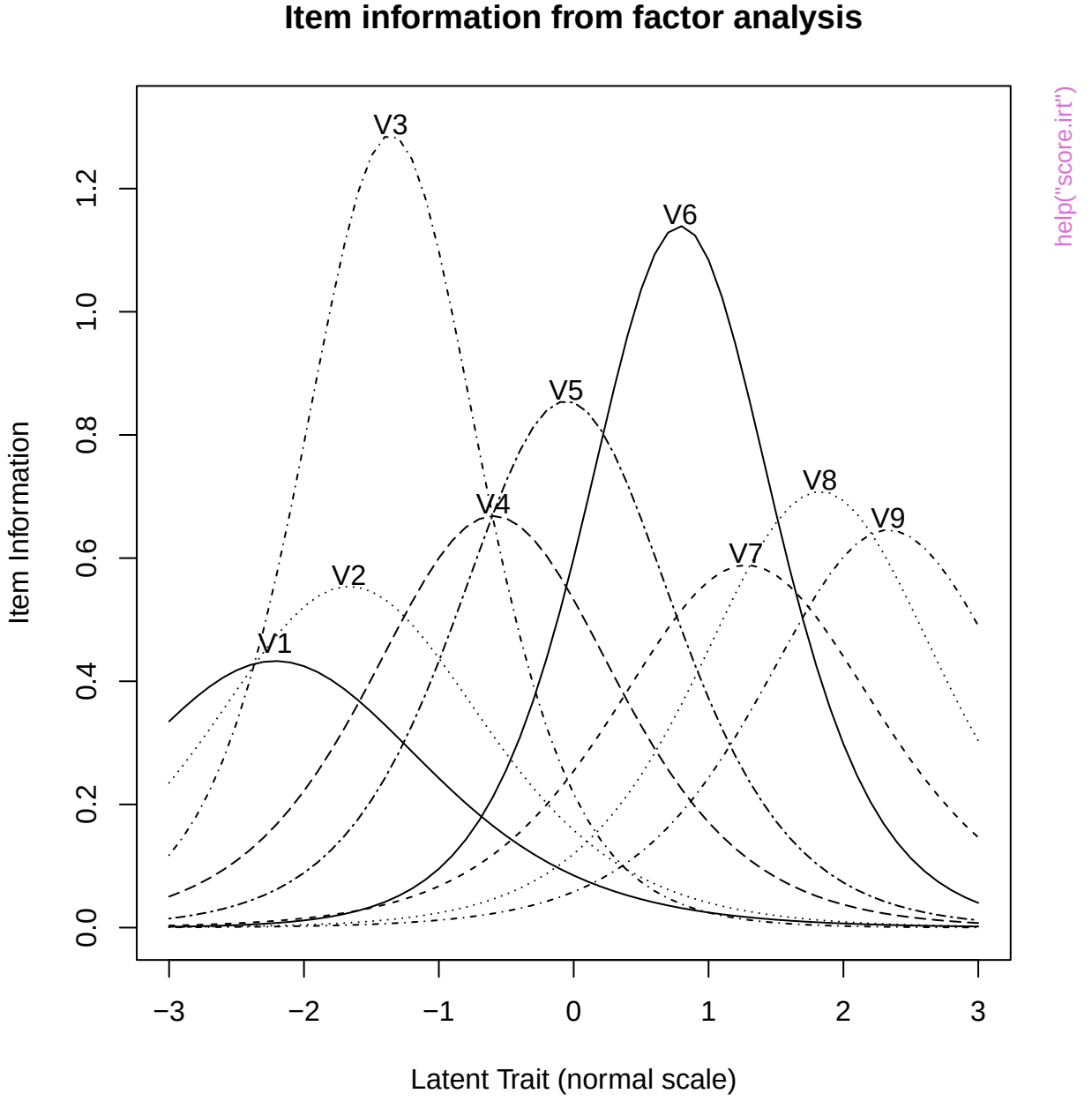

r = 0.64
help("scatter.hist")
0
40
80
120
200
300
400
500
600
700
800
V1
V2


r = 0.64
help("scatter.hist")
0
40
80
120
SATV
SATQ
200
300
400
500
600
700
800

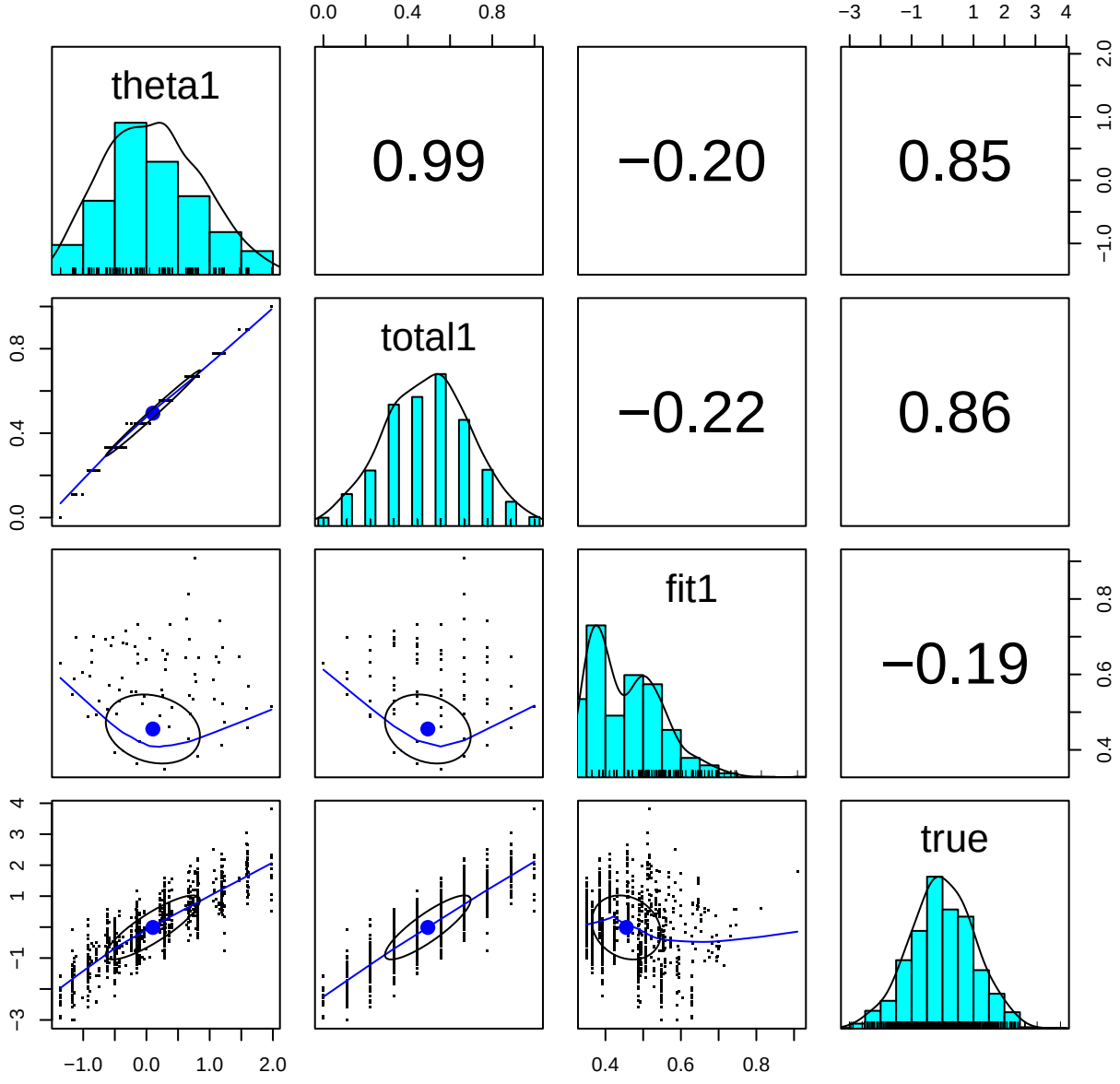

r = 0.64
help("scatter.hist")
0
40
80
120
SATQ
SATV
200
300
400
500
600
700
800


Scatter plot + density
Density
r = 0.64
r wg =0.65
help("scatter.hist")
SATV
SATQ
200
300
400
500
600
700
800
Density

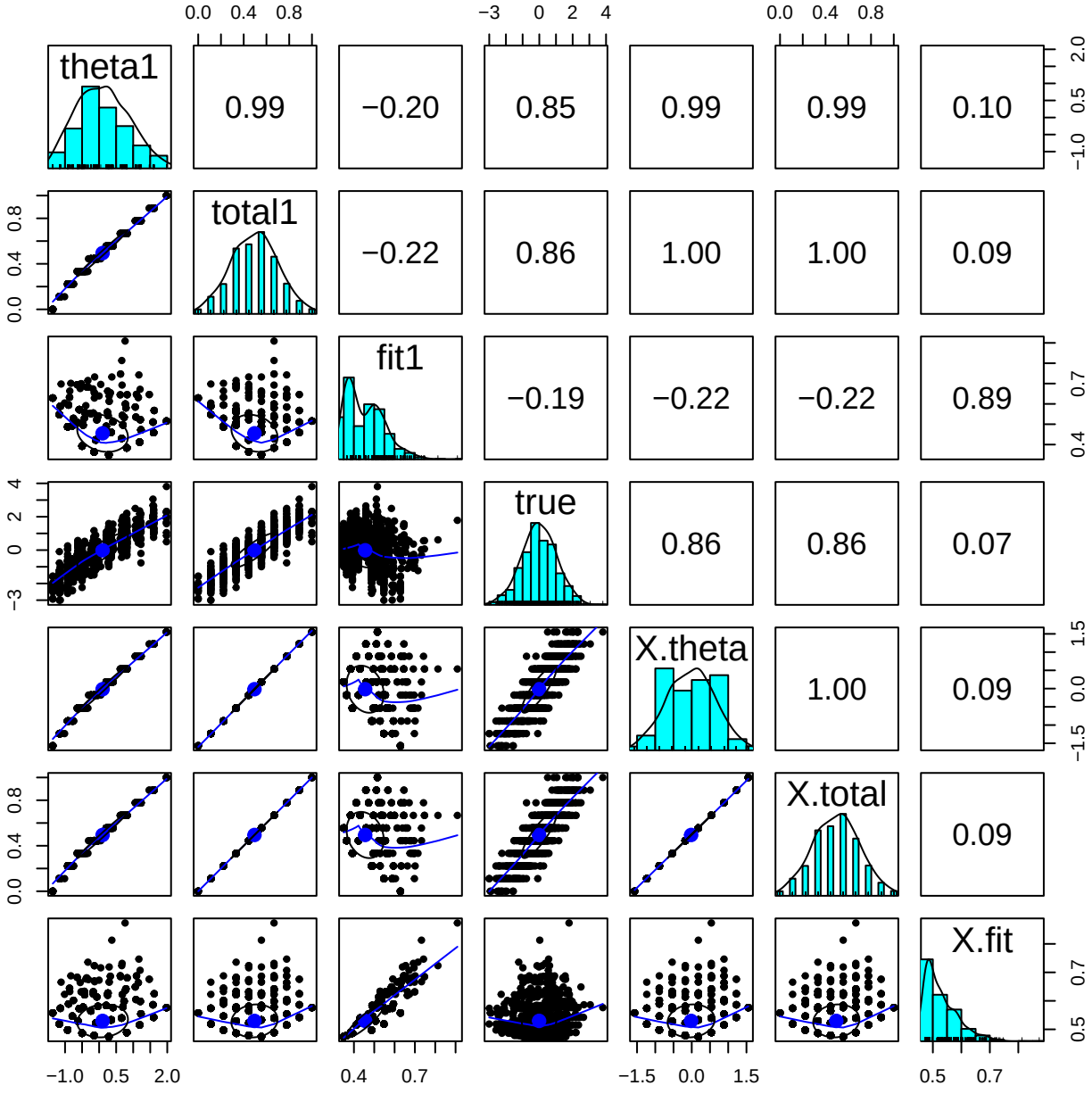

Fisher's Iris example
Density
r = −0.43
r wg =0.38
help("scatter.hist")
Sepal.Width
Petal.Length
Density
2.0
2.5
3.0
3.5
4.0
1
2
3
4
5
6
7


Item information from factor analysis
help("score.irt")
Item Information
0.0
0.2
0.4
0.6
0.8
1.0
1.2
V1
V2
V3
V4
V5
V6
V7
V8
V9
−3
−2
−1
0
1
2
3
Latent Trait (normal scale)

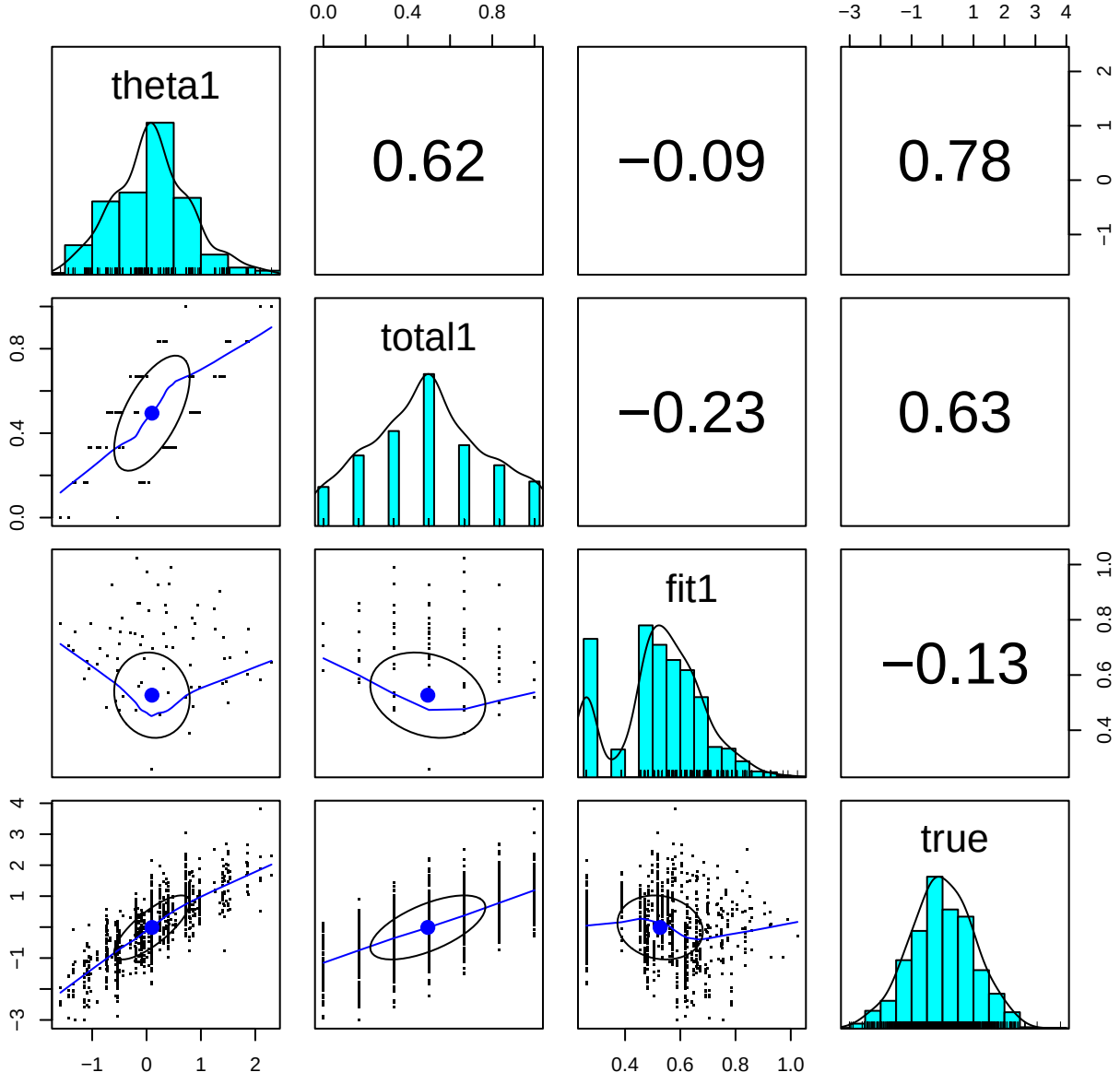
Comparing IRT and classical with complete data

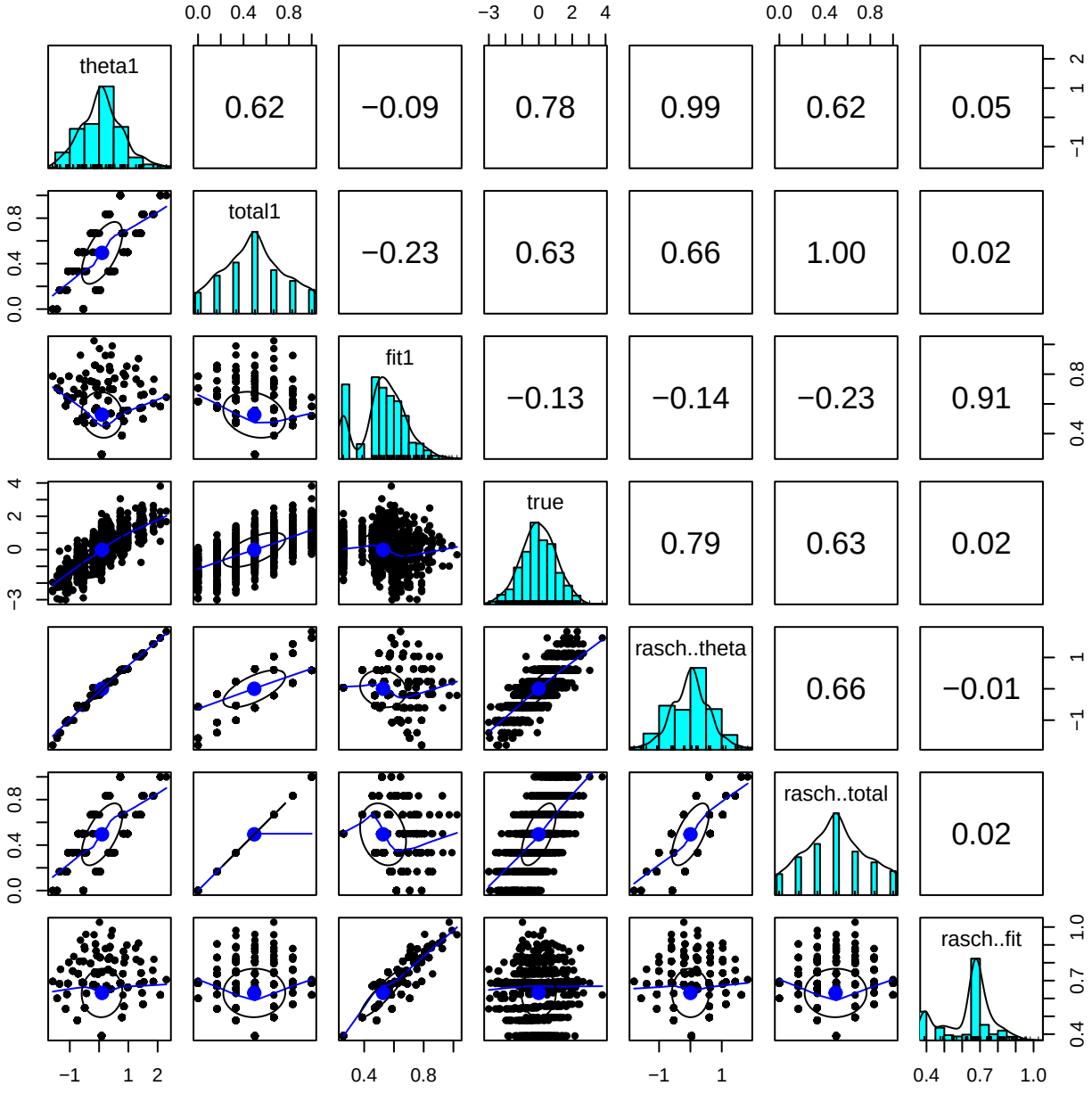


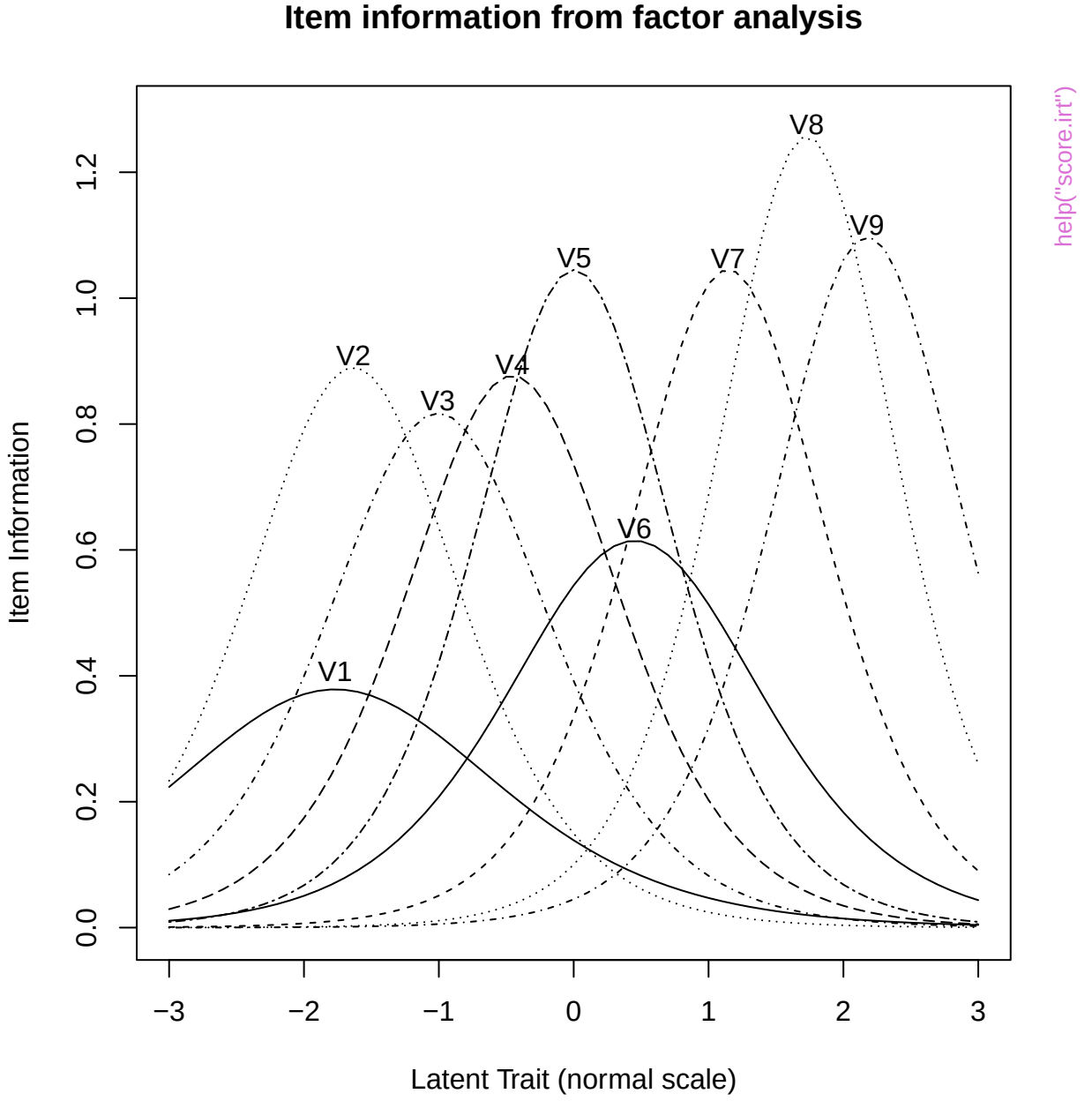
help("score.irt")


theta1
total1
fit1
true
X.theta
X.total
X.fit
0.99
−0.20
0.85
0.99
0.99
0.10
−0.22
0.86
1.00
1.00
0.09
−0.19
−0.22
−0.22
0.89
0.86
0.86
0.07
1.00
0.09
0.09
help("score.irt")

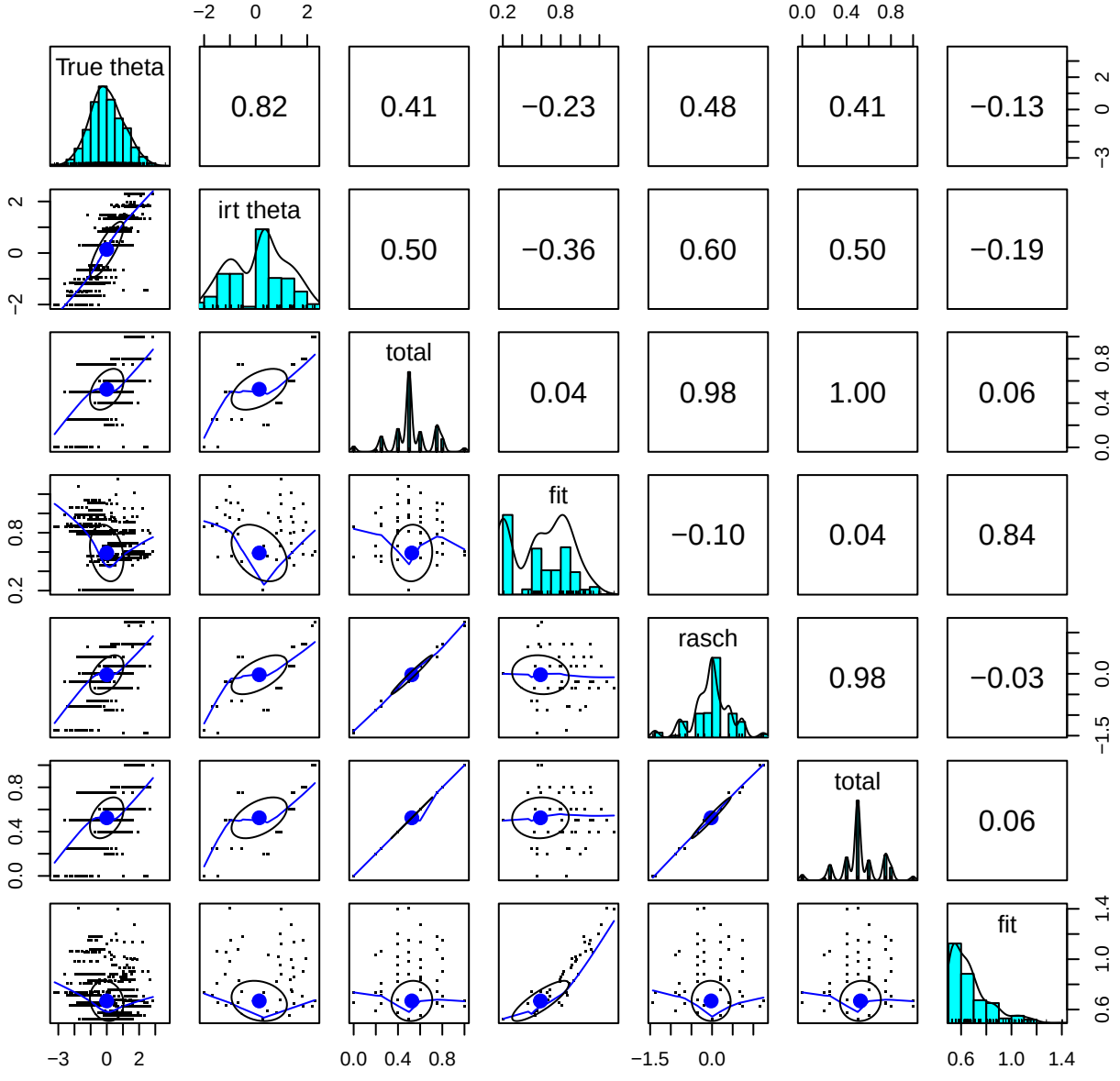
Comparing IRT and classical with random missing data




theta1
total1
fit1
true
rasch..theta
rasch..total
rasch..fit
0.62
−0.09
0.78
0.99
0.62
0.05
−0.23
0.63
0.66
1.00
0.02
−0.13
−0.14
−0.23
0.91
0.79
0.63
0.02
0.66
−0.01
0.02
help("score.irt")

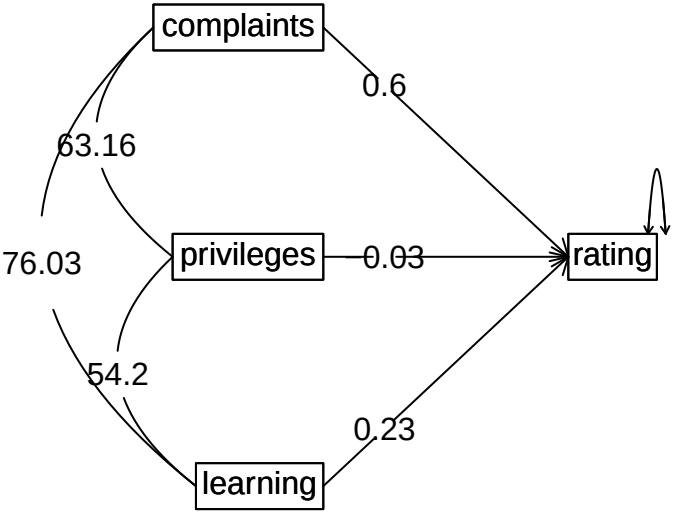

Item information from factor analysis
help("score.irt")
Item Information
0.0
0.2
0.4
0.6
0.8
1.0
1.2
V1
V2
V3
V4
V5
V6
V7
V8
V9
−3
−2
−1
0
1
2
3
Latent Trait (normal scale)

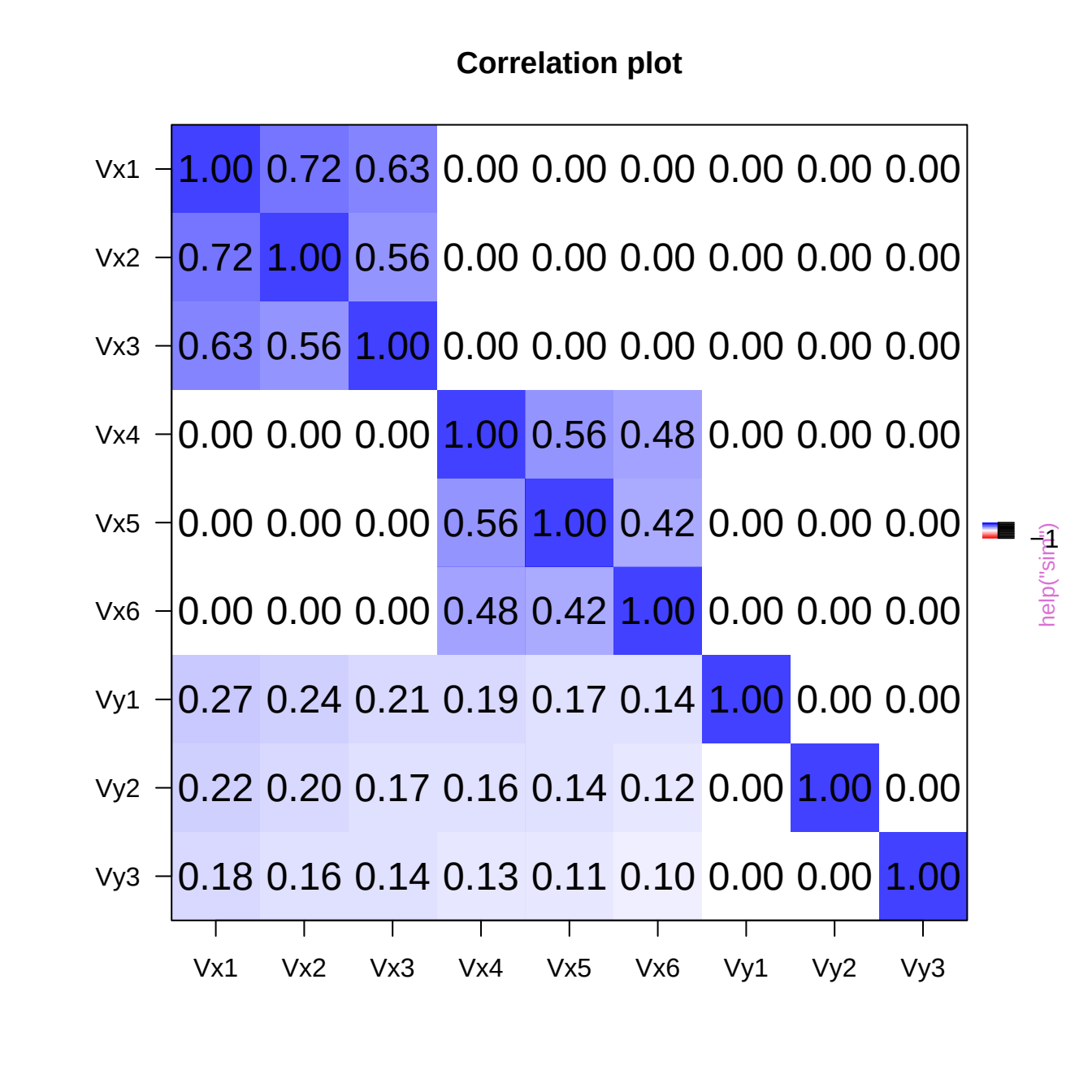
Comparing IRT and classical with missing data

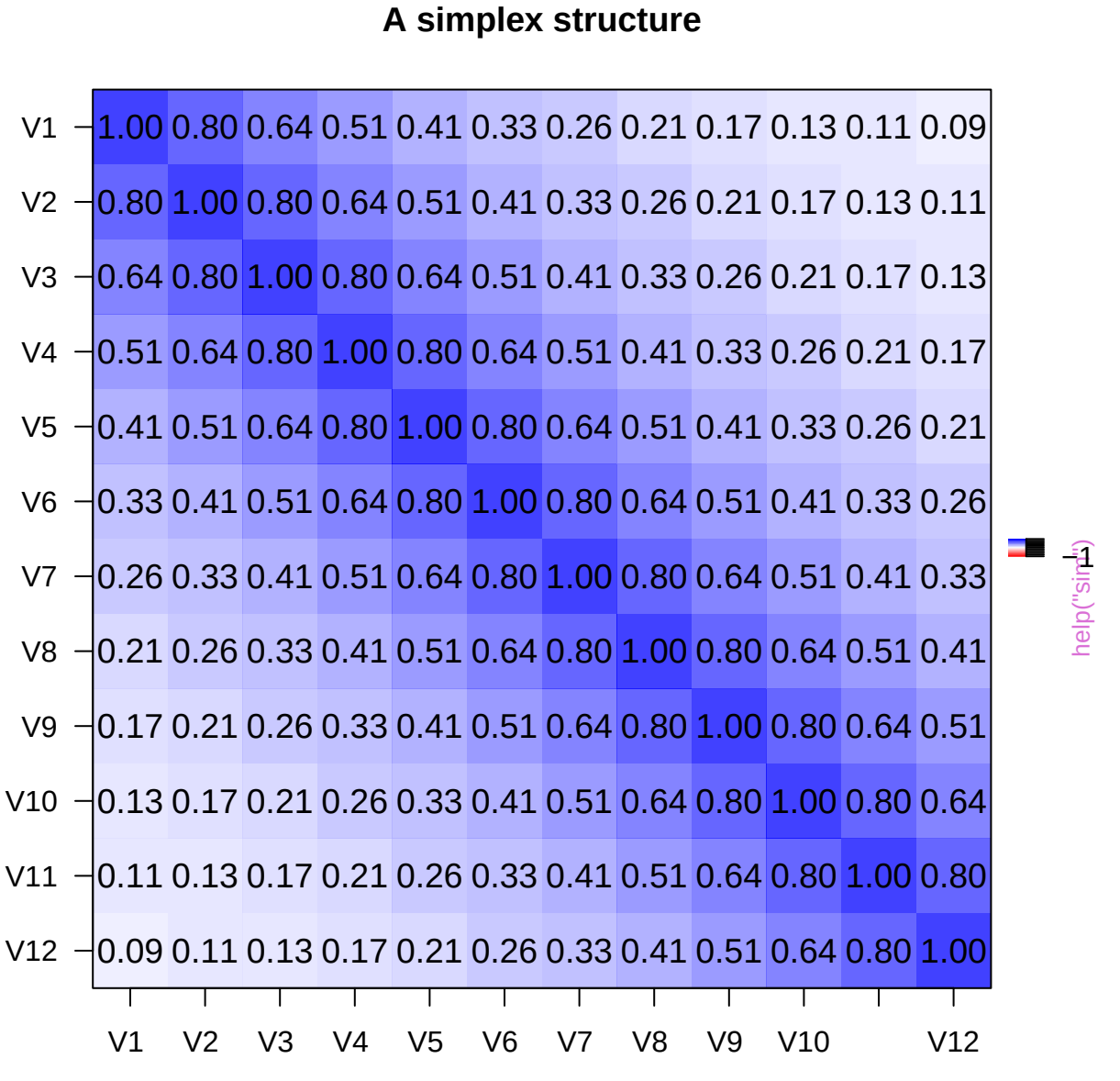


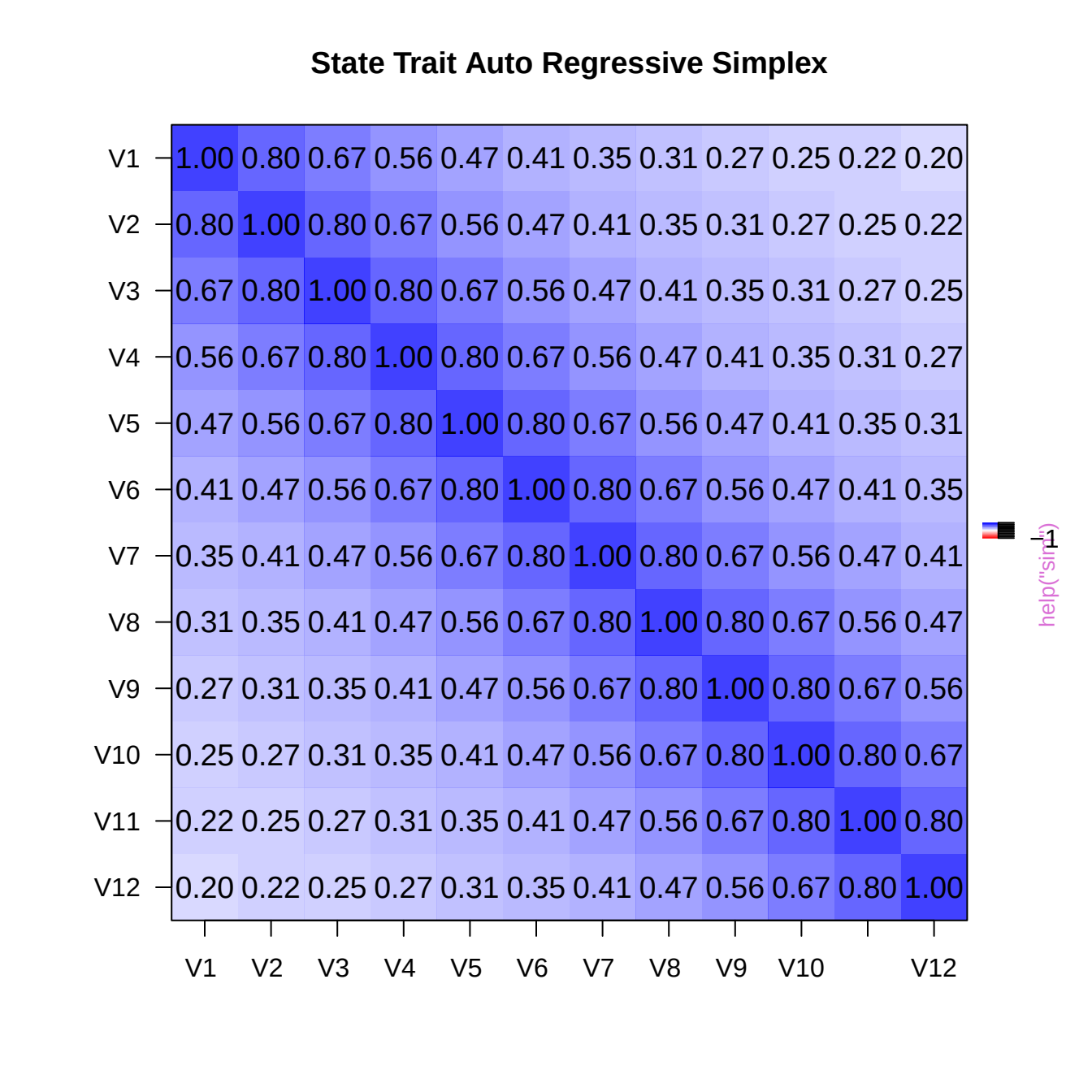
Regression Models

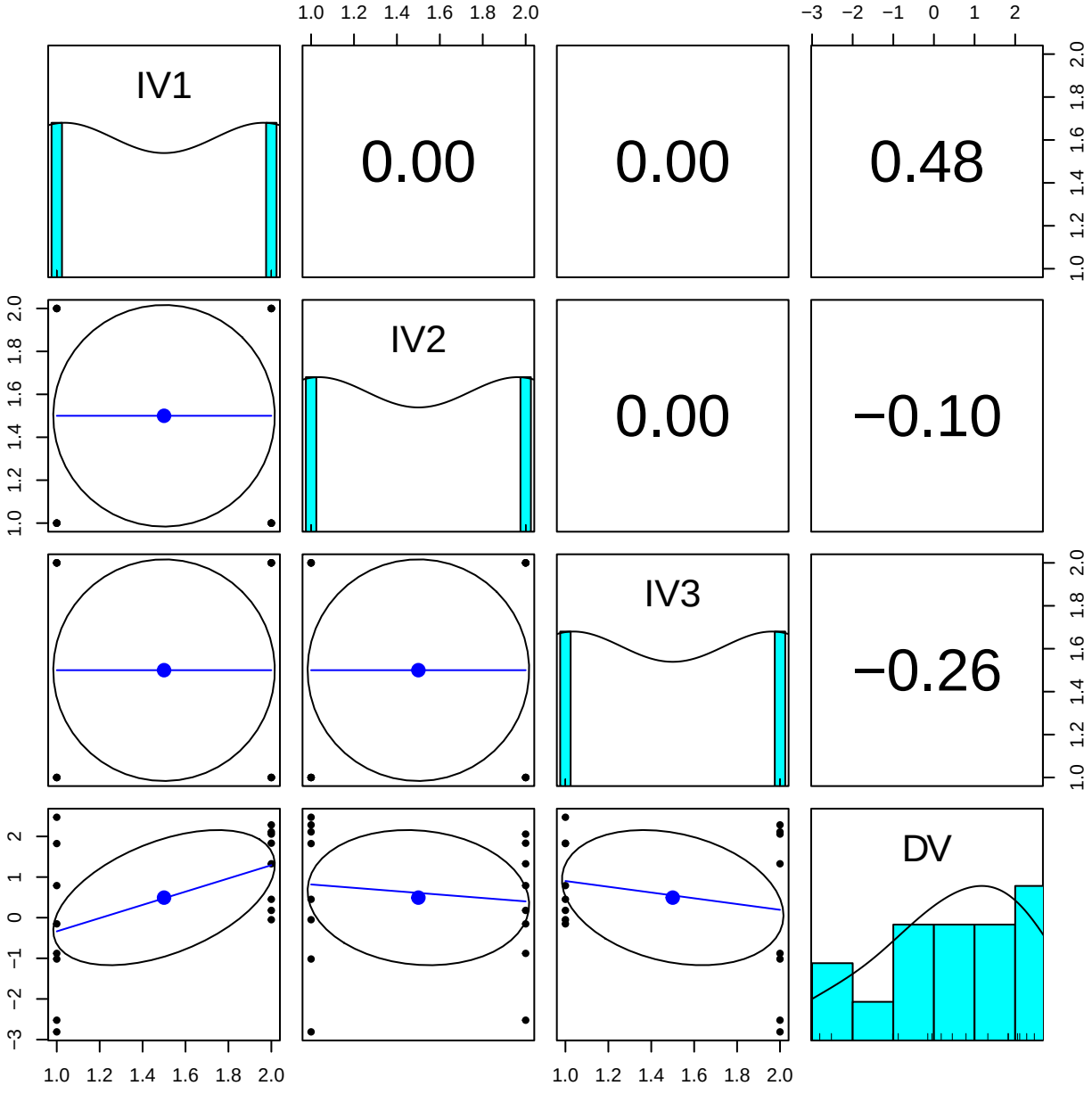
help("scoreWtd")



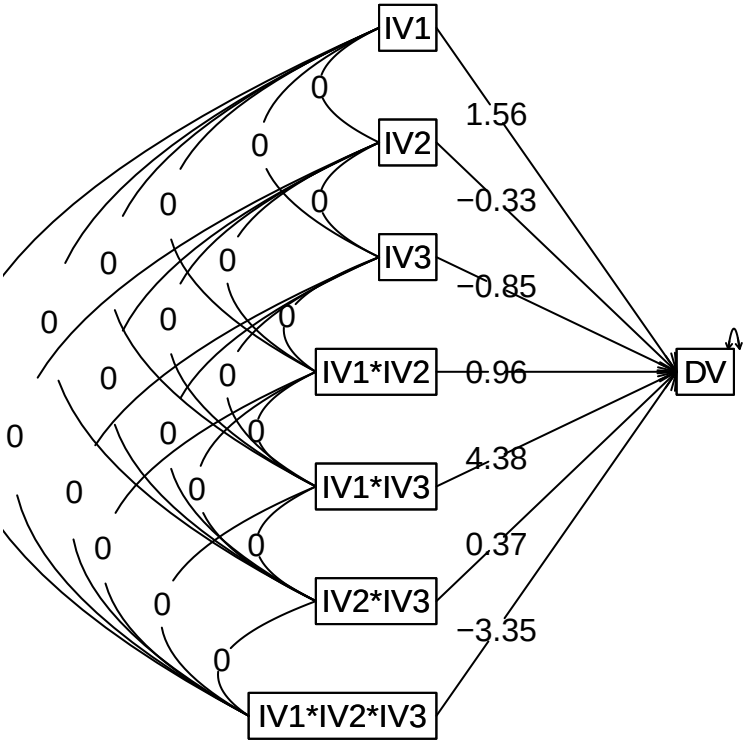

Correlation plot
Vx1 1.00 0.72 0.63 0.00 0.00 0.00 0.00 0.00 0.00
Vx2 0.72 1.00 0.56 0.00 0.00 0.00 0.00 0.00 0.00
Vx3 0.63 0.56 1.00 0.00 0.00 0.00 0.00 0.00 0.00
Vx4 0.00 0.00 0.00 1.00 0.56 0.48 0.00 0.00 0.00
Vx5 0.00 0.00 0.00 0.56 1.00 0.42 0.00 0.00 0.00
Vx6 0.00 0.00 0.00 0.48 0.42 1.00 0.00 0.00 0.00
Vy1 0.27 0.24 0.21 0.19 0.17 0.14 1.00 0.00 0.00
Vy2 0.22 0.20 0.17 0.16 0.14 0.12 0.00 1.00 0.00
Vy3 0.18 0.16 0.14 0.13 0.11 0.10 0.00 0.00 1.00
Vx1 Vx2 Vx3 Vx4 Vx5 Vx6 Vy1 Vy2 Vy3
1
help("sin")


A simplex structure
V1 1.00 0.80 0.64 0.51 0.41 0.33 0.26 0.21 0.17 0.13 0.11 0.09
V2 0.80 1.00 0.80 0.64 0.51 0.41 0.33 0.26 0.21 0.17 0.13 0.11
V3 0.64 0.80 1.00 0.80 0.64 0.51 0.41 0.33 0.26 0.21 0.17 0.13
V4 0.51 0.64 0.80 1.00 0.80 0.64 0.51 0.41 0.33 0.26 0.21 0.17
V5 0.41 0.51 0.64 0.80 1.00 0.80 0.64 0.51 0.41 0.33 0.26 0.21
V6 0.33 0.41 0.51 0.64 0.80 1.00 0.80 0.64 0.51 0.41 0.33 0.26
V7 0.26 0.33 0.41 0.51 0.64 0.80 1.00 0.80 0.64 0.51 0.41 0.33
V8 0.21 0.26 0.33 0.41 0.51 0.64 0.80 1.00 0.80 0.64 0.51 0.41
V9 0.17 0.21 0.26 0.33 0.41 0.51 0.64 0.80 1.00 0.80 0.64 0.51
V10 0.13 0.17 0.21 0.26 0.33 0.41 0.51 0.64 0.80 1.00 0.80 0.64
V11 0.11 0.13 0.17 0.21 0.26 0.33 0.41 0.51 0.64 0.80 1.00 0.80
V12 0.09 0.11 0.13 0.17 0.21 0.26 0.33 0.41 0.51 0.64 0.80 1.00
V1 V2 V3 V4 V5 V6 V7 V8 V9 V10 V12
1
help("sim")


State Trait Auto Regressive Simplex
V1 1.00 0.80 0.67 0.56 0.47 0.41 0.35 0.31 0.27 0.25 0.22 0.20
V2 0.80 1.00 0.80 0.67 0.56 0.47 0.41 0.35 0.31 0.27 0.25 0.22
V3 0.67 0.80 1.00 0.80 0.67 0.56 0.47 0.41 0.35 0.31 0.27 0.25
V4 0.56 0.67 0.80 1.00 0.80 0.67 0.56 0.47 0.41 0.35 0.31 0.27
V5 0.47 0.56 0.67 0.80 1.00 0.80 0.67 0.56 0.47 0.41 0.35 0.31
V6 0.41 0.47 0.56 0.67 0.80 1.00 0.80 0.67 0.56 0.47 0.41 0.35
V7 0.35 0.41 0.47 0.56 0.67 0.80 1.00 0.80 0.67 0.56 0.47 0.41
V8 0.31 0.35 0.41 0.47 0.56 0.67 0.80 1.00 0.80 0.67 0.56 0.47
V9 0.27 0.31 0.35 0.41 0.47 0.56 0.67 0.80 1.00 0.80 0.67 0.56
V10 0.25 0.27 0.31 0.35 0.41 0.47 0.56 0.67 0.80 1.00 0.80 0.67
V11 0.22 0.25 0.27 0.31 0.35 0.41 0.47 0.56 0.67 0.80 1.00 0.80
V12 0.20 0.22 0.25 0.27 0.31 0.35 0.41 0.47 0.56 0.67 0.80 1.00
V1 V2 V3 V4 V5 V6 V7 V8 V9 V10 V12
1
help("sim")

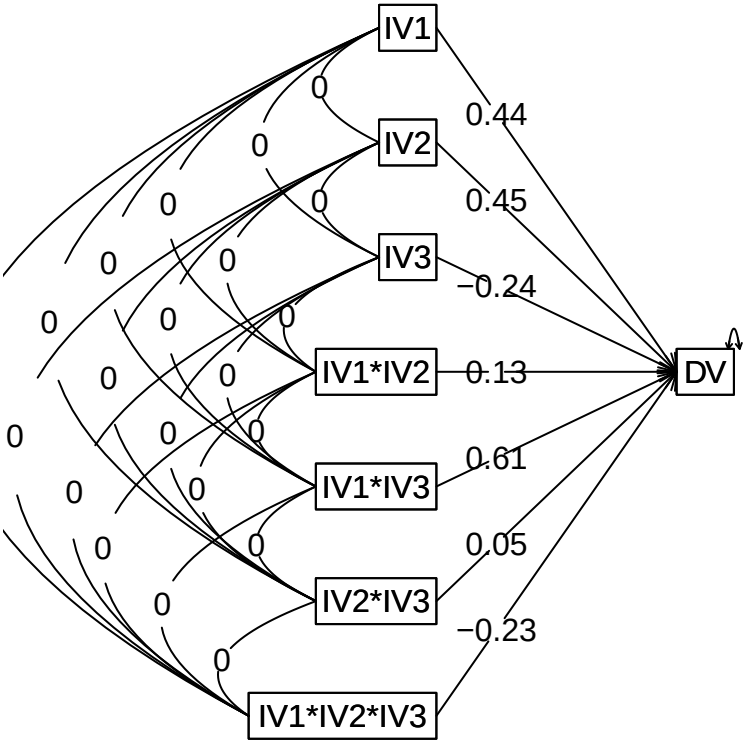

IV1
IV2
IV3
DV
0.00
0.00
0.48
0.00
−0.10
−0.26
1.0 1.2 1.4 1.6 1.8 2.0
−3 −2 −1 0 1 2
help("sim.anova")

Regression Models

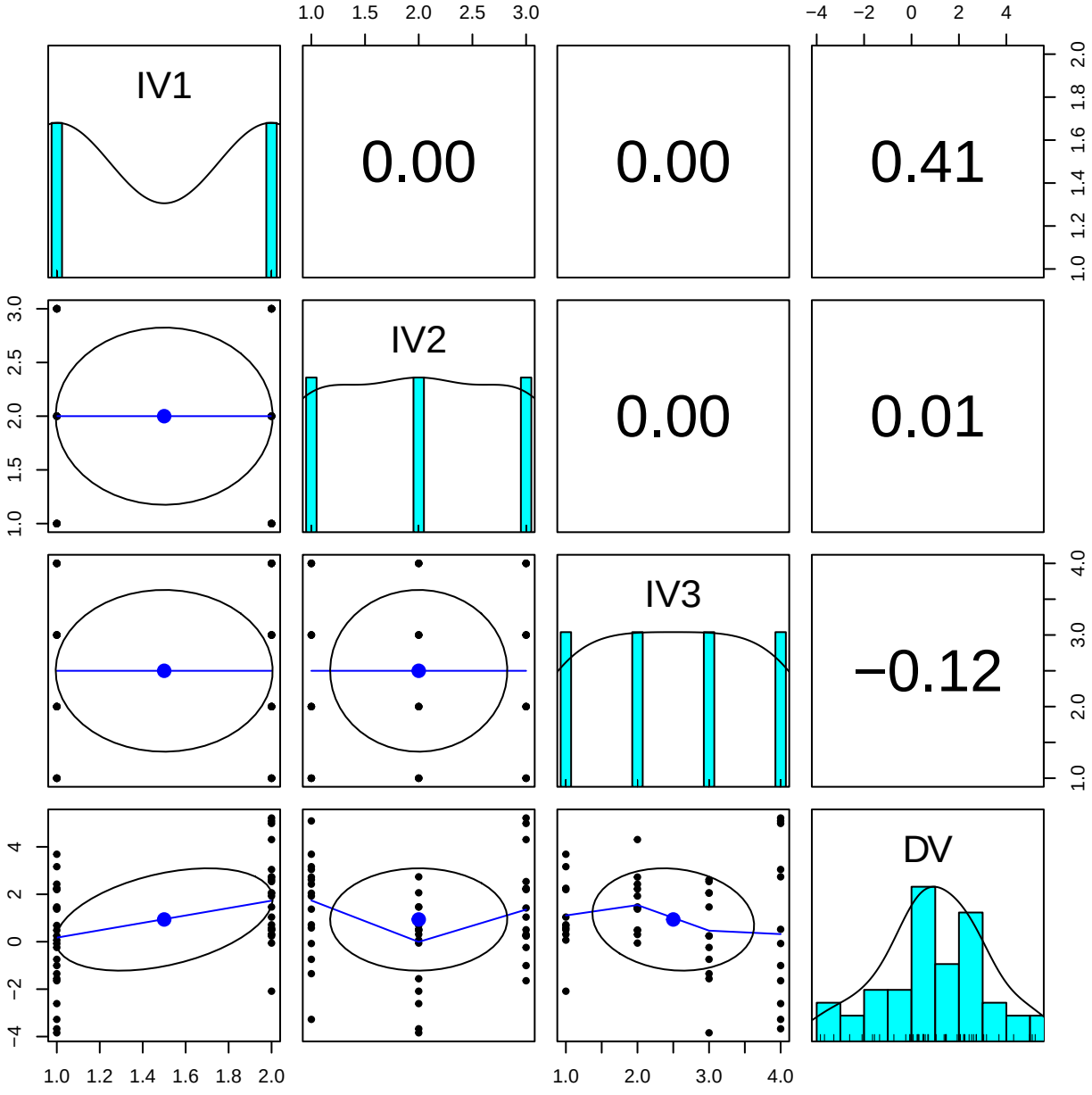


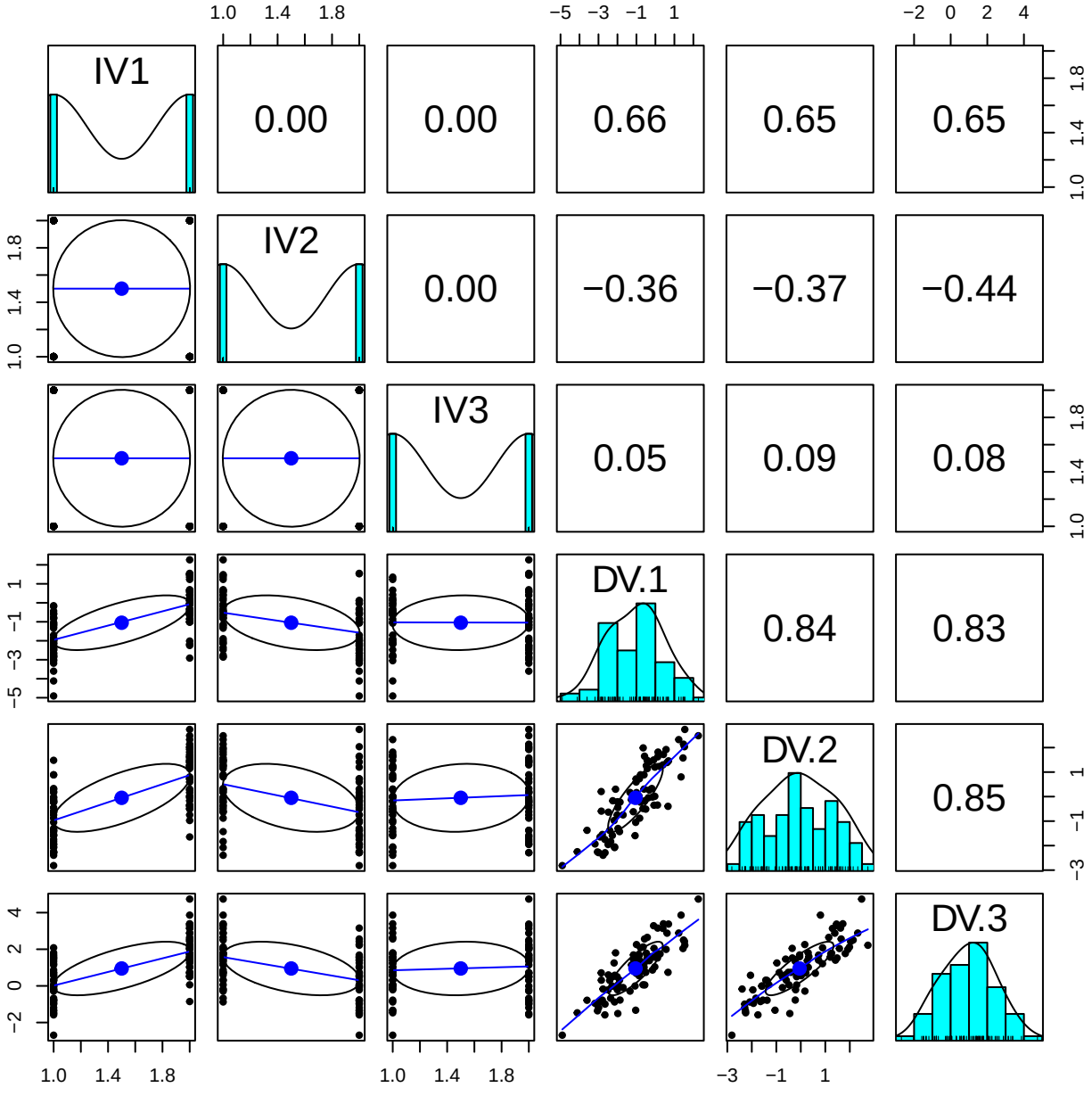
help("sim.anova")

Regression Models

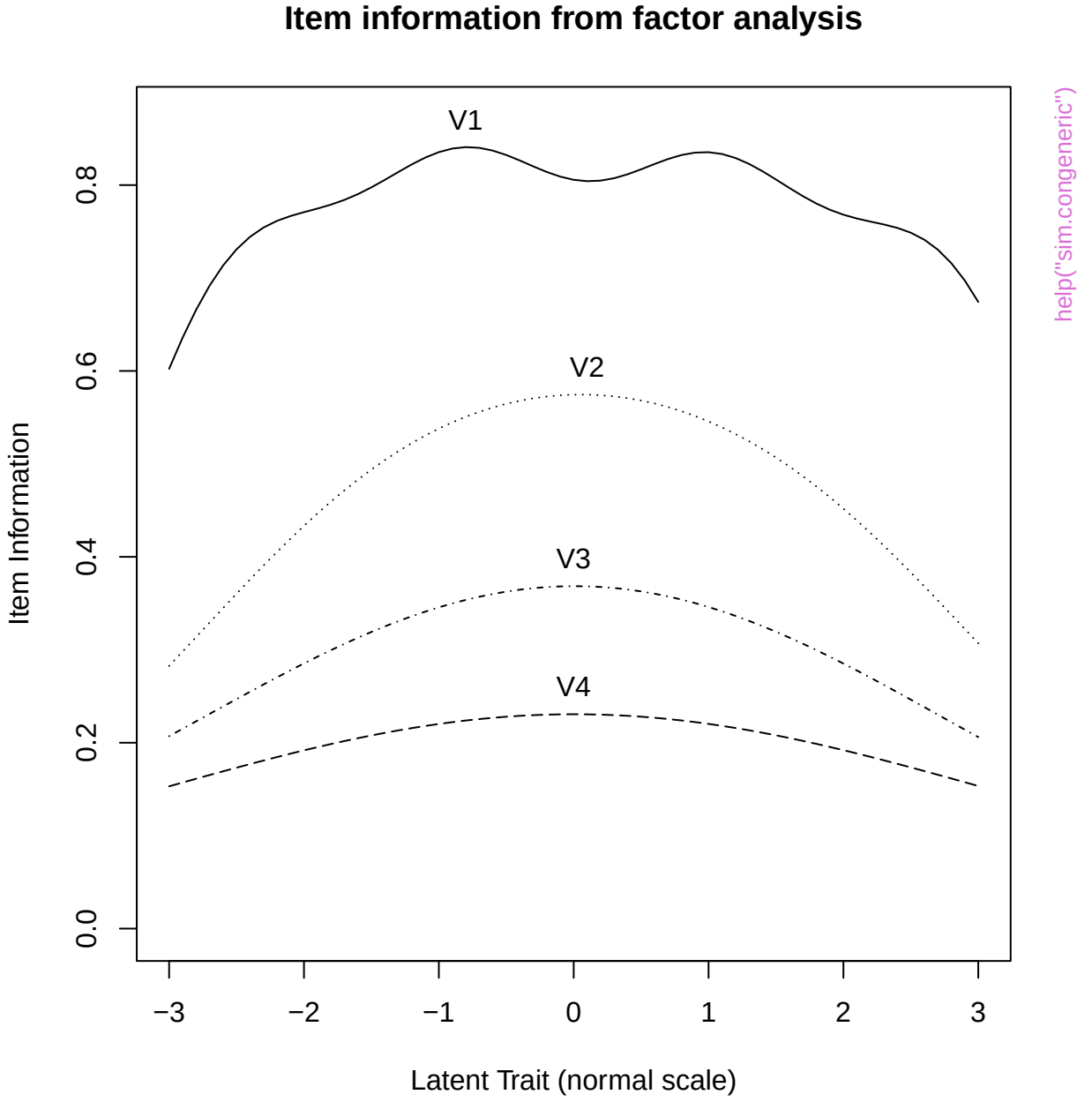


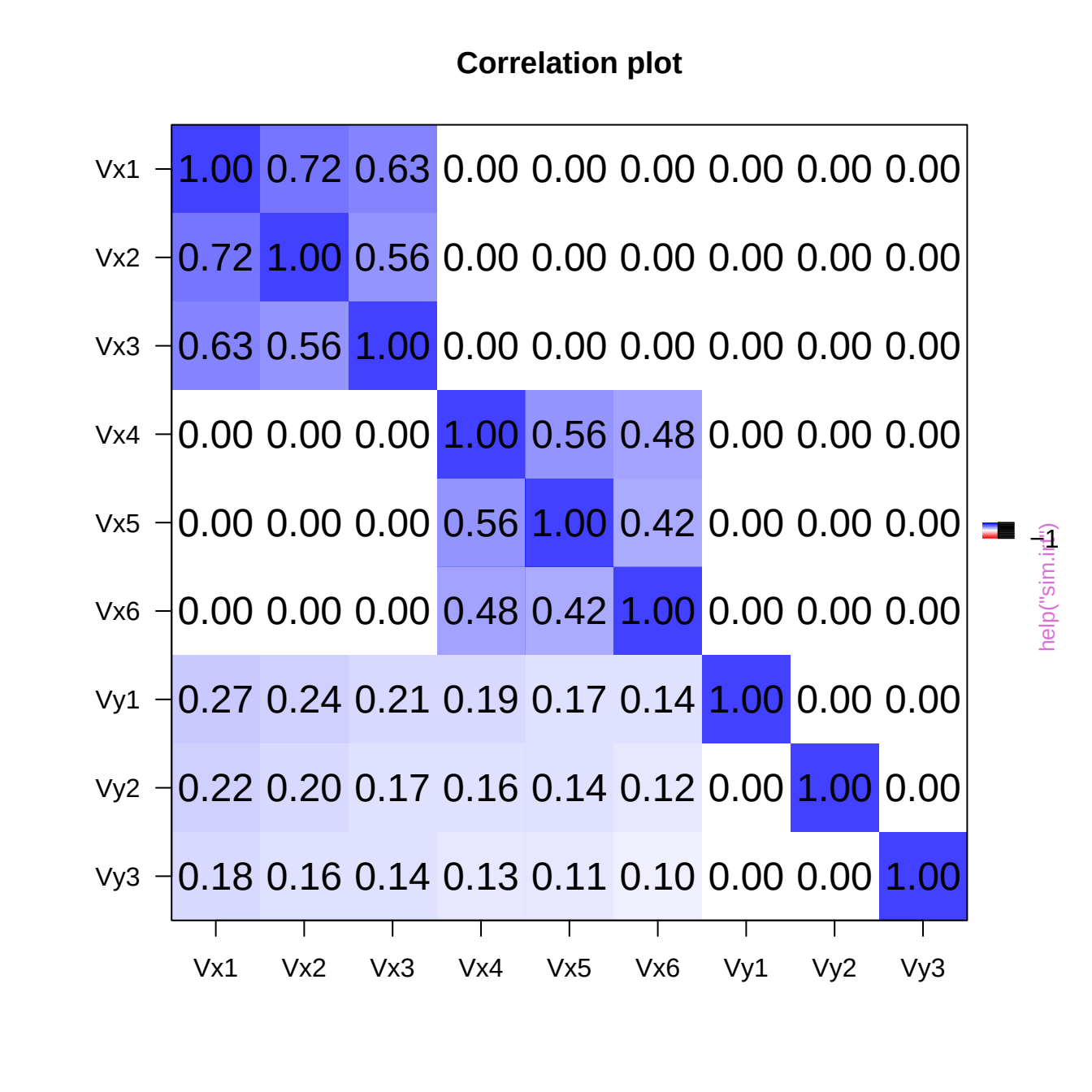
help("sim.anova")

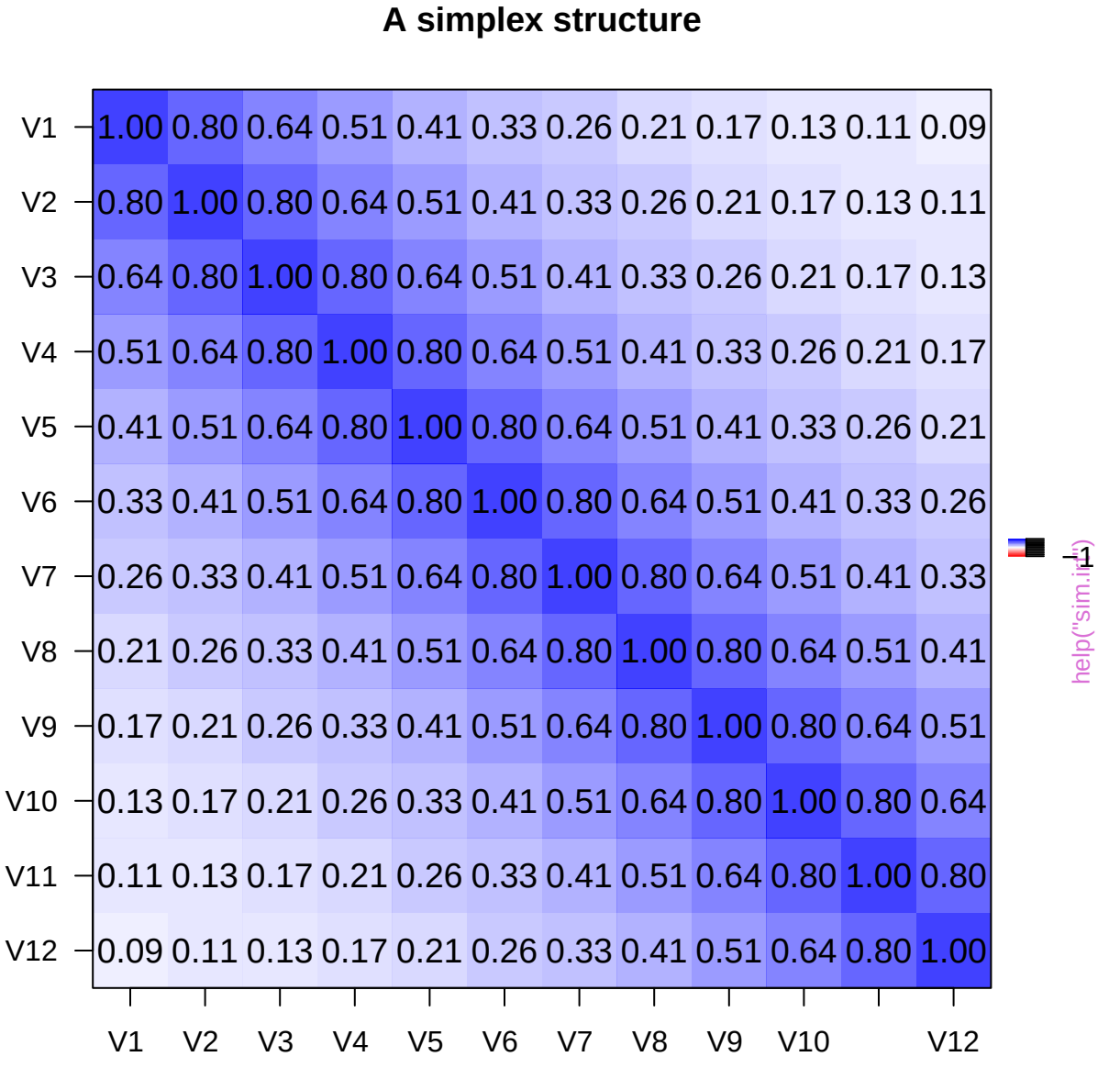

IV1
IV2
IV3
DV
0.00
0.00
0.41
0.00
0.01
−0.12
help("sim.anova")

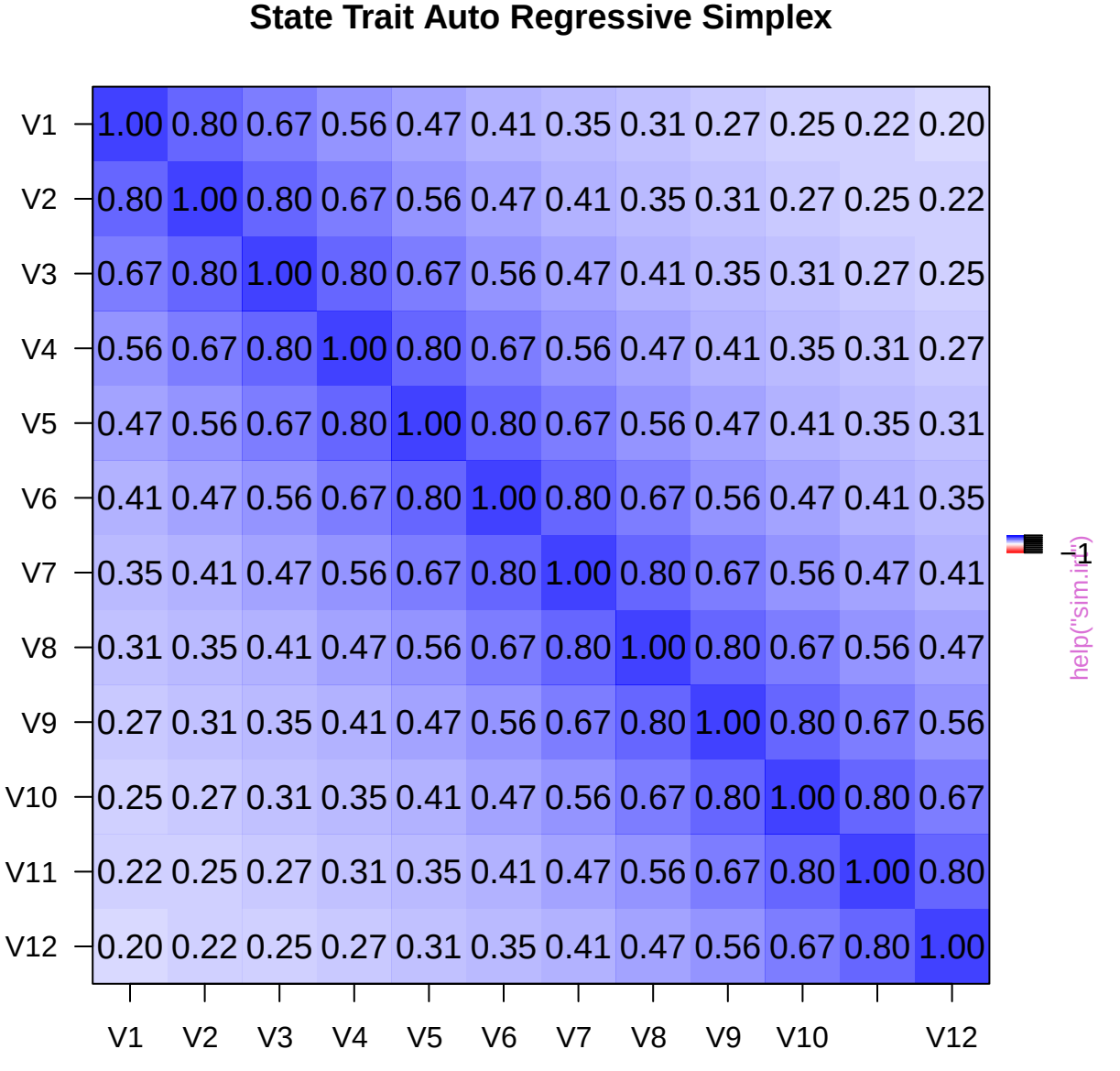


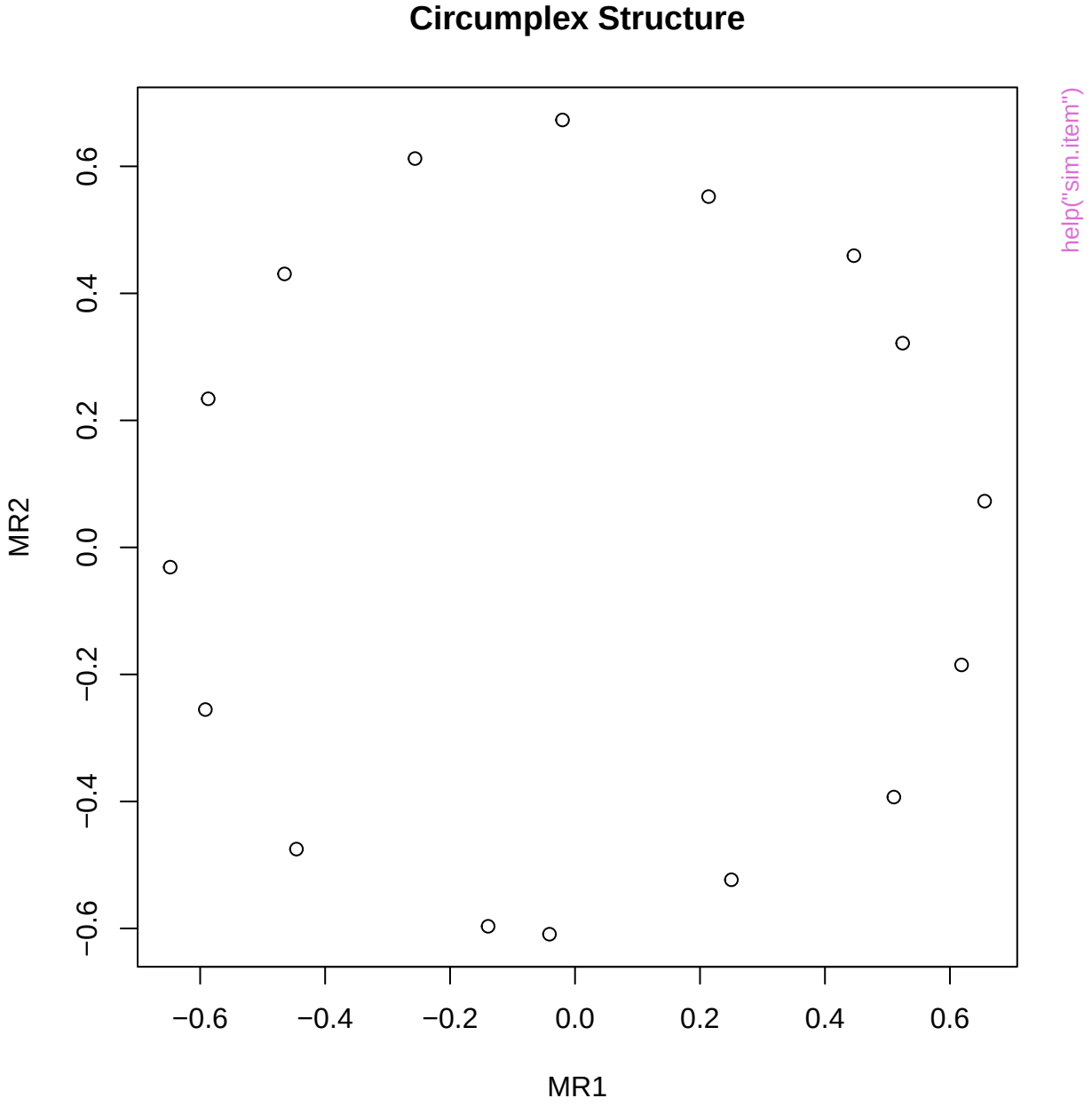
help("sim.anova")

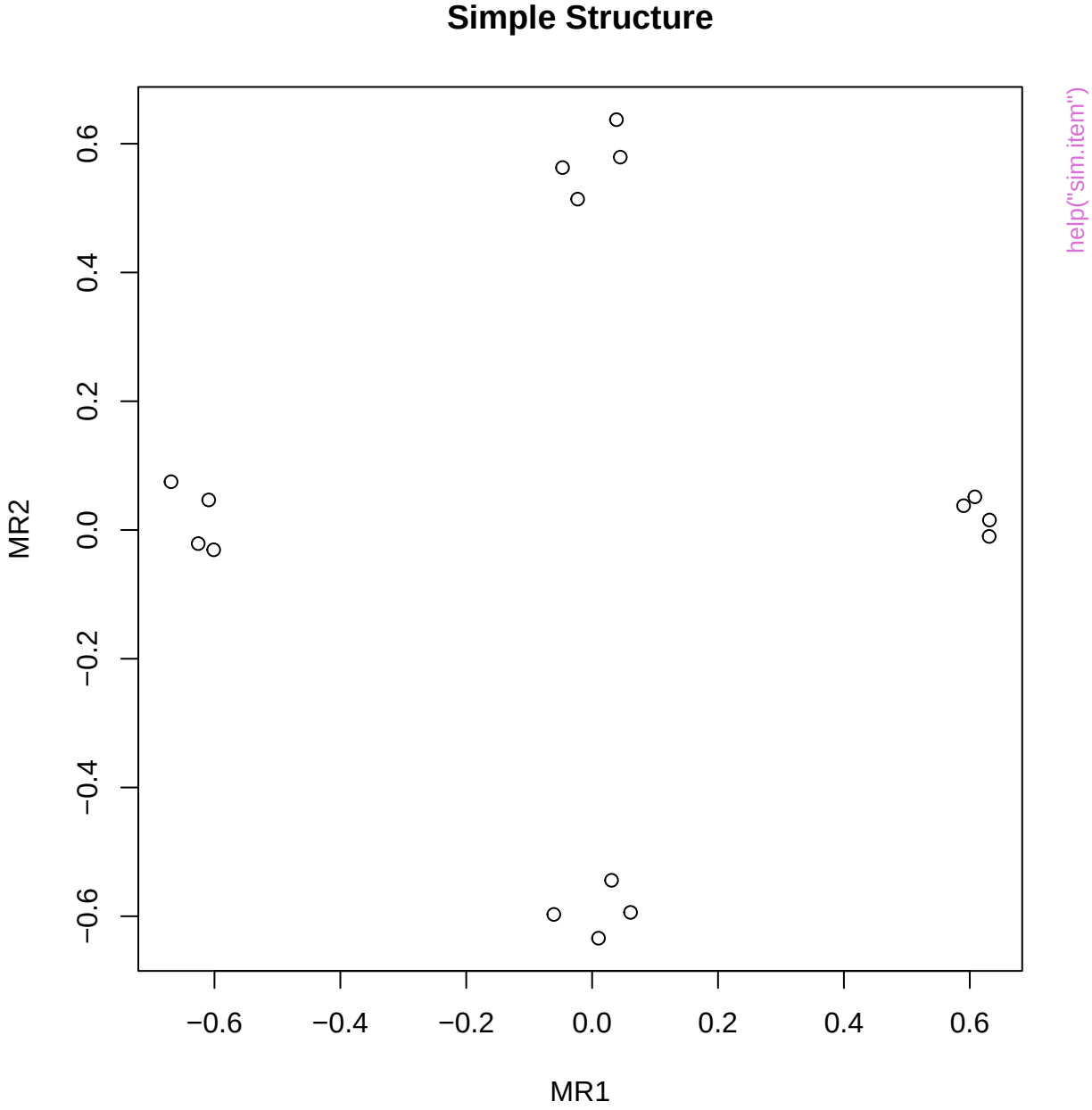

Item information from factor analysis
V1
V2
V3
V4
Item Information
0.0
0.2
0.4
0.6
0.8
−3
−2
−1
0
1
2
3
Latent Trait (normal scale)
help("sim.congeneric")

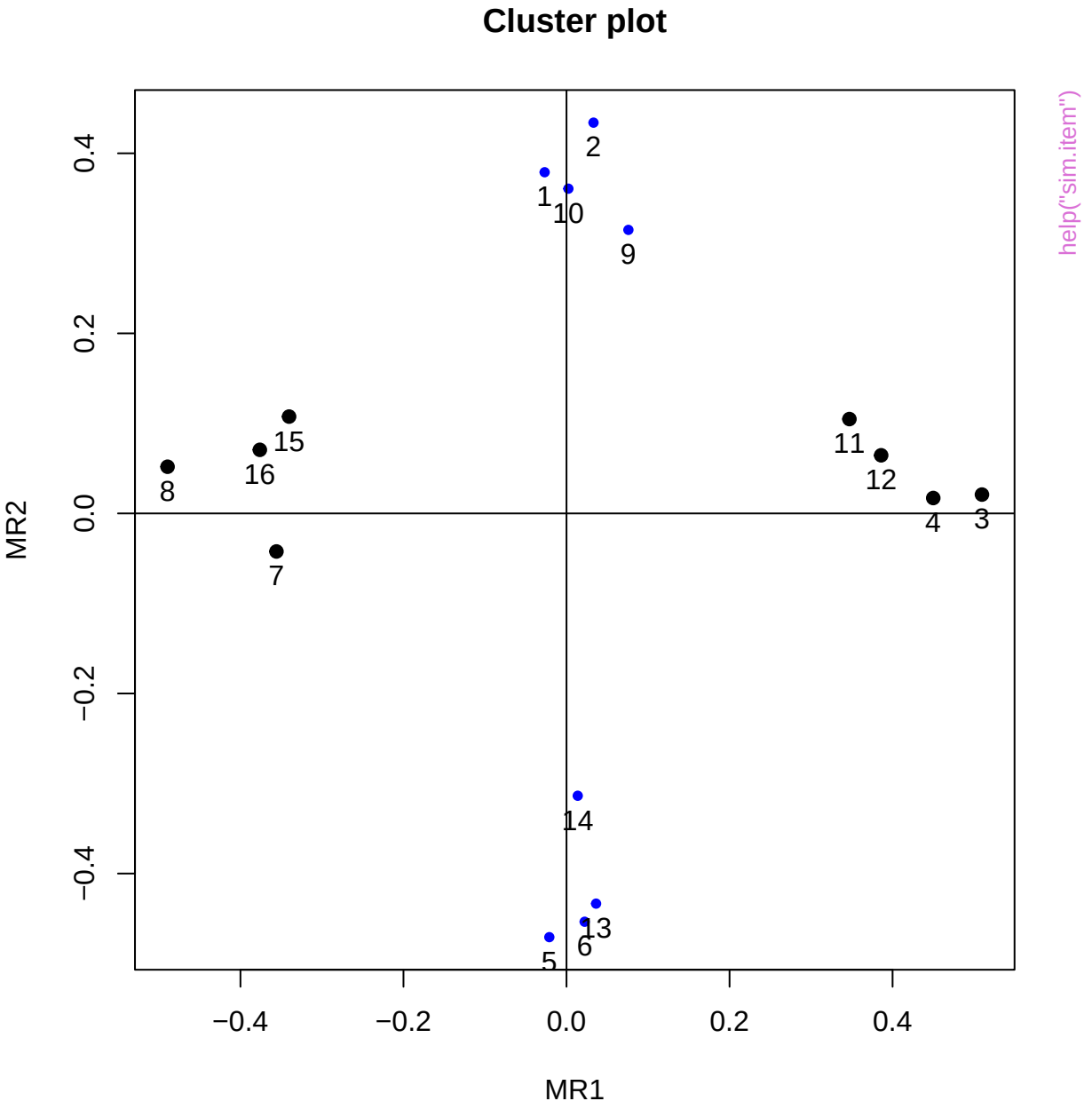

Correlation plot
Vx1 1.00 0.72 0.63 0.00 0.00 0.00 0.00 0.00 0.00
Vx2 0.72 1.00 0.56 0.00 0.00 0.00 0.00 0.00 0.00
Vx3 0.63 0.56 1.00 0.00 0.00 0.00 0.00 0.00 0.00
Vx4 0.00 0.00 0.00 1.00 0.56 0.48 0.00 0.00 0.00
Vx5 0.00 0.00 0.00 0.56 1.00 0.42 0.00 0.00 0.00
Vx6 0.00 0.00 0.00 0.48 0.42 1.00 0.00 0.00 0.00
Vy1 0.27 0.24 0.21 0.19 0.17 0.14 1.00 0.00 0.00
Vy2 0.22 0.20 0.17 0.16 0.14 0.12 0.00 1.00 0.00
Vy3 0.18 0.16 0.14 0.13 0.11 0.10 0.00 0.00 1.00
Vx1 Vx2 Vx3 Vx4 Vx5 Vx6 Vy1 Vy2 Vy3
1
help("sim.ip")

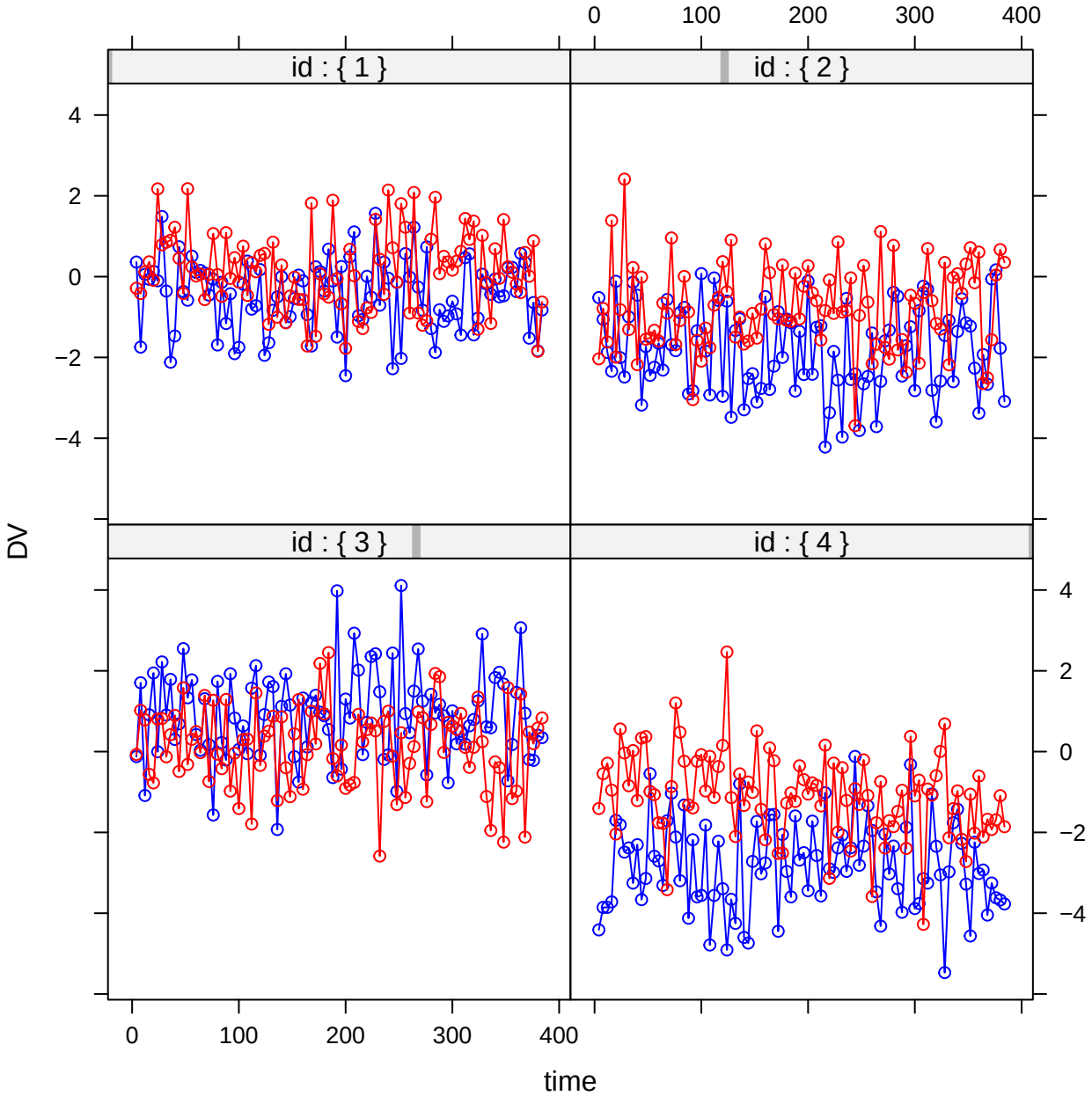

A simplex structure
V1 1.00 0.80 0.64 0.51 0.41 0.33 0.26 0.21 0.17 0.13 0.11 0.09
V2 0.80 1.00 0.80 0.64 0.51 0.41 0.33 0.26 0.21 0.17 0.13 0.11
V3 0.64 0.80 1.00 0.80 0.64 0.51 0.41 0.33 0.26 0.21 0.17 0.13
V4 0.51 0.64 0.80 1.00 0.80 0.64 0.51 0.41 0.33 0.26 0.21 0.17
V5 0.41 0.51 0.64 0.80 1.00 0.80 0.64 0.51 0.41 0.33 0.26 0.21
V6 0.33 0.41 0.51 0.64 0.80 1.00 0.80 0.64 0.51 0.41 0.33 0.26
V7 0.26 0.33 0.41 0.51 0.64 0.80 1.00 0.80 0.64 0.51 0.41 0.33
V8 0.21 0.26 0.33 0.41 0.51 0.64 0.80 1.00 0.80 0.64 0.51 0.41
V9 0.17 0.21 0.26 0.33 0.41 0.51 0.64 0.80 1.00 0.80 0.64 0.51
V10 0.13 0.17 0.21 0.26 0.33 0.41 0.51 0.64 0.80 1.00 0.80 0.64
V11 0.11 0.13 0.17 0.21 0.26 0.33 0.41 0.51 0.64 0.80 1.00 0.80
V12 0.09 0.11 0.13 0.17 0.21 0.26 0.33 0.41 0.51 0.64 0.80 1.00
V1 V2 V3 V4 V5 V6 V7 V8 V9 V10 V12
1
help("sim.ip")

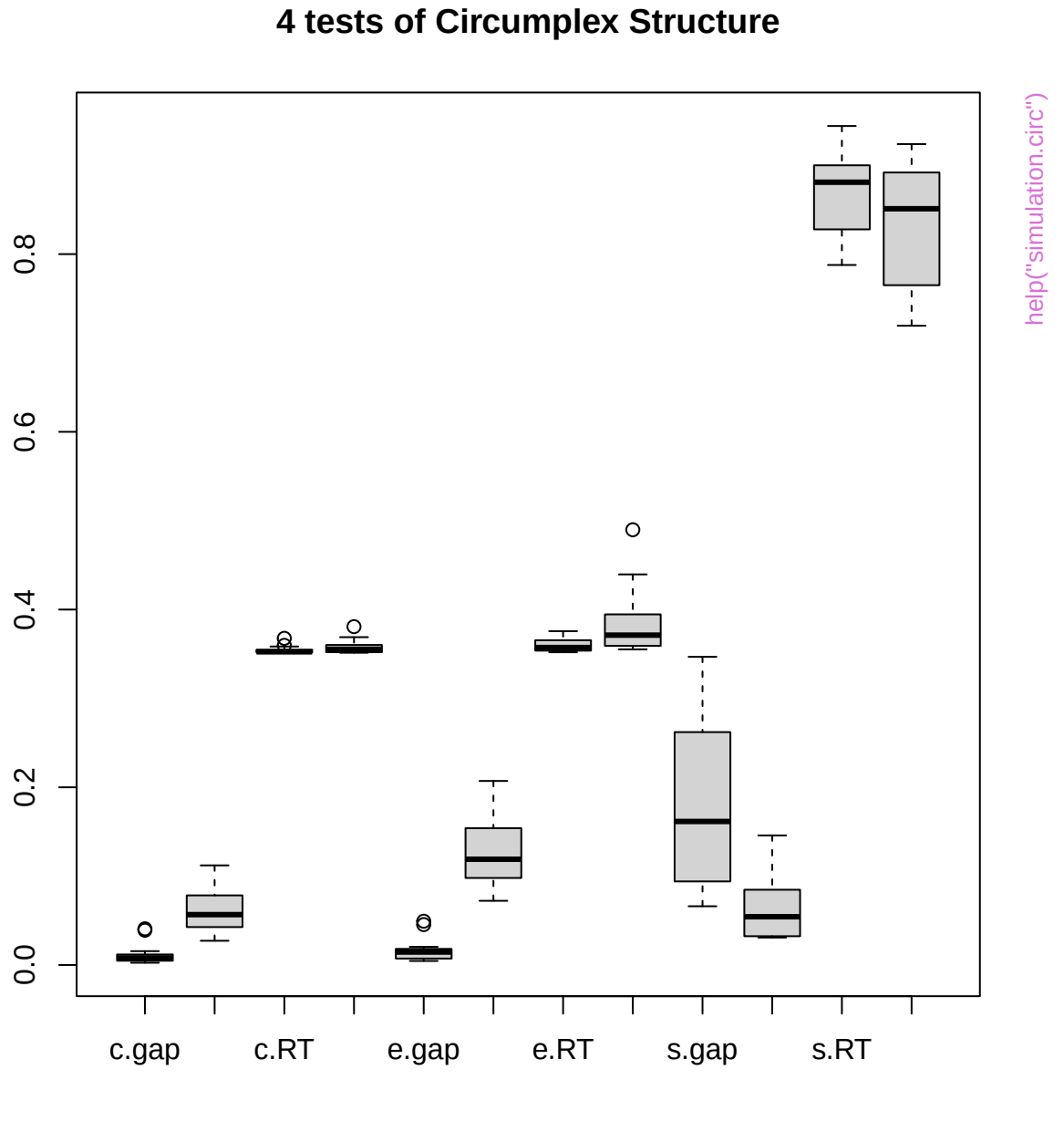

State Trait Auto Regressive Simplex
V1 1.00 0.80 0.67 0.56 0.47 0.41 0.35 0.31 0.27 0.25 0.22 0.20
V2 0.80 1.00 0.80 0.67 0.56 0.47 0.41 0.35 0.31 0.27 0.25 0.22
V3 0.67 0.80 1.00 0.80 0.67 0.56 0.47 0.41 0.35 0.31 0.27 0.25
V4 0.56 0.67 0.80 1.00 0.80 0.67 0.56 0.47 0.41 0.35 0.31 0.27
V5 0.47 0.56 0.67 0.80 1.00 0.80 0.67 0.56 0.47 0.41 0.35 0.31
V6 0.41 0.47 0.56 0.67 0.80 1.00 0.80 0.67 0.56 0.47 0.41 0.35
V7 0.35 0.41 0.47 0.56 0.67 0.80 1.00 0.80 0.67 0.56 0.47 0.41
V8 0.31 0.35 0.41 0.47 0.56 0.67 0.80 1.00 0.80 0.67 0.56 0.47
V9 0.27 0.31 0.35 0.41 0.47 0.56 0.67 0.80 1.00 0.80 0.67 0.56
V10 0.25 0.27 0.31 0.35 0.41 0.47 0.56 0.67 0.80 1.00 0.80 0.67
V11 0.22 0.25 0.27 0.31 0.35 0.41 0.47 0.56 0.67 0.80 1.00 0.80
V12 0.20 0.22 0.25 0.27 0.31 0.35 0.41 0.47 0.56 0.67 0.80 1.00
V1 V2 V3 V4 V5 V6 V7 V8 V9 V10 V12
1
help("sim.ip")


Circumplex Structure
MR2
MR1
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
help("sim.item")

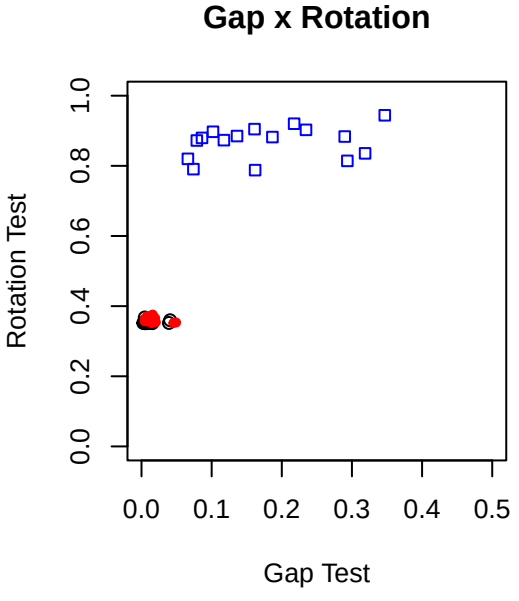

Simple Structure
MR2
MR1
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
help("sim.item")

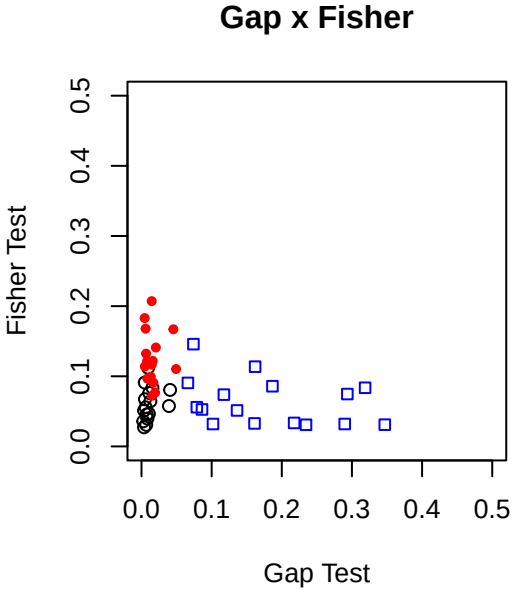

Cluster plot
help("sim.item")
MR2
MR1
0.4
0.2
0.0
−0.2
−0.4
−0.4
−0.2
0.0
0.2
0.4
1
2
10
9
15
16
8
7
11
12
4
3
14
13
6
5


id : { 1 }
id : { 2 }
id : { 3 }
id : { 4 }
DV
time
0
100
200
300
400
4
2
0
−2
−4
help("sim.multilevel")

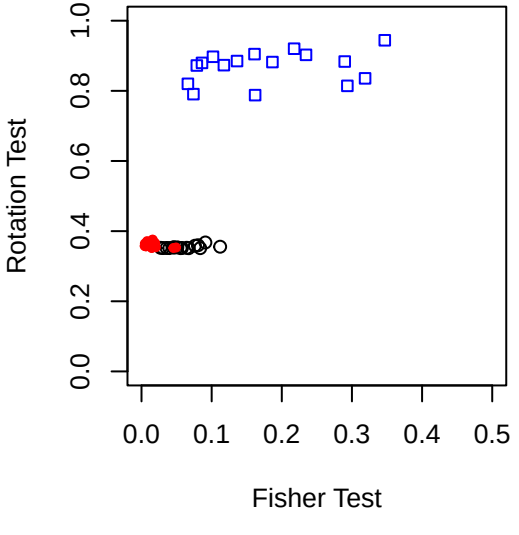

4 tests of Circumplex Structure
help("simulation.circ")
0.0
0.2
0.4
0.6
0.8
c.gap
c.RT
e.gap
e.RT
s.gap
s.RT
Circumplex, Ellipsoid, Simple Structure

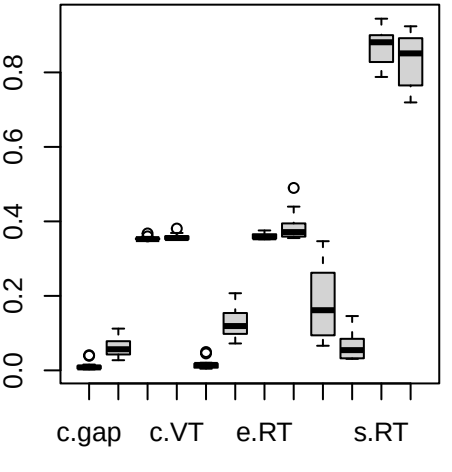
Circumplex Tests for Circumplex, Ellipsoid, and Simple Structure

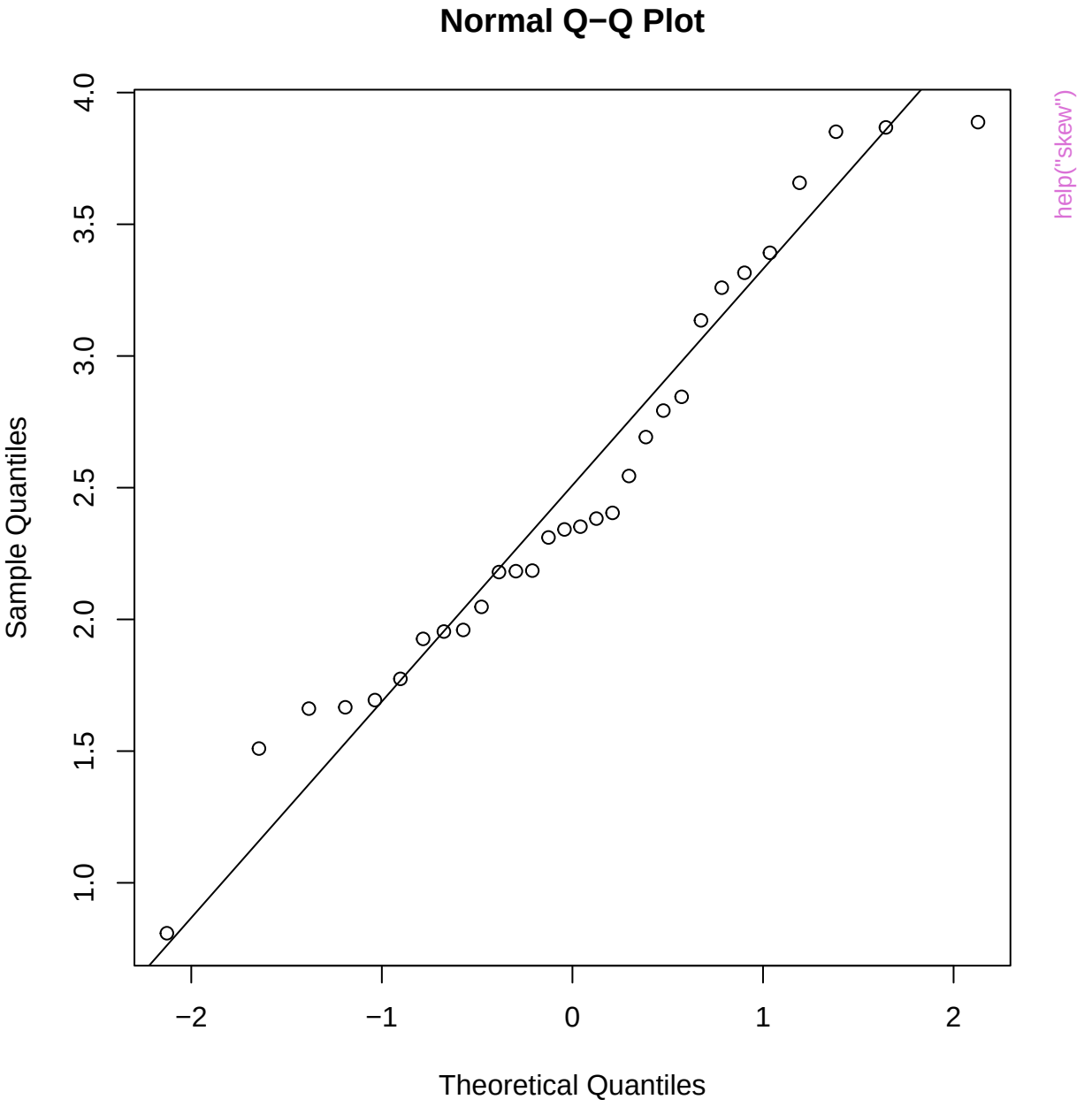


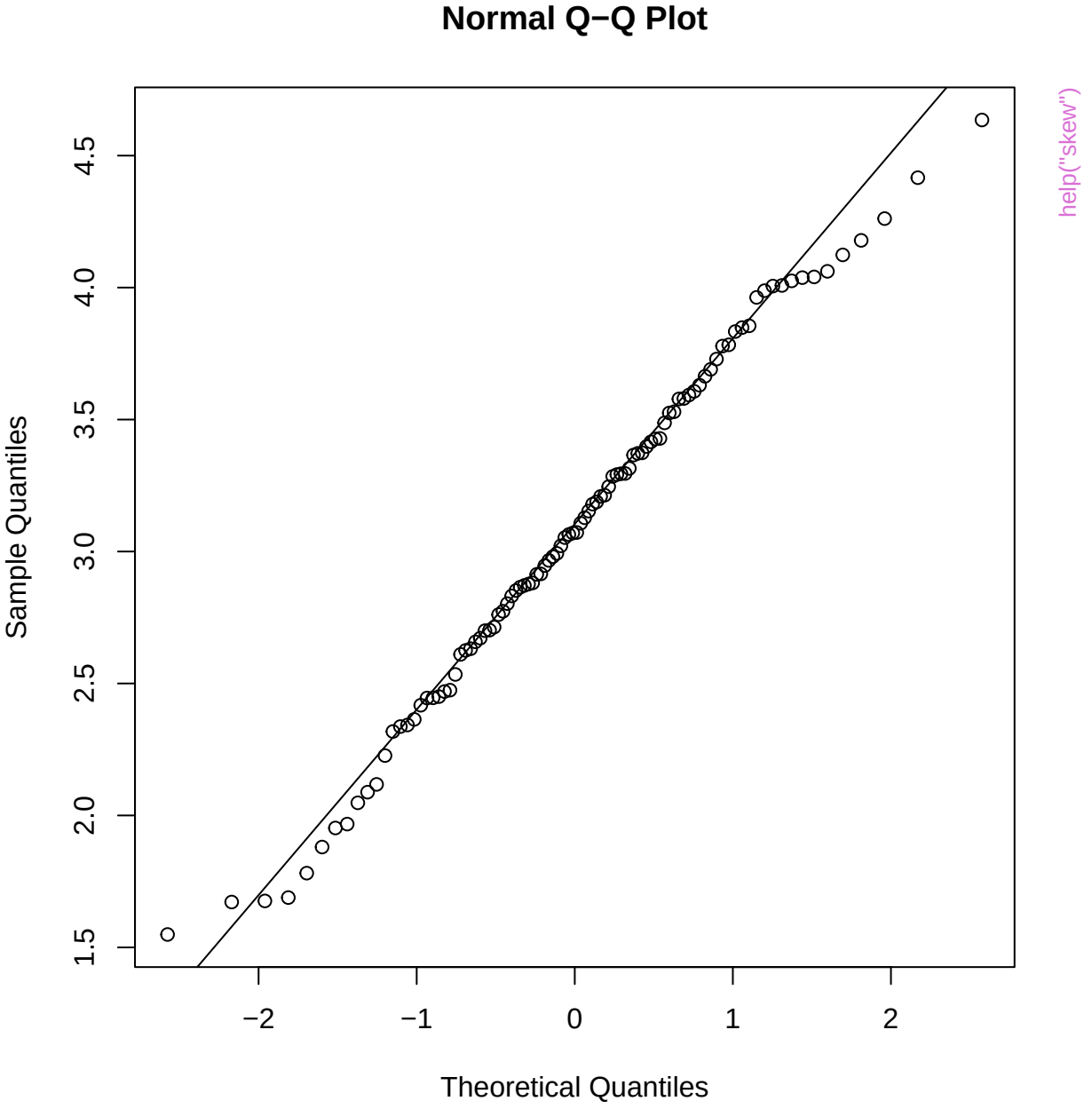


help("simulation.circ")

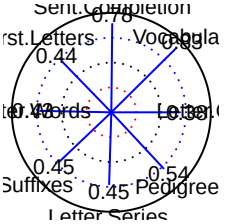




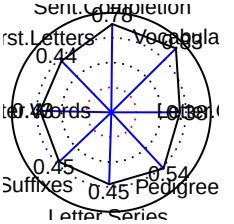

Normal Q−Q Plot
Sample Quantiles
Theoretical Quantiles
1.0
1.5
2.0
2.5
3.0
3.5
4.0
−2
−1
0
1
2
help("skew")


Normal Q−Q Plot
Sample Quantiles
Theoretical Quantiles
1.5
2.0
2.5
3.0
3.5
4.0
4.5
−2
−1
0
1
2
help("skew")

Sentences

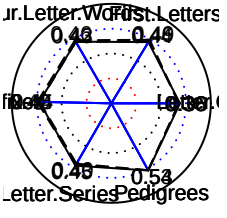


Sentences

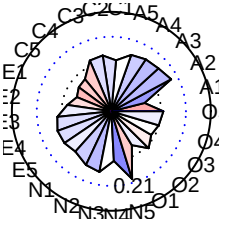


help("spider")

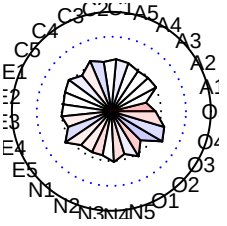
Sentences



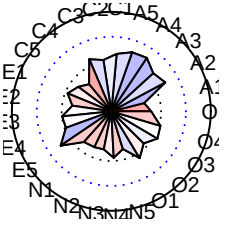
gender



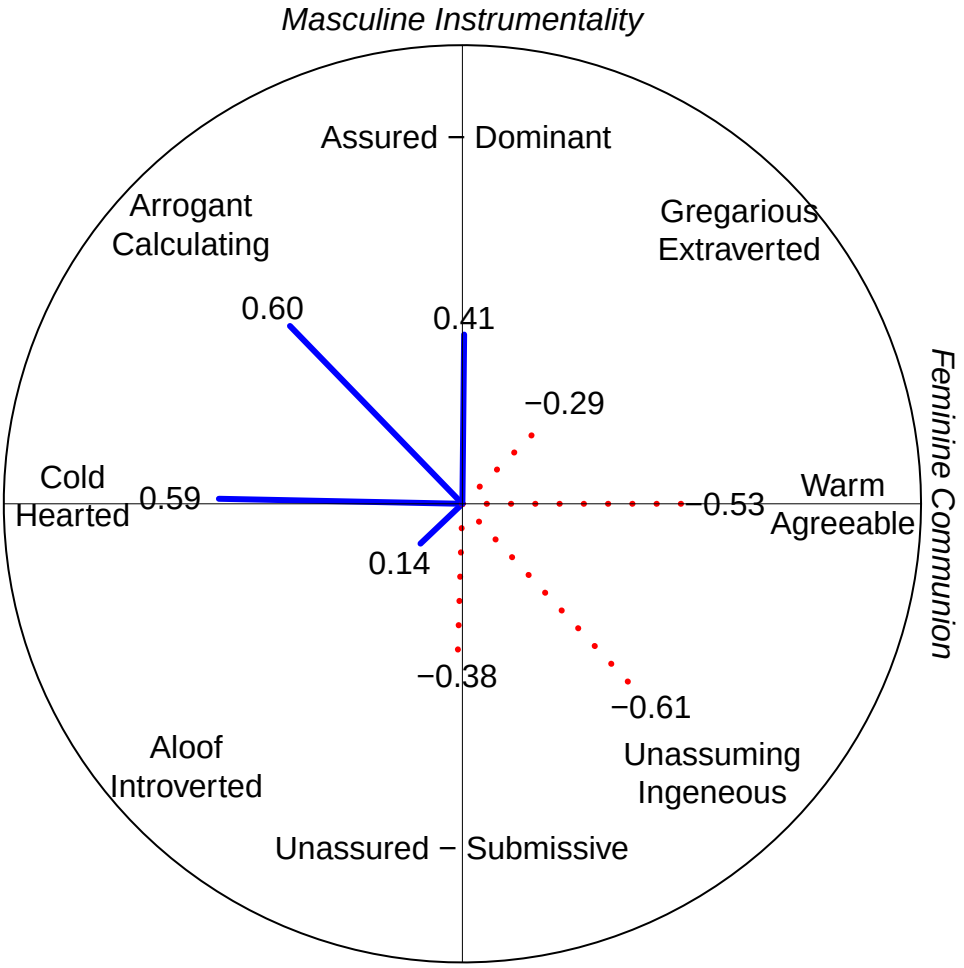
education

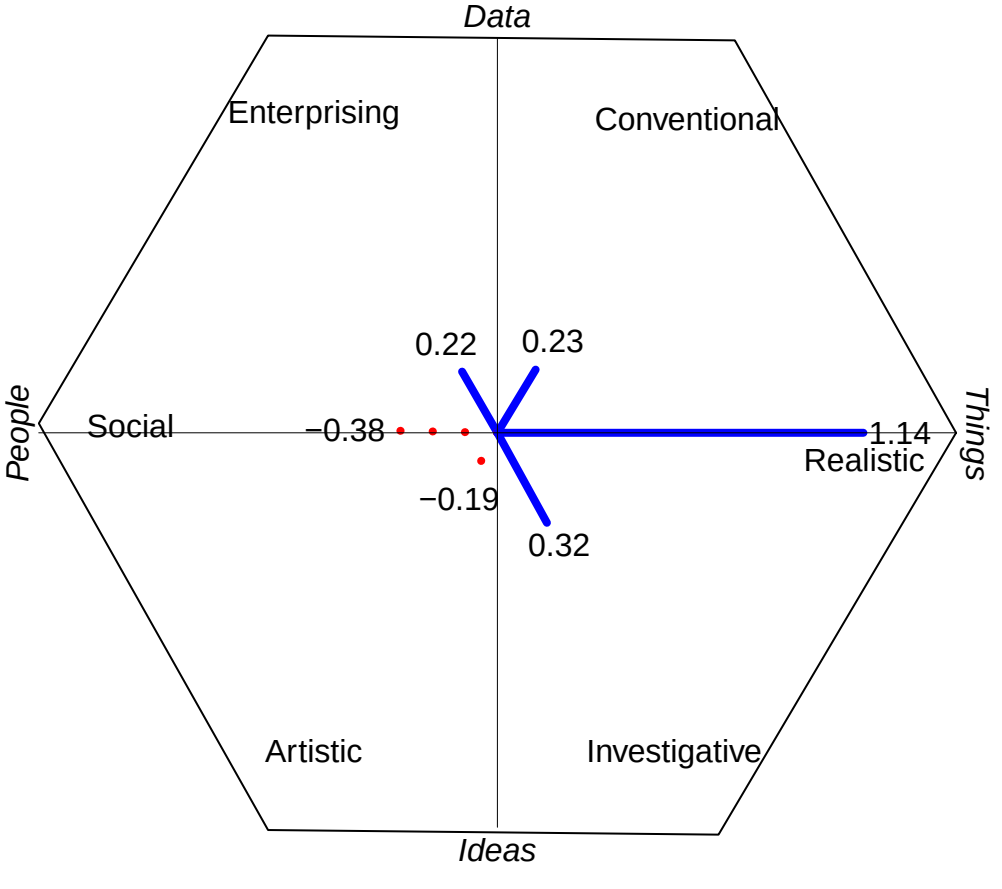


age



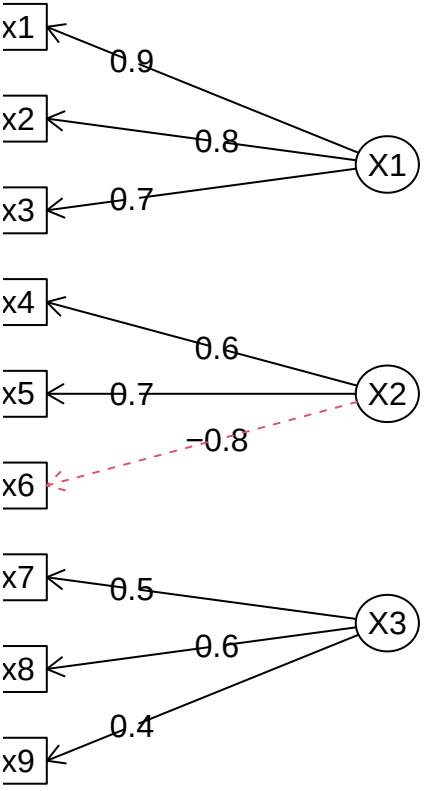
Data from Lippa (2001)




Data
Enterprising
Conventional
0.22
0.23
People
Social
−0.38
1.14
Realistic
Things
−0.19
0.32
Artistic
Investigative
Ideas

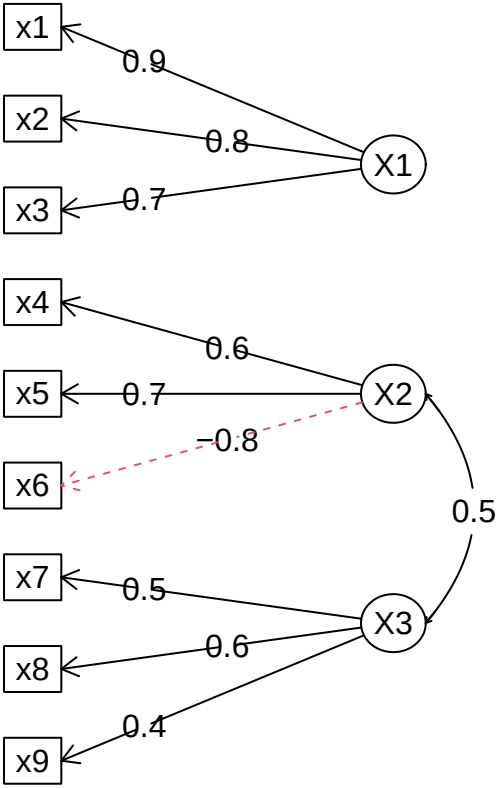
help("spider")

A measurement model for x

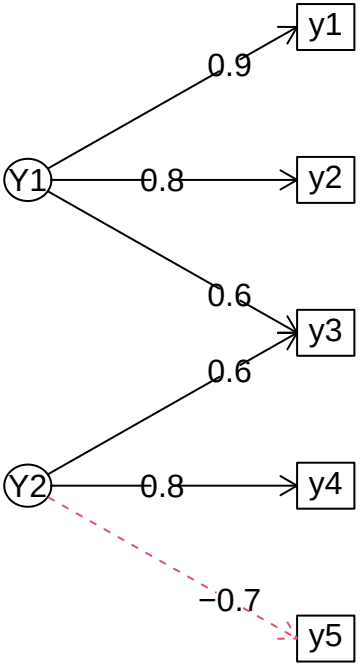


help("structure.diagram")

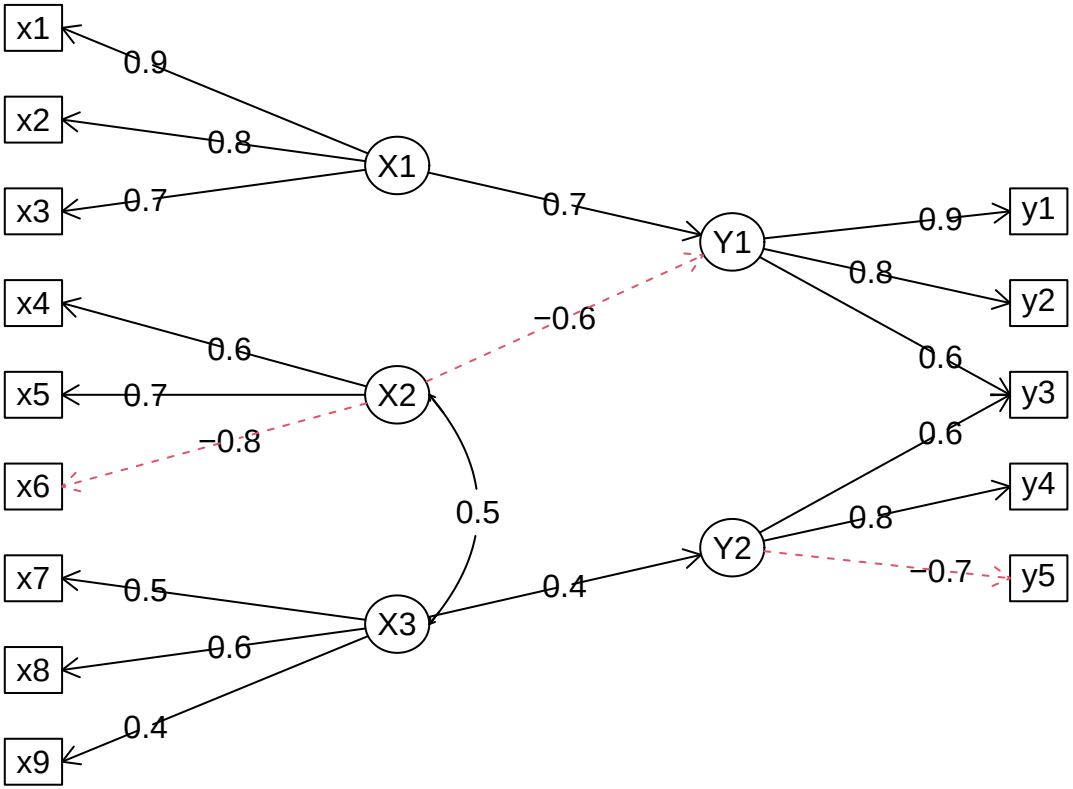
A measurement model for x



A measurement model for y

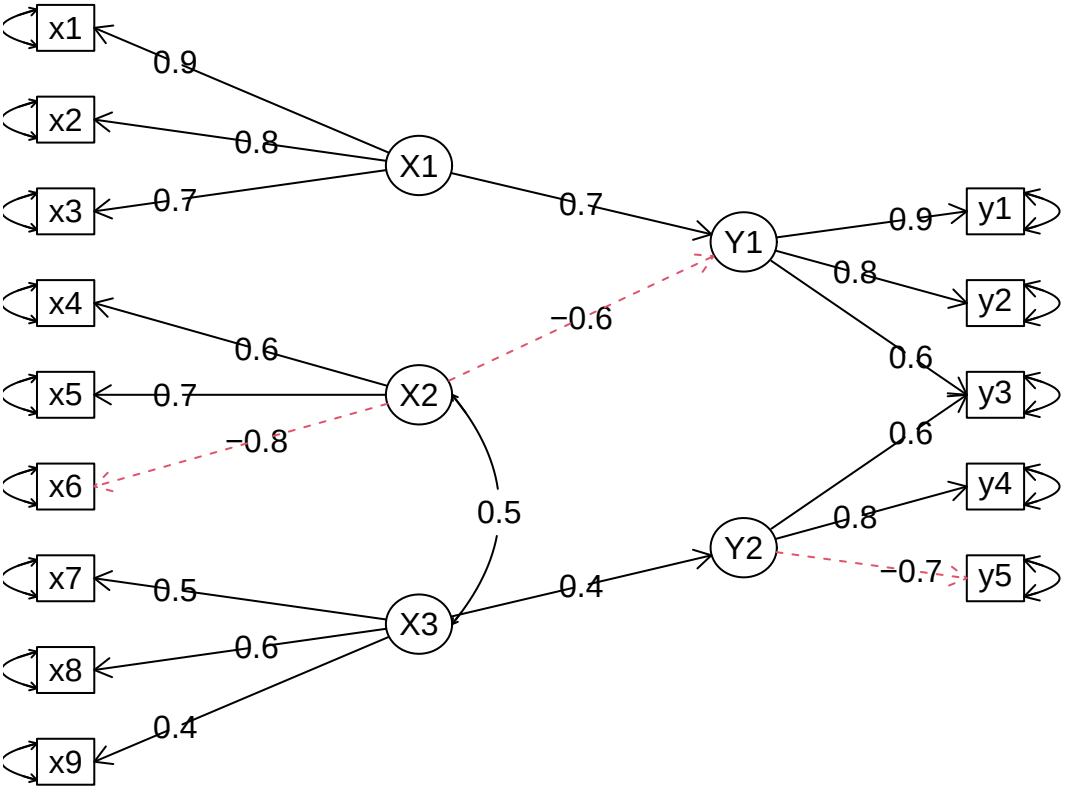


A structural path diagram



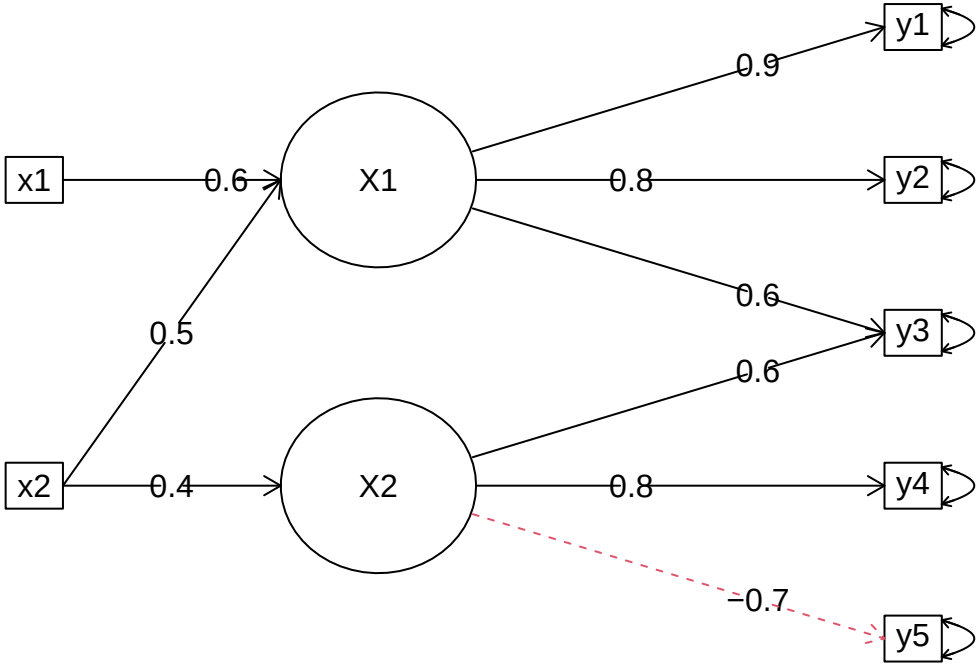
help("structure.diagram")

A structural path diagram

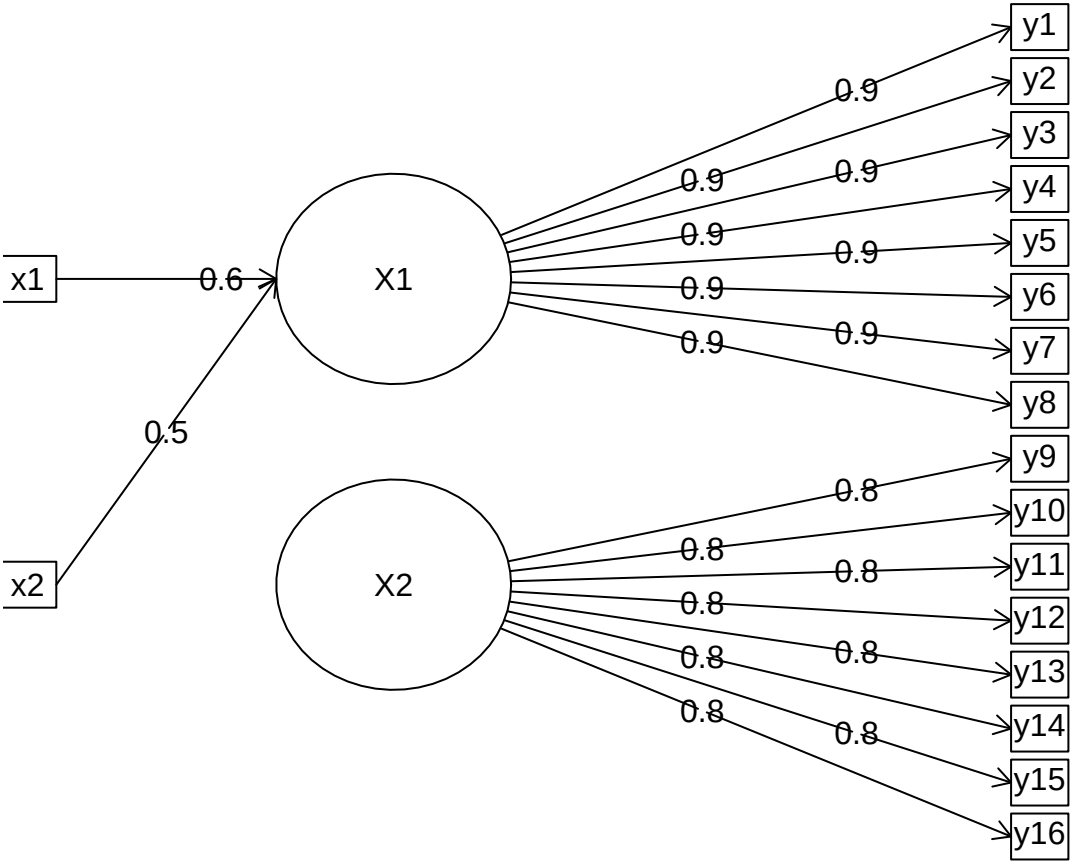


help("structure.diagram")

A mimic diagram

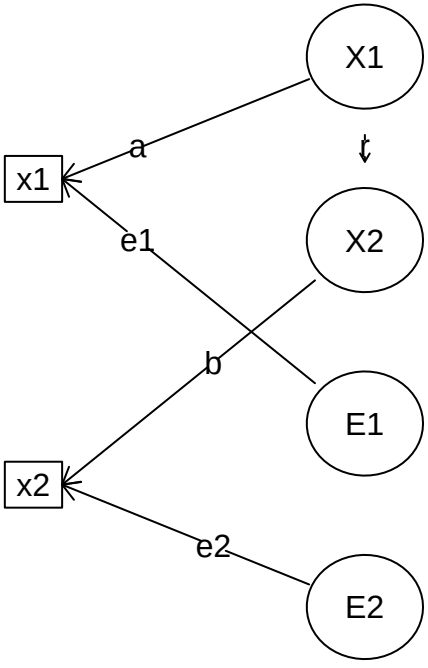


Structural model



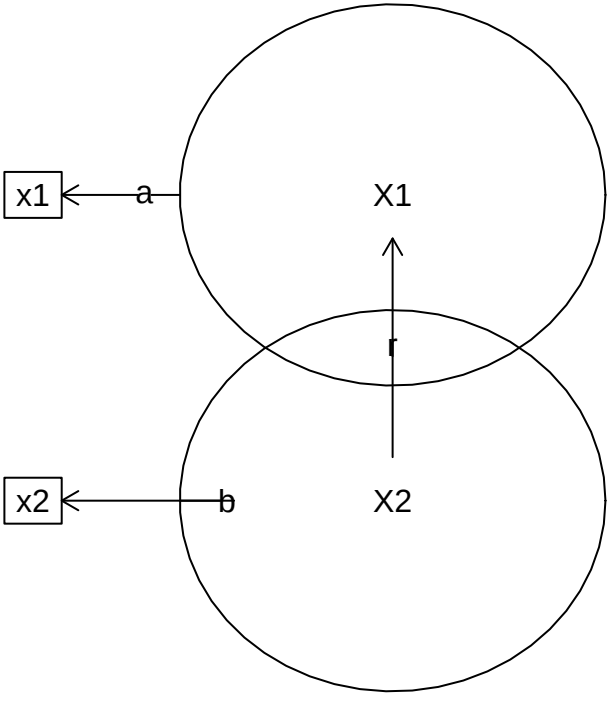
help("structure.diagram")

A symbolic model



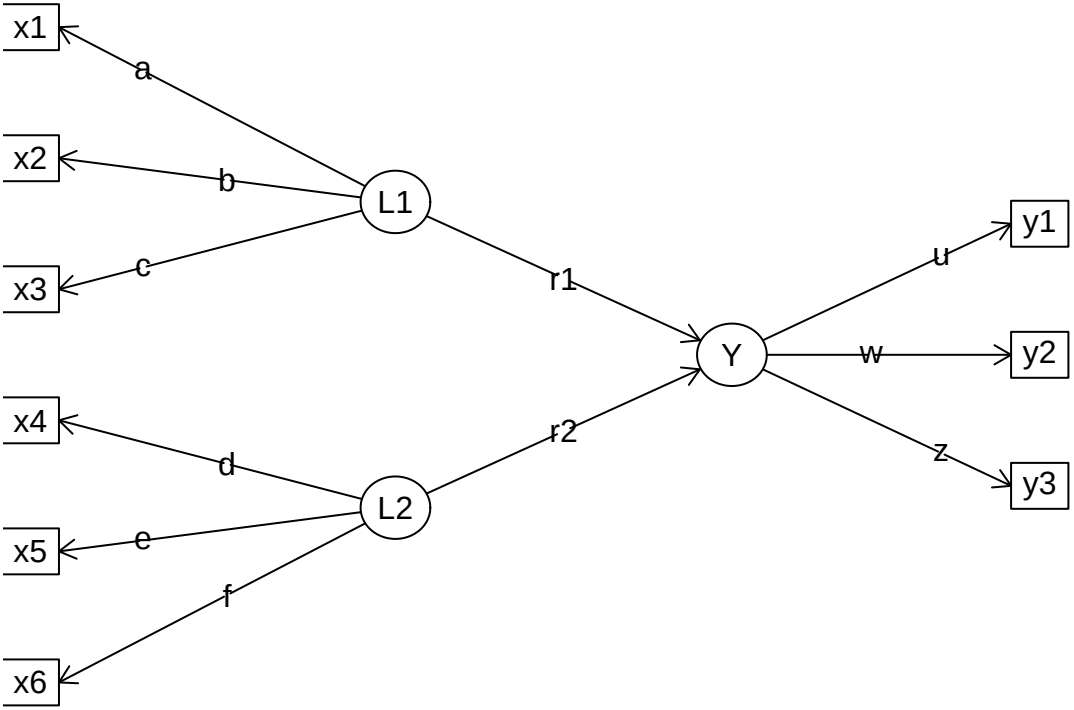
help("structure.diagram")

an alternative representation



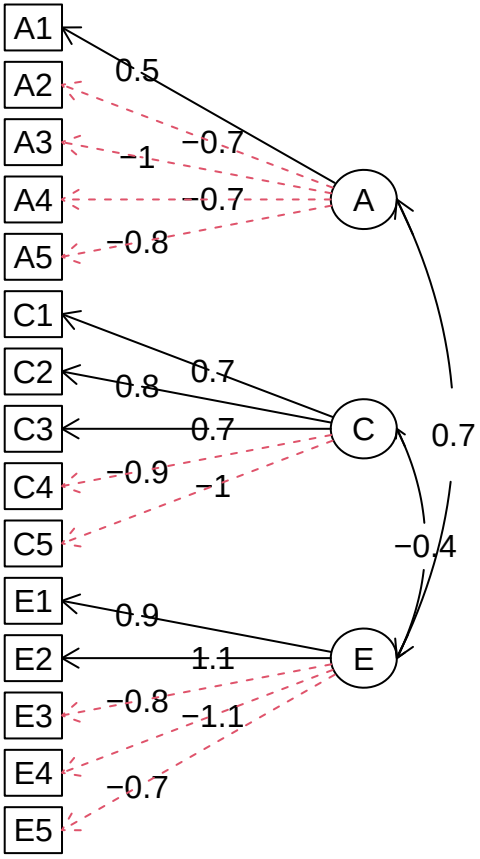
help("structure.diagram")

Structural model

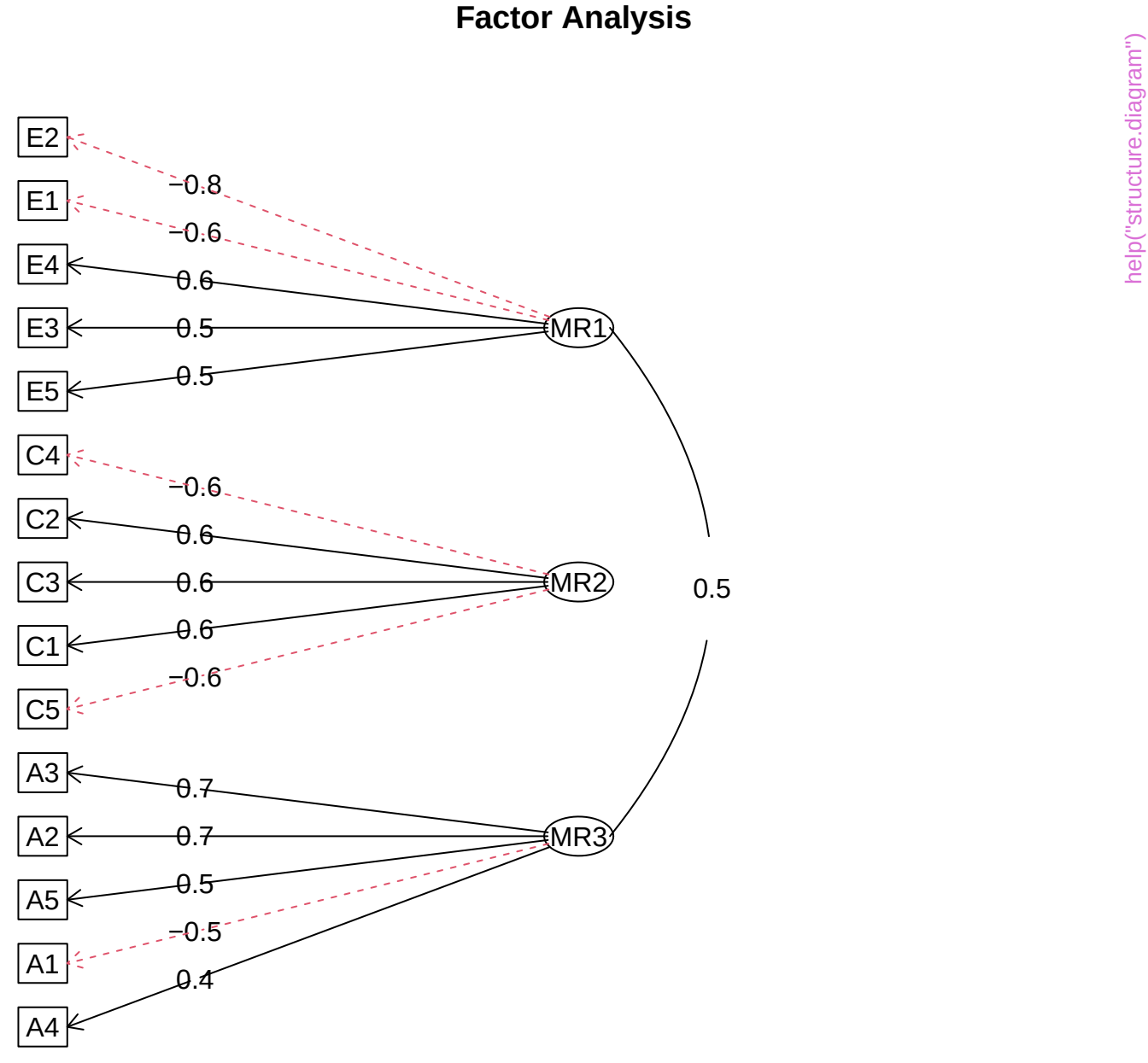


help("structure.diagram")

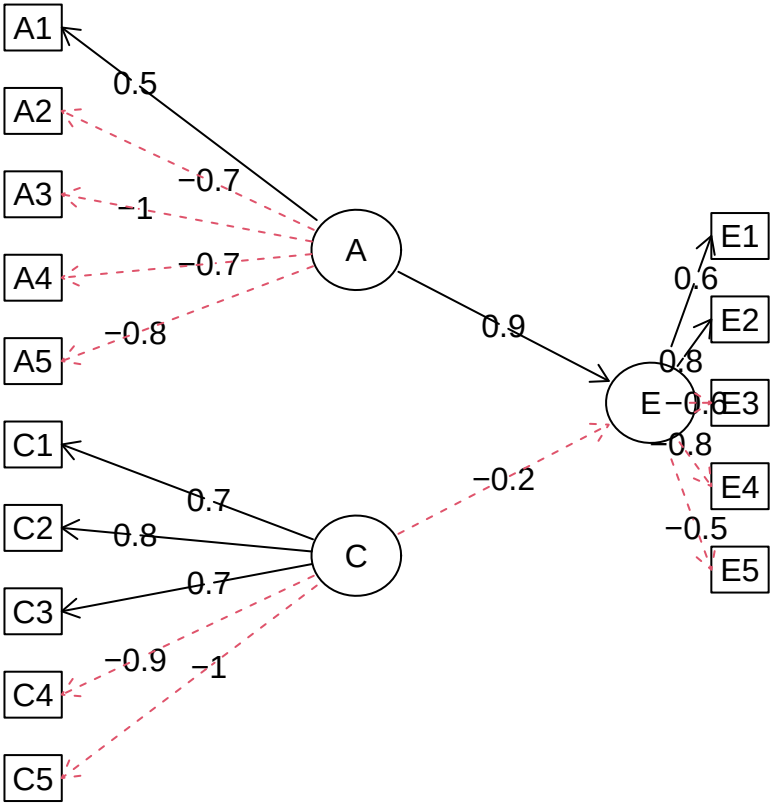
Confirmatory structure



help("structure.diagram")

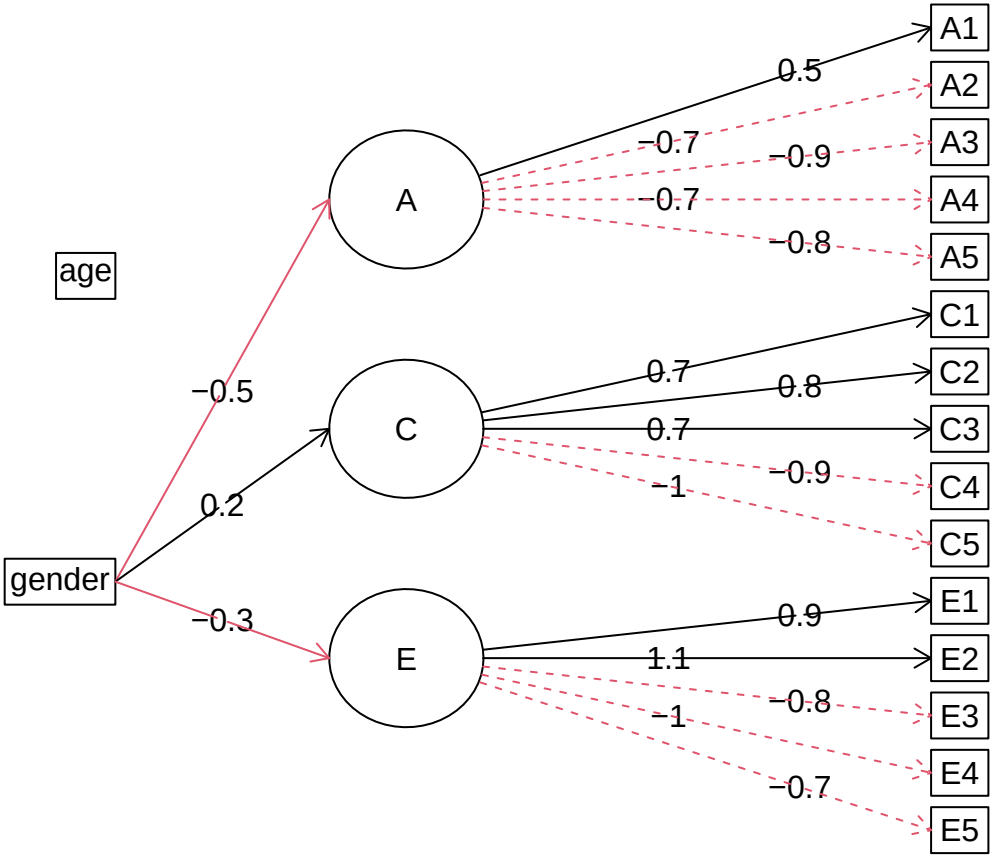

Factor Analysis
E2
E1
E4
E3
E5
C4
C2
C3
C1
C5
A3
A2
A5
A1
A4
MR1
MR2
MR3
−0.8
−0.6
0.6
0.5
0.5
−0.6
0.6
0.6
0.6
−0.6
0.7
0.7
0.5
−0.5
0.4
0.5
help("structure.diagram")

sem model



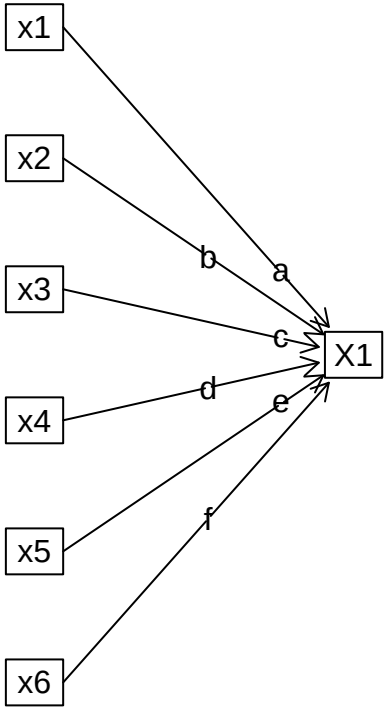
help("structure.diagram")

mimic model

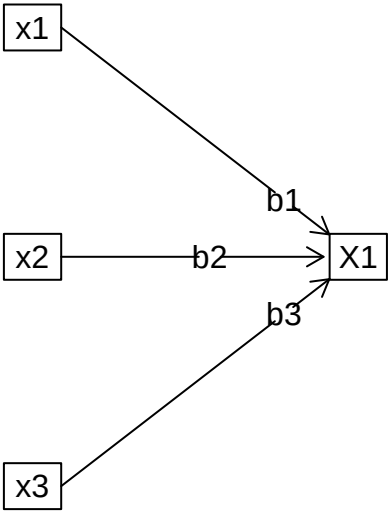


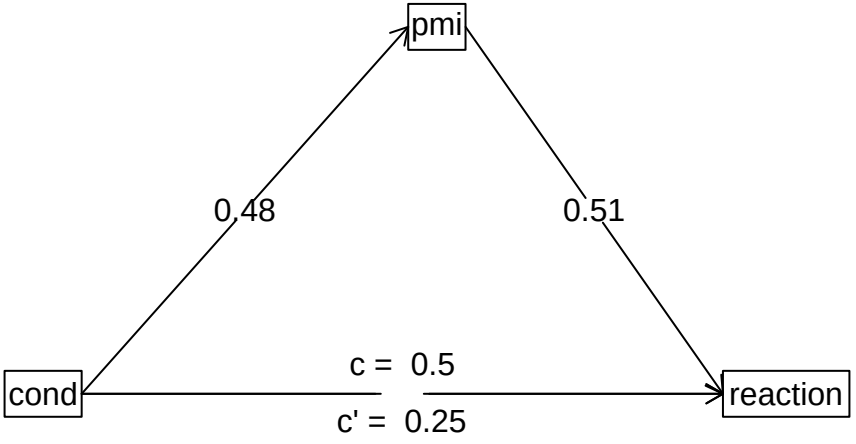
help("structure.diagram")

Regression model

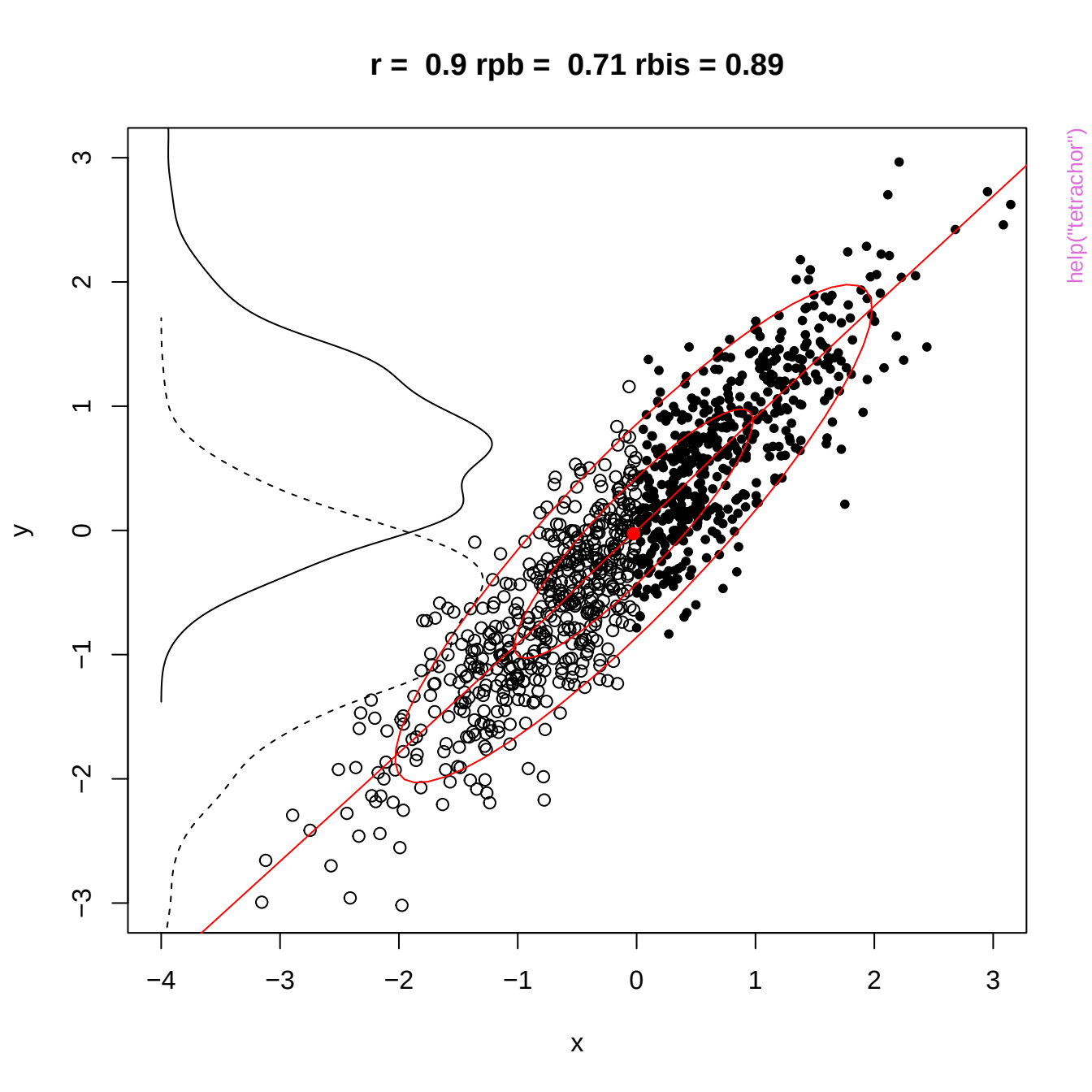


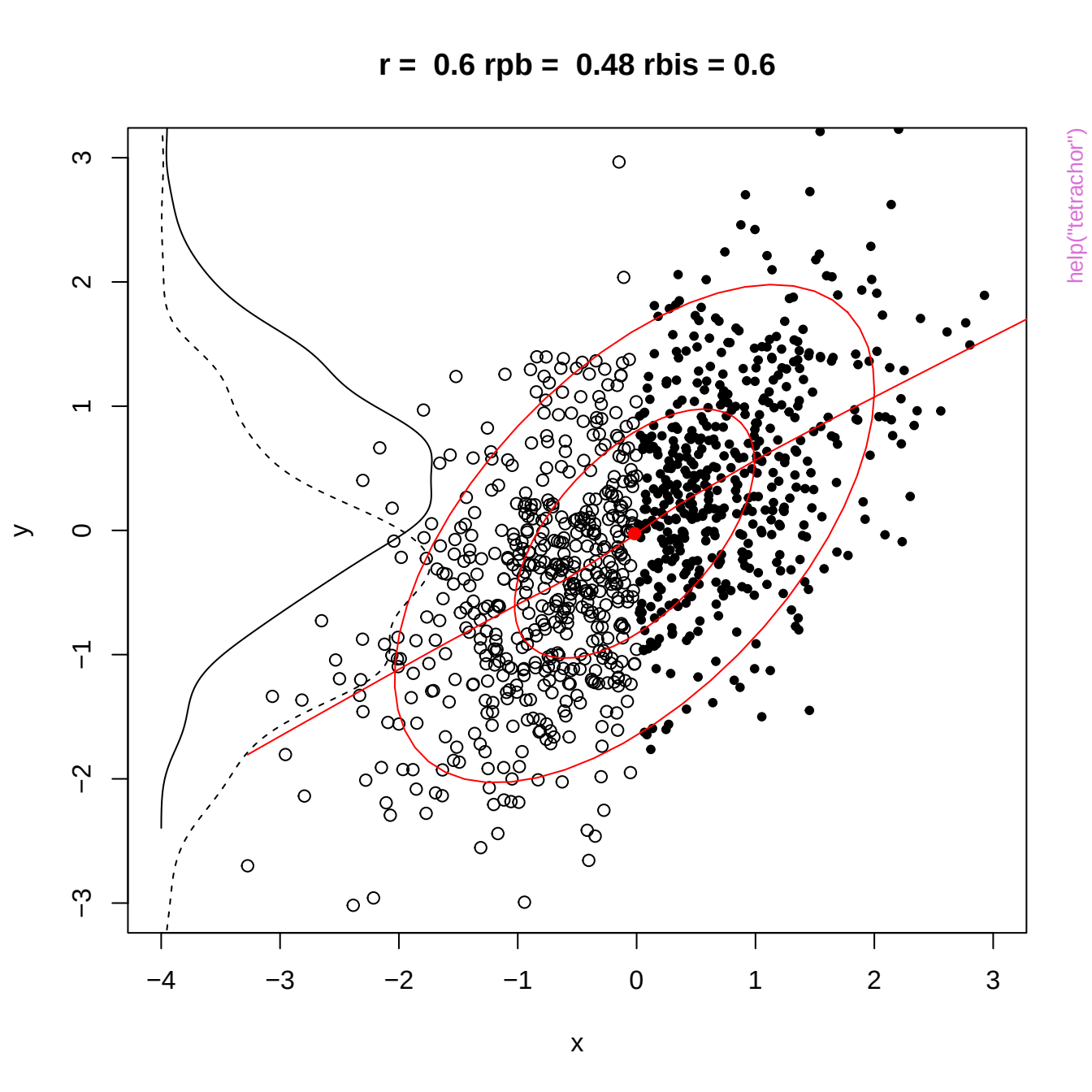
Regression model

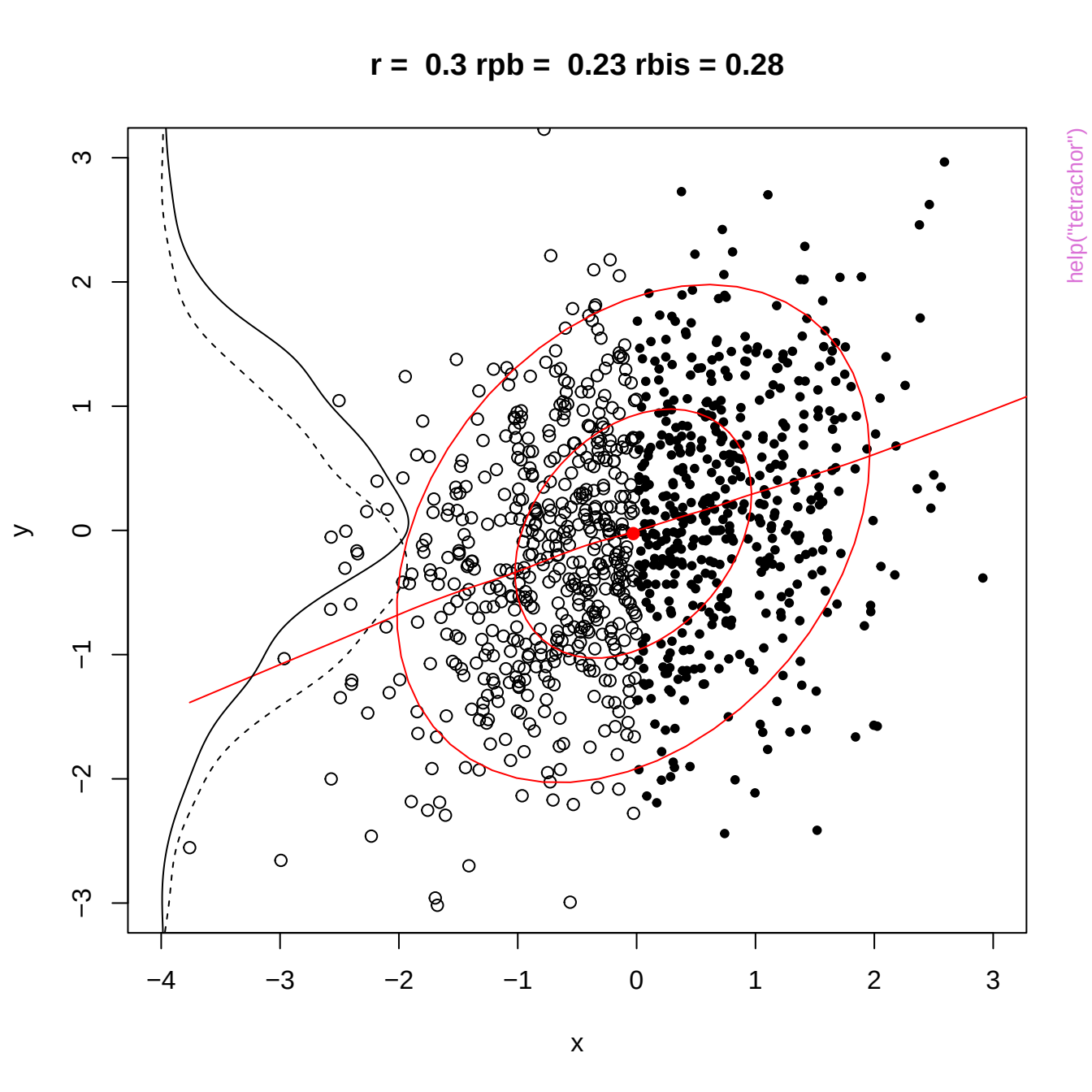


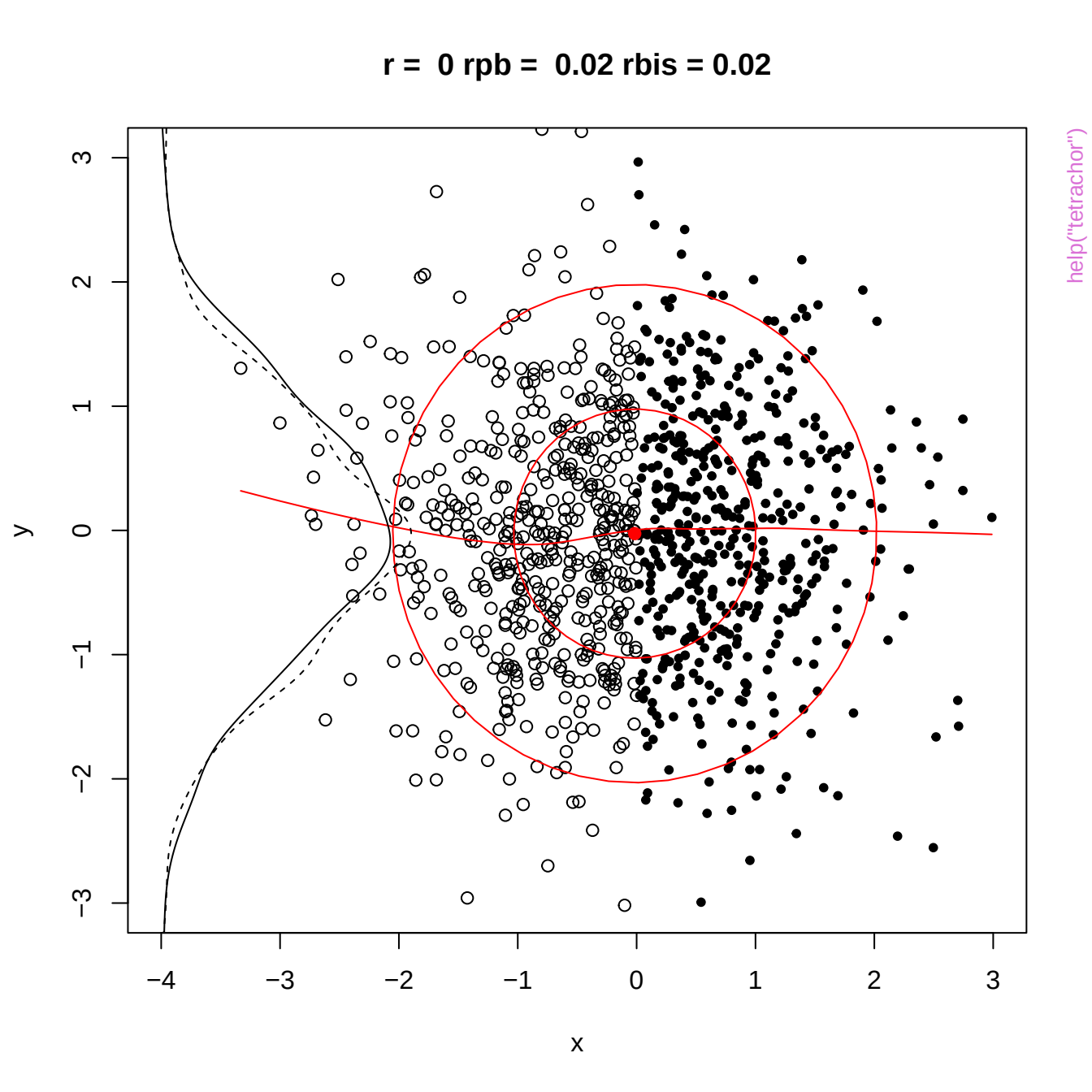


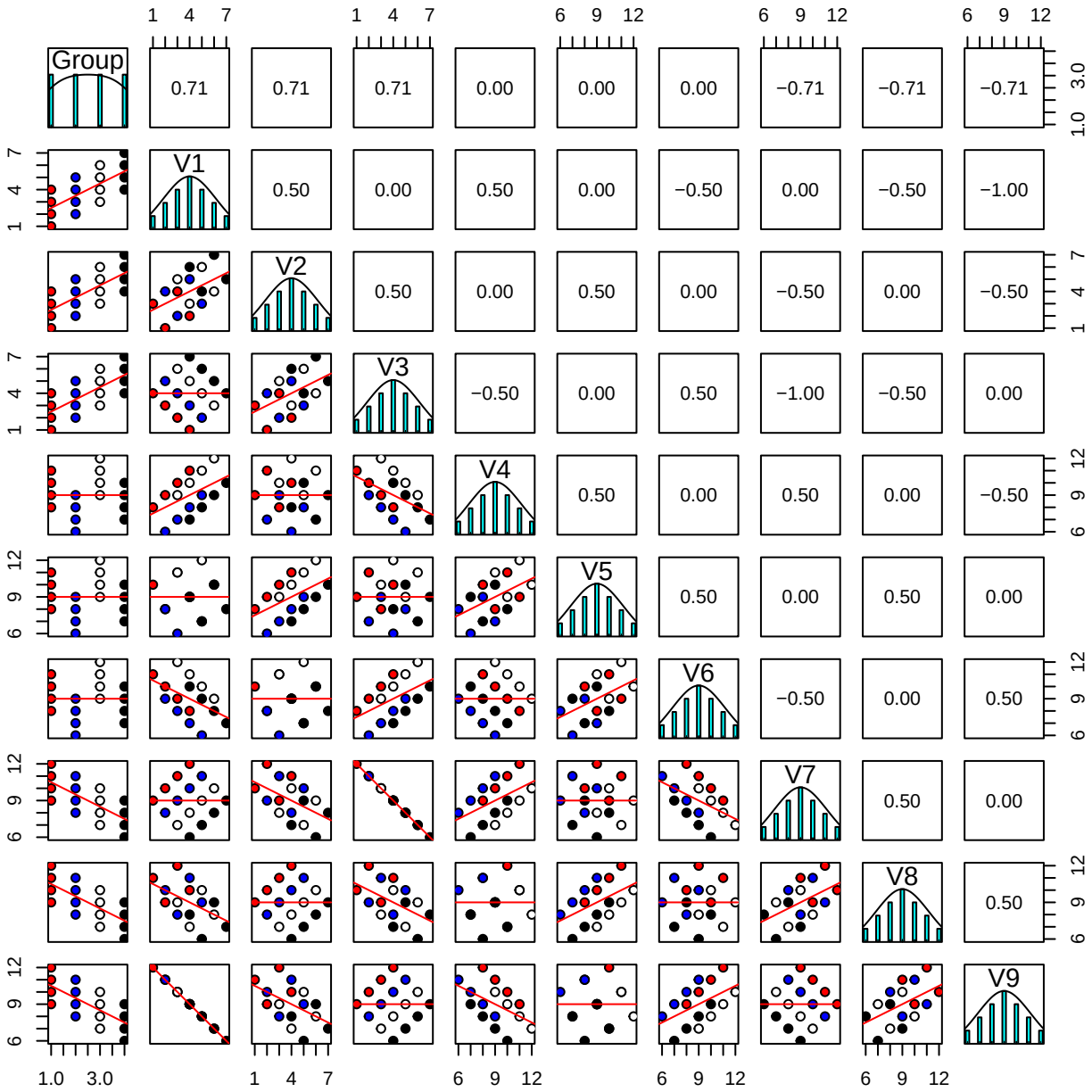
help("tal_or")


r = 0.9 rpb = 0.71 rbis = 0.89
help("tetrachor")
y
x
3
2
1
0
−1
−2
−3
−4
−3
−2
−1
0
1
2
3


r = 0.6 rpb = 0.48 rbis = 0.6
y
x
−4
−3
−2
−1
0
1
2
3
help("tetrachor")


r = 0.3 rpb = 0.23 rbis = 0.28
y
x
−4
−3
−2
−1
0
1
2
3
help("tetrachor")


r = 0 rpb = 0.02 rbis = 0.02
y
x
−4
−3
−2
−1
0
1
2
3
help("tetrachor")


Group
V1
V2
V3
V4
V5
V6
V7
V8
V9
0.71
0.50
0.00
−0.50
−0.71
−1.00
help("withinBetween")