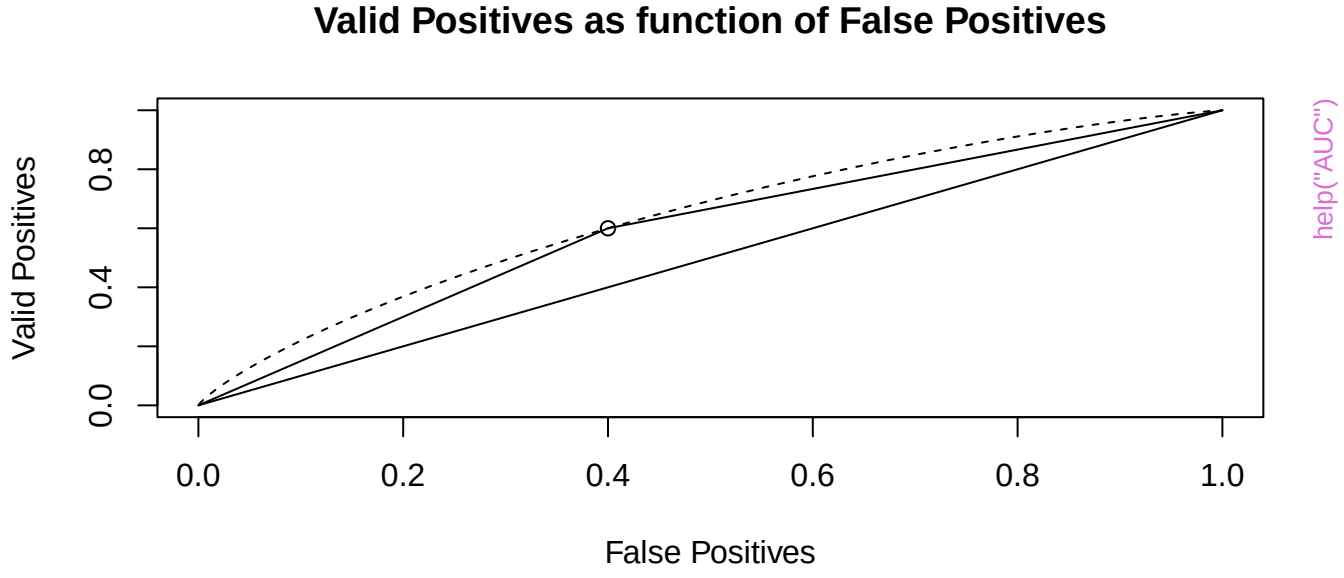
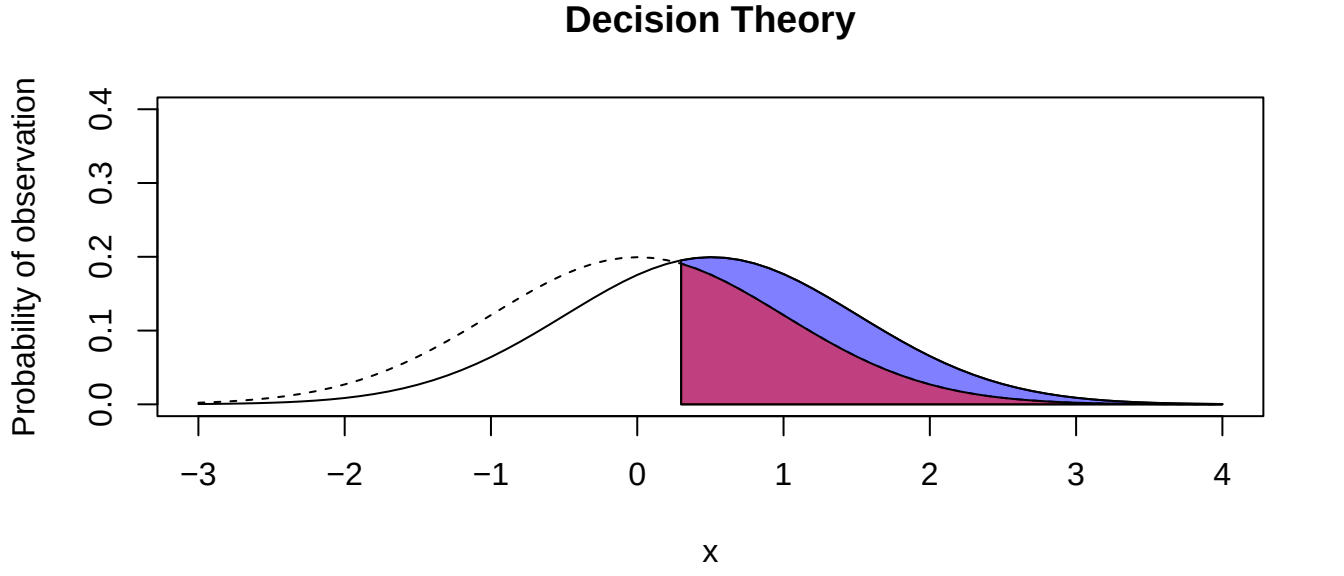
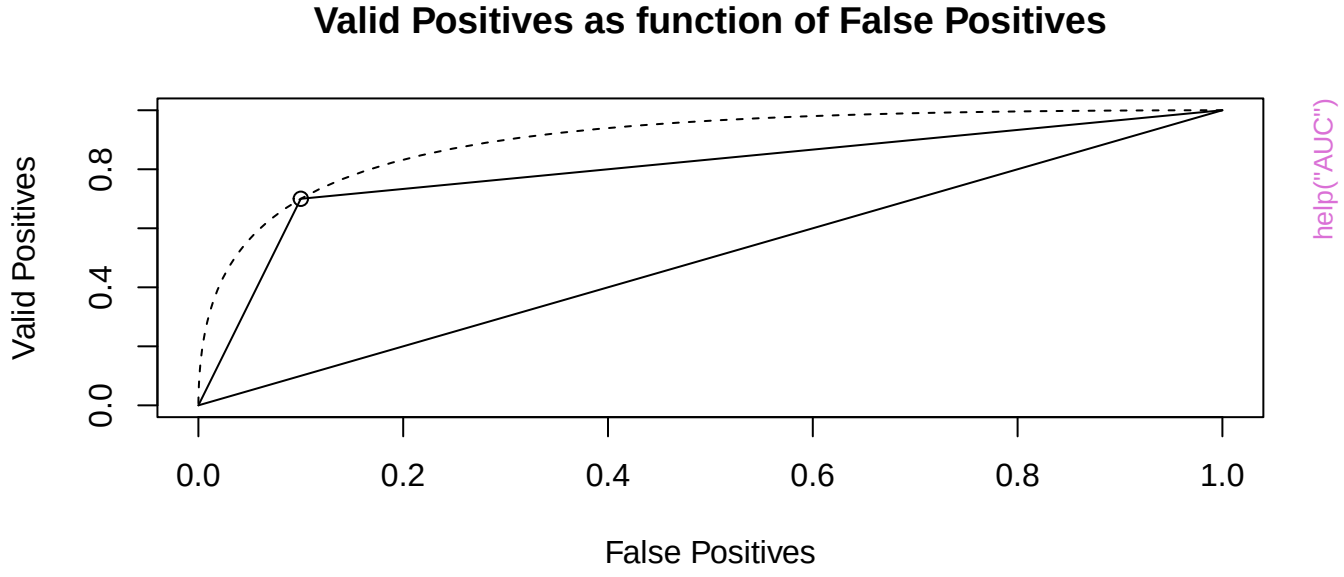
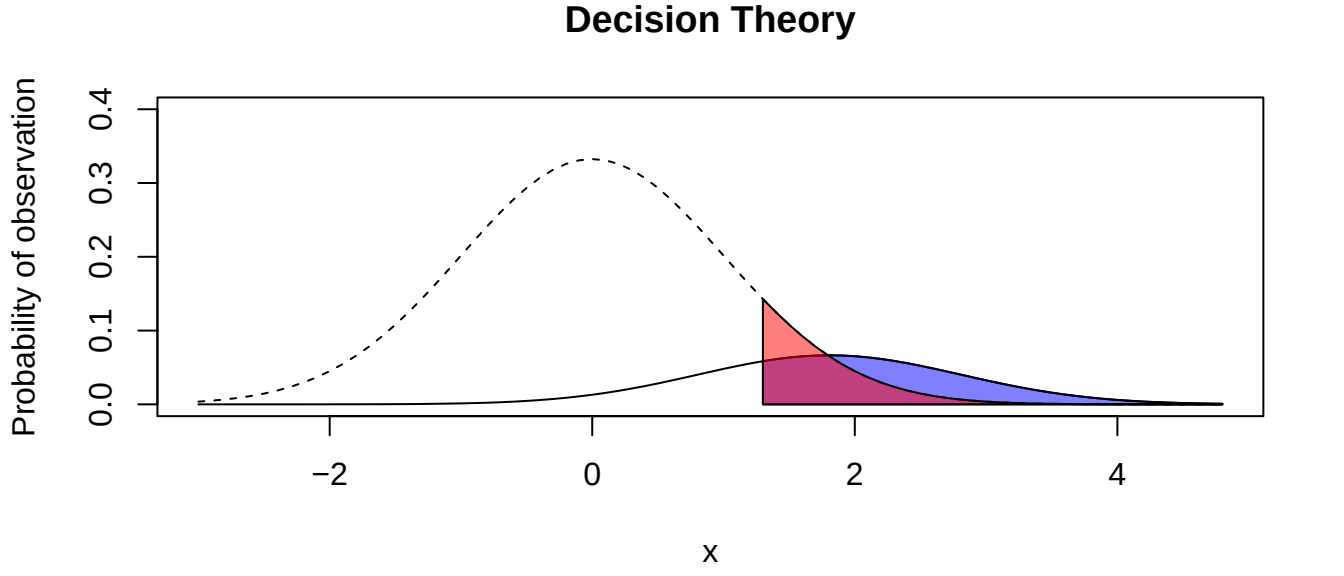
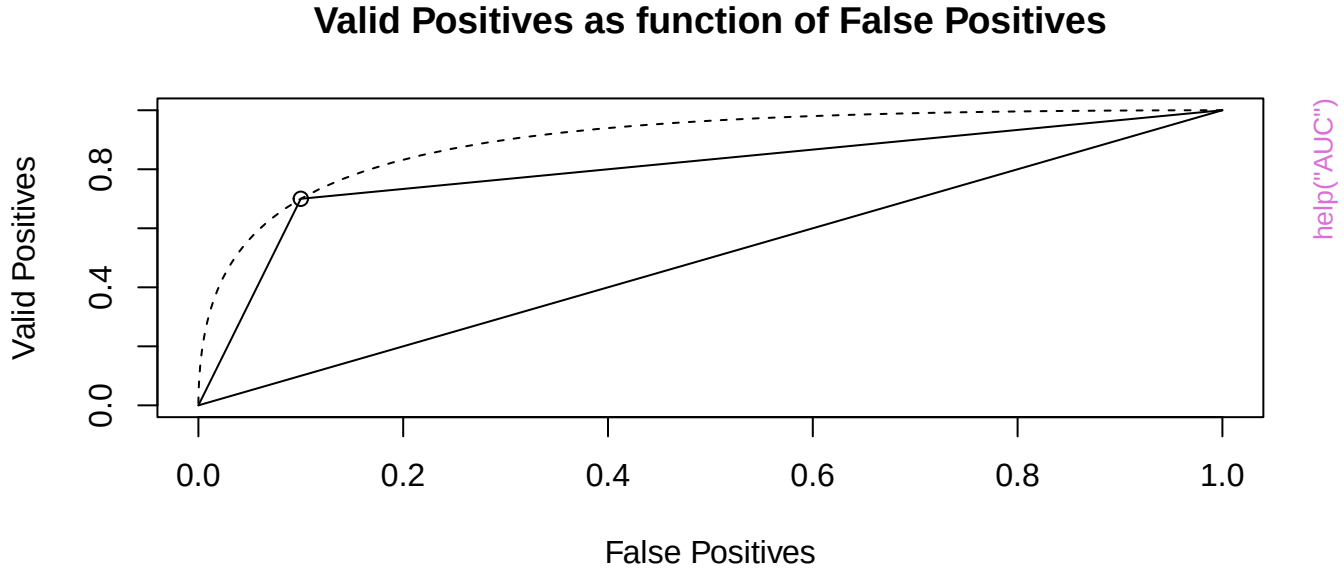
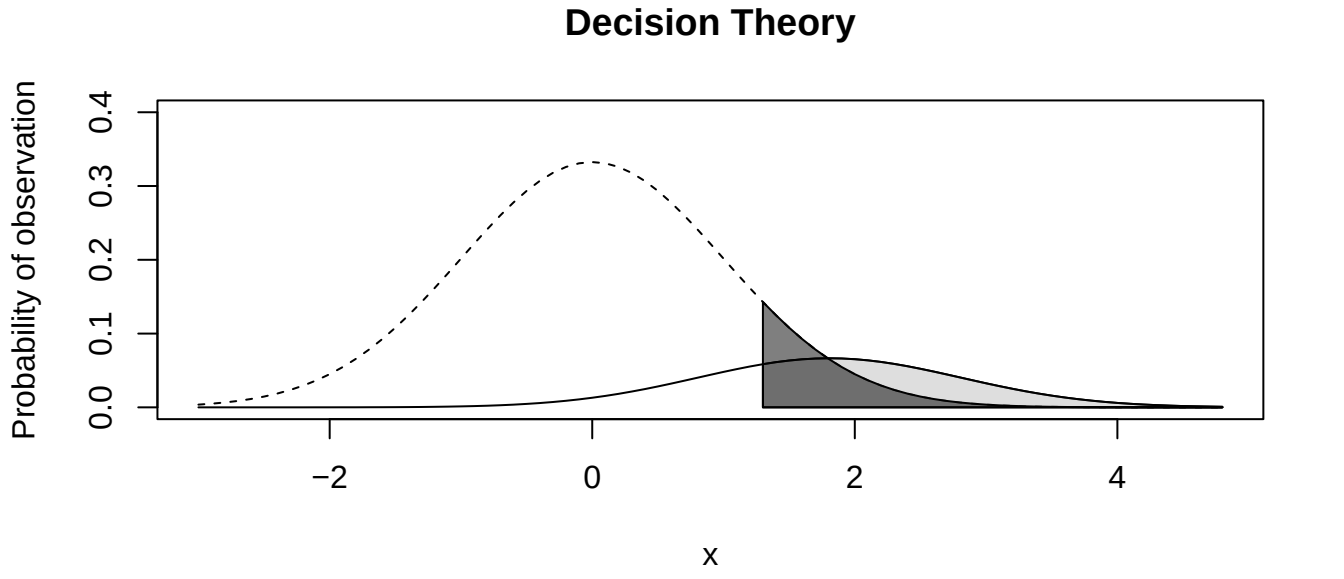

Valid Positives as function of False Positives
Valid Positives
0.0
0.4
0.8
0.0
0.2
0.4
0.6
0.8
1.0
False Positives
help("AUC")

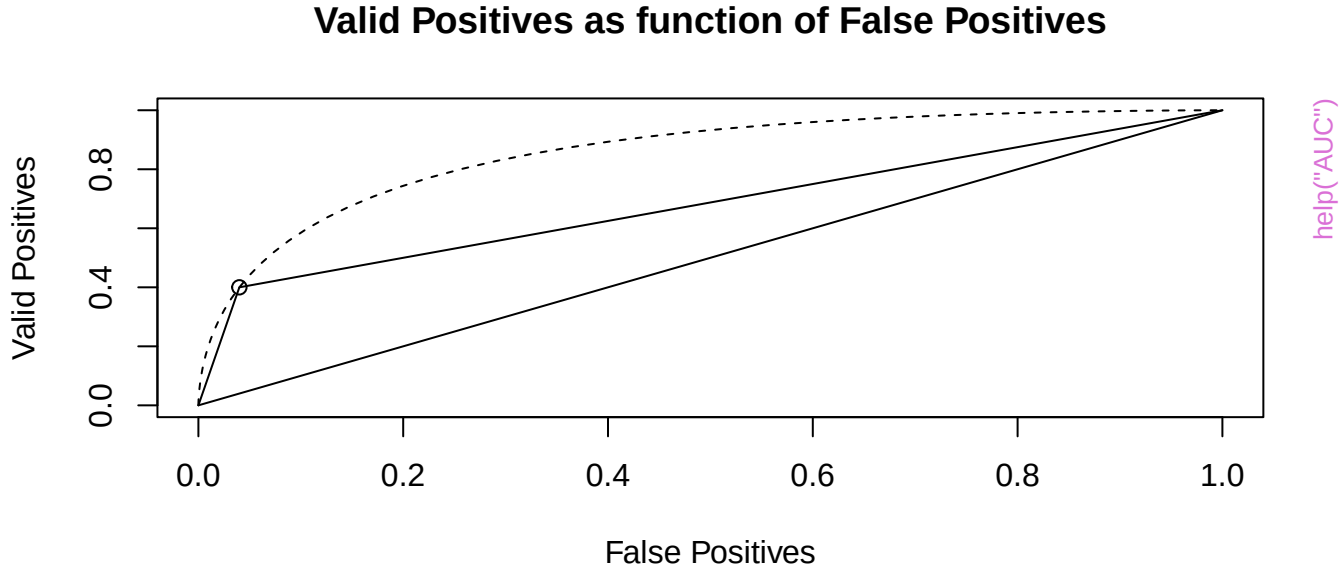

Decision Theory
Probability of observation
0.0
0.1
0.2
0.3
0.4
−3
−2
−1
0
1
2
3
4
x

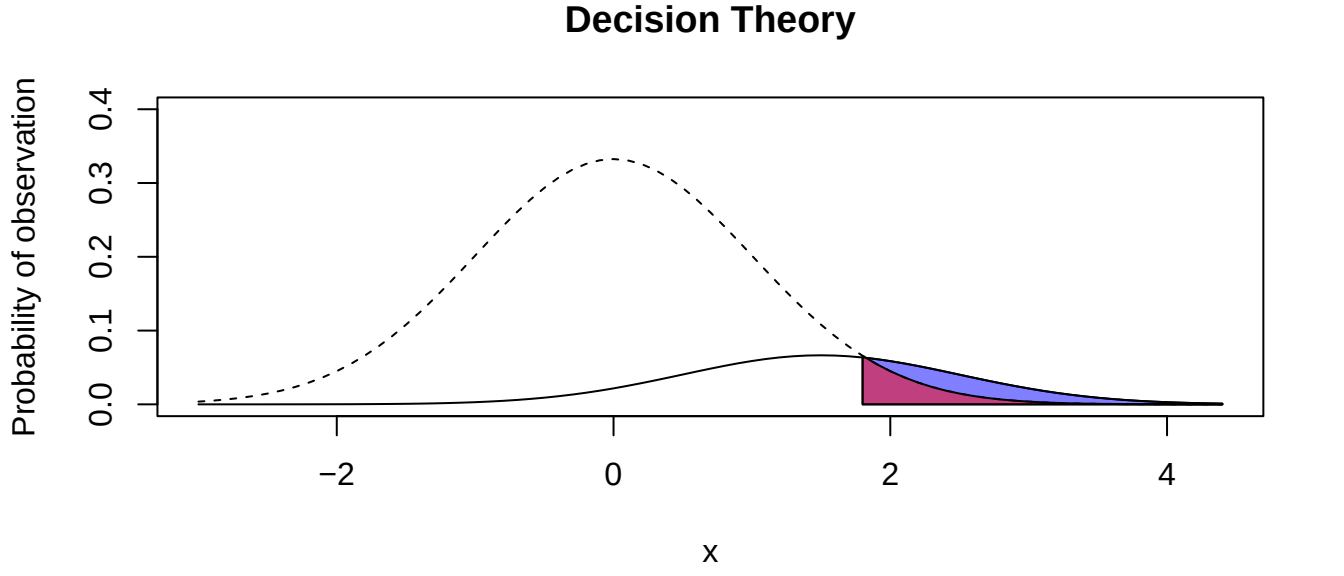

Valid Positives as function of False Positives
Valid Positives
0.0
0.4
0.8
0.0
0.2
0.4
0.6
0.8
1.0
False Positives
help("AUC")

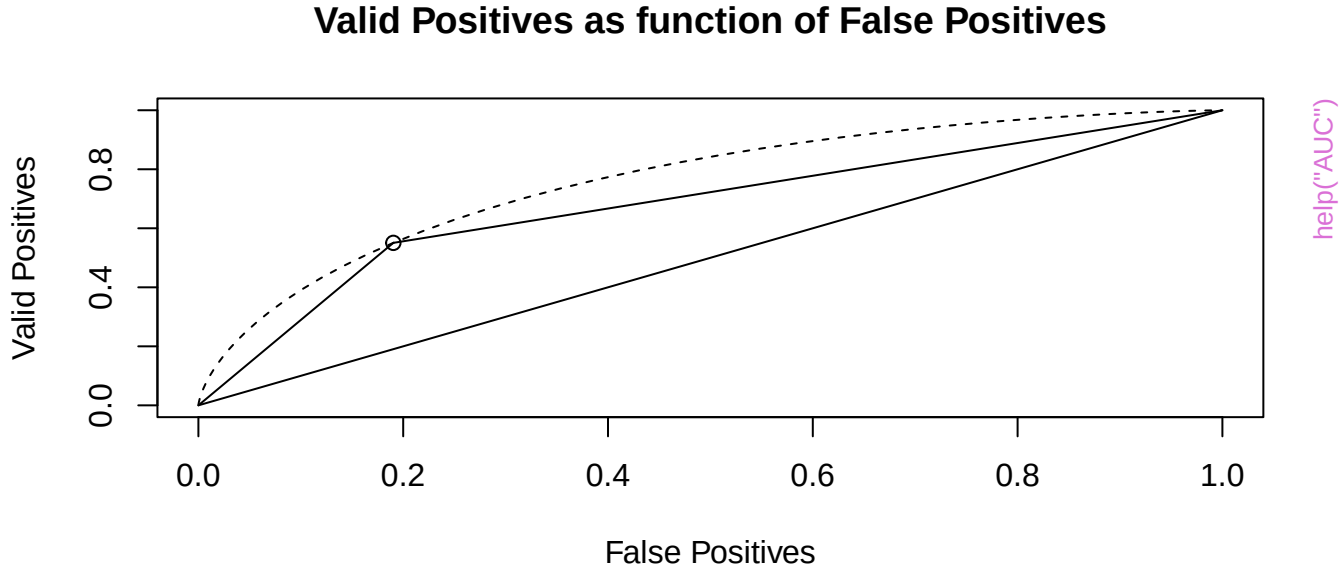

Decision Theory
Probability of observation
0.0
0.1
0.2
0.3
0.4
−2
0
2
4
x


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")

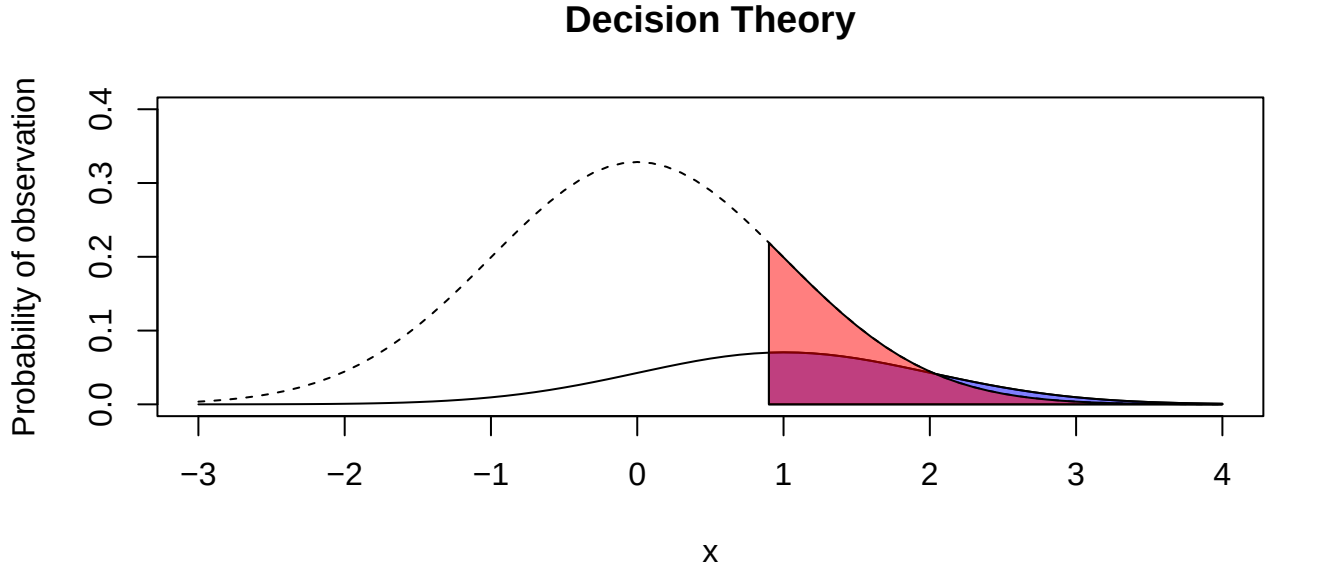

Decision Theory
Probability of observation
0.0
0.1
0.2
0.3
0.4
−2
0
2
4
x

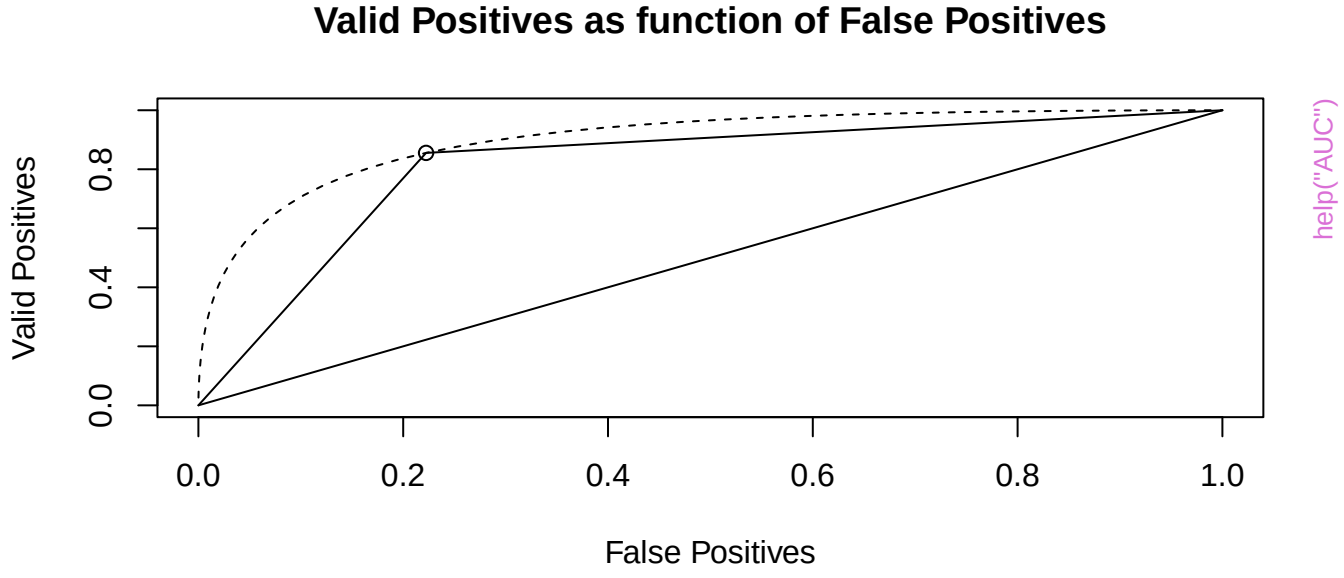

Valid Positives as function of False Positives
Valid Positives
0.0
0.4
0.8
0.0
0.2
0.4
0.6
0.8
1.0
False Positives
help("AUC")

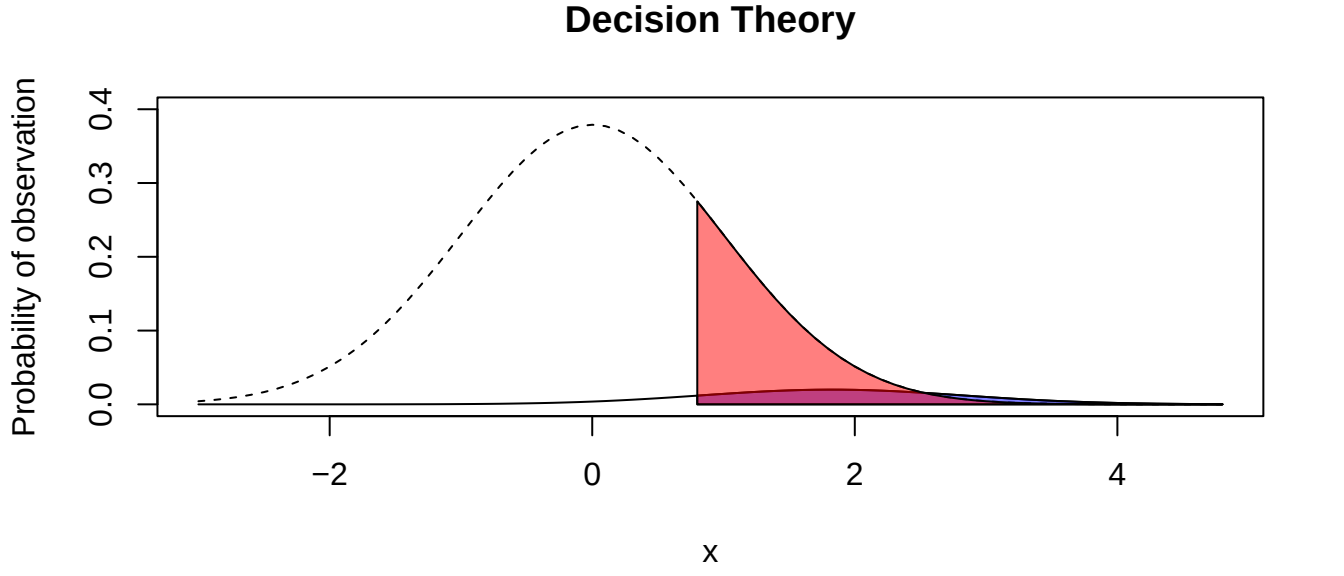

Decision Theory
Probability of observation
0.0
0.1
0.2
0.3
0.4
−2
0
2
4
x


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

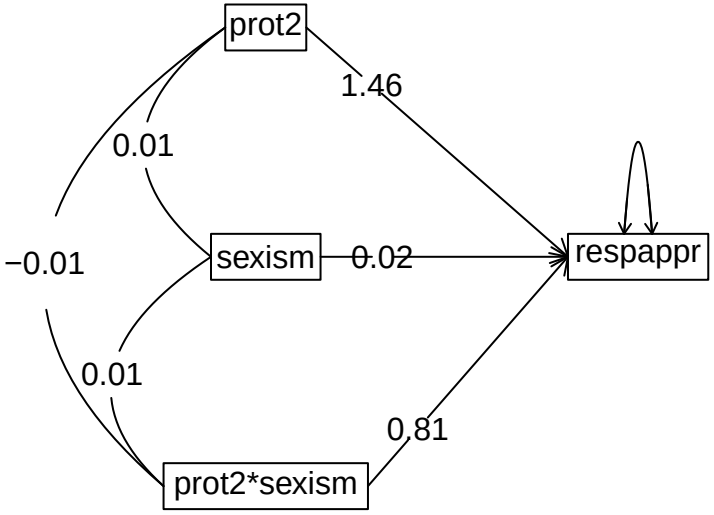
help("AUC")


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

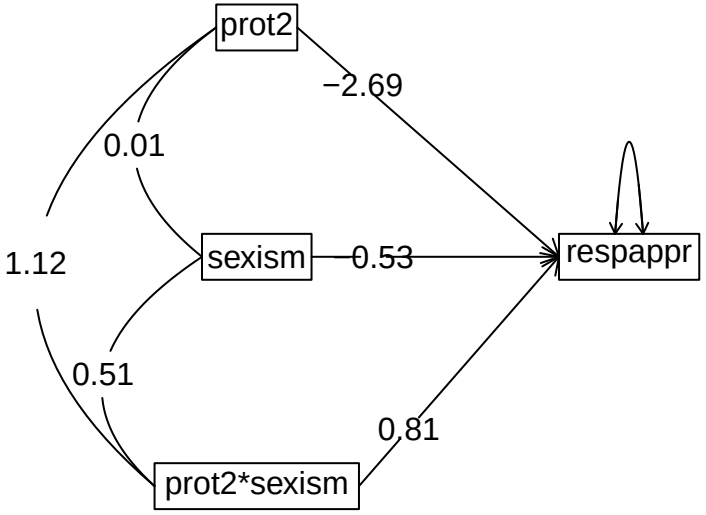

Valid Positives as function of False Positives
Valid Positives
0.0
0.4
0.8
0.0
0.2
0.4
0.6
0.8
1.0
False Positives
help("AUC")

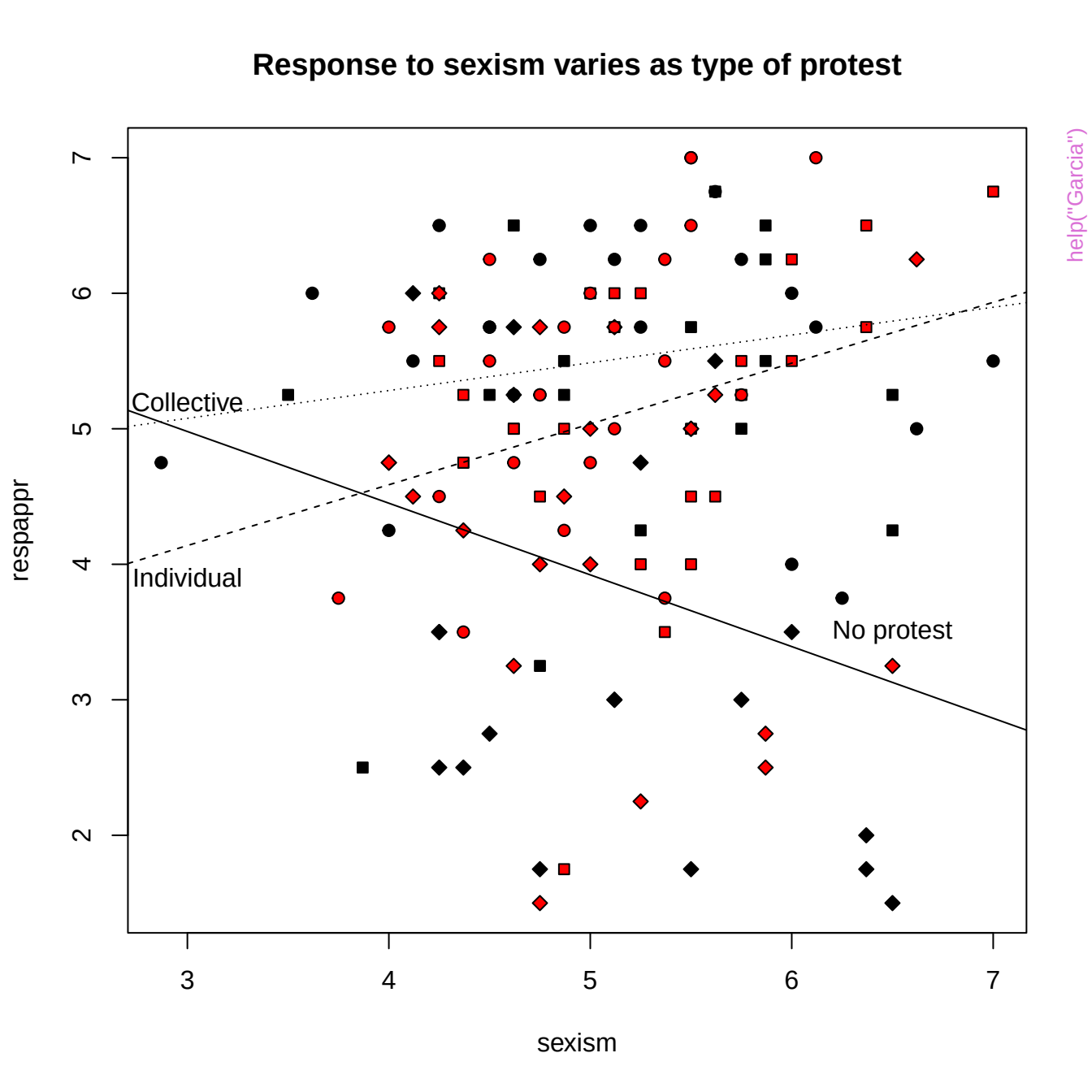

Decision Theory
Probability of observation
0.0
0.1
0.2
0.3
0.4
−2
0
2
4
x

Moderated (mean centered)

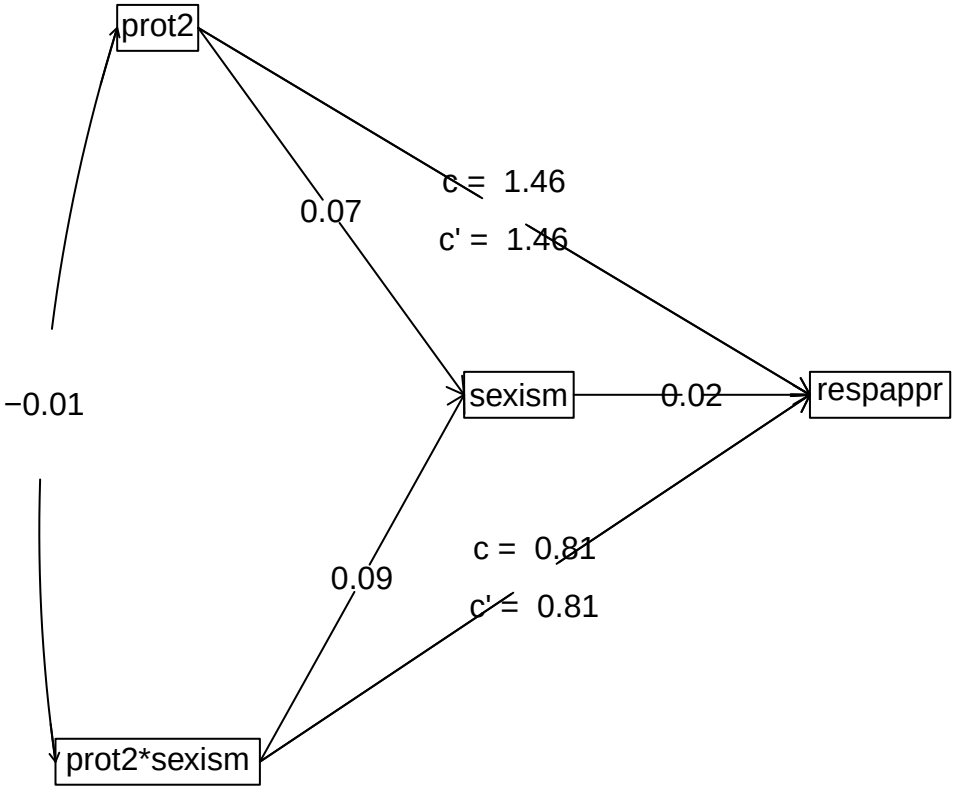


Moderated (don't center)

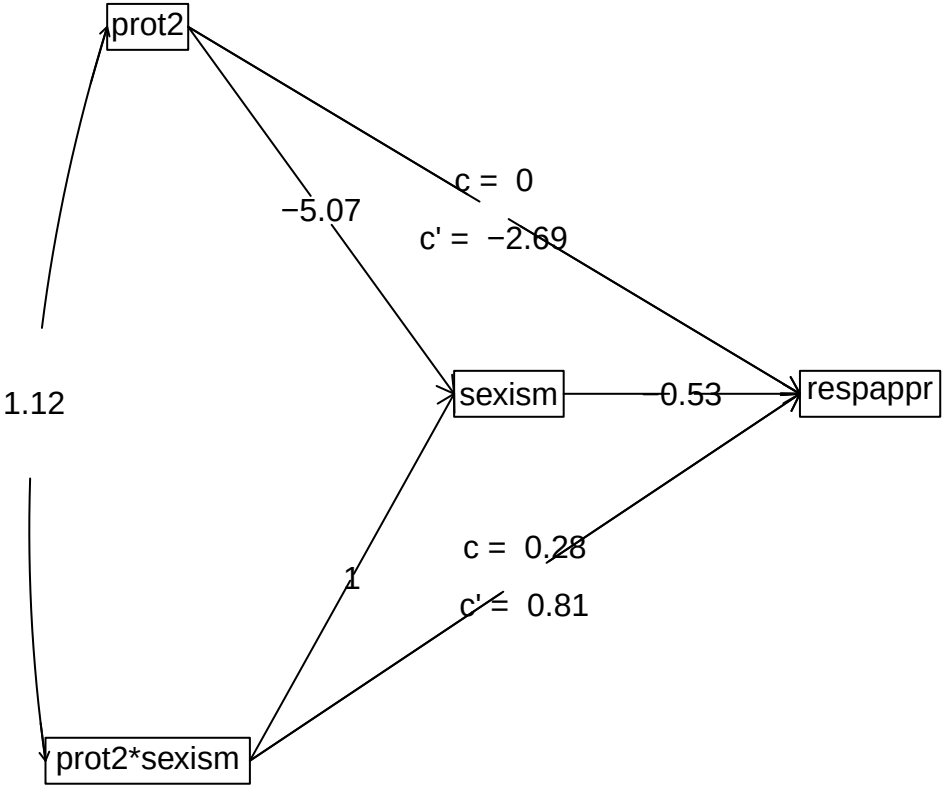


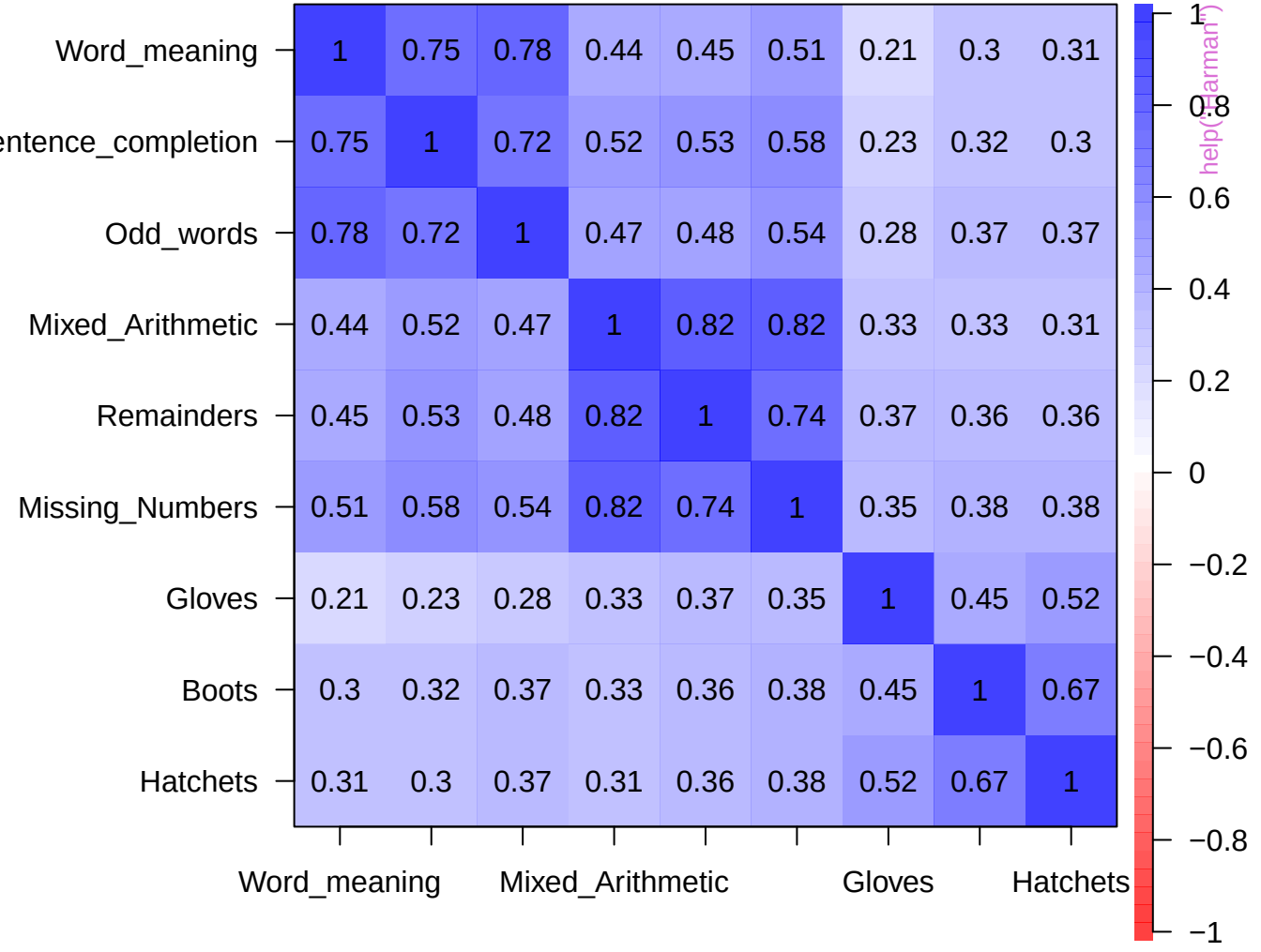

Response to sexism varies as type of protest
help("Garcia")
respappr
sexism
Collective
Individual
No protest
2
3
4
5
6
7
3
4
5
6
7

Moderated mediation (mean centered)



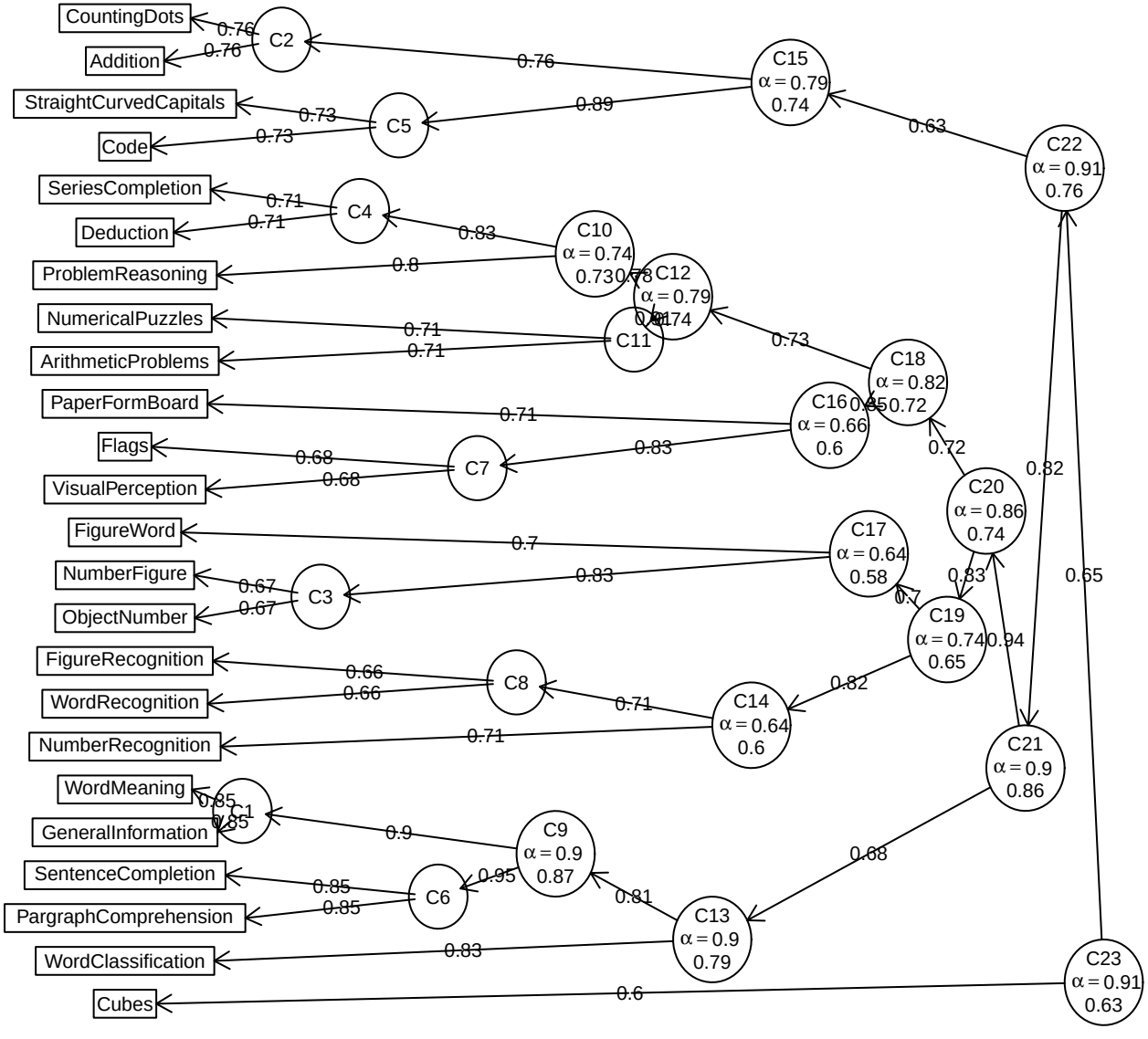
Moderated mediation (not centered



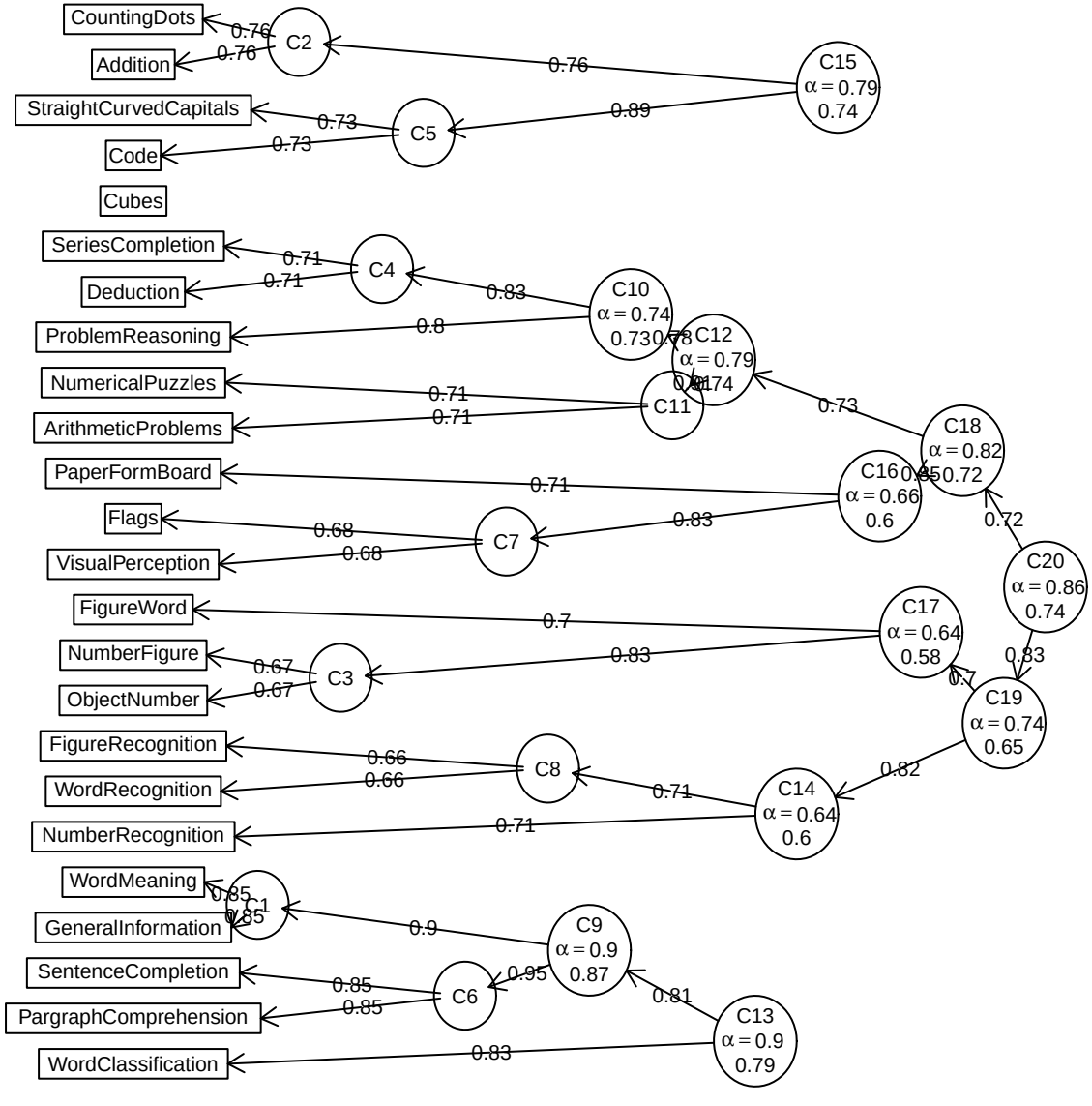

Word_meaning
ntence_completion
Odd_words
Mixed_Arithmetic
Remainders
Missing_Numbers
Gloves
Boots
Hatchets
1 0.75 0.78 0.44 0.45 0.51 0.21 0.3 0.31
0.75 1 0.72 0.52 0.53 0.58 0.23 0.32 0.3
0.78 0.72 1 0.47 0.48 0.54 0.28 0.37 0.37
0.44 0.52 0.47 1 0.82 0.82 0.33 0.33 0.31
0.45 0.53 0.48 0.82 1 0.74 0.37 0.36 0.36
0.51 0.58 0.54 0.82 0.74 1 0.35 0.38 0.38
0.21 0.23 0.28 0.33 0.37 0.35 1 0.45 0.52
0.3 0.32 0.37 0.33 0.36 0.38 0.45 1 0.67
0.31 0.3 0.37 0.31 0.36 0.38 0.52 0.67 1
Word_meaning
Mixed_Arithmetic
Gloves
Hatchets
help(pairman")
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1


Sociability
Sorrow
Tenderness
Joy
Wonder
Disgust
Anger
Fear
1 0.83 0.81 0.8 0.71 0.54 0.53 0.24
0.83 1 0.87 0.62 0.59 0.58 0.44 0.45
0.81 0.87 1 0.63 0.37 0.3 0.12 0.33
0.8 0.62 0.63 1 0.49 0.3 0.28 0.29
0.71 0.59 0.37 0.49 1 0.34 0.55 0.19
0.54 0.58 0.3 0.3 0.34 1 0.38 0.21
0.53 0.44 0.12 0.28 0.55 0.38 1 0.1
0.24 0.45 0.33 0.29 0.19 0.21 0.1 1
Sociability
Tenderness
Wonder
Anger
Fear
help(pairman)
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1

ICLUST of the Harman data

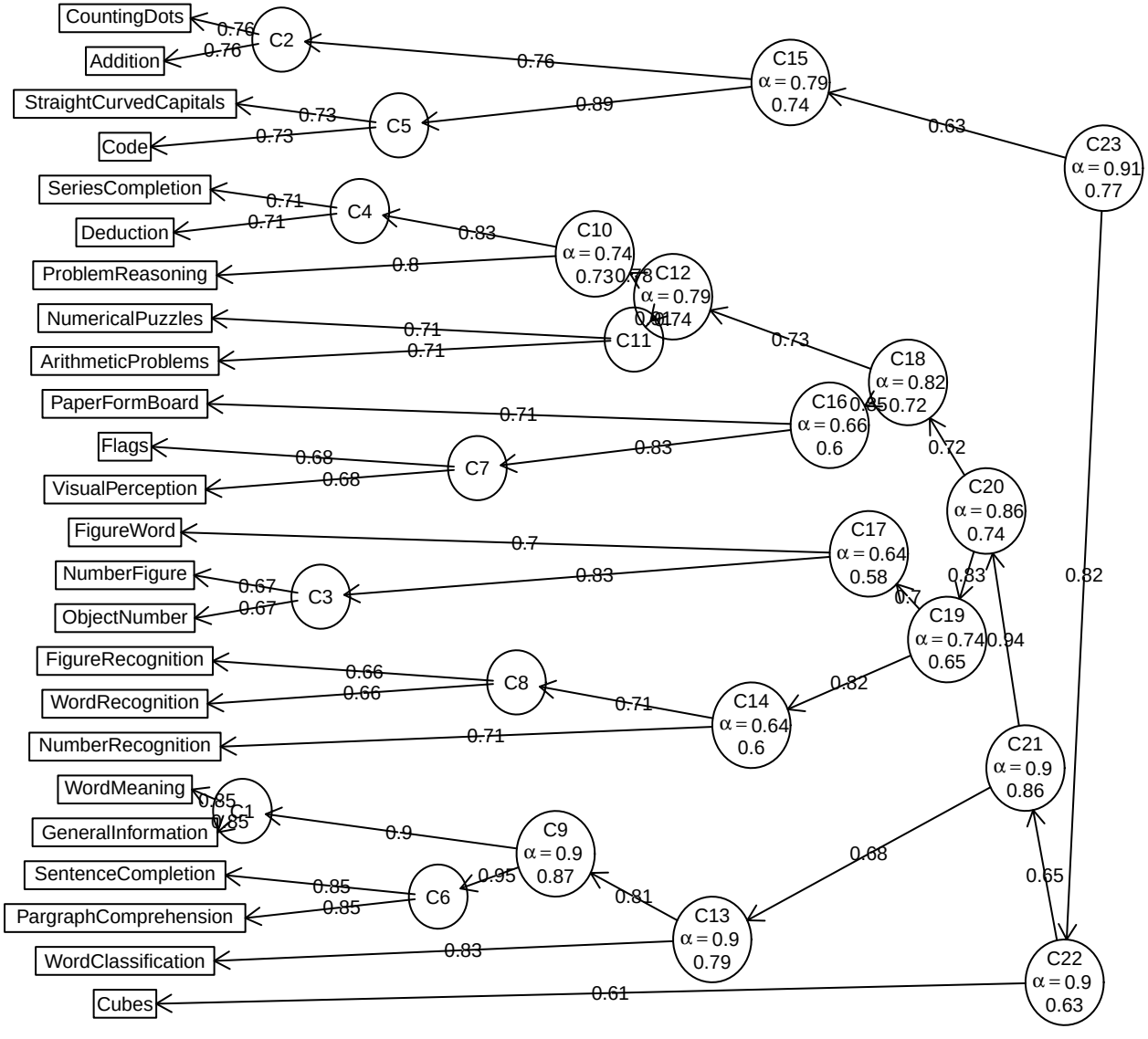


Force 4 clusters

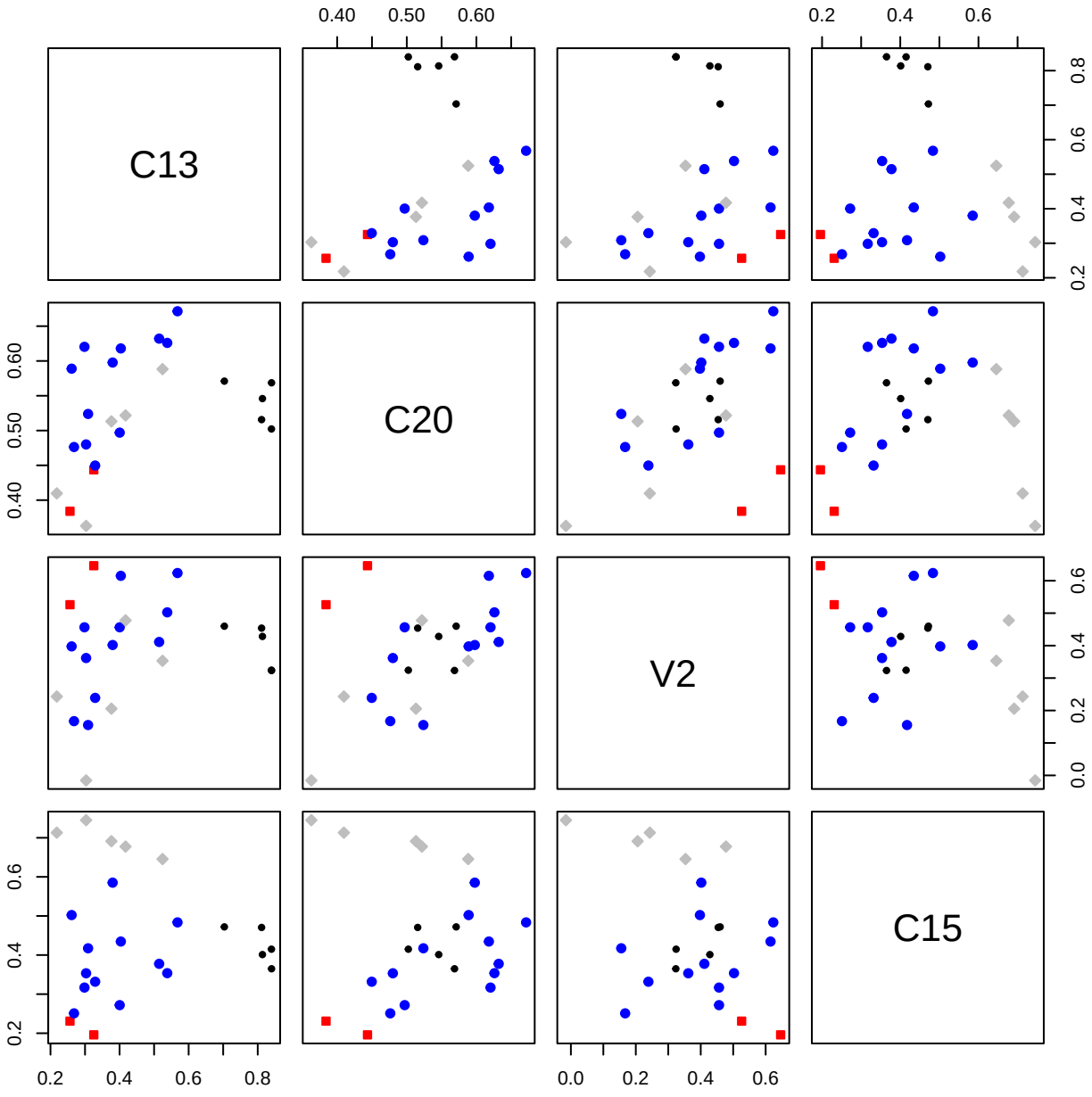


help("ICLUST")

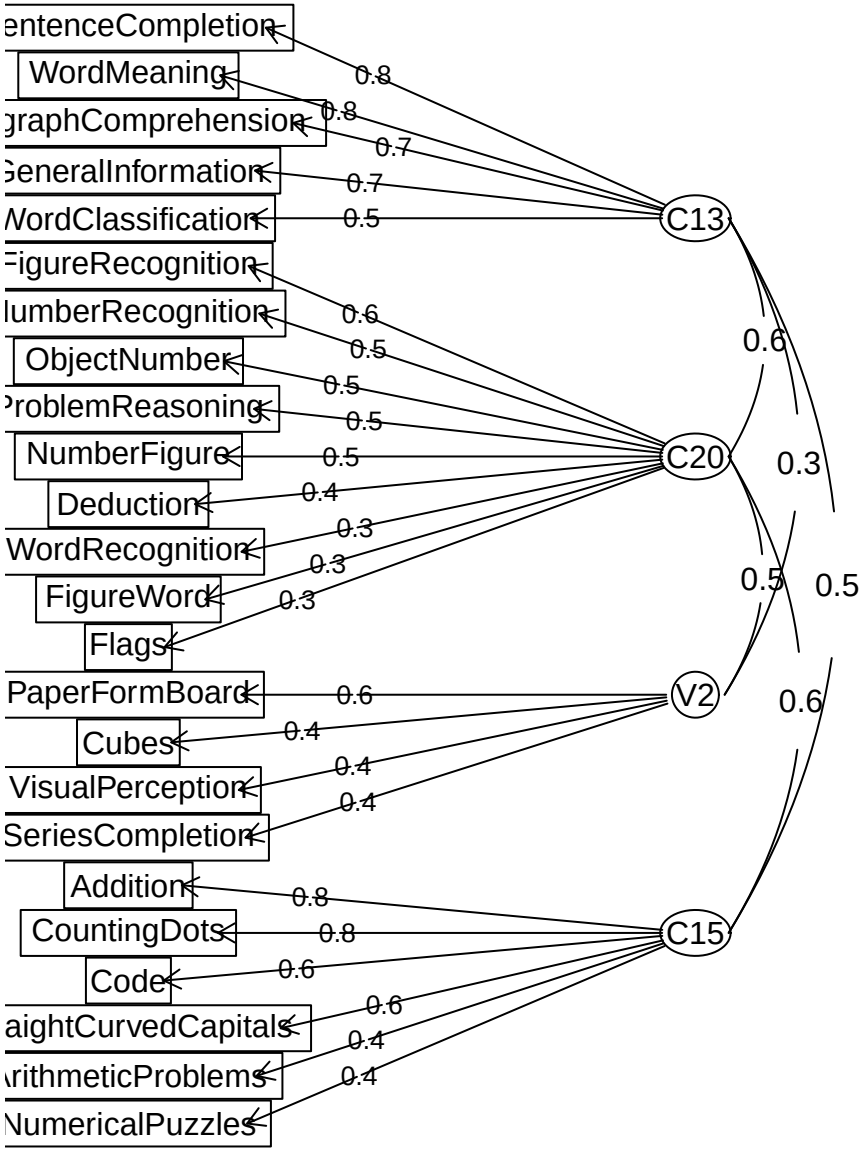
ICLUST



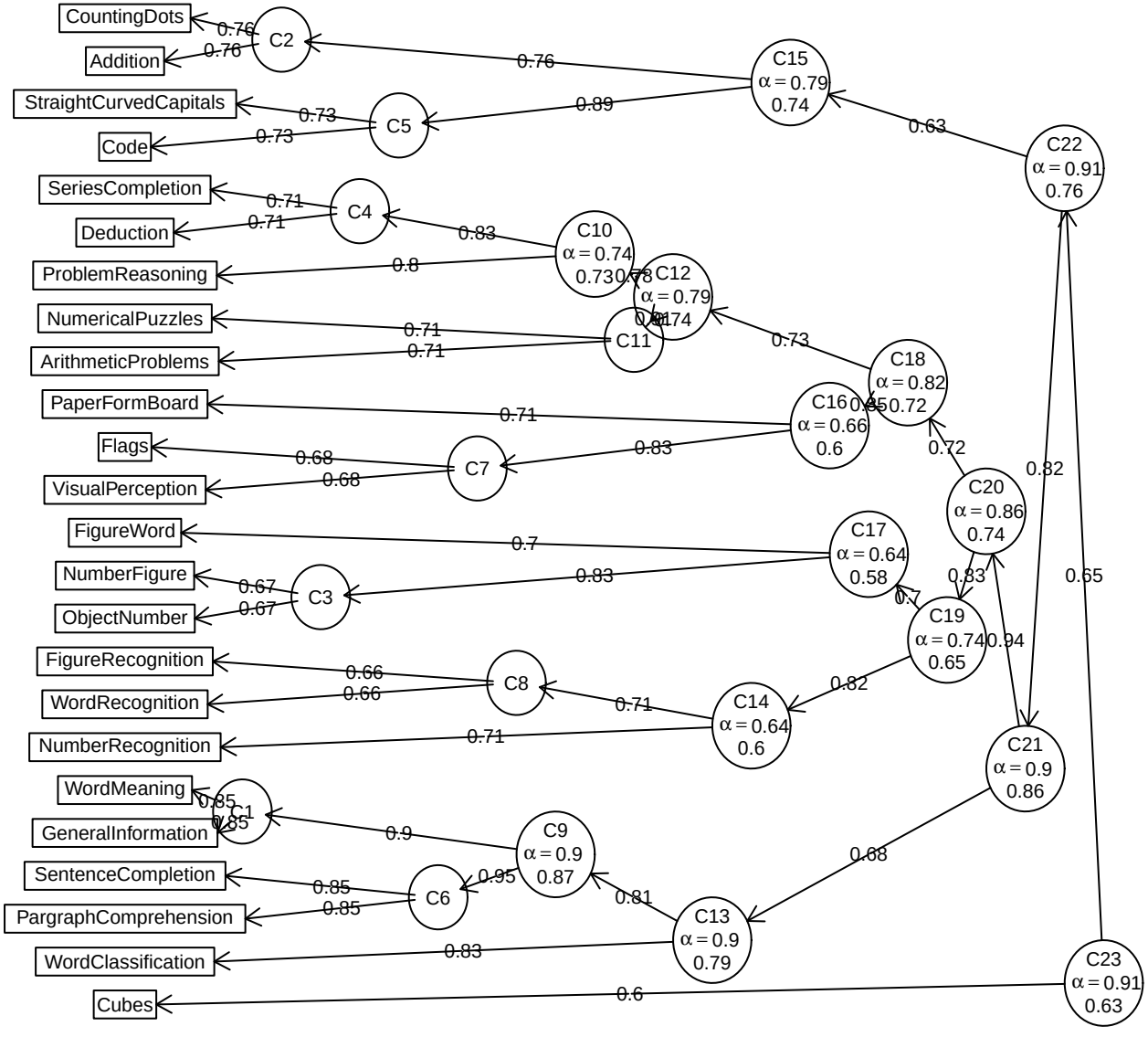
help("ICLUST")

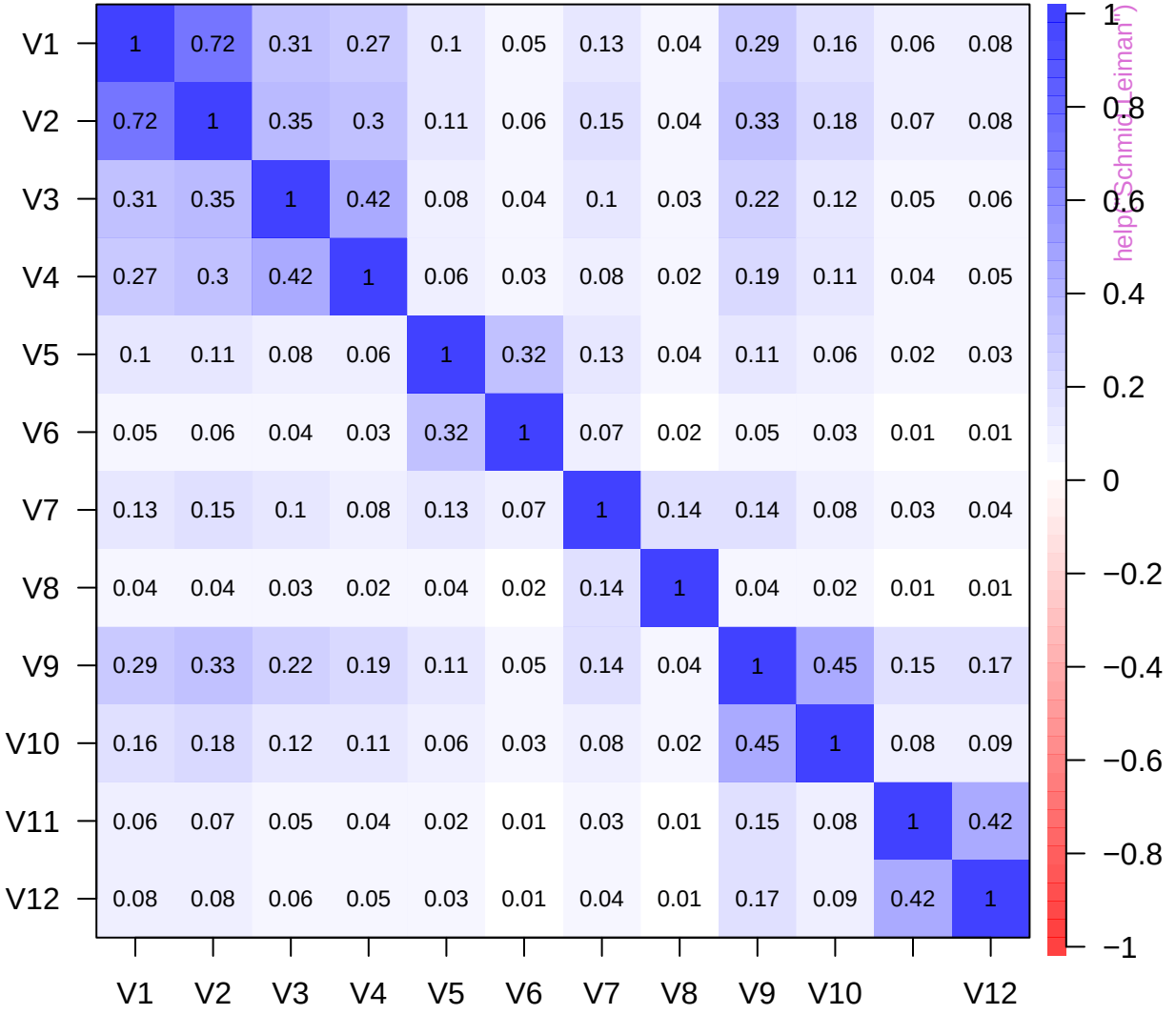

C13
C20
V2
C15
0.40
0.50
0.60
0.2
0.4
0.6
0.8
0.0
help("ICLUST")

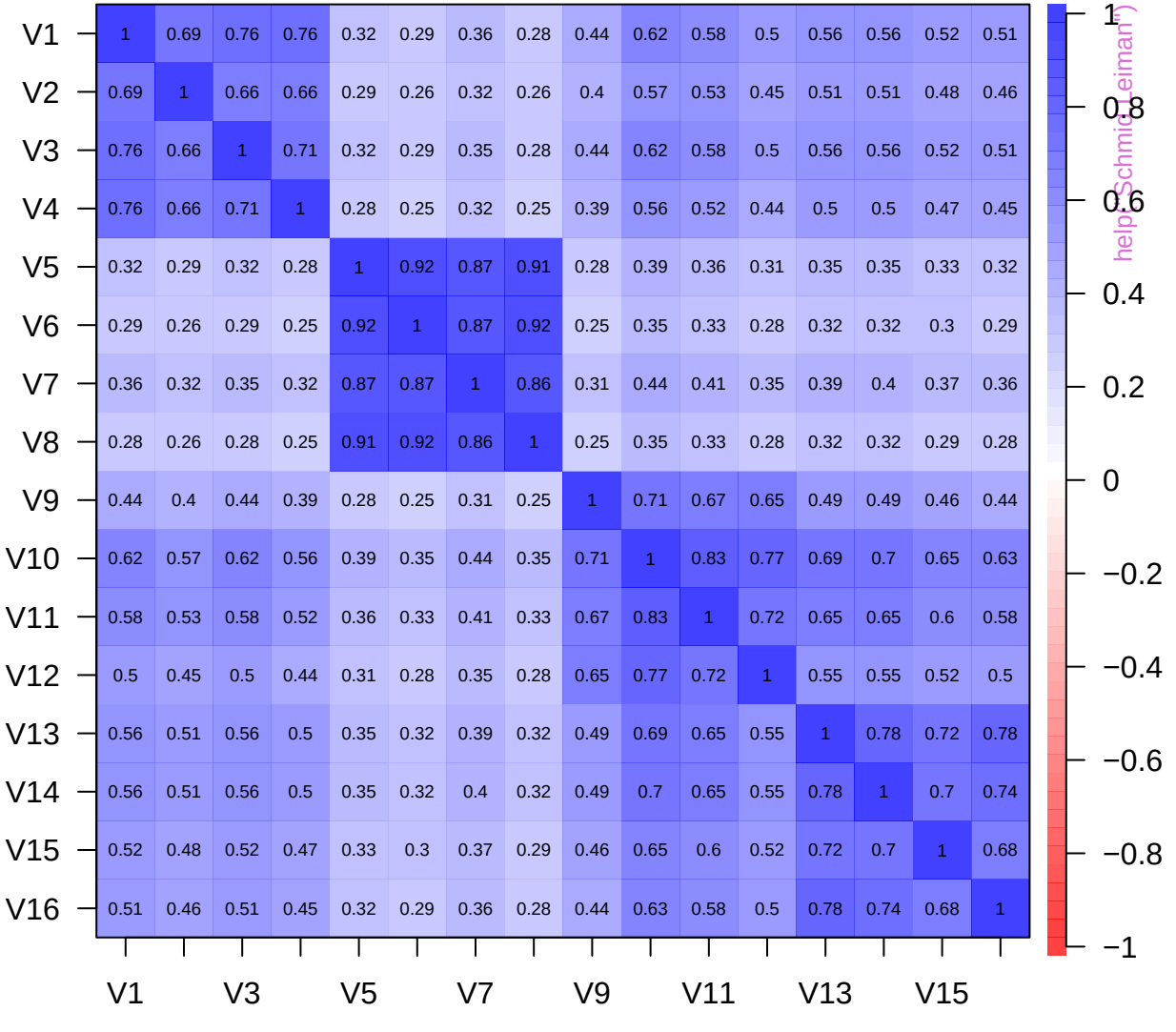
Pattern taken from iclust



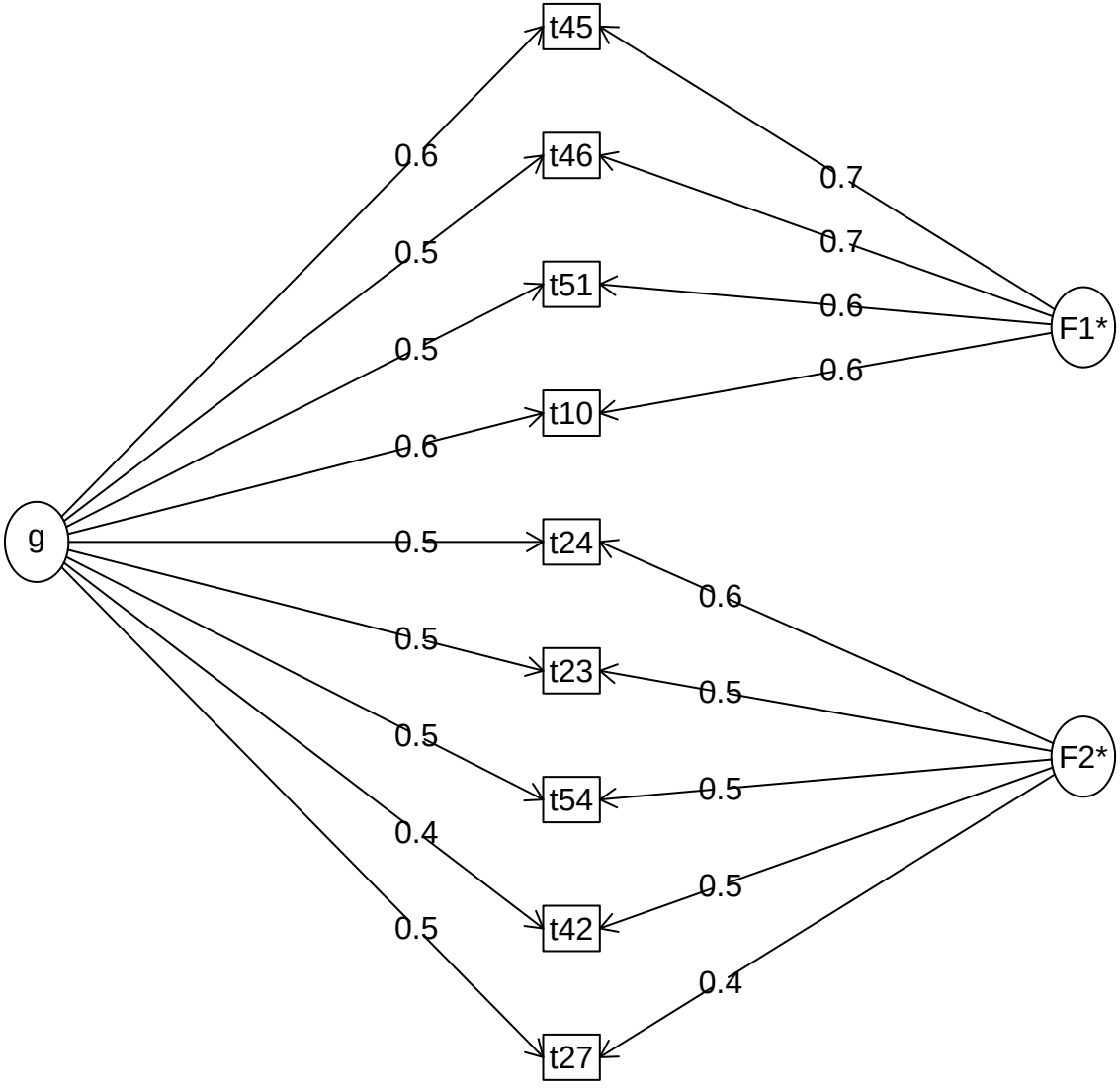
ICLUST


CountingDots
Addition
StraightCurvedCapitals
Code
SeriesCompletion
Deduction
ProblemReasoning
NumericalPuzzles
ArithmeticProblems
PaperFormBoard
Flags
VisualPerception
FigureWord
NumberFigure
ObjectNumber
FigureRecognition
WordRecognition
NumberRecognition
WordMeaning
GeneralInformation
SentenceCompletion
PargraphComprehension
WordClassification
Cubes
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
α = 0.79
0.74
C16
α = 0.66
0.6
C17
α = 0.64
0.58
C18
α = 0.82
0.72
C19
α = 0.74
0.65
C20
α = 0.86
0.74
C21
α = 0.9
0.86
C22
α = 0.91
0.76
C23
α = 0.91
0.63
help("ICLUST.rgraph")

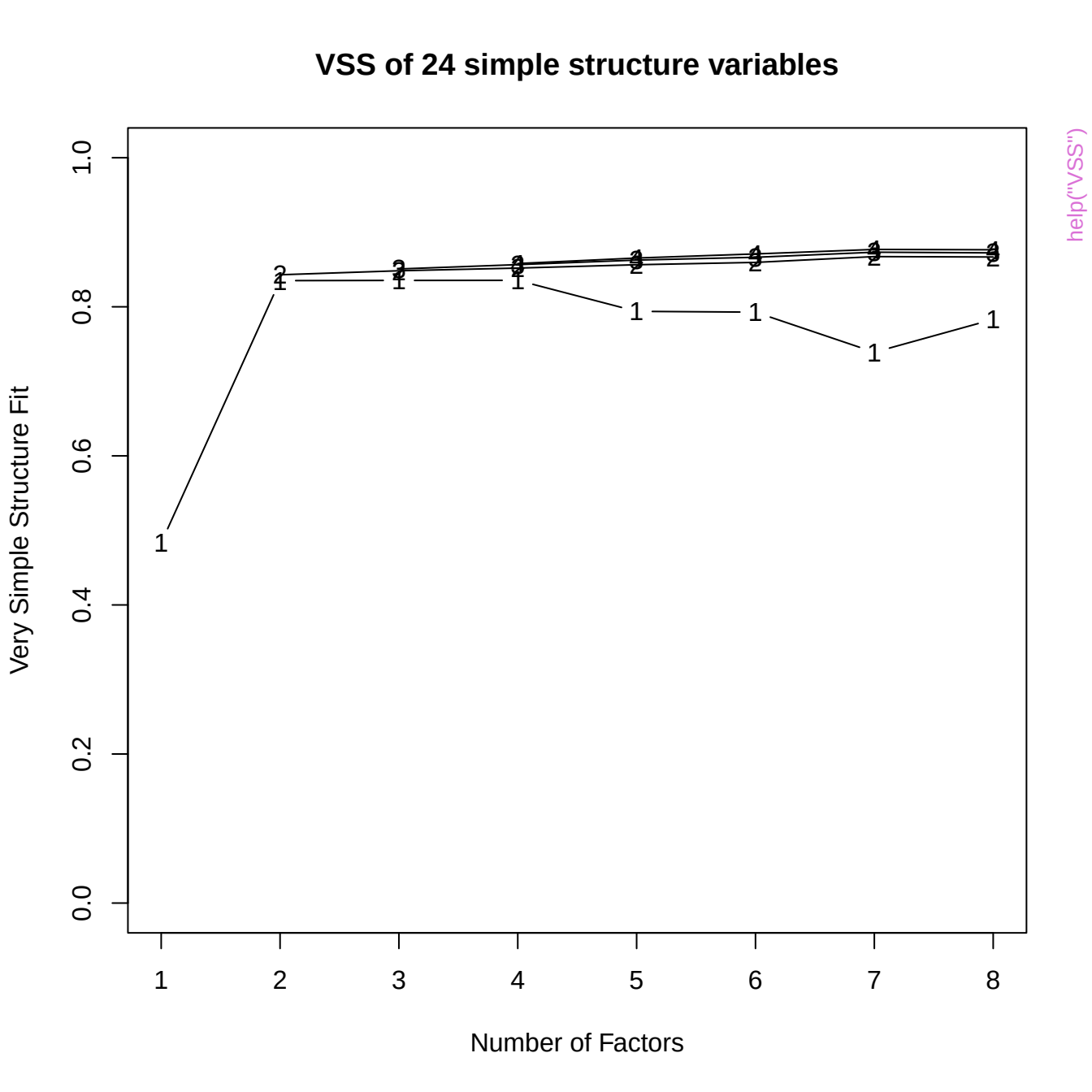

V1 1 0.72 0.31 0.27 0.1 0.05 0.13 0.04 0.29 0.16 0.06 0.08
V2 0.72 1 0.35 0.3 0.11 0.06 0.15 0.04 0.33 0.18 0.07 0.08
V3 0.31 0.35 1 0.42 0.08 0.04 0.1 0.03 0.22 0.12 0.05 0.06
V4 0.27 0.3 0.42 1 0.06 0.03 0.08 0.02 0.19 0.11 0.04 0.05
V5 0.1 0.11 0.08 0.06 1 0.32 0.13 0.04 0.11 0.06 0.02 0.03
V6 0.05 0.06 0.04 0.03 0.32 1 0.07 0.02 0.05 0.03 0.01 0.01
V7 0.13 0.15 0.1 0.08 0.13 0.07 1 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 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 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 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 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
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.Leiman)

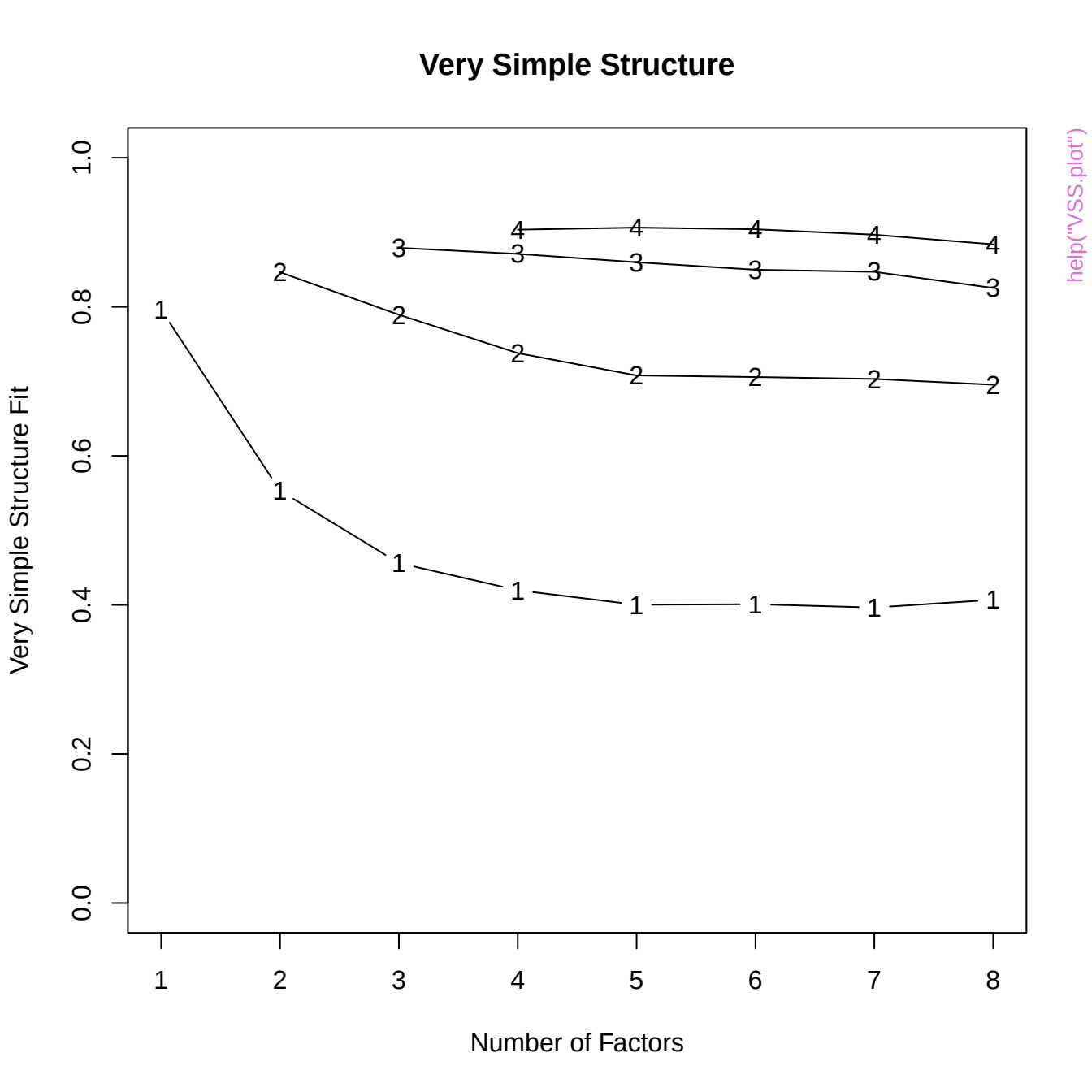

V1 1 0.69 0.76 0.76 0.32 0.29 0.36 0.28 0.44 0.62 0.58 0.5 0.56 0.56 0.52 0.51
V2 0.69 1 0.66 0.66 0.29 0.26 0.32 0.26 0.4 0.57 0.53 0.45 0.51 0.51 0.48 0.46
V3 0.76 0.66 1 0.71 0.32 0.29 0.35 0.28 0.44 0.62 0.58 0.5 0.56 0.56 0.52 0.51
V4 0.76 0.66 0.71 1 0.28 0.25 0.32 0.25 0.39 0.56 0.52 0.44 0.5 0.5 0.47 0.45
V5 0.32 0.29 0.32 0.28 1 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 0.87 0.92 0.25 0.35 0.33 0.28 0.32 0.32 0.3 0.29
V7 0.36 0.32 0.35 0.32 0.87 0.87 1 0.86 0.31 0.44 0.41 0.35 0.39 0.4 0.37 0.36
V8 0.28 0.26 0.28 0.25 0.91 0.92 0.86 1 0.25 0.35 0.33 0.28 0.32 0.32 0.29 0.28
V9 0.44 0.4 0.44 0.39 0.28 0.25 0.31 0.25 1 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 0.83 0.77 0.69 0.7 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 0.72 0.65 0.65 0.6 0.58
V12 0.5 0.45 0.5 0.44 0.31 0.28 0.35 0.28 0.65 0.77 0.72 1 0.55 0.55 0.52 0.5
V13 0.56 0.51 0.56 0.5 0.35 0.32 0.39 0.32 0.49 0.69 0.65 0.55 1 0.78 0.72 0.78
V14 0.56 0.51 0.56 0.5 0.35 0.32 0.4 0.32 0.49 0.7 0.65 0.55 0.78 1 0.7 0.74
V15 0.52 0.48 0.52 0.47 0.33 0.3 0.37 0.29 0.46 0.65 0.6 0.52 0.72 0.7 1 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 0.5 0.78 0.74 0.68 1
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.eimar)

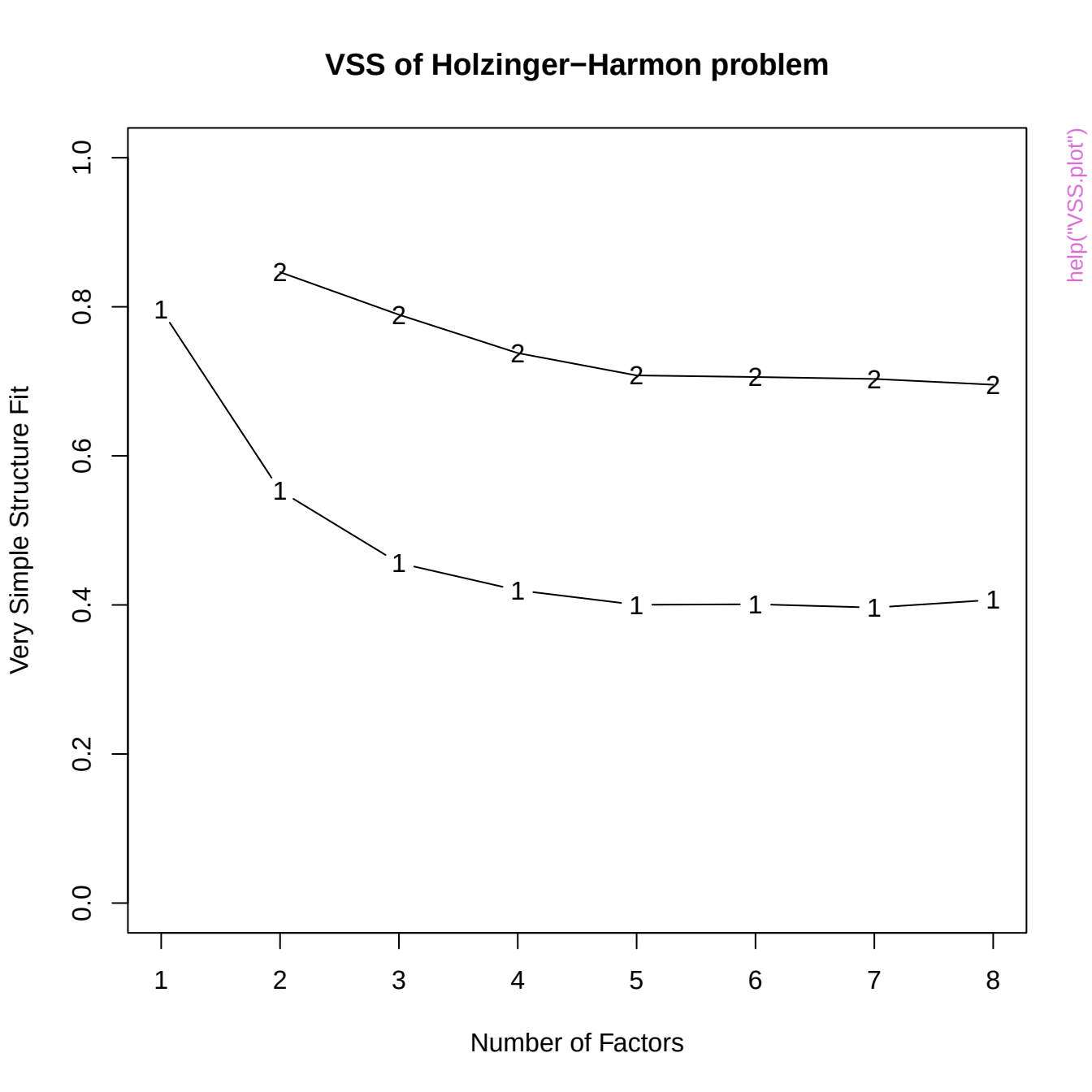
Omega

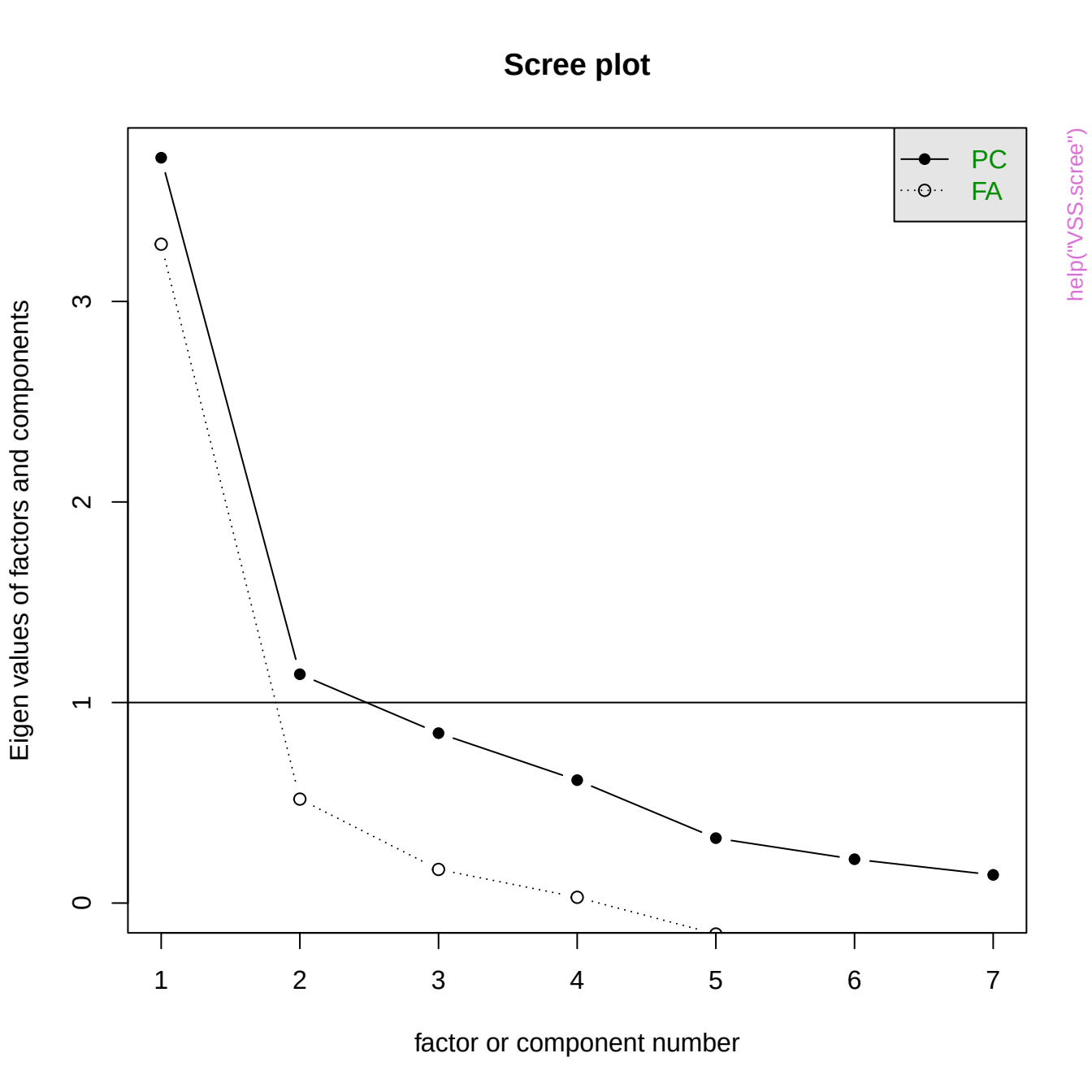


help("Tucker")

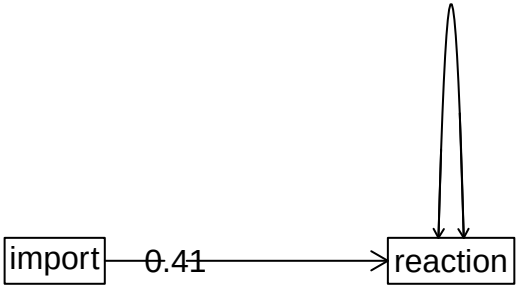

VSS of 24 simple structure variables
Very Simple Structure Fit
Number of Factors
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6
7
8
help("VSS")


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")

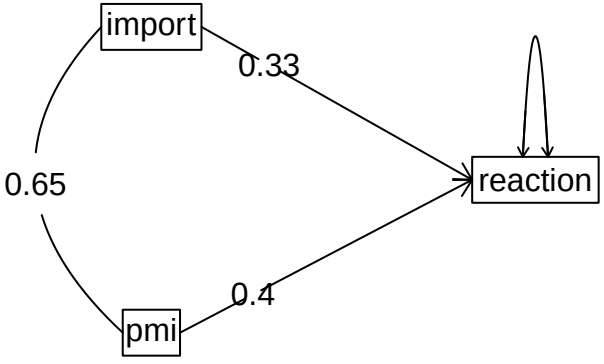

Scree plot
PC
FA
help("VSS.scree")
Eigen values of factors and components
0
1
2
3
1
2
3
4
5
6
7
factor or component number

Regression Models



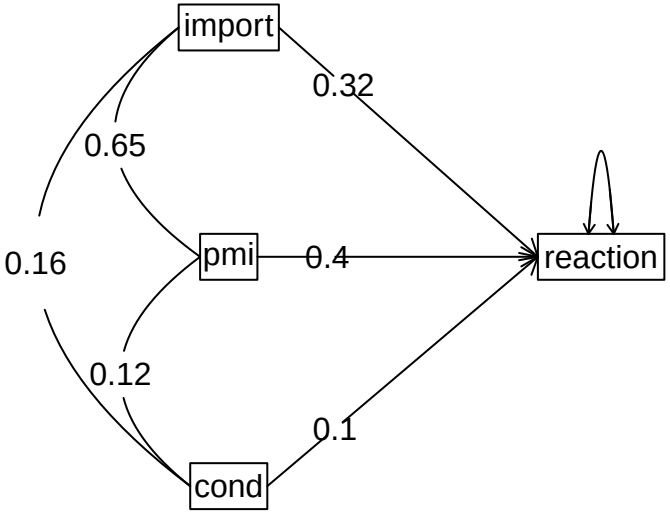
help("anova.psych")

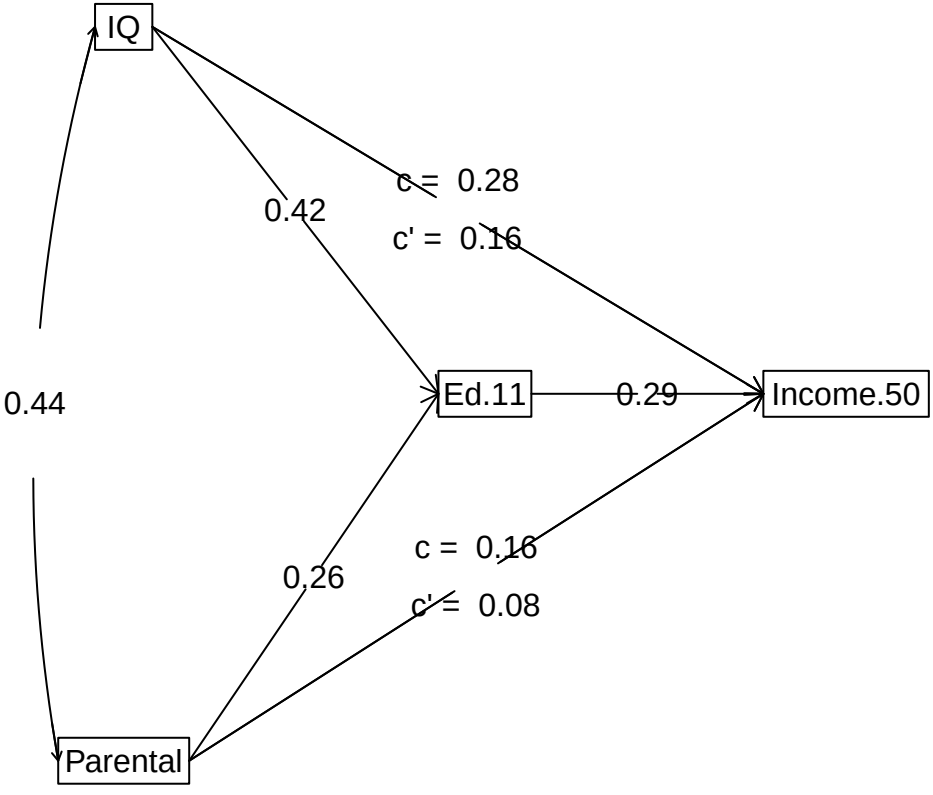
Regression Models



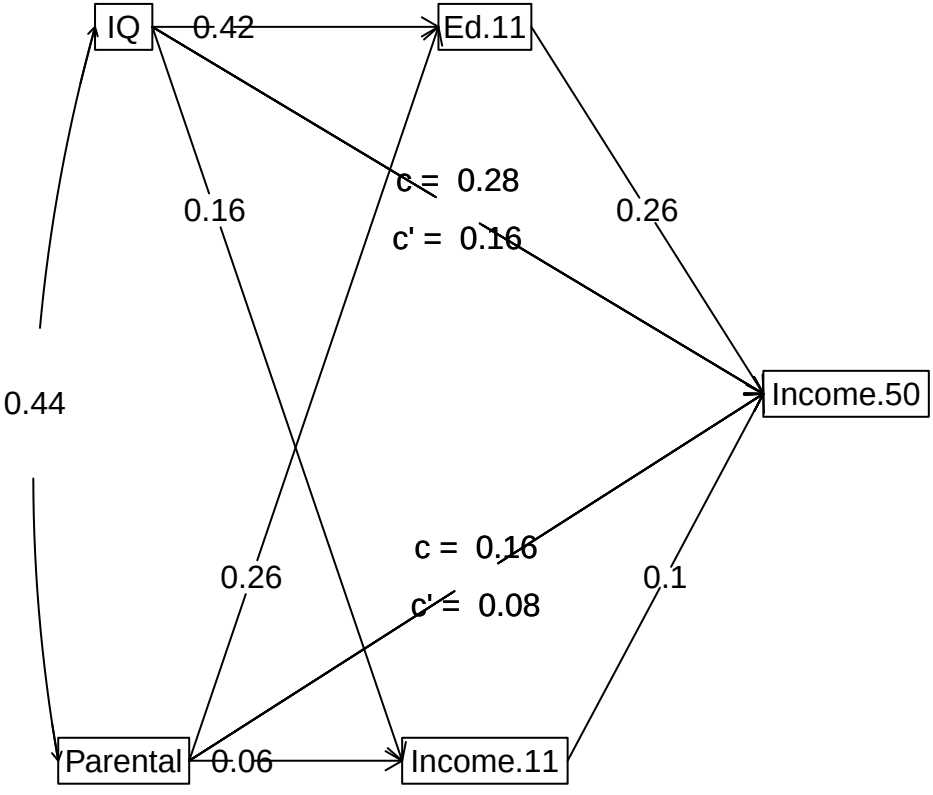
help("anova.psych")

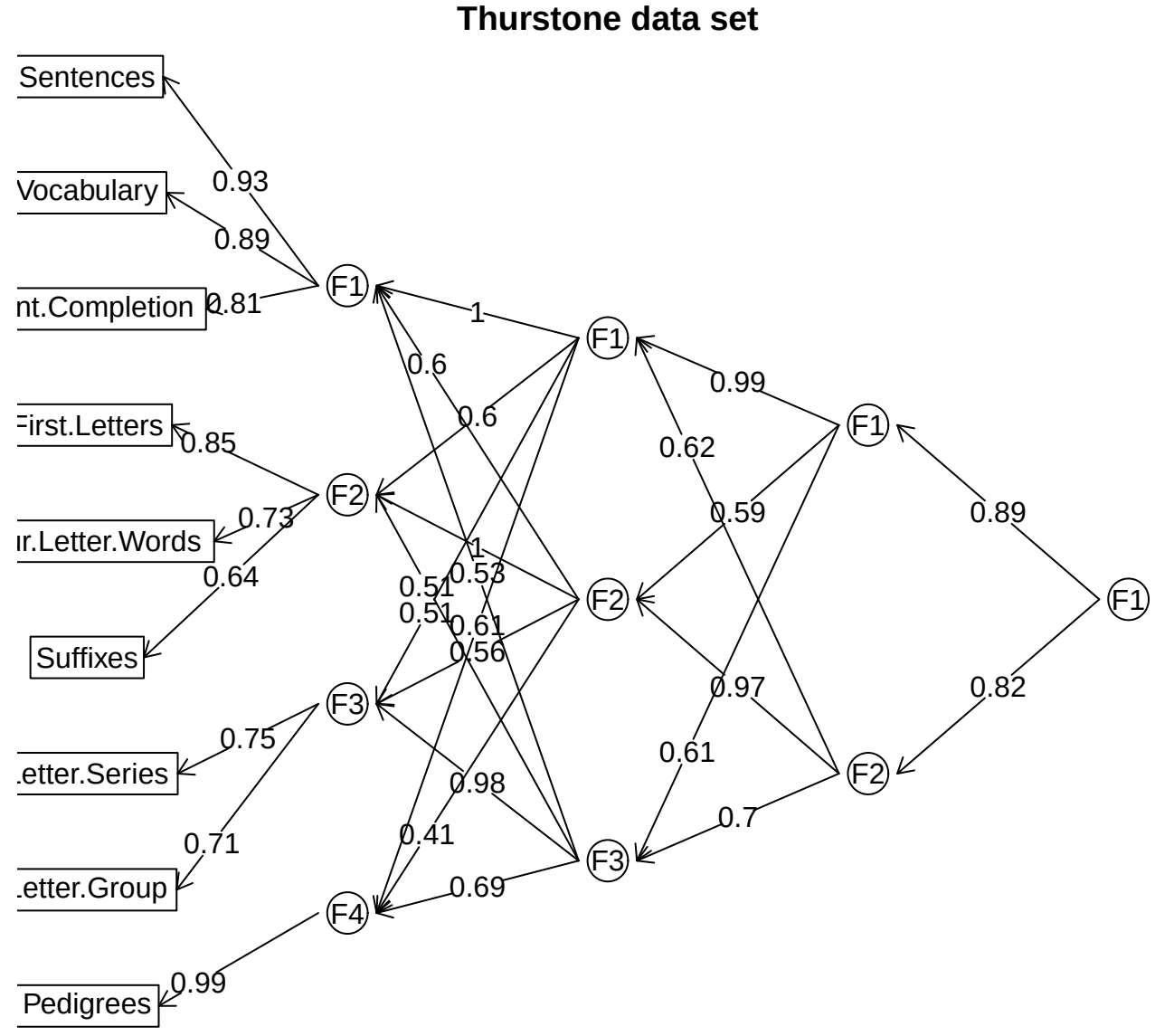
Regression Models

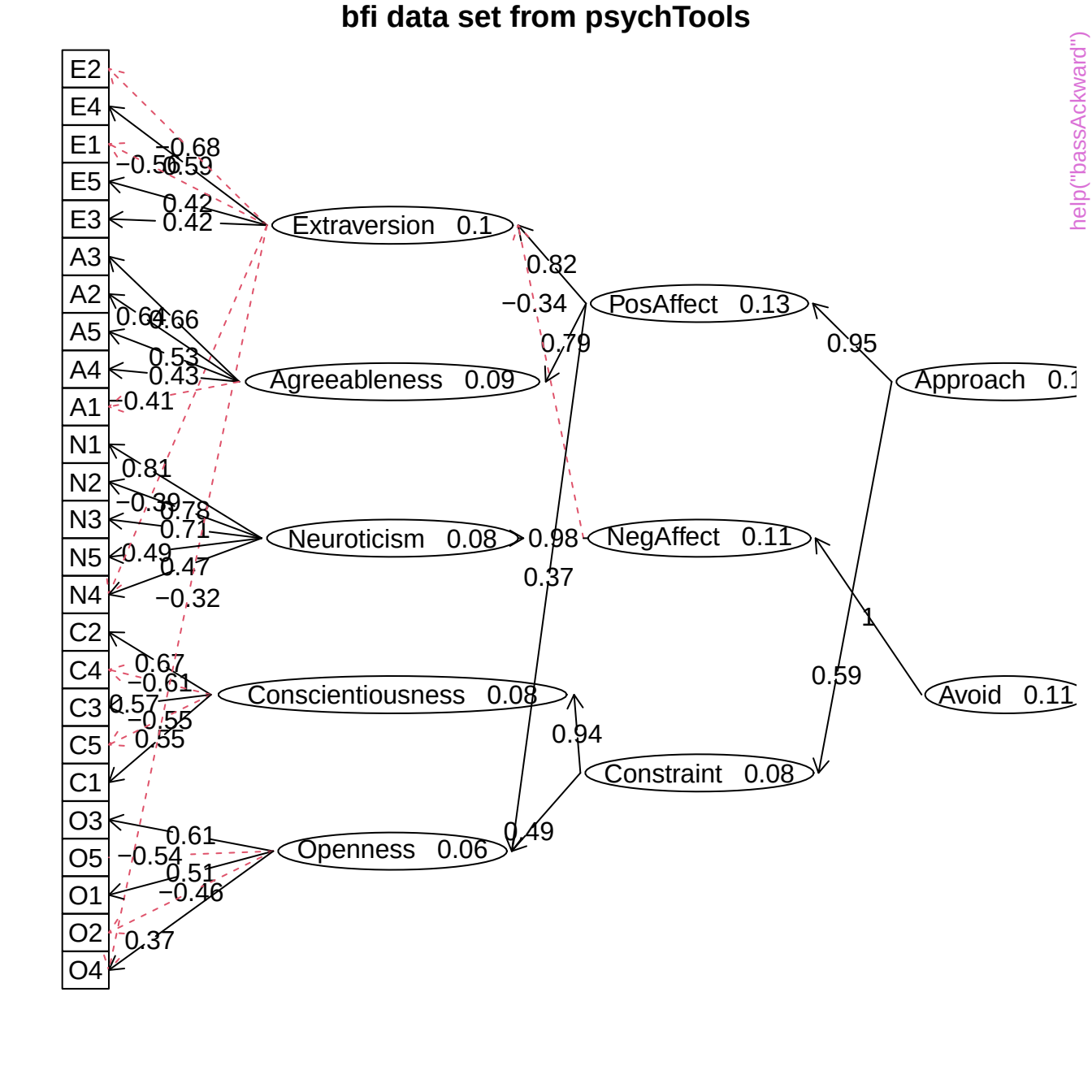


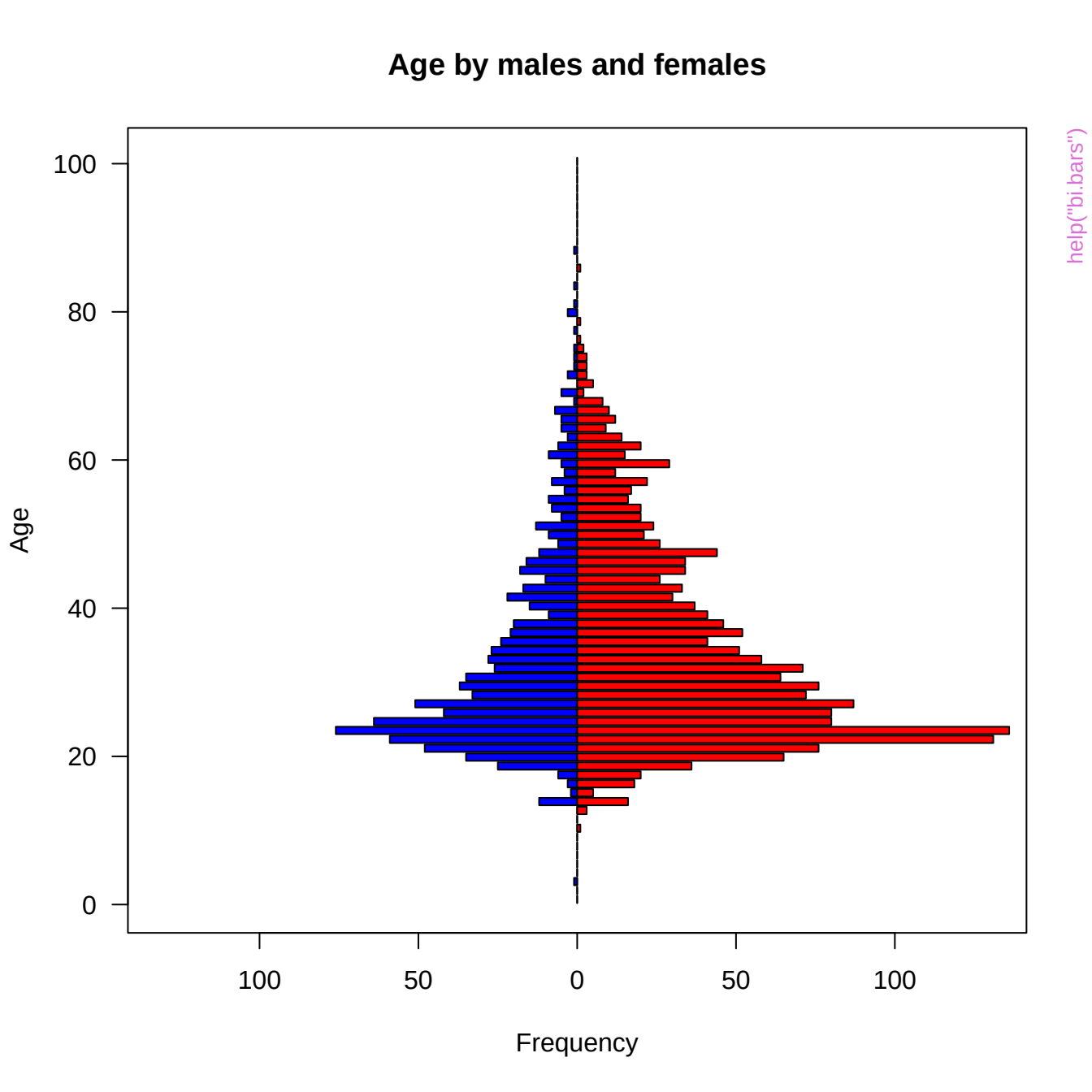

Mediation
IQ
Ed.11
Income.50
Parental
c = 0.28
c' = 0.16
0.42
0.44
0.29
0.26
c = 0.16
c' = 0.08
help("anova.psych")

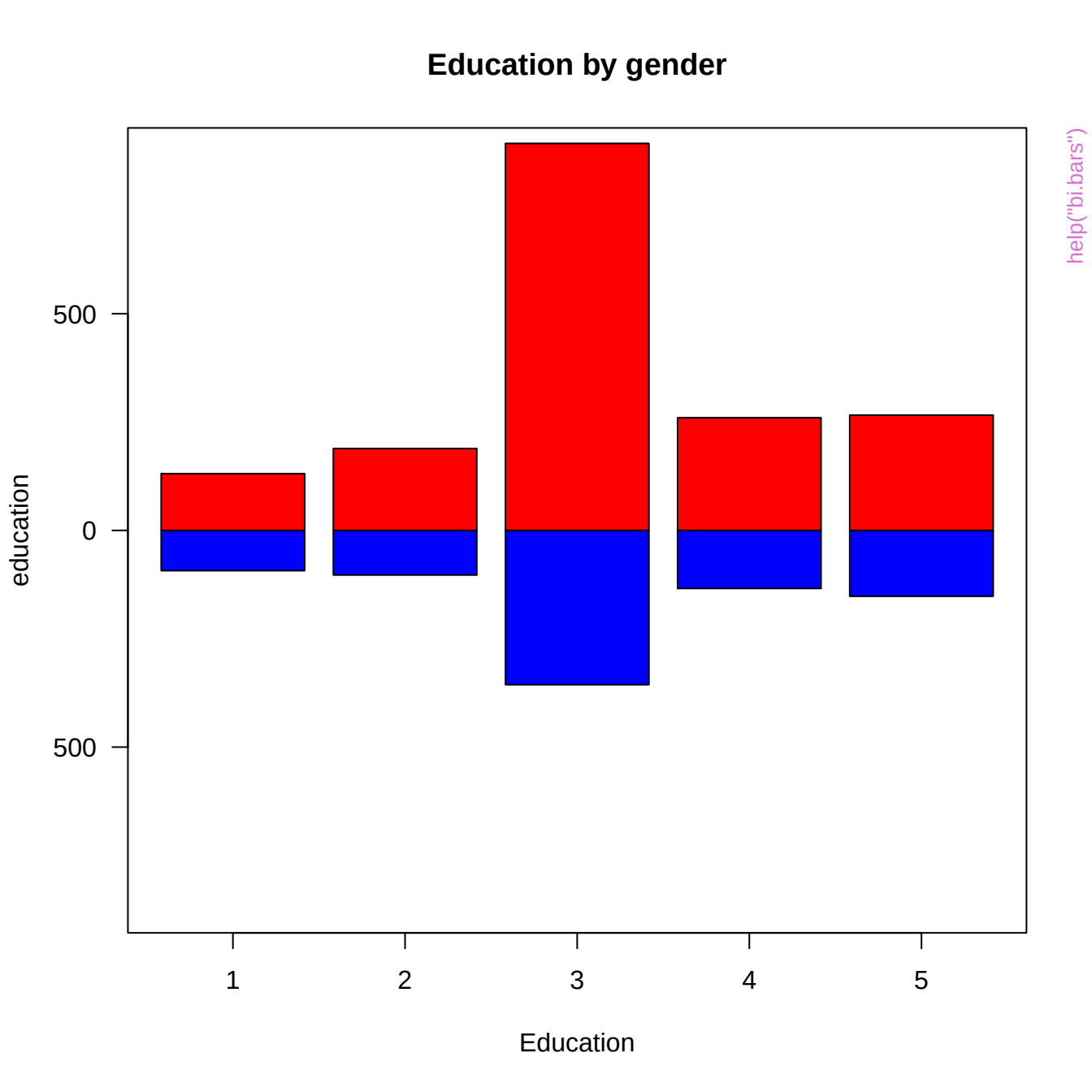
Mediation



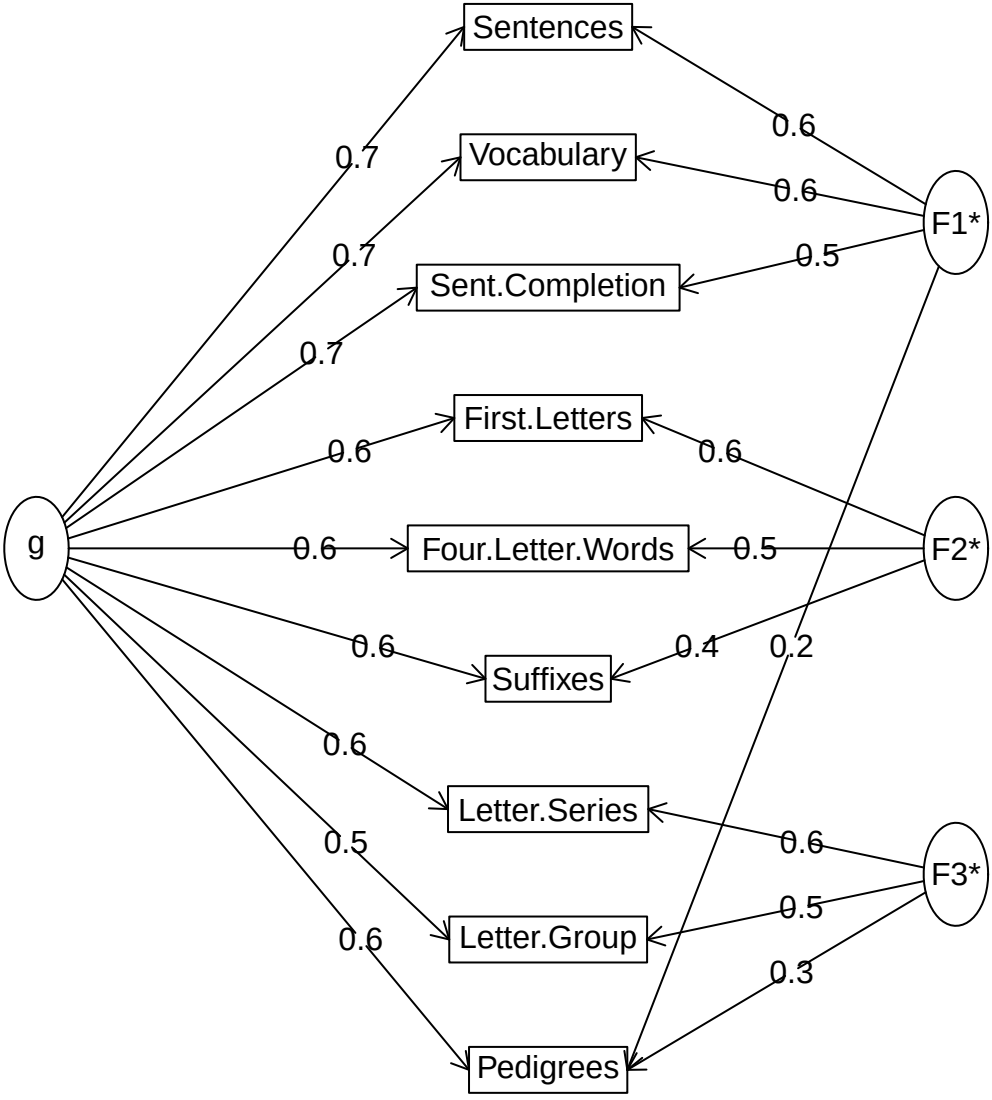

Thurstone data set
Sentences
Vocabulary
nt.Completion
First.Letters
ır.Letter.Words
Suffixes
.etter.Series
.etter.Group
Pedigrees
0.93
0.89
0.81
0.85
0.73
0.64
0.75
0.71
0.99
F1
F2
F3
F4
1
0.6
0.6
1
0.53
0.51
0.51
0.61
0.56
0.98
0.41
0.69
F1
F2
F3
0.99
0.62
0.59
0.97
0.61
0.7
F1
F2
0.89
0.82
F1
help("bassAckward")


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
Extraversion 0.1
Agreeableness 0.09
Neuroticism 0.08
Conscientiousness 0.08
Openness 0.06
PosAffect 0.13
NegAffect 0.11
Constraint 0.08
Approach 0.1
Avoid 0.11
help("bassAckward")

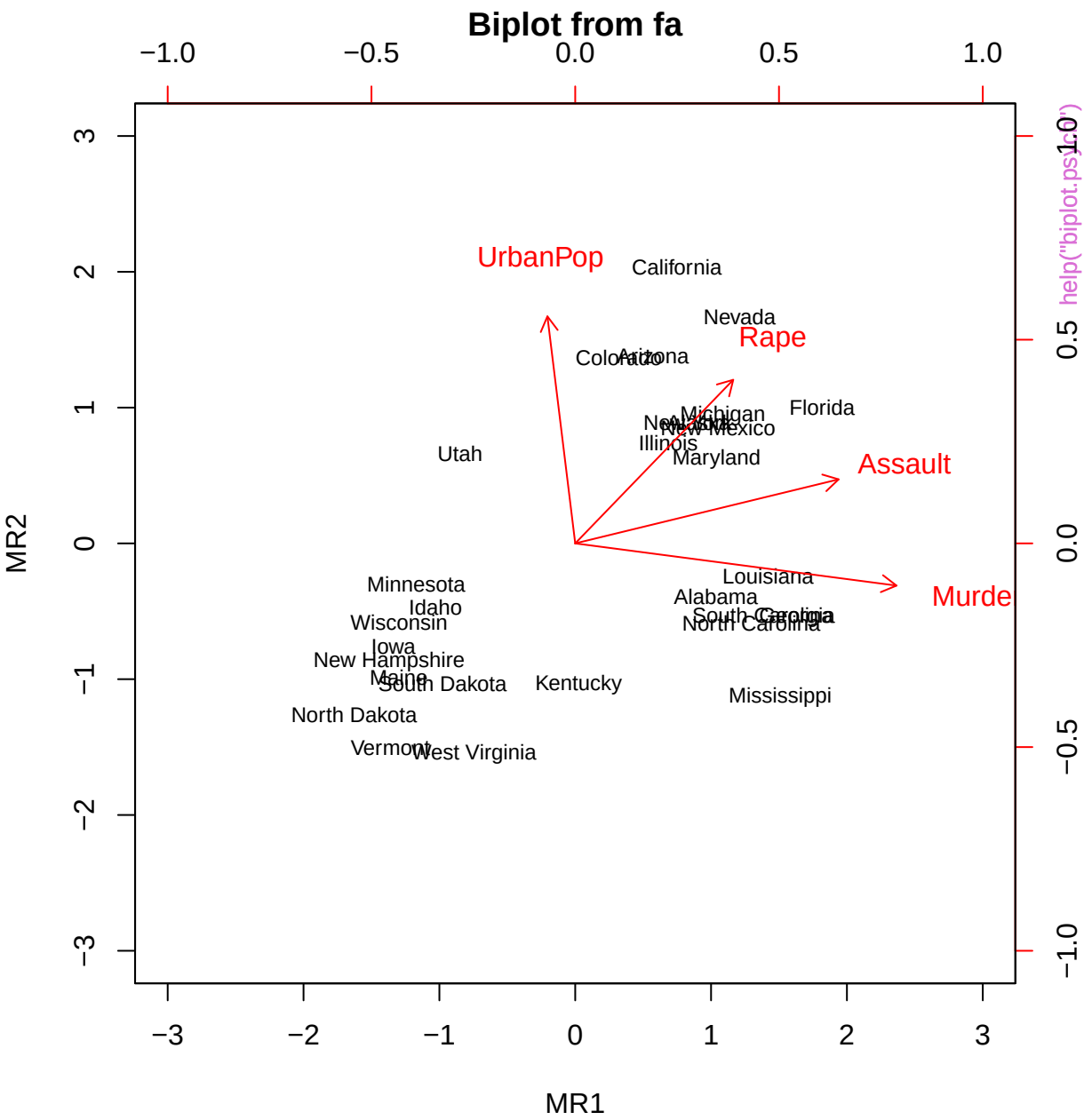

Age by males and females
help("bi.bars")
Age
100
80
60
40
20
0
100
50
0
50
100
Frequency

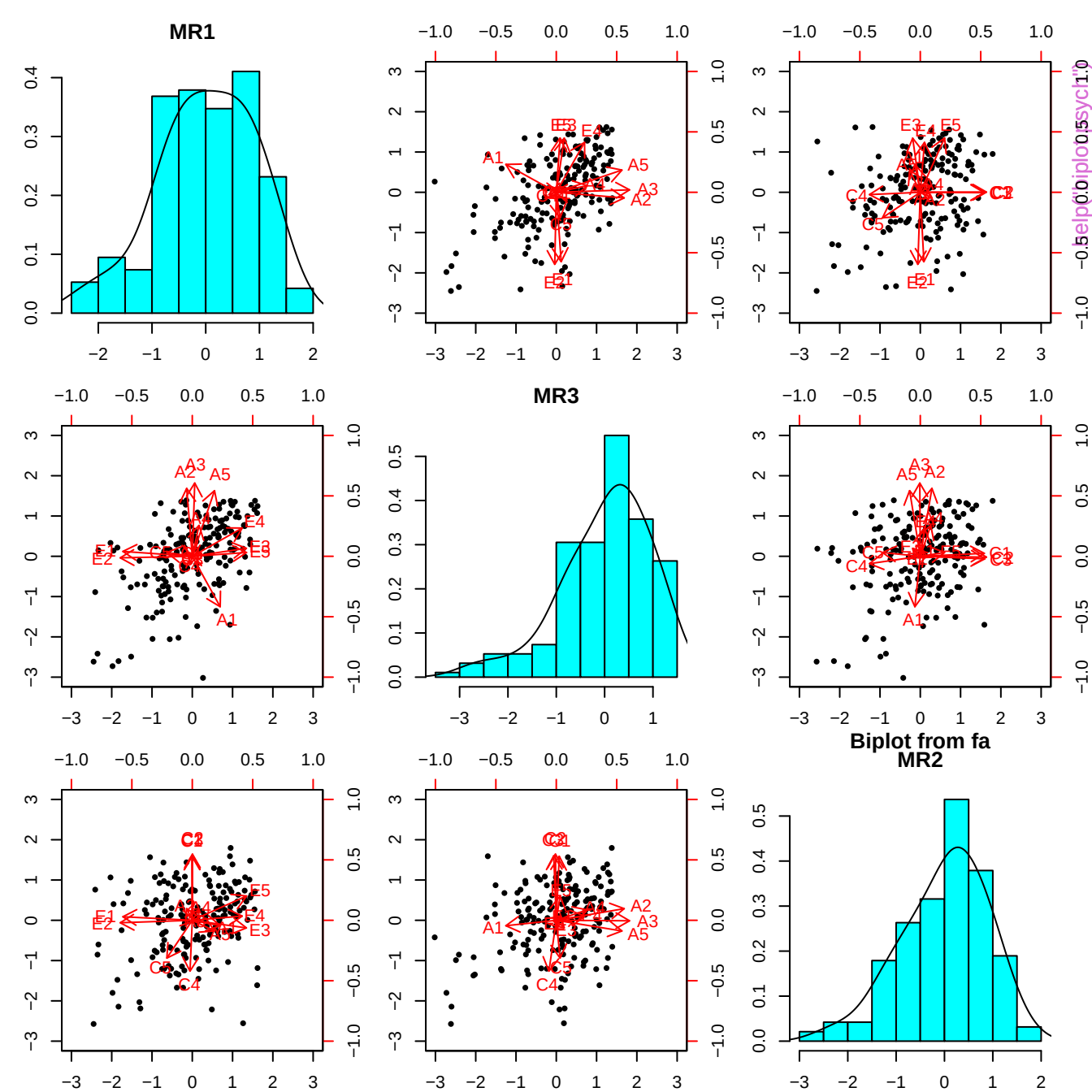

Education by gender
help("bi.bars")
500
0
500
education
1
2
3
4
5
Education

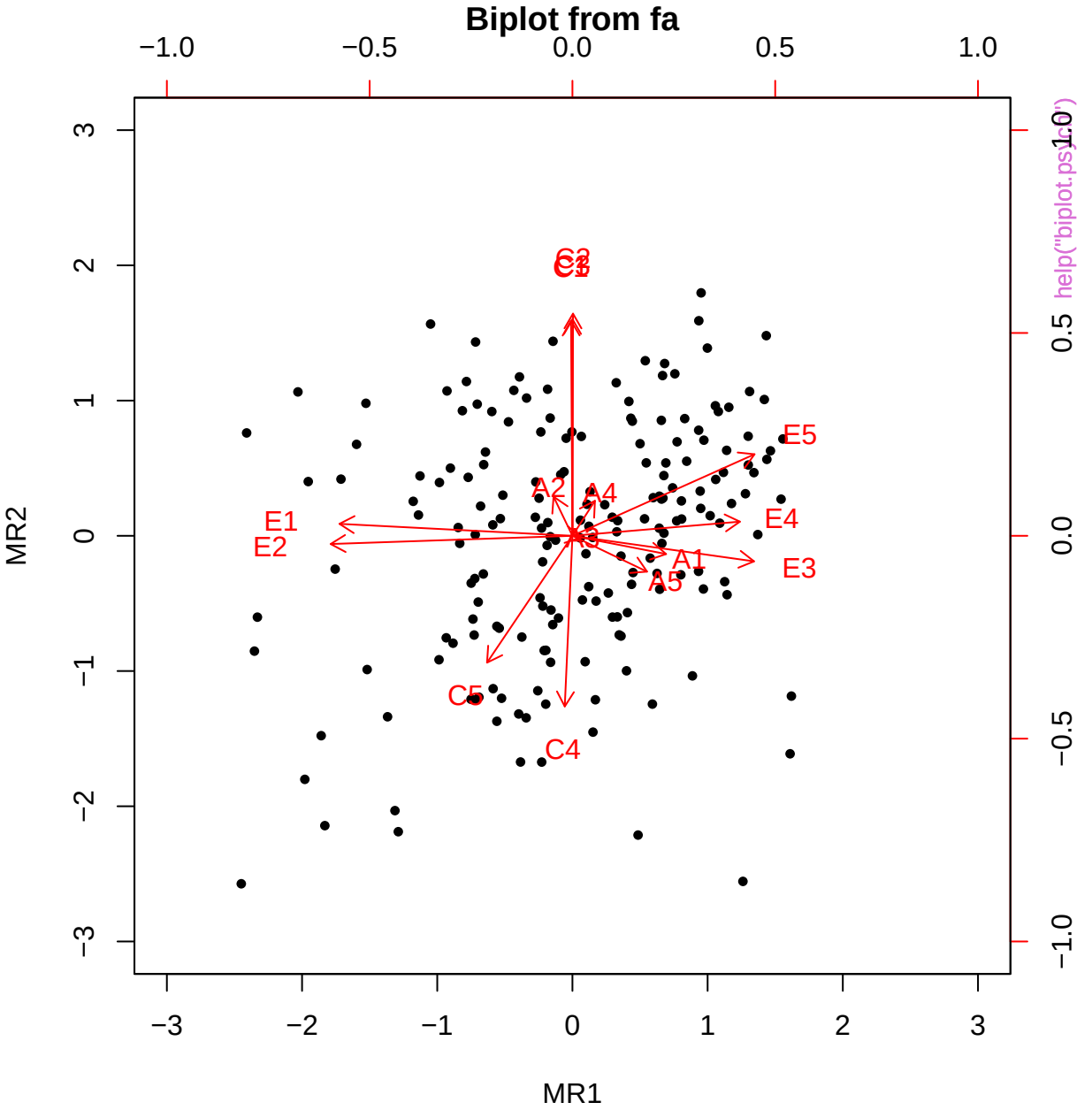
9 variables from Thurstone

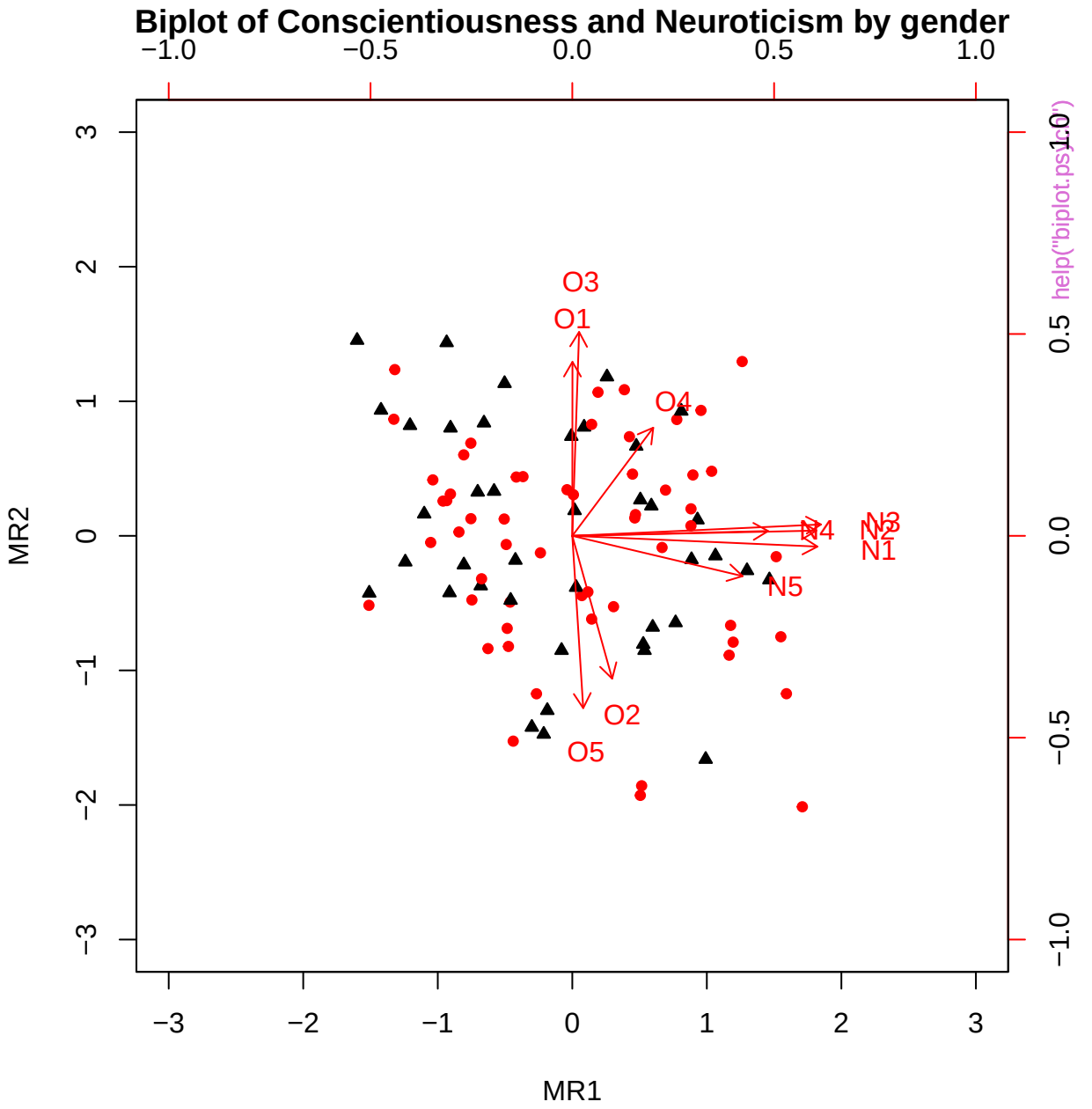


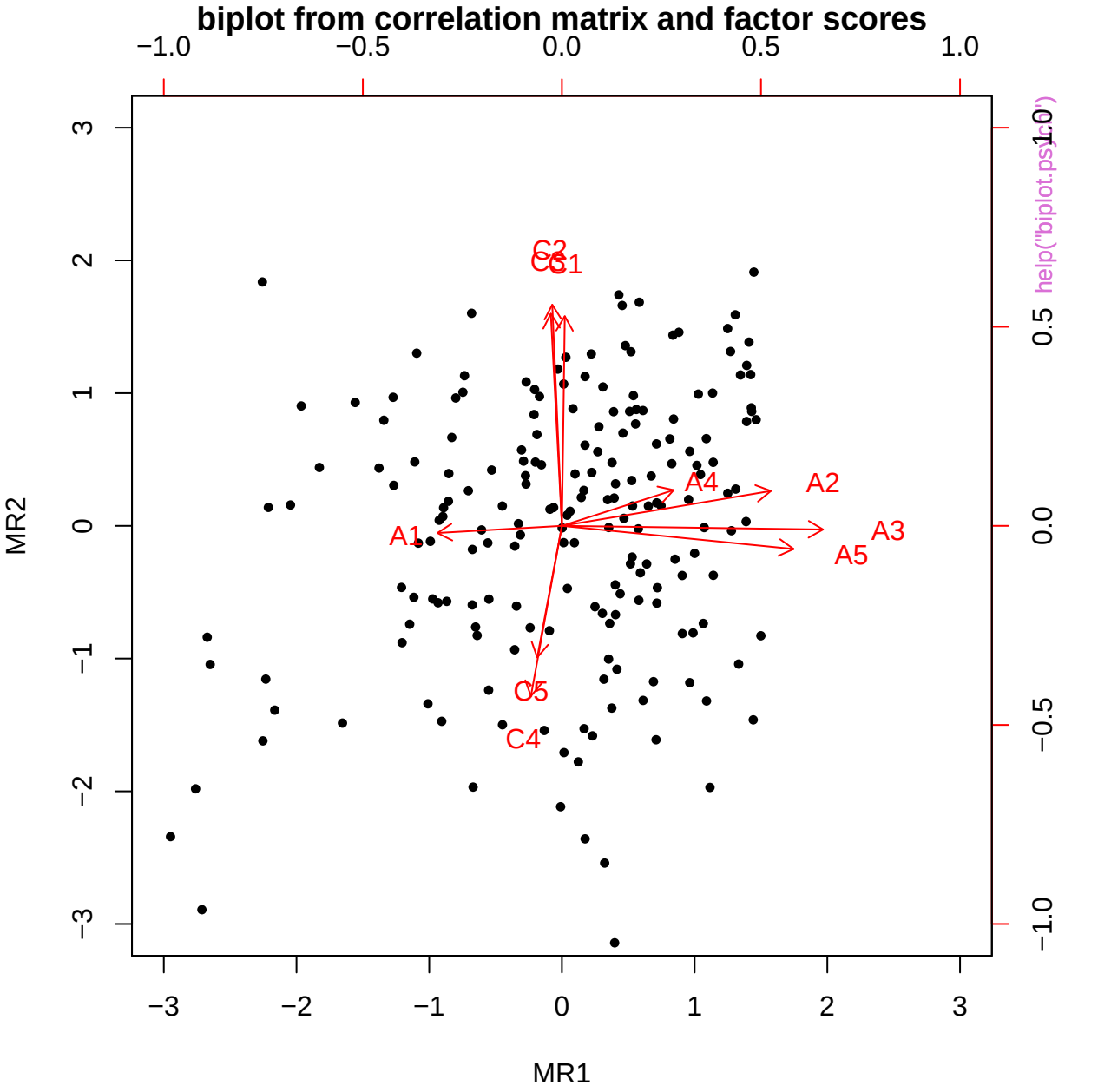
help("bifactor")

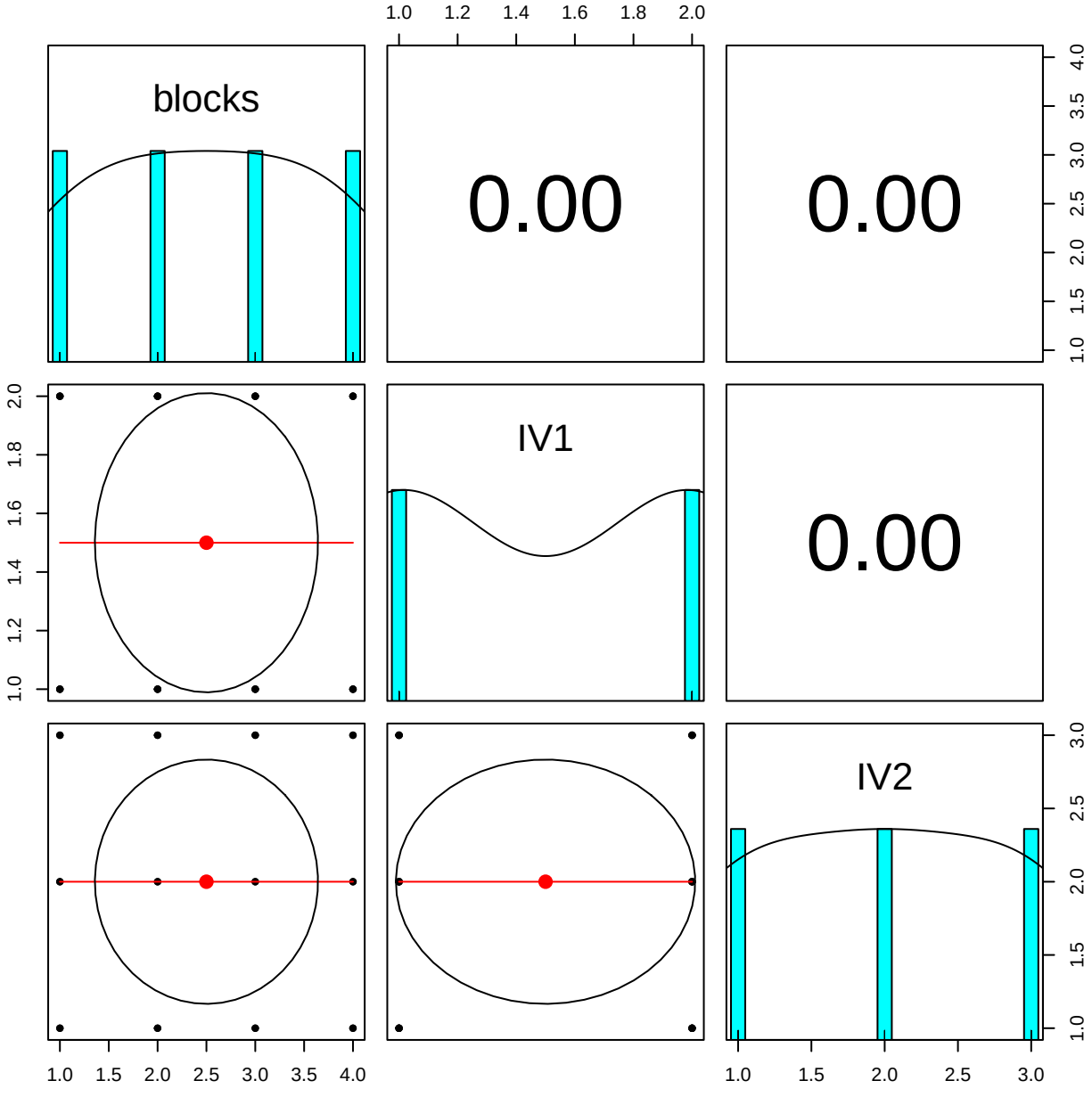

Biplot from fa
−1.0
−0.5
0.0
0.5
1.0
3
2
1
0
−1
−2
−3
MR2
MR1
−3
−2
−1
0
1
2
3
1.0
0.5
0.0
−0.5
−1.0
help("biplot.psych")
UrbanPop
Rape
Assault
Murde
California
Nevada
Colorado
Arizona
Florida
Michigan
New Mexico
Illinois
Utah
Maryland
Louisiana
Alabama
North Carolina
Minnesota
Idaho
Wisconsin
Iowa
New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

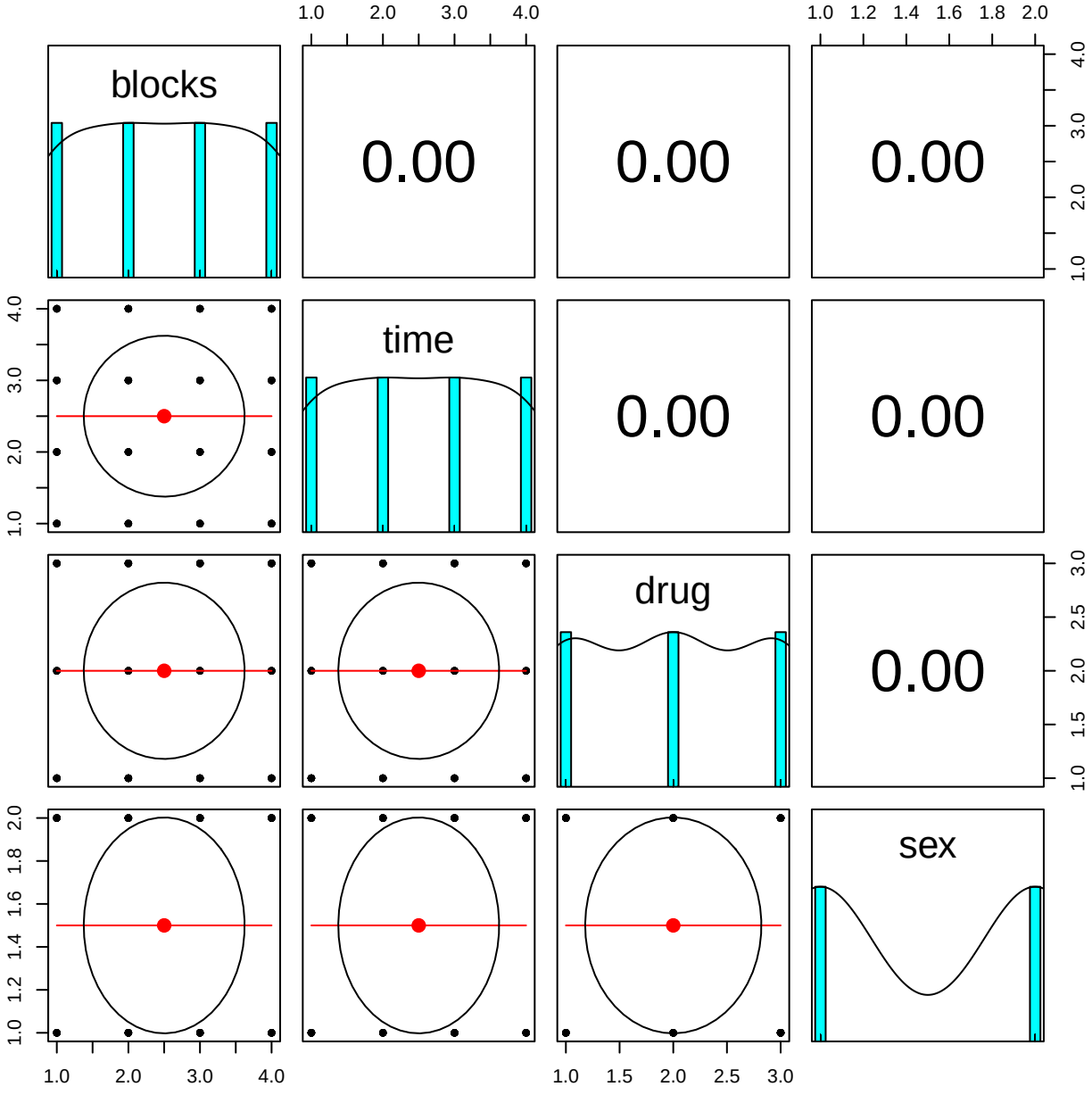

Biplot from fa
−1.0
−0.5
0.0
0.5
1.0
MR2
MR1
−3
−2
−1
0
1
2
3
help("biplot.psych")
C2
C3
C1
E5
A2
A4
A3
E1
E2
E4
A1
A5
E3
C5
C4

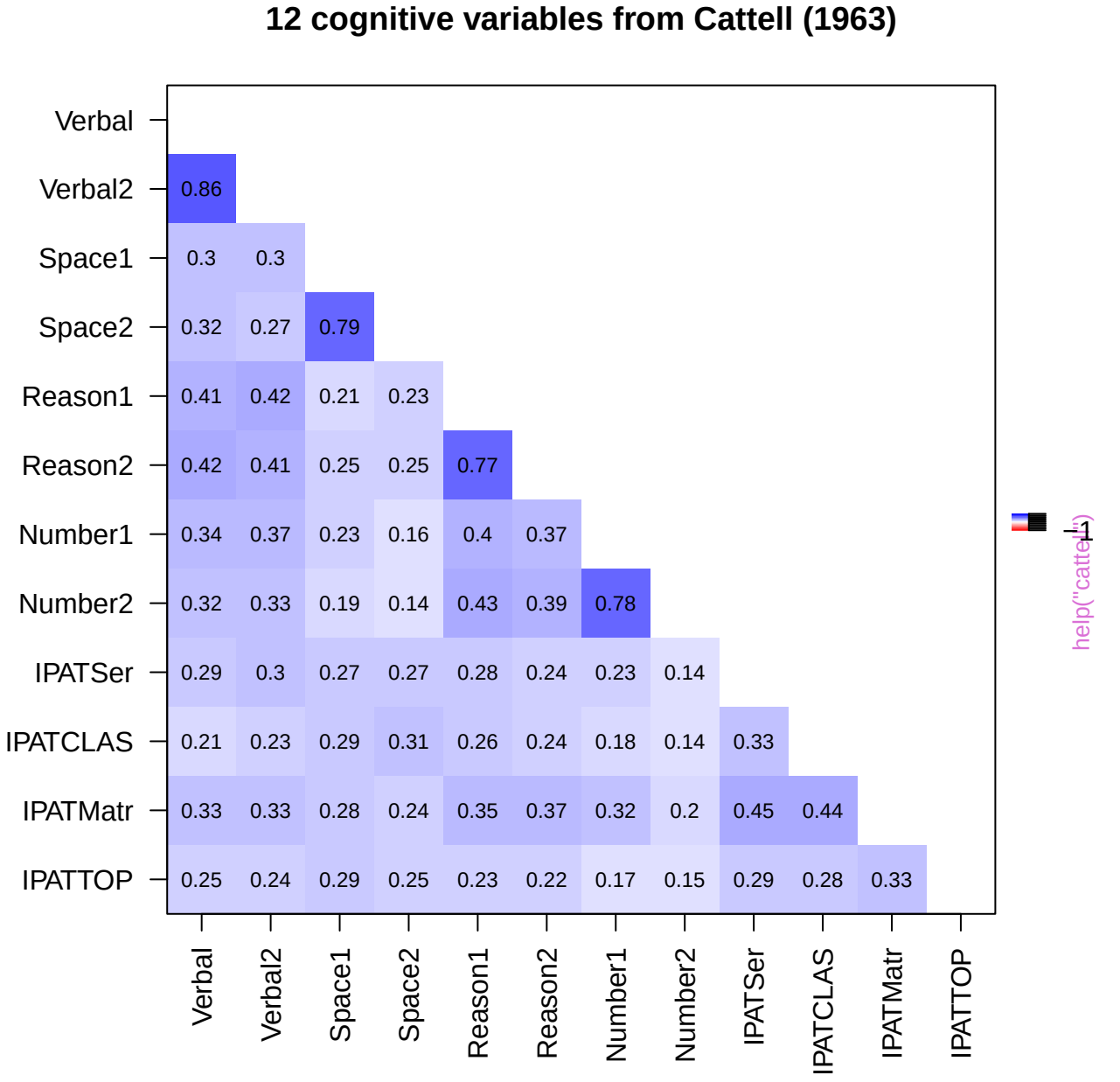

Biplot of Conscientiousness and Neuroticism by gender
MR1
MR2
O3
O1
O4
O2
O5
N3
N4
N2
N1
N5
help("biplot.psych")

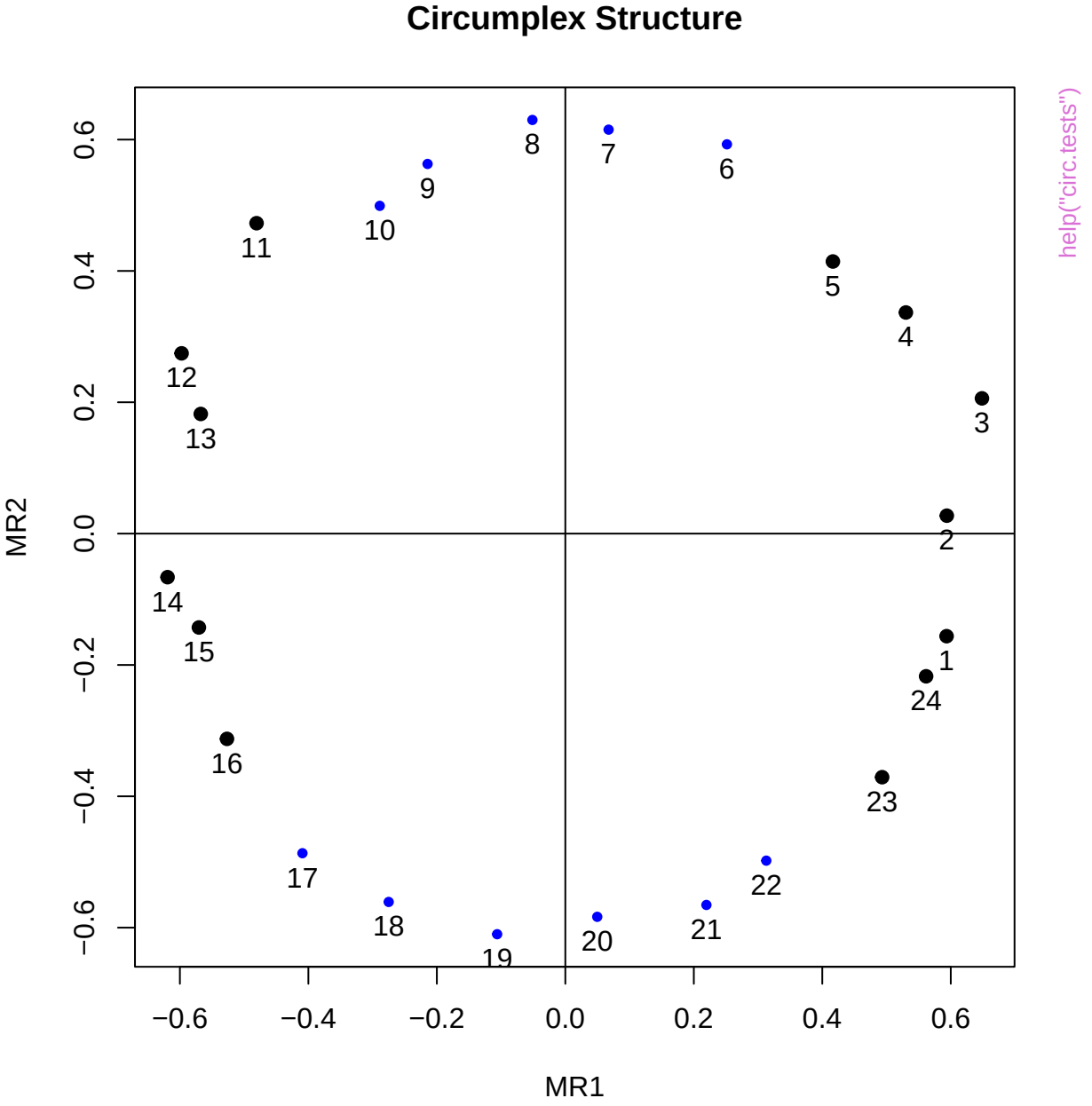

biplot from correlation matrix and factor scores
−1.0
−0.5
0.0
0.5
1.0
3
2
1
0
−1
−2
−3
MR2
C2
C3
C1
A4
A2
A1
A3
A5
C5
C4
MR1
help("biplot.psych")

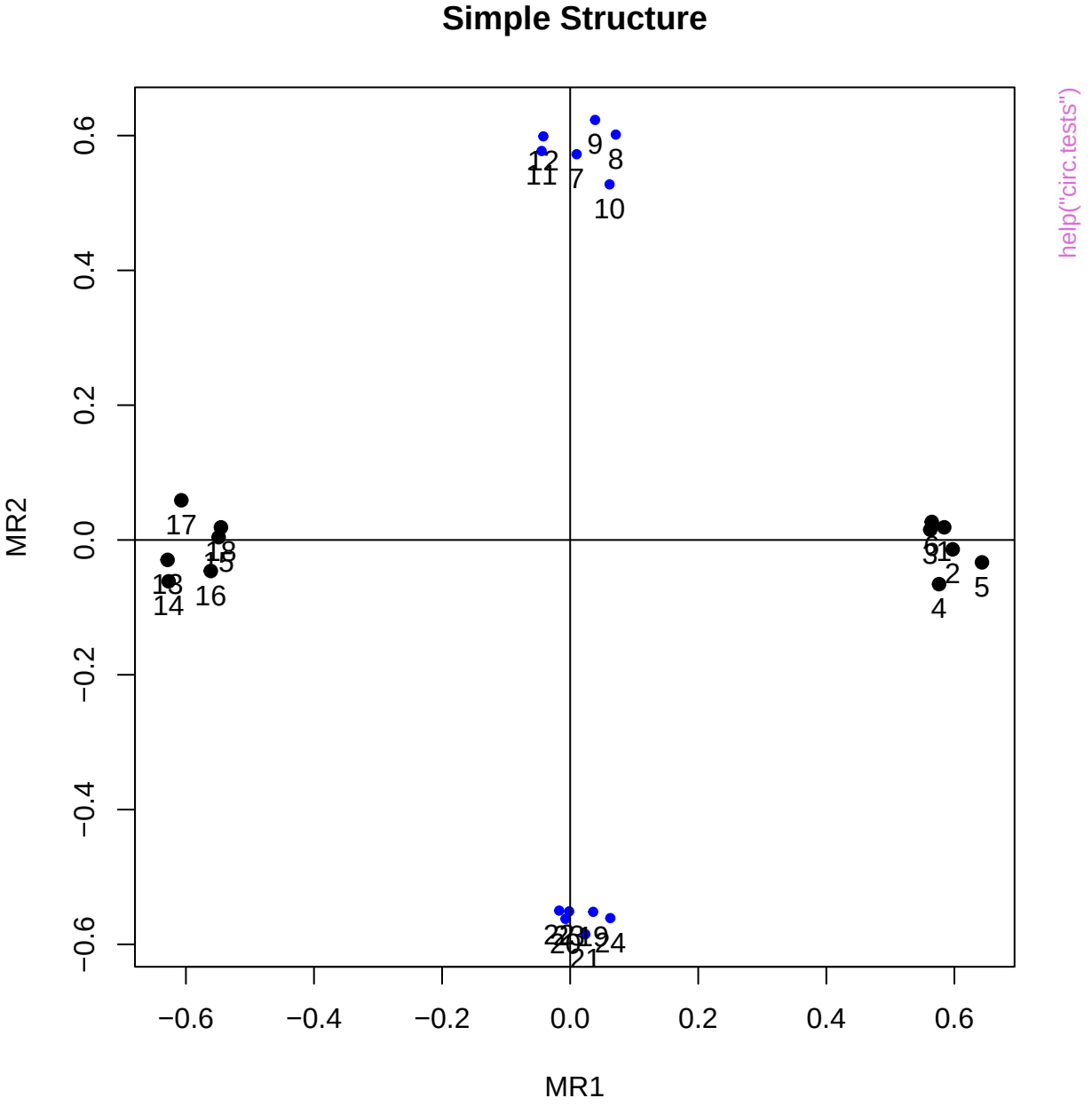


help("block.random")

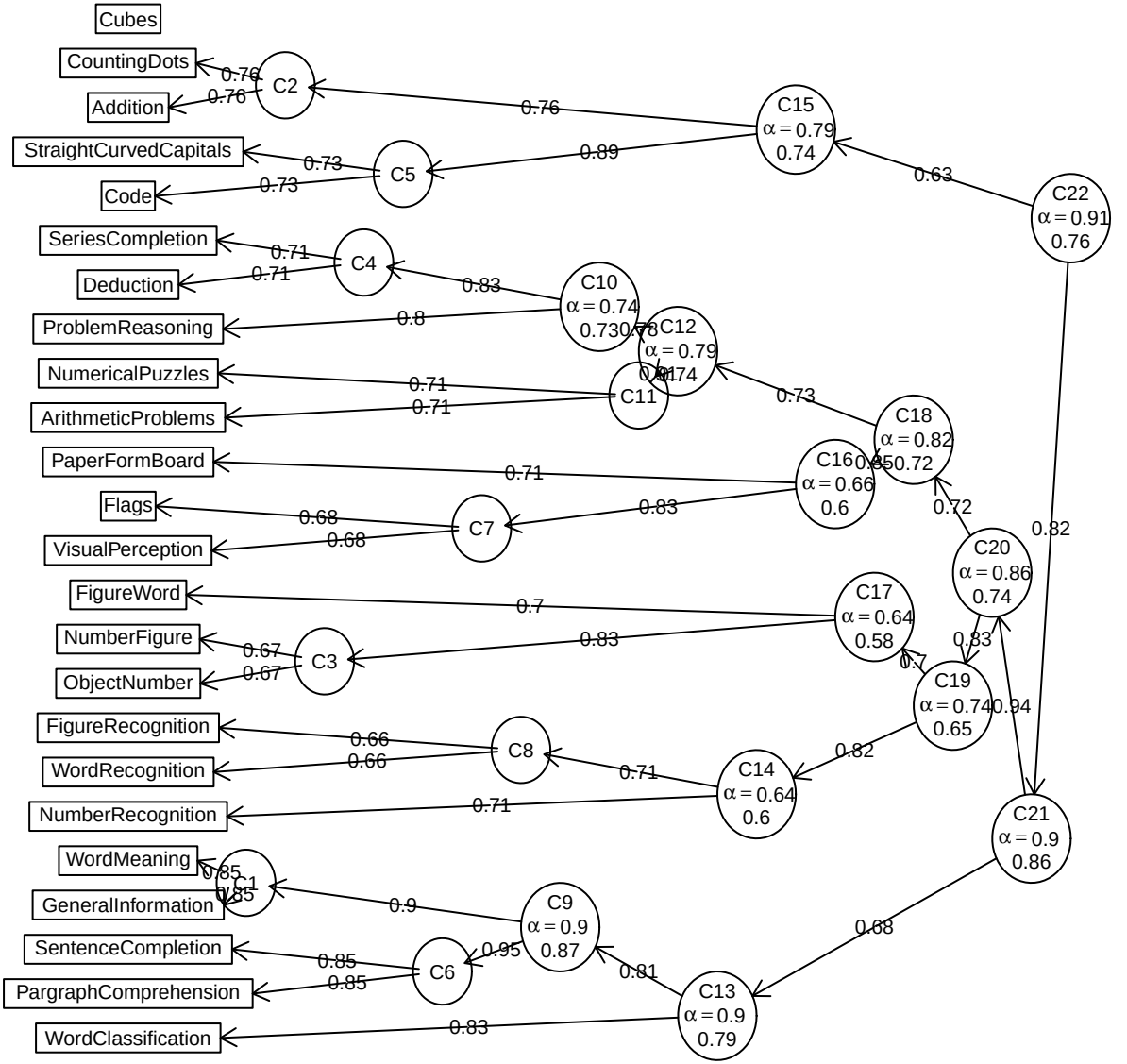

blocks
time
drug
sex
0.00
0.00
0.00
0.00
0.00
0.00
1.0 2.0 3.0 4.0
1.0 1.2 1.4 1.6 1.8 2.0
1.0 1.5 2.0 2.5 3.0
help("block.random")

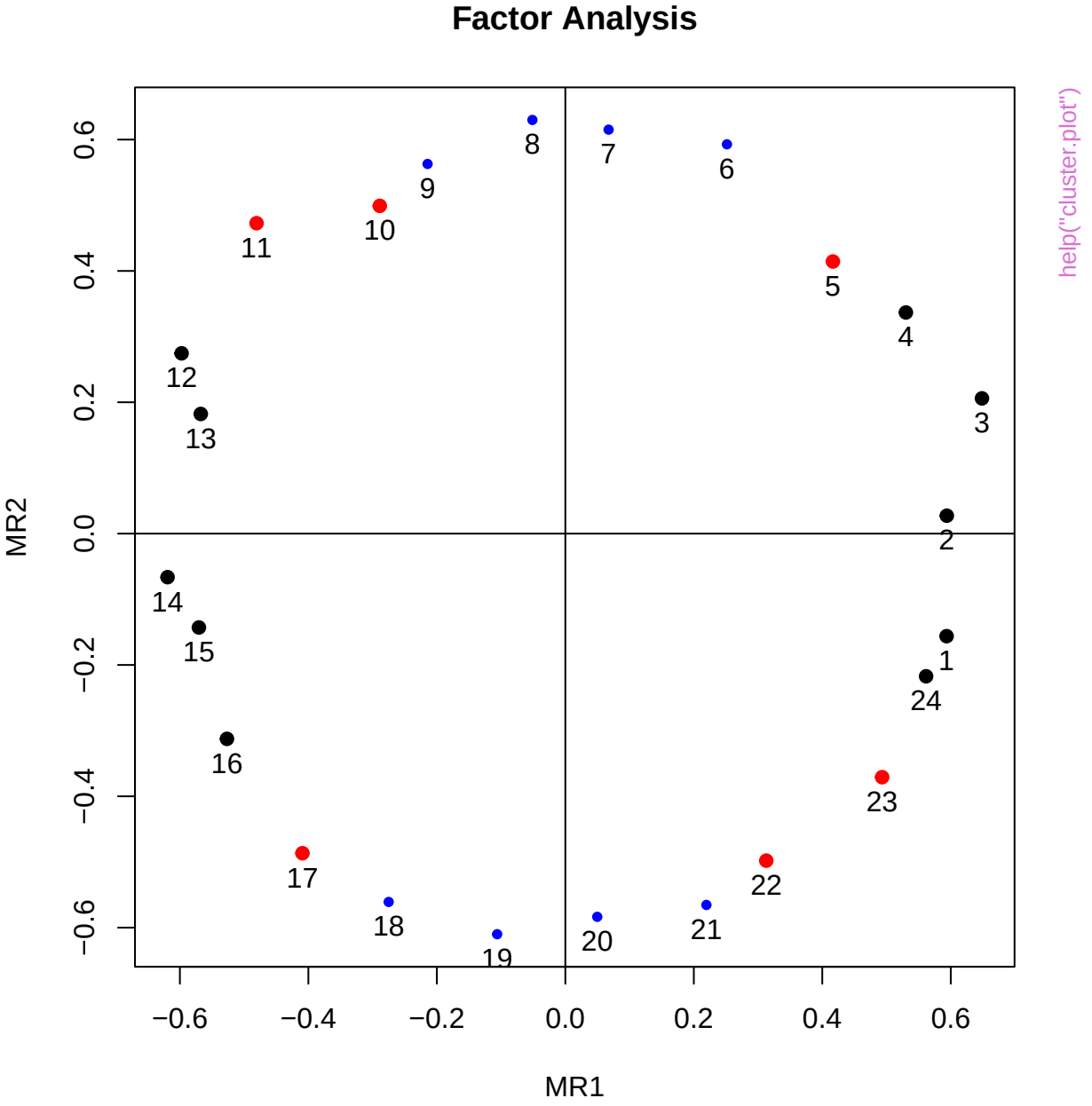

12 cognitive variables from Cattell (1963)
Verbal
Verbal2
Space1
Space2
Reason1
Reason2
Number1
Number2
IPATSer
IPATCLAS
IPATMatr
IPATTOP
0.86
0.3 0.3
0.32 0.27 0.79
0.41 0.42 0.21 0.23
0.42 0.41 0.25 0.25 0.77
0.34 0.37 0.23 0.16 0.4 0.37
0.32 0.33 0.19 0.14 0.43 0.39 0.78
0.29 0.3 0.27 0.27 0.28 0.24 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 0.2 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

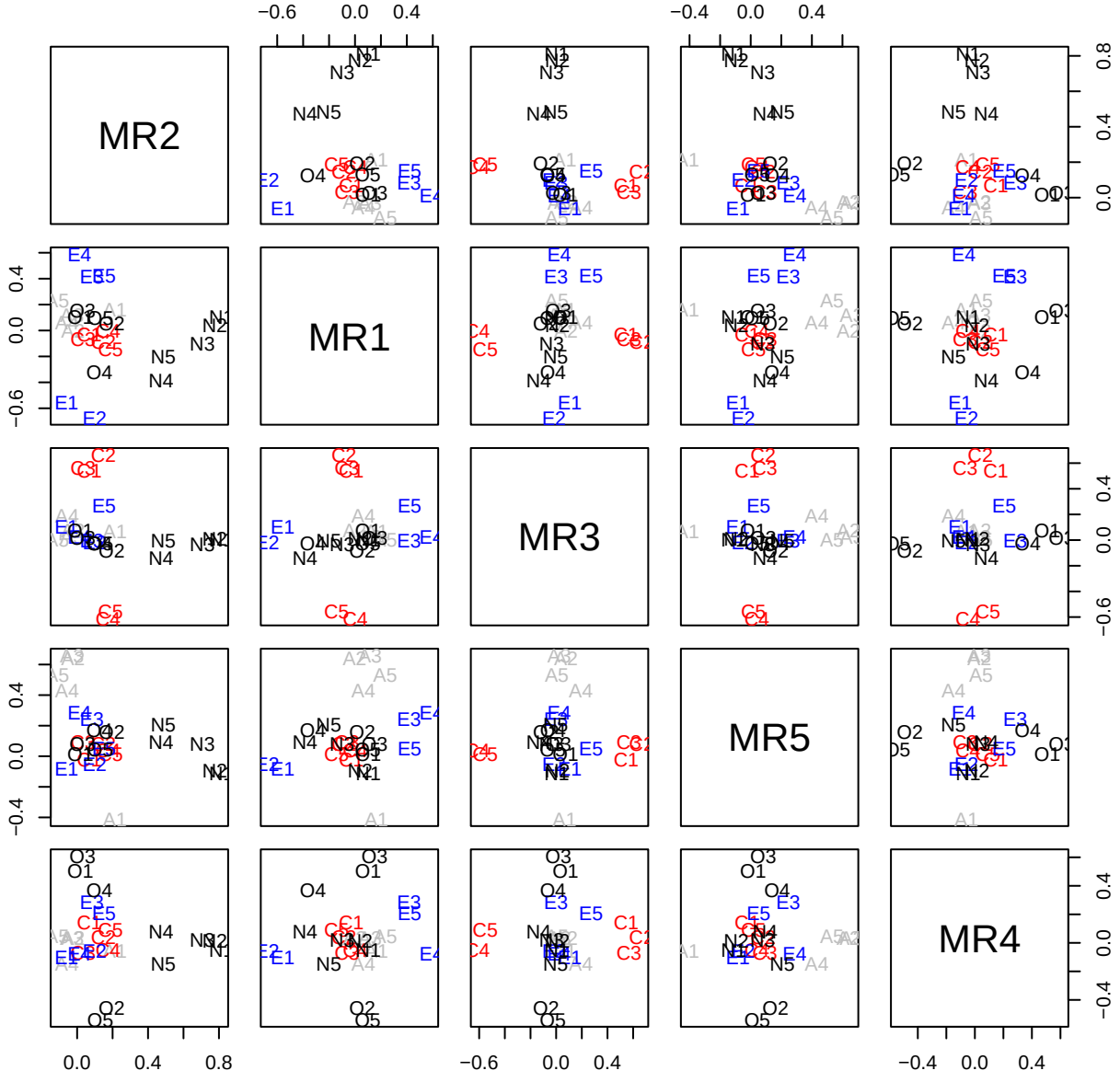

Simple Structure
help("circ.tests")
MR2
MR1
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6

ICLUST


Cubes
CountingDots
Addition
StraightCurvedCapitals
Code
SeriesCompletion
Deduction
ProblemReasoning
NumericalPuzzles
ArithmeticProblems
PaperFormBoard
Flags
VisualPerception
FigureWord
NumberFigure
ObjectNumber
FigureRecognition
WordRecognition
NumberRecognition
WordMeaning
GeneralInformation
SentenceCompletion
PargraphComprehension
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
0.74
α = 0.91
0.76
α = 0.74
0.73
α = 0.79
0.74
α = 0.82
α = 0.66
0.6
α = 0.64
0.58
α = 0.86
0.74
α = 0.74
0.65
α = 0.64
0.6
α = 0.9
0.86
α = 0.9
0.87
α = 0.9
0.79
0.76
0.76
0.76
0.89
0.73
0.73
0.71
0.71
0.83
0.8
0.78
0.71
0.71
0.73
0.72
0.72
0.71
0.83
0.68
0.68
0.7
0.83
0.67
0.67
0.83
0.66
0.66
0.71
0.82
0.71
0.94
0.85
0.85
0.9
0.95
0.85
0.85
0.81
0.68
0.83
0.63
0.82
help("cluster.fit")

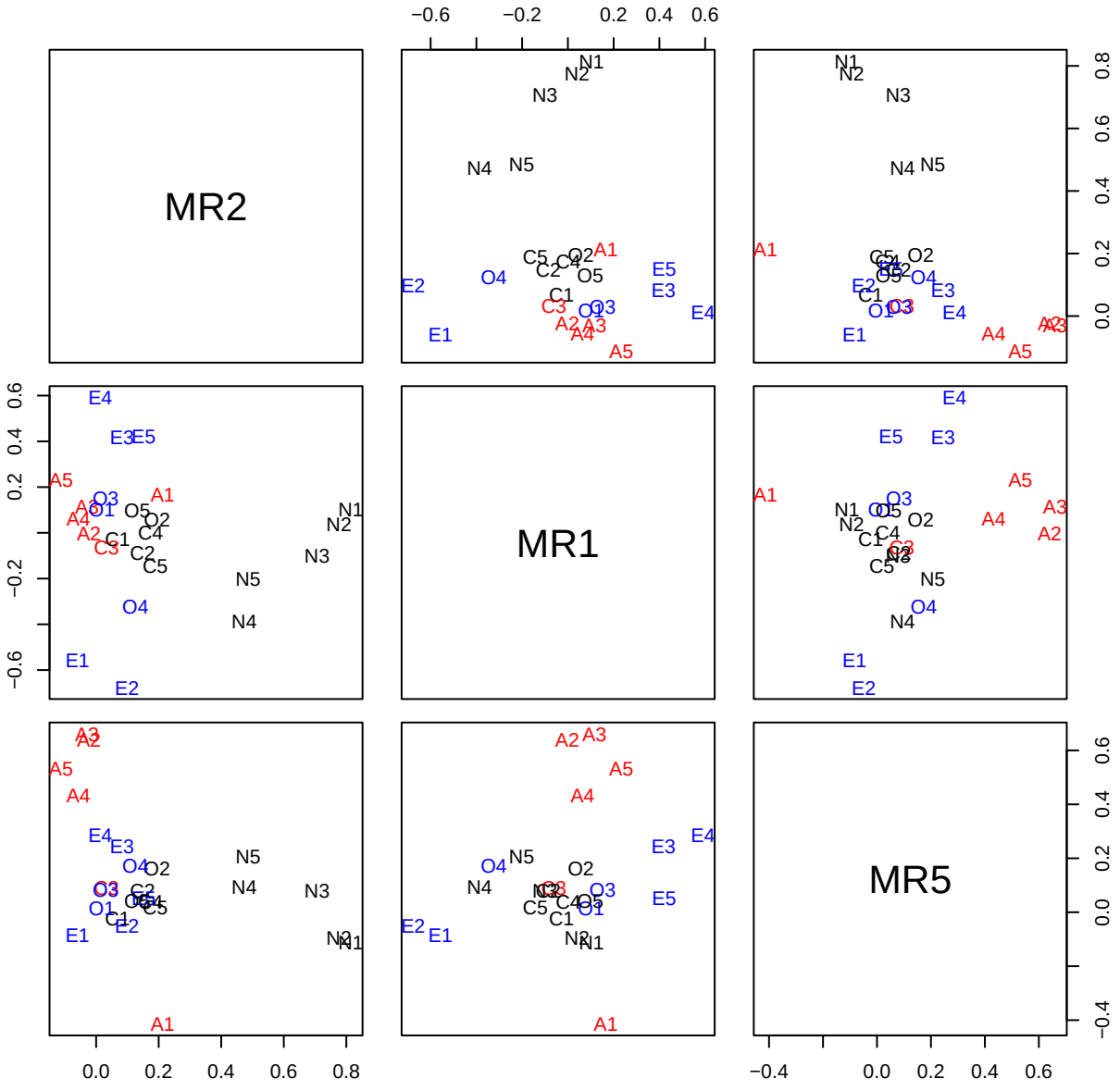

Factor Analysis
MR2
MR1
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
help("cluster.plot")

Factor Analysis

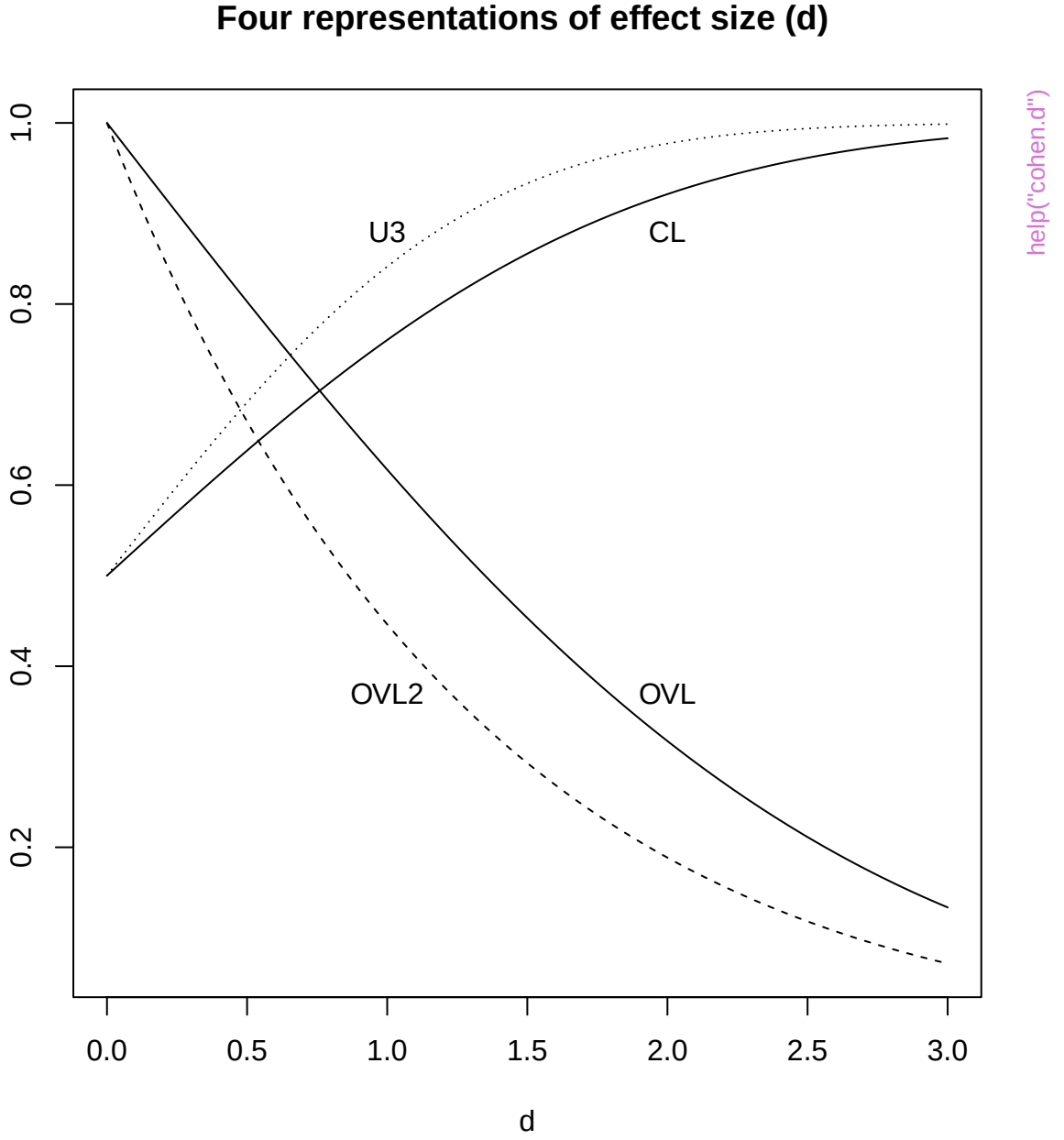


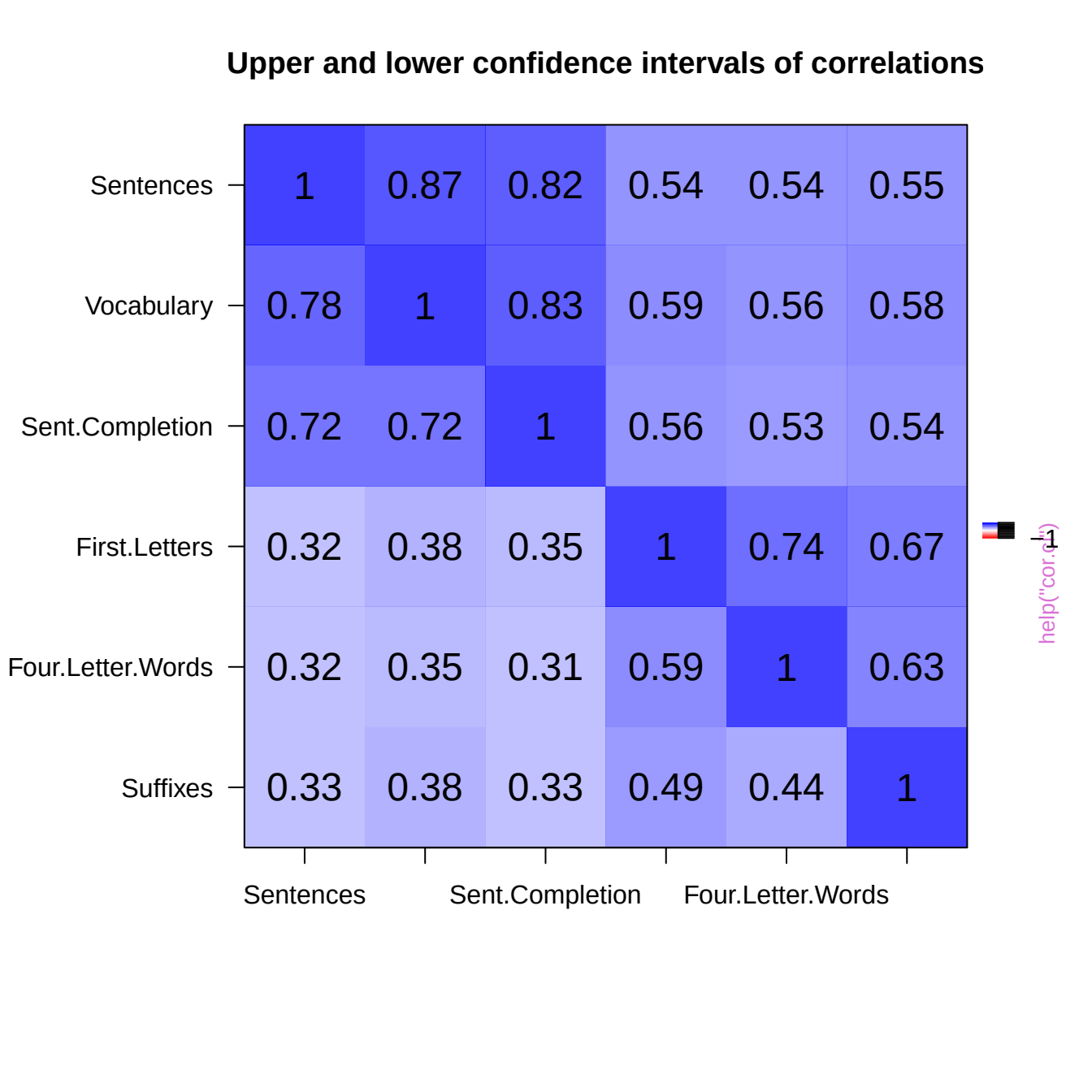
help("cluster.plot")

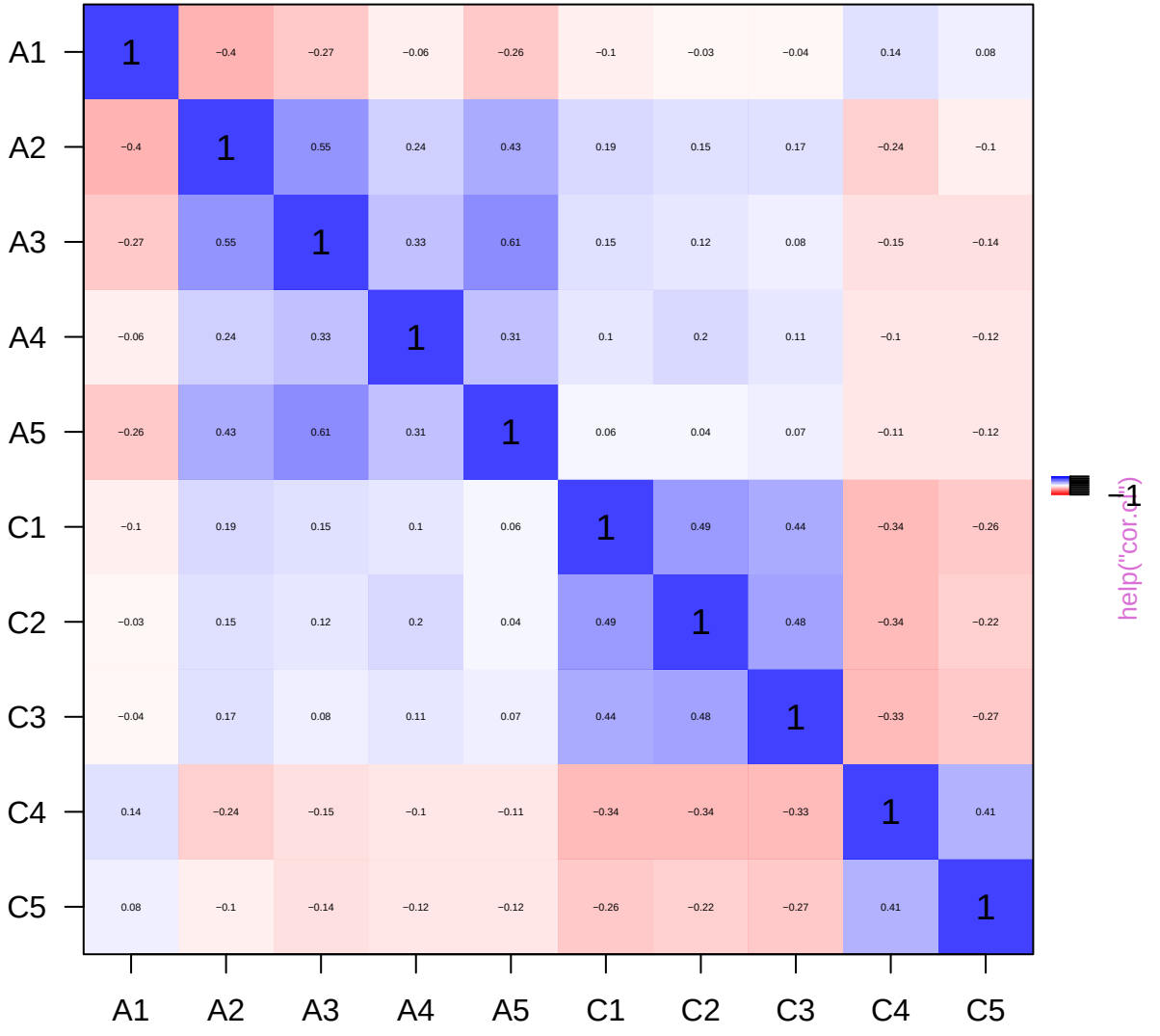
Factor Analysis

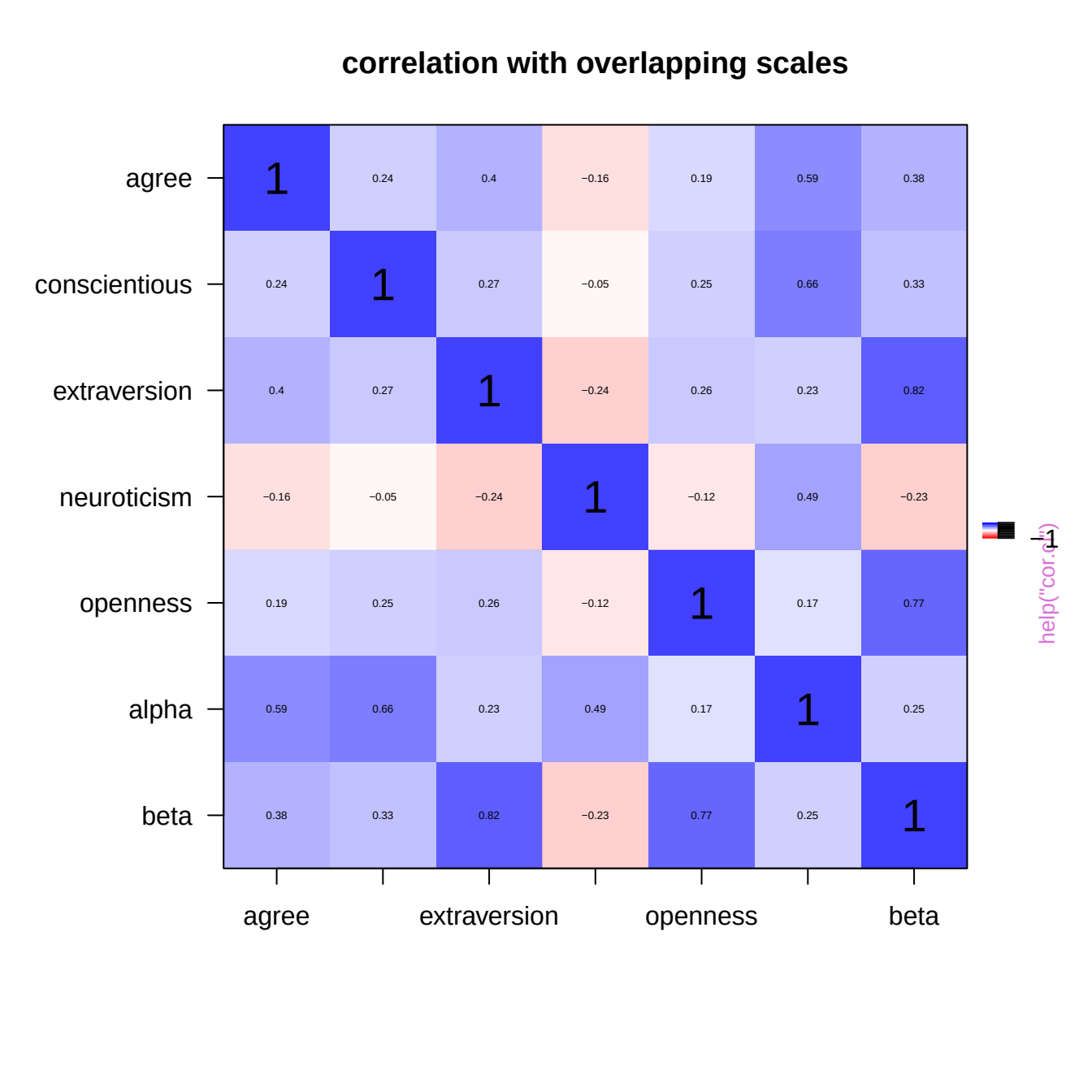


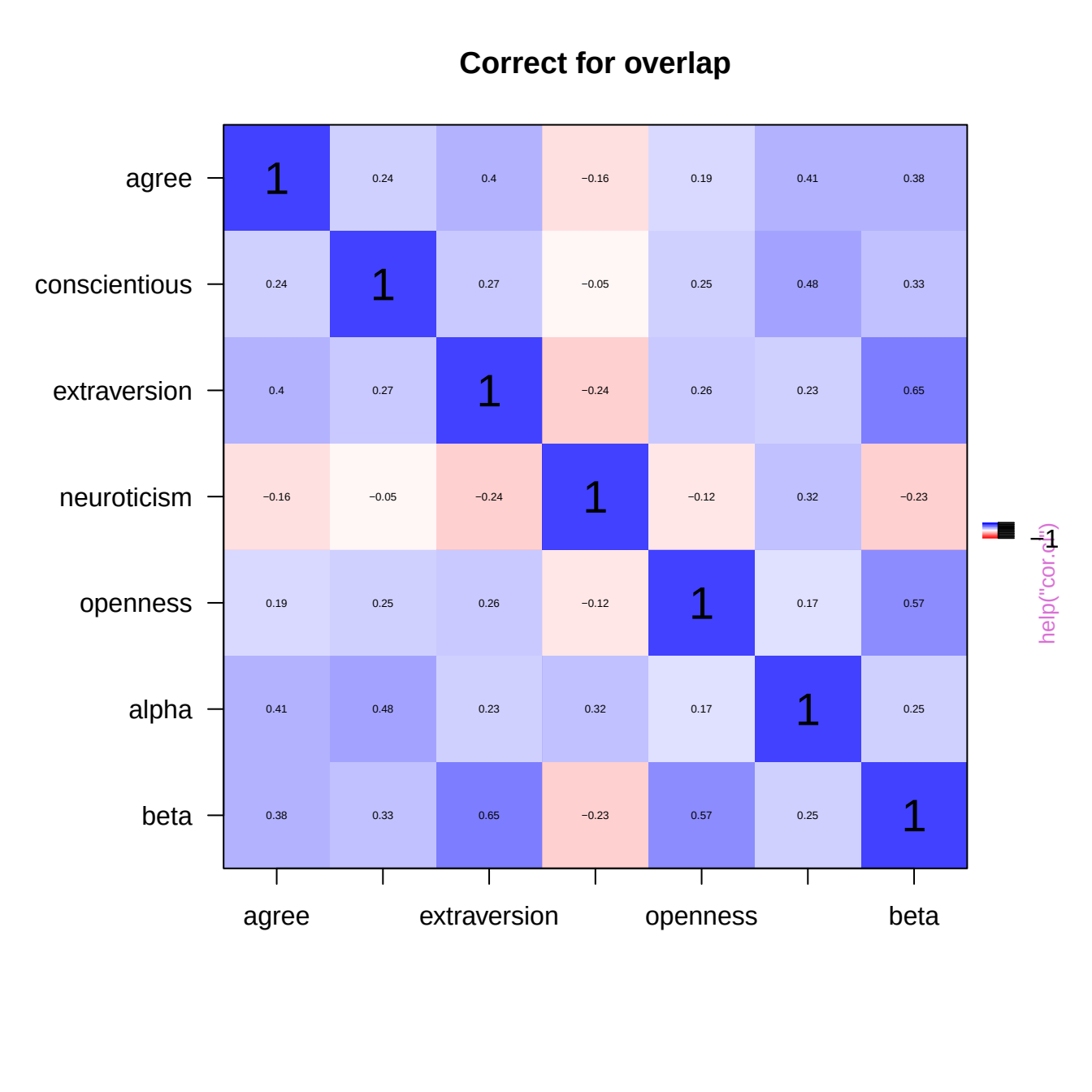
help("cluster.plot")

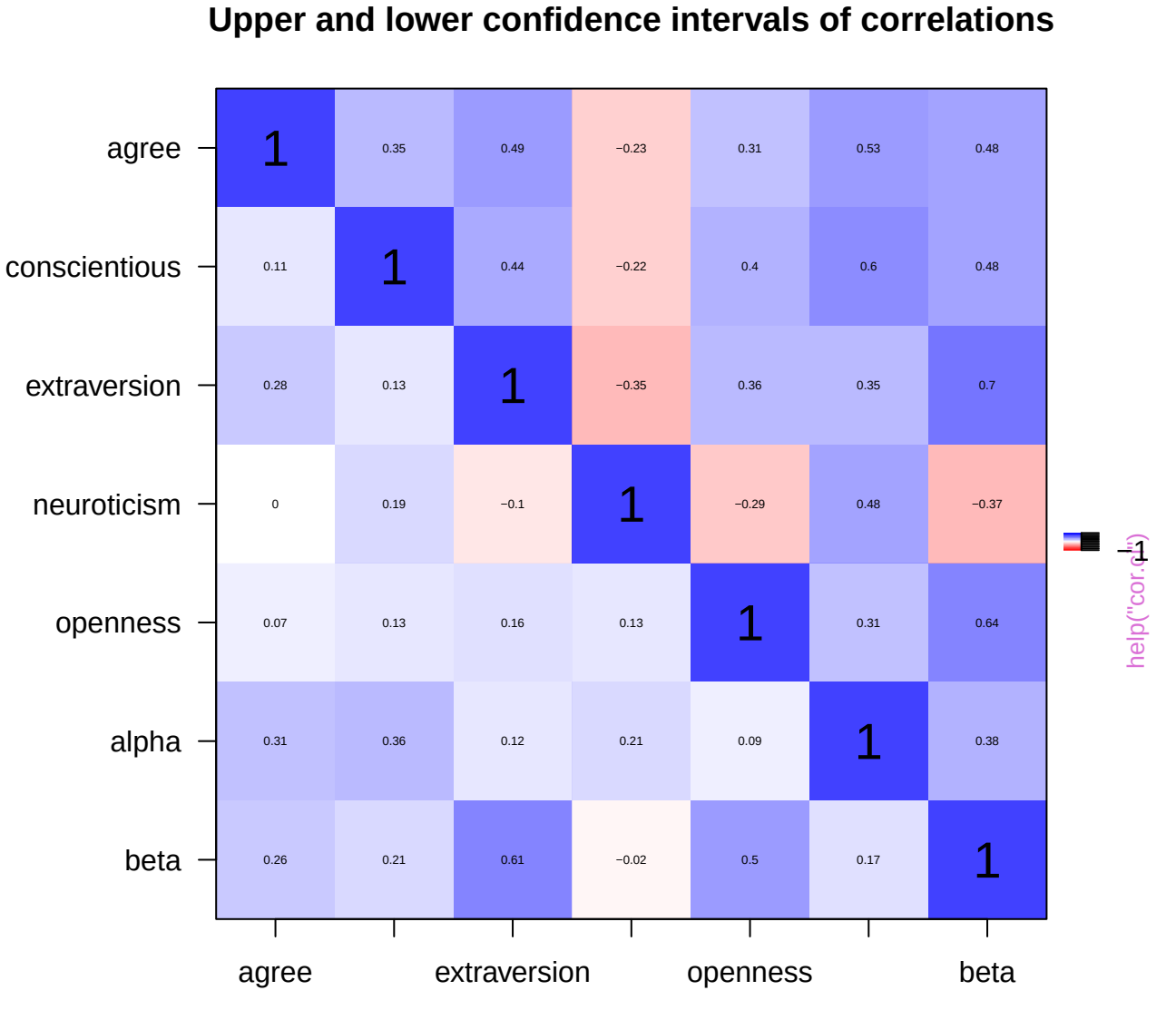

Four representations of effect size (d)
help("cohen.d")
U3
CL
OVL2
OVL
1.0
0.8
0.6
0.4
0.2
0.0
0.5
1.0
1.5
2.0
2.5
3.0
d

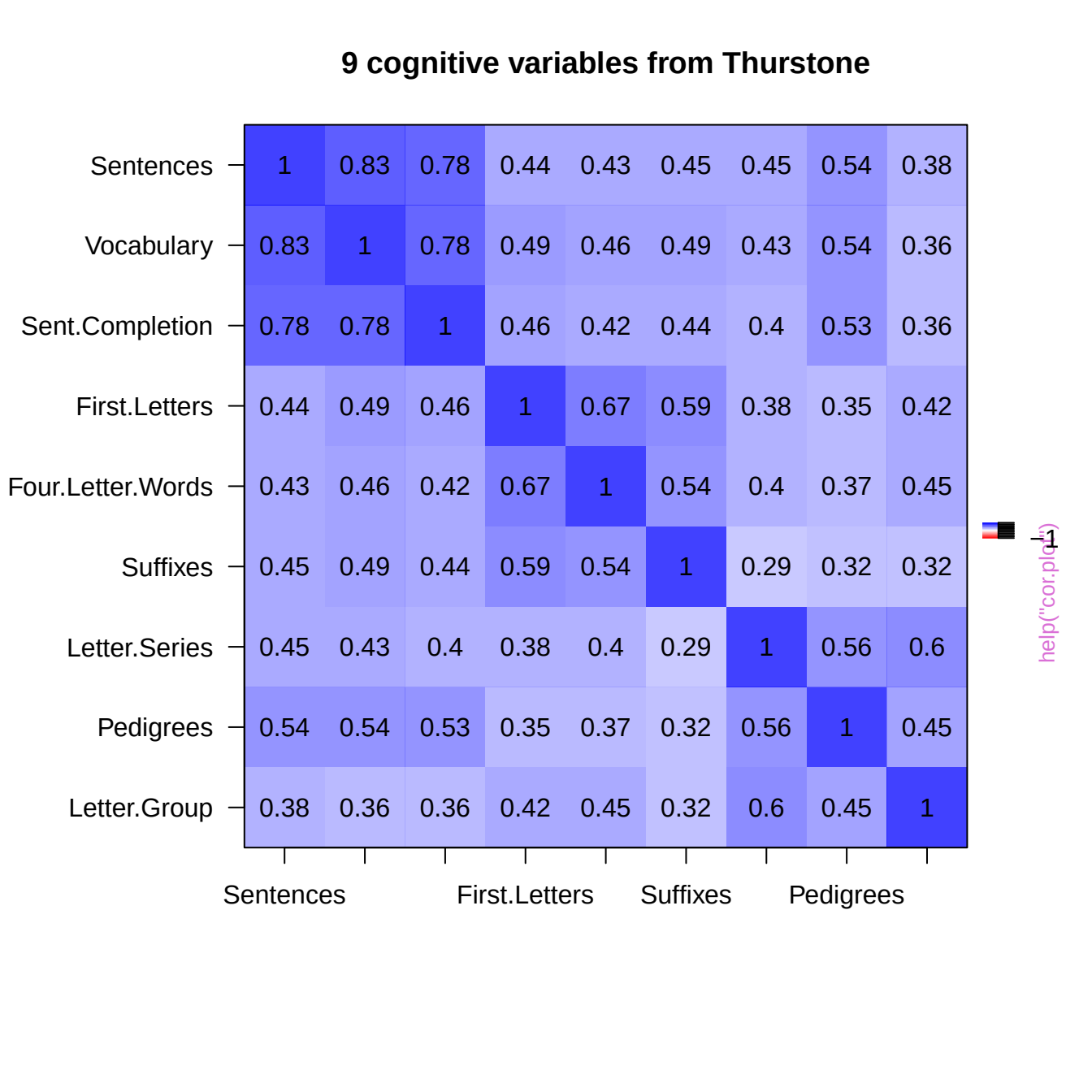

Upper and lower confidence intervals of correlations
Sentences
Vocabulary
Sent.Completion
First.Letters
Four.Letter.Words
Suffixes
1 0.87 0.82 0.54 0.54 0.55
0.78 1 0.83 0.59 0.56 0.58
0.72 0.72 1 0.56 0.53 0.54
0.32 0.38 0.35 1 0.74 0.67
0.32 0.35 0.31 0.59 1 0.63
0.33 0.38 0.33 0.49 0.44 1
Sentences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

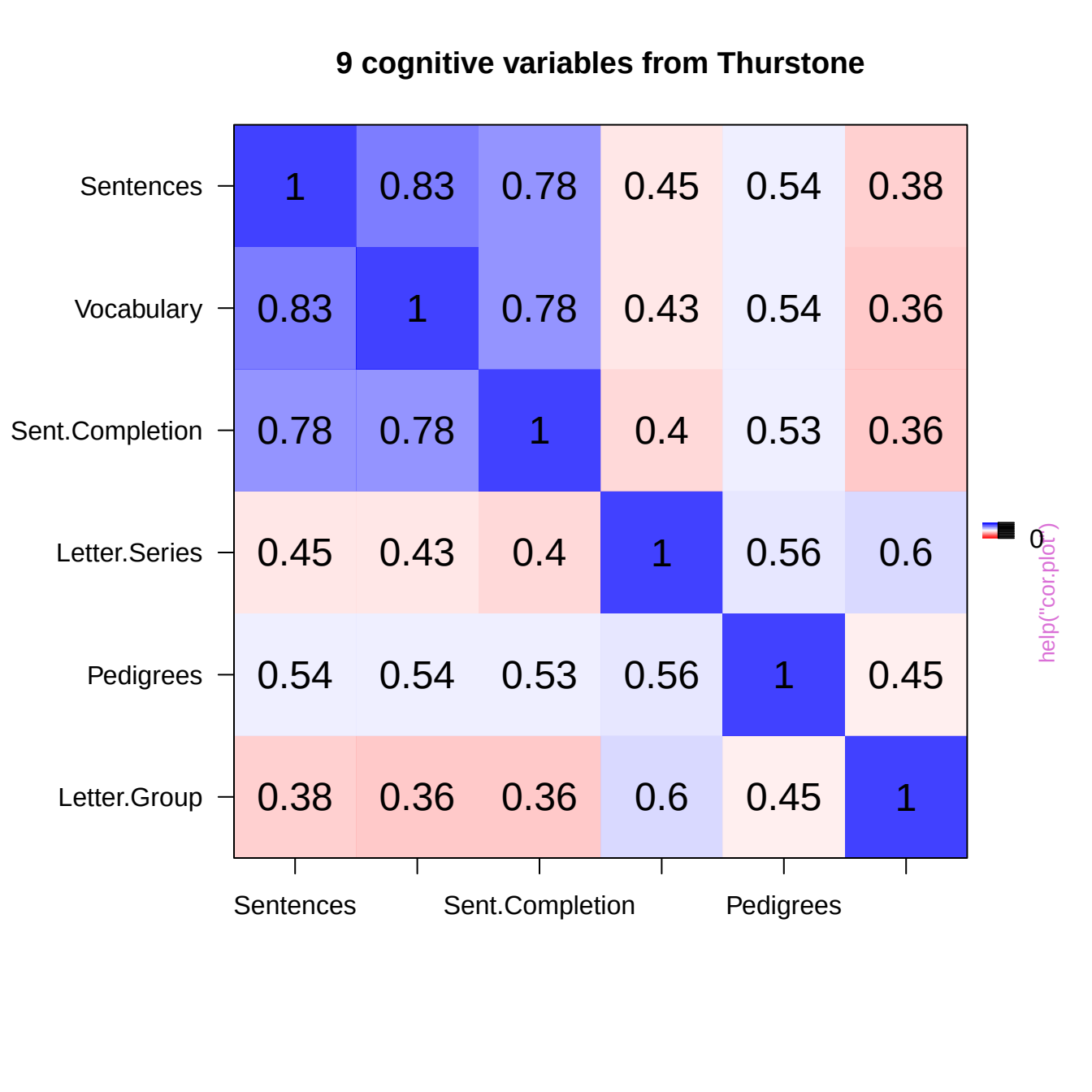

A1
A2
A3
A4
A5
C1
C2
C3
C4
C5
1
−0.4
−0.27
−0.06
−0.26
−0.1
−0.03
−0.04
0.14
0.08
−0.4
1
0.55
0.24
0.43
0.19
0.15
0.17
−0.24
−0.1
−0.27
0.55
1
0.33
0.61
0.15
0.12
0.08
−0.15
−0.14
−0.06
0.24
0.33
1
0.31
0.1
0.2
0.11
−0.1
−0.12
−0.26
0.43
0.61
0.31
1
0.06
0.04
0.07
−0.11
−0.12
−0.1
0.19
0.15
0.1
0.06
1
0.49
0.44
−0.34
−0.26
−0.03
0.15
0.12
0.2
0.04
0.49
1
0.48
−0.34
−0.22
−0.04
0.17
0.08
0.11
0.07
0.44
0.48
1
−0.33
−0.27
0.14
−0.24
−0.15
−0.1
−0.11
−0.34
−0.34
−0.33
1
0.41
0.08
−0.1
−0.14
−0.12
−0.12
−0.26
−0.22
−0.27
0.41
1
1
help("cor.g")

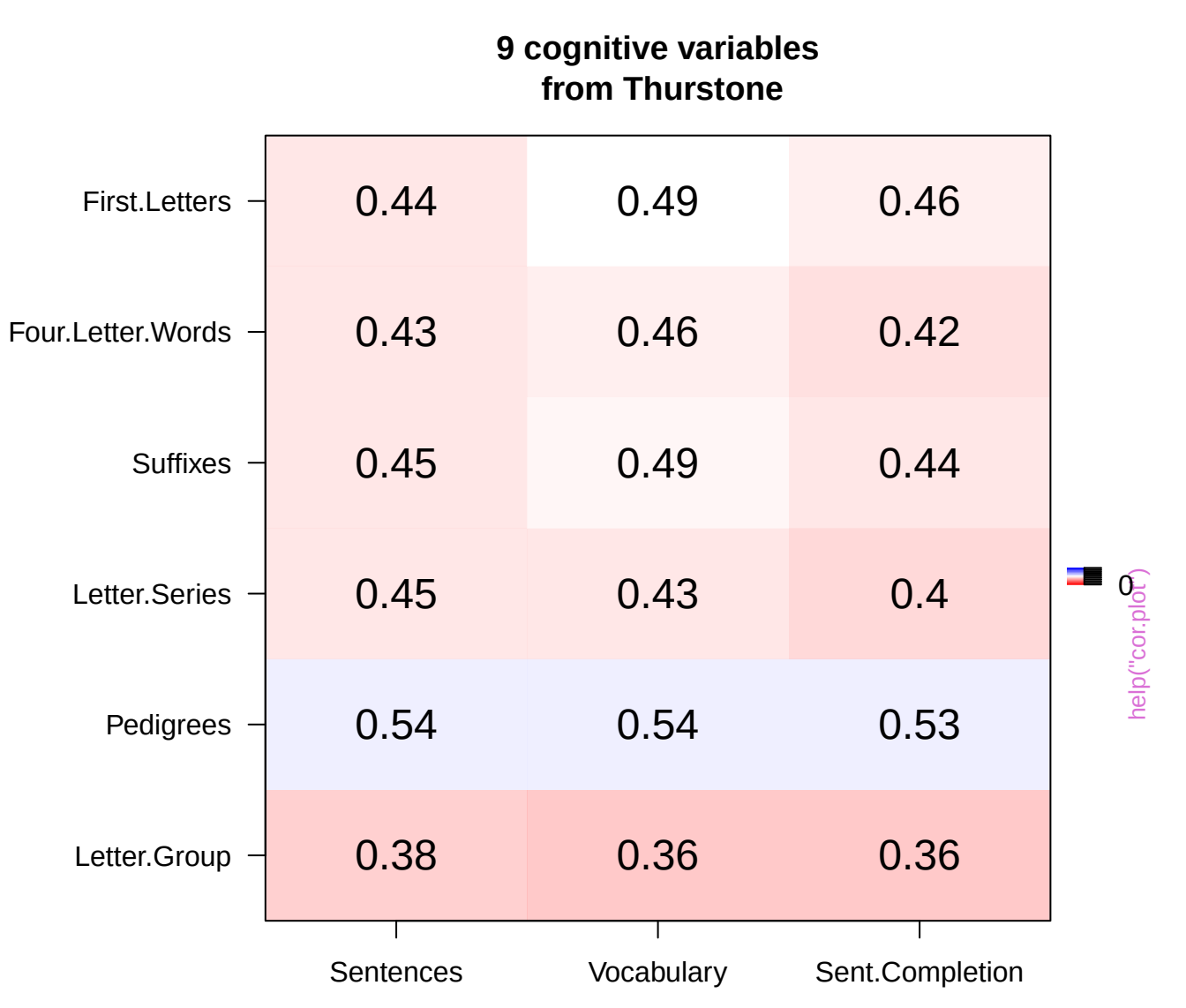

correlation with overlapping scales
agree
conscientious
extraversion
neuroticism
openness
alpha
beta
1 0.24 0.4 −0.16 0.19 0.59 0.38
0.24 1 0.27 −0.05 0.25 0.66 0.33
0.4 0.27 1 −0.24 0.26 0.23 0.82
−0.16 −0.05 −0.24 1 −0.12 0.49 −0.23
0.19 0.25 0.26 −0.12 1 0.17 0.77
0.59 0.66 0.23 0.49 0.17 1 0.25
0.38 0.33 0.82 −0.23 0.77 0.25 1
agree
extraversion
openness
beta
1
help("cor.ci")

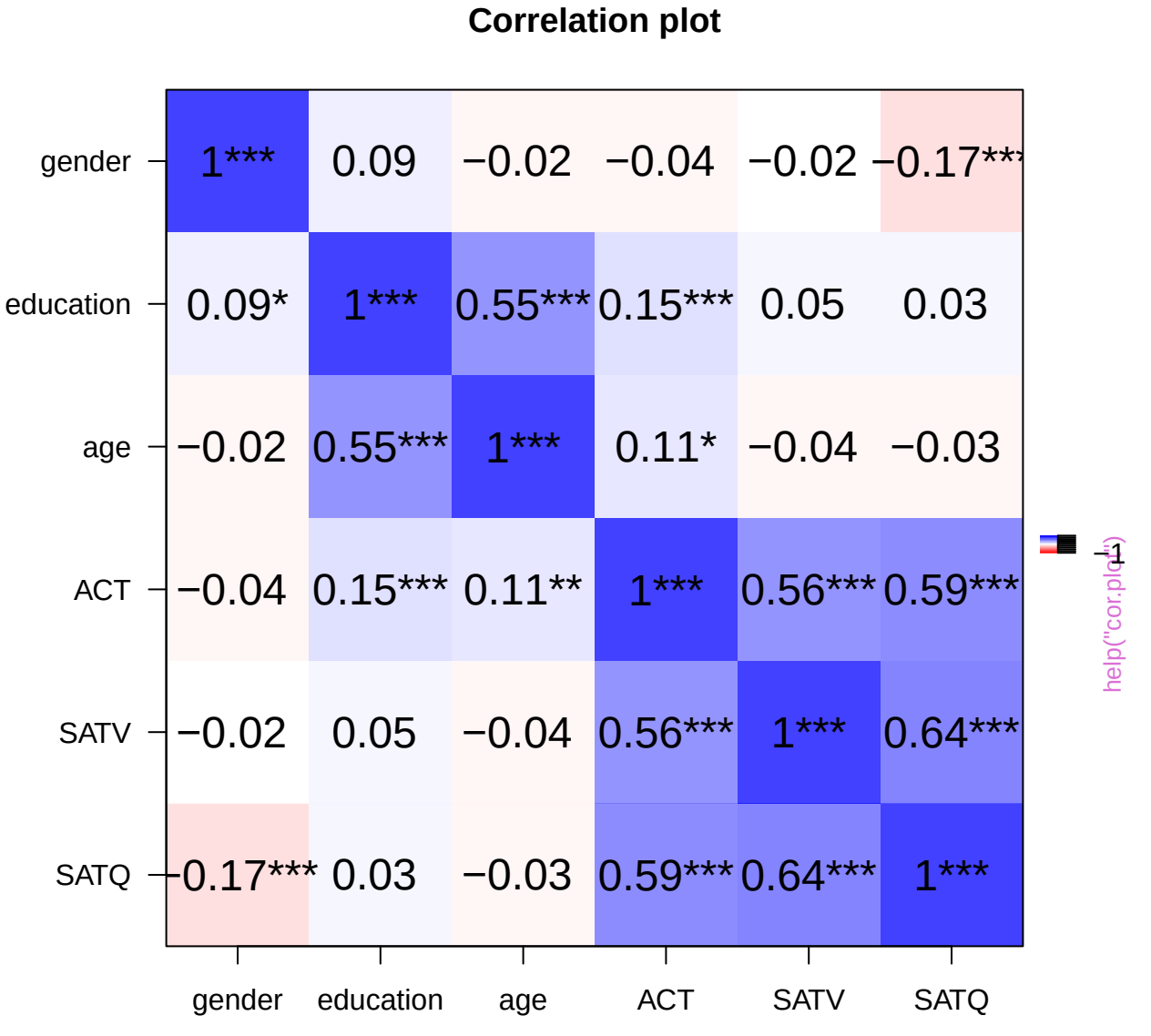

Correct for overlap
agree
conscientious
extraversion
neuroticism
openness
alpha
beta
1 0.24 0.4 −0.16 0.19 0.41 0.38
0.24 1 0.27 −0.05 0.25 0.48 0.33
0.4 0.27 1 −0.24 0.26 0.23 0.65
−0.16 −0.05 −0.24 1 −0.12 0.32 −0.23
0.19 0.25 0.26 −0.12 1 0.17 0.57
0.41 0.48 0.23 0.32 0.17 1 0.25
0.38 0.33 0.65 −0.23 0.57 0.25 1
agree
extraversion
openness
beta
1
help("cor.ci")

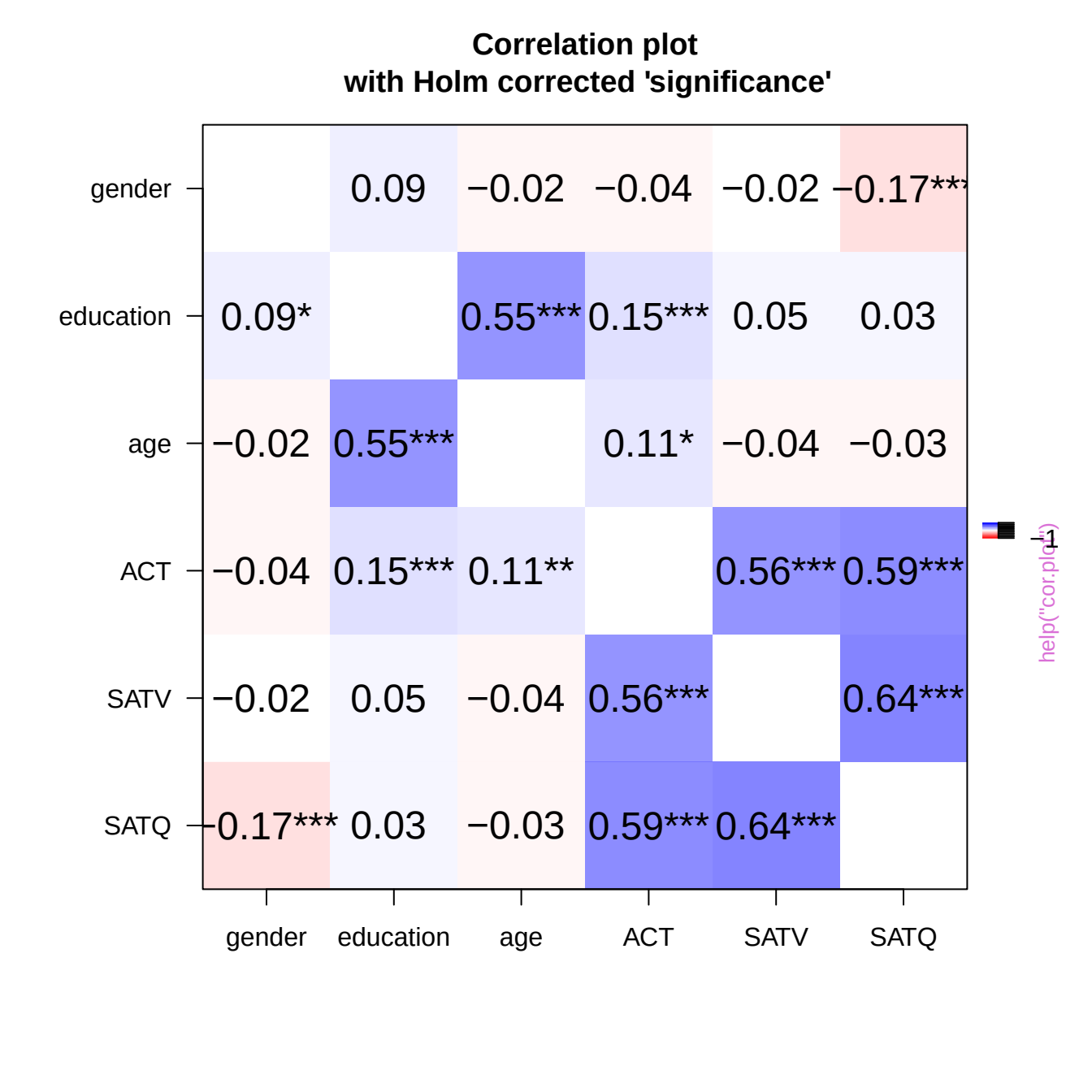

Upper and lower confidence intervals of correlations
agree
conscientious
extraversion
neuroticism
openness
alpha
beta
1 0.35 0.49 −0.23 0.31 0.53 0.48
0.11 1 0.44 −0.22 0.4 0.6 0.48
0.28 0.13 1 −0.35 0.36 0.35 0.7
0 0.19 −0.1 1 −0.29 0.48 −0.37
0.07 0.13 0.16 0.13 1 0.31 0.64
0.31 0.36 0.12 0.21 0.09 1 0.38
0.26 0.21 0.61 −0.02 0.5 0.17 1
agree
extraversion
openness
beta
1
help("cor.ci")

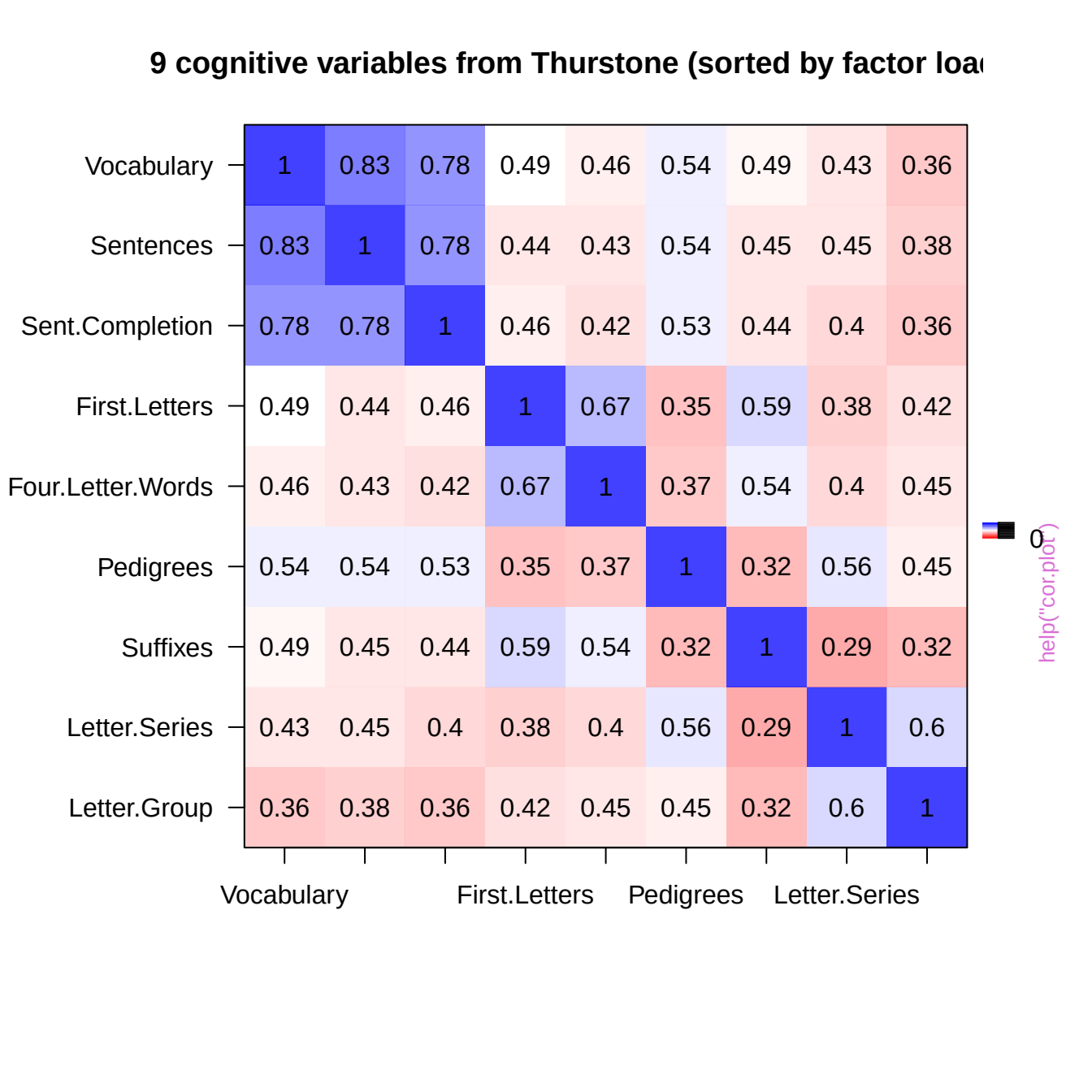

9 cognitive variables from Thurstone
Sentences
Vocabulary
Sent.Completion
First.Letters
Four.Letter.Words
Suffixes
Letter.Series
Pedigrees
Letter.Group
1 0.83 0.78 0.44 0.43 0.45 0.45 0.54 0.38
0.83 1 0.78 0.49 0.46 0.49 0.43 0.54 0.36
0.78 0.78 1 0.46 0.42 0.44 0.4 0.53 0.36
0.44 0.49 0.46 1 0.67 0.59 0.38 0.35 0.42
0.43 0.46 0.42 0.67 1 0.54 0.4 0.37 0.45
0.45 0.49 0.44 0.59 0.54 1 0.29 0.32 0.32
0.45 0.43 0.4 0.38 0.4 0.29 1 0.56 0.6
0.54 0.54 0.53 0.35 0.37 0.32 0.56 1 0.45
0.38 0.36 0.36 0.42 0.45 0.32 0.6 0.45 1
Sentences
First.Letters
Suffixes
Pedigrees
1
help("cor.plot")


9 cognitive variables from Thurstone
Sentences
Vocabulary
Sent.Completion
Letter.Series
Pedigrees
Letter.Group
1 0.83 0.78 0.45 0.54 0.38
0.83 1 0.78 0.43 0.54 0.36
0.78 0.78 1 0.4 0.53 0.36
0.45 0.43 0.4 1 0.56 0.6
0.54 0.54 0.53 0.56 1 0.45
0.38 0.36 0.36 0.6 0.45 1
Sentences
Sent.Completion
Pedigrees
0
help("cor.plot")

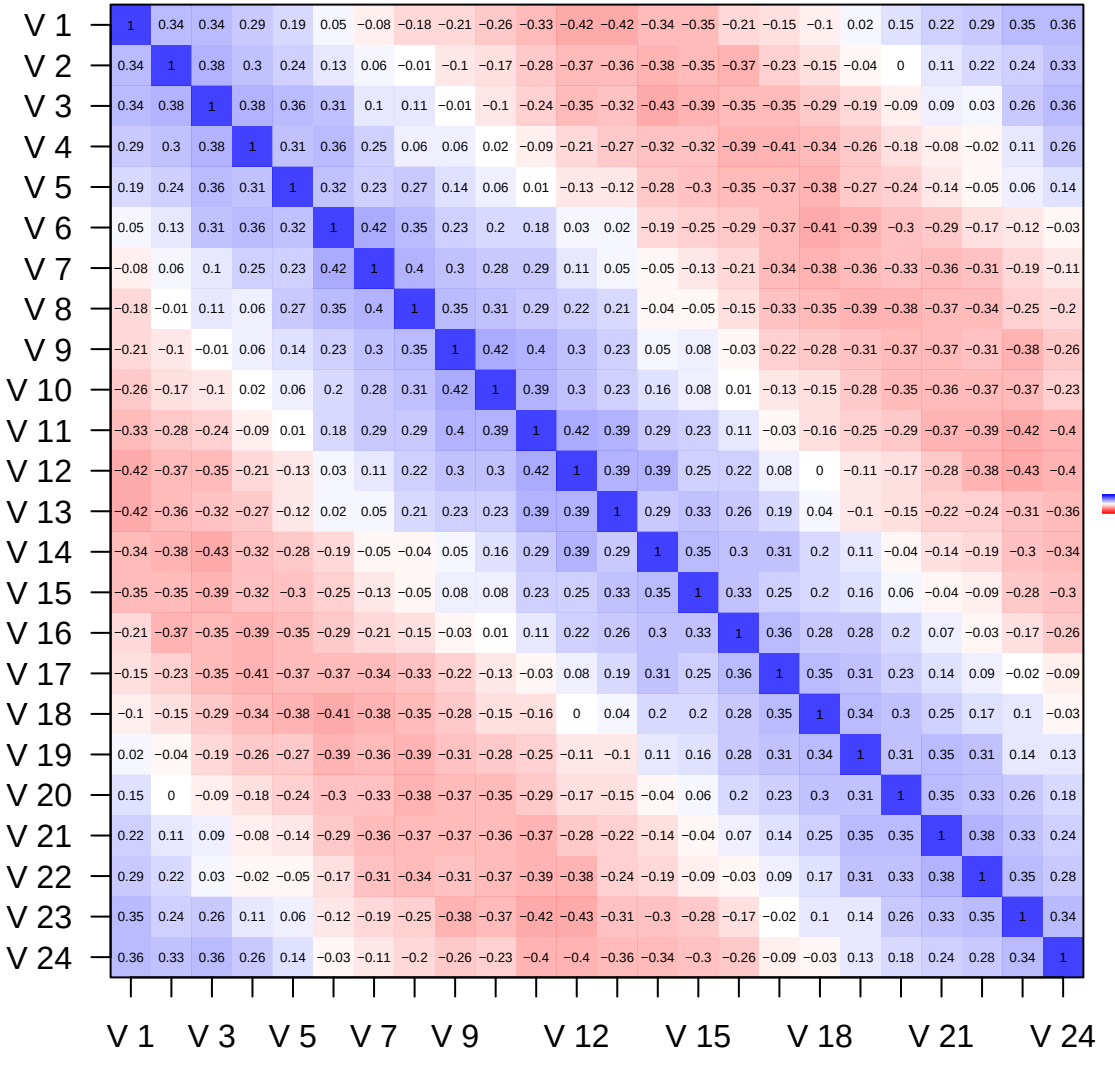

9 cognitive variables
from Thurstone
First.Letters
Four.Letter.Words
Suffixes
Letter.Series
Pedigrees
Letter.Group
0.44
0.49
0.46
0.43
0.46
0.42
0.45
0.49
0.44
0.45
0.43
0.4
0.54
0.54
0.53
0.38
0.36
0.36
Sentences
Vocabulary
Sent.Completion
0
help("cor.plot")

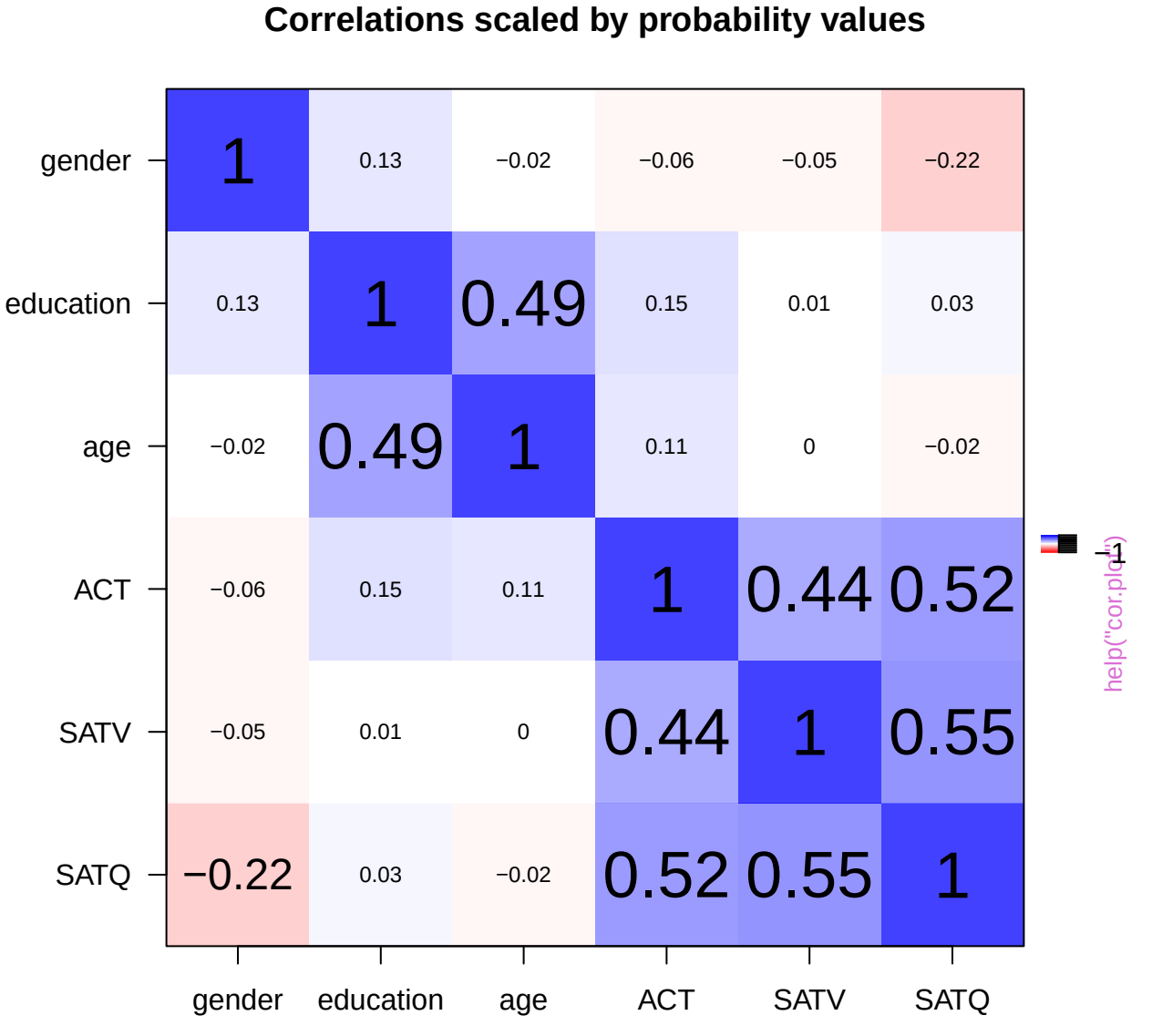

Correlation plot
gender
education
age
ACT
SATV
SATQ
1***
0.09
−0.02
−0.04
−0.02
−0.17***
0.09*
1***
0.55***
0.15***
0.05
0.03
−0.02
0.55***
1***
0.11*
−0.04
−0.03
−0.04
0.15***
0.11**
1***
0.56***
0.59***
−0.02
0.05
−0.04
0.56***
1***
0.64***
−0.17***
0.03
−0.03
0.59***
0.64***
1***
−1
help("cor.plot")

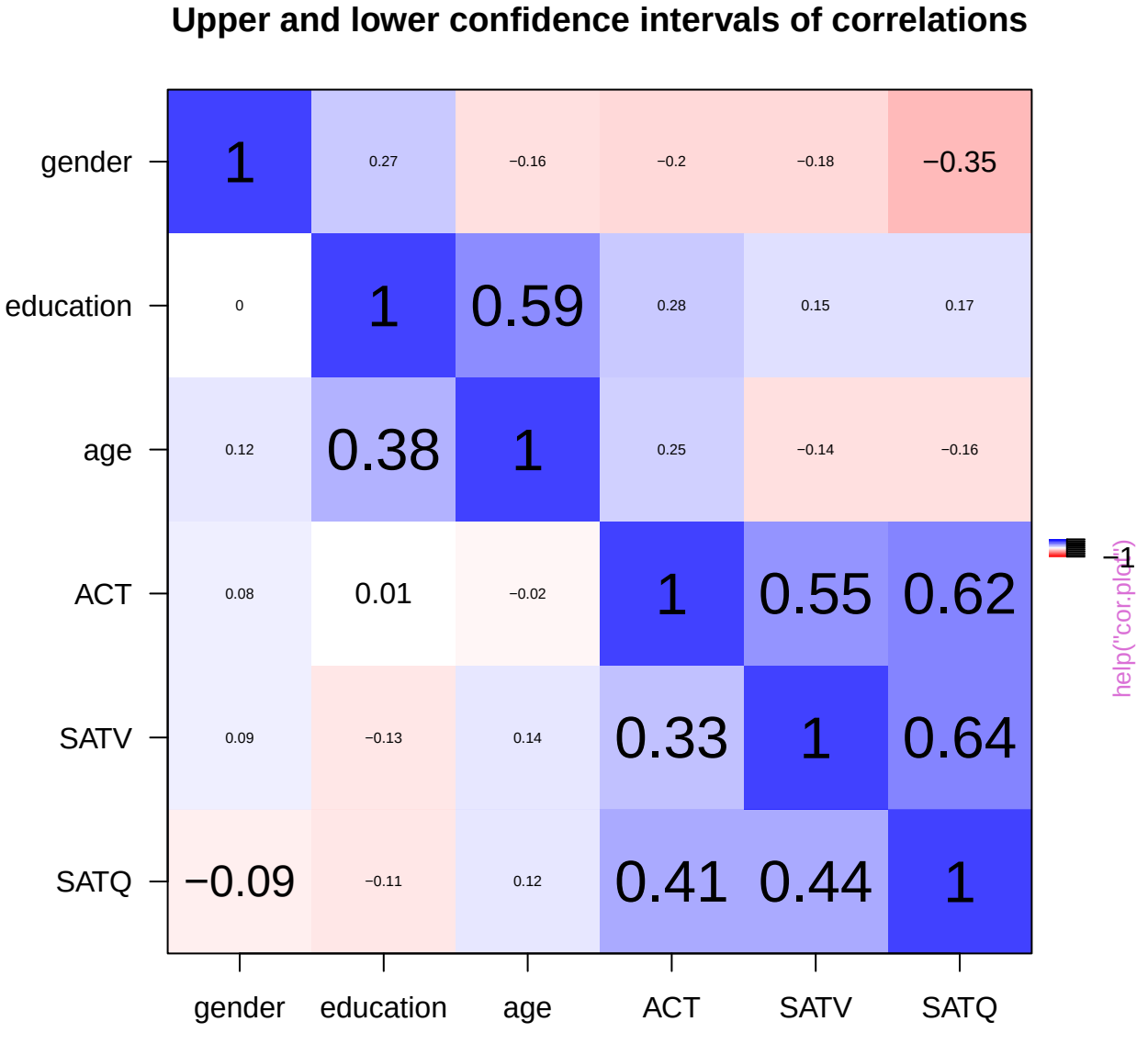

Correlation plot
with Holm corrected 'significance'
gender
education
age
ACT
SATV
SATQ
0.09
−0.02
−0.04
−0.02
−0.17***
0.09*
0.55***
0.15***
0.05
0.03
−0.02
0.55***
0.11*
−0.04
−0.03
−0.04
0.15***
0.11**
0.56***
0.59***
−0.02
0.05
−0.04
0.56***
0.64***
−0.17***
0.03
−0.03
0.59***
0.64***
gender
education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

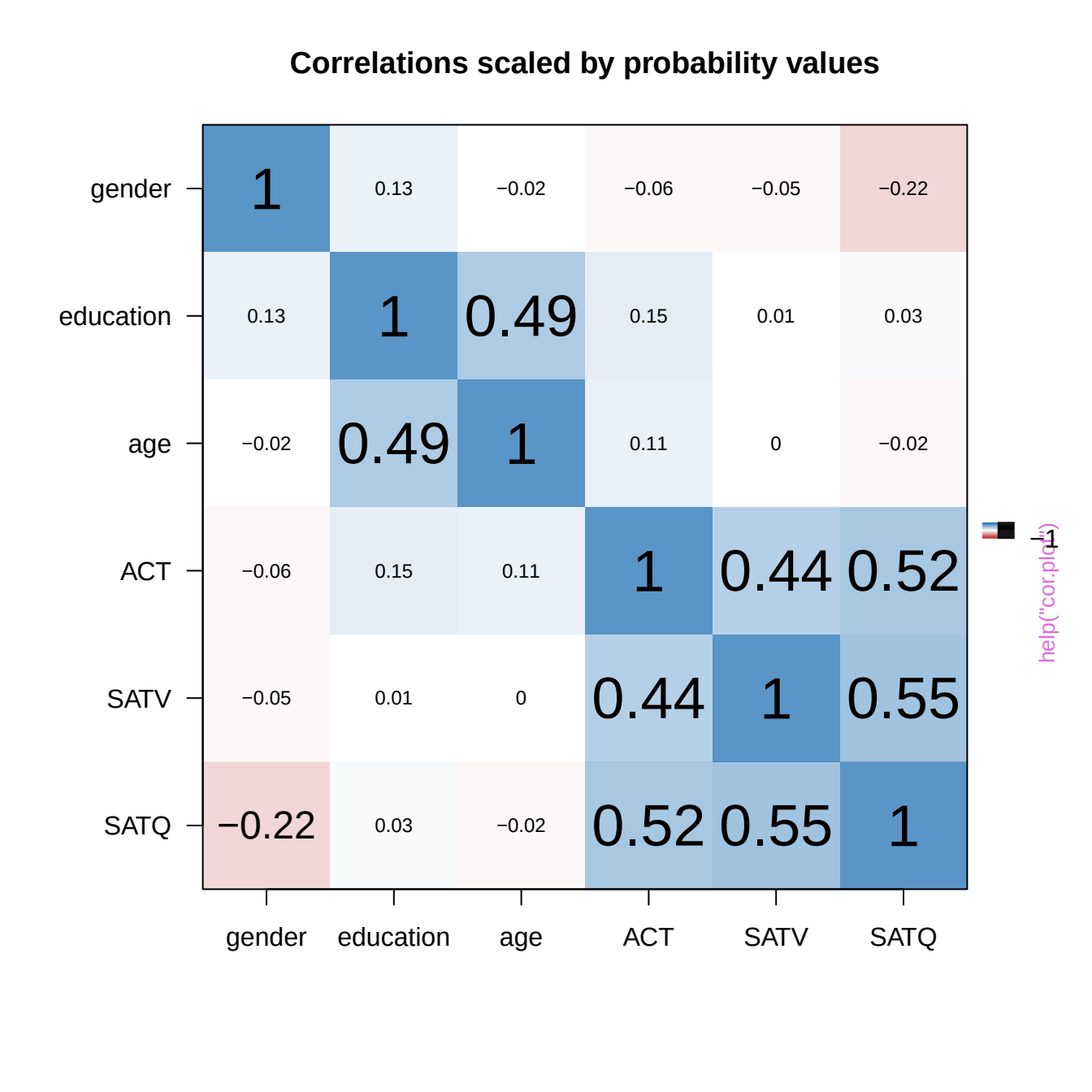

9 cognitive variables from Thurstone (sorted by factor loa
Vocabulary
Sentences
Sent.Completion
First.Letters
Four.Letter.Words
Pedigrees
Suffixes
Letter.Series
Letter.Group
1 0.83 0.78 0.49 0.46 0.54 0.49 0.43 0.36
0.83 1 0.78 0.44 0.43 0.54 0.45 0.45 0.38
0.78 0.78 1 0.46 0.42 0.53 0.44 0.4 0.36
0.49 0.44 0.46 1 0.67 0.35 0.59 0.38 0.42
0.46 0.43 0.42 0.67 1 0.37 0.54 0.4 0.45
0.54 0.54 0.53 0.35 0.37 1 0.32 0.56 0.45
0.49 0.45 0.44 0.59 0.54 0.32 1 0.29 0.32
0.43 0.45 0.4 0.38 0.4 0.56 0.29 1 0.6
0.36 0.38 0.36 0.42 0.45 0.45 0.32 0.6 1
Vocabulary
First.Letters
Pedigrees
Letter.Series
0
help("cor.plot")

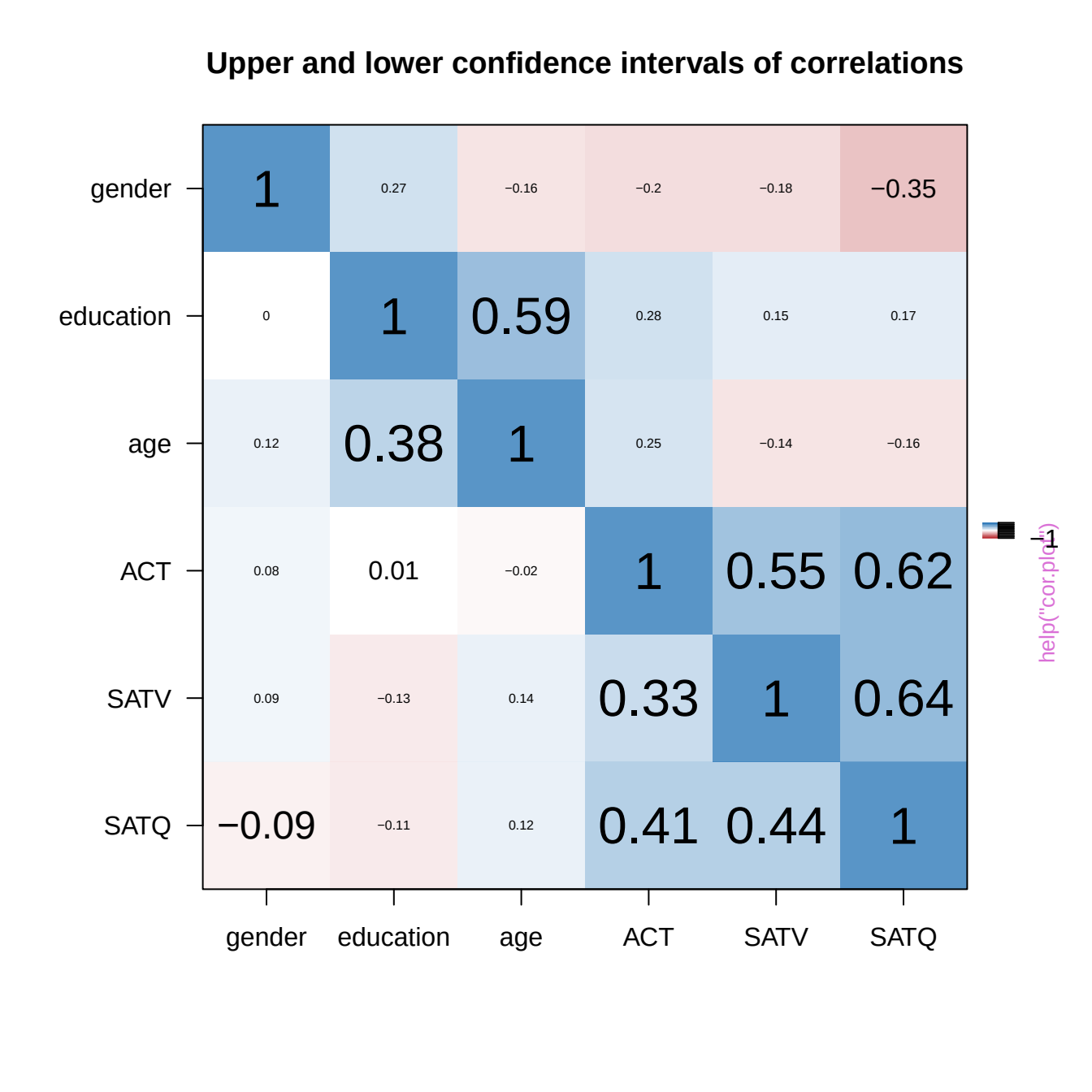
24 variables in a circumplex



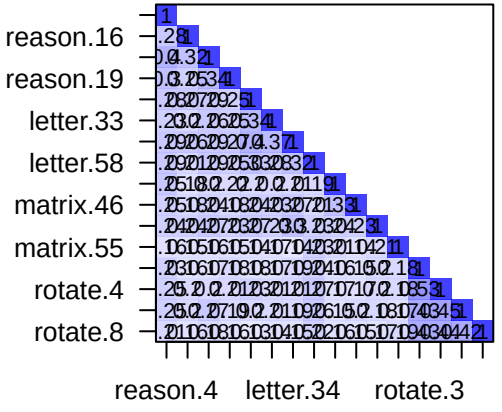

Correlations scaled by probability values
gender
education
age
ACT
SATV
SATQ
1
0.13
−0.02
−0.06
−0.05
−0.22
0.13
1
0.49
0.15
0.01
0.03
−0.02
0.49
1
0.11
0
−0.02
−0.06
0.15
0.11
1
0.44
0.52
−0.05
0.01
0
0.44
1
0.55
−0.22
0.03
−0.02
0.52
0.55
1
gender
education
age
ACT
SATV
SATQ
−1
help("cor.plot")


Upper and lower confidence intervals of correlations
gender
education
age
ACT
SATV
SATQ
1
0.27
−0.16
−0.2
−0.18
−0.35
0
1
0.59
0.28
0.15
0.17
0.12
0.38
1
0.25
−0.14
−0.16
0.08
0.01
−0.02
1
0.55
0.62
0.09
−0.13
0.14
0.33
1
0.64
−0.09
−0.11
0.12
0.41
0.44
1
gender
education
age
ACT
SATV
SATQ
−1
help("cor.plot")

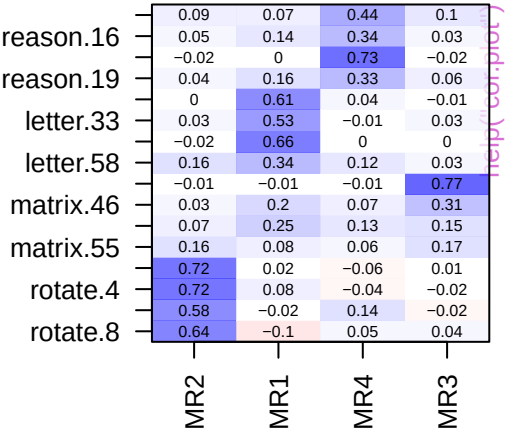

Correlations scaled by probability values
gender
education
age
ACT
SATV
SATQ
1
0.13
−0.02
−0.06
−0.05
−0.22
0.13
1
0.49
0.15
0.01
0.03
−0.02
0.49
1
0.11
0
−0.02
−0.06
0.15
0.11
1
0.44
0.52
−0.05
0.01
0
0.44
1
0.55
−0.22
0.03
−0.02
0.52
0.55
1
gender
education
age
ACT
SATV
SATQ
−1
help("cor.plot")


Upper and lower confidence intervals of correlations
gender
education
age
ACT
SATV
SATQ
1
0.27
−0.16
−0.2
−0.18
−0.35
0
1
0.59
0.28
0.15
0.17
0.12
0.38
1
0.25
−0.14
−0.16
0.08
0.01
−0.02
1
0.55
0.62
0.09
−0.13
0.14
0.33
1
0.64
−0.09
−0.11
0.12
0.41
0.44
1
gender
education
age
ACT
SATV
SATQ
−1
help("cor.plot")

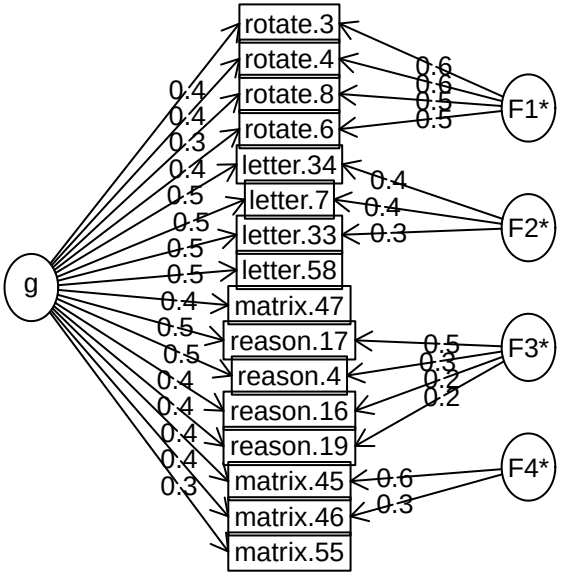
Correlation plot



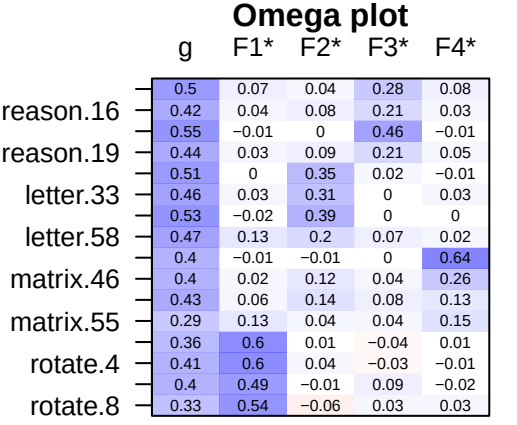
Factor Loadings plot

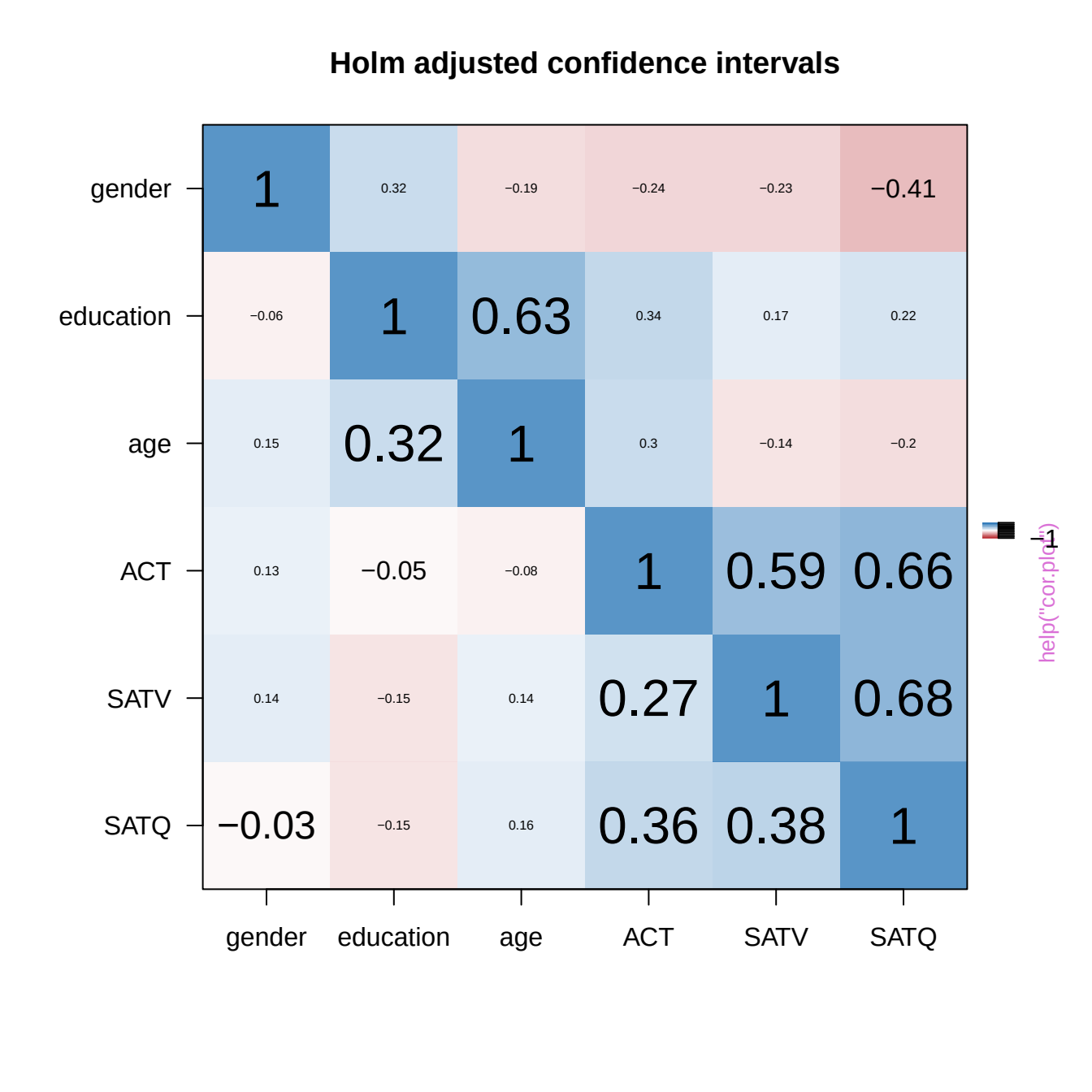


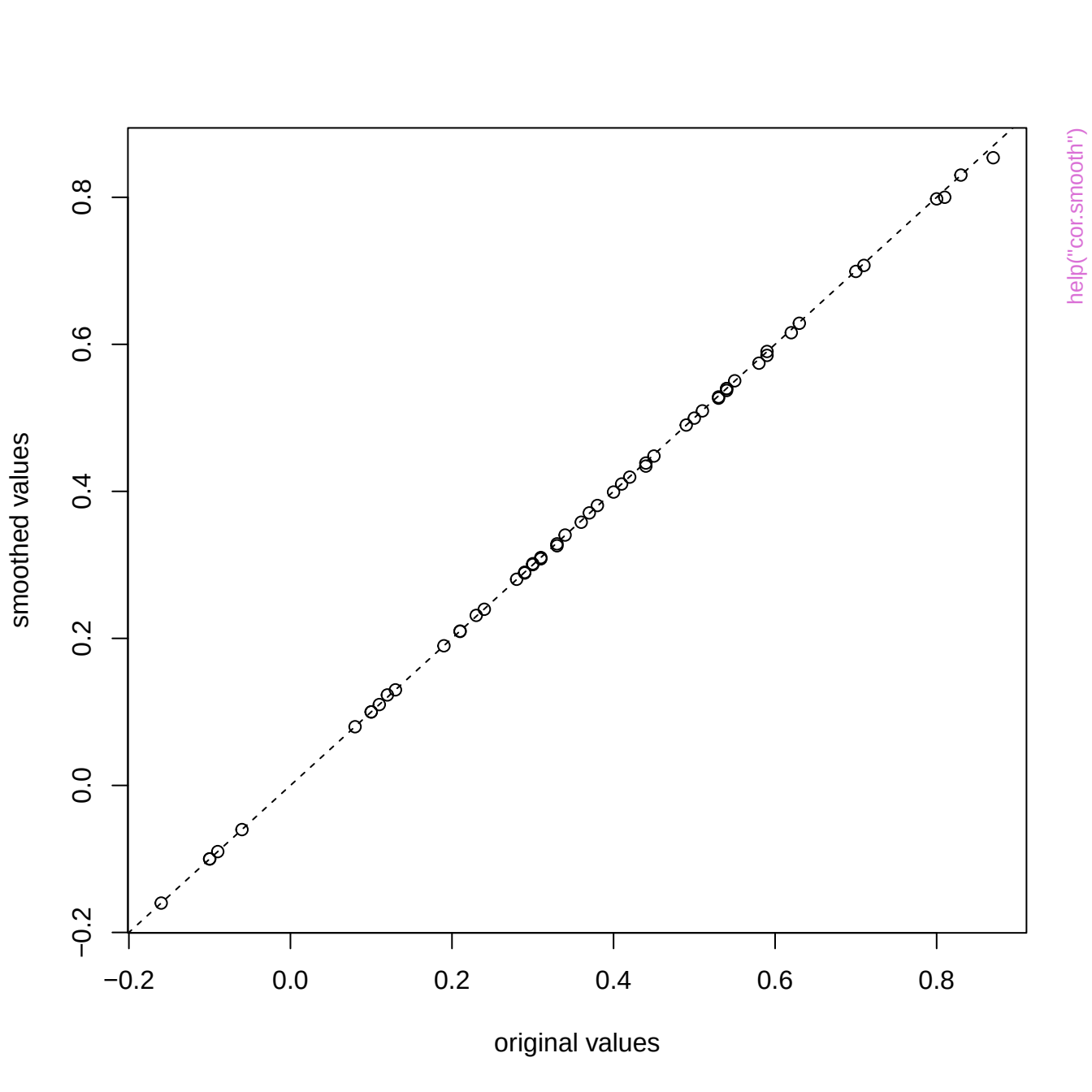
Omega

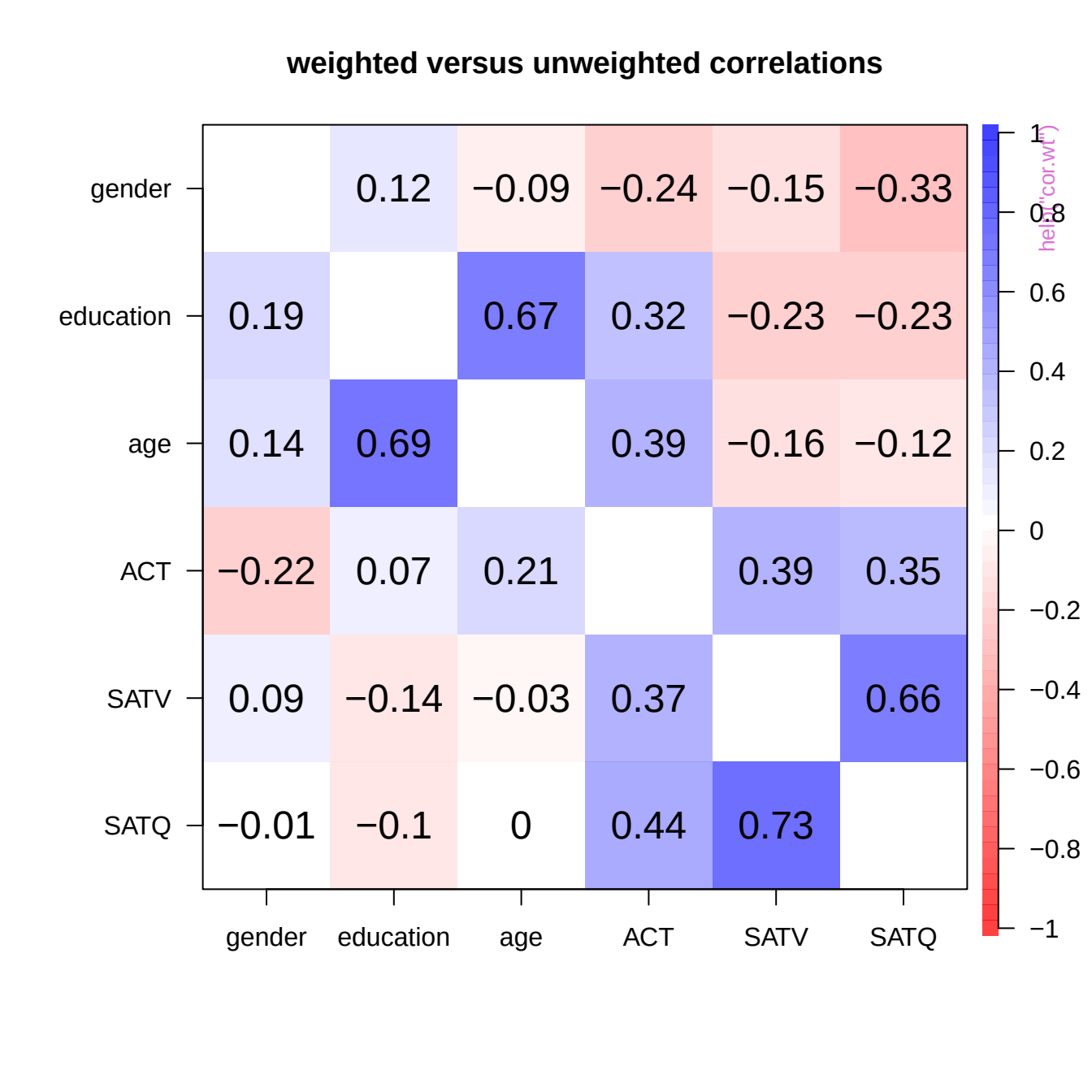


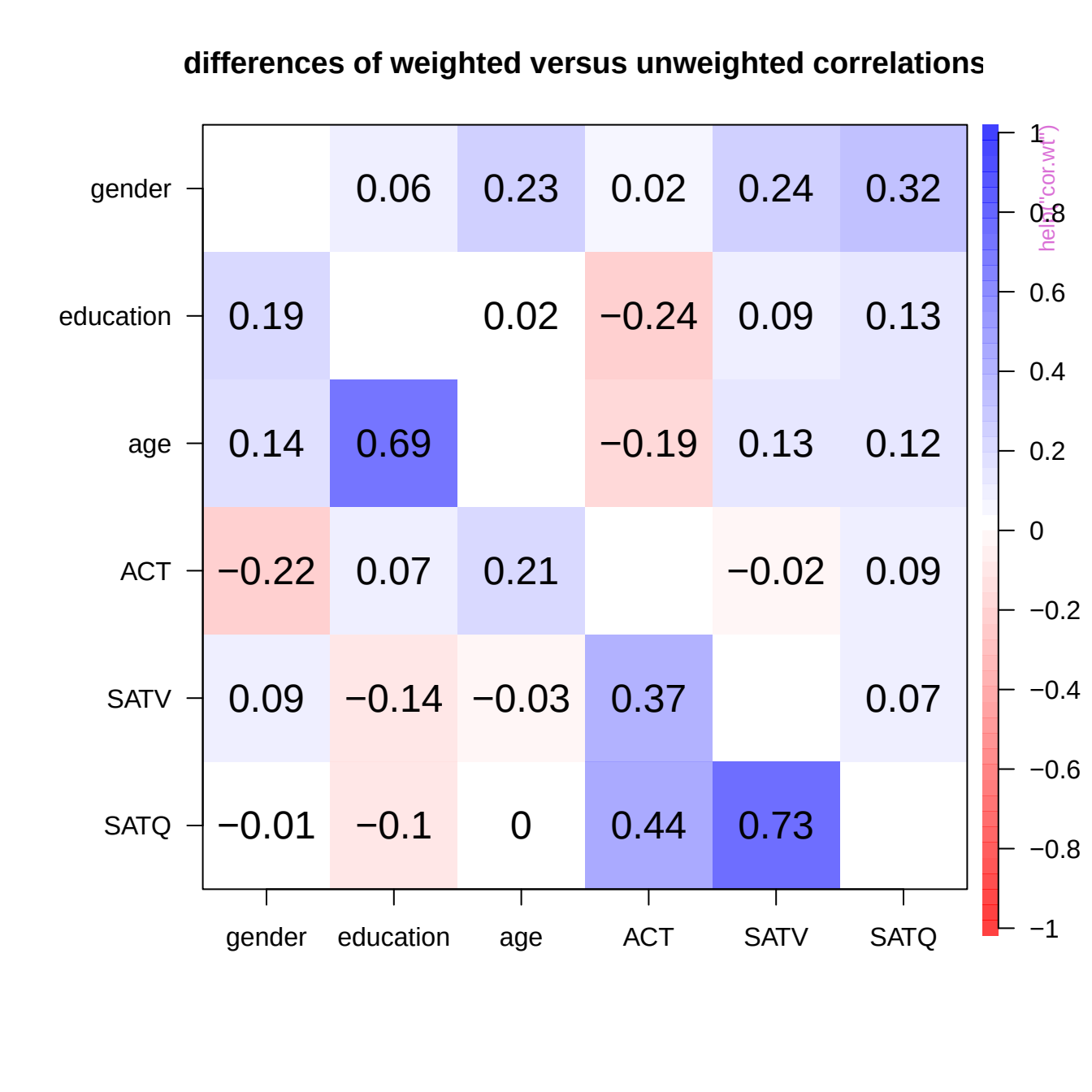
Omega plot

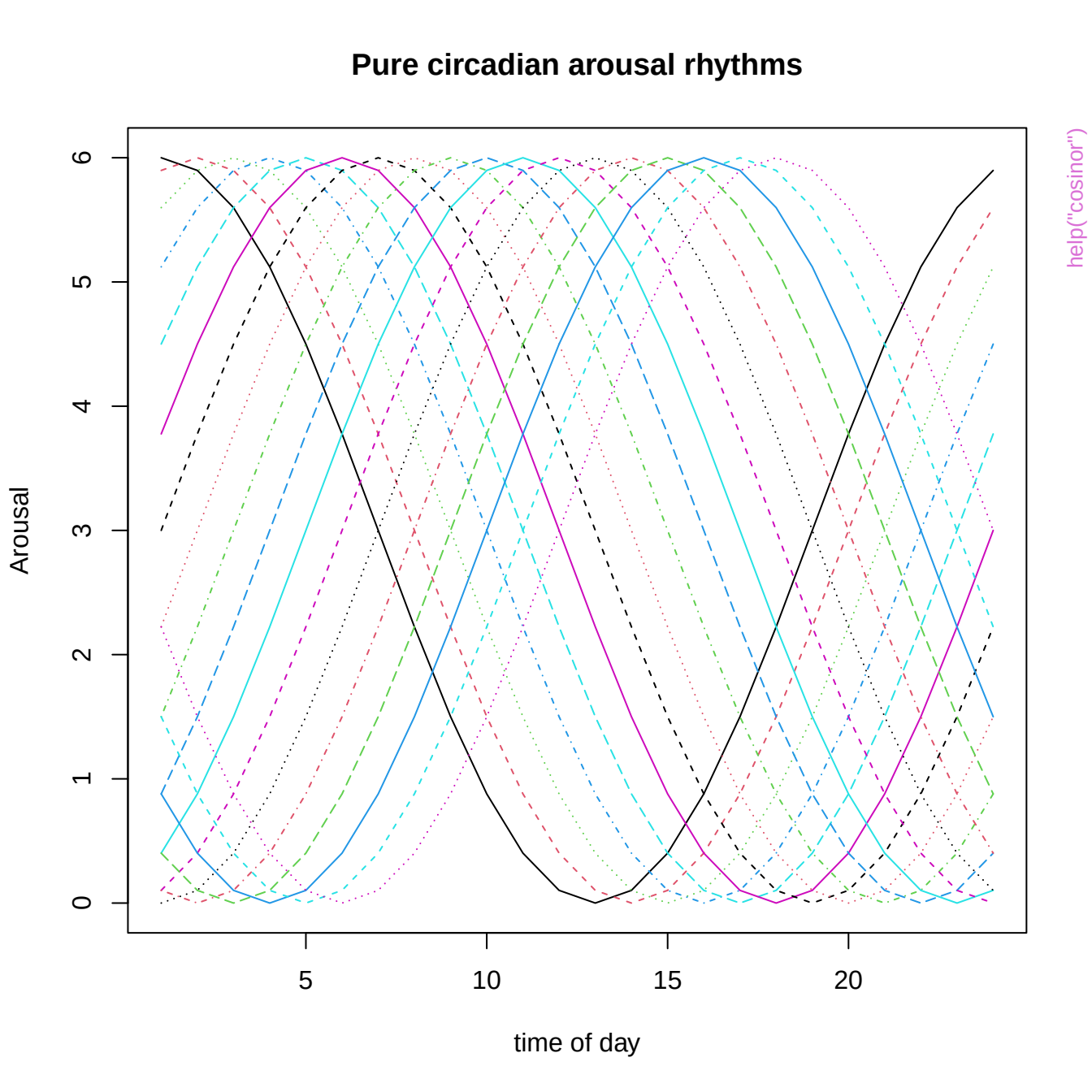


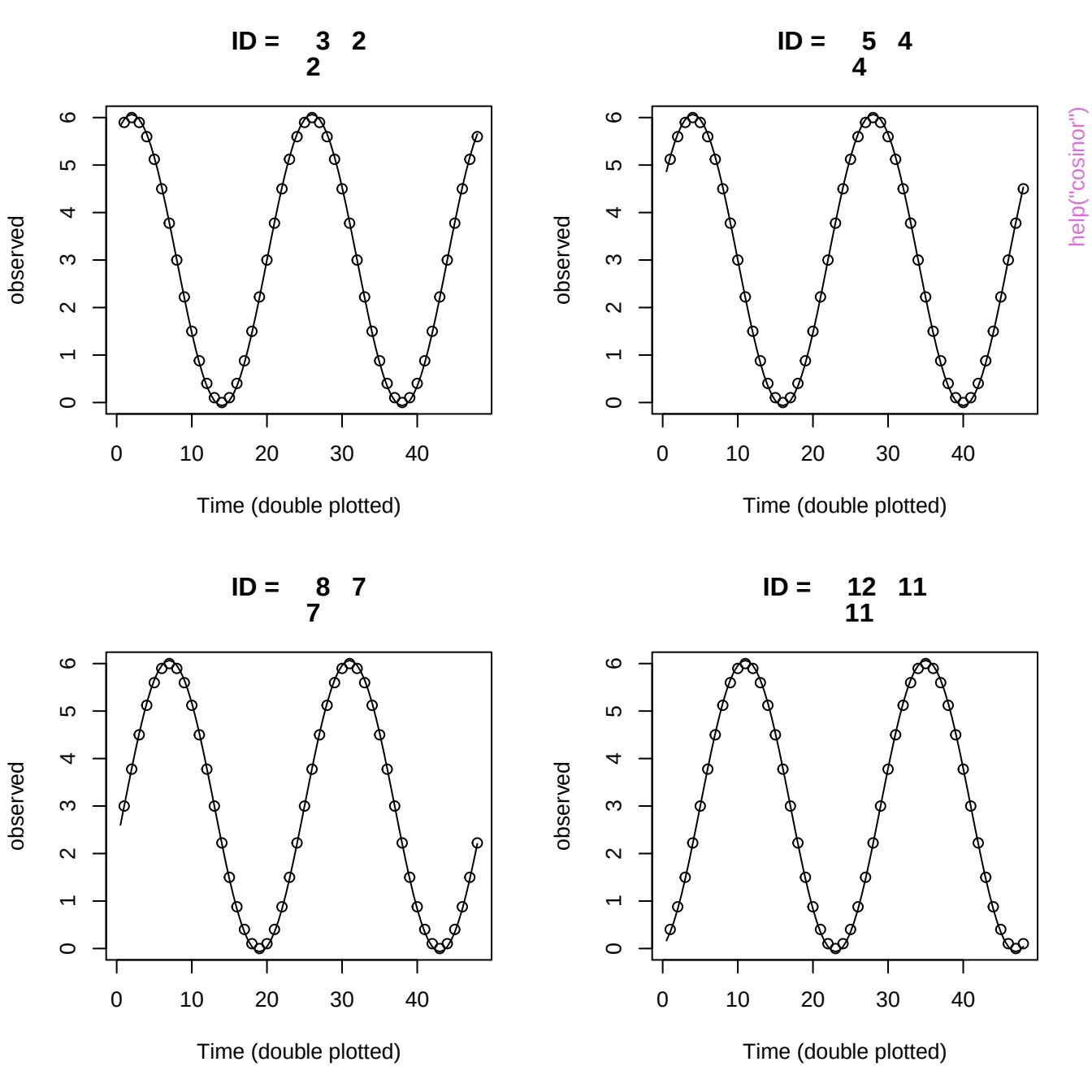

Holm adjusted confidence intervals
gender
education
age
ACT
SATV
SATQ
1
0.32
−0.19
−0.24
−0.23
−0.41
−0.06
1
0.63
0.34
0.17
0.22
0.15
0.32
1
0.3
−0.14
−0.2
0.13
−0.05
−0.08
1
0.59
0.66
0.14
−0.15
0.14
0.27
1
0.68
−0.03
−0.15
0.16
0.36
0.38
1
gender
education
age
ACT
SATV
SATQ
−1
help("cor.plot")

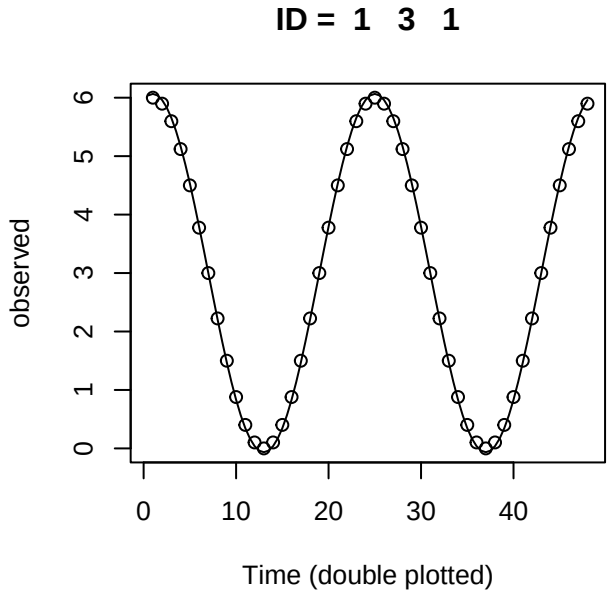

smoothed values
original values
−0.2
0.0
0.2
0.4
0.6
0.8
help("cor.smooth")

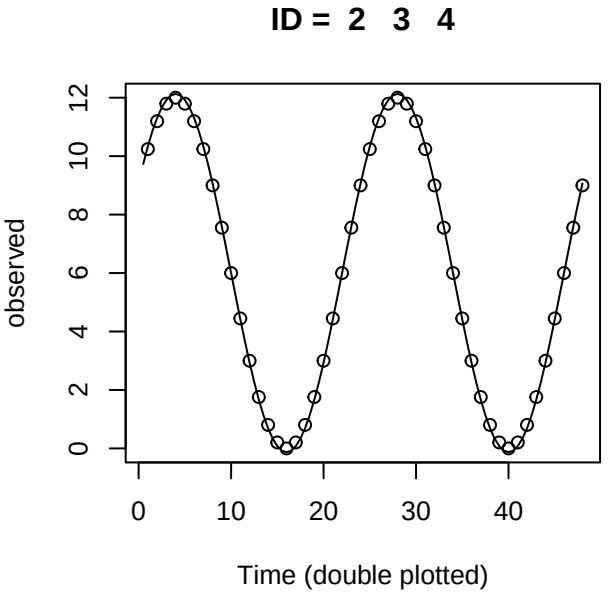

weighted versus unweighted correlations
gender
education
age
ACT
SATV
SATQ
0.12
−0.09
−0.24
−0.15
−0.33
0.19
0.67
0.32
−0.23
−0.23
0.14
0.69
0.39
−0.16
−0.12
−0.22
0.07
0.21
0.39
0.35
0.09
−0.14
−0.03
0.37
0.66
−0.01
−0.1
0
0.44
0.73
help("cor.wt")
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1

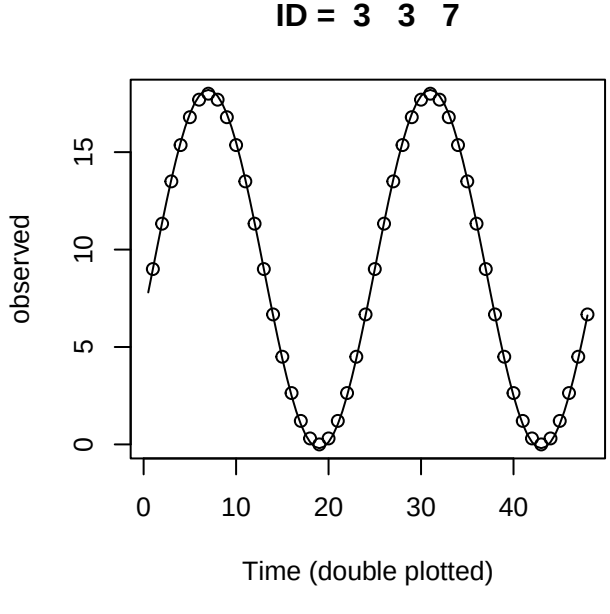

differences of weighted versus unweighted correlations
gender
education
age
ACT
SATV
SATQ
0.06 0.23 0.02 0.24 0.32
0.19 0.02 −0.24 0.09 0.13
0.14 0.69 −0.19 0.13 0.12
−0.22 0.07 0.21 −0.02 0.09
0.09 −0.14 −0.03 0.37 0.07
−0.01 −0.1 0 0.44 0.73
gender
education
age
ACT
SATV
SATQ
help("cor.wt")
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1

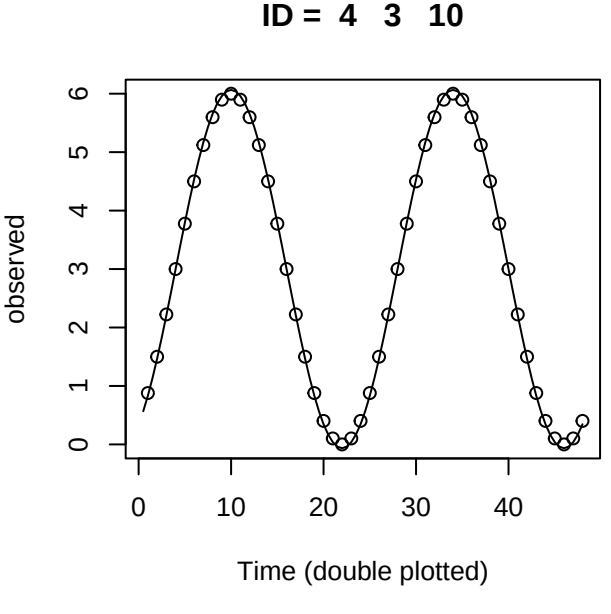

Pure circadian arousal rhythms
Arousal
0
1
2
3
4
5
6
5
10
15
20
time of day
help("cosinor")


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")

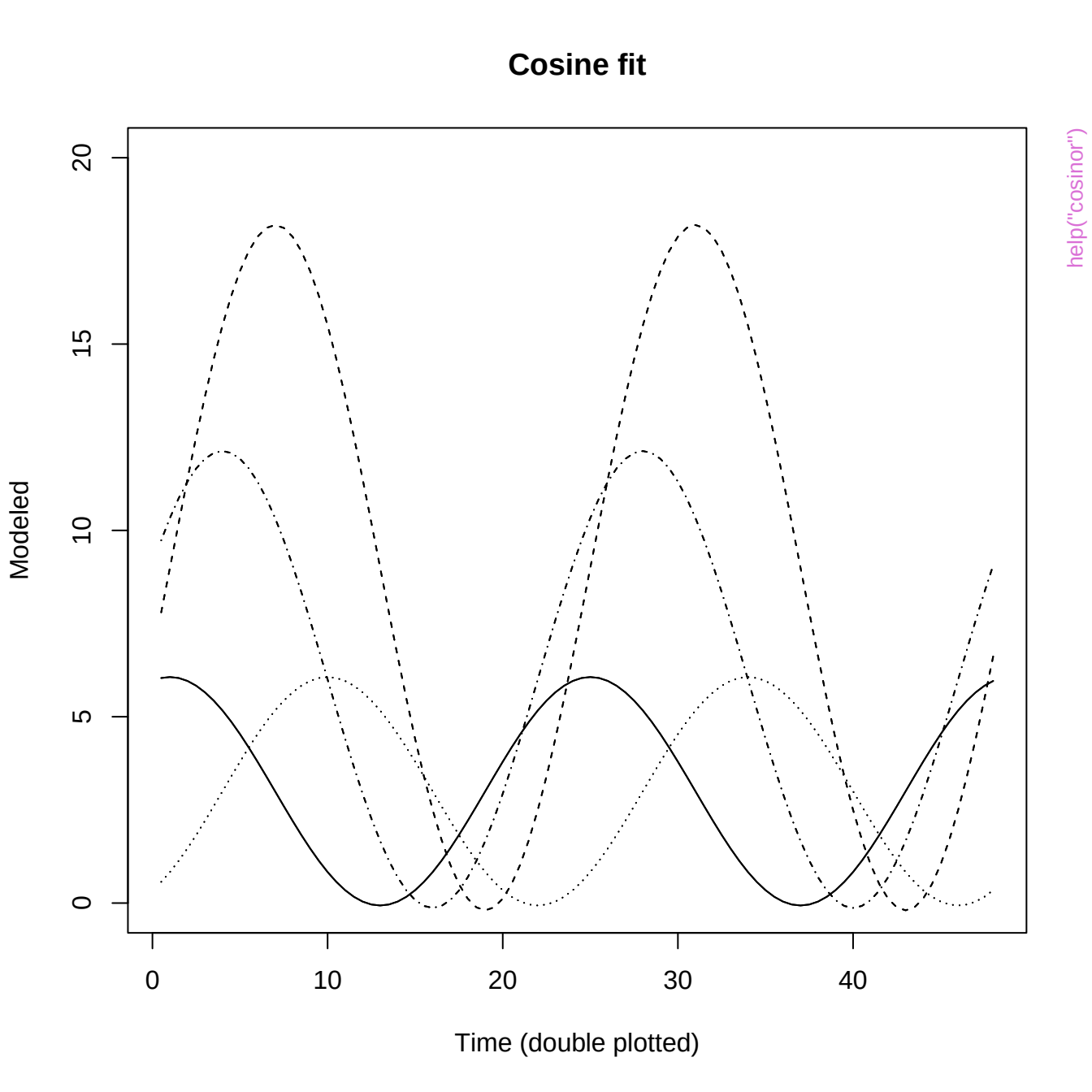


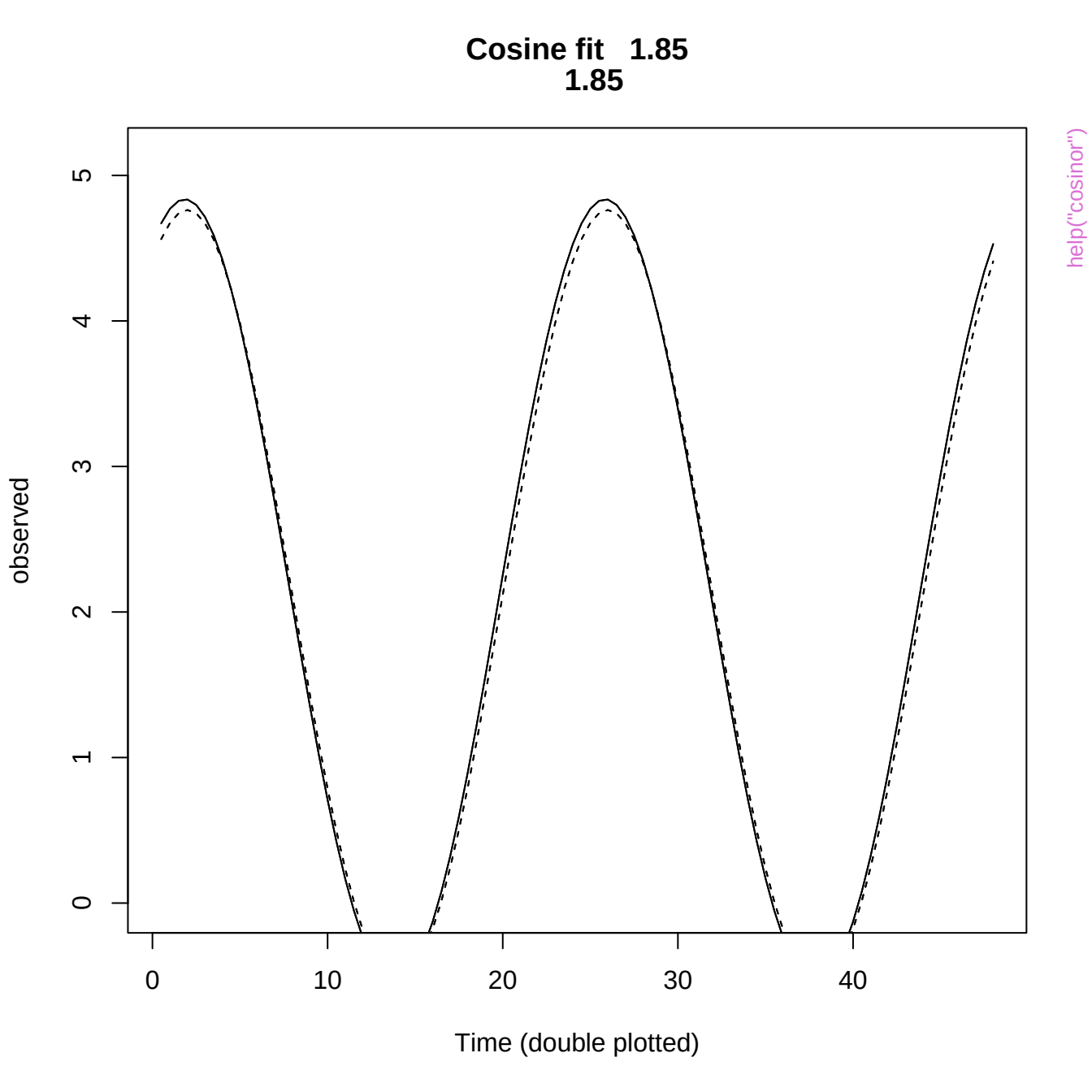


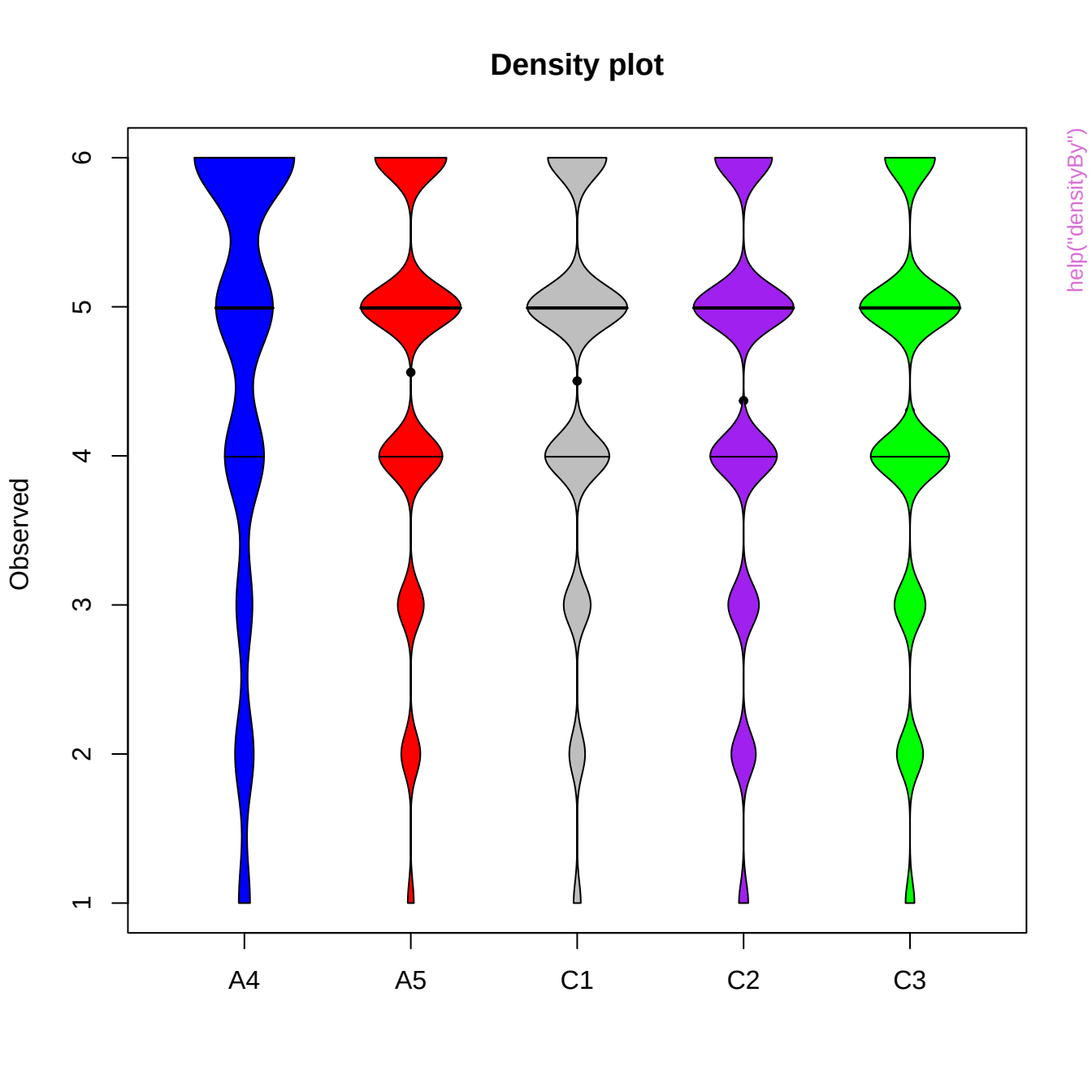


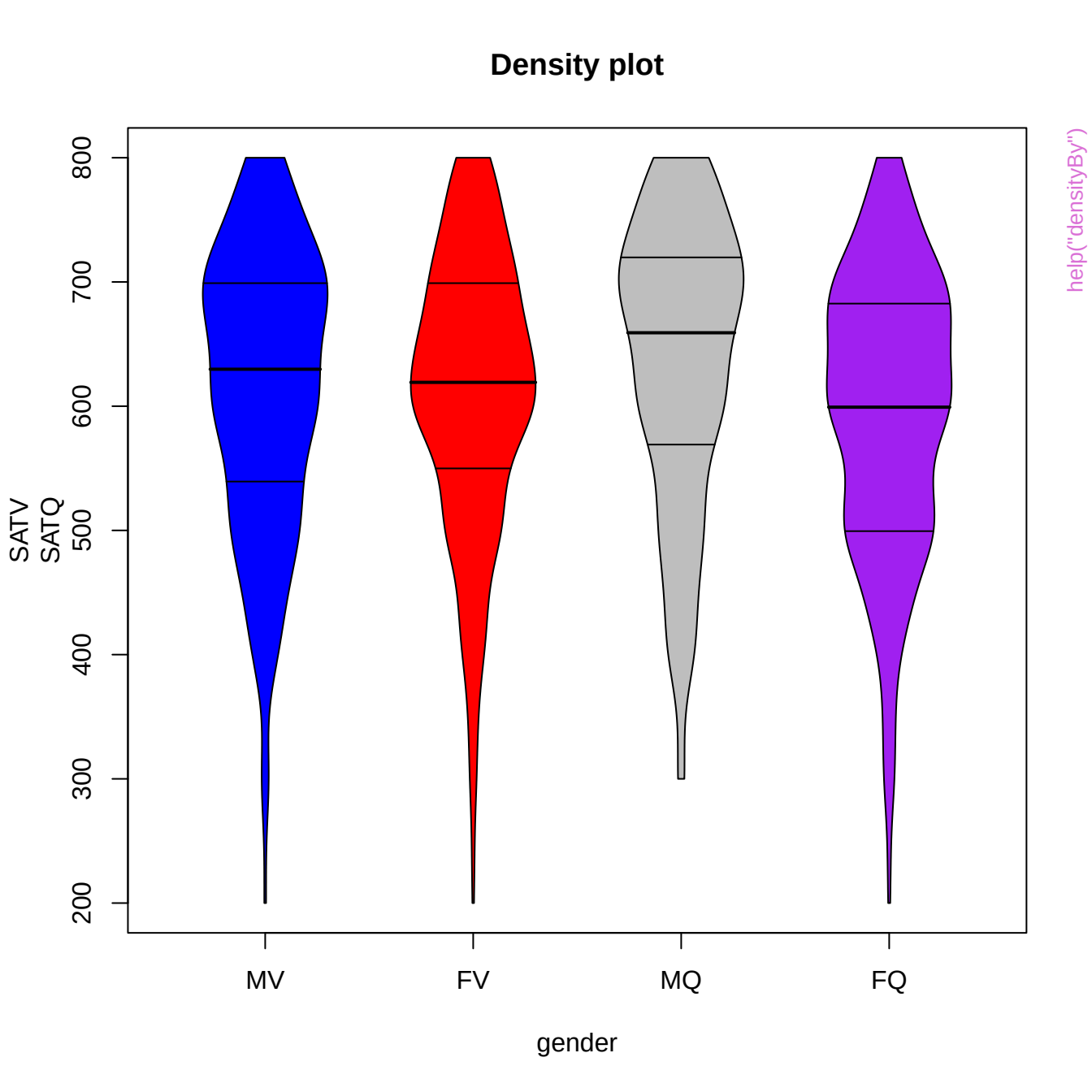


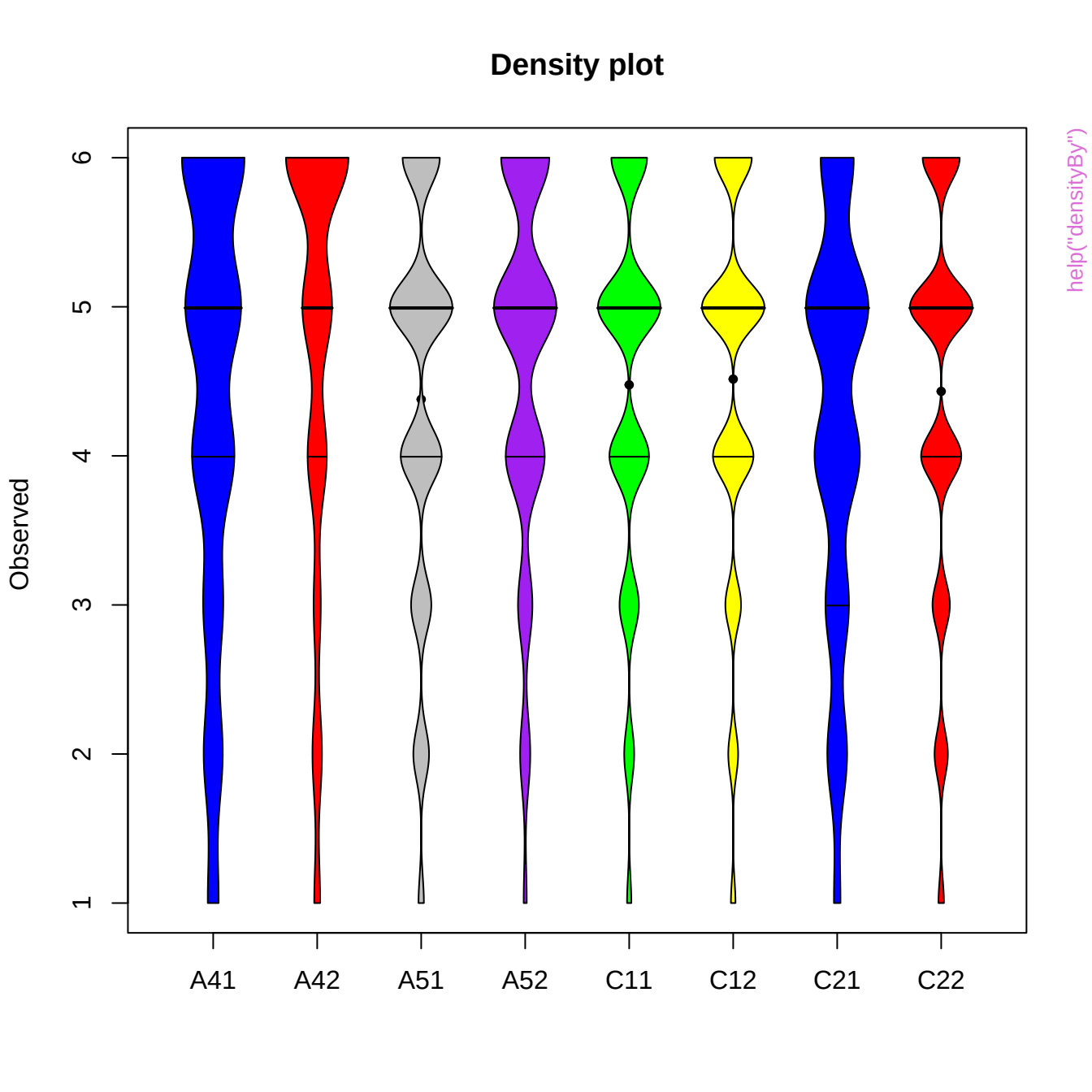
help("cosinor")

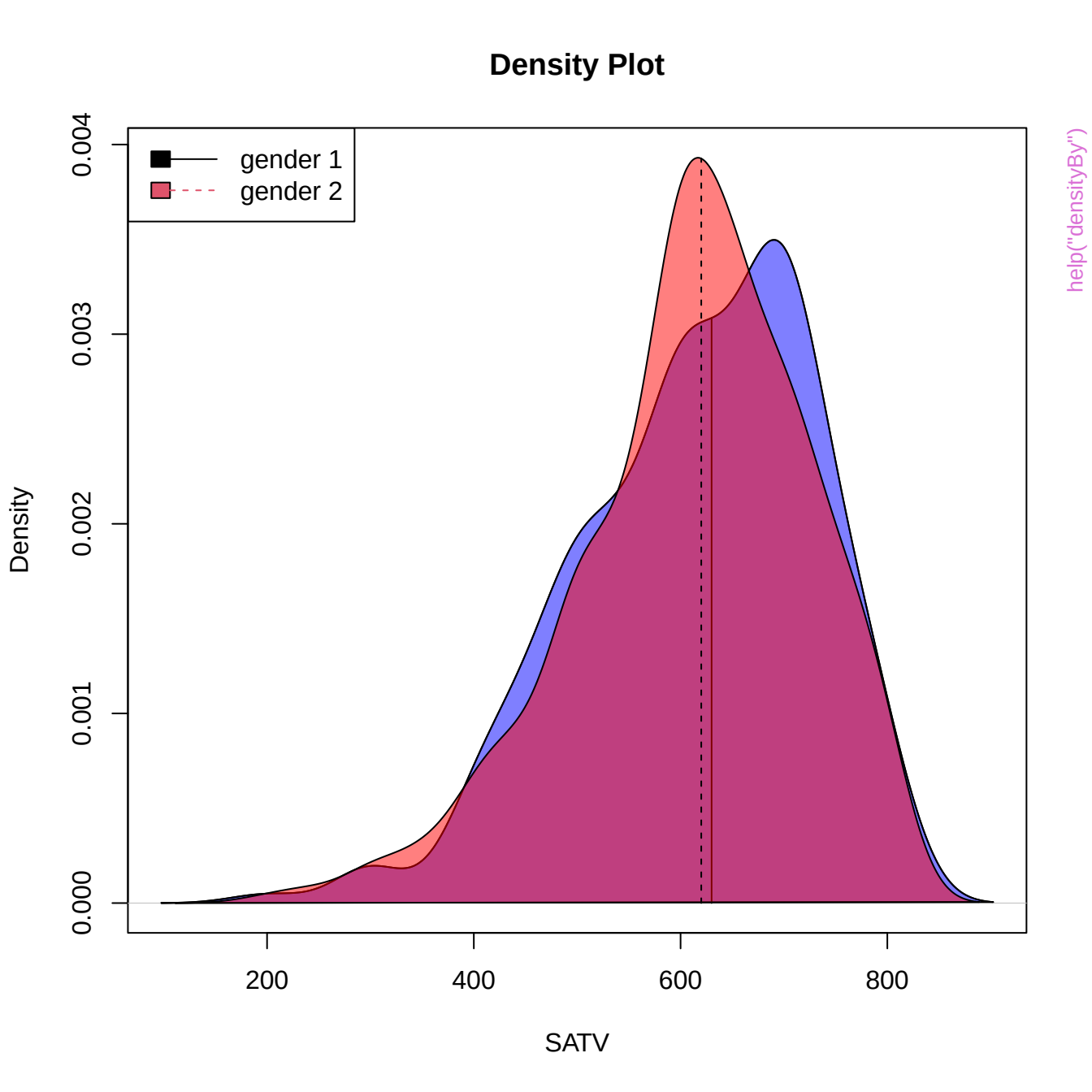

Cosine fit
Modeled
Time (double plotted)
0
5
10
15
20
0
10
20
30
40
help("cosinor")


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

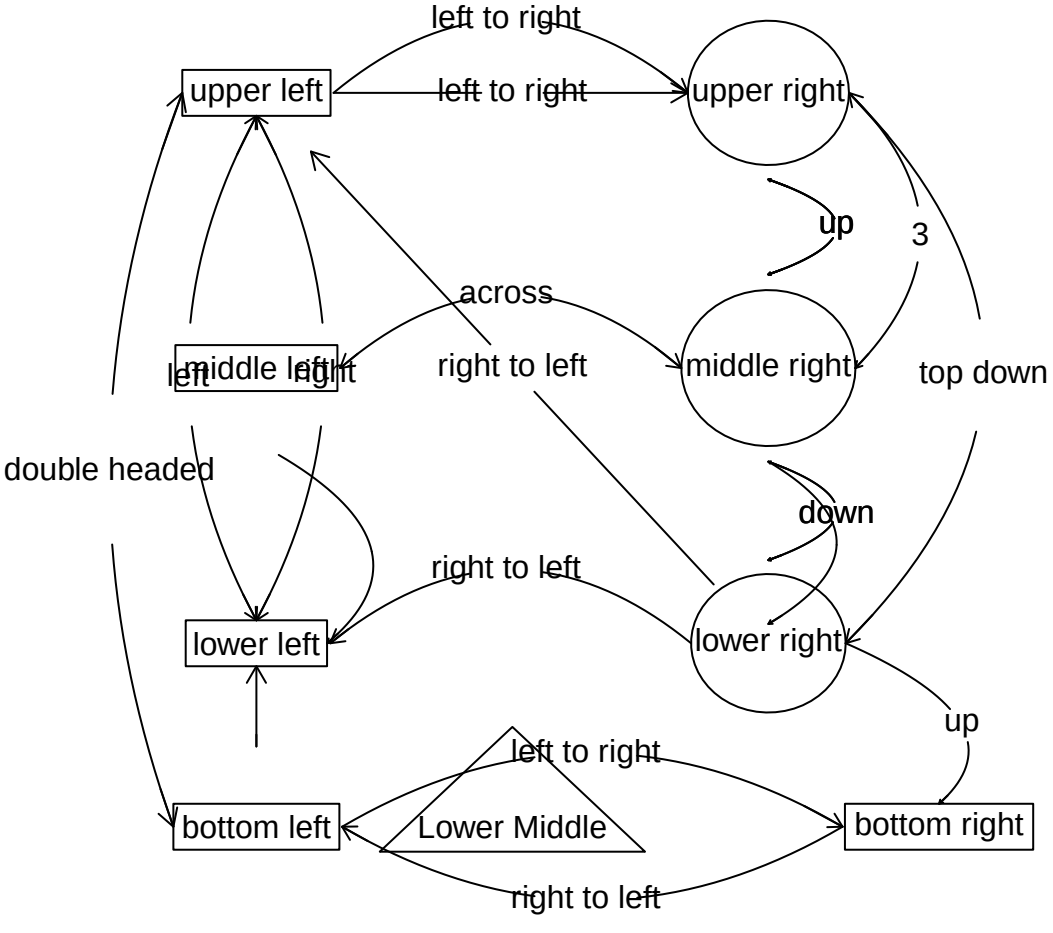

Density plot
Observed
1
2
3
4
5
6
A4
A5
C1
C2
C3
help("densityBy")

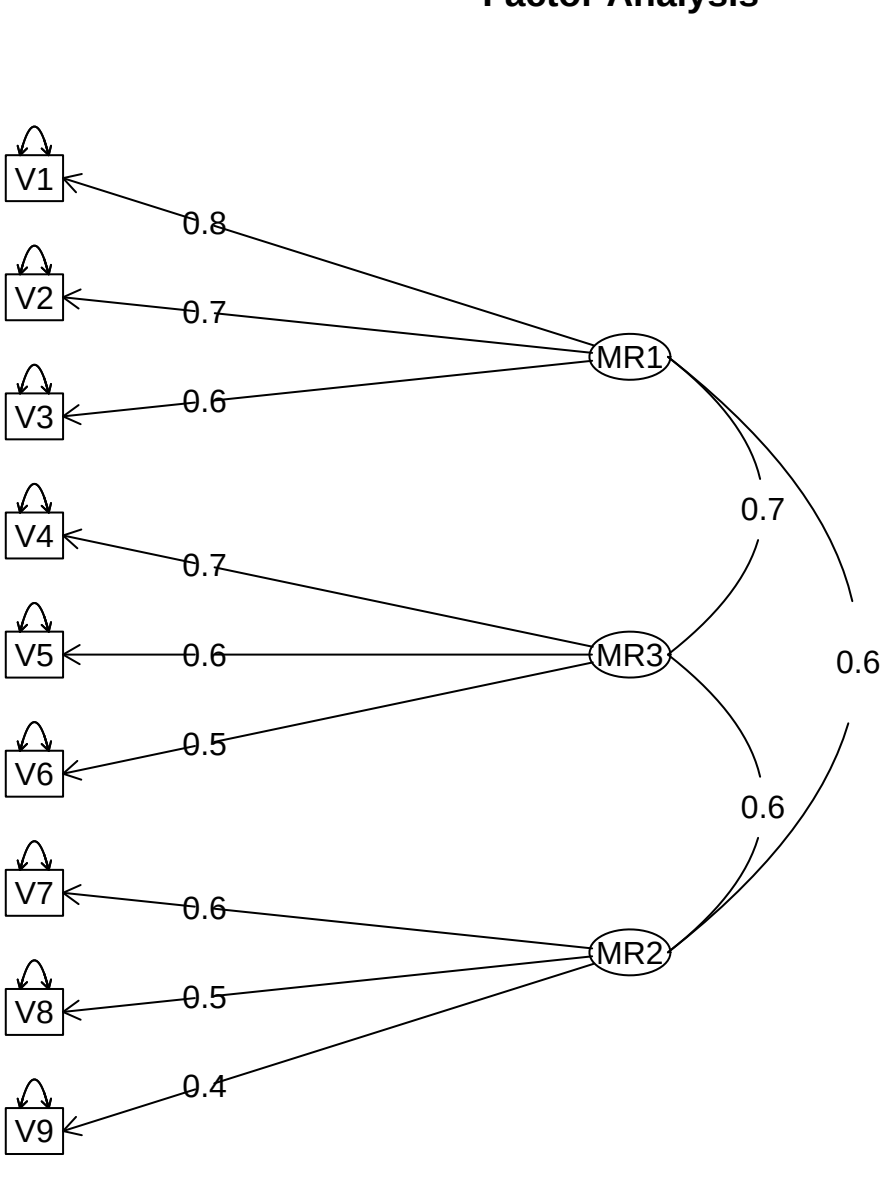

Density plot
SATV
SATQ
200
300
400
500
600
700
800
MV
FV
MQ
FQ
gender
help("densityBy")

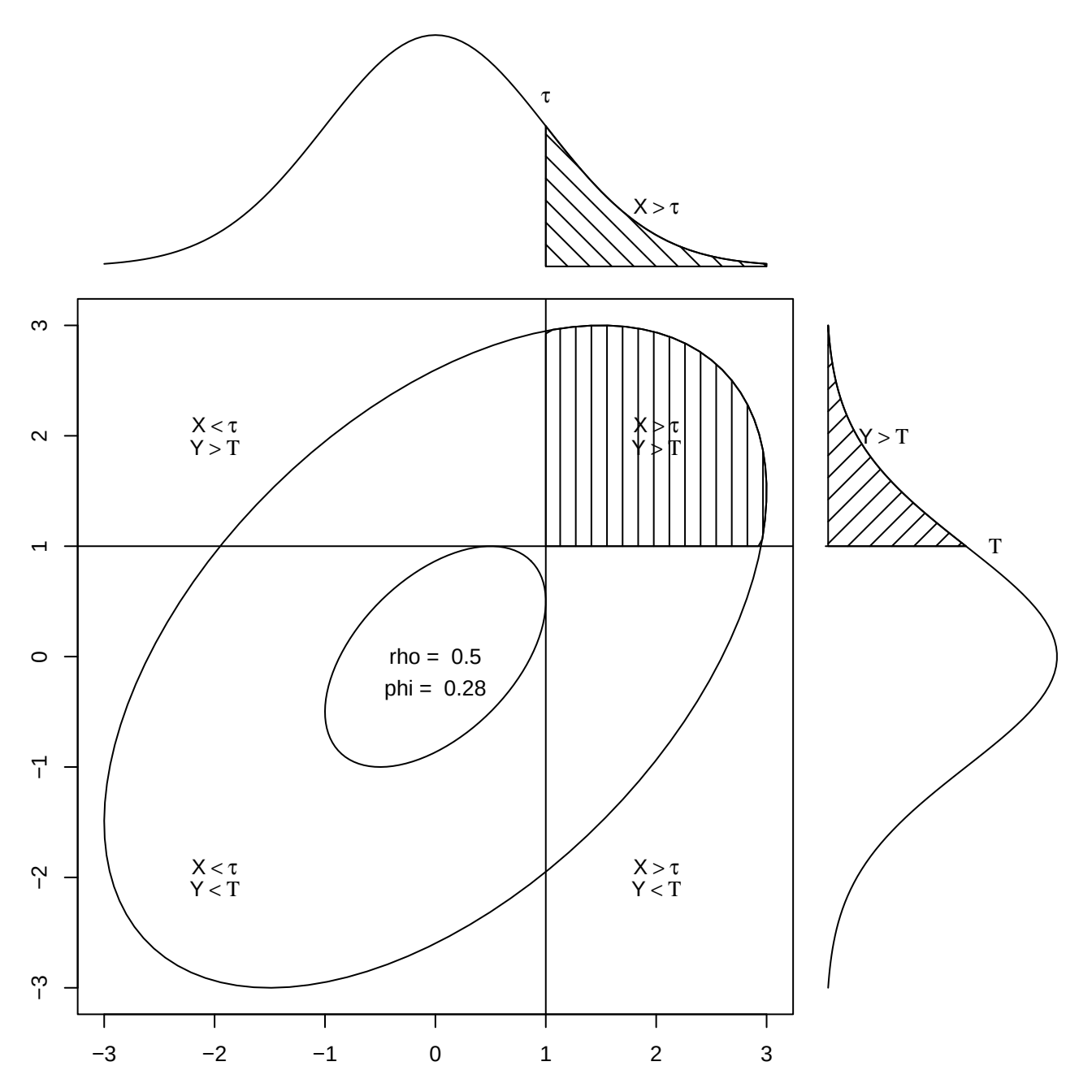

Density plot
Observed
1
2
3
4
5
6
A41
A42
A51
A52
C11
C12
C21
C22
help("densityBy")

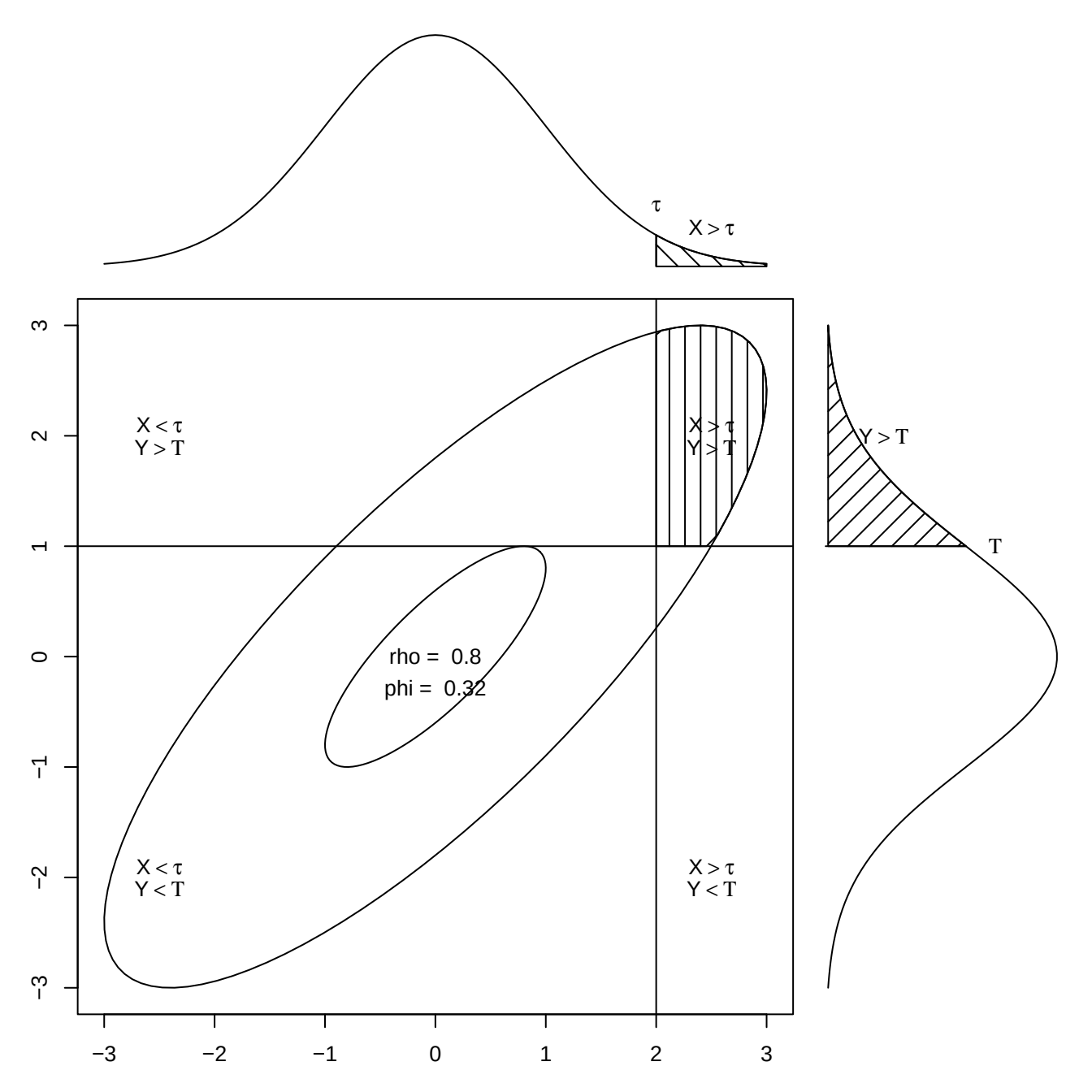

Density Plot
gender 1
gender 2
0.004
0.003
0.002
0.001
0.000
Density
200
400
600
800
SATV
help("densityBy")

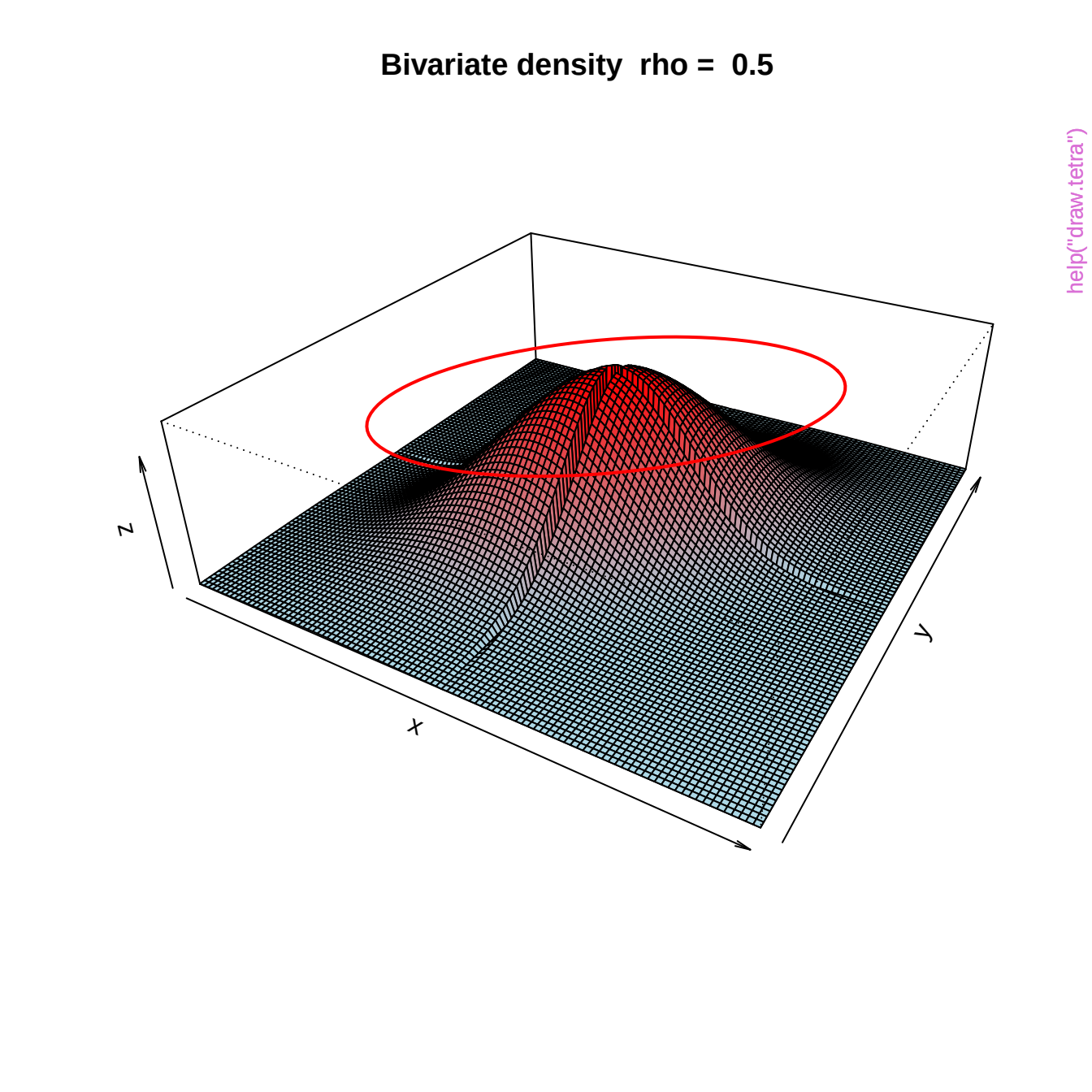
Demonstration of diagram functions



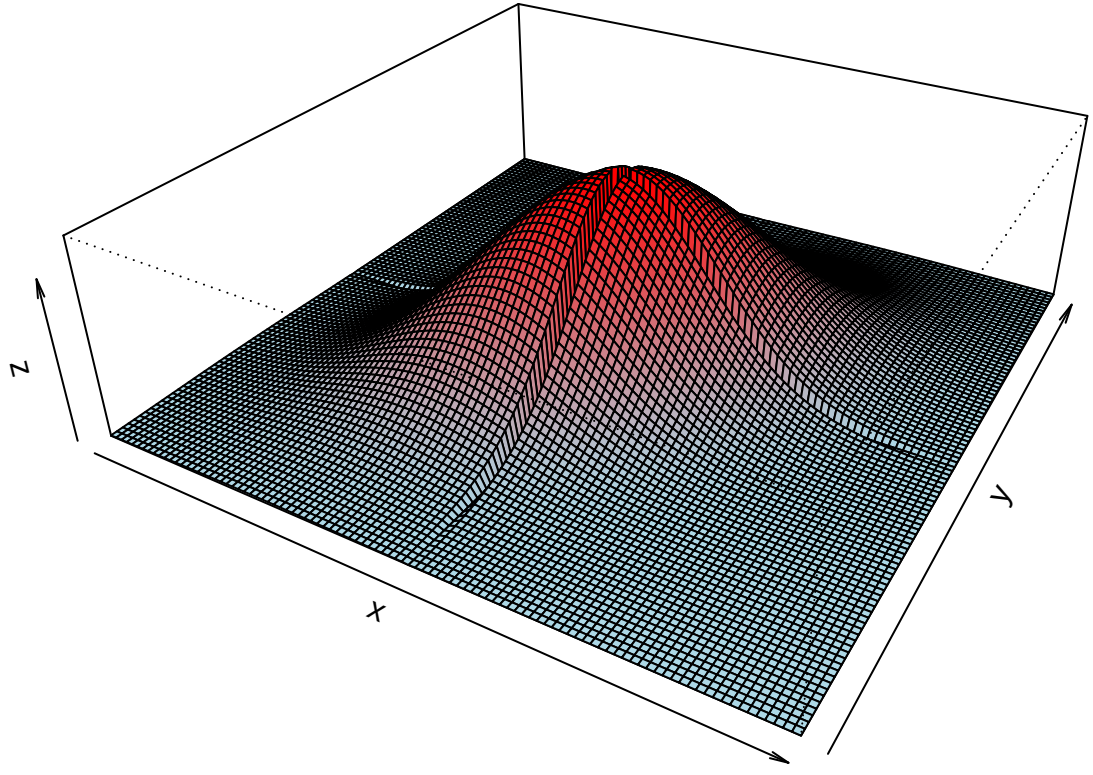

Factor Analysis
V1
V2
V3
V4
V5
V6
V7
V8
V9
MR1
MR3
MR2
0.8
0.7
0.6
0.7
0.6
0.5
0.6
0.5
0.4
0.7
0.6
0.6
help("diagram")


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

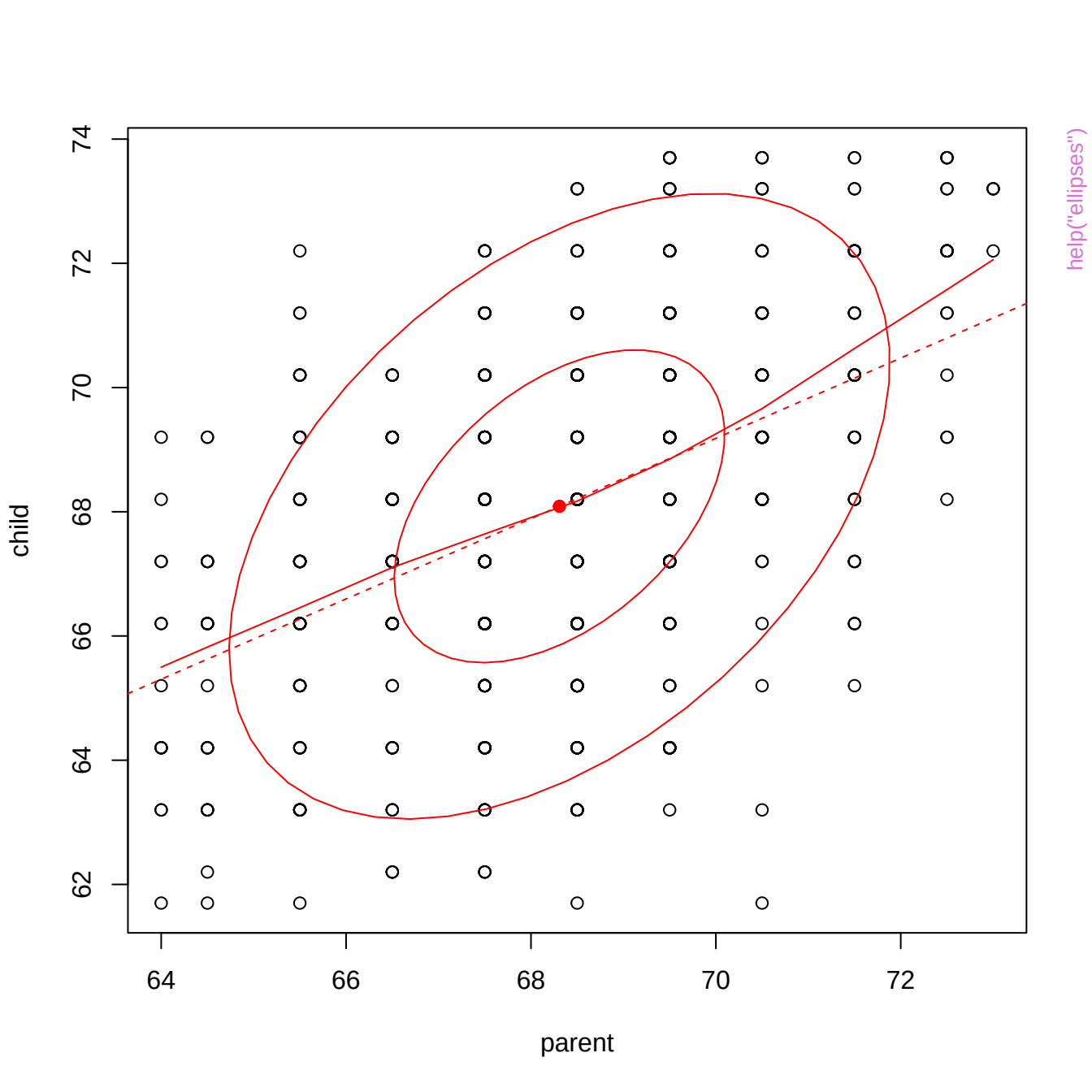

τ
X > τ
X < τ
Y > T
X > τ
Y > T
Y > T
T
rho = 0.8
phi = 0.32
X < τ
Y < T
X > τ
Y < T
3
2
1
0
−1
−2
−3
−3
−2
−1
0
1
2
3

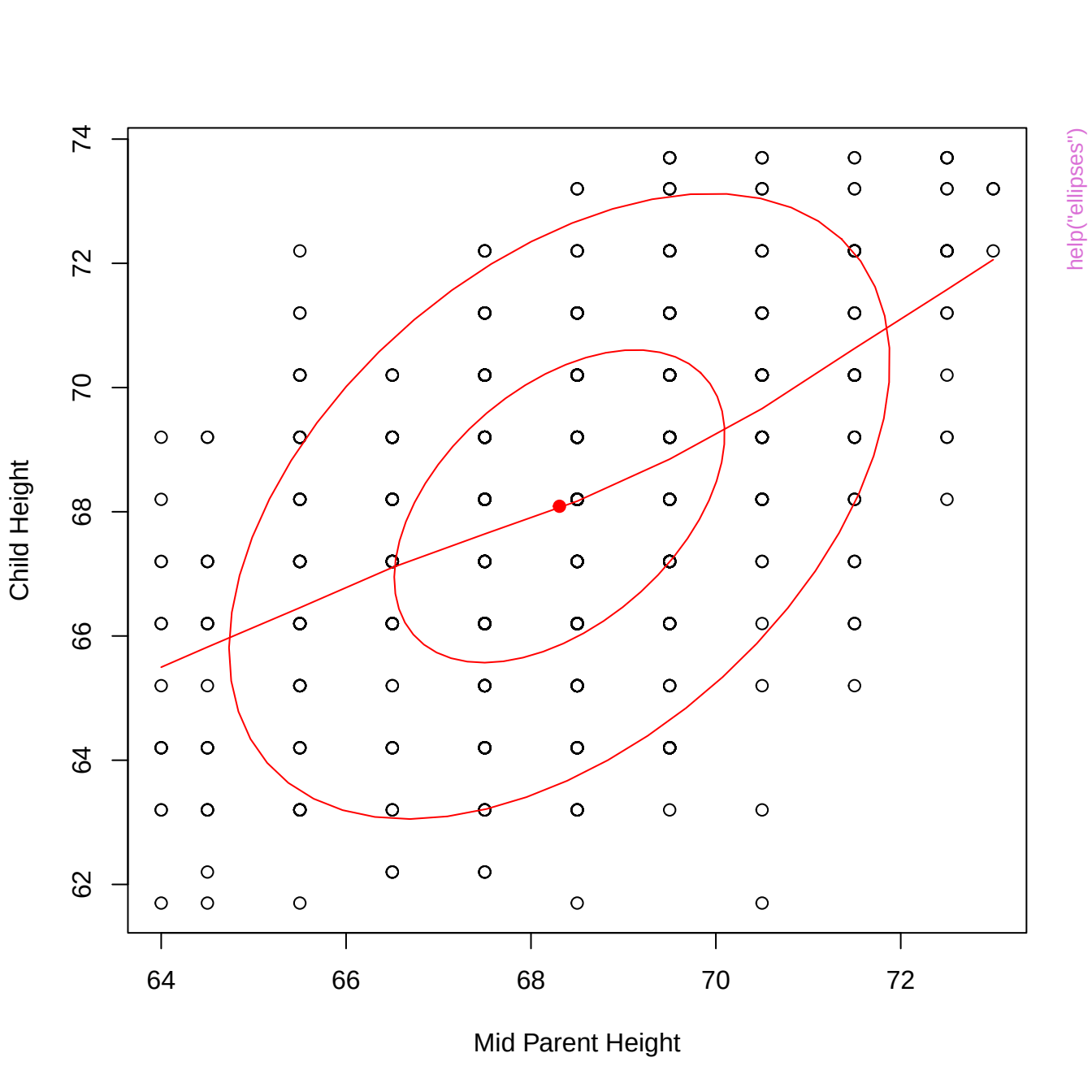

Bivariate density rho = 0.5
help("draw.tetra")
z
x
y

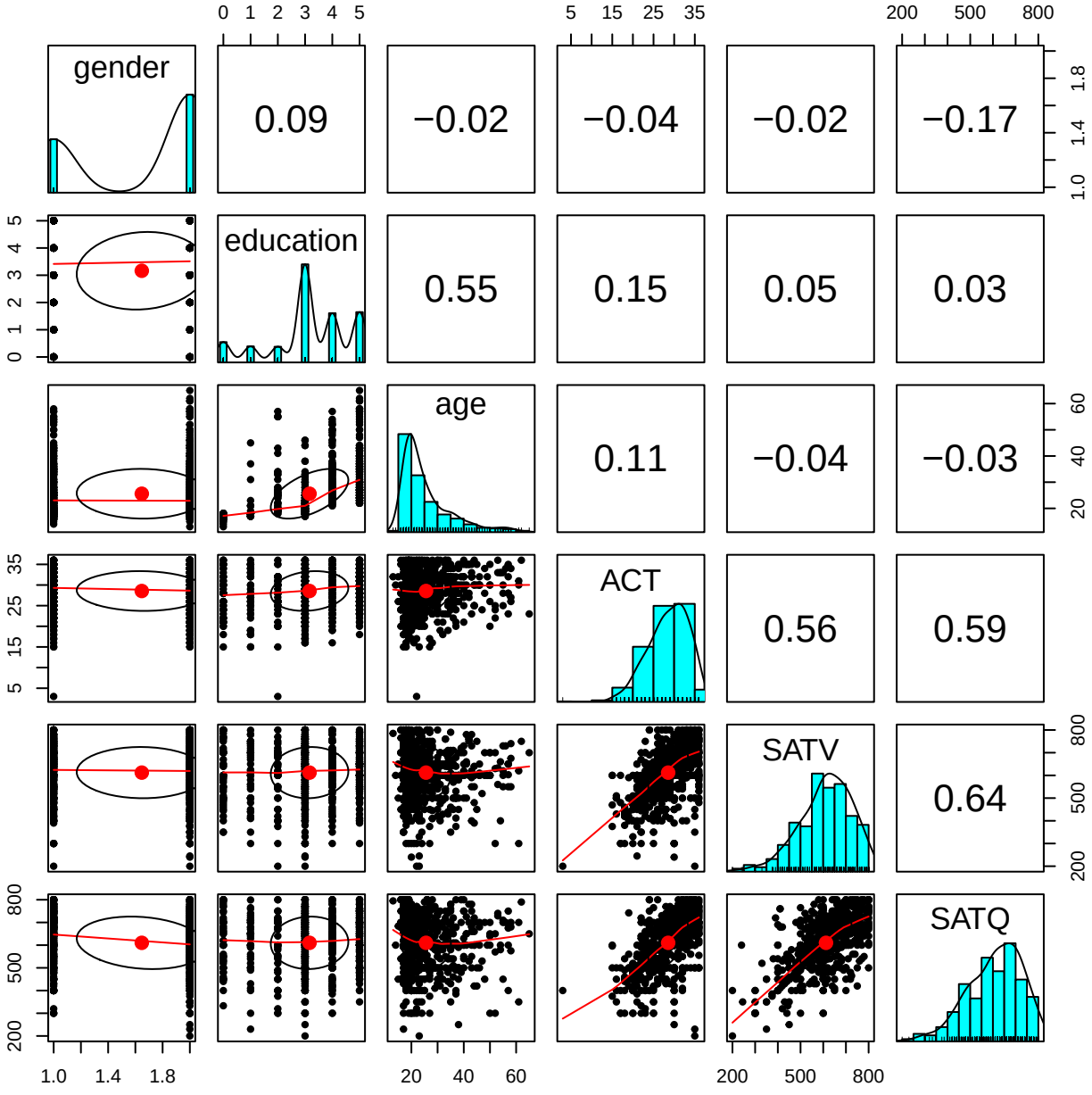
Bivariate density rho = 0.5

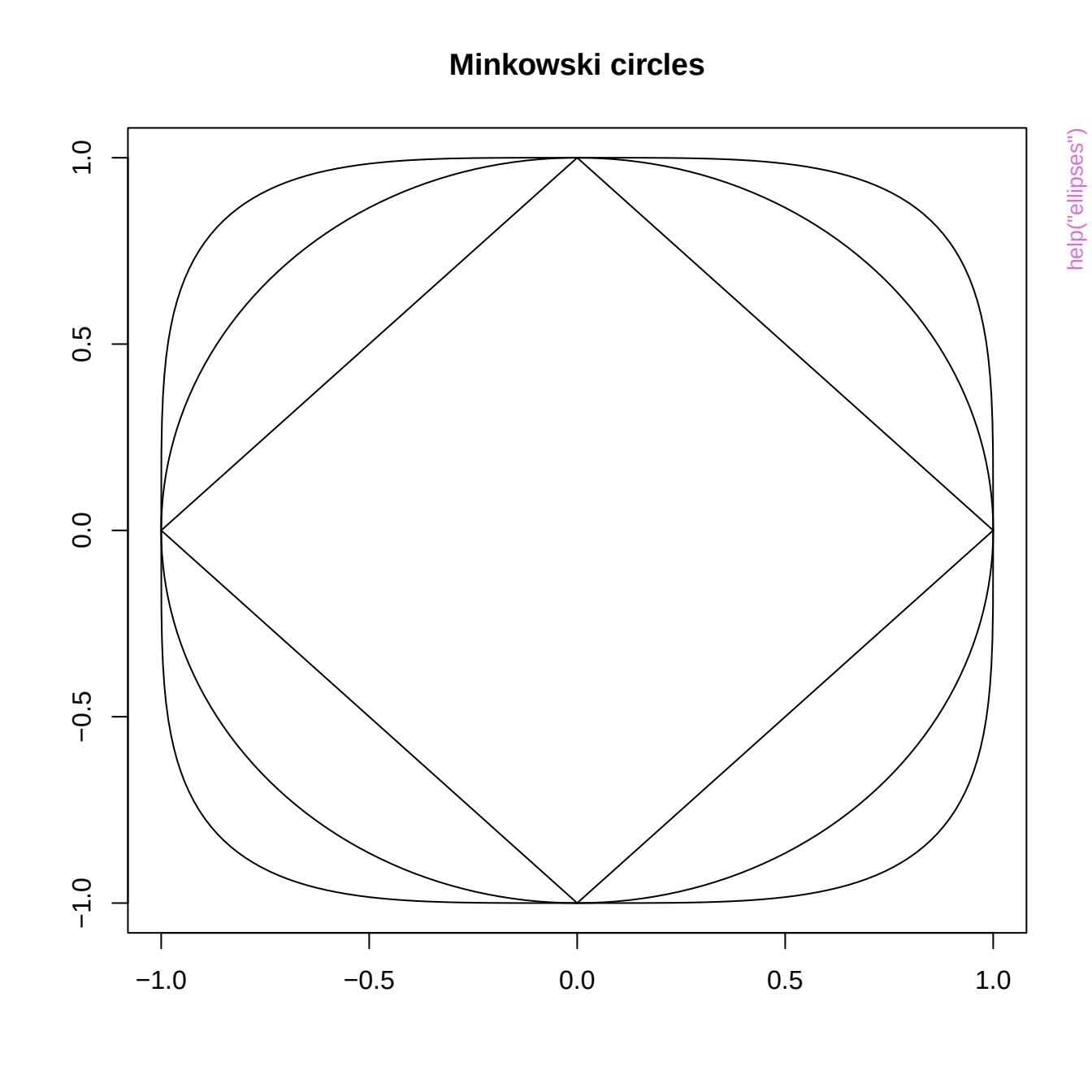


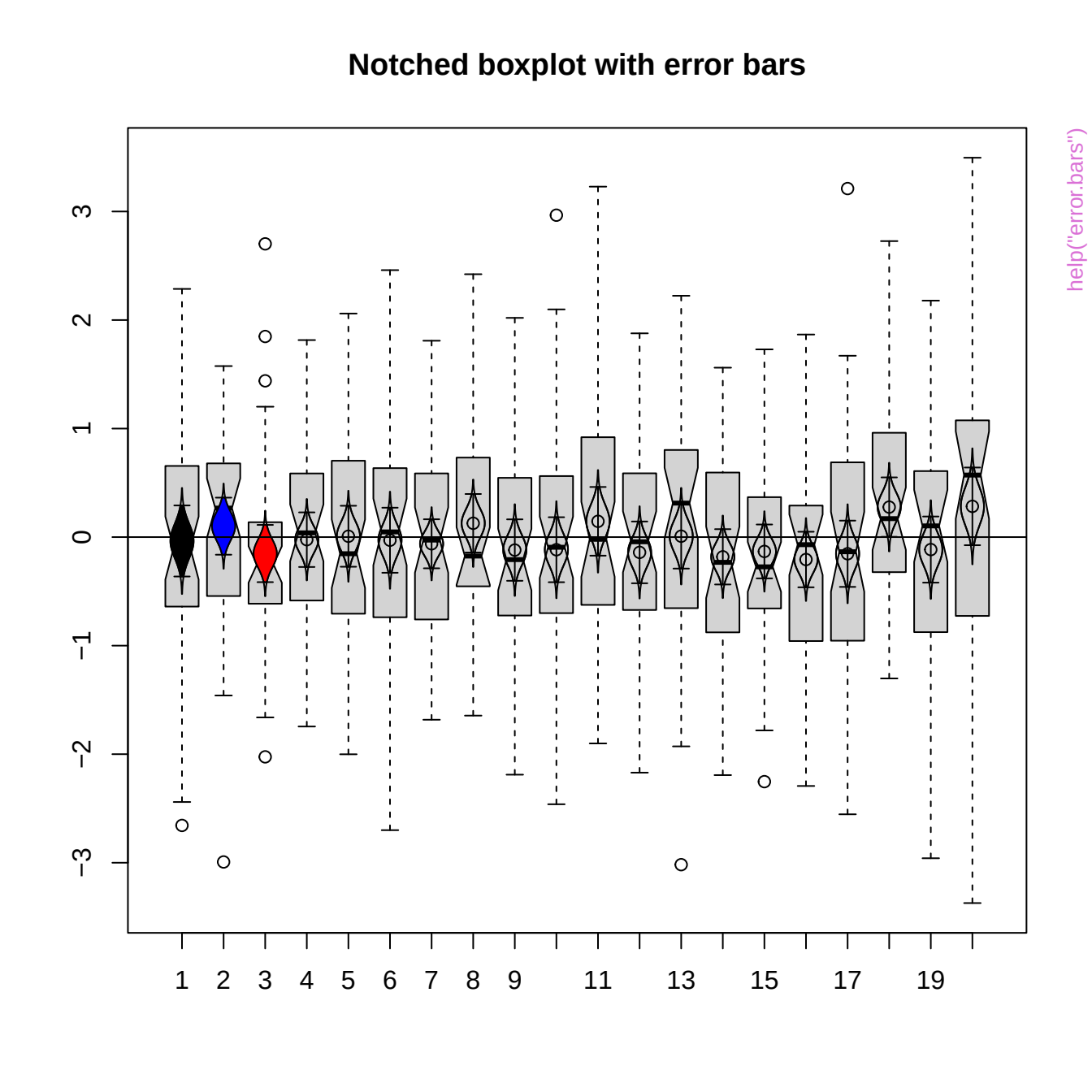
help("draw.tetra")

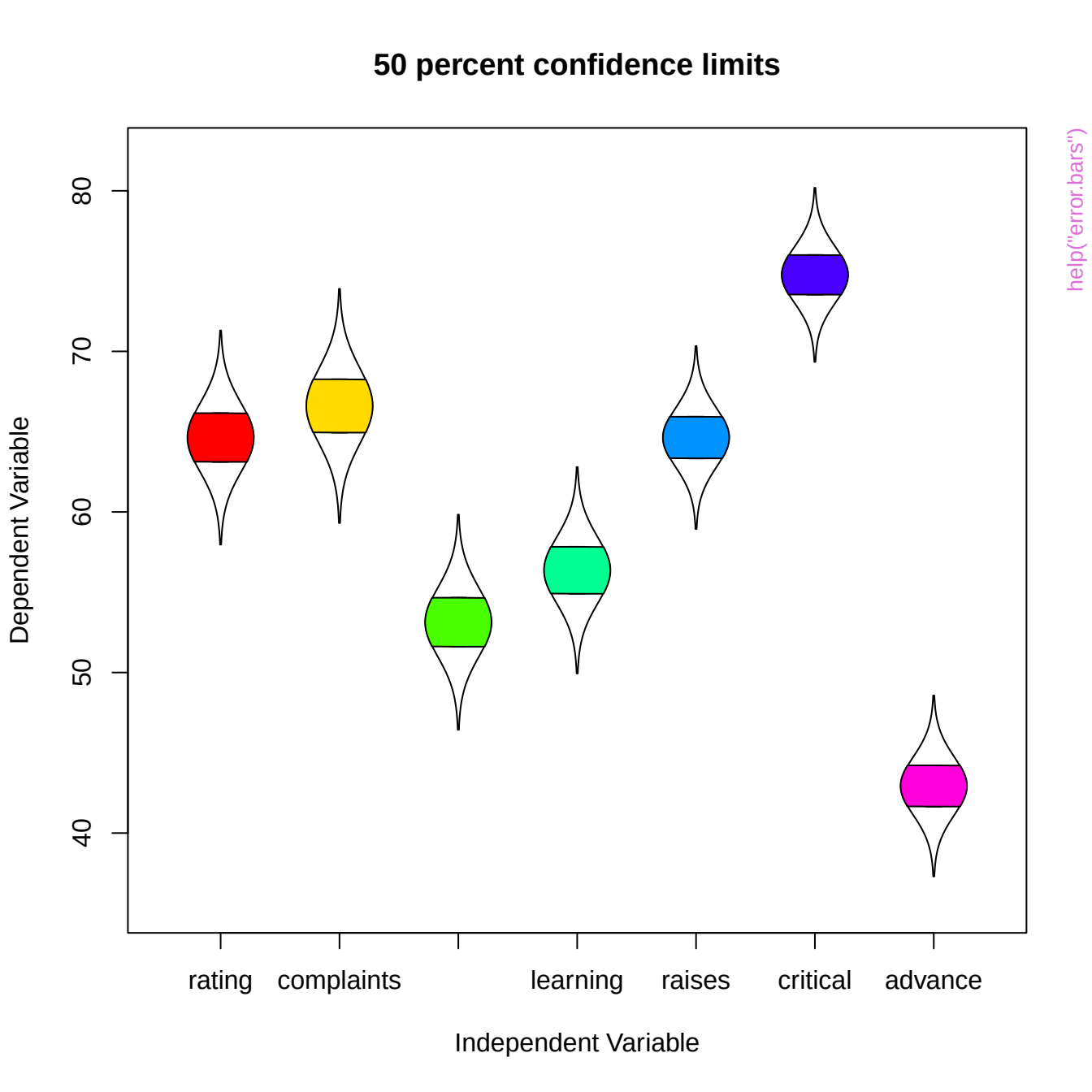

child
parent
62
64
66
68
70
72
74
64
66
68
70
72
help("ellipses")

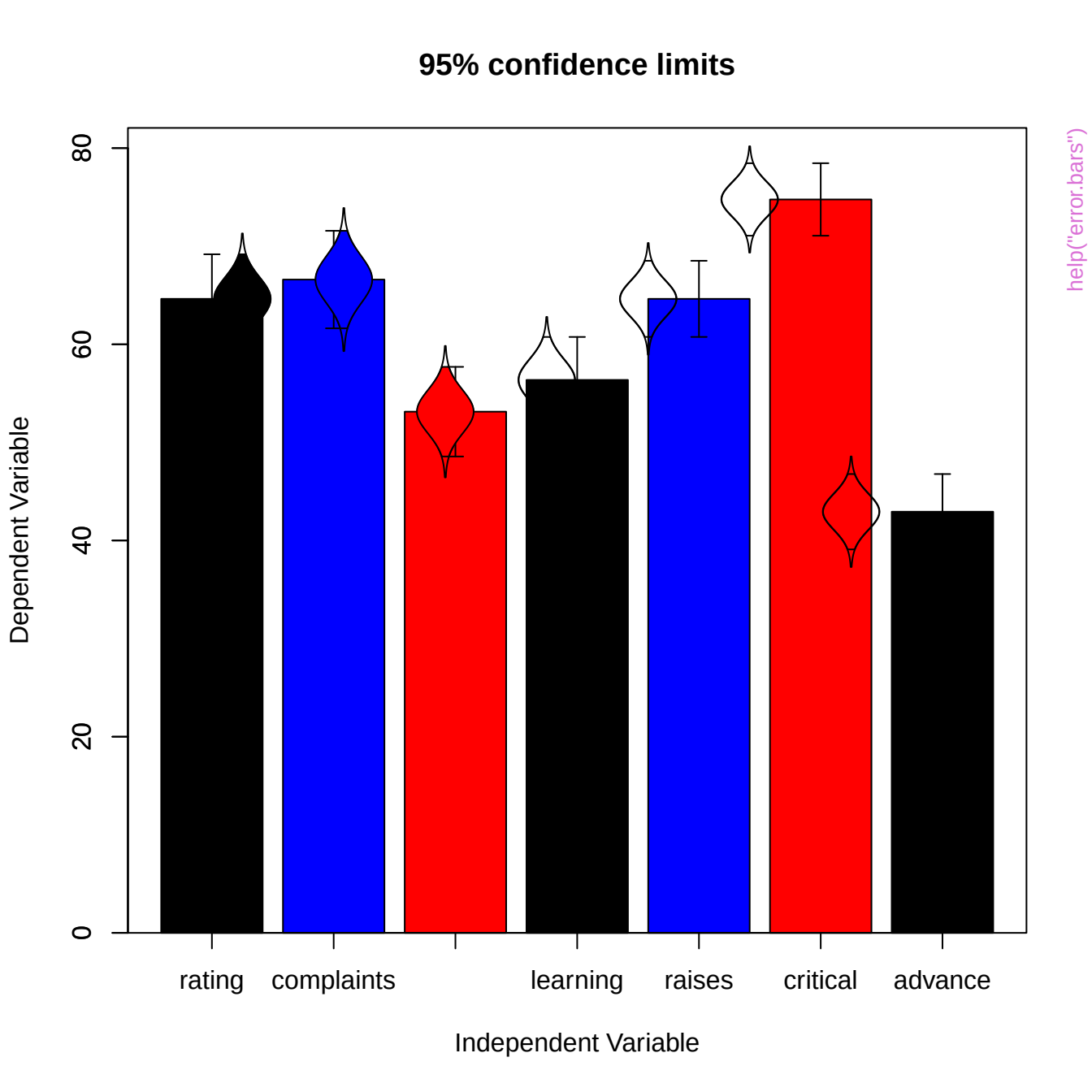

help("ellipses")
Child Height
Mid Parent Height
62
64
66
68
70
72
74
64
66
68
70
72

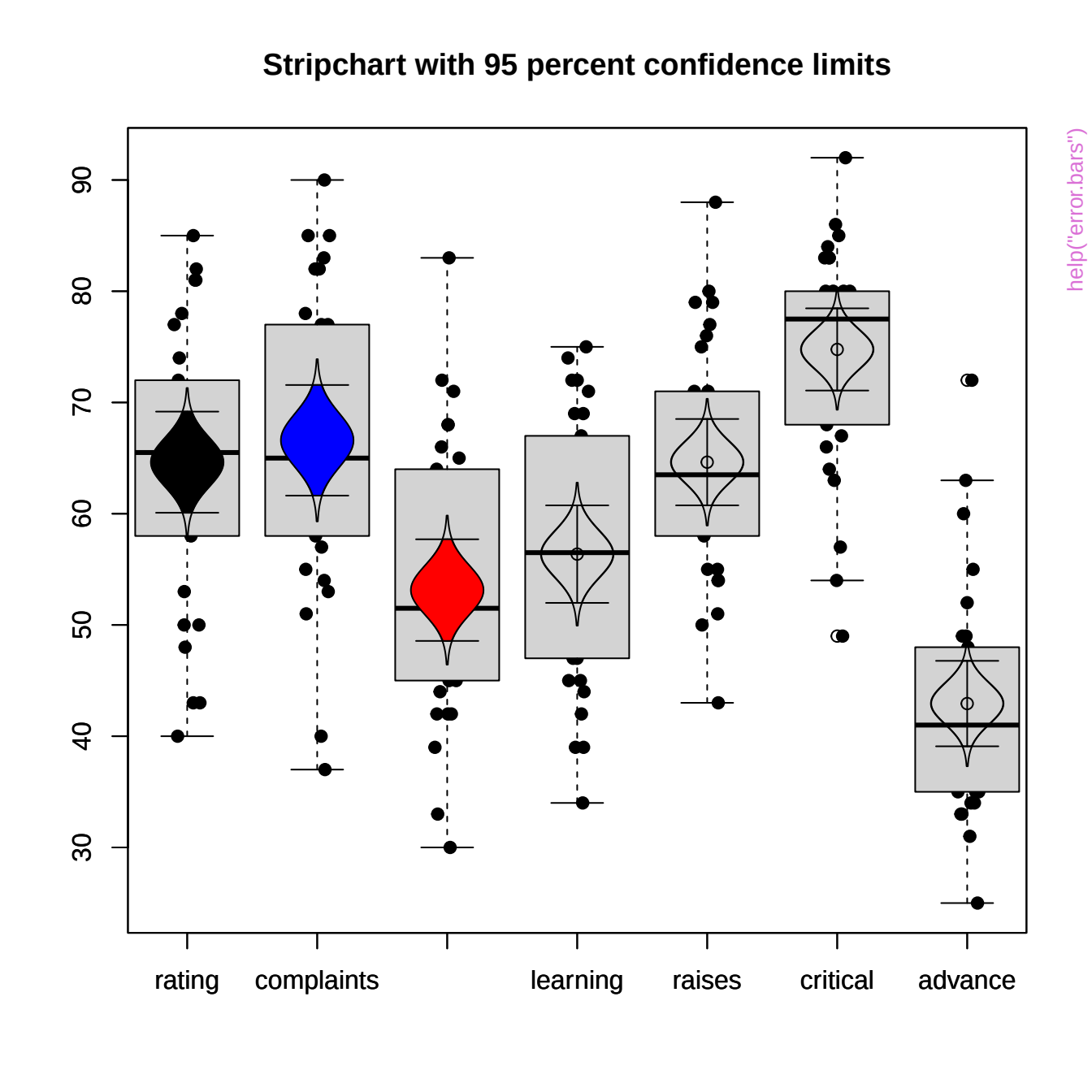

gender
education
age
ACT
SATV
SATQ
0.09
−0.02
−0.04
−0.02
−0.17
0.55
0.15
0.05
0.03
0.11
−0.04
−0.03
0.56
0.59
0.64
help("ellipses")

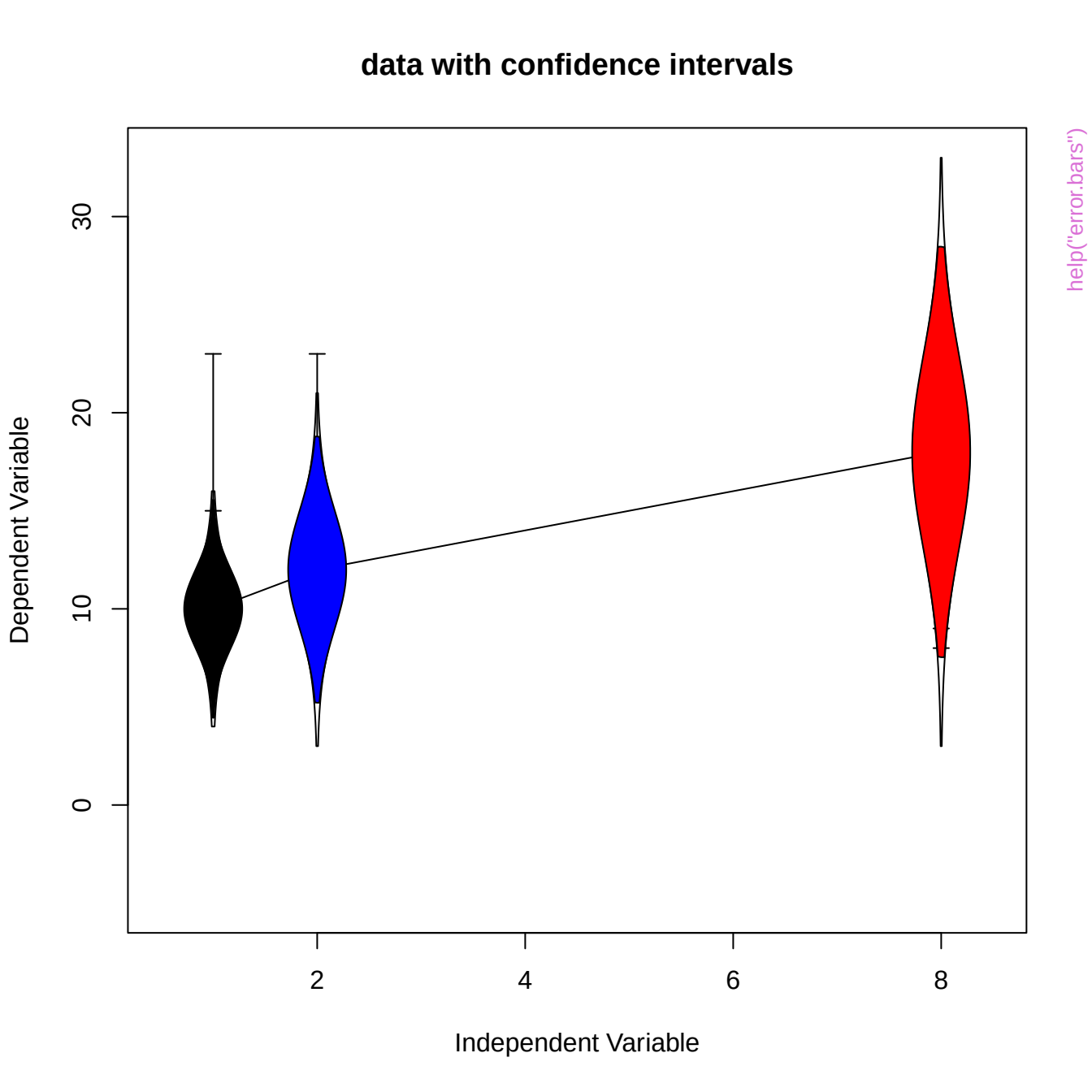

Minkowski circles
1.0
0.5
0.0
−0.5
−1.0
−1.0
−0.5
0.0
0.5
1.0
help("ellipses")

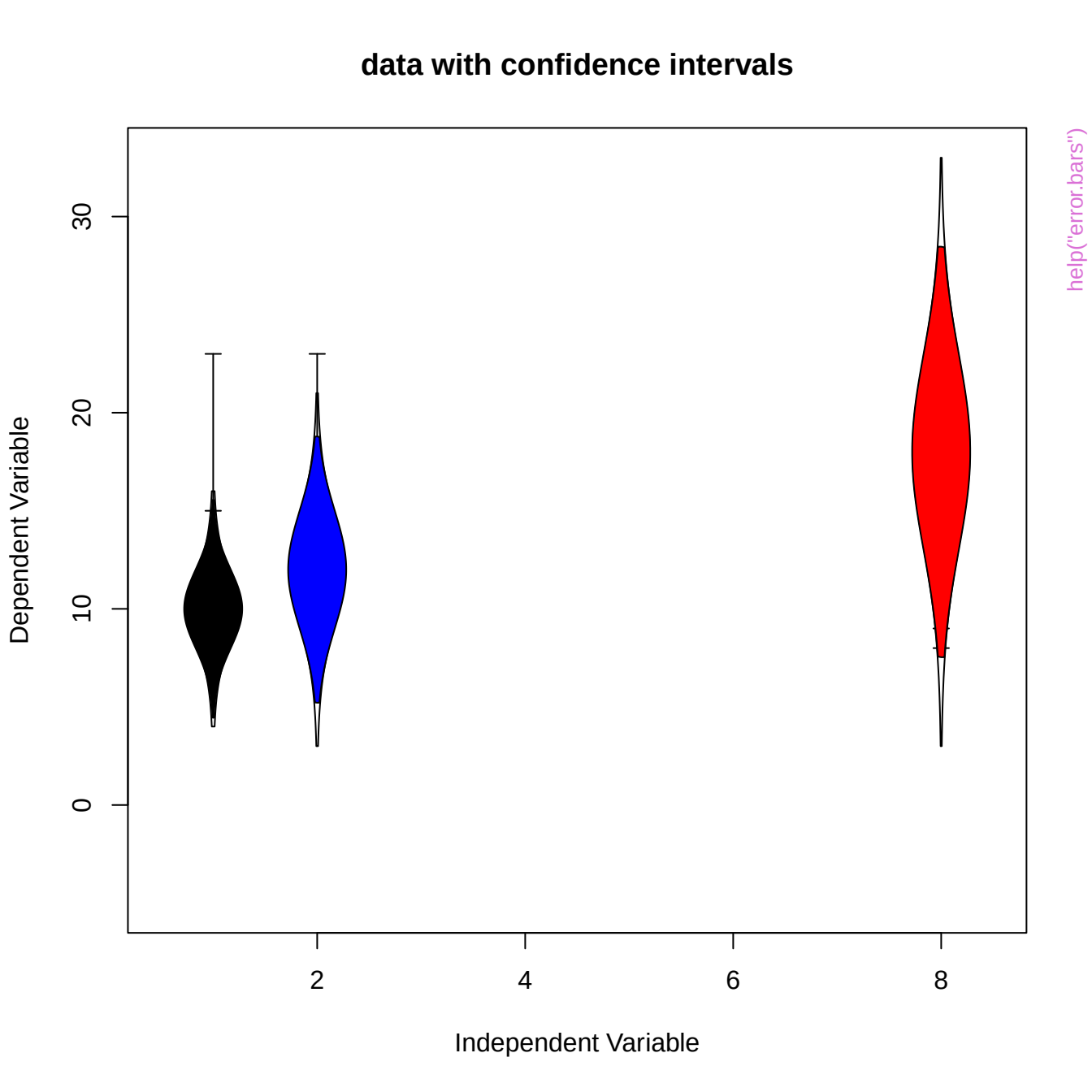

Notched boxplot with error bars
help("error.bars")
3
2
1
0
−1
−2
−3
1
2
3
4
5
6
7
8
9
11
13
15
17
19

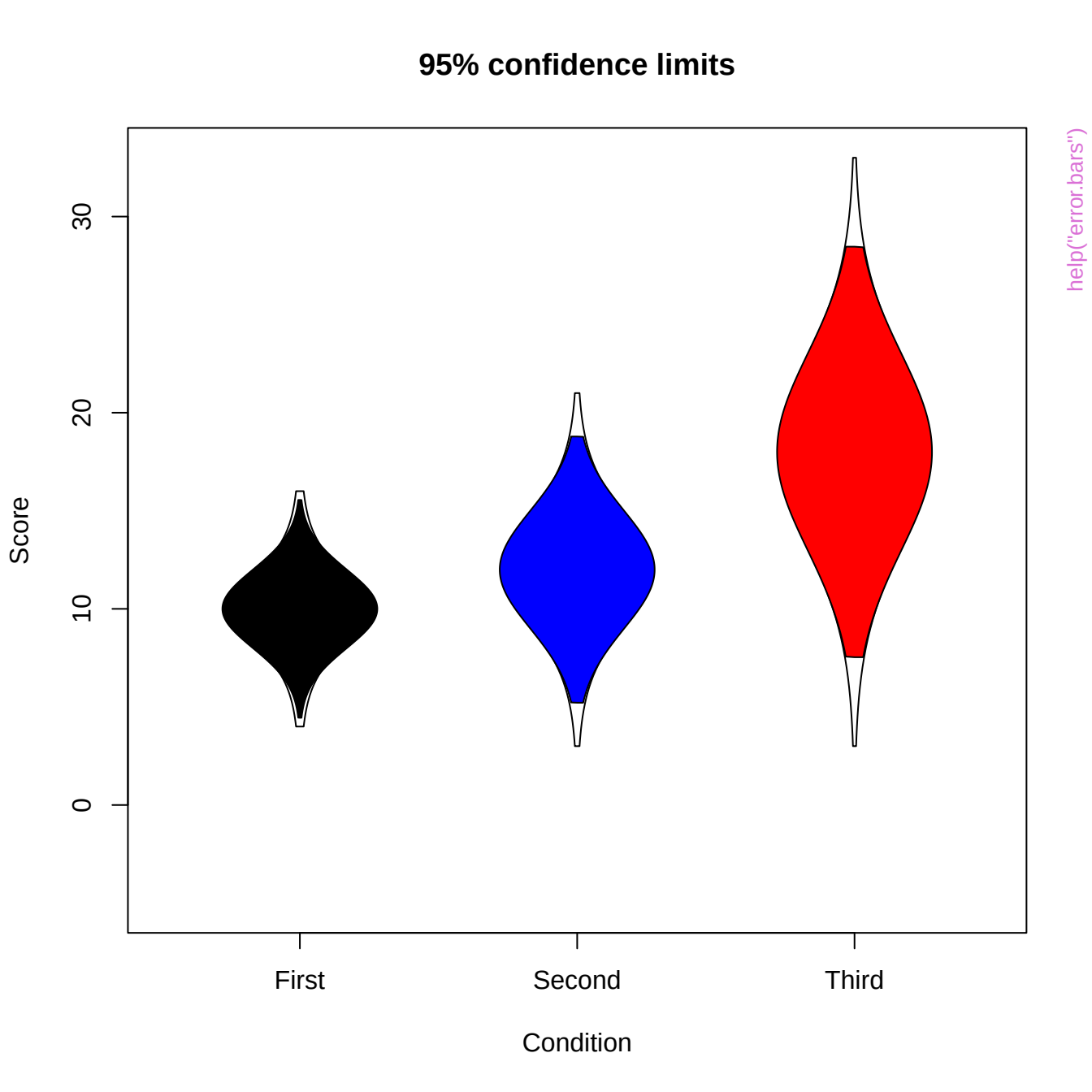

50 percent confidence limits
Dependent Variable
40
50
60
70
80
rating
complaints
learning
raises
critical
advance
Independent Variable
help("error.bars")

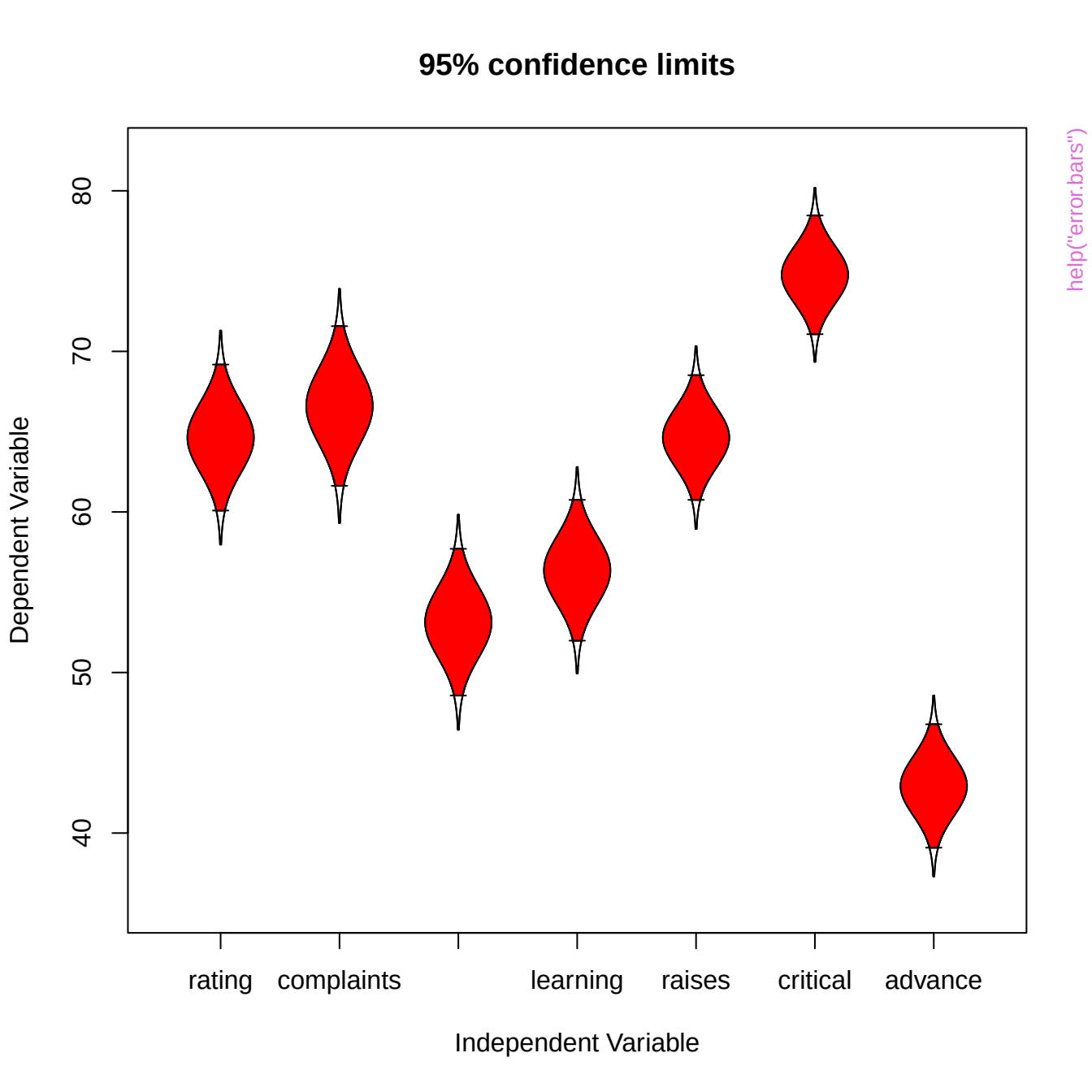

95% confidence limits
help("error.bars")
Dependent Variable
0
20
40
60
80
rating
complaints
learning
raises
critical
advance
Independent Variable

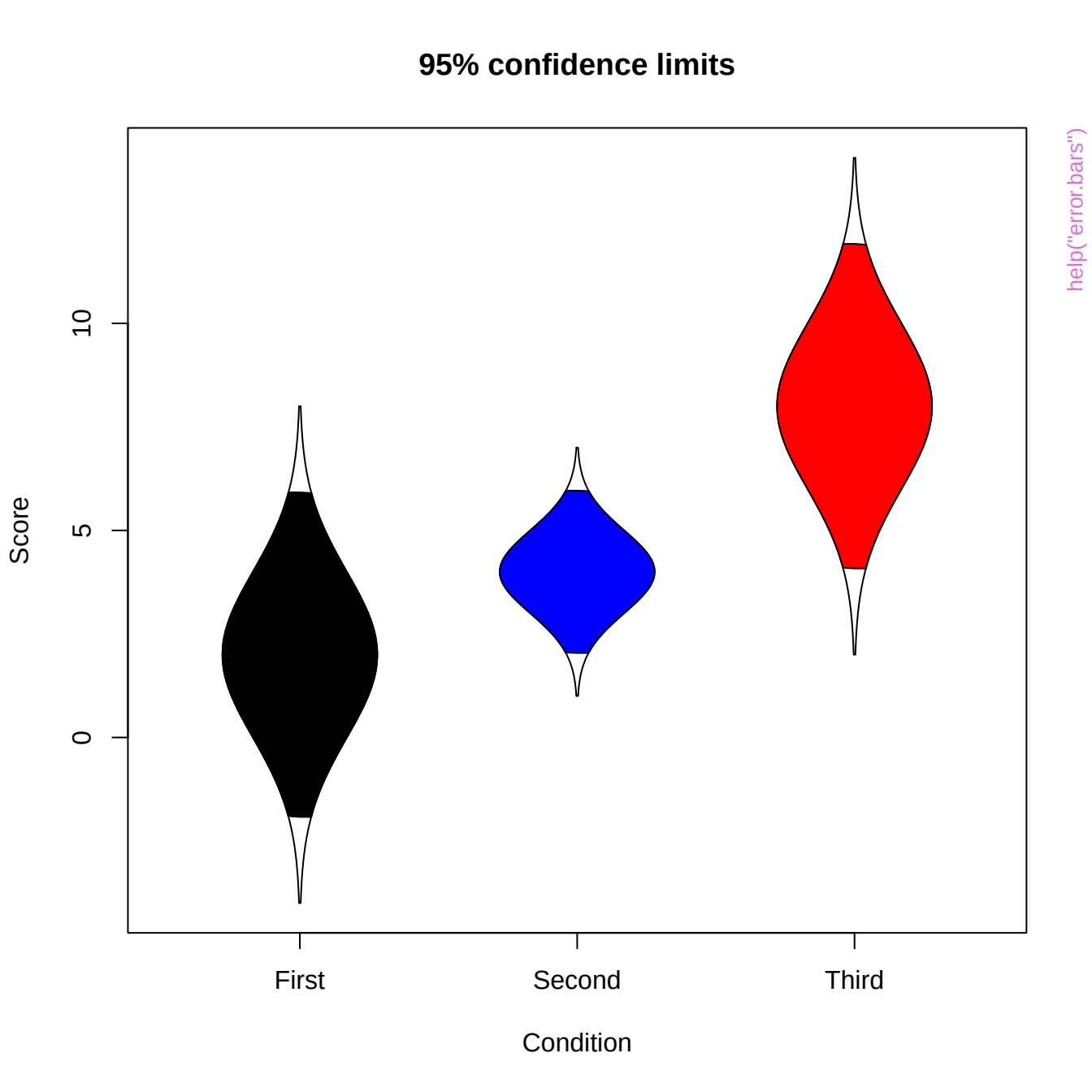

Stripchart with 95 percent confidence limits
help("error.bars")
90
80
70
60
50
40
30
rating
complaints
learning
raises
critical
advance

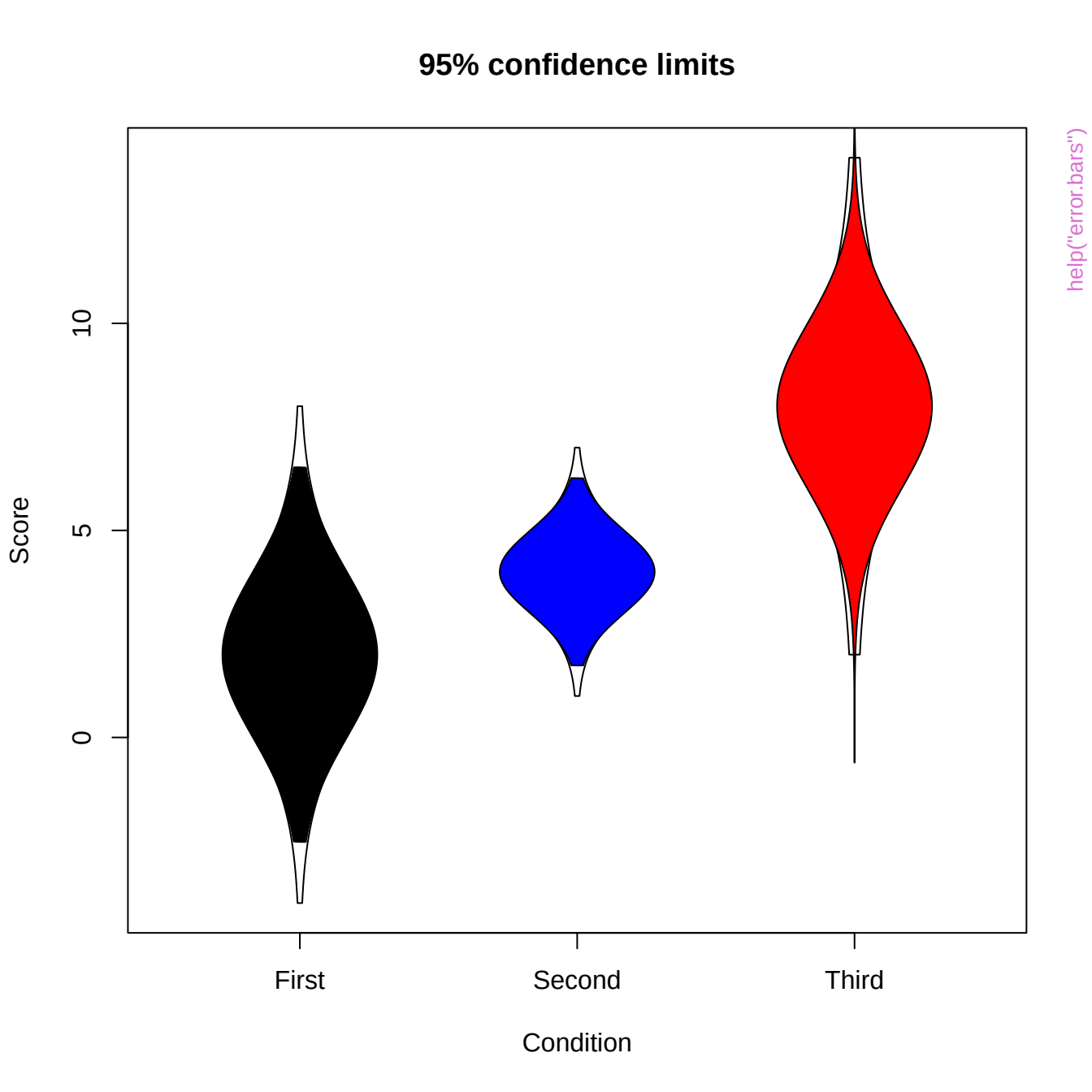

data with confidence intervals
Dependent Variable
0
10
20
30
2
4
6
8
Independent Variable
help("error.bars")

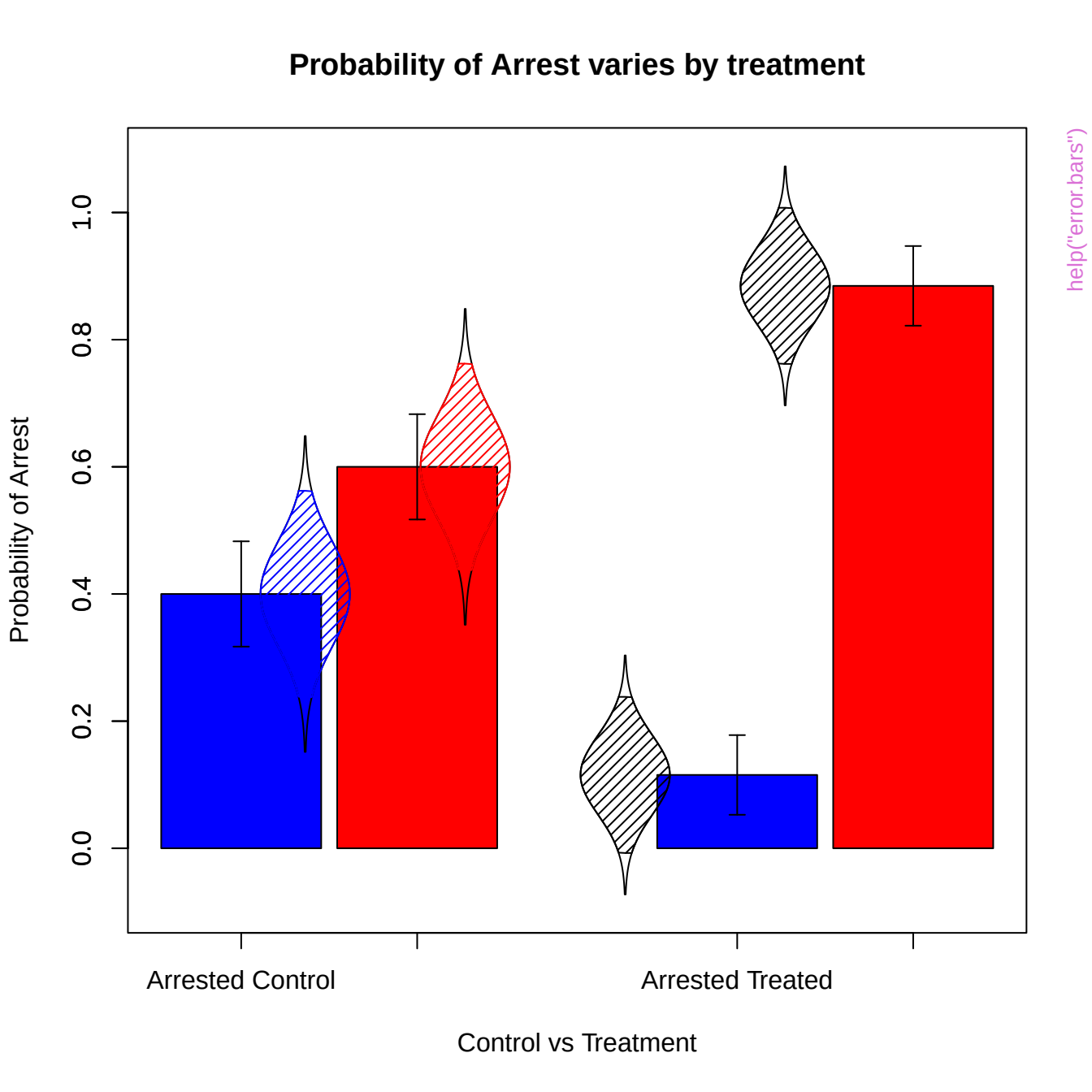

data with confidence intervals
help("error.bars")
Dependent Variable
0
10
20
30
2
4
6
8
Independent Variable

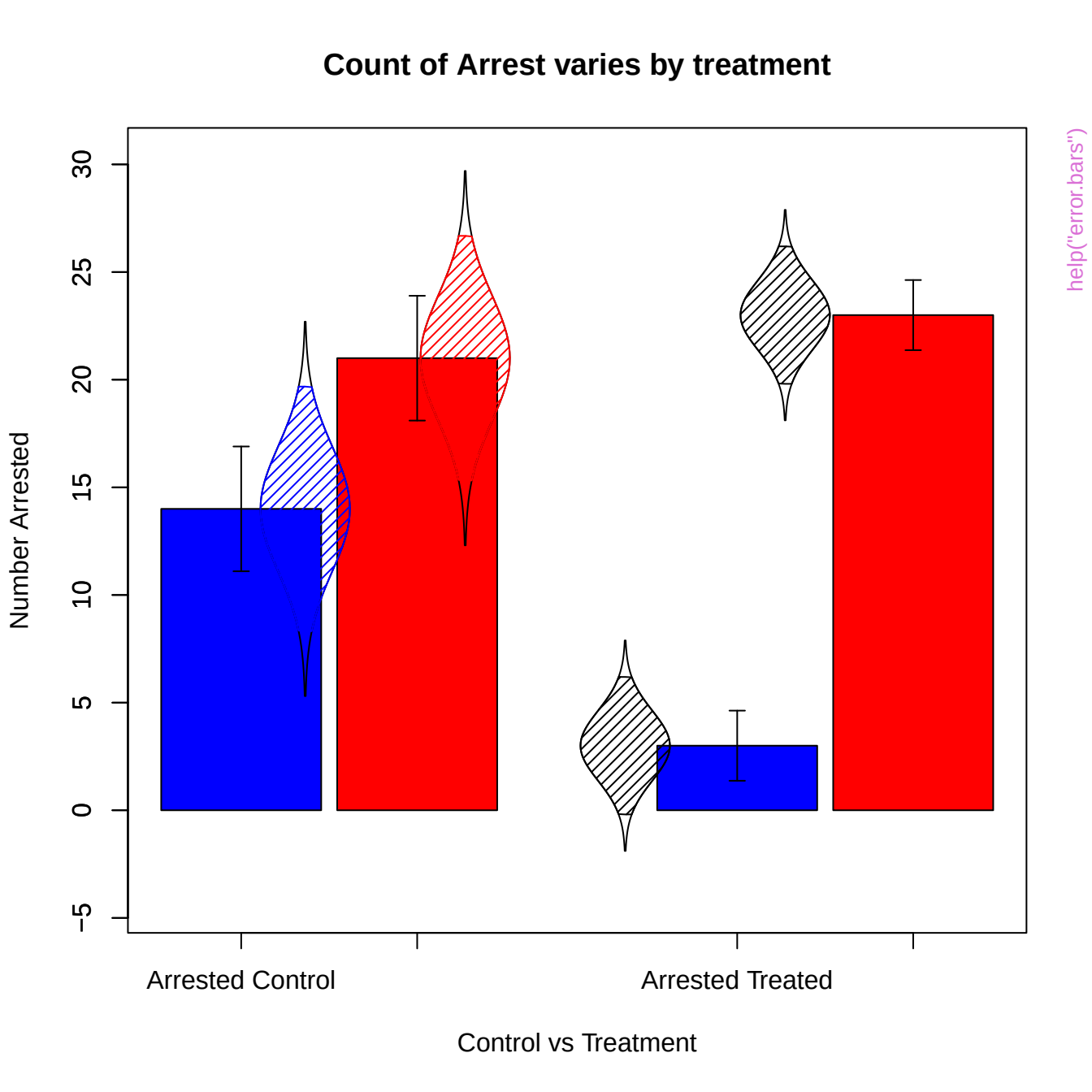

95% confidence limits
help("error.bars")
Score
0
10
20
30
First
Second
Third
Condition

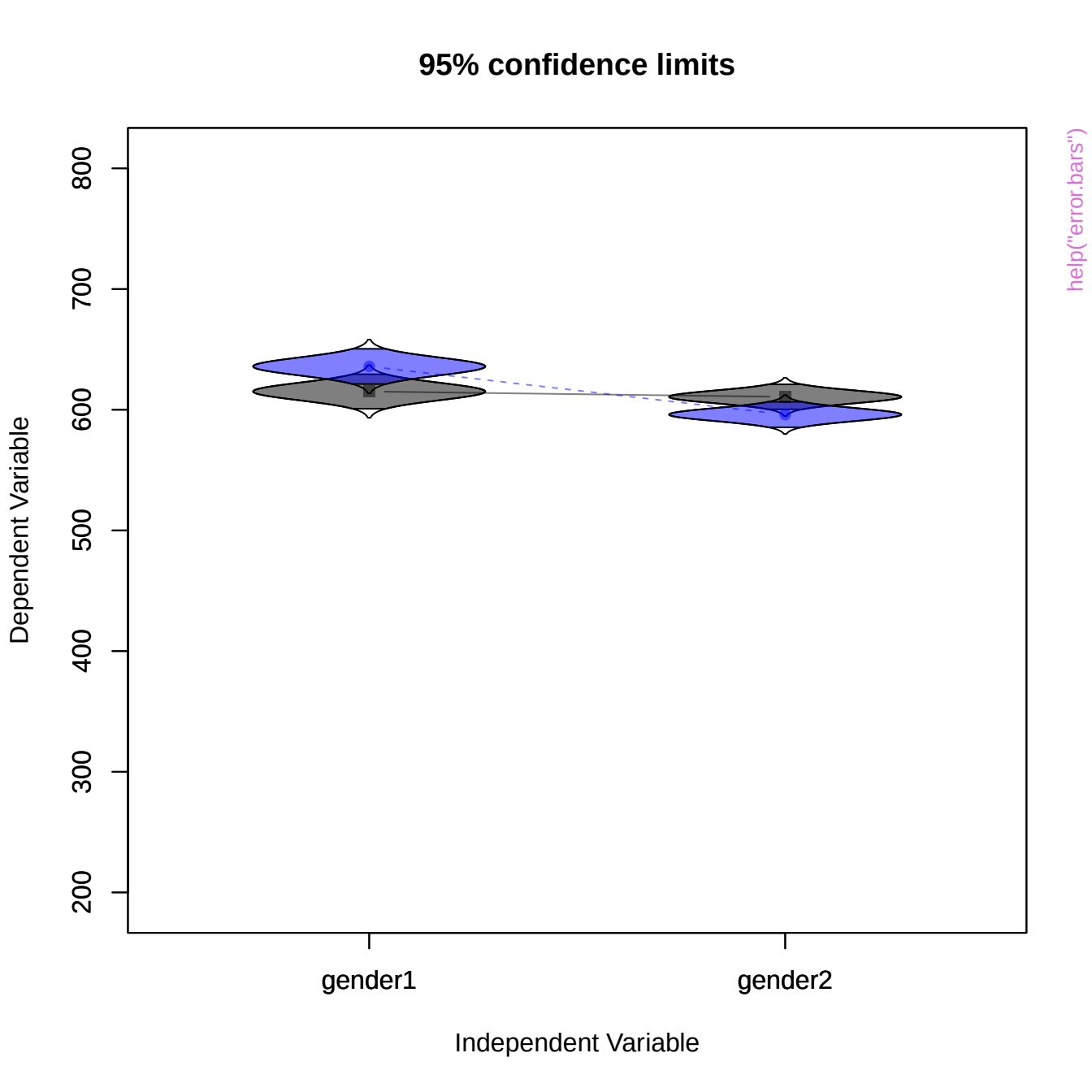

95% confidence limits
Dependent Variable
40
50
60
70
80
rating
complaints
learning
raises
critical
advance
Independent Variable
help("error.bars")

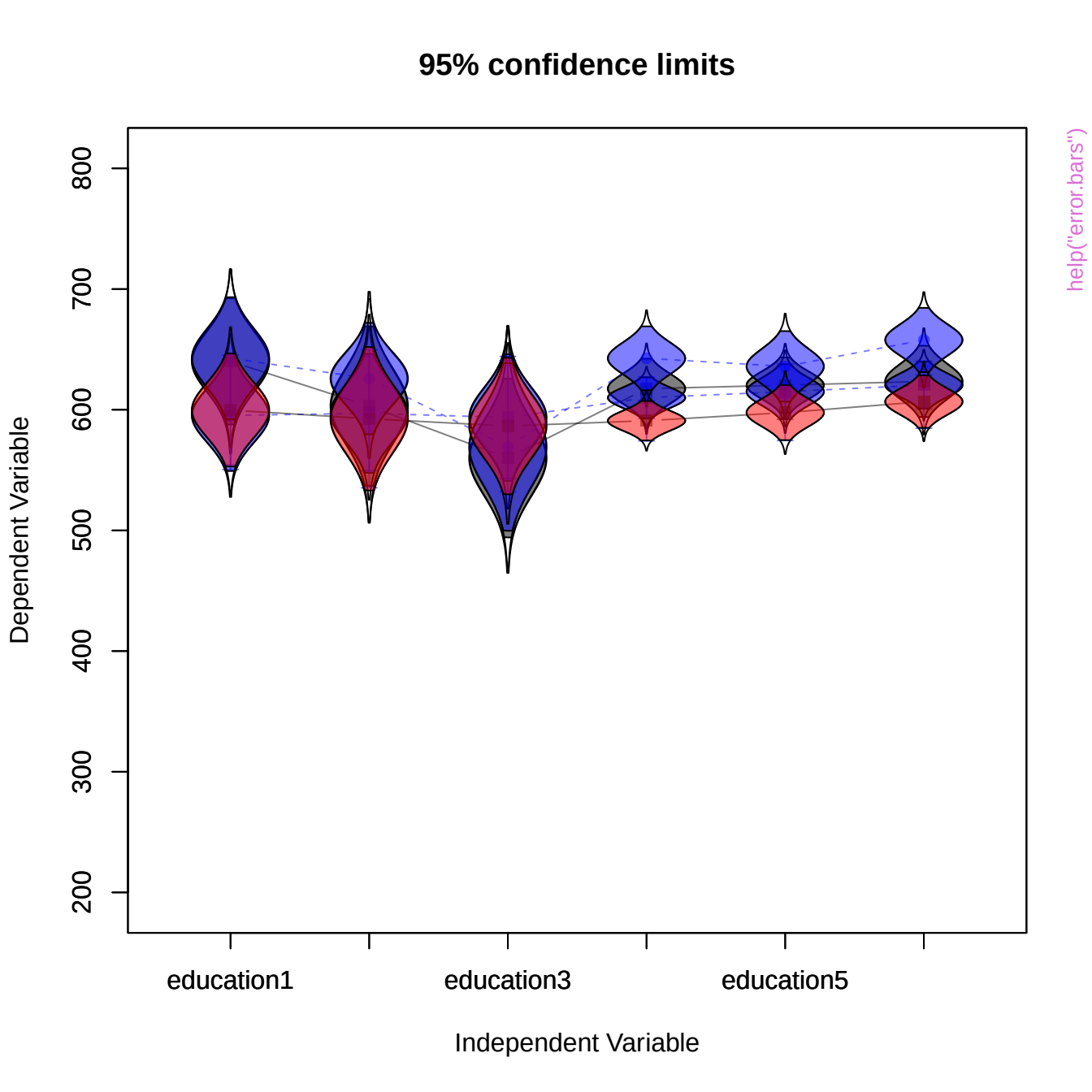

95% confidence limits
help("error.bars")
Score
0
5
10
First
Second
Third
Condition

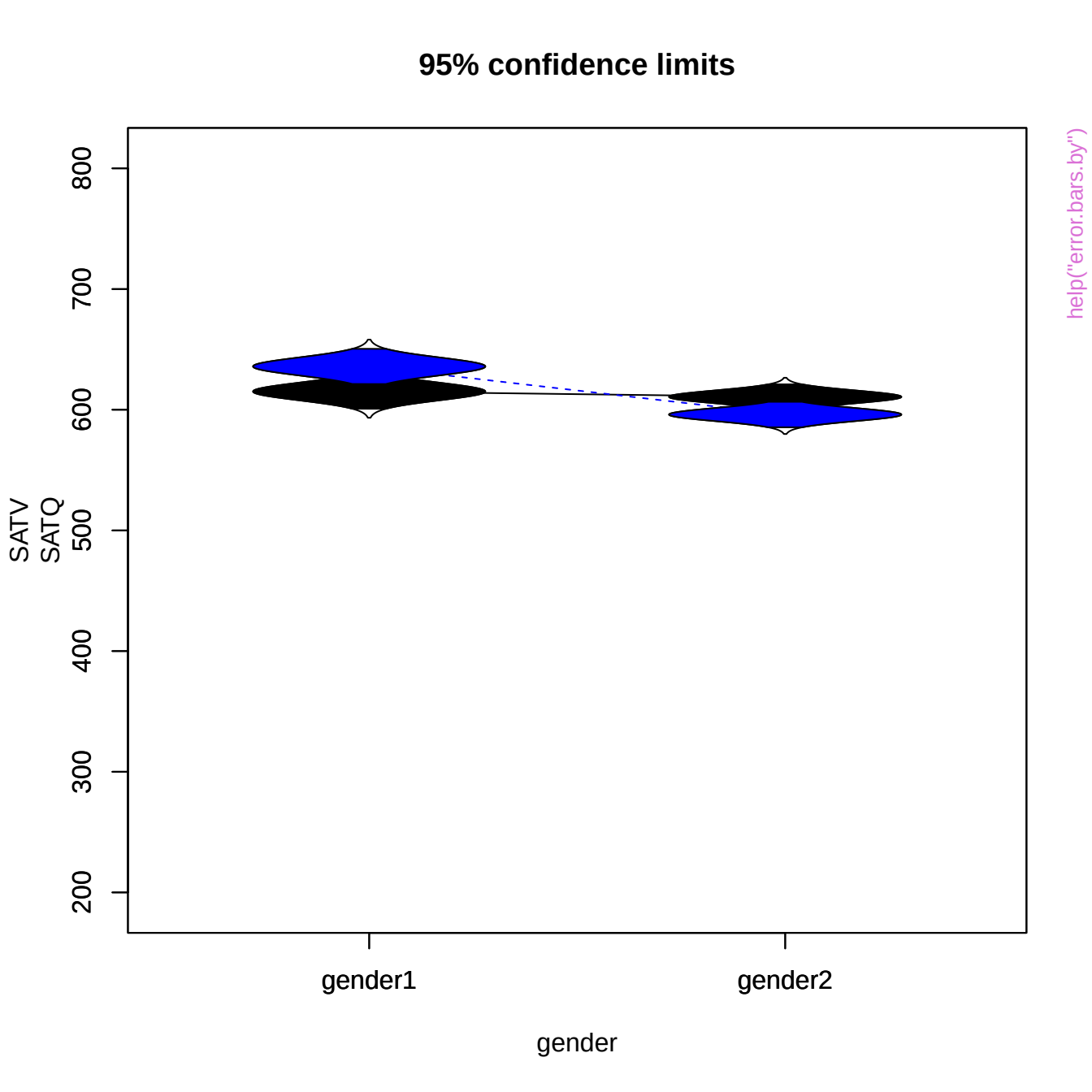

95% confidence limits
help("error.bars")
Score
0
5
10
First
Second
Third
Condition

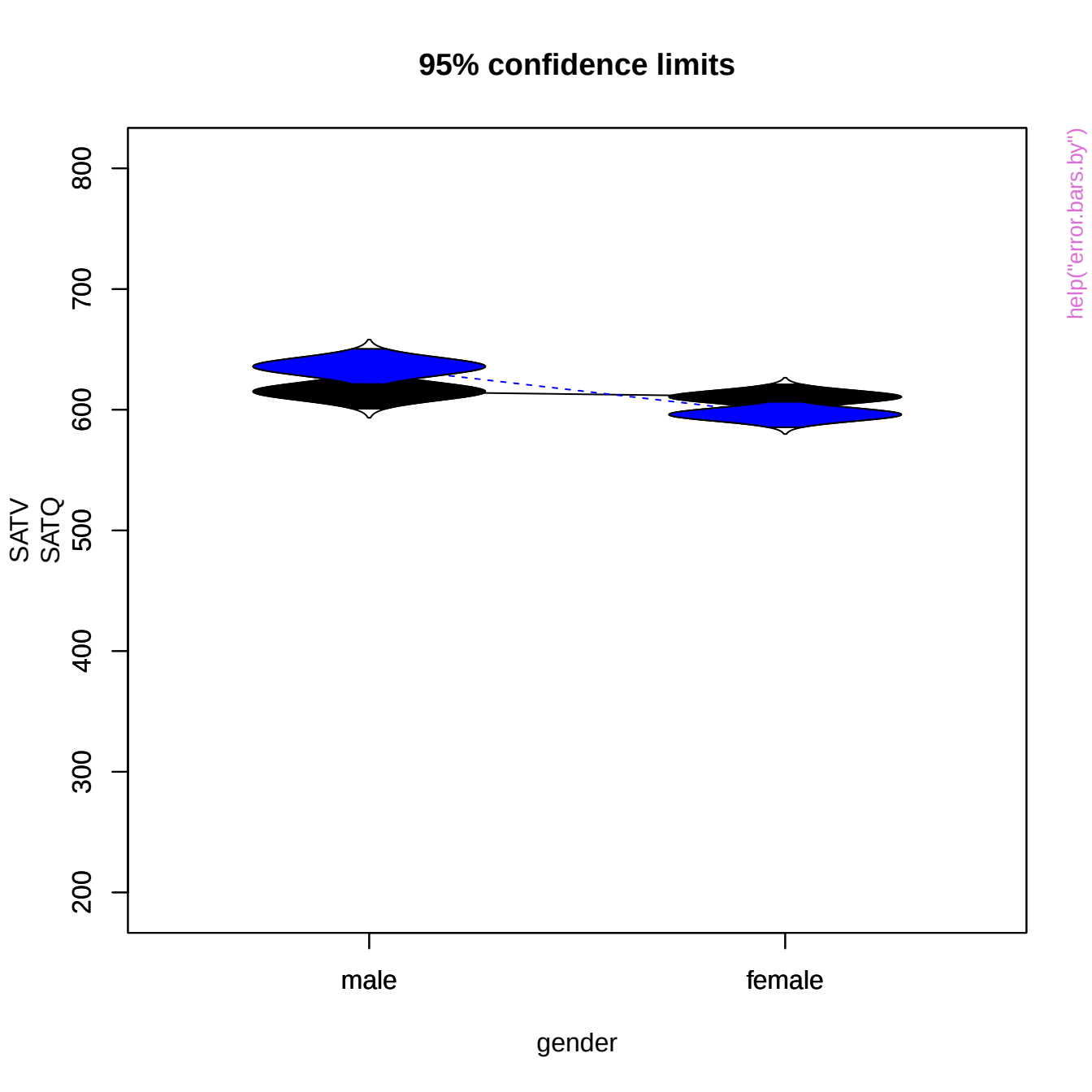

Probability of Arrest varies by treatment
help("error.bars")
Probability of Arrest
0.0
0.2
0.4
0.6
0.8
1.0
Arrested Control
Arrested Treated
Control vs Treatment

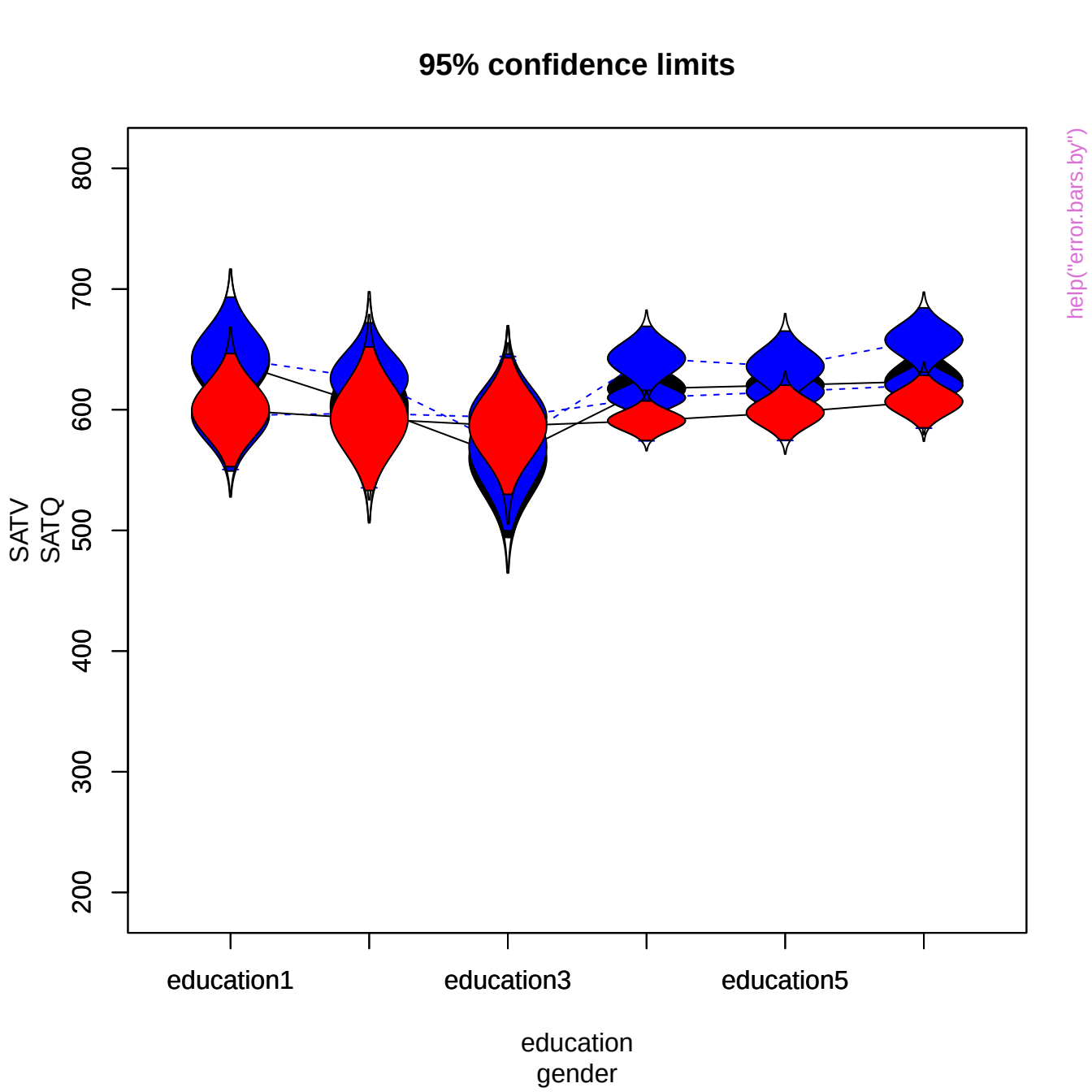

Count of Arrest varies by treatment
Number Arrested
30
25
20
15
10
5
0
−5
Arrested Control
Arrested Treated
Control vs Treatment
help("error.bars")

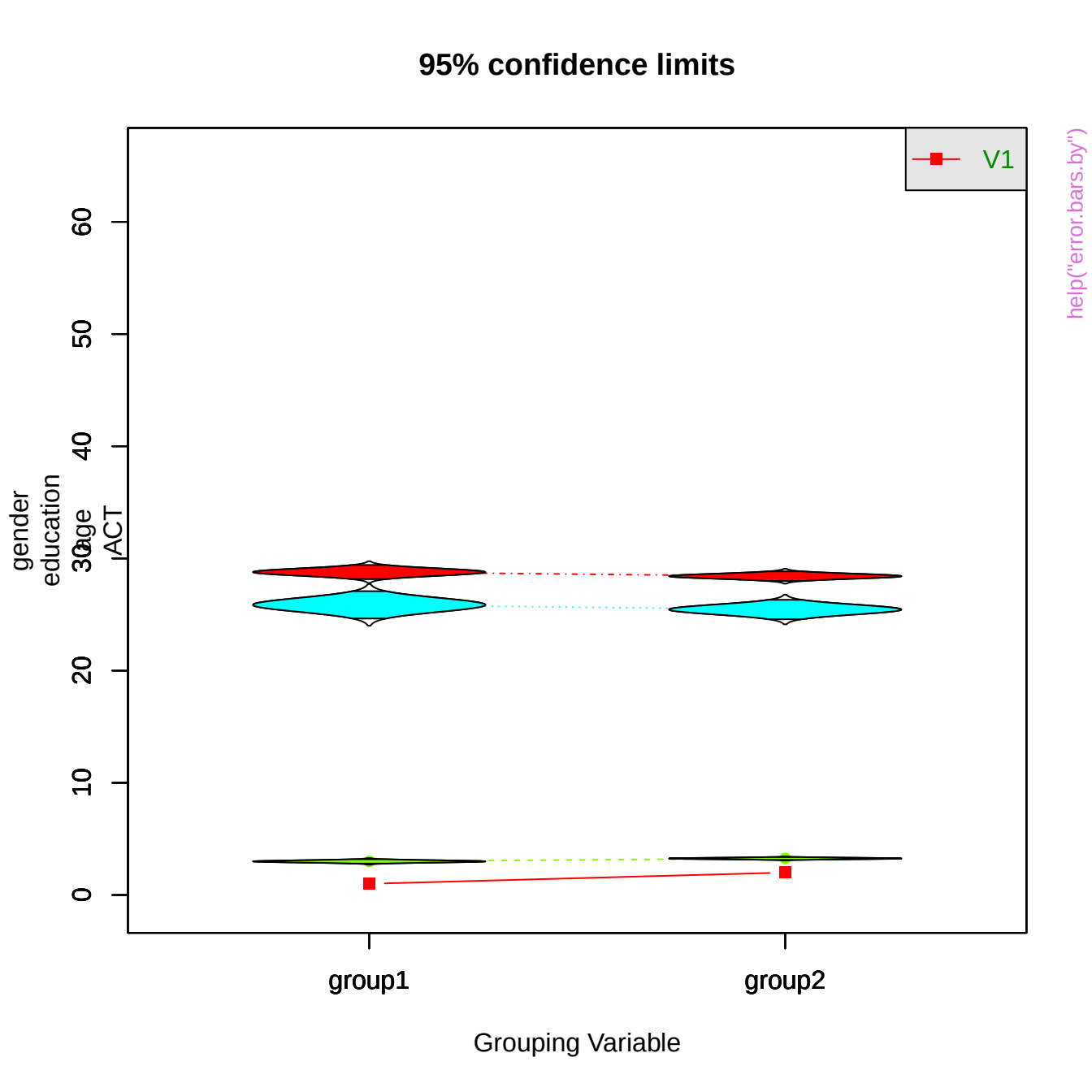

95% confidence limits
help("error.bars")
Dependent Variable
800
700
600
500
400
300
200
gender1
gender2
Independent Variable

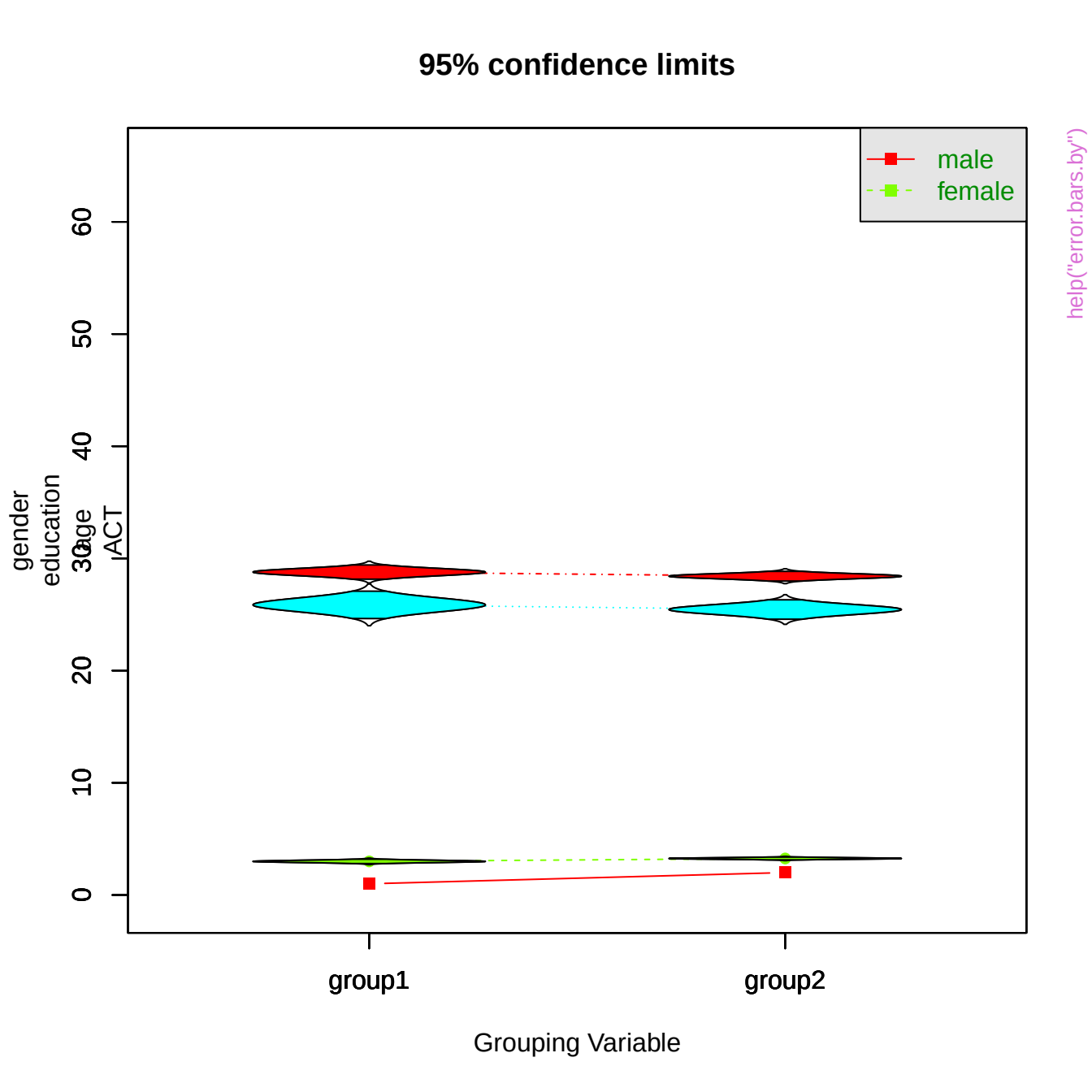

95% confidence limits
Dependent Variable
800
700
600
500
400
300
200
education1
education3
education5
Independent Variable
help("error.bars")

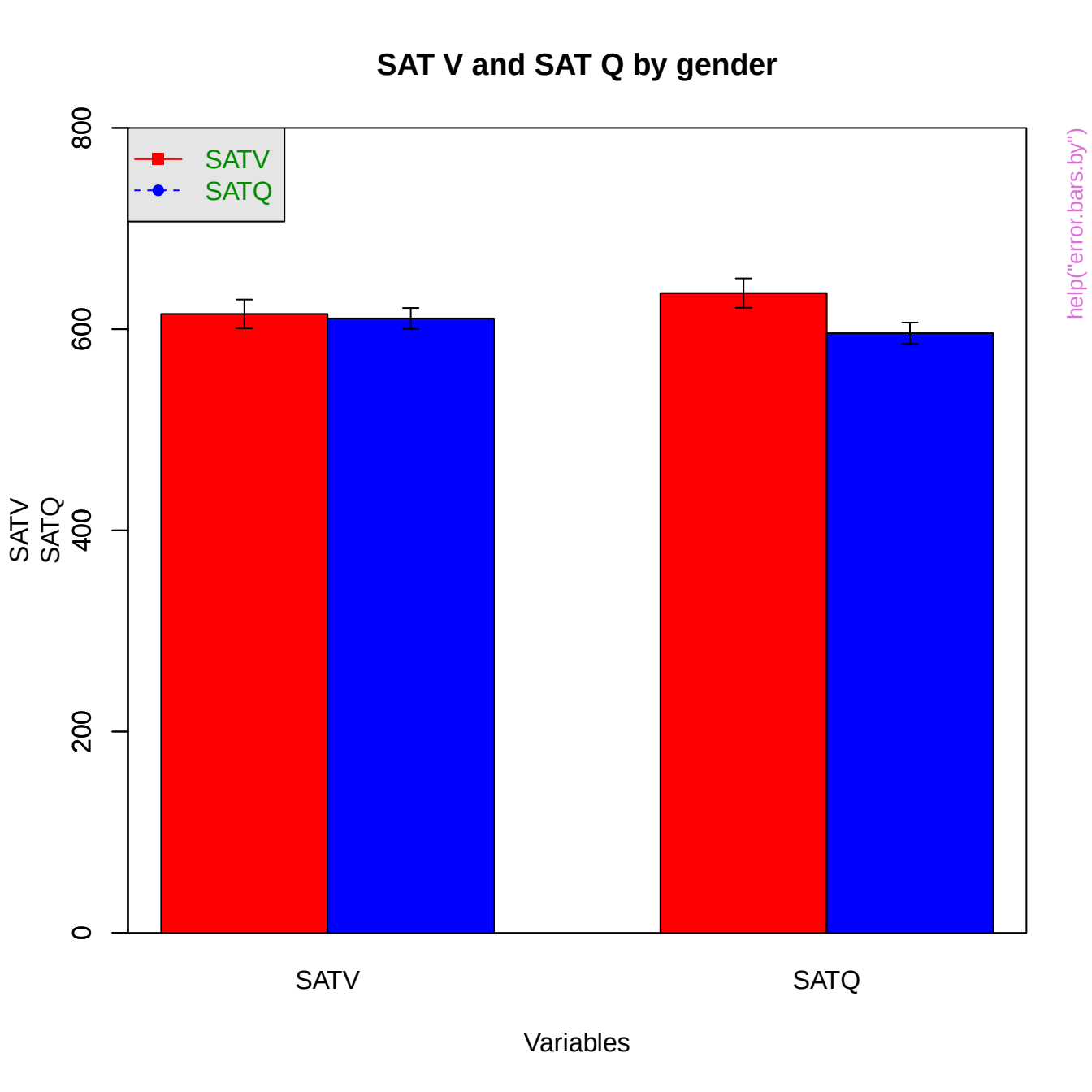

95% confidence limits
SATV
SATQ
800
700
600
500
400
300
200
gender1
gender2
gender
help("error.bars.by")

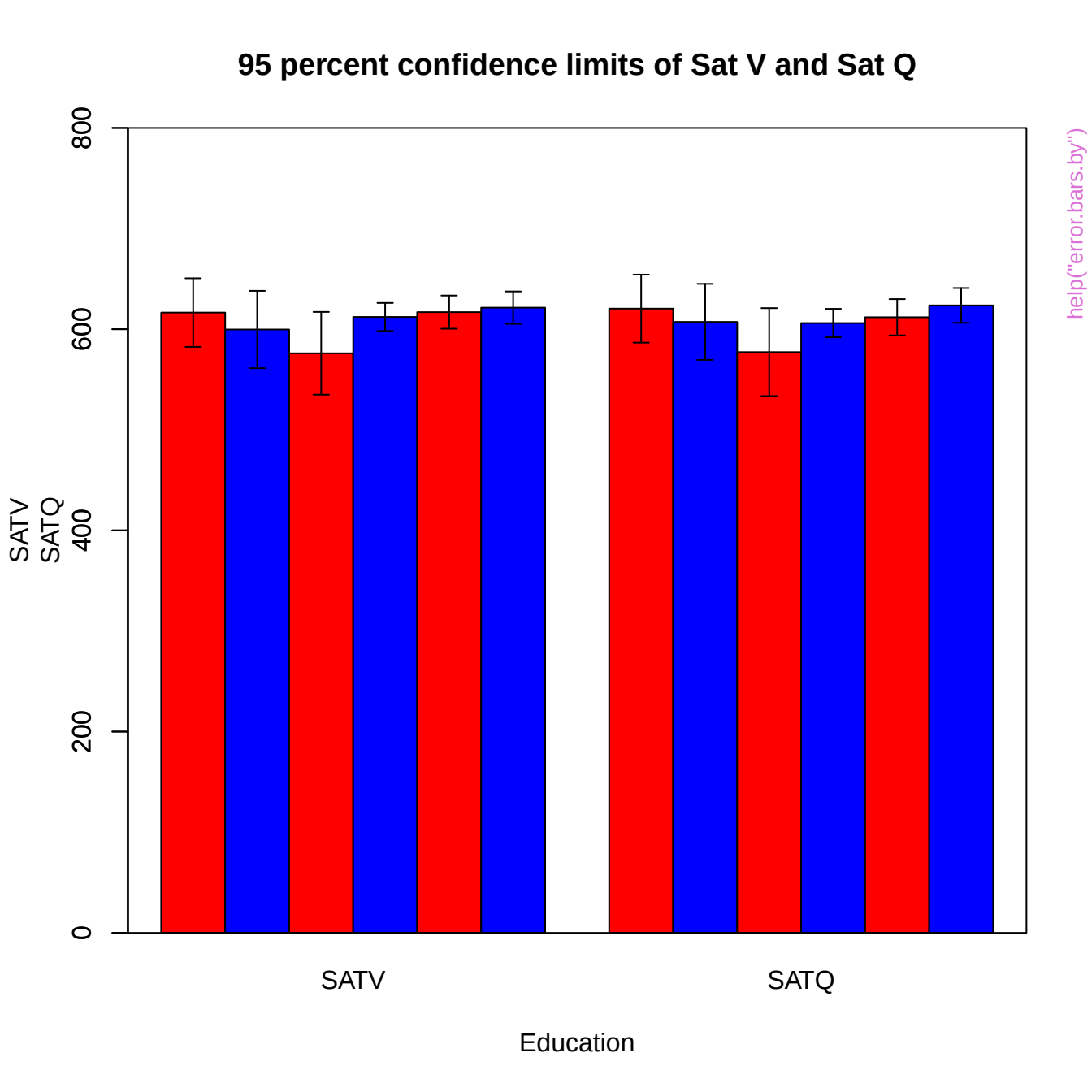

95% confidence limits
SATV
SATQ
800
700
600
500
400
300
200
male
female
gender
help("error.bars.by")

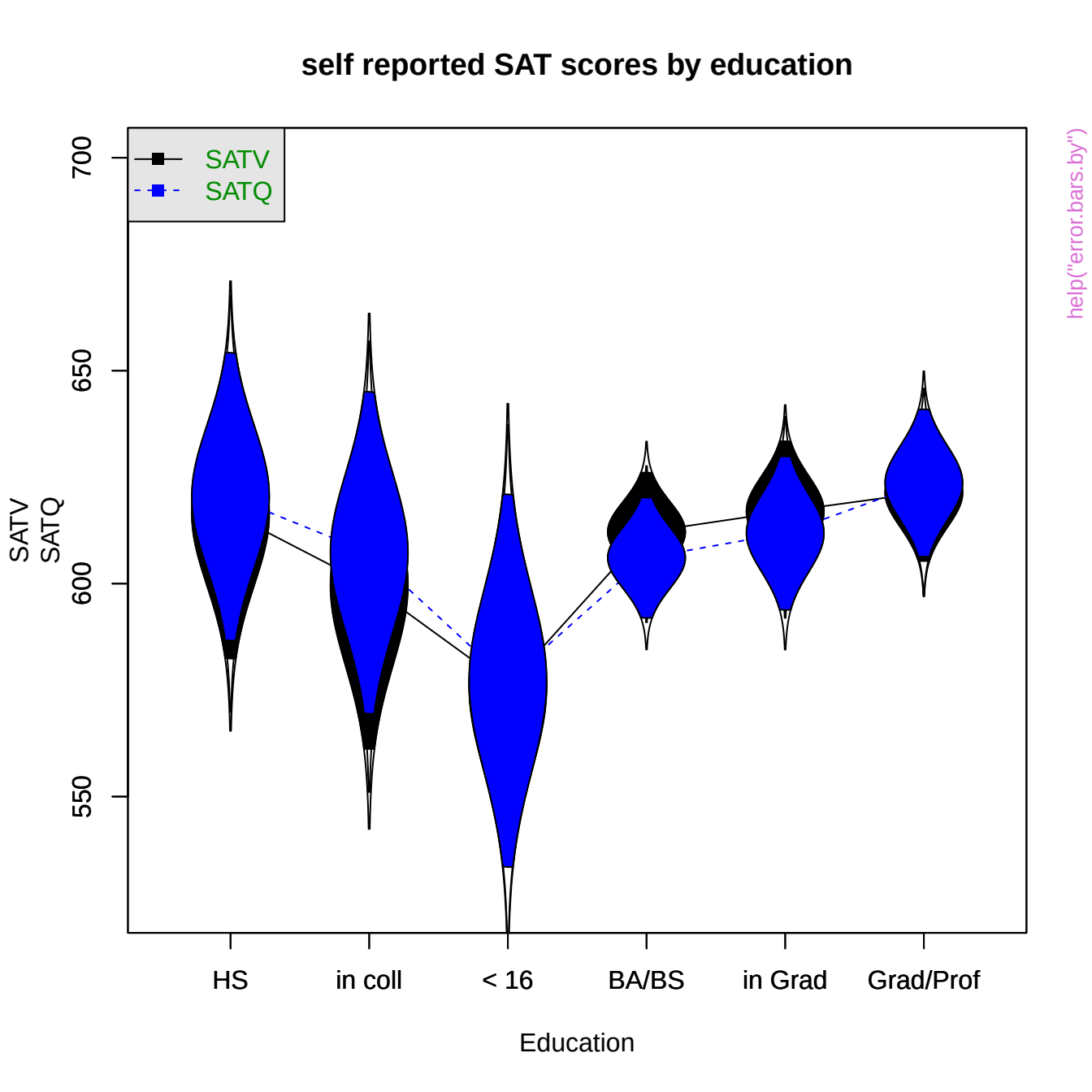

95% confidence limits
SATV
SATQ
800
700
600
500
400
300
200
education1
education3
education5
education
gender
help("error.bars.by")

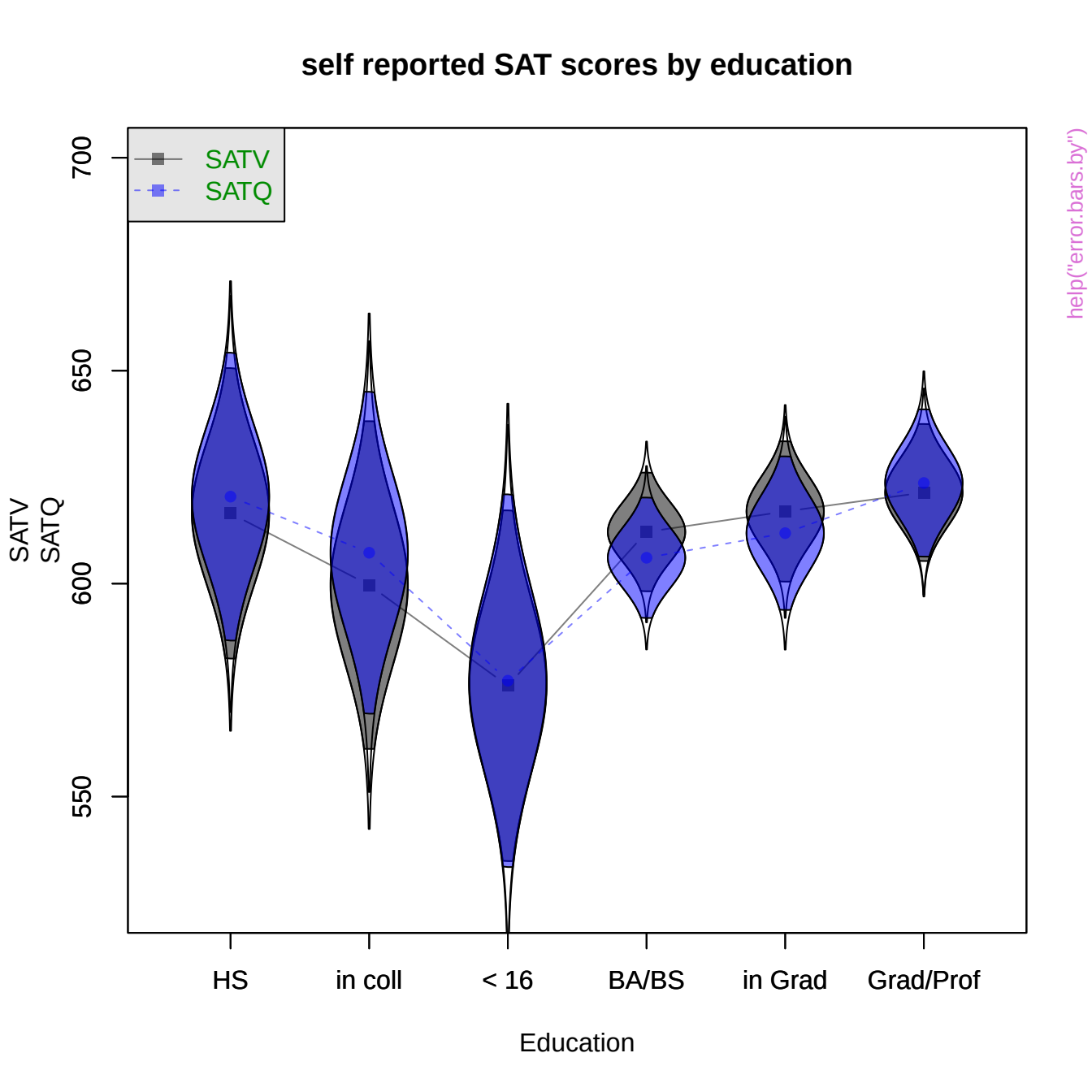

95% confidence limits
V1
help("error.bars.by")
gender
education
age
ACT
0
10
20
30
40
50
60
group1
group2
Grouping Variable

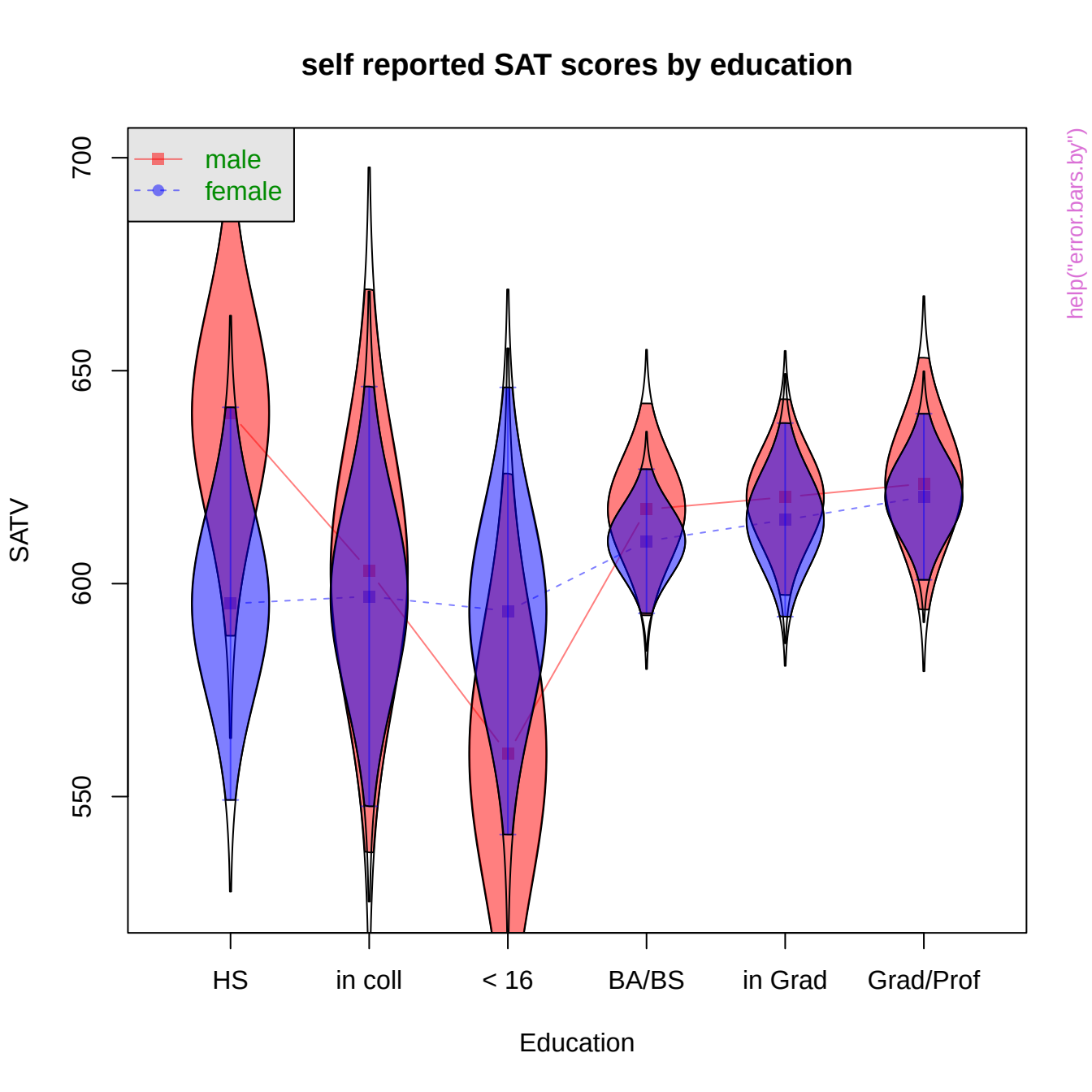

95% confidence limits
male
female
help("error.bars.by")
gender
education
age
ACT
0
10
20
30
40
50
60
group1
group2
Grouping Variable

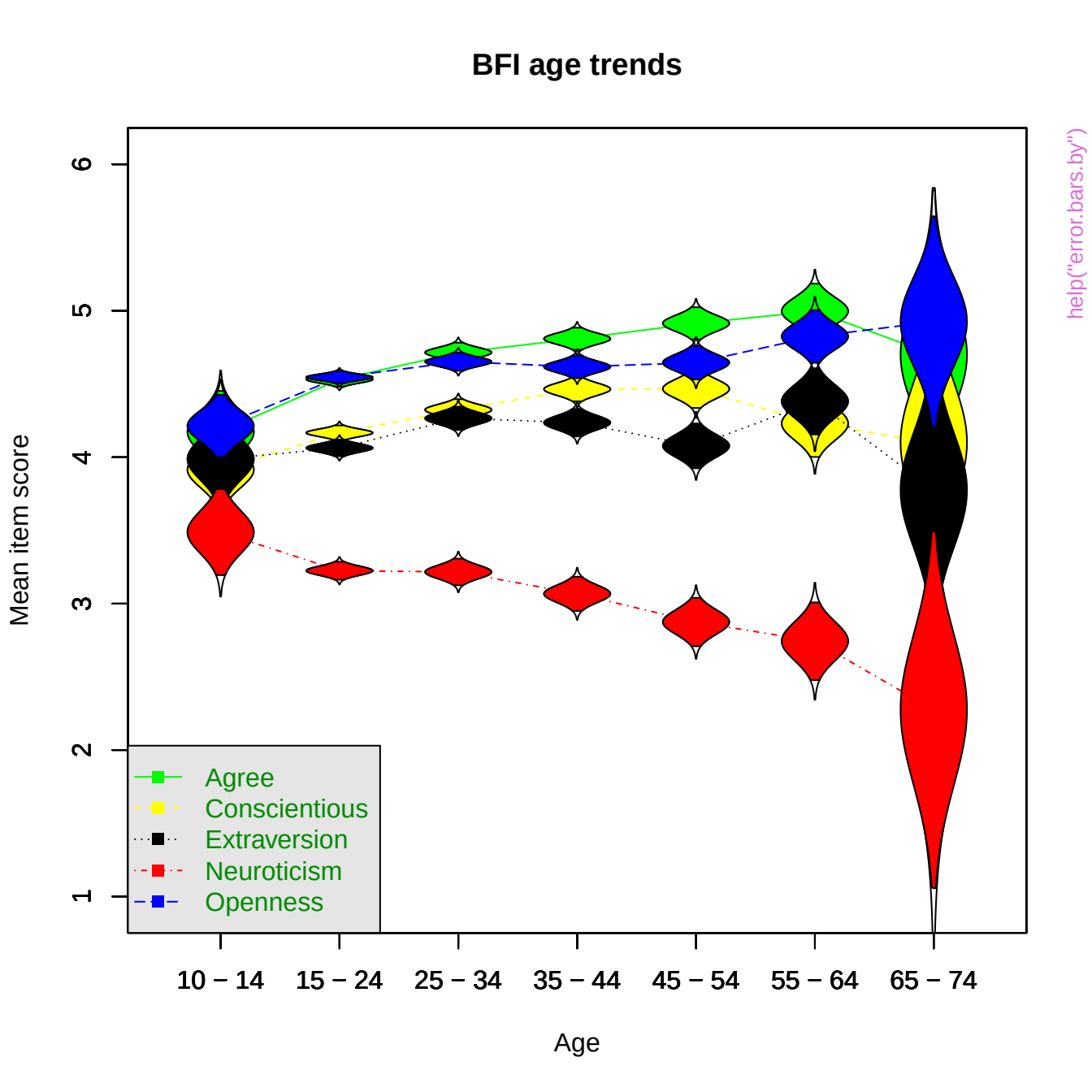

SAT V and SAT Q by gender
SATV
SATQ
800
600
400
200
0
SATV
SATQ
SATV
SATQ
Variables
help("error.bars.by")

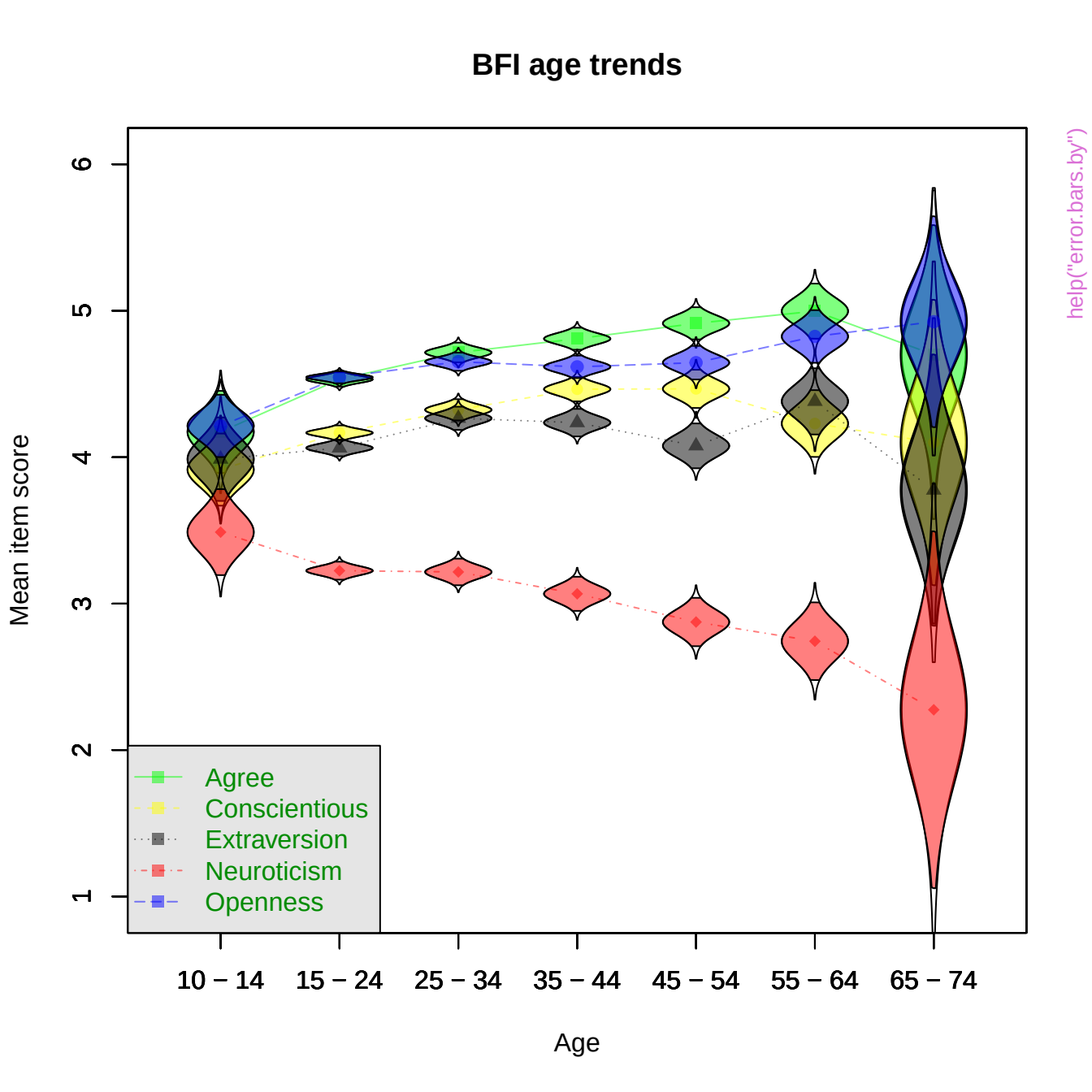

95 percent confidence limits of Sat V and Sat Q
SATV
SATQ
0
200
400
600
800
SATV
SATQ
Education
help("error.bars.by")

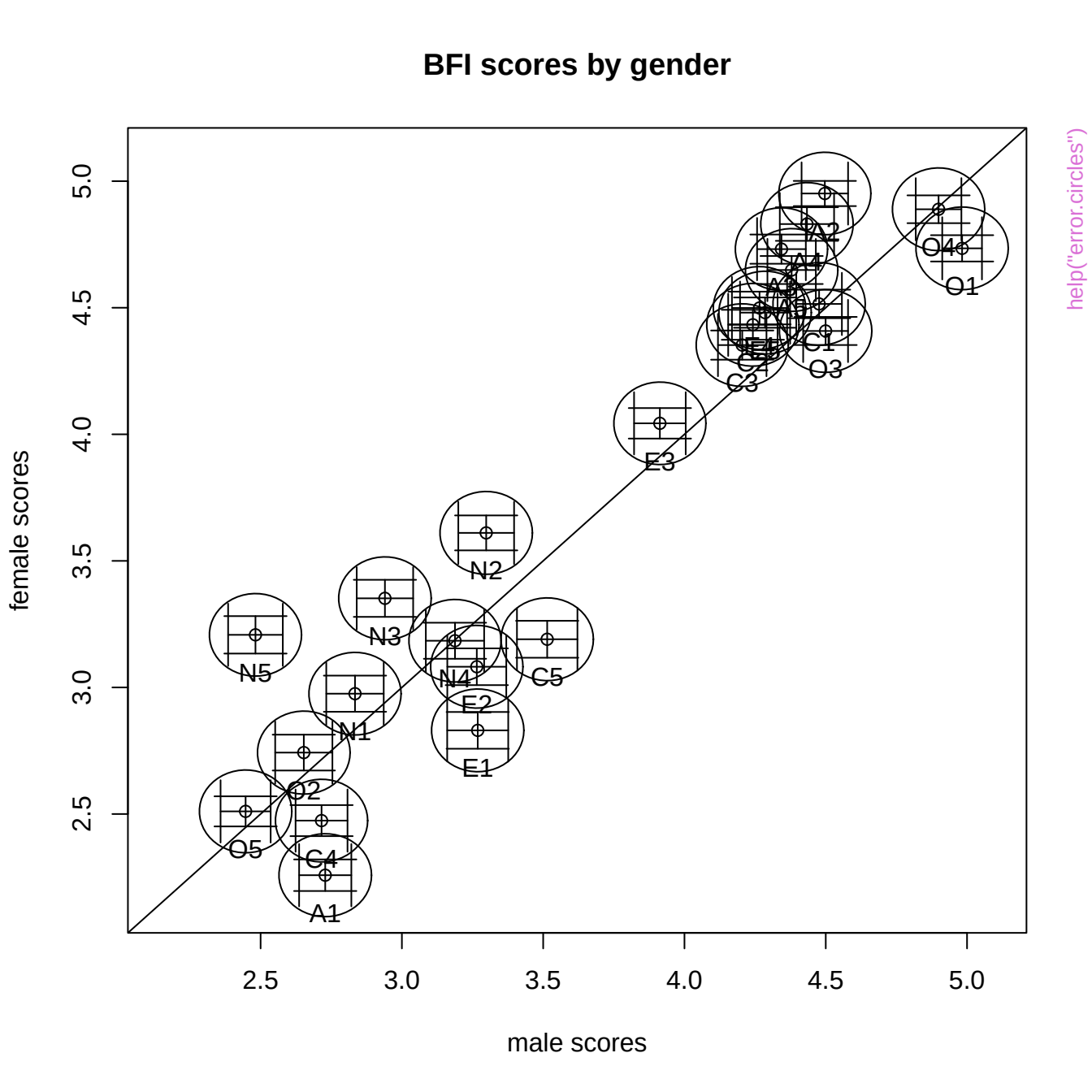

self reported SAT scores by education
SATV
SATQ
700
650
600
550
SATV
SATQ
HS
in coll
< 16
BA/BS
in Grad
Grad/Prof
Education
help("error.bars.by")

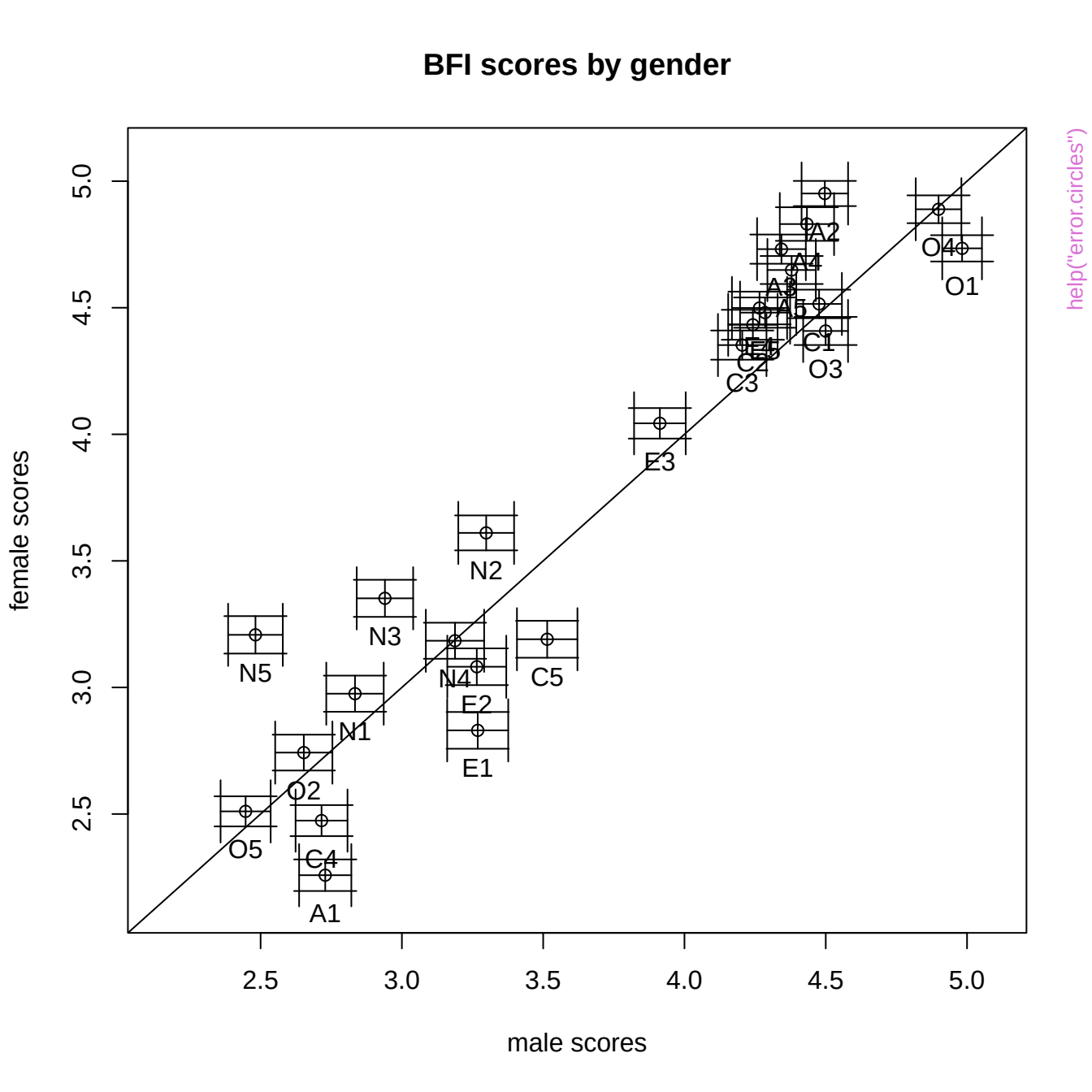

self reported SAT scores by education
SATV
SATQ
700
650
600
550
SATV
SATQ
HS
in coll
< 16
BA/BS
in Grad
Grad/Prof
Education
help("error.bars.by")

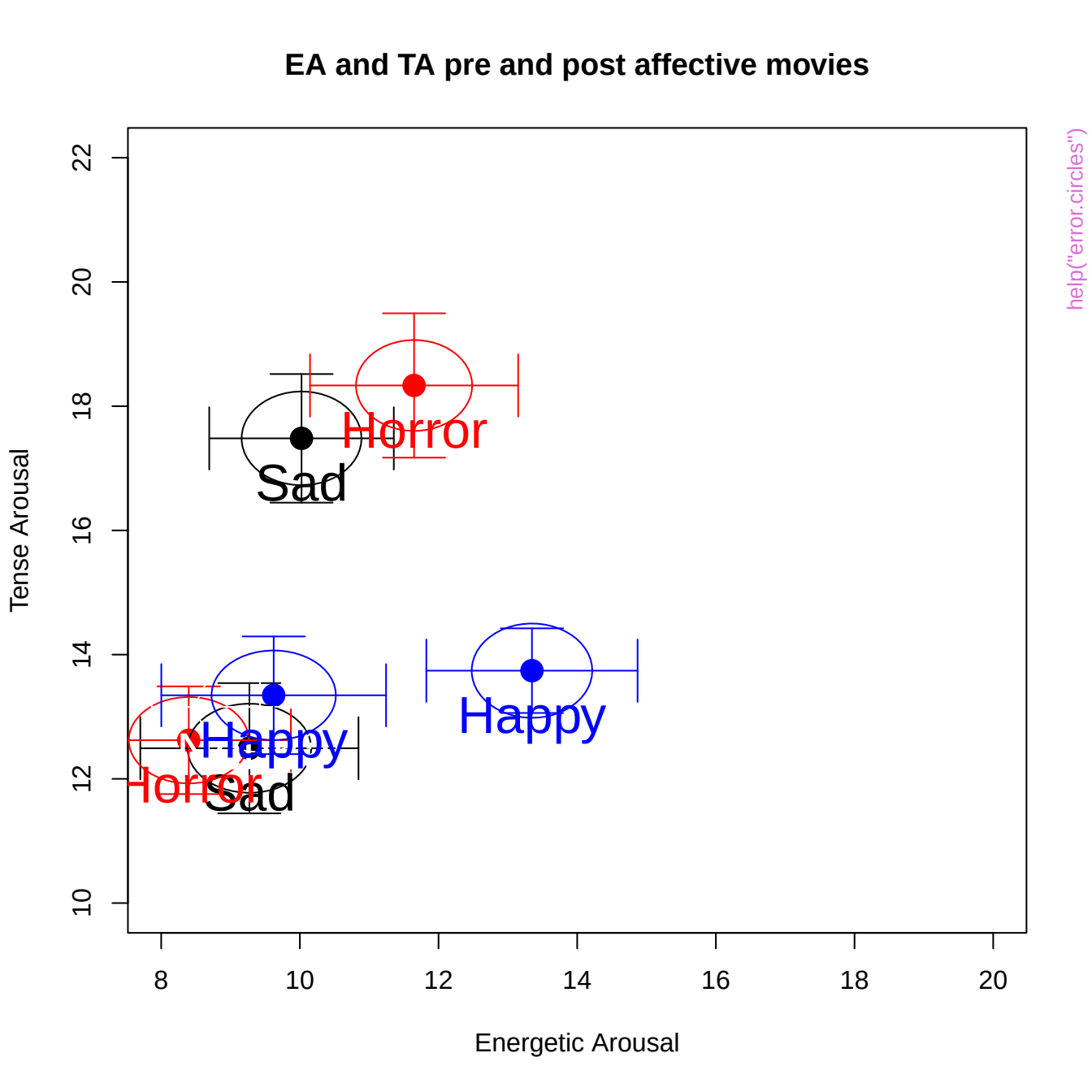

self reported SAT scores by education
male
female
700
650
600
550
SATV
HS
in coll
< 16
BA/BS
in Grad
Grad/Prof
Education
help("error.bars.by")

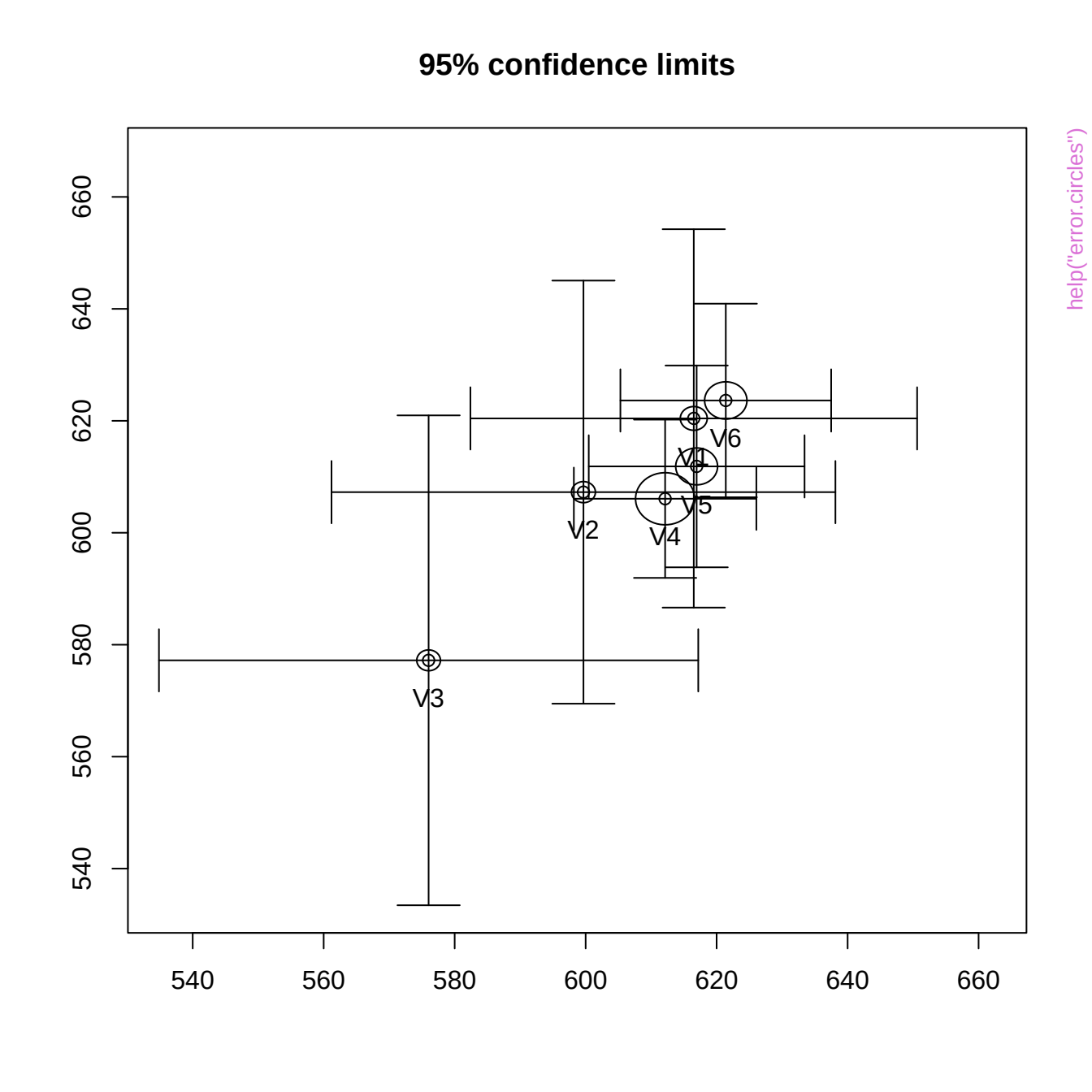

BFI age trends
Mean item score
1
2
3
4
5
6
10 − 14
15 − 24
25 − 34
35 − 44
45 − 54
55 − 64
65 − 74
Age
Agree
Conscientious
Extraversion
Neuroticism
Openness
help("error.bars.by")

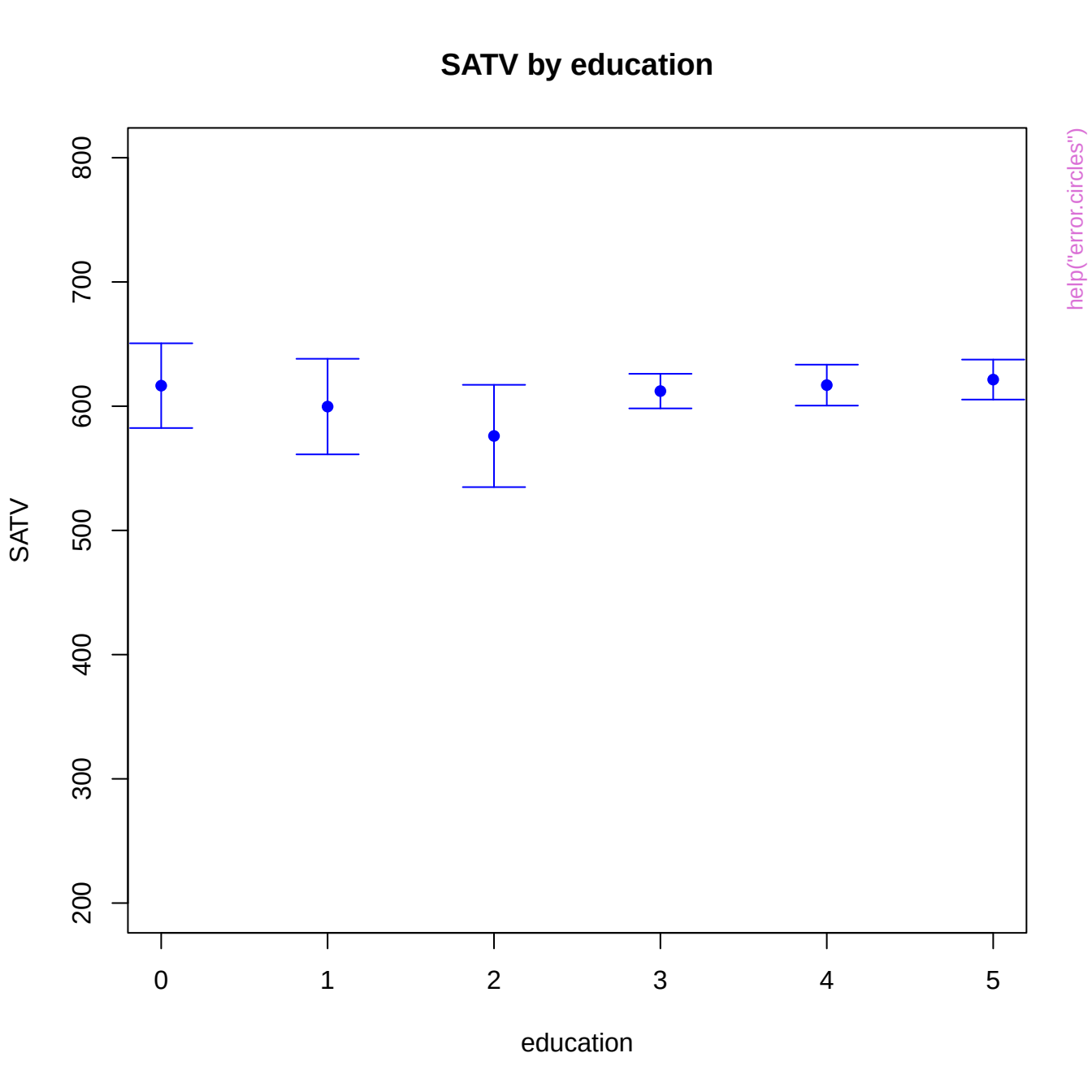

BFI age trends
Mean item score
1
2
3
4
5
6
10 − 14
15 − 24
25 − 34
35 − 44
45 − 54
55 − 64
65 − 74
Age
Agree
Conscientious
Extraversion
Neuroticism
Openness
help("error.bars.by")

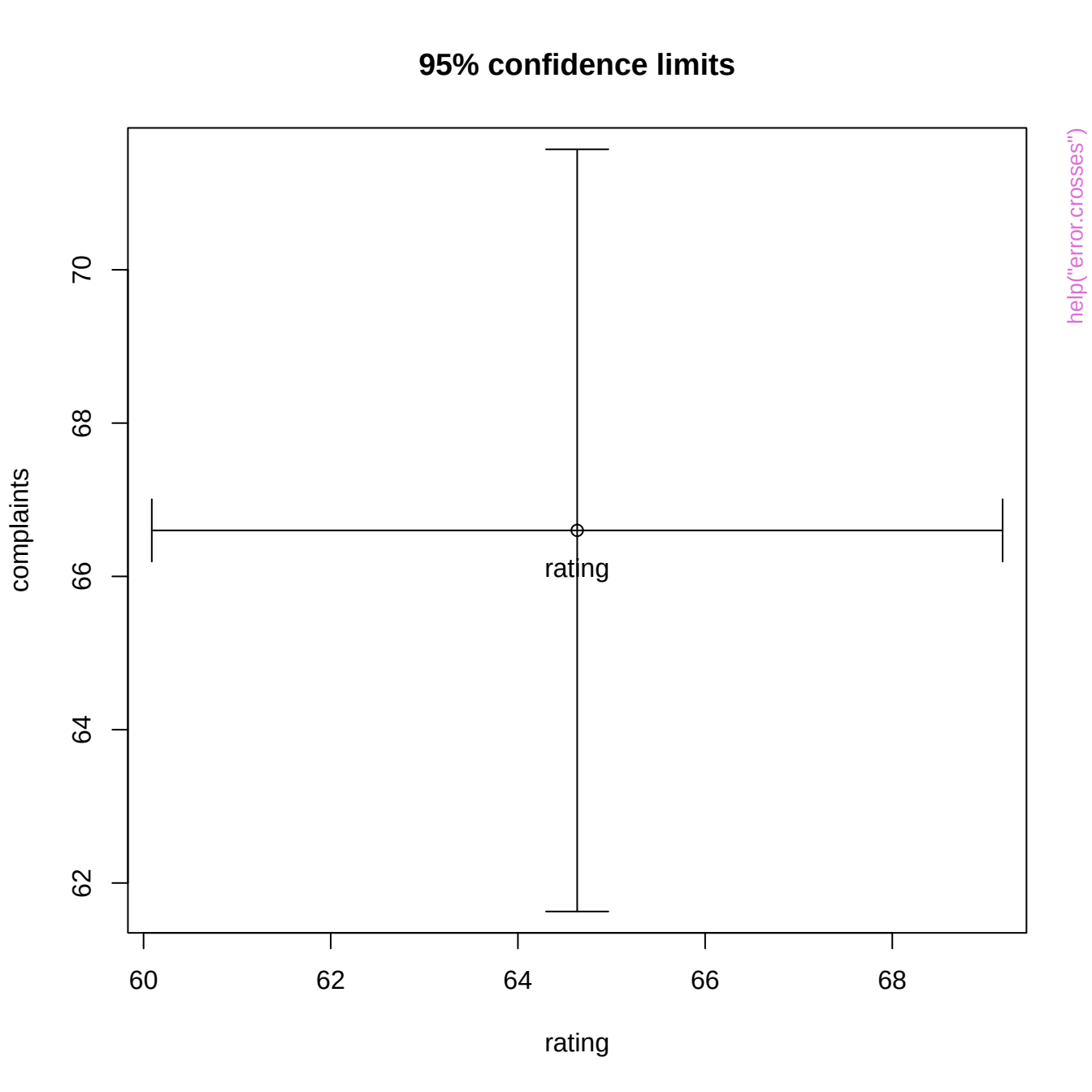

BFI scores by gender
female scores
male scores
2.5
3.0
3.5
4.0
4.5
5.0
A1
A2
A3
A4
A5
C1
C2
C3
C4
C5
E1
E2
E3
N1
N2
N3
N4
N5
O1
O2
O3
O4
O5
help("error.circles")

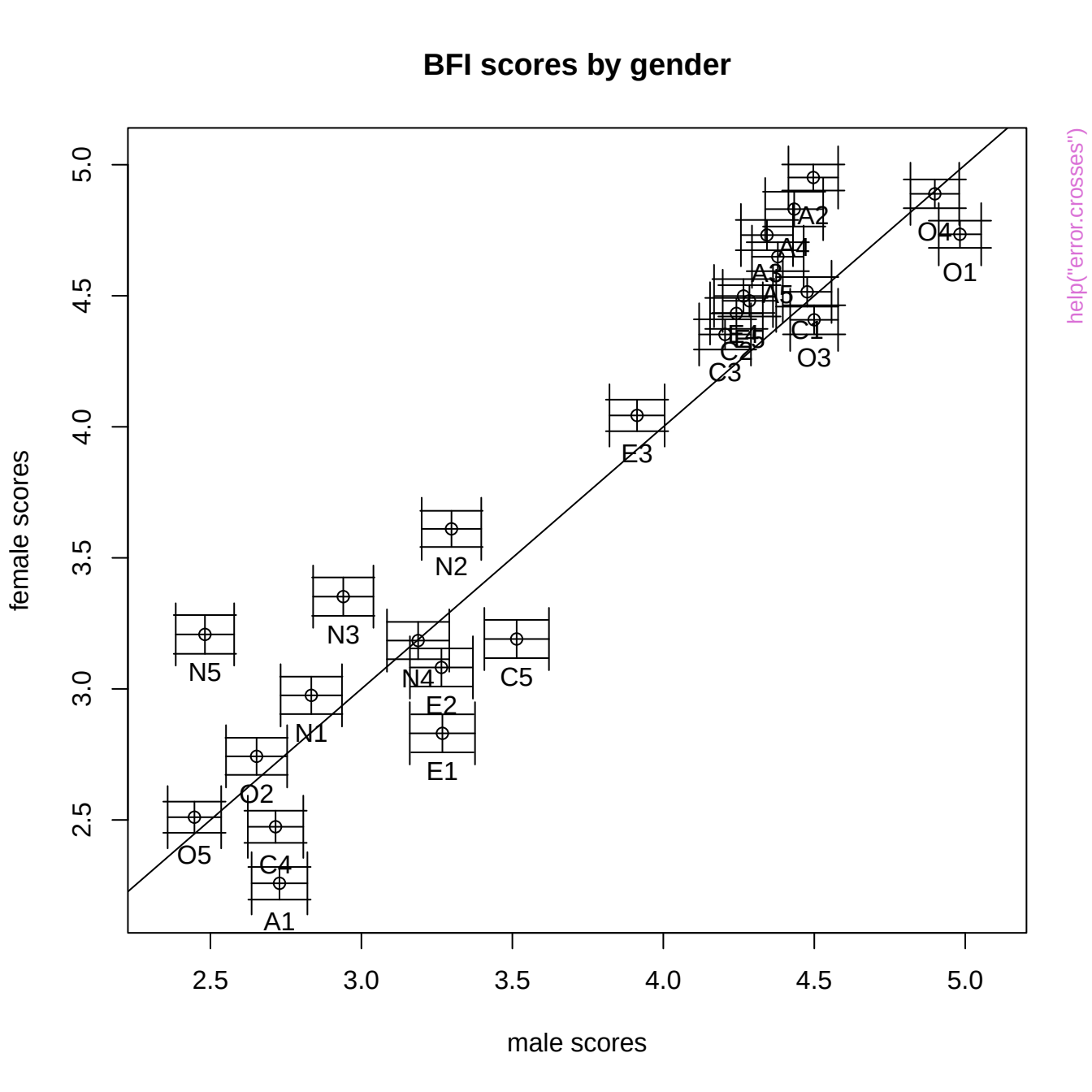

BFI scores by gender
female scores
male scores
2.5
3.0
3.5
4.0
4.5
5.0
A2
A4
A3
A5
C1
C2
C3
E4
E5
O3
O4
O1
E3
N2
N3
N5
N4
C5
E2
E1
N1
O2
O5
C4
A1
help("error.circles")

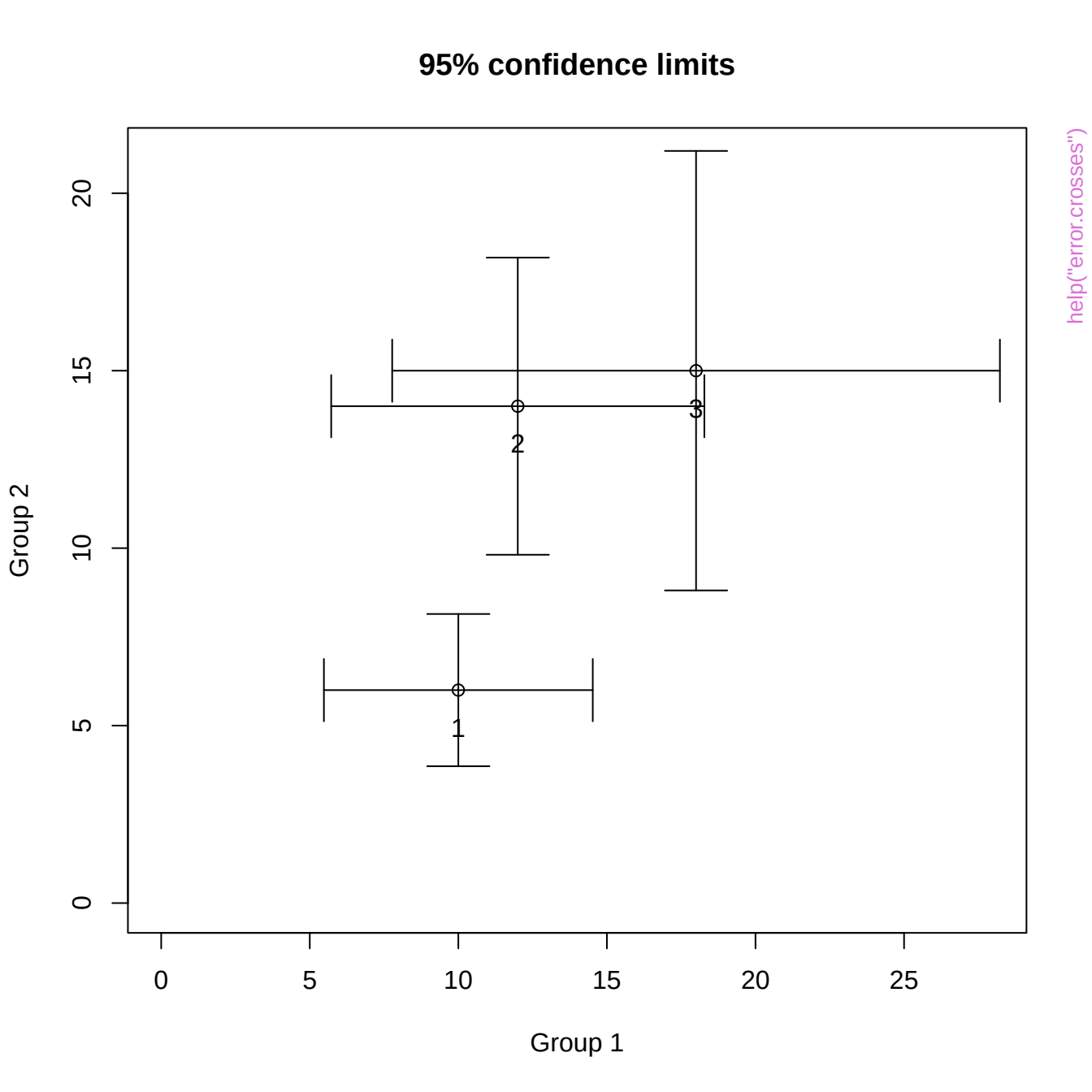

EA and TA pre and post affective movies
Tense Arousal
Energetic Arousal
10
12
14
16
18
20
22
8
10
12
14
16
18
20
Horror
Sad
Happy
Happy
Horror
Sad
help("error.circles")

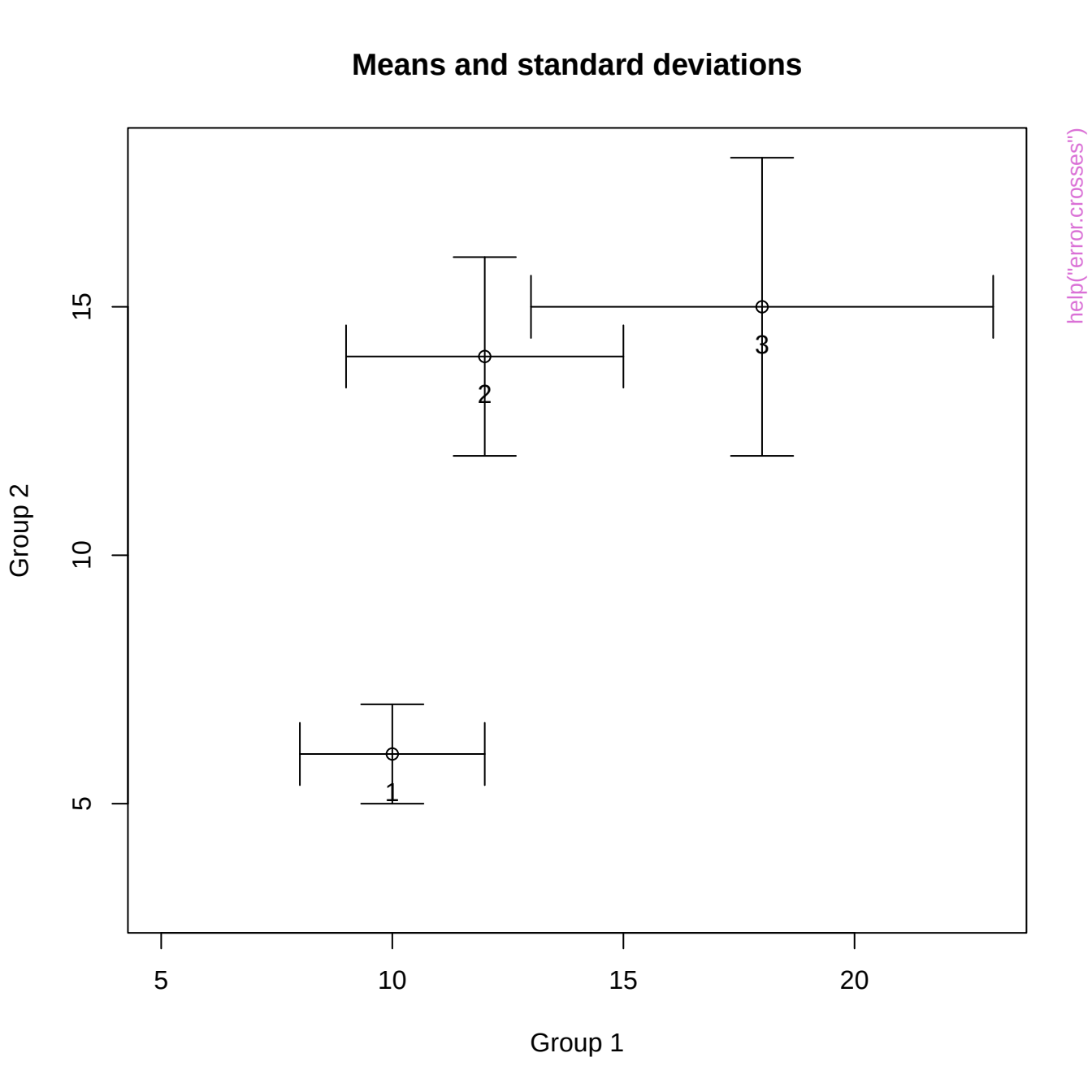

95% confidence limits
V1
V2
V3
V4
V5
V6
540
560
580
600
620
640
660
help("error.circles")

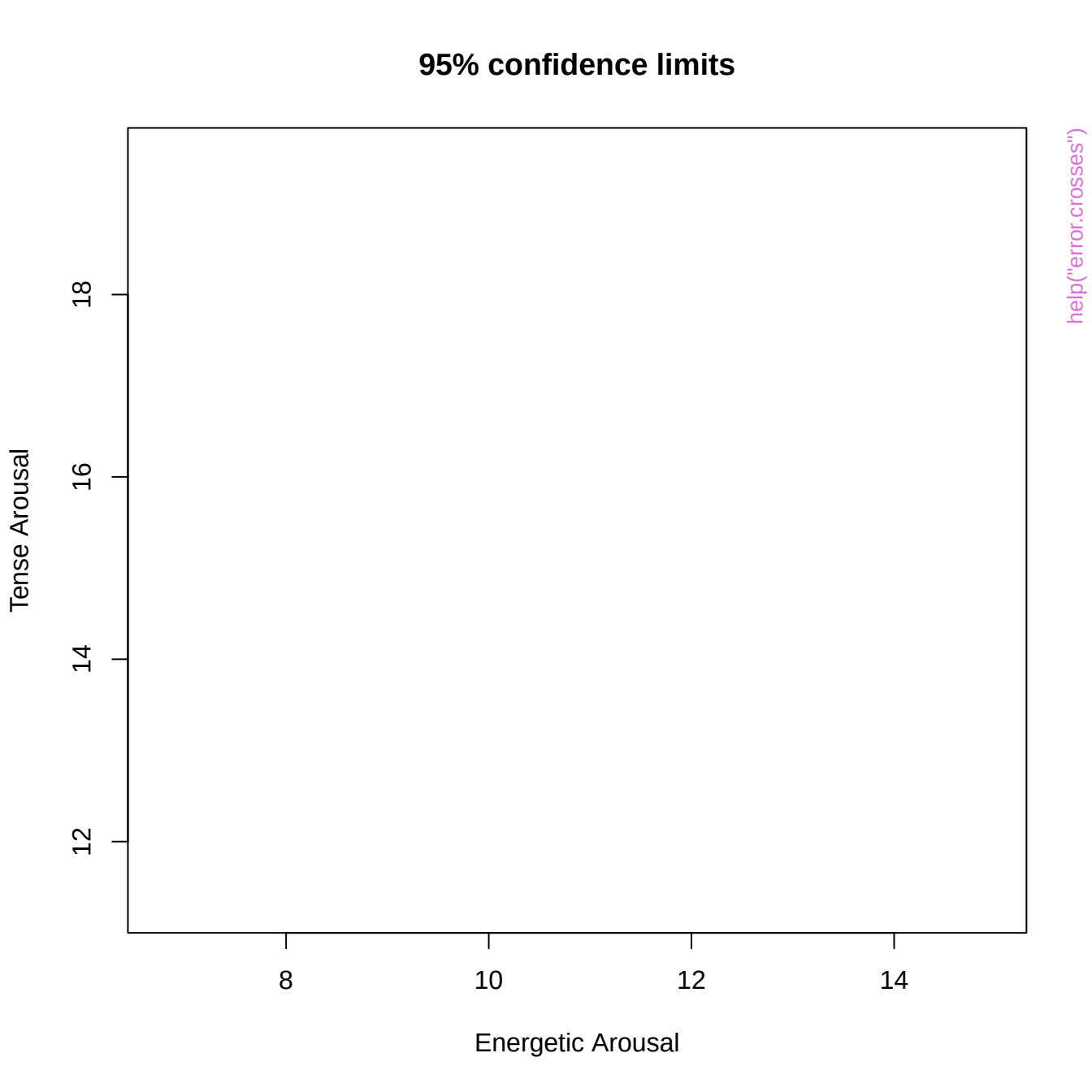

SATV by education
SATV
800
700
600
500
400
300
200
0
1
2
3
4
5
education
help("error.circles")

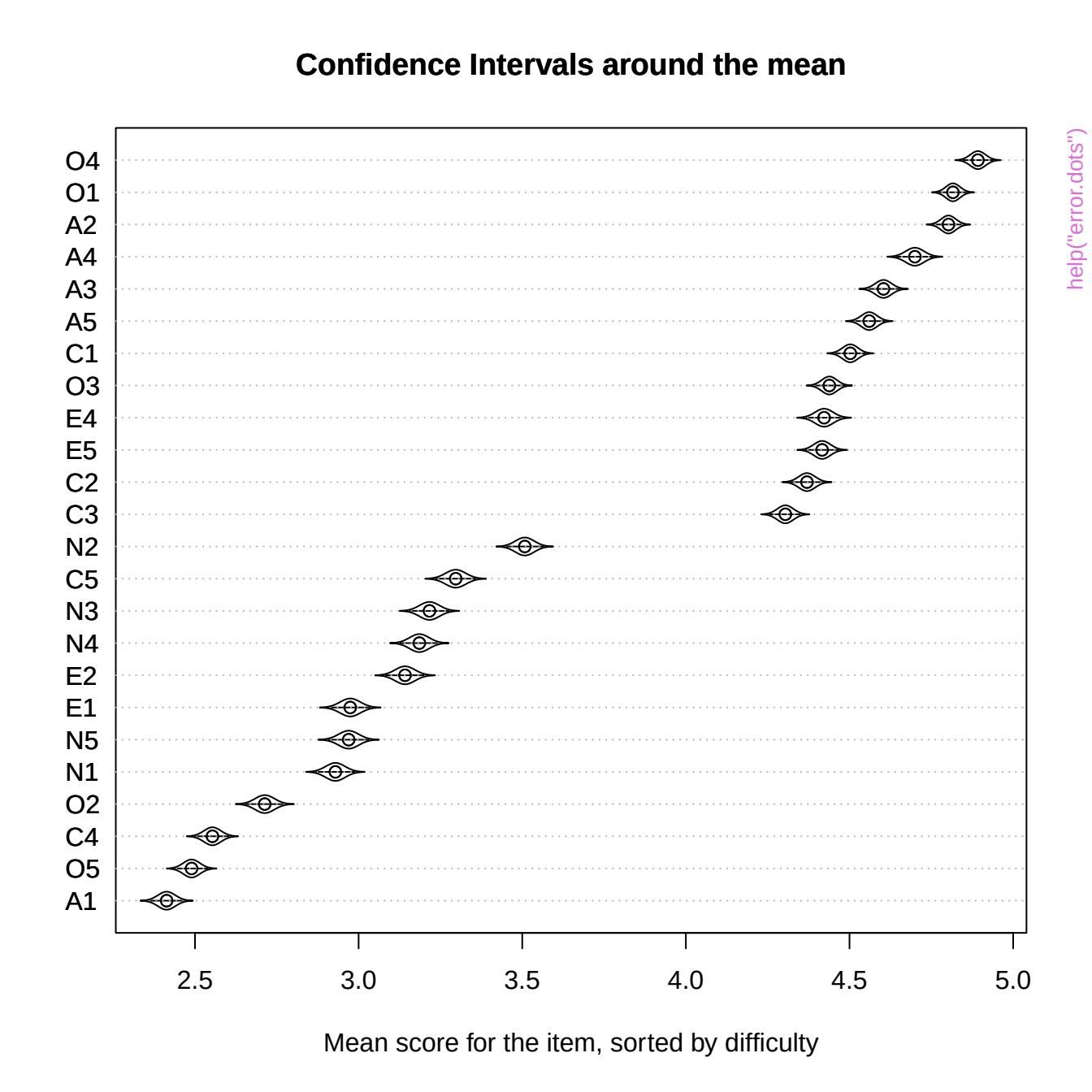

95% confidence limits
complaints
70
68
66
64
62
rating
60
62
64
66
68
rating
help("error.crosses")

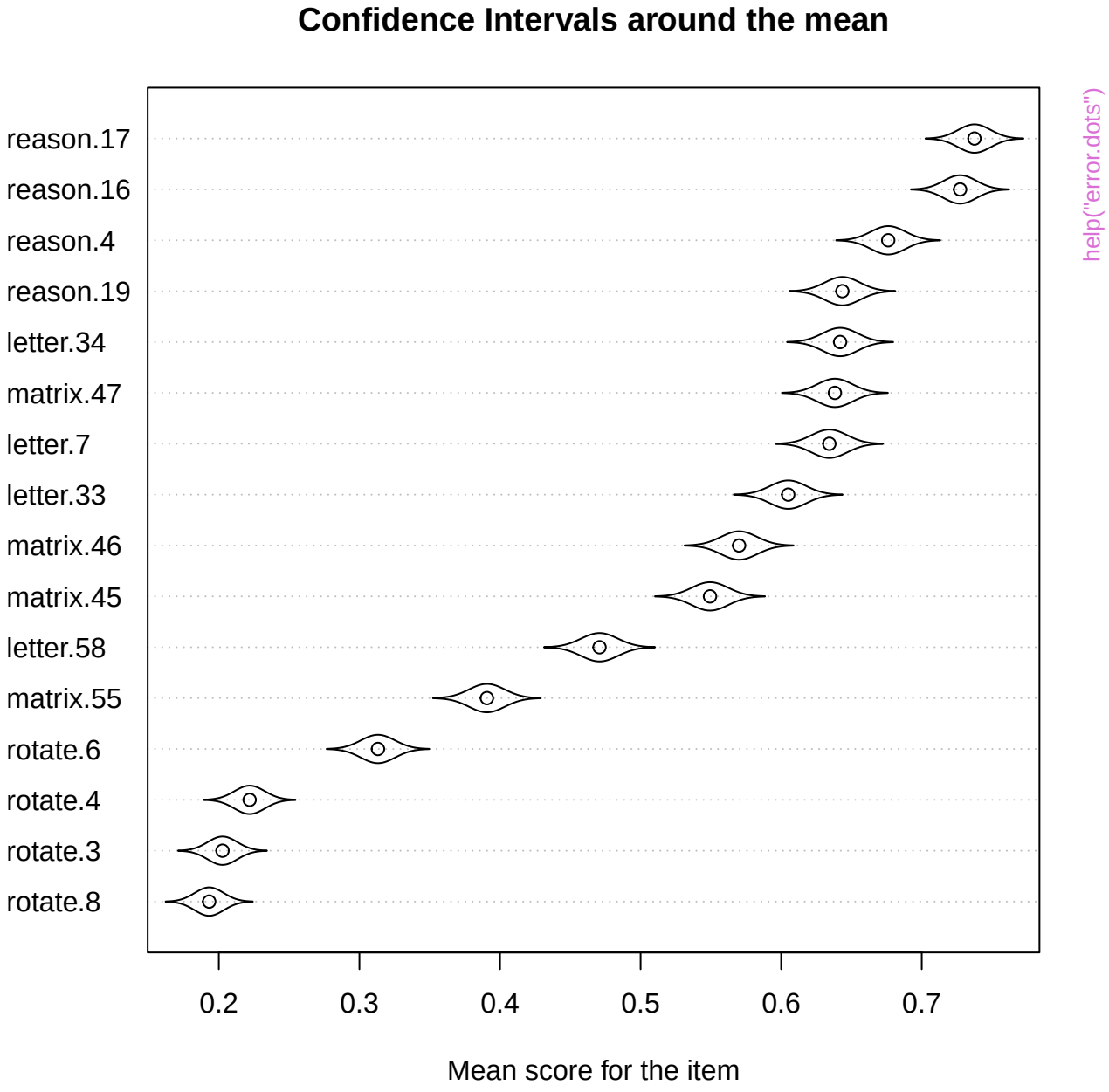

BFI scores by gender
female scores
male scores
2.5
3.0
3.5
4.0
4.5
5.0
A1
A2
A3
A4
A5
C1
C2
C3
C4
C5
E1
E2
E3
E4
E5
N1
N2
N3
N4
N5
O1
O2
O3
O4
O5
help("error.crosses")

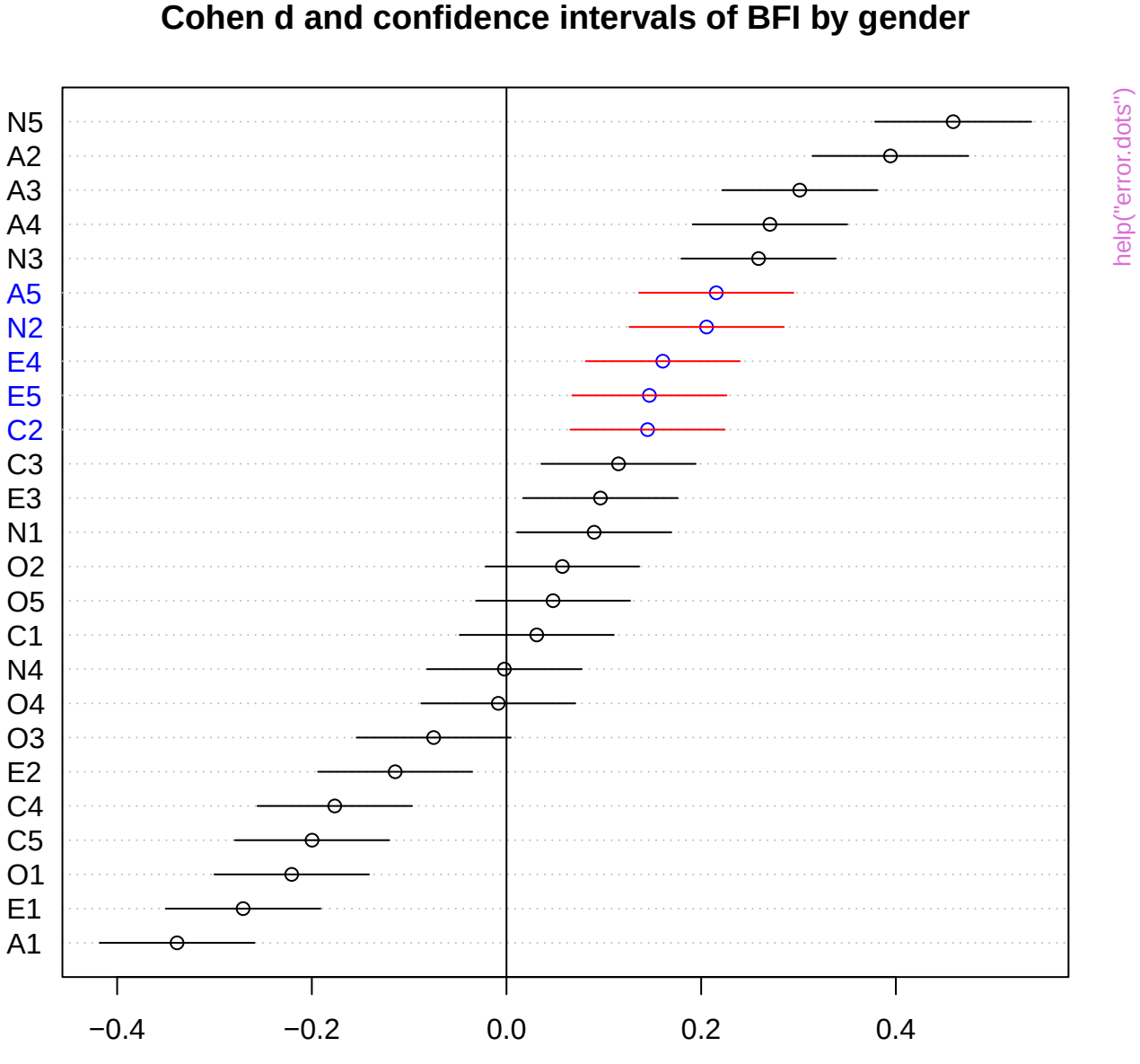

95% confidence limits
Group 2
Group 1
0
5
10
15
20
25
1
2
3
help("error.crosses")


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

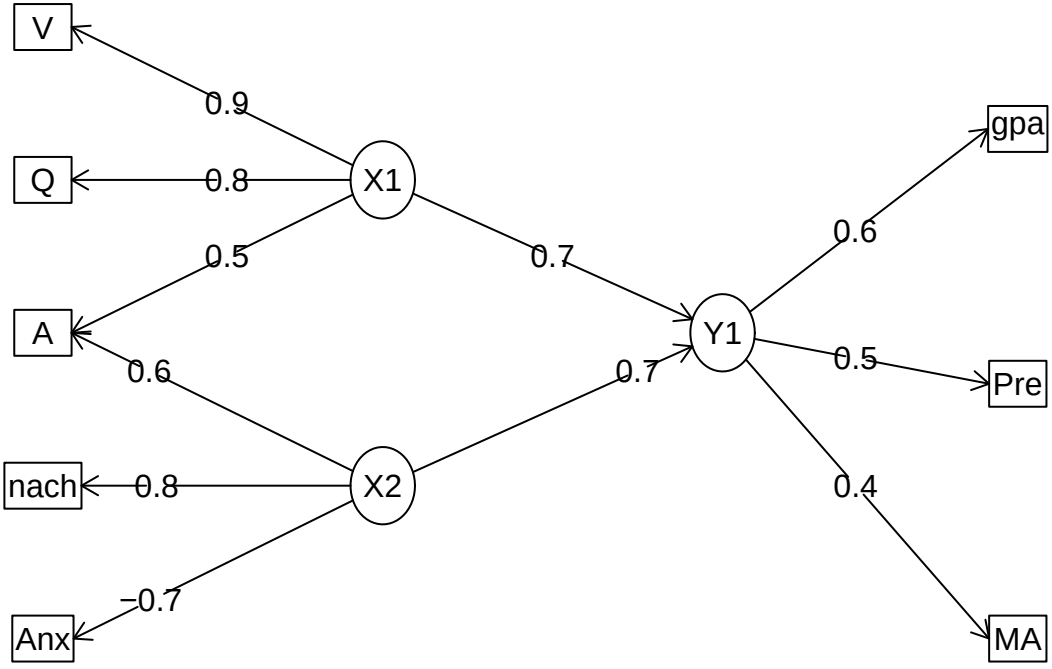

95% confidence limits
Tense Arousal
18
16
14
12
8
10
12
14
Energetic Arousal
help("error.crosses")


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")

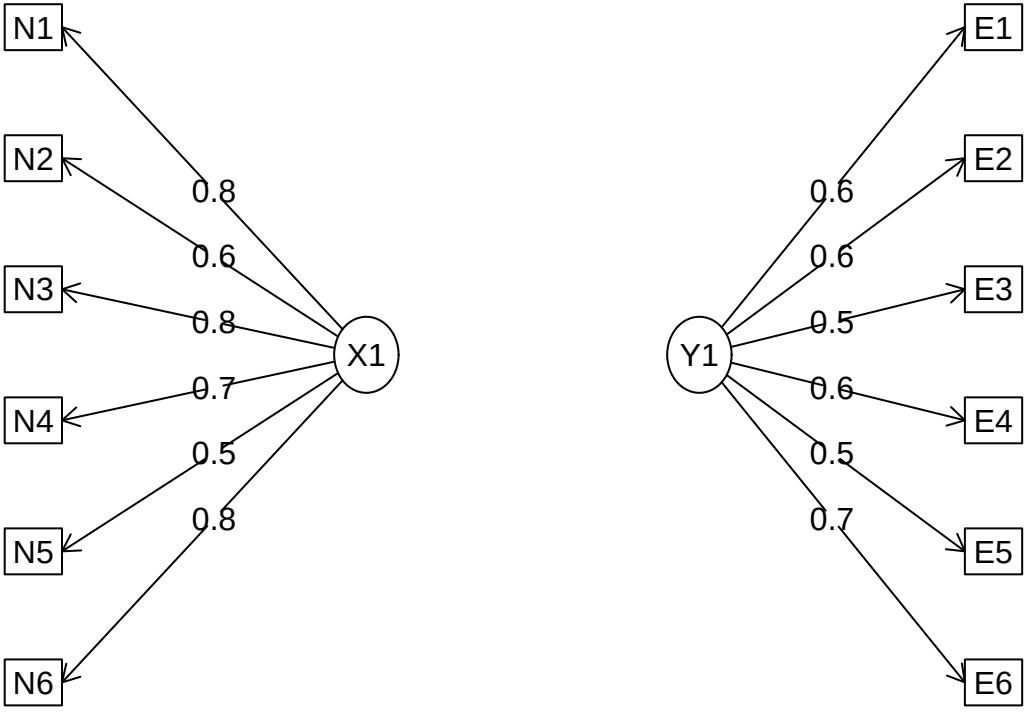

Confidence Intervals around the mean
reason.17
reason.16
reason.4
reason.19
letter.34
matrix.47
letter.7
letter.33
matrix.46
matrix.45
letter.58
matrix.55
rotate.6
rotate.4
rotate.3
rotate.8
0.2
0.3
0.4
0.5
0.6
0.7
Mean score for the item
help("error.dots")


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")

Exploratory Structural Model

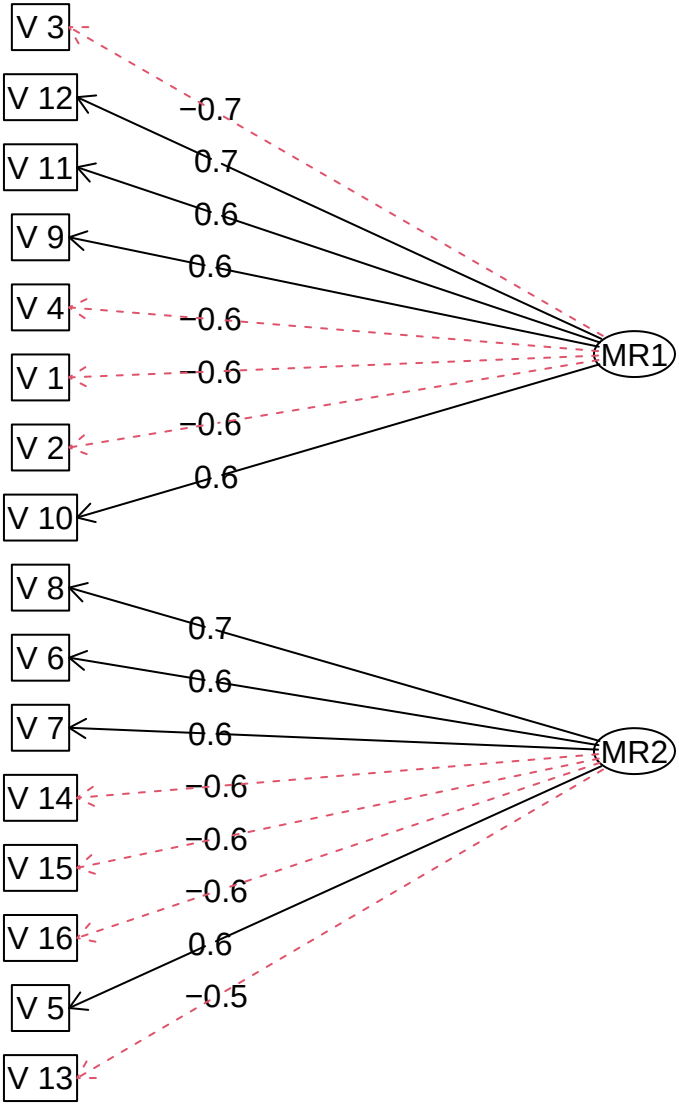


Exploratory Structural Model



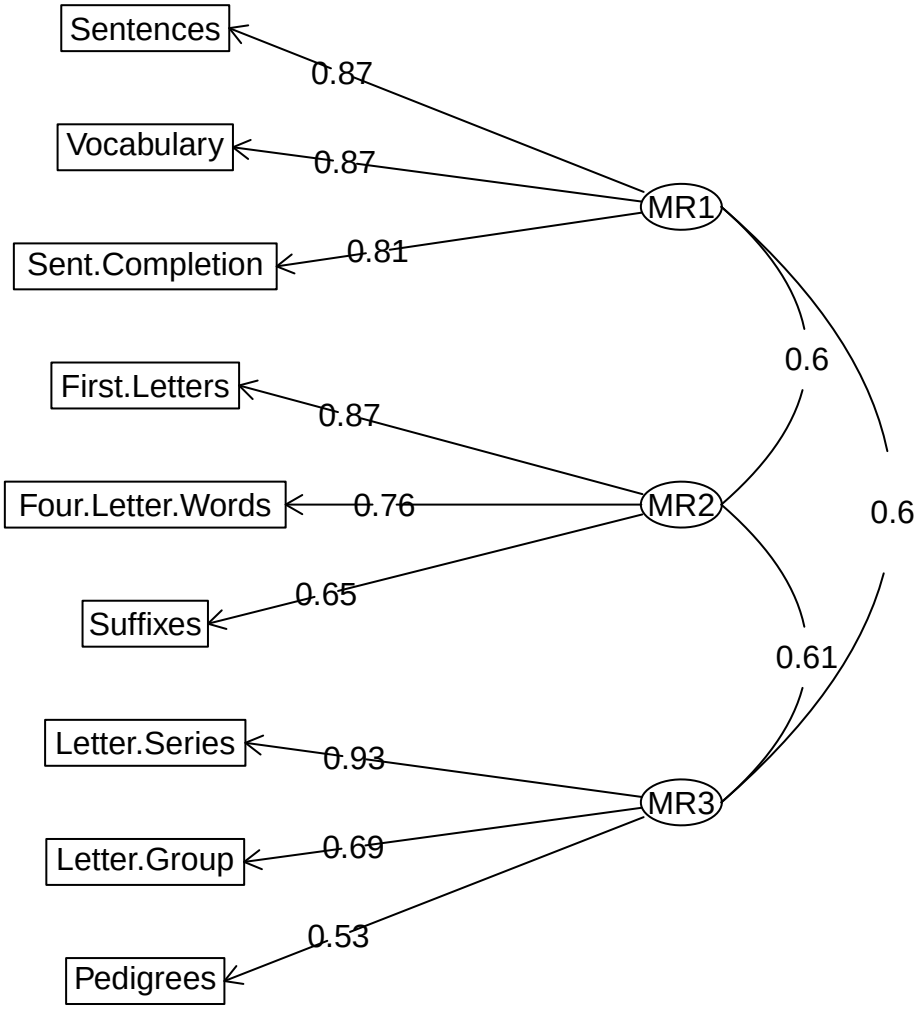
help("esem")

Factor Analysis



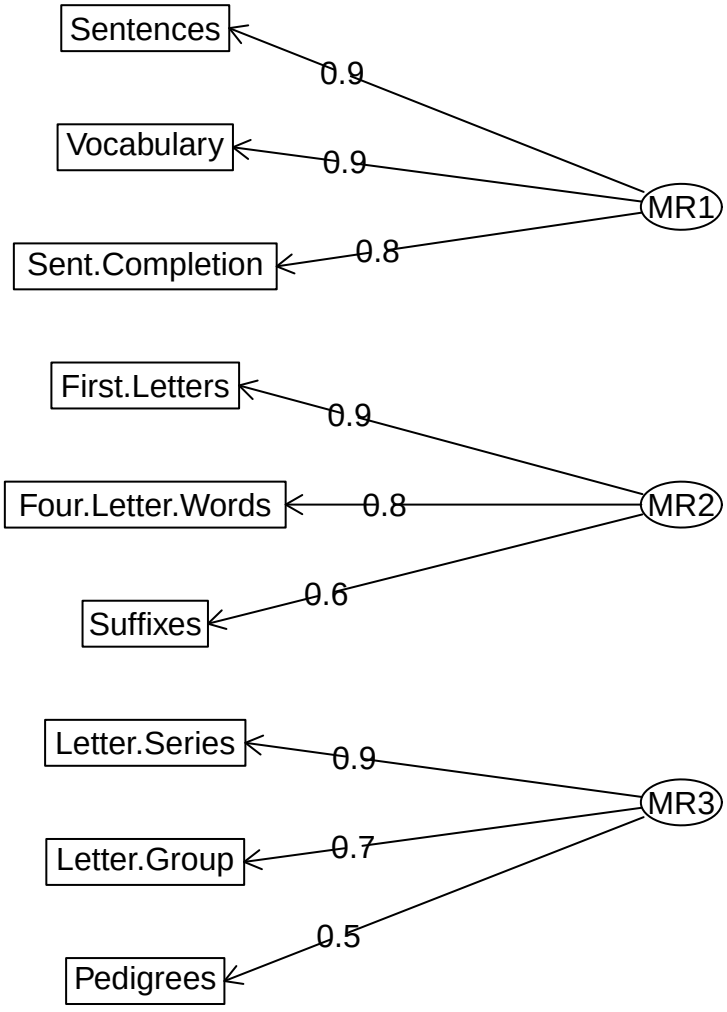
help("fa.diagram")

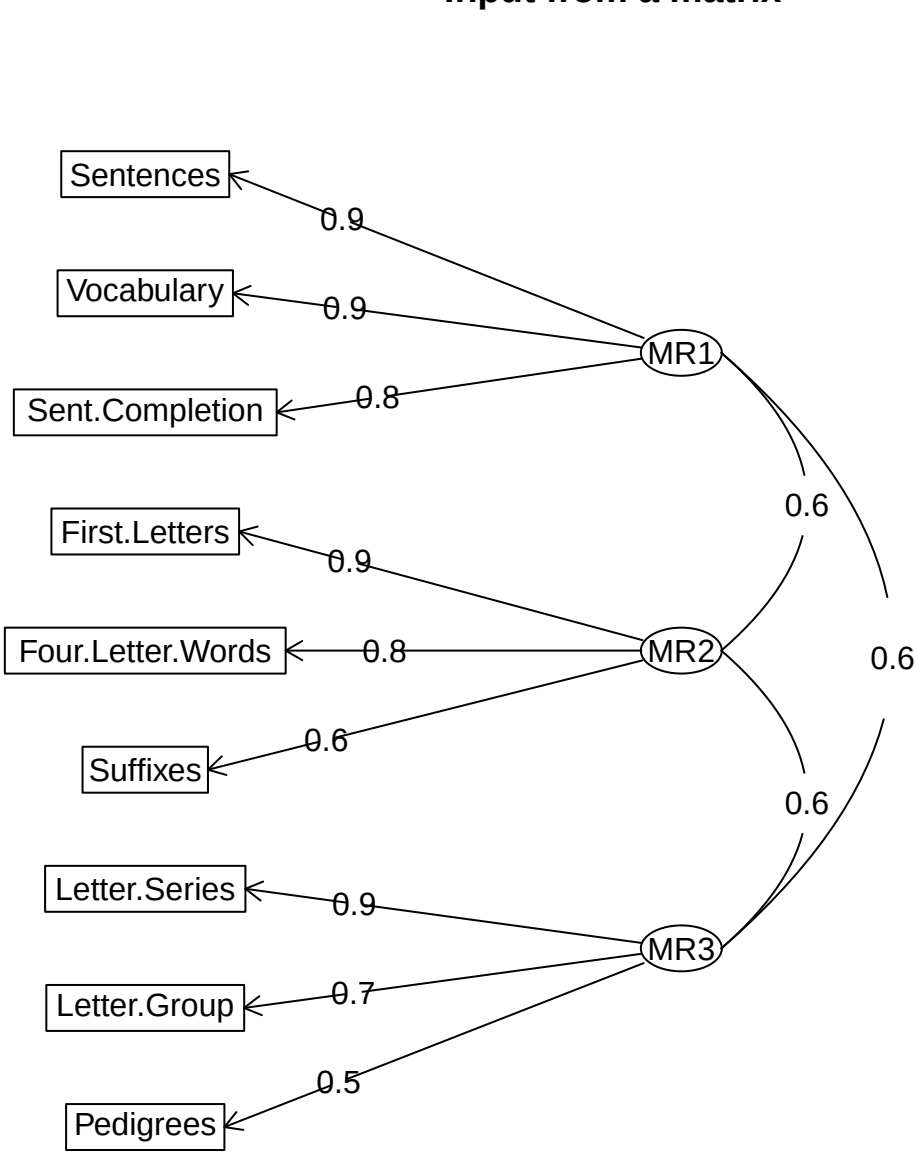
Factor Analysis

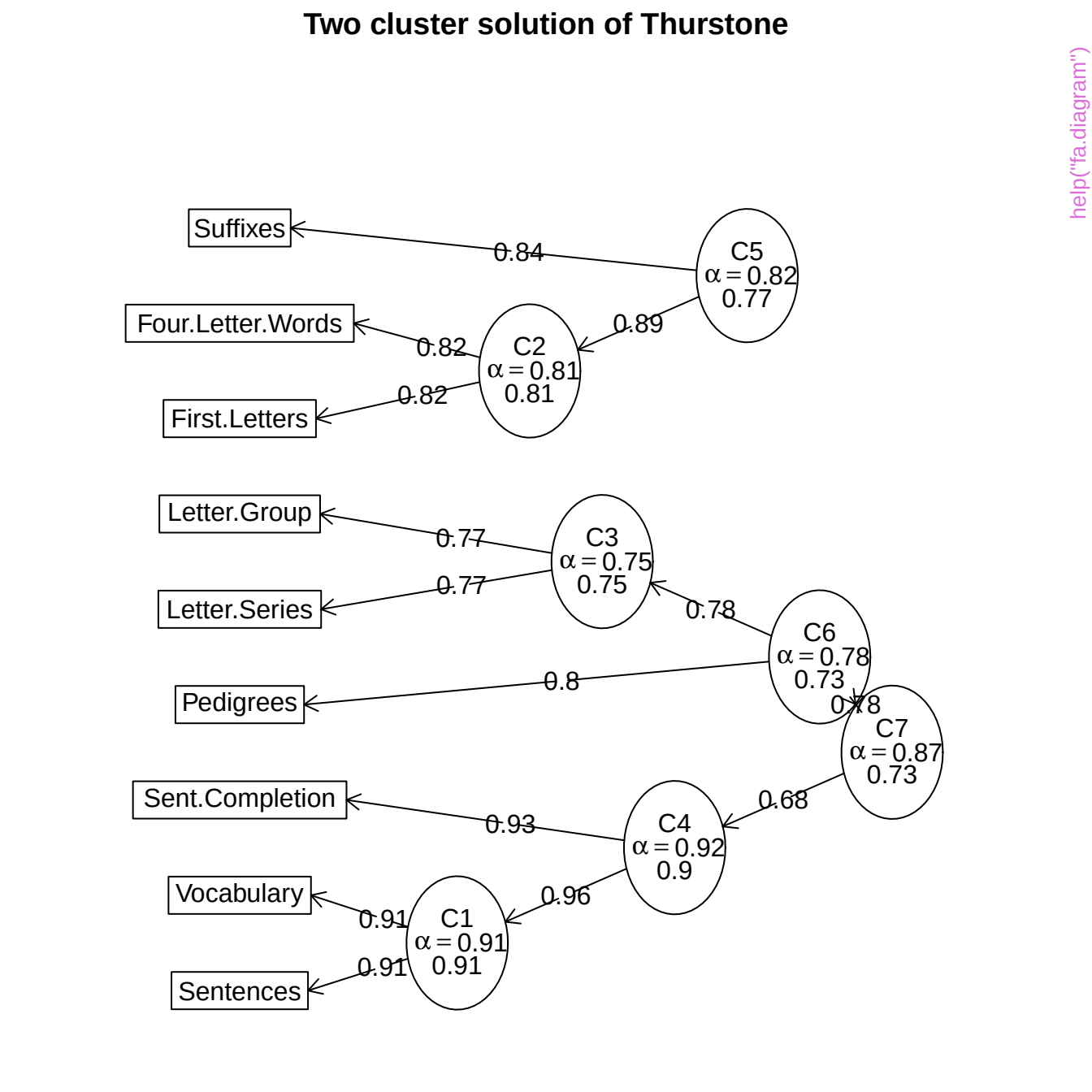


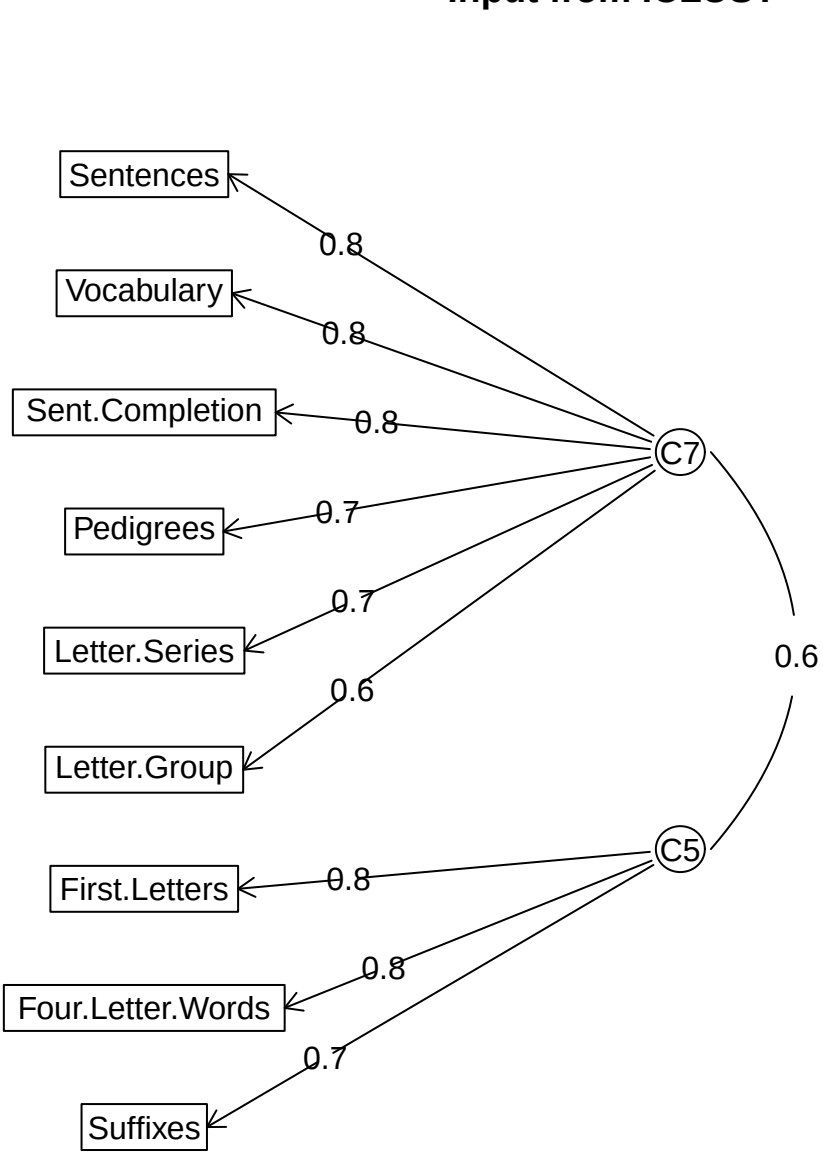
help("fa.diagram")

input from a matrix

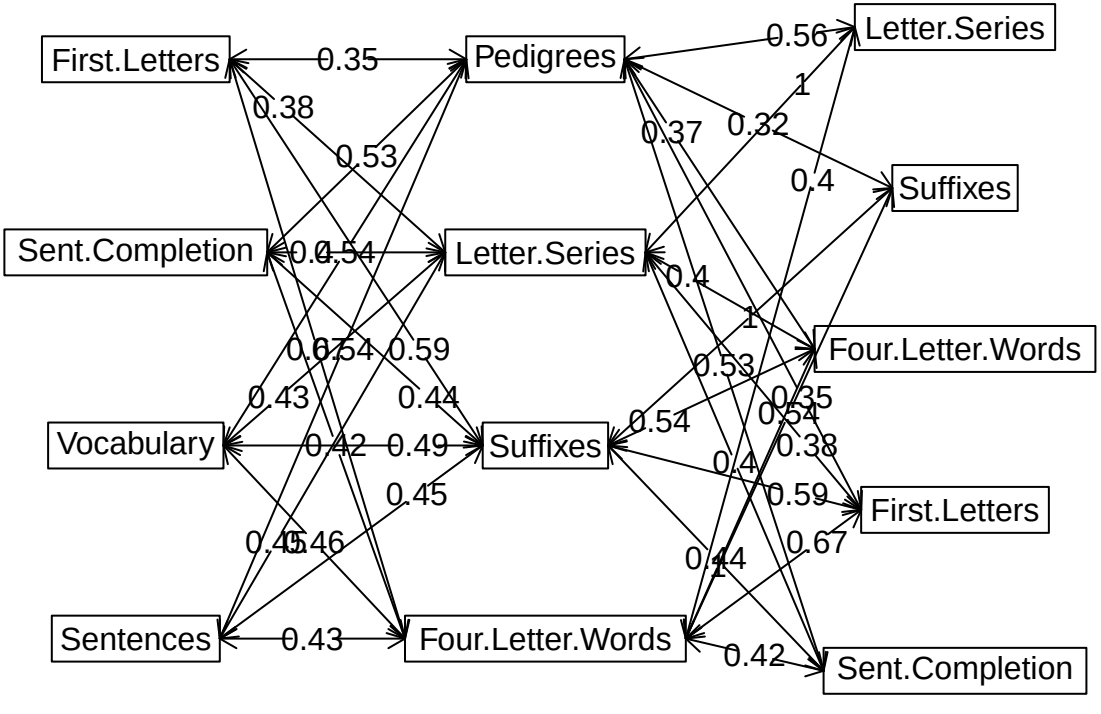





Two cluster solution of Thurstone
help("fa.diagram")
Suffixes
Four.Letter.Words
First.Letters
Letter.Group
Letter.Series
Pedigrees
Sent.Completion
Vocabulary
Sentences
C1
α = 0.91
0.91
C2
α = 0.81
0.81
C3
α = 0.75
0.75
C4
α = 0.92
0.9
C5
α = 0.82
0.77
C6
α = 0.78
0.73
C7
α = 0.87
0.73
0.84
0.82
0.82
0.89
0.77
0.77
0.78
0.8
0.78
0.68
0.93
0.96
0.91
0.91

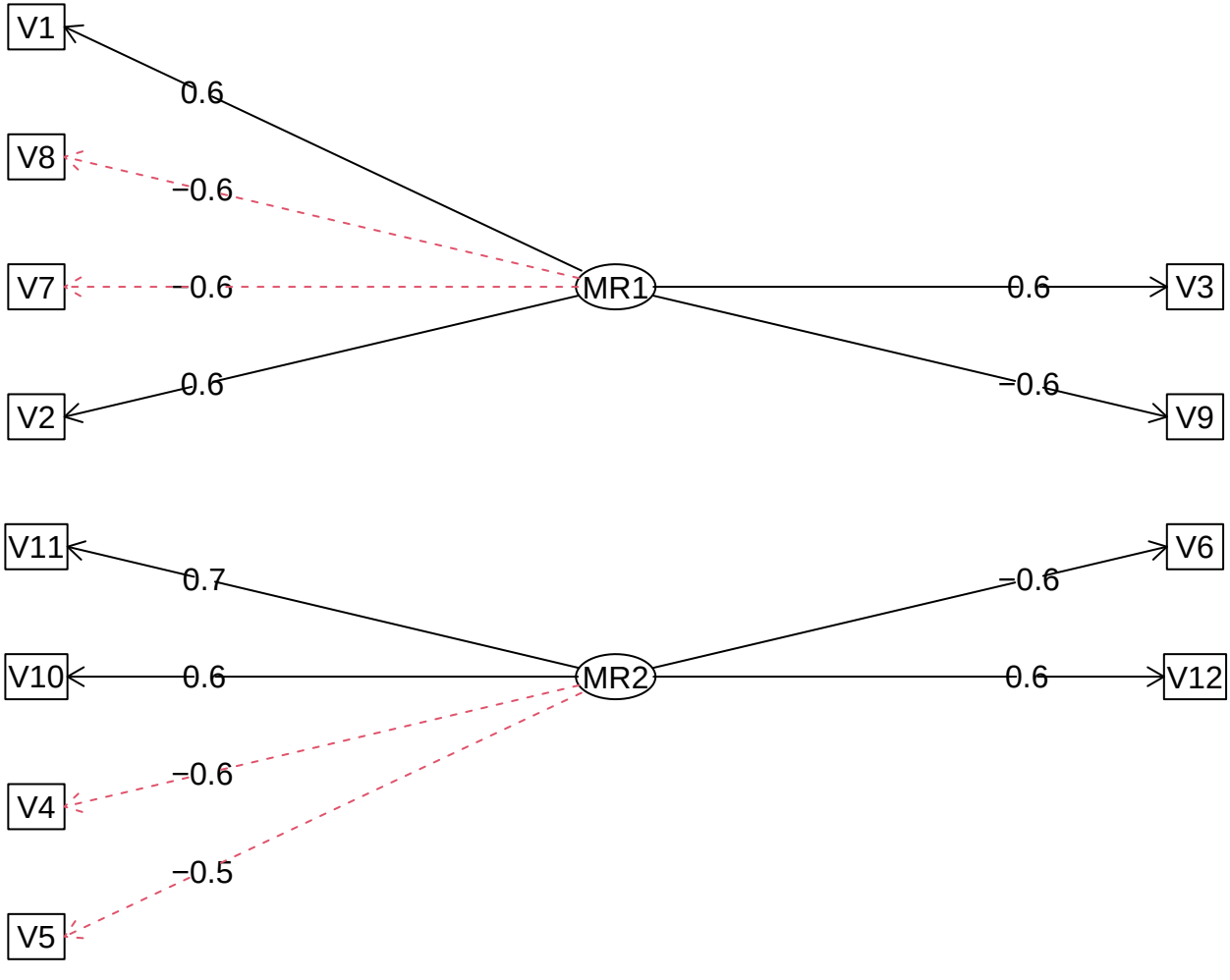

Input from ICLUST
Sentences
Vocabulary
Sent.Completion
Pedigrees
Letter.Series
Letter.Group
First.Letters
Four.Letter.Words
Suffixes
C7
C5
0.8
0.8
0.8
0.7
0.7
0.6
0.8
0.8
0.7
0.6
help("fa.diagram")

Heterarchy diagram



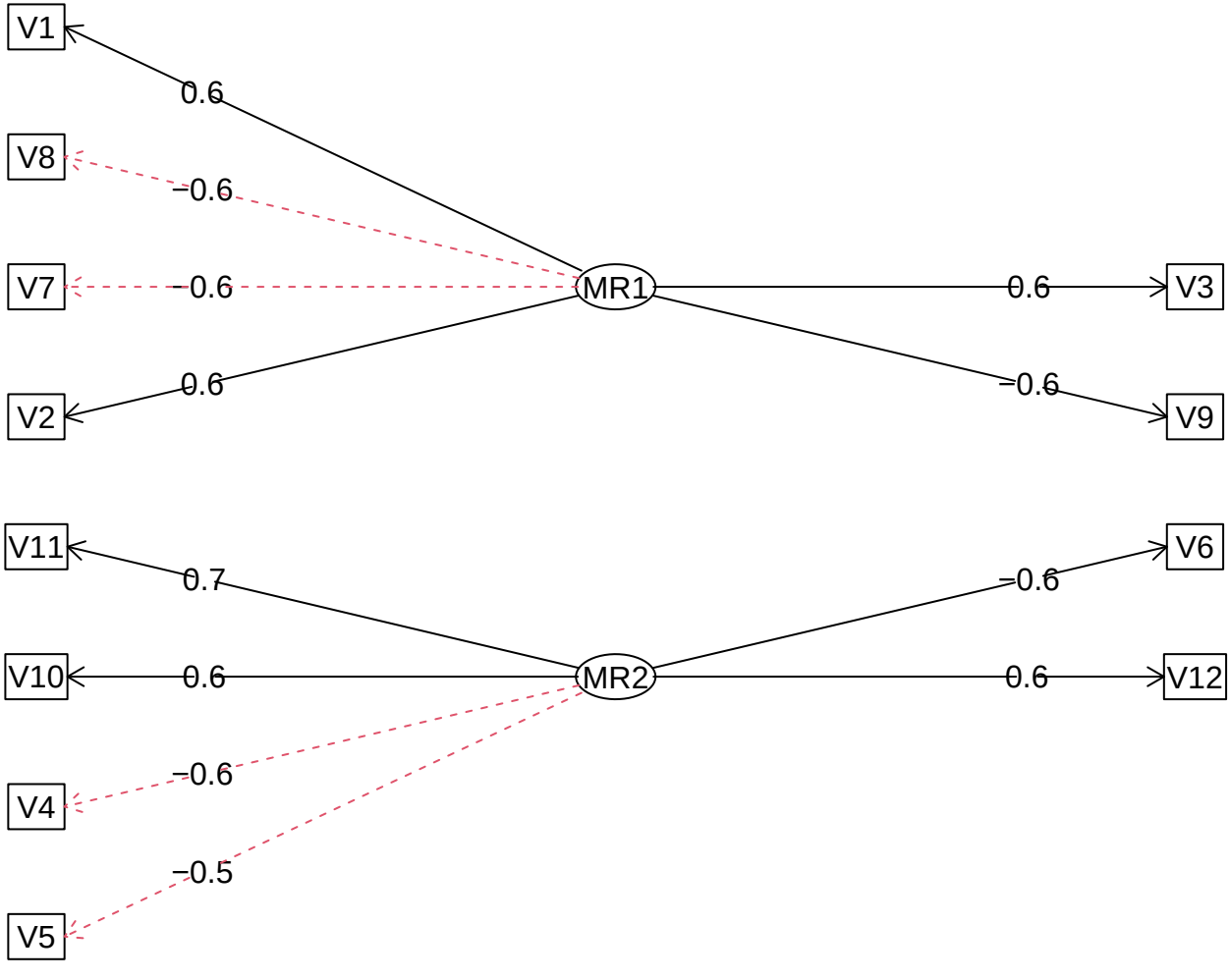
help("fa.diagram")

Factor analysis and extension



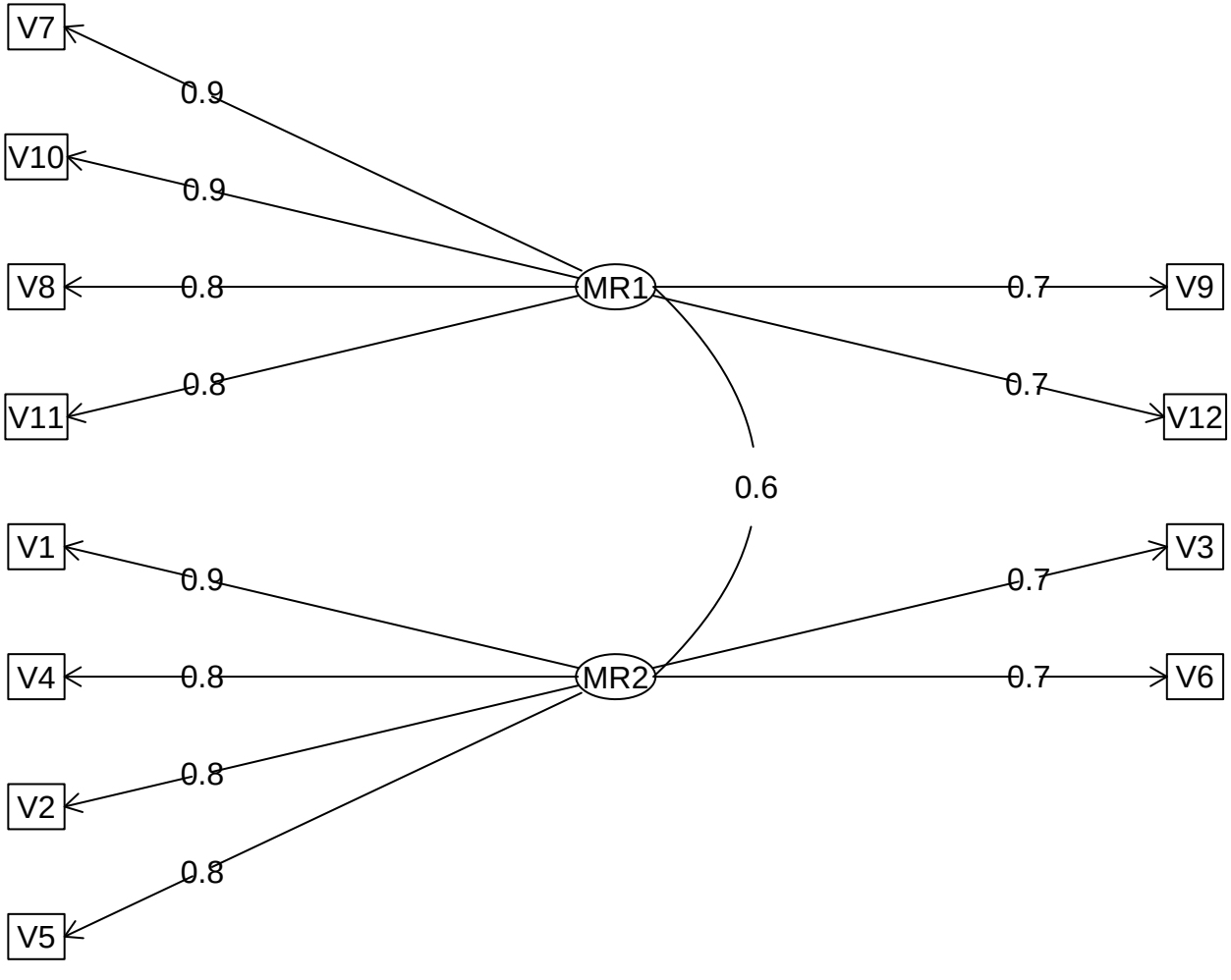
help("fa.extension")

Factor analysis and extension

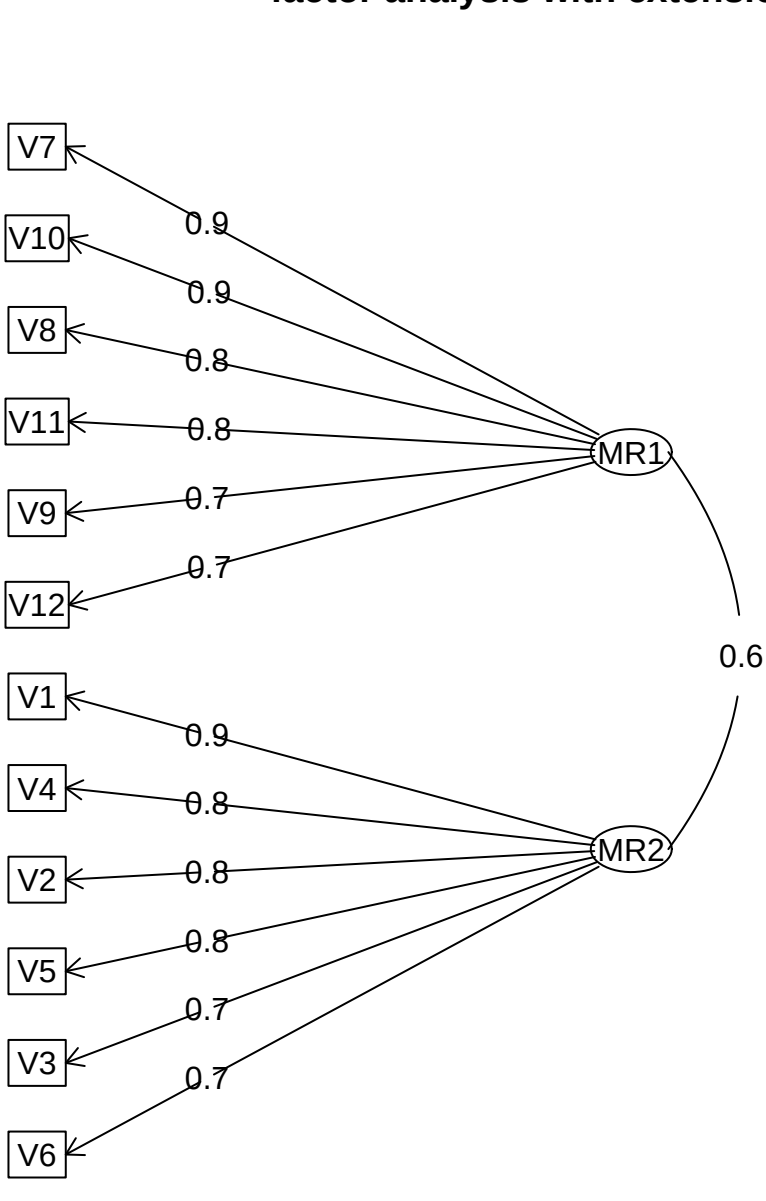


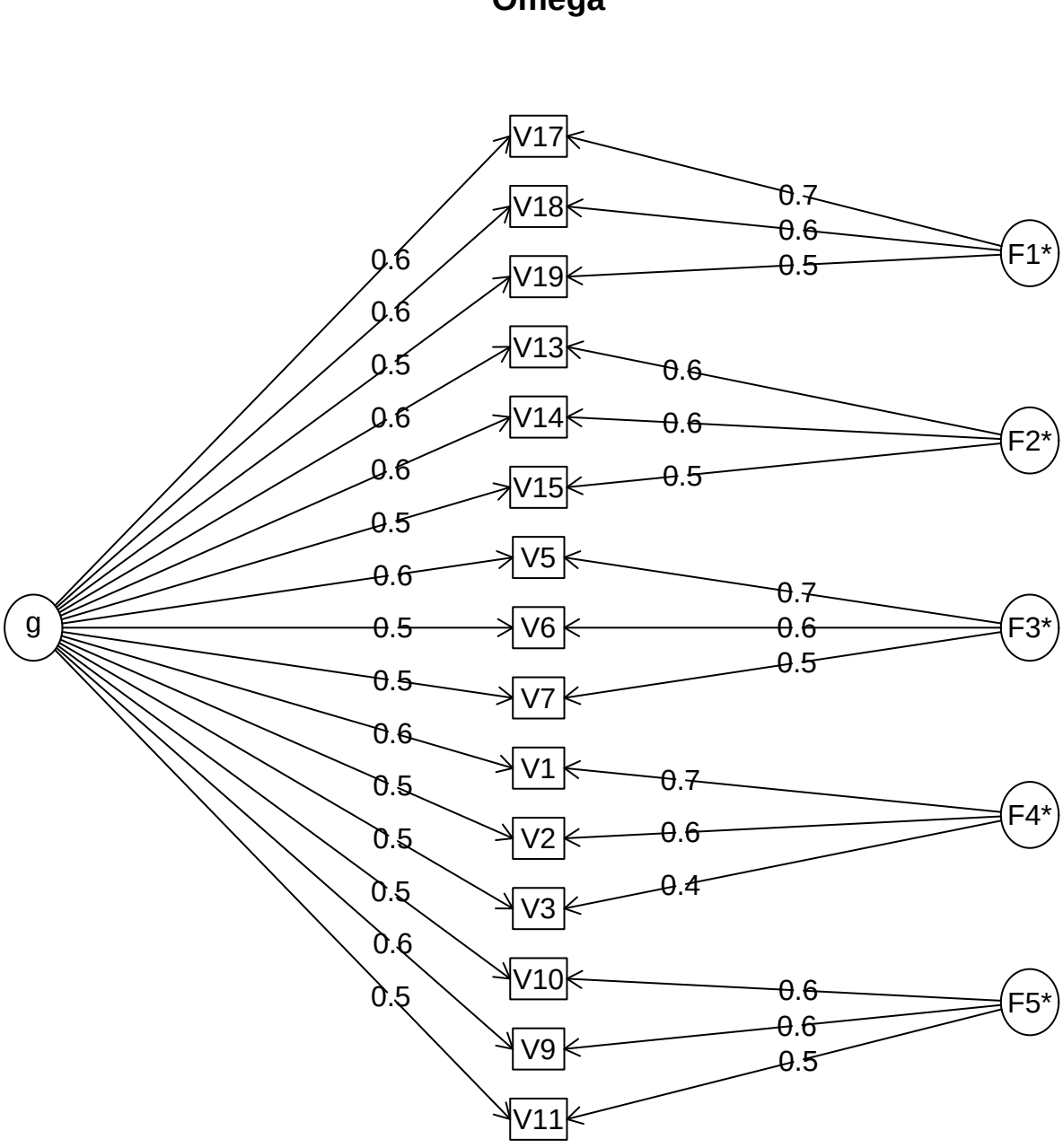
help("fa.extension")

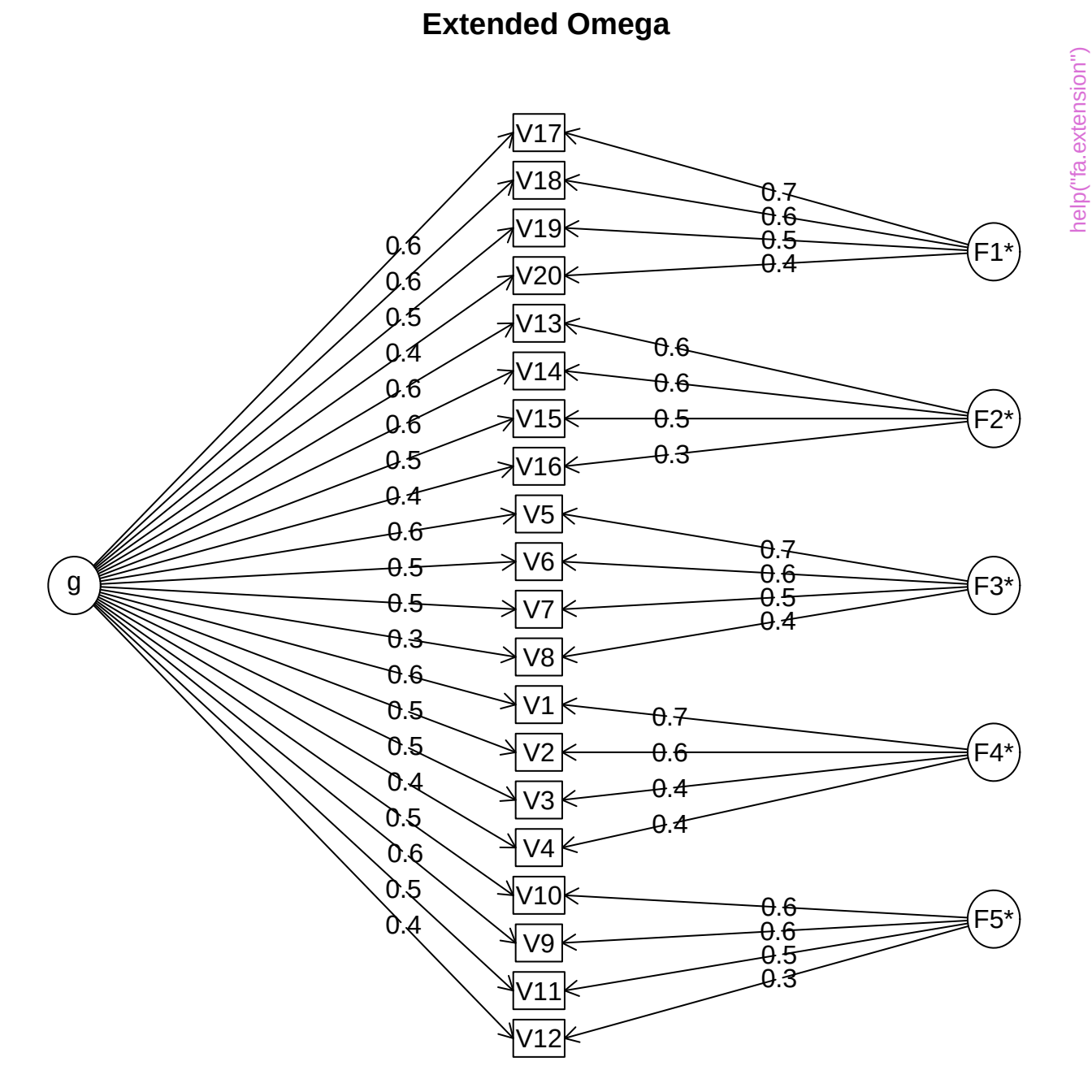
Factor analysis and extension

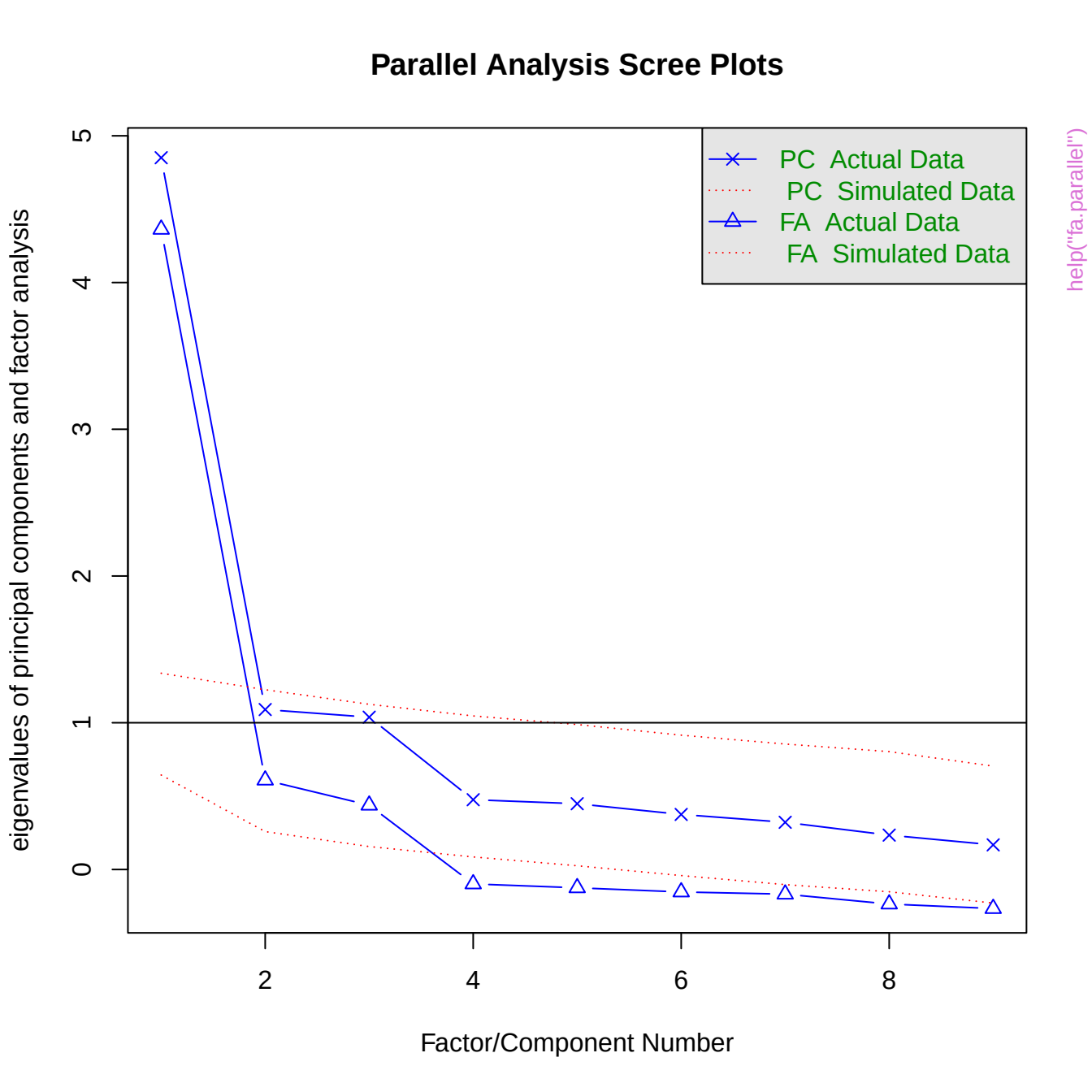


help("fa.extension")

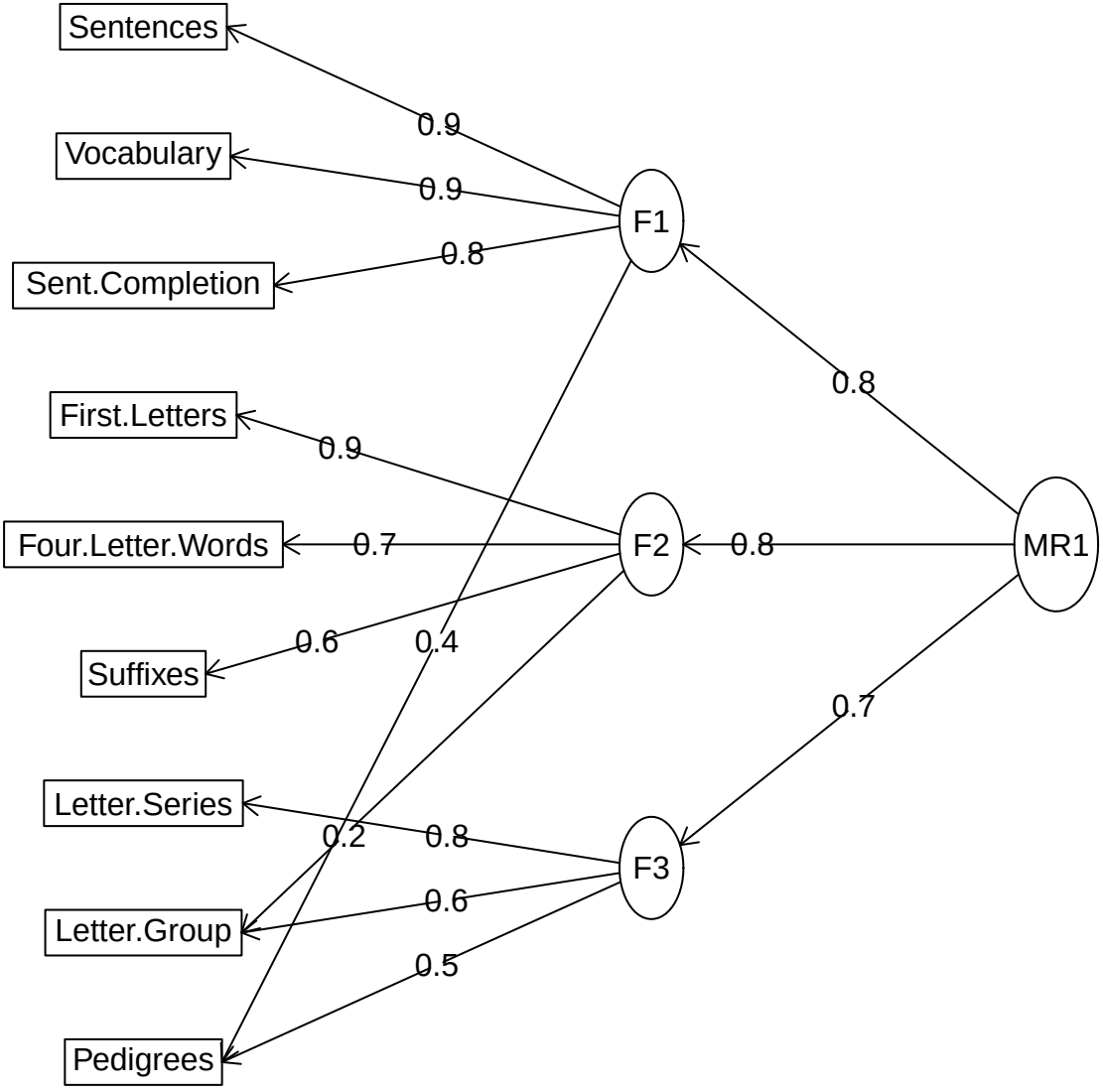


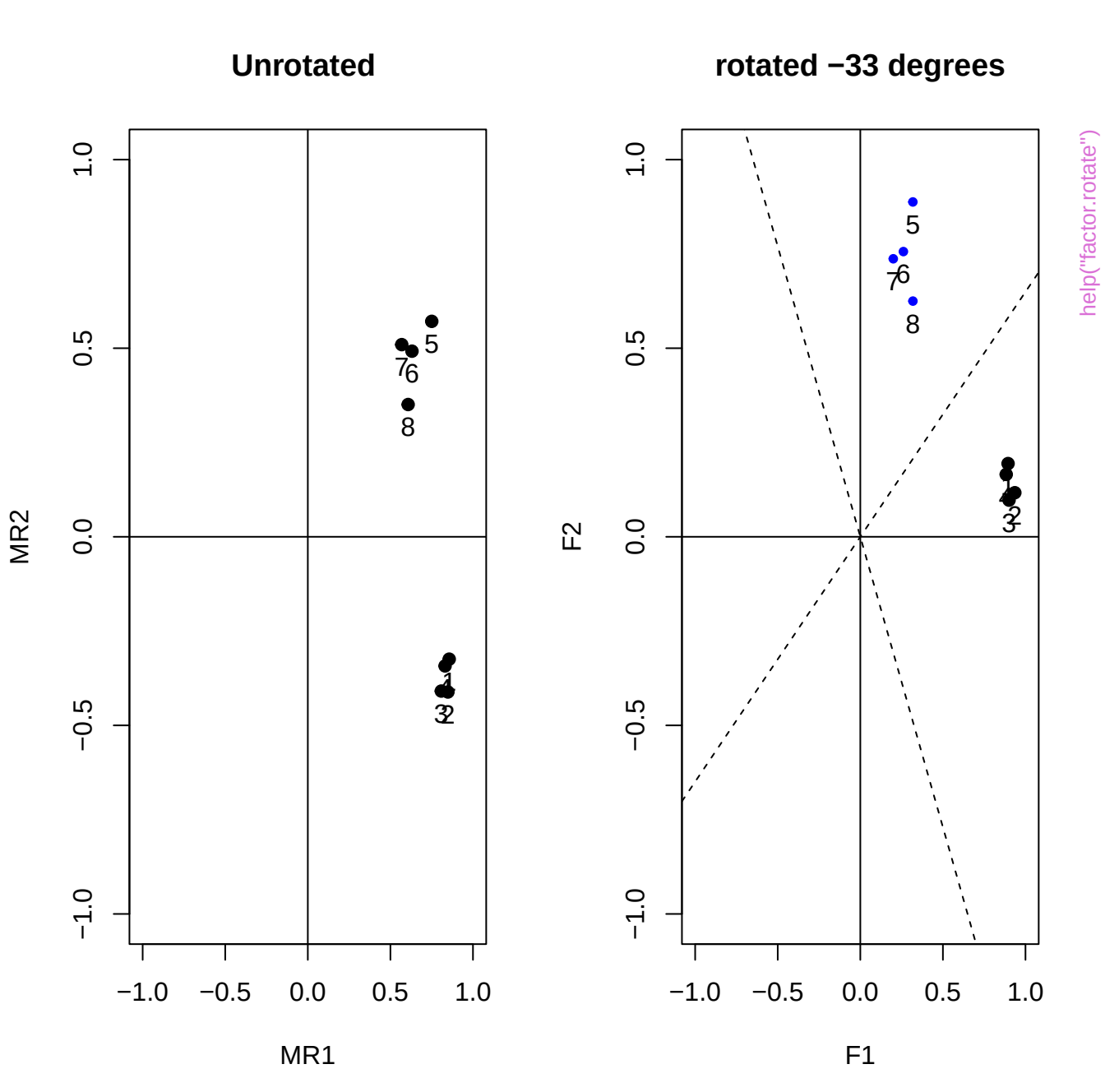

Omega
help("fa.extension")
g
V17
V18
V19
V13
V14
V15
V5
V6
V7
V1
V2
V3
V10
V9
V11
F1*
F2*
F3*
F4*
F5*
0.6
0.6
0.5
0.6
0.6
0.5
0.6
0.5
0.5
0.6
0.5
0.5
0.6
0.5
0.7
0.6
0.5
0.6
0.6
0.5
0.7
0.6
0.5
0.7
0.6
0.4
0.6
0.6
0.5


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

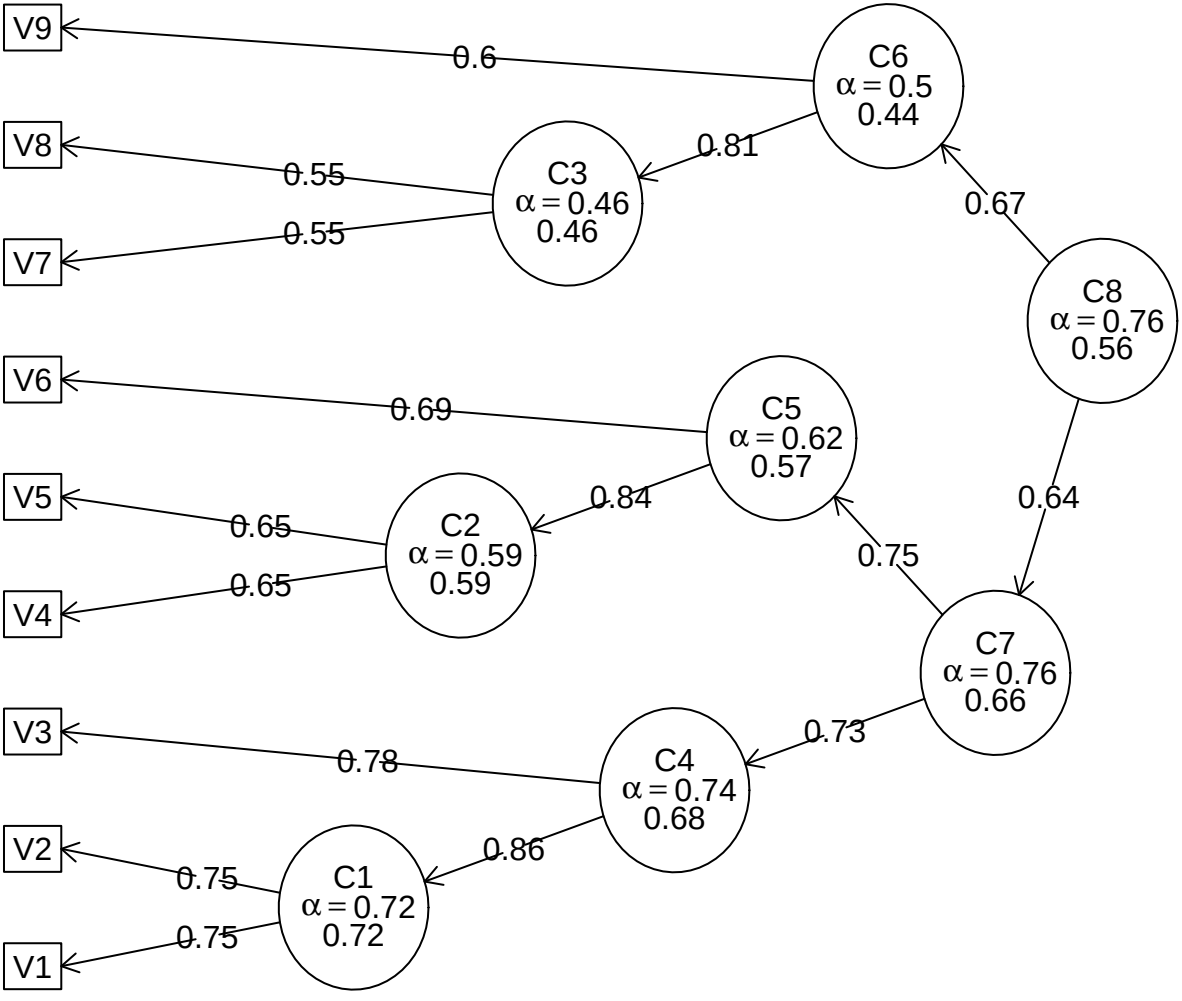

Parallel Analysis Scree Plots
PC Actual Data
PC Simulated Data
FA Actual Data
FA Simulated Data
eigenvalues of principal components and factor analysis
Factor/Component Number
0
1
2
3
4
5
2
4
6
8
help("fa.parallel")

Hierarchical (multilevel) Structure



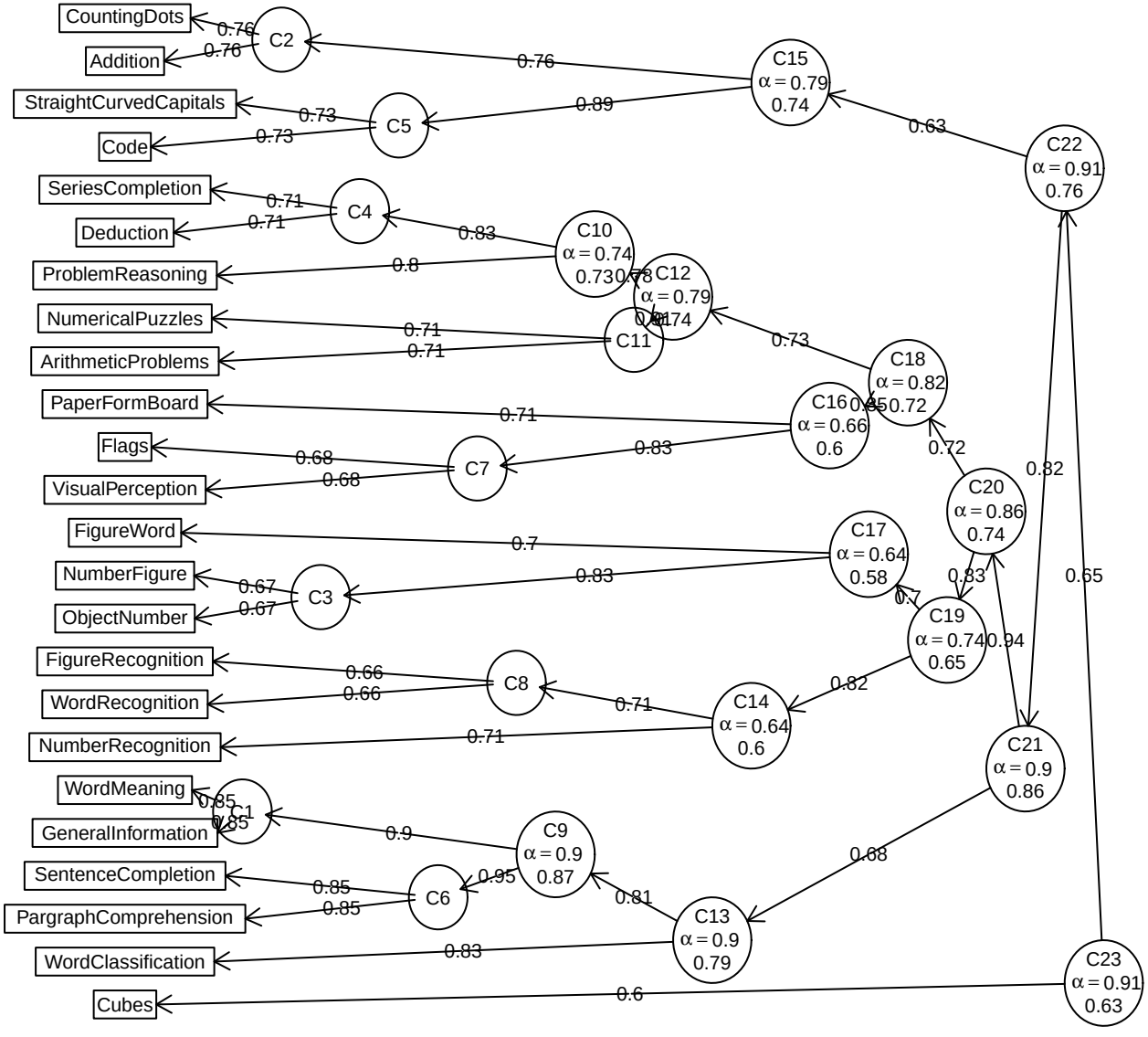

Unrotated
MR2
MR1
1.0
0.5
0.0
−0.5
−1.0
−1.0
−0.5
0.0
0.5
1.0
5
7
6
8
1
2
3
4
rotated −33 degrees
F2
F1
help("factor.rotate")

ICLUST

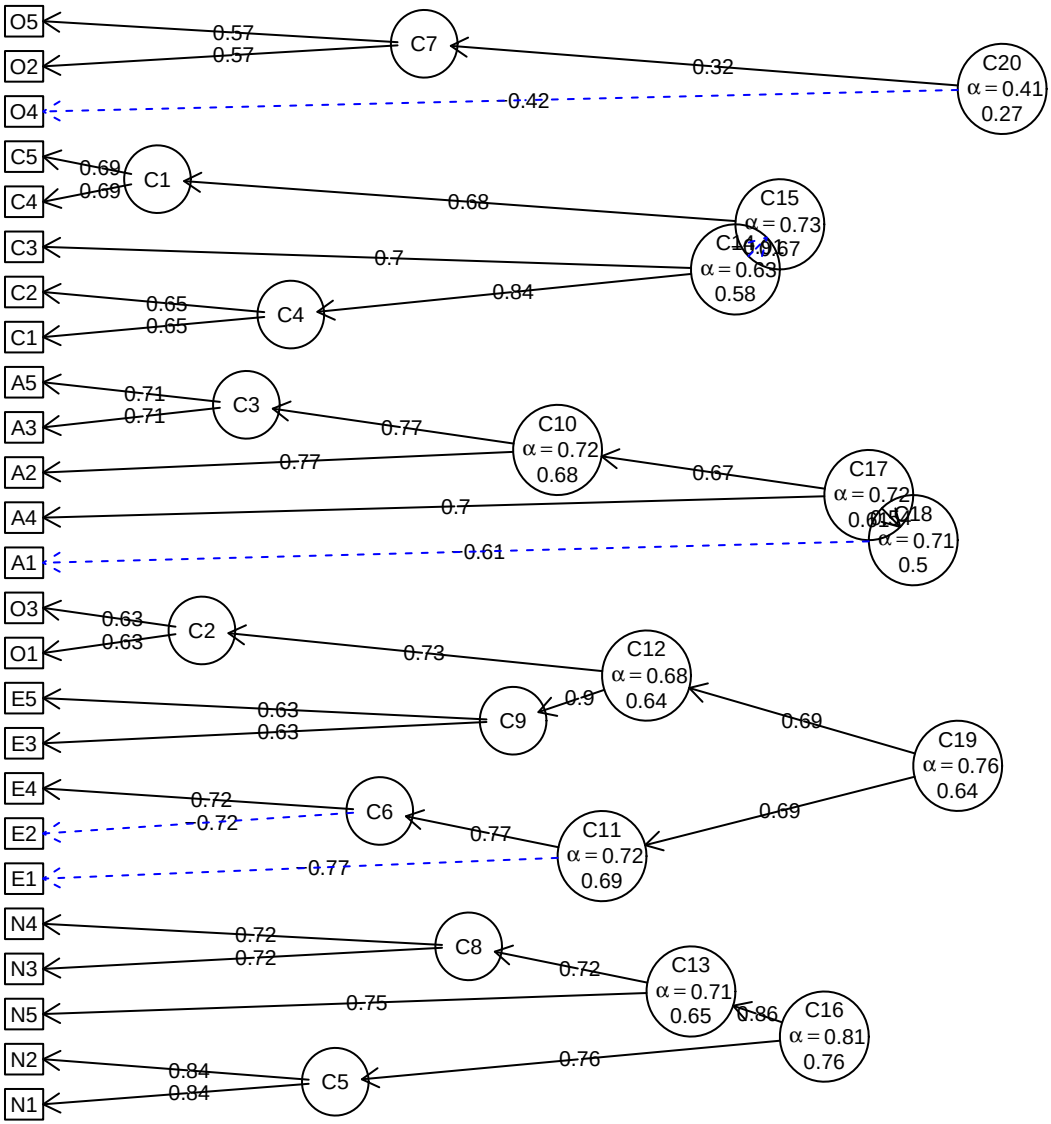


help("iclust.diagram")

ICLUST

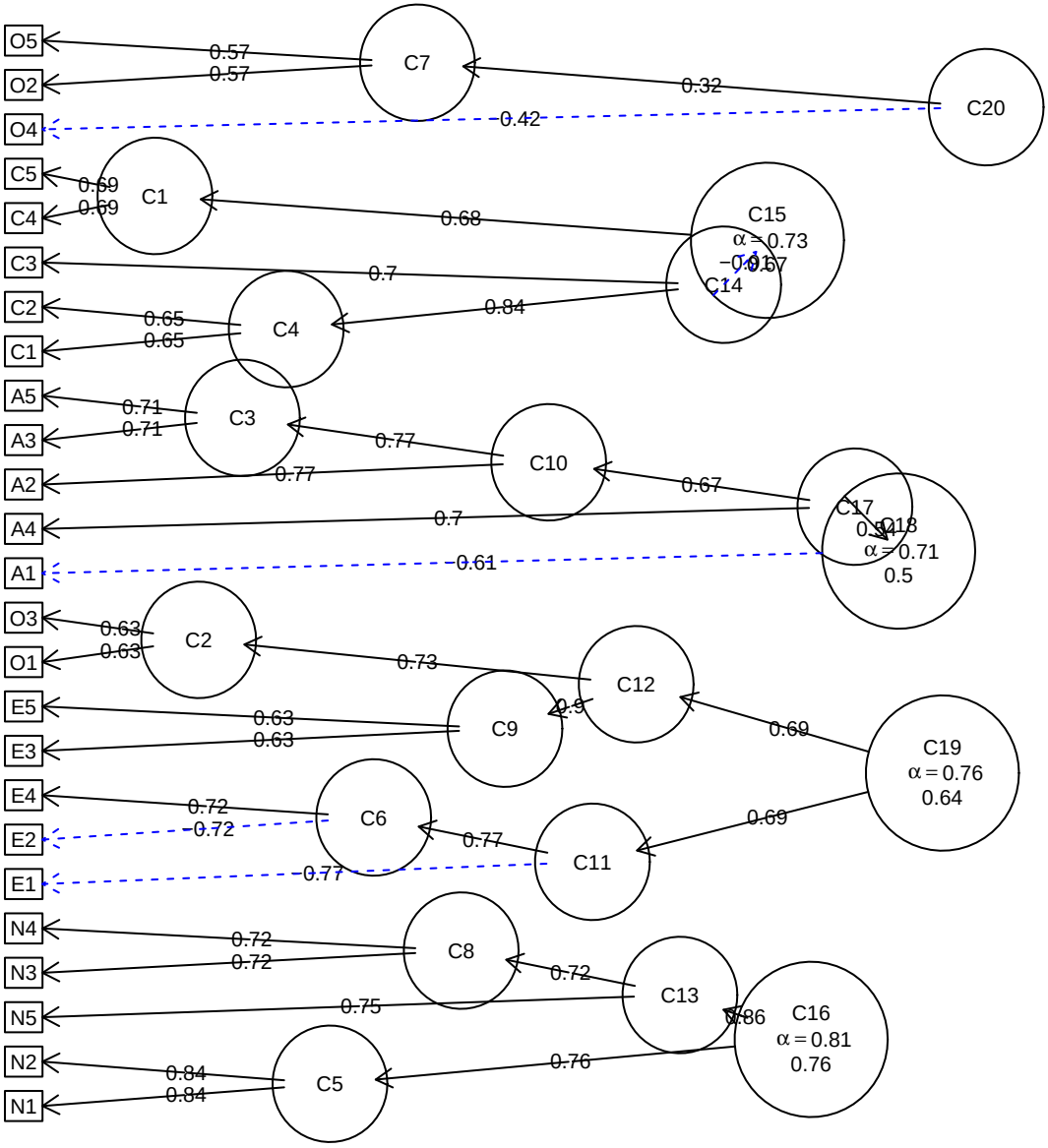

CountingDots
Addition
StraightCurvedCapitals
Code
SeriesCompletion
Deduction
ProblemReasoning
NumericalPuzzles
ArithmeticProblems
PaperFormBoard
Flags
VisualPerception
FigureWord
NumberFigure
ObjectNumber
FigureRecognition
WordRecognition
NumberRecognition
WordMeaning
GeneralInformation
SentenceCompletion
PargraphComprehension
WordClassification
Cubes
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
α = 0.79
0.74
C16
α = 0.66
0.6
C17
α = 0.64
0.58
C18
α = 0.82
0.72
C19
α = 0.74
0.65
C20
α = 0.86
0.74
C21
α = 0.9
0.86
C22
α = 0.91
0.76
C23
α = 0.91
0.63
help("iclust.diagram")

ICLUST

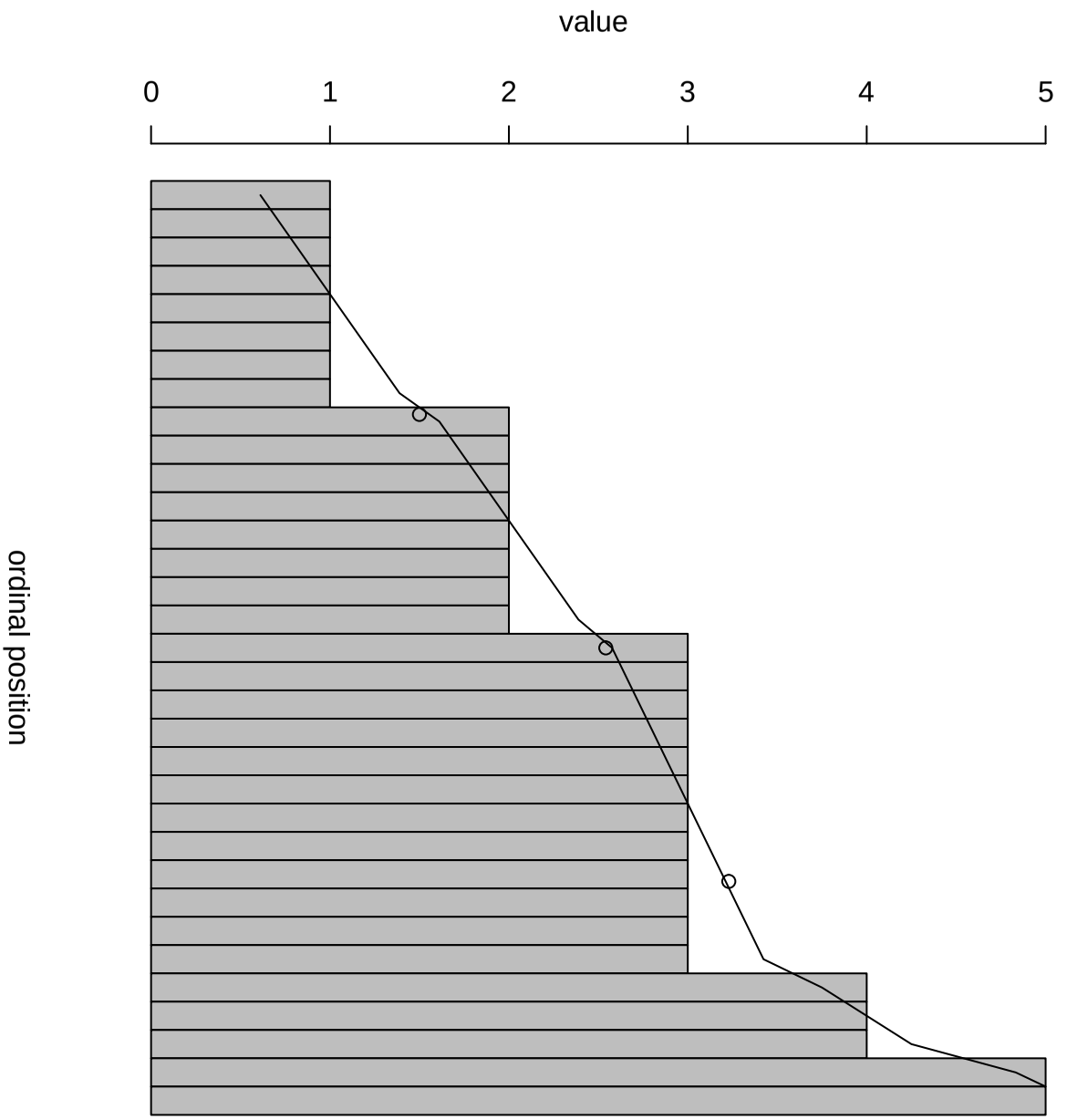


help("iclust.diagram")

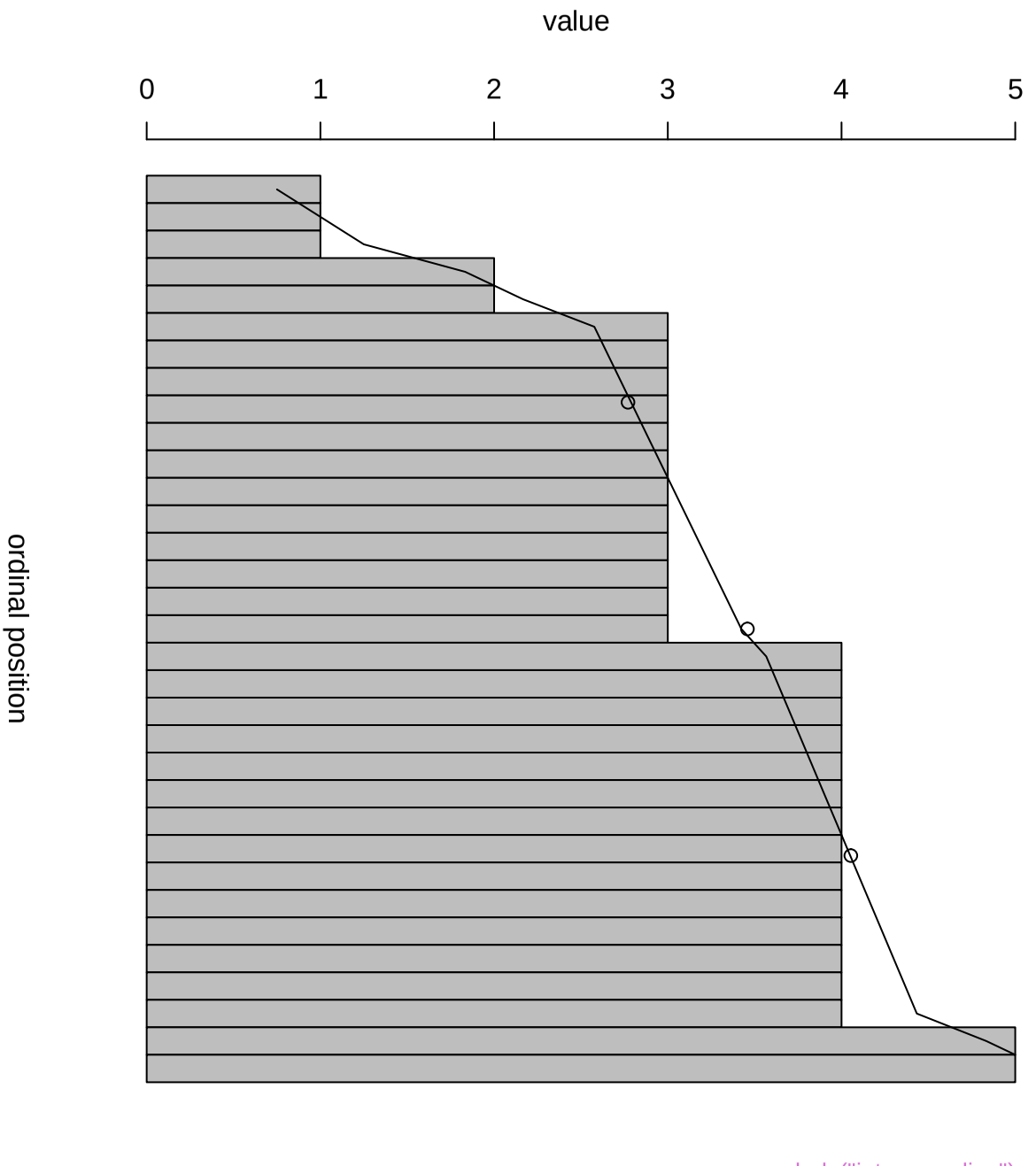
ICLUST diagram



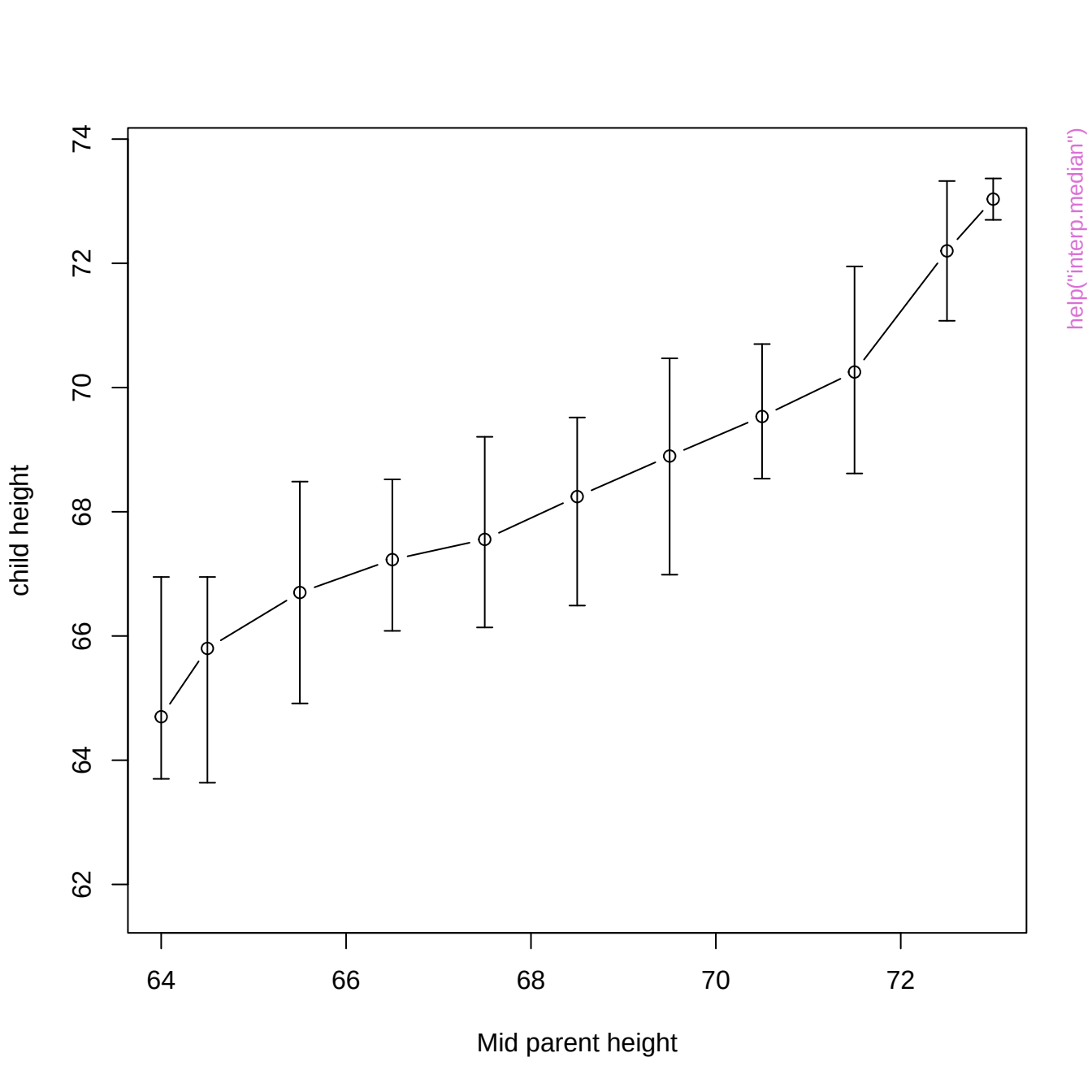
help("iclust.diagram")

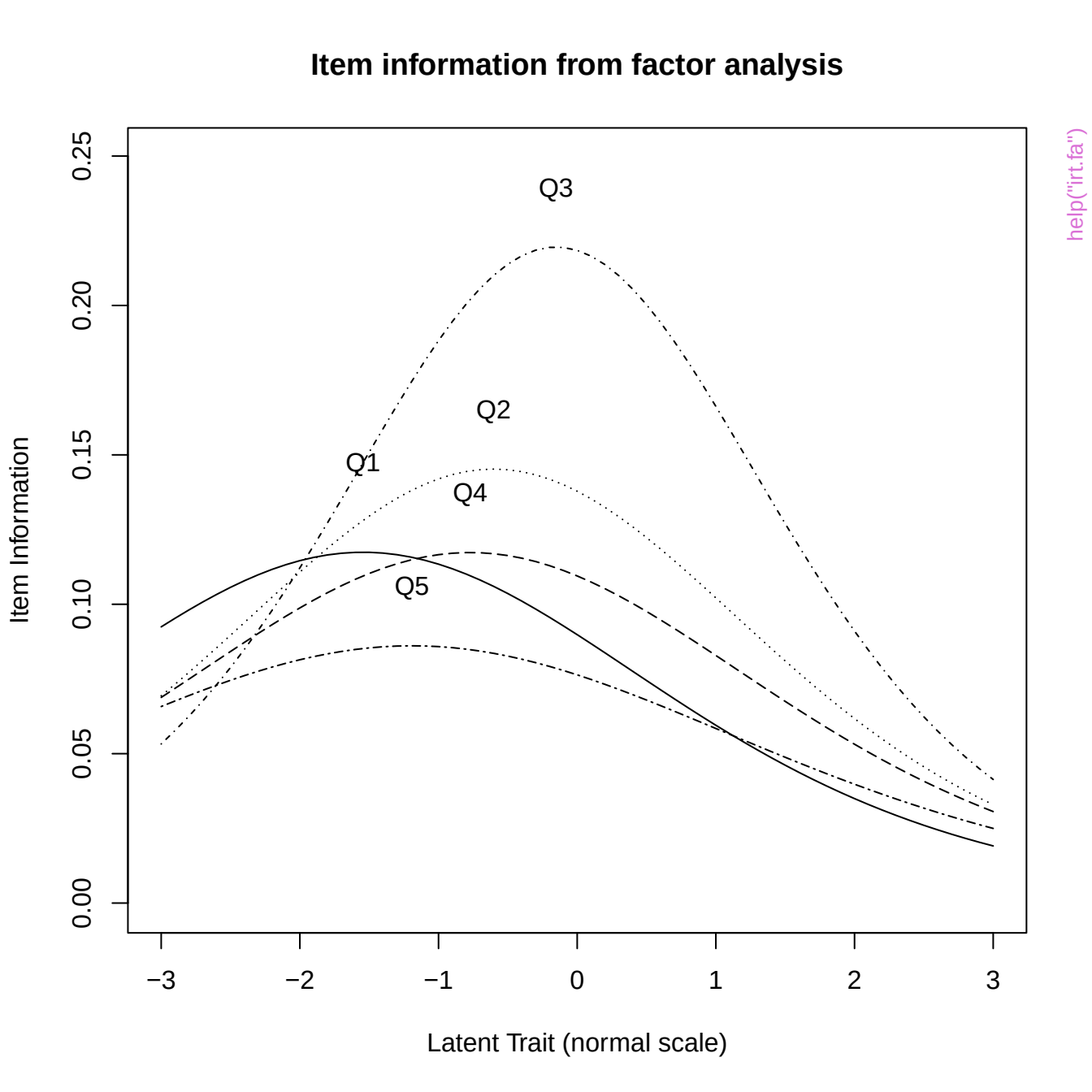


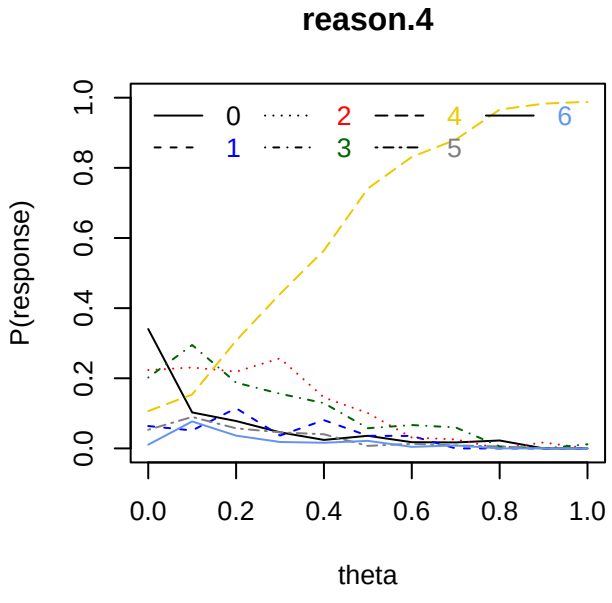
help("interp.median")

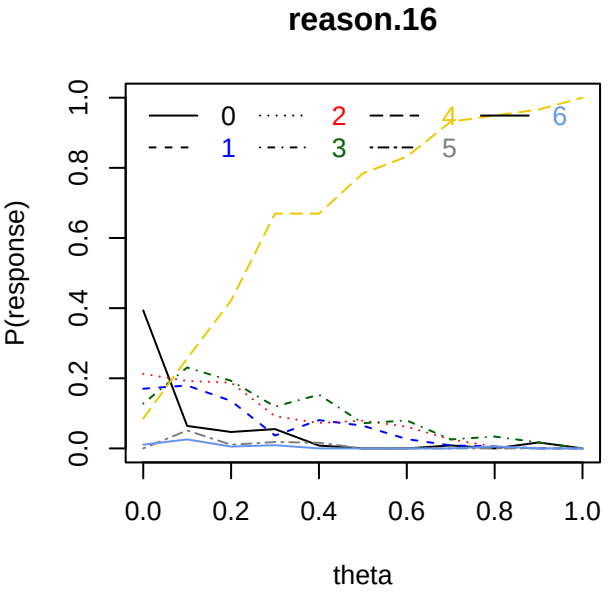


help("interp.median")

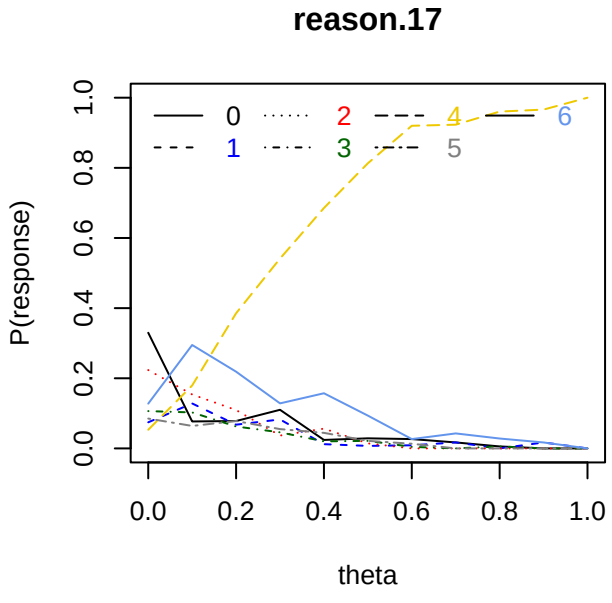

child height
Mid parent height
62
64
66
68
70
72
74
64
66
68
70
72
help("interp.median")

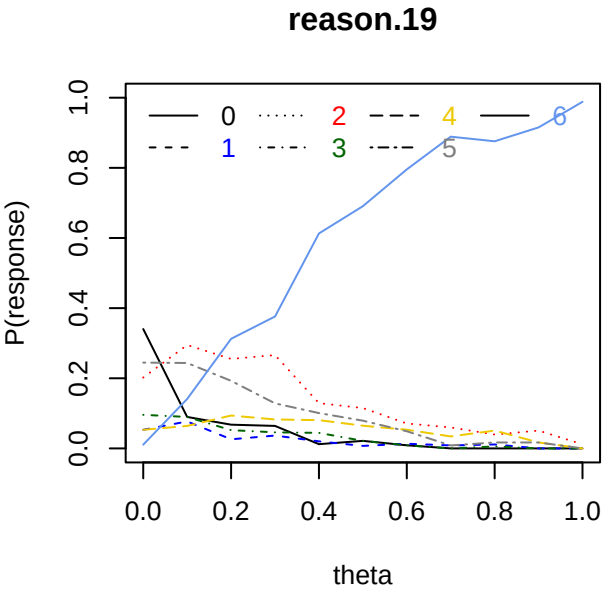

Item information from factor analysis
help("irt.fa")
Item Information
0.00
0.05
0.10
0.15
0.20
0.25
Q1
Q2
Q3
Q4
Q5
−3
−2
−1
0
1
2
3
Latent Trait (normal scale)

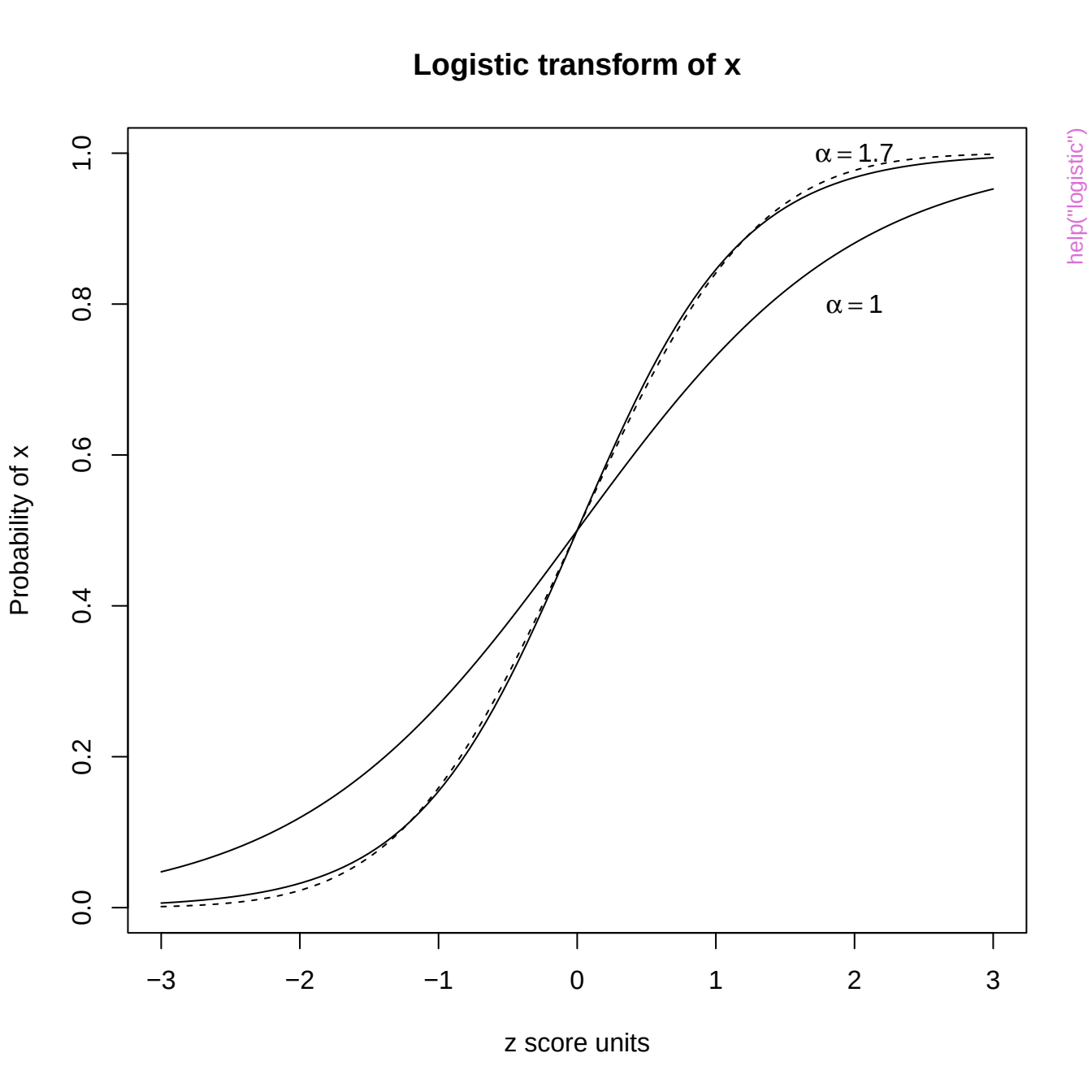


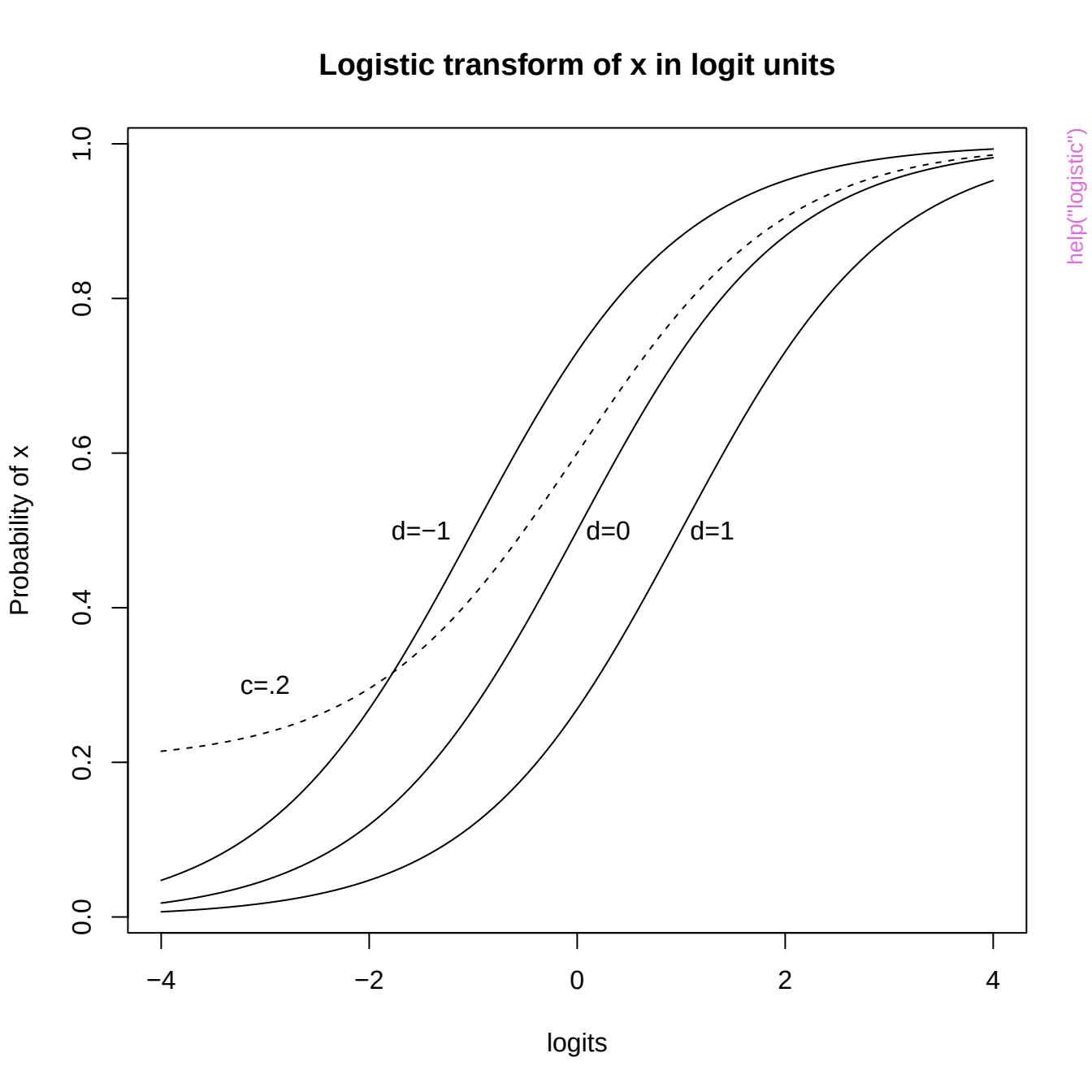


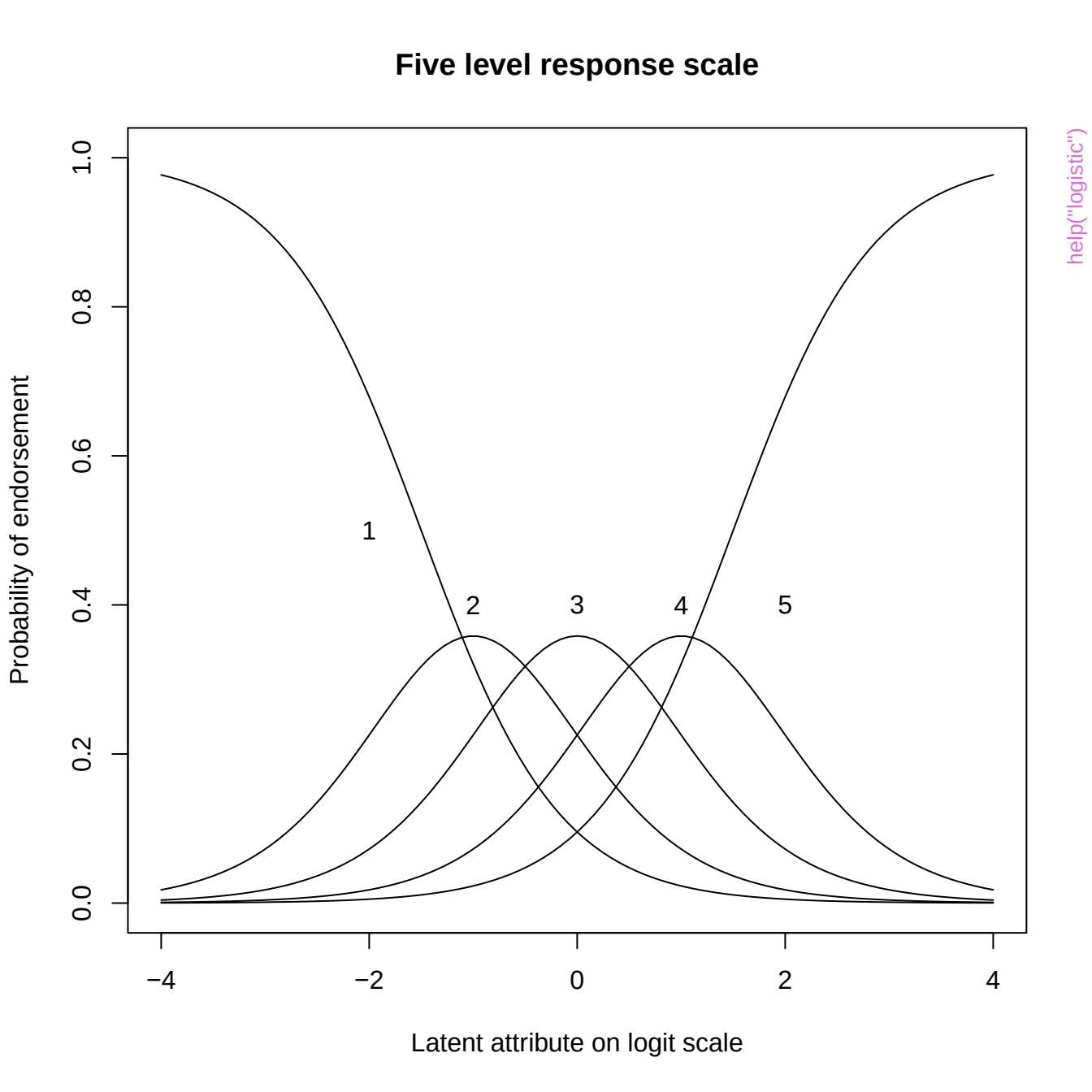
help("irt.responses")

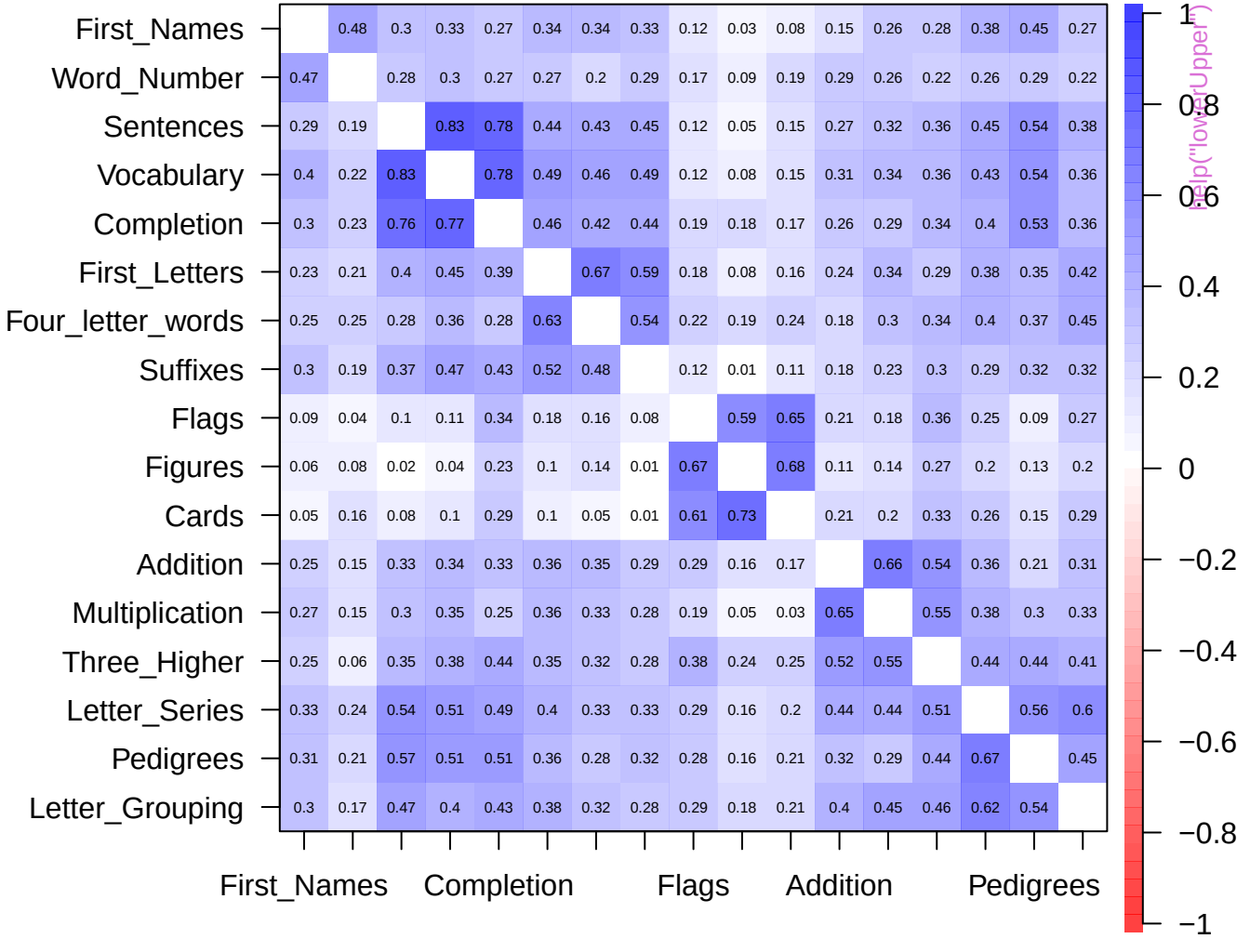


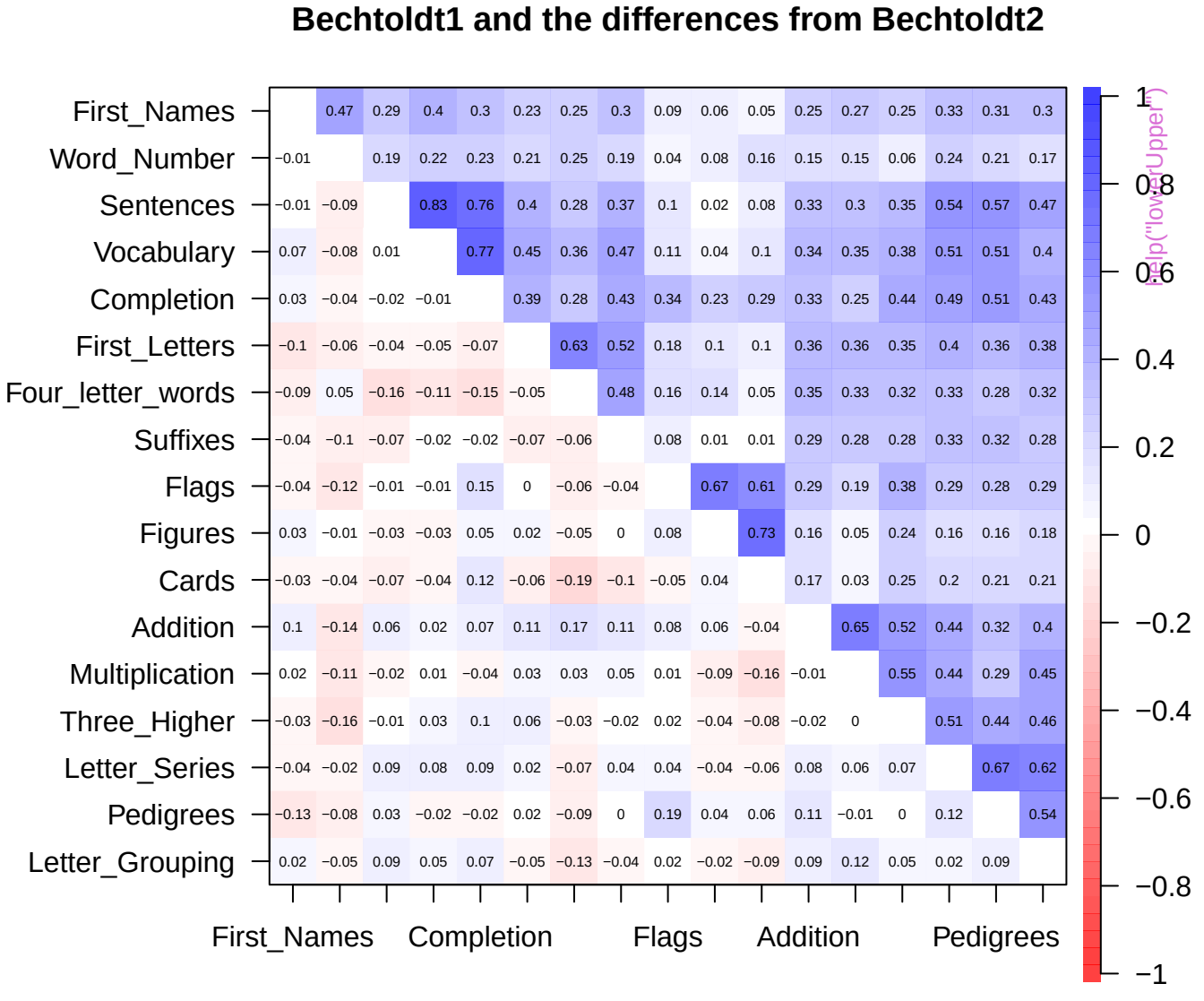


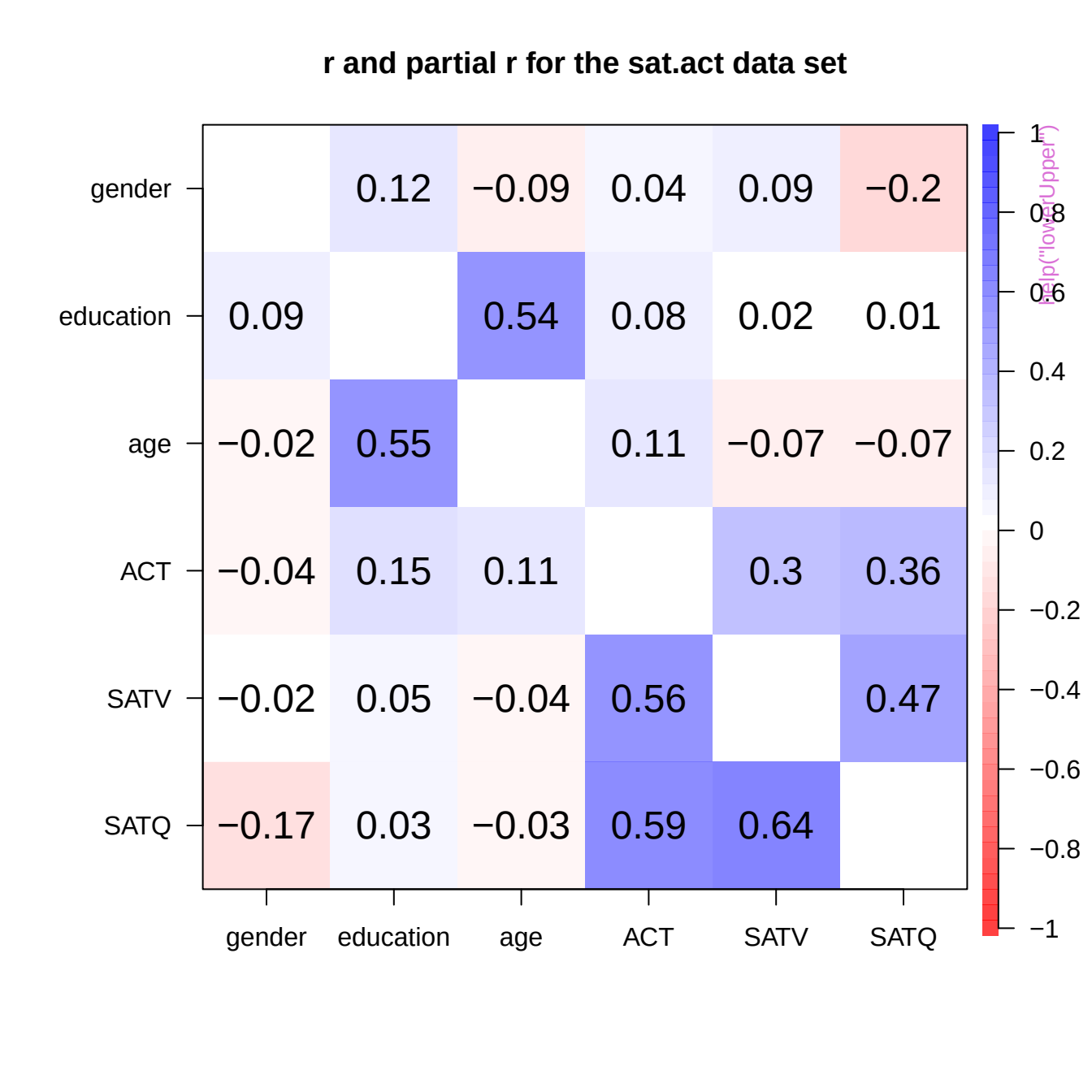

Logistic transform of x
Probability of x
z score units
α = 1.7
α = 1
0.0
0.2
0.4
0.6
0.8
1.0
−3
−2
−1
0
1
2
3
help("logistic")

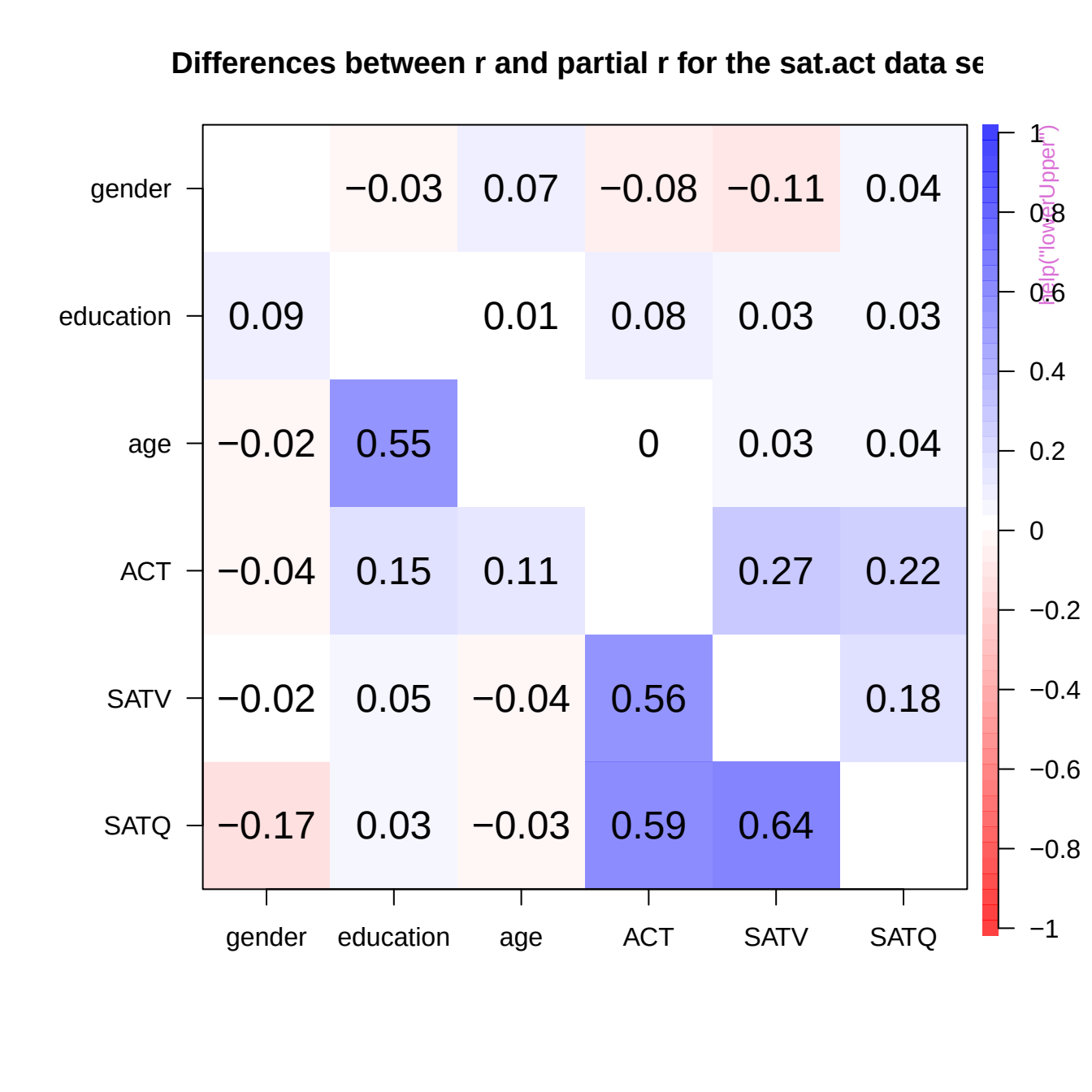

Logistic transform of x in logit units
Probability of x
0.0
0.2
0.4
0.6
0.8
1.0
−4
−2
0
2
4
logits
d=−1
d=0
d=1
c=.2
help("logistic")

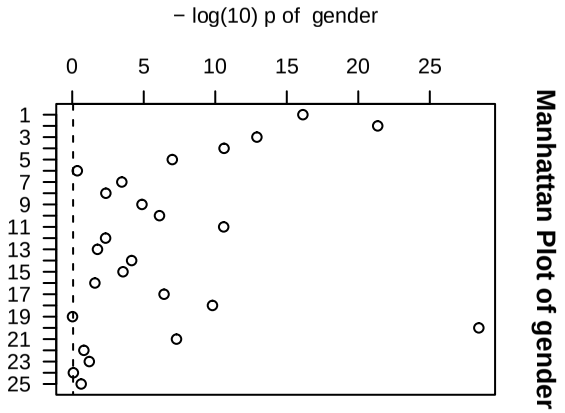

Five level response scale
help("logistic")
Probability of endorsement
1.0
0.8
0.6
0.4
0.2
0.0
1
2
3
4
5
−4
−2
0
2
4
Latent attribute on logit scale

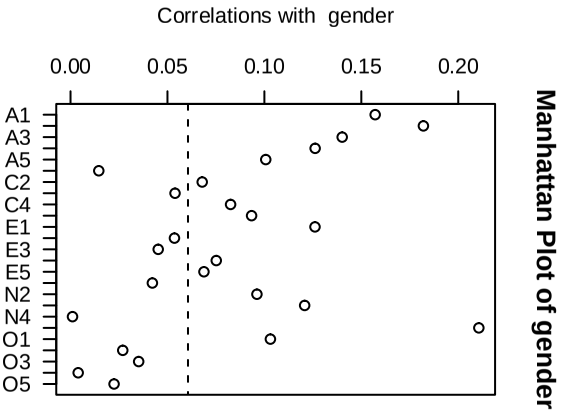

First_Names
Word_Number
Sentences
Vocabulary
Completion
First_Letters
Four_letter_words
Suffixes
Flags
Figures
Cards
Addition
Multiplication
Three_Higher
Letter_Series
Pedigrees
Letter_Grouping
First_Names
Completion
Flags
Addition
Pedigrees
lowerUpper
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1

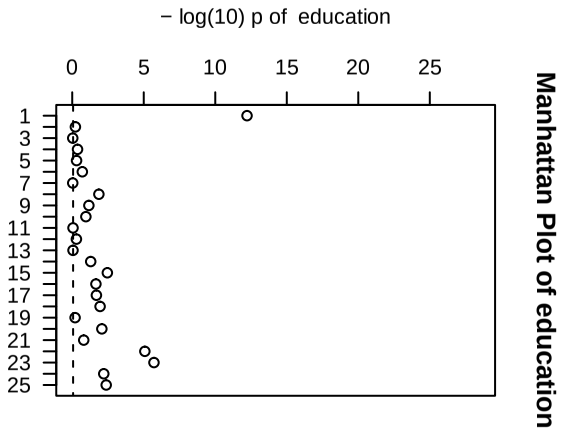

Bechtoldt1 and the differences from Bechtoldt2
First_Names
Word_Number
Sentences
Vocabulary
Completion
First_Letters
Four_letter_words
Suffixes
Flags
Figures
Cards
Addition
Multiplication
Three_Higher
Letter_Series
Pedigrees
Letter_Grouping
First_Names
Completion
Flags
Addition
Pedigrees
help("lowerUpper")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

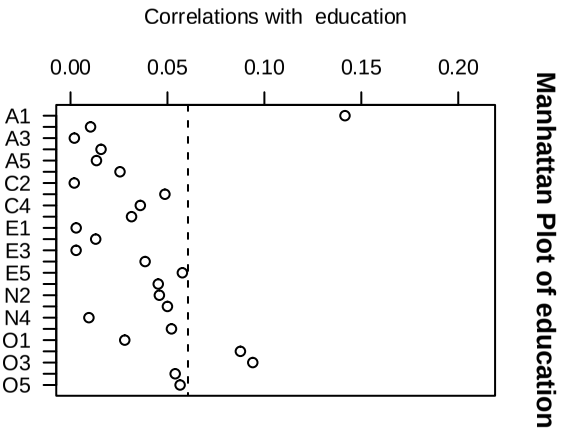

r and partial r for the sat.act data set
gender
education
age
ACT
SATV
SATQ
0.12
−0.09
0.04
0.09
−0.2
0.09
0.54
0.08
0.02
0.01
−0.02
0.55
0.11
−0.07
−0.07
−0.04
0.15
0.11
0.3
0.36
−0.02
0.05
−0.04
0.56
0.47
−0.17
0.03
−0.03
0.59
0.64
gender
education
age
ACT
SATV
SATQ
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
help("lowerUpper")

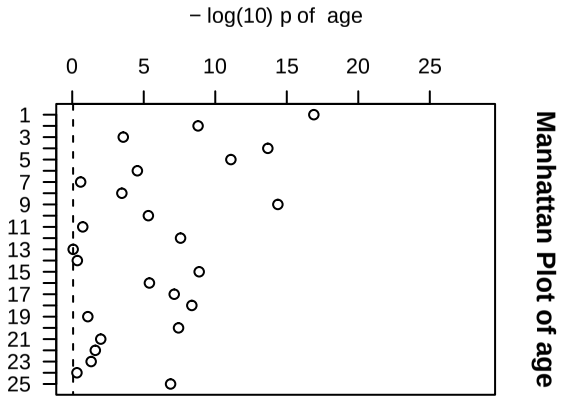

Differences between r and partial r for the sat.act data se
gender
education
age
ACT
SATV
SATQ
−0.03
0.07
−0.08
−0.11
0.04
0.09
0.01
0.08
0.03
0.03
−0.02
0.55
0
0.03
0.04
−0.04
0.15
0.11
0.27
0.22
−0.02
0.05
−0.04
0.56
0.18
−0.17
0.03
−0.03
0.59
0.64
help("lowerUpper")
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6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

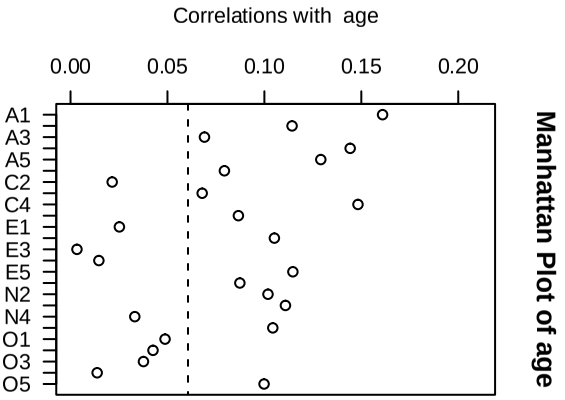




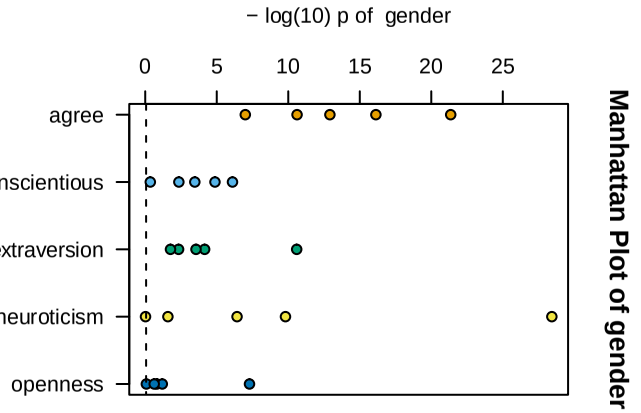


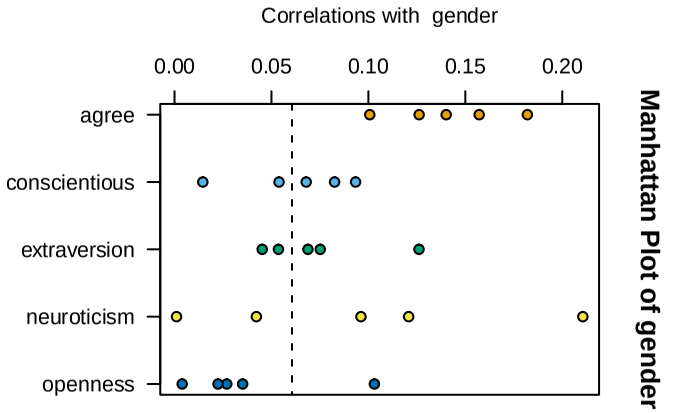


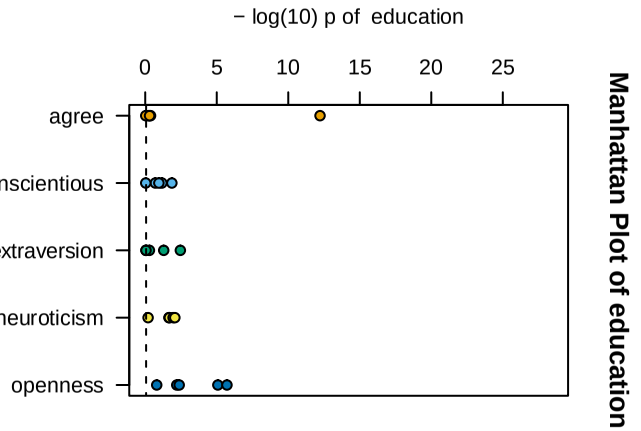


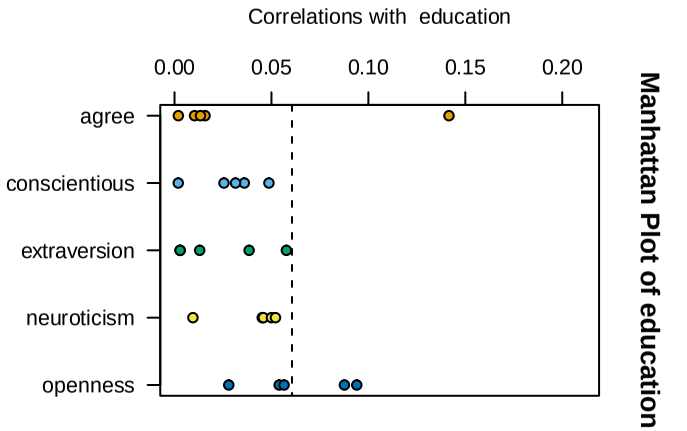


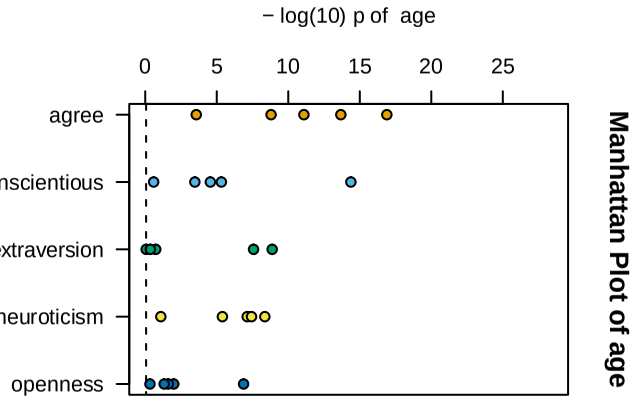
help("manhattan")

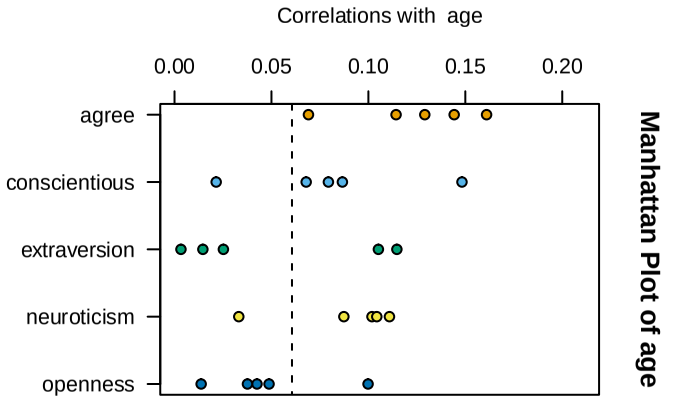




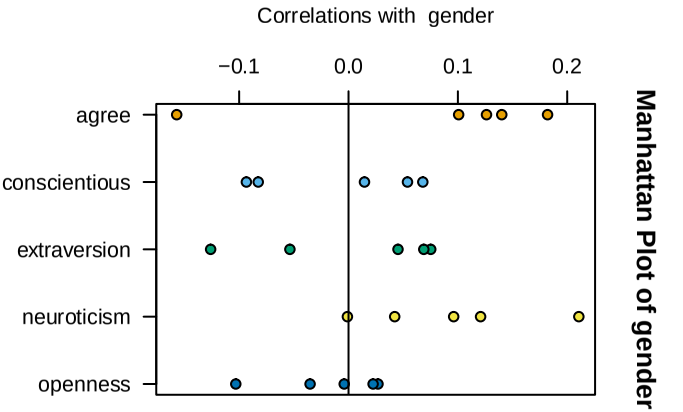


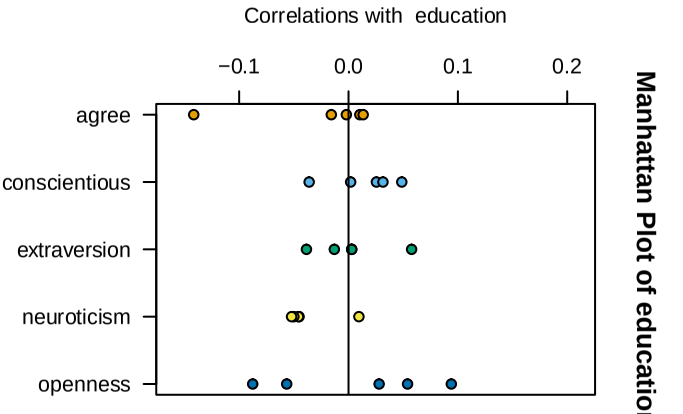


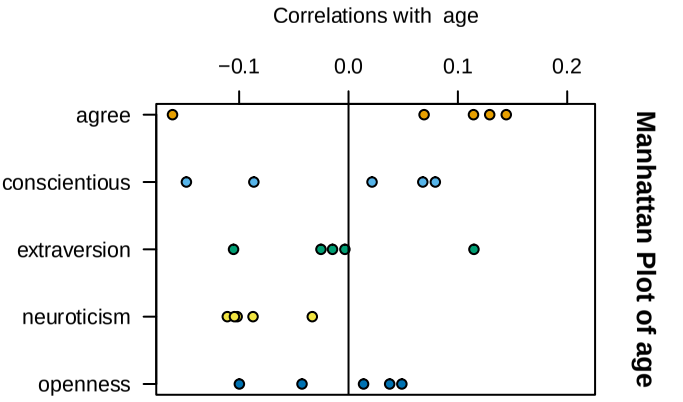




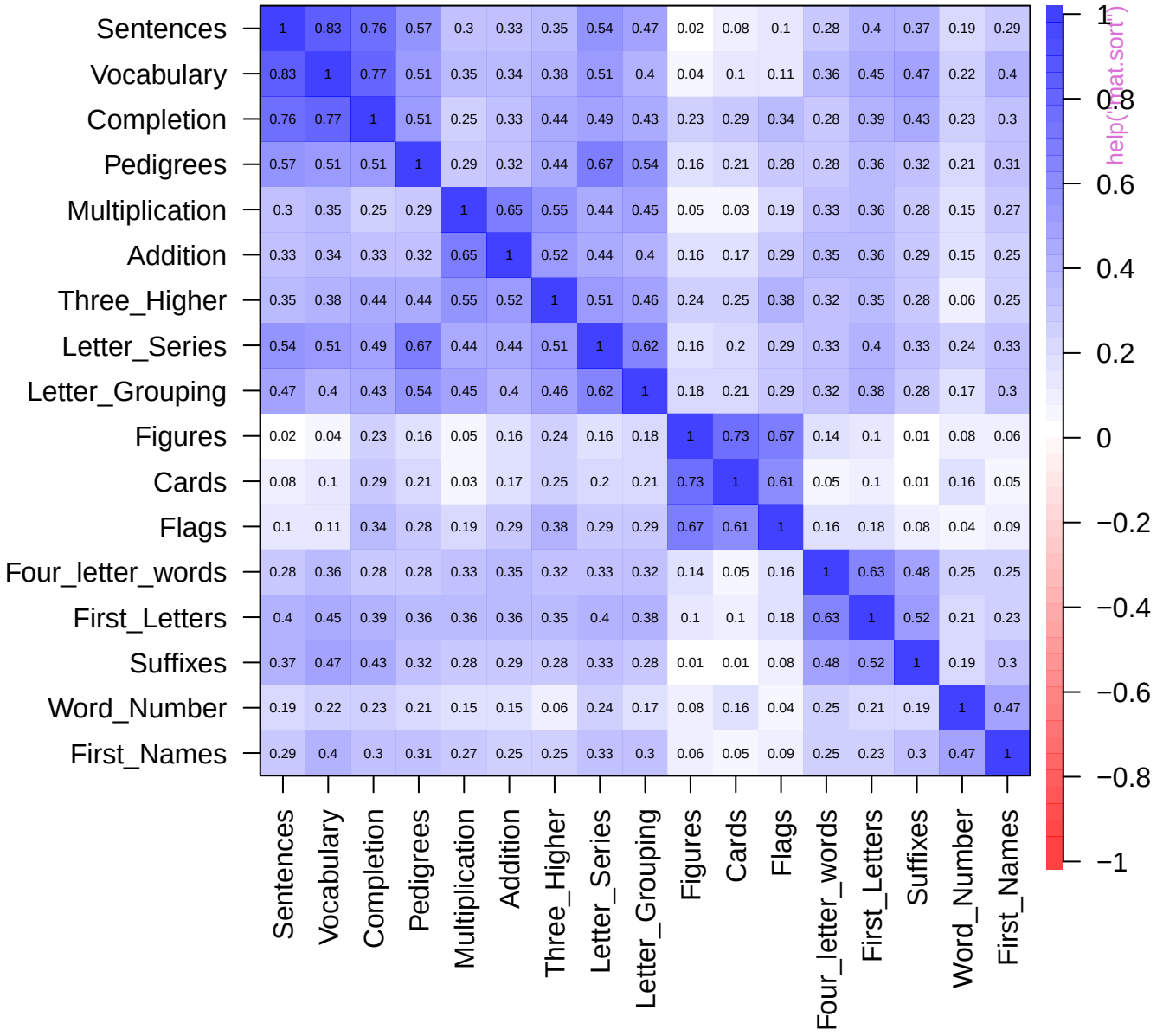
help("manhattan")



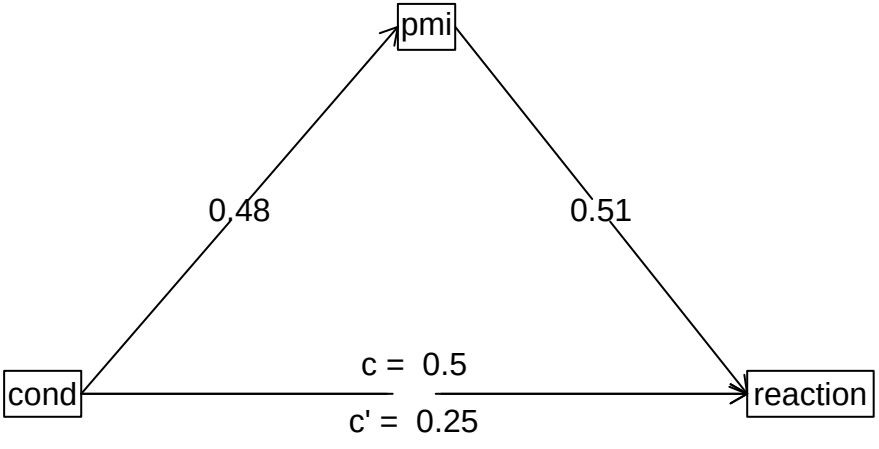




help("manhattan")

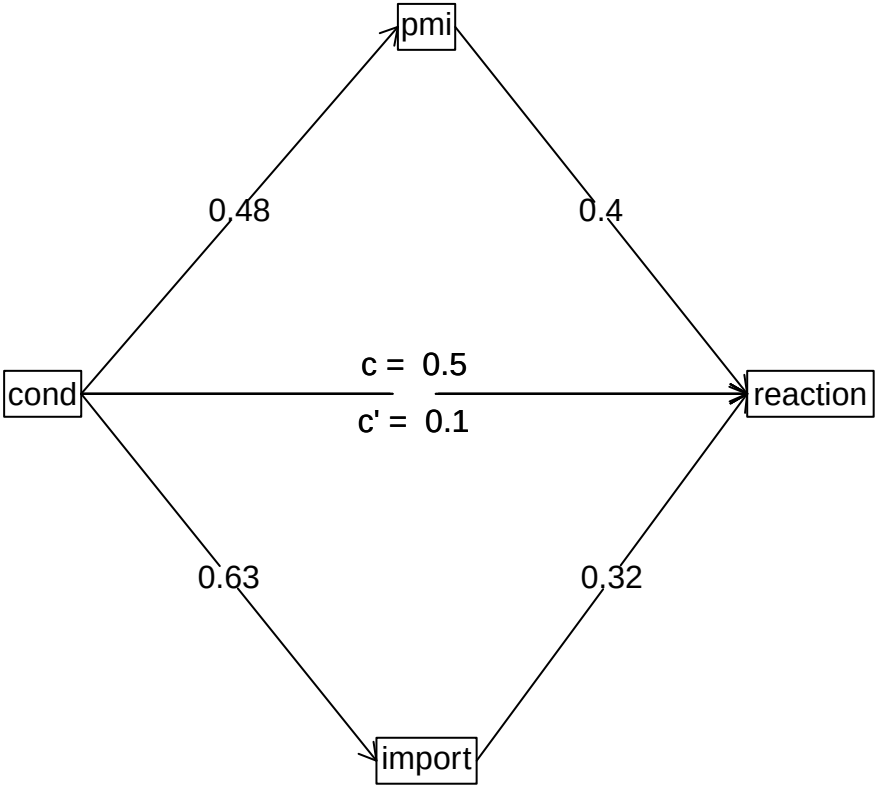

Sentences 1 0.83 0.76 0.57 0.3 0.33 0.35 0.54 0.47 0.02 0.08 0.1 0.28 0.4 0.37 0.19 0.29
Vocabulary 0.83 1 0.77 0.51 0.35 0.34 0.38 0.51 0.4 0.04 0.1 0.11 0.36 0.45 0.47 0.22 0.4
Completion 0.76 0.77 1 0.51 0.25 0.33 0.44 0.49 0.43 0.23 0.29 0.34 0.28 0.39 0.43 0.23 0.3
Pedigrees 0.57 0.51 0.51 1 0.29 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 0.3 0.35 0.25 0.29 1 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 0.52 0.44 0.4 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 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 0.62 0.16 0.2 0.29 0.33 0.4 0.33 0.24 0.33
Letter_Grouping 0.47 0.4 0.43 0.54 0.45 0.4 0.46 0.62 1 0.18 0.21 0.29 0.32 0.38 0.28 0.17 0.3
Figures 0.02 0.04 0.23 0.16 0.05 0.16 0.24 0.16 0.18 1 0.73 0.67 0.14 0.1 0.01 0.08 0.06
Cards 0.08 0.1 0.29 0.21 0.03 0.17 0.25 0.2 0.21 0.73 1 0.61 0.05 0.1 0.01 0.16 0.05
Flags 0.1 0.11 0.34 0.28 0.19 0.29 0.38 0.29 0.29 0.67 0.61 1 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 0.63 0.48 0.25 0.25
First_Letters 0.4 0.45 0.39 0.36 0.36 0.36 0.35 0.4 0.38 0.1 0.1 0.18 0.63 1 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 0.19 0.3
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 0.47
First_Names 0.29 0.4 0.3 0.31 0.27 0.25 0.25 0.33 0.3 0.06 0.05 0.09 0.25 0.23 0.3 0.47 1
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("mat.sort")
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1

Mediation



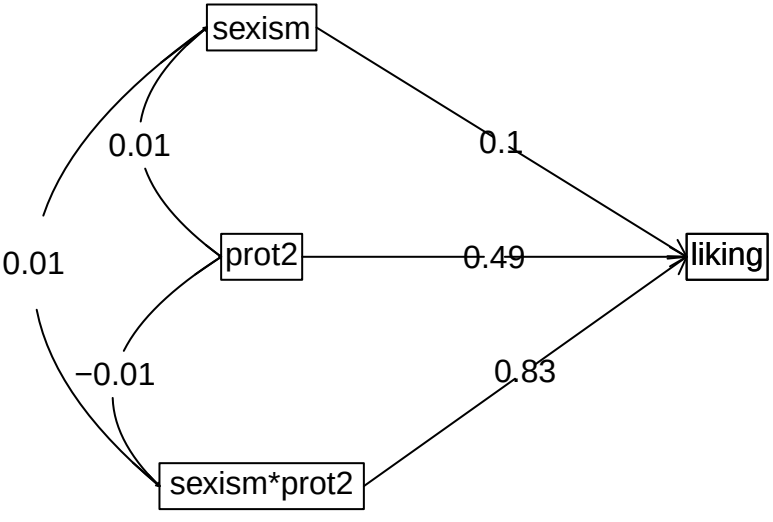
help("mediate")

Mediation

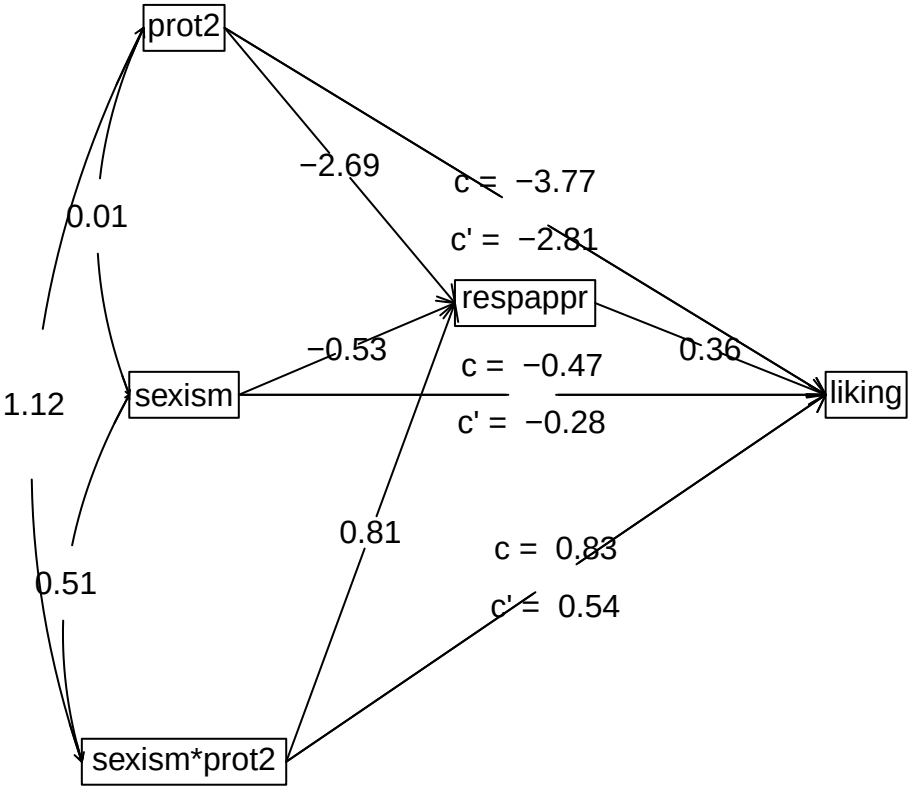


help("mediate")

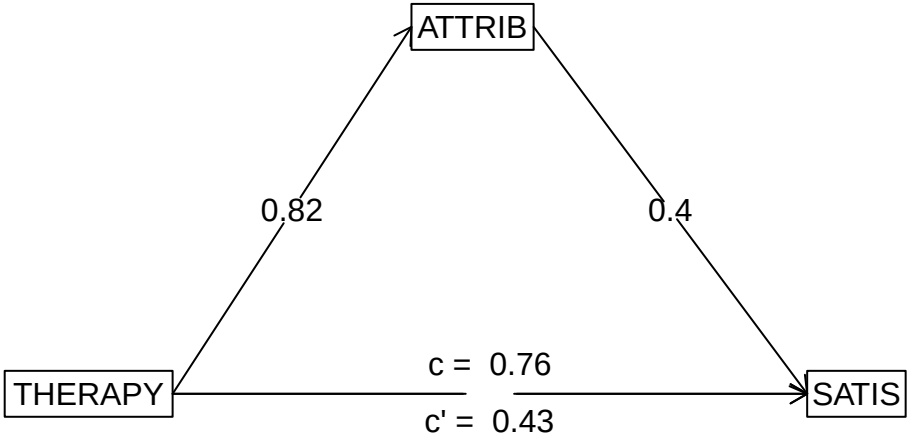
Moderation model



Mediation

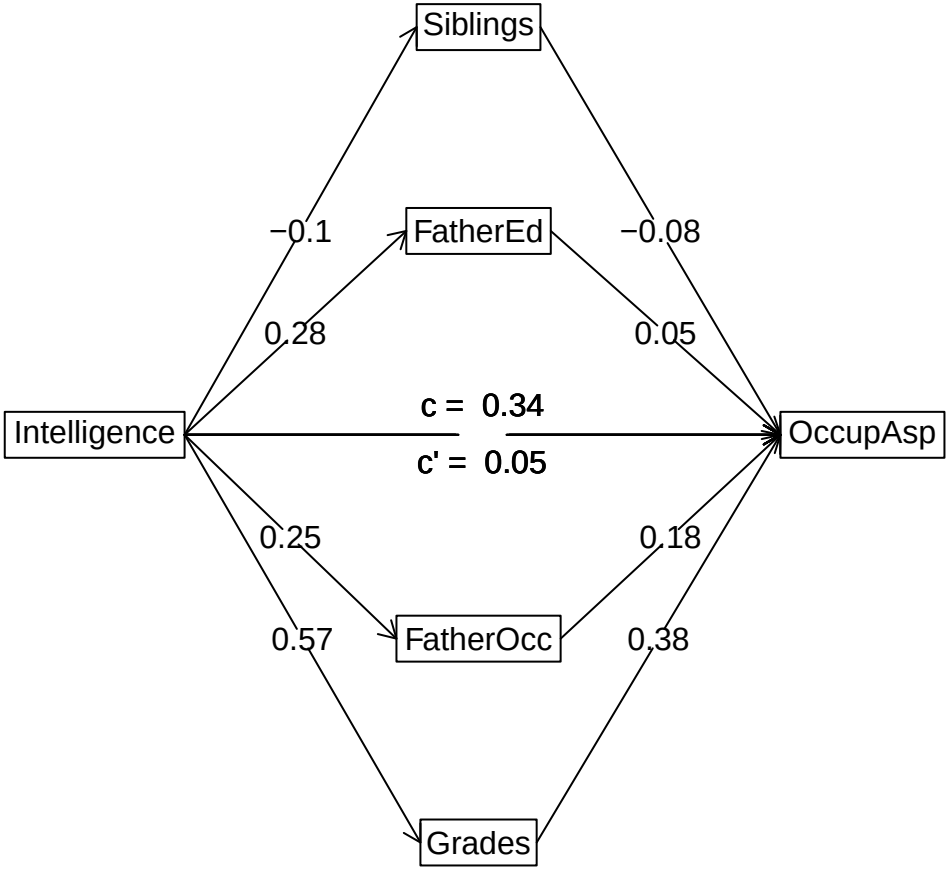


Mediation

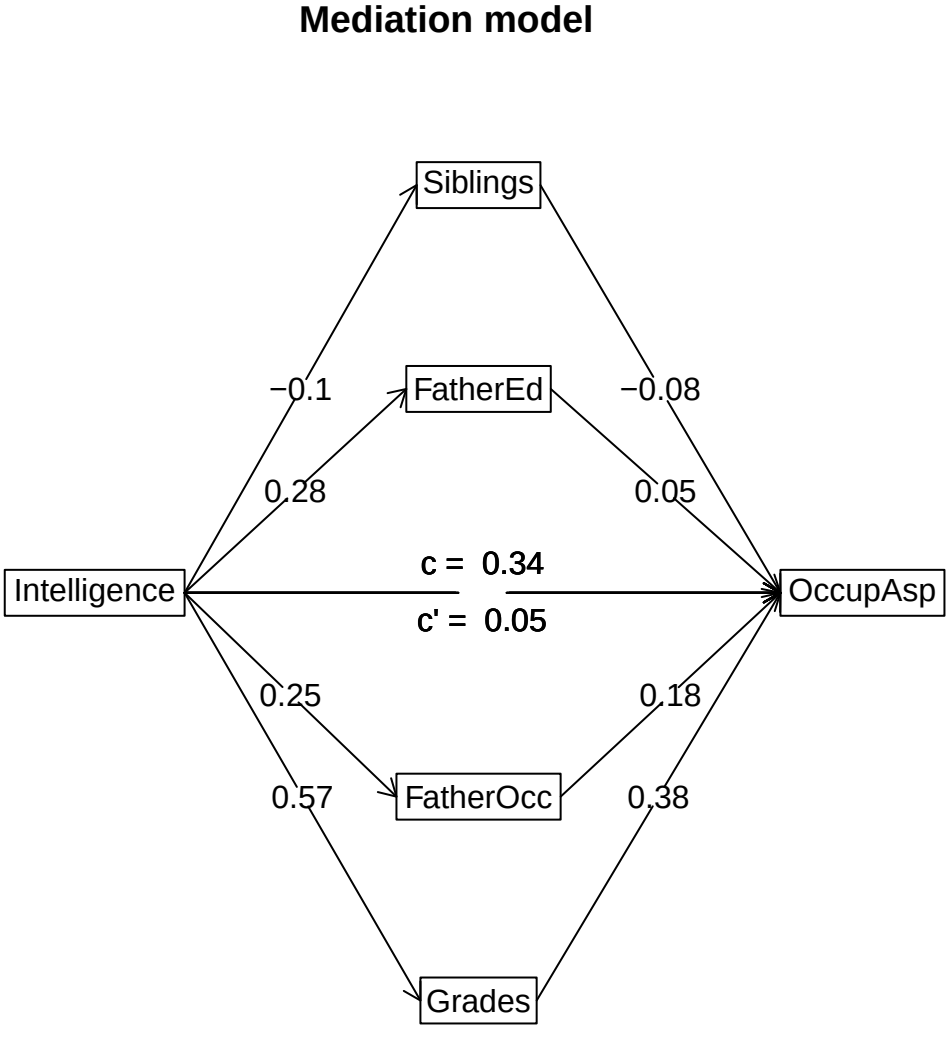


help("mediate")

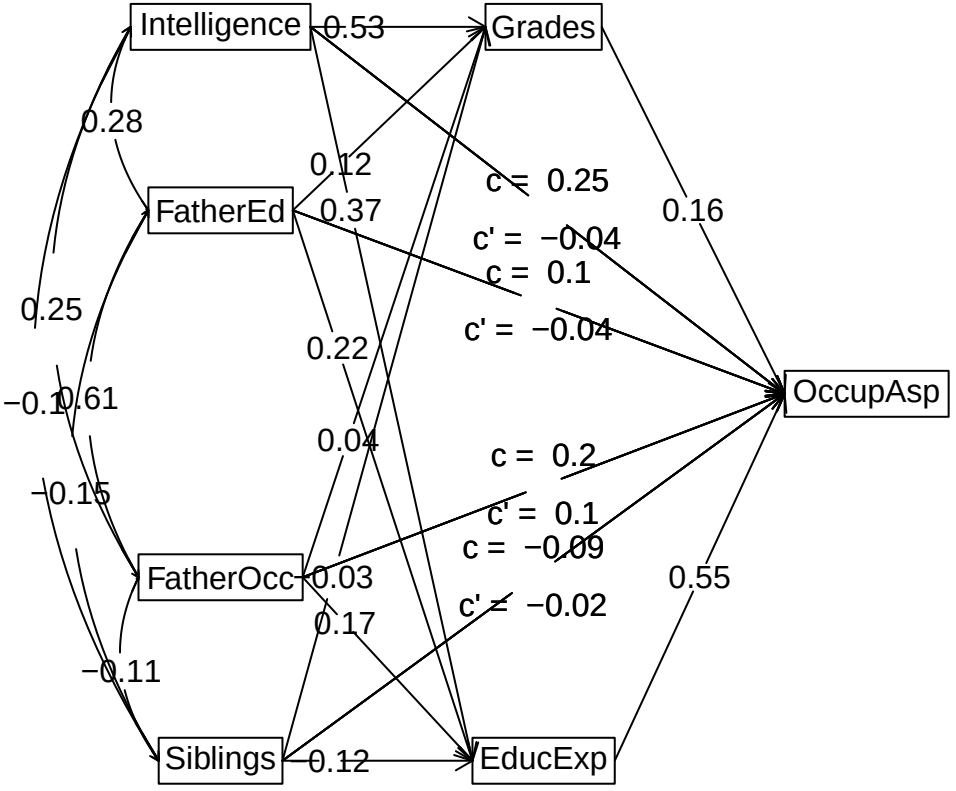
Mediation



help("mediate")

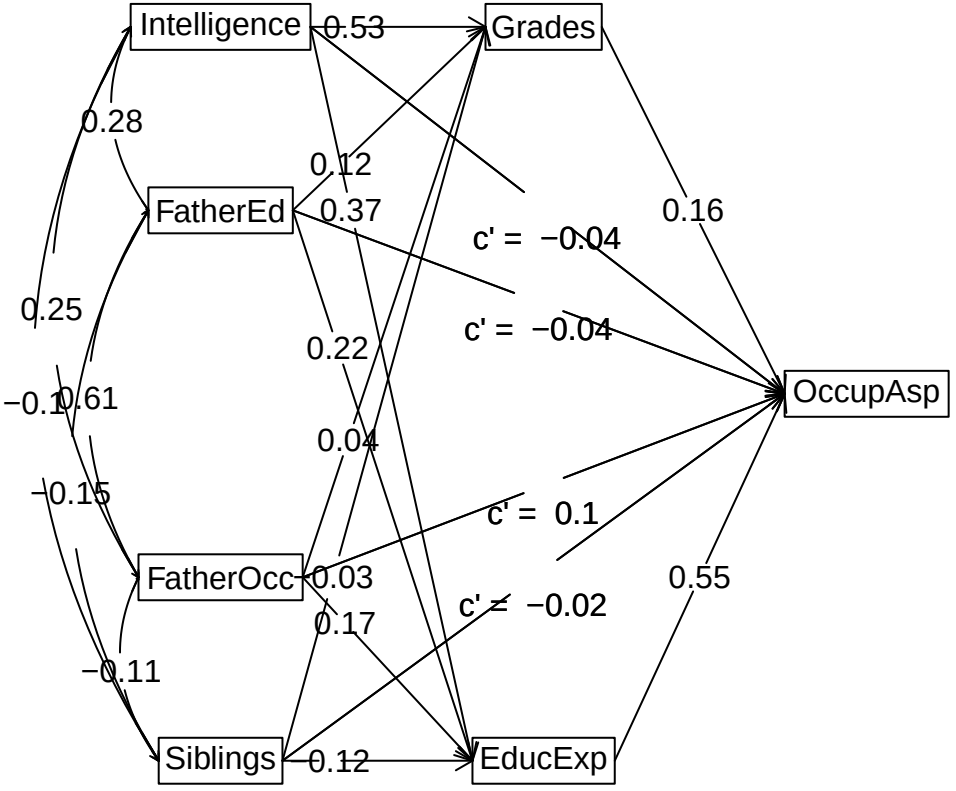

Mediation model
Siblings
FatherEd
FatherOcc
Grades
Intelligence
OccupAsp
−0.1
−0.08
0.28
0.05
c = 0.34
c' = 0.05
0.25
0.18
0.57
0.38
help("mediate")

Mediation



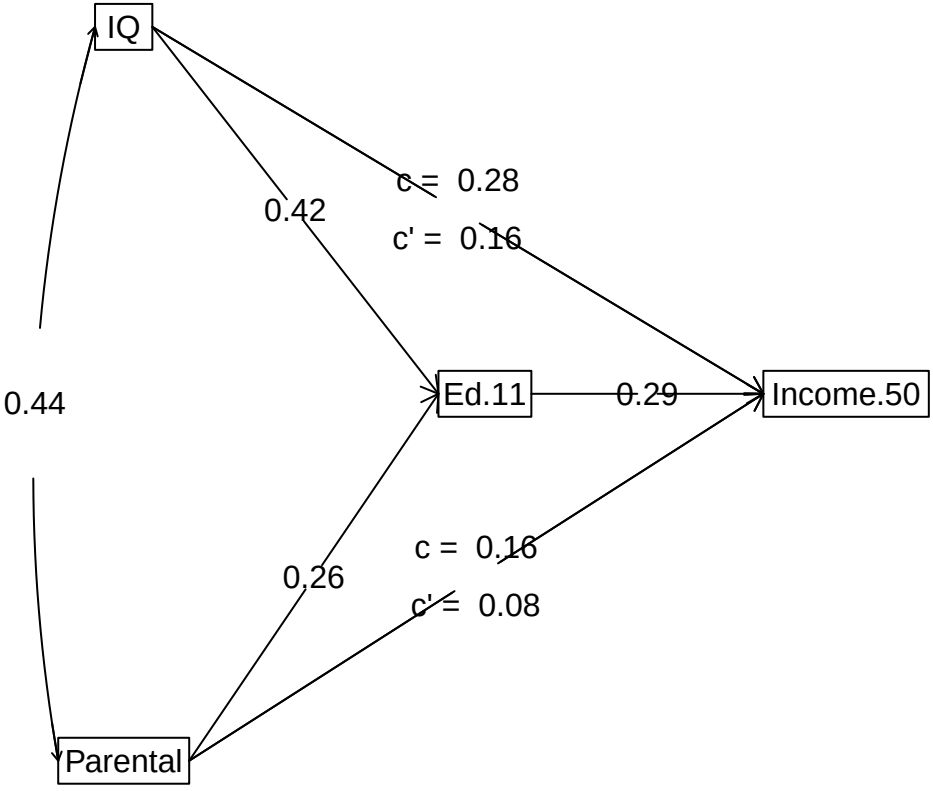
help("mediate")

Mediation model



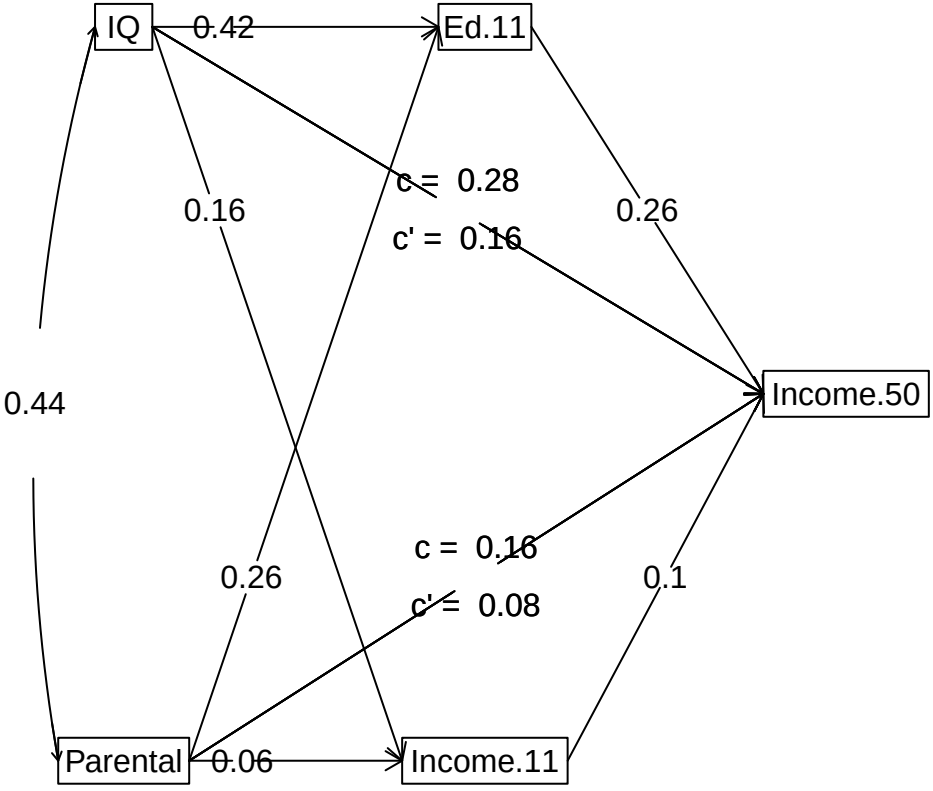
help("mediate")

Mediation

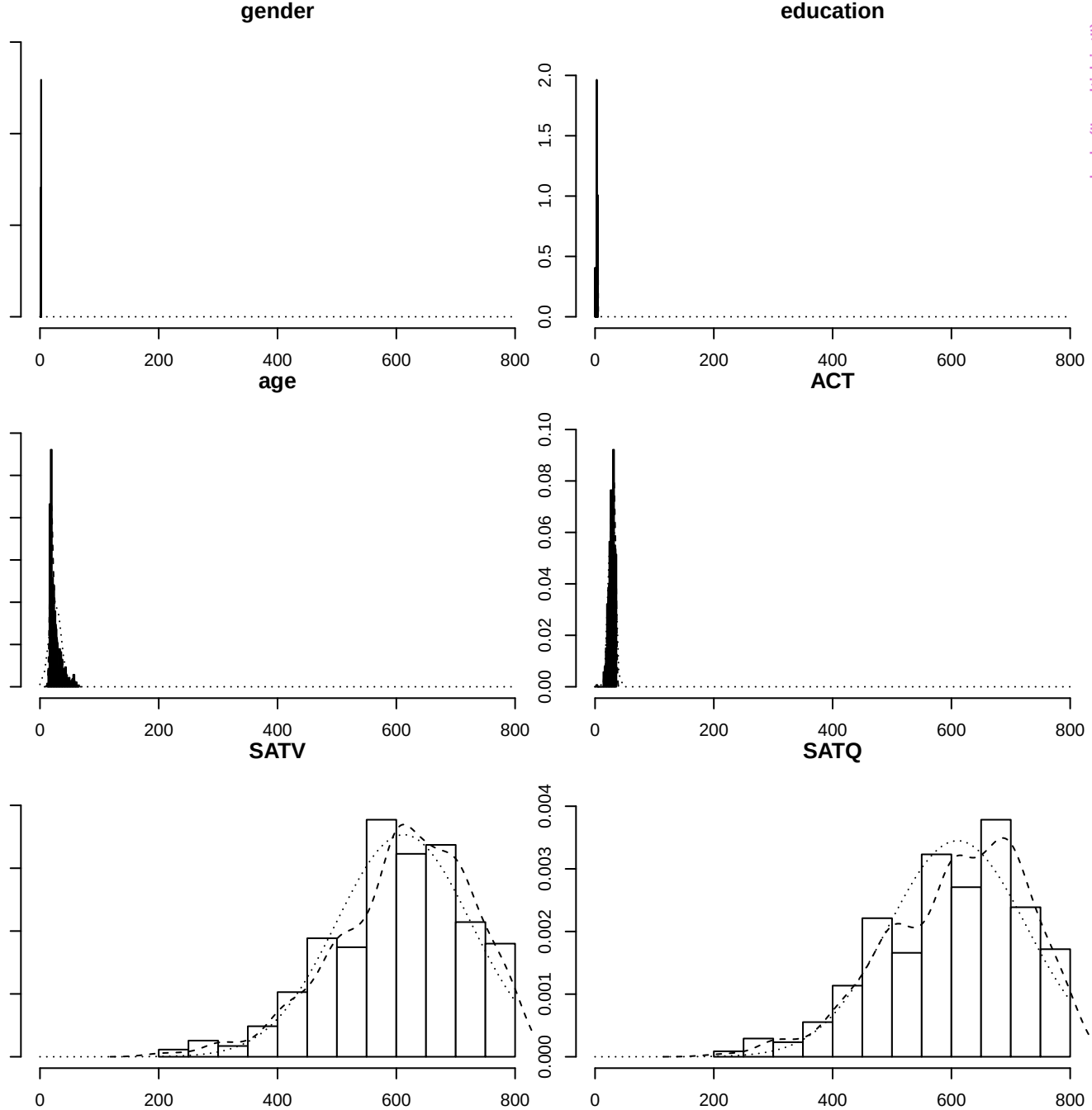


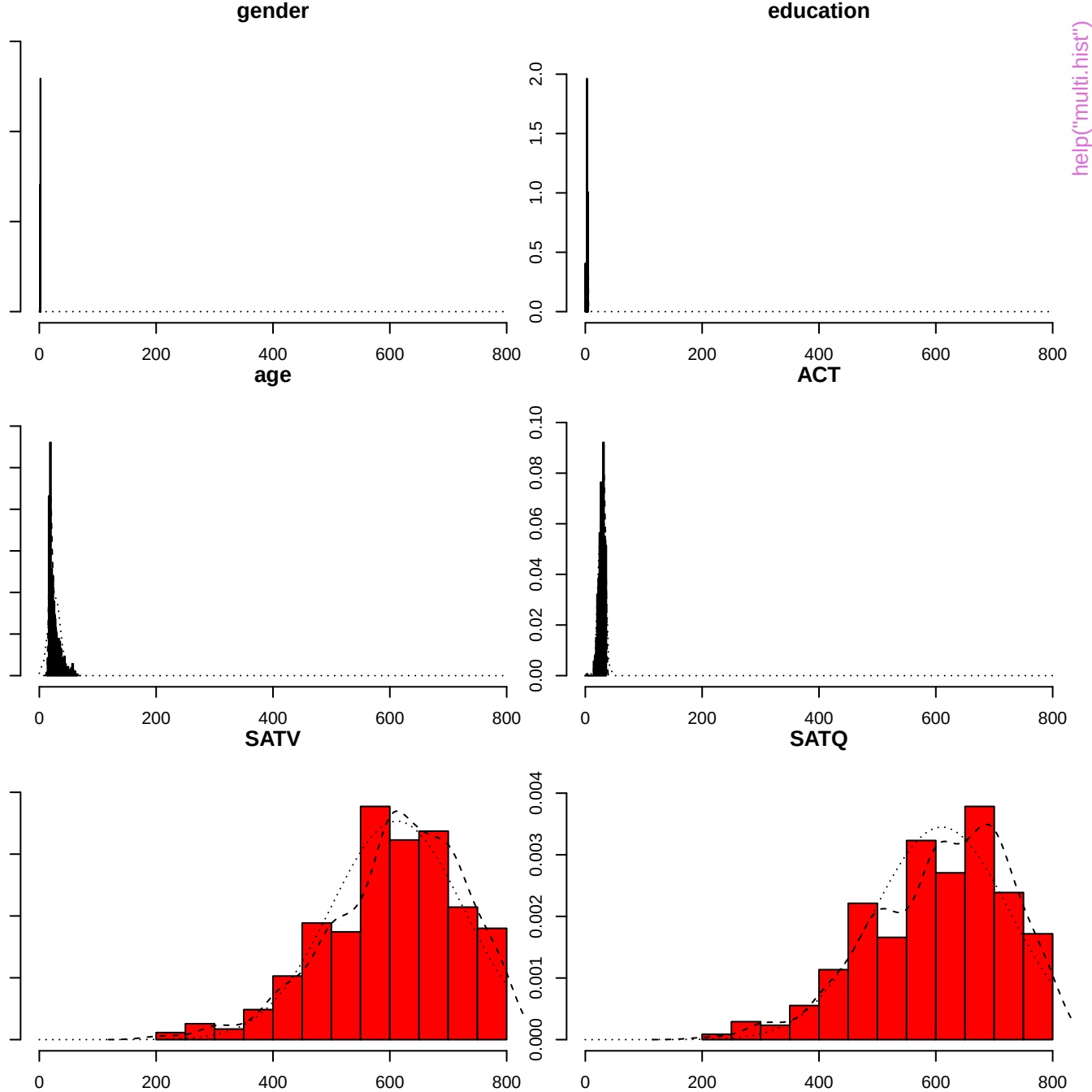
help("mediate")

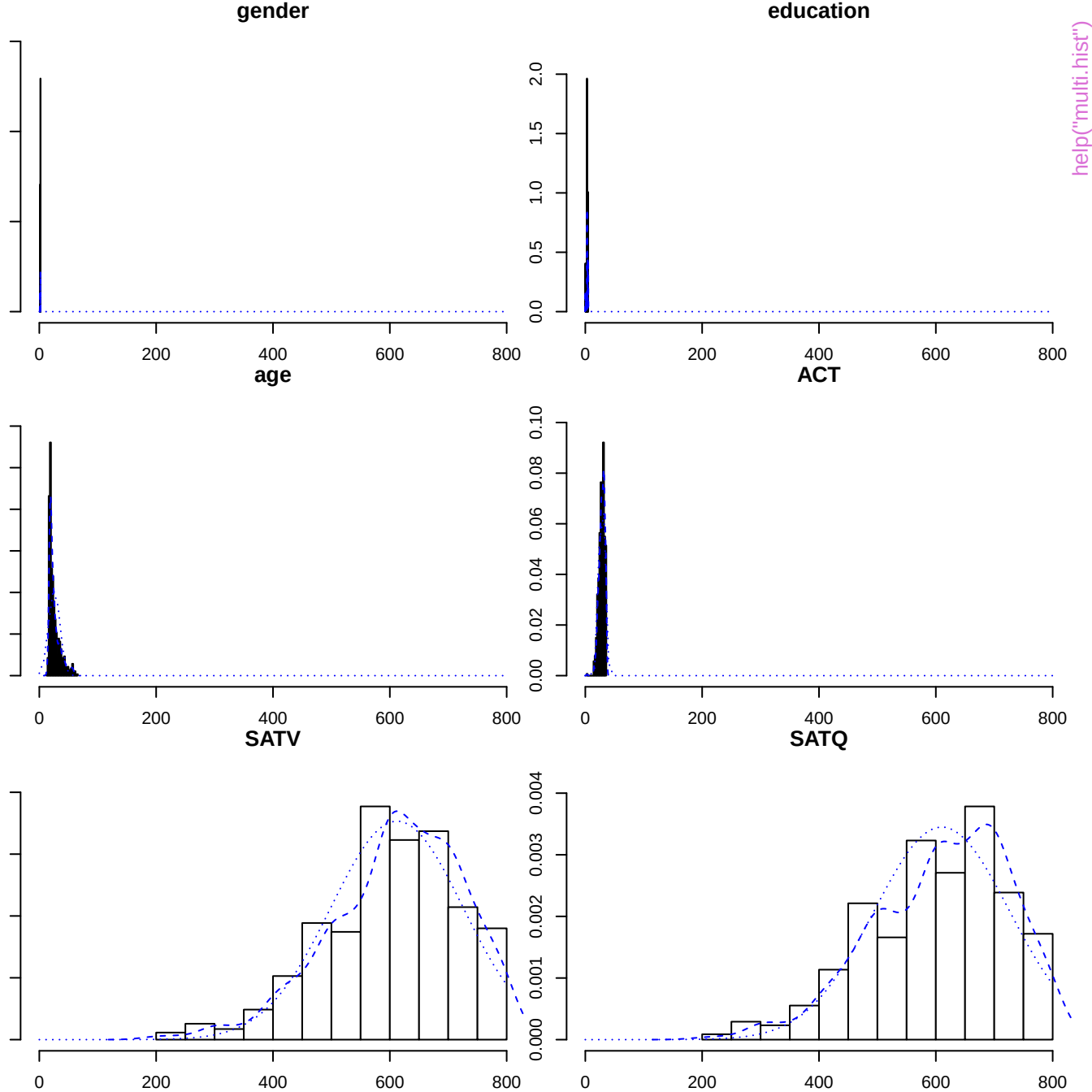
Mediation

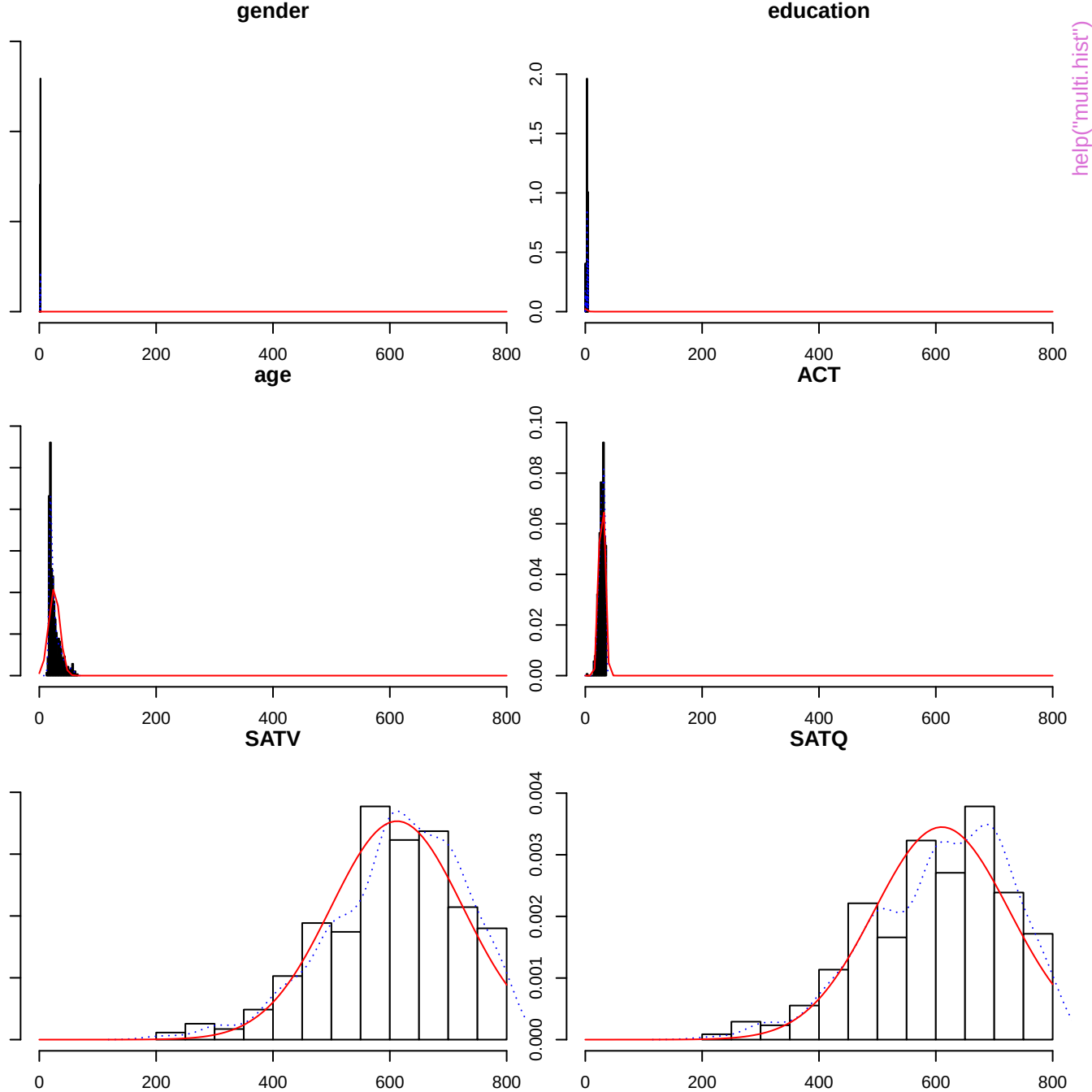


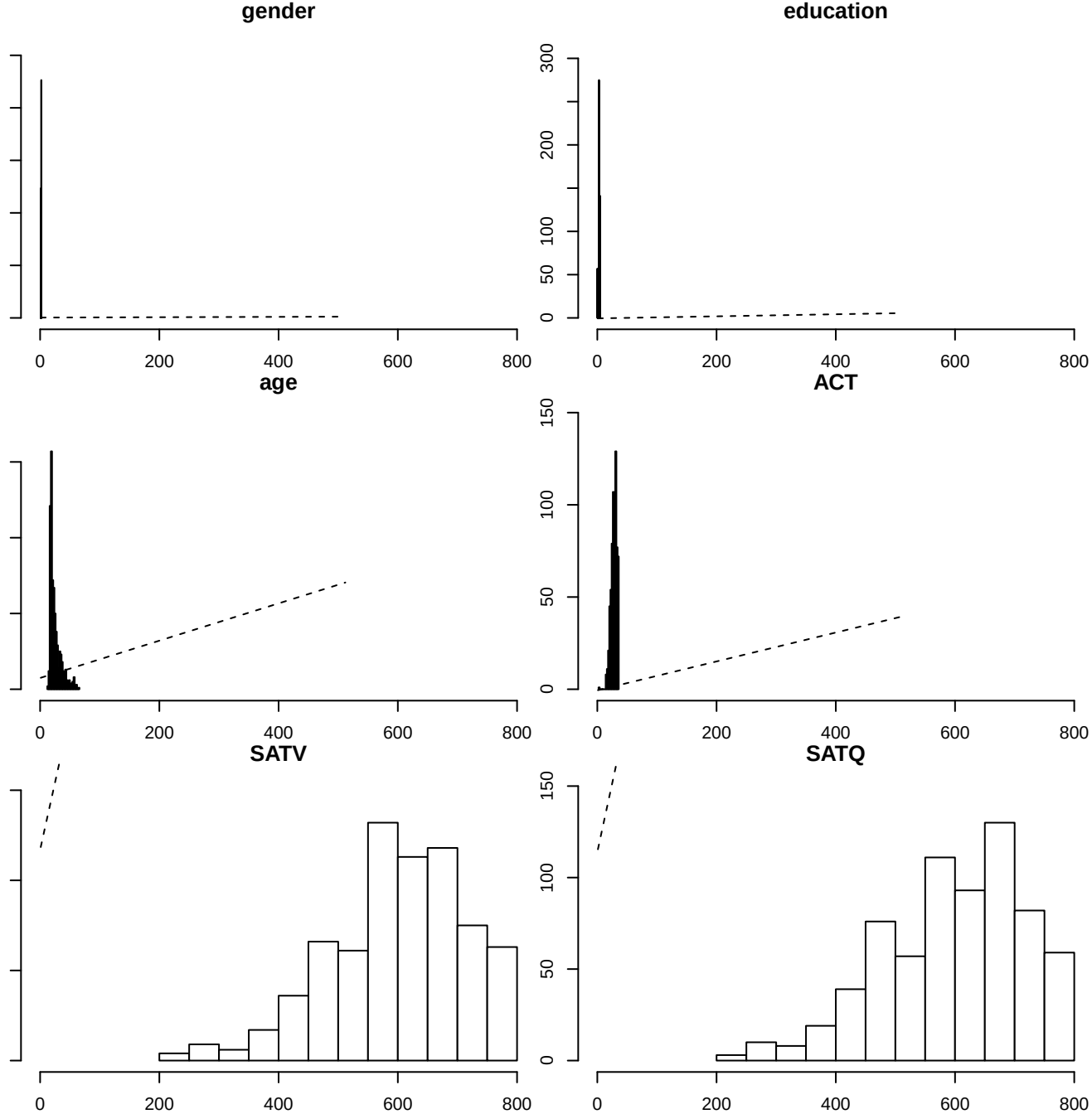
help("mediate")

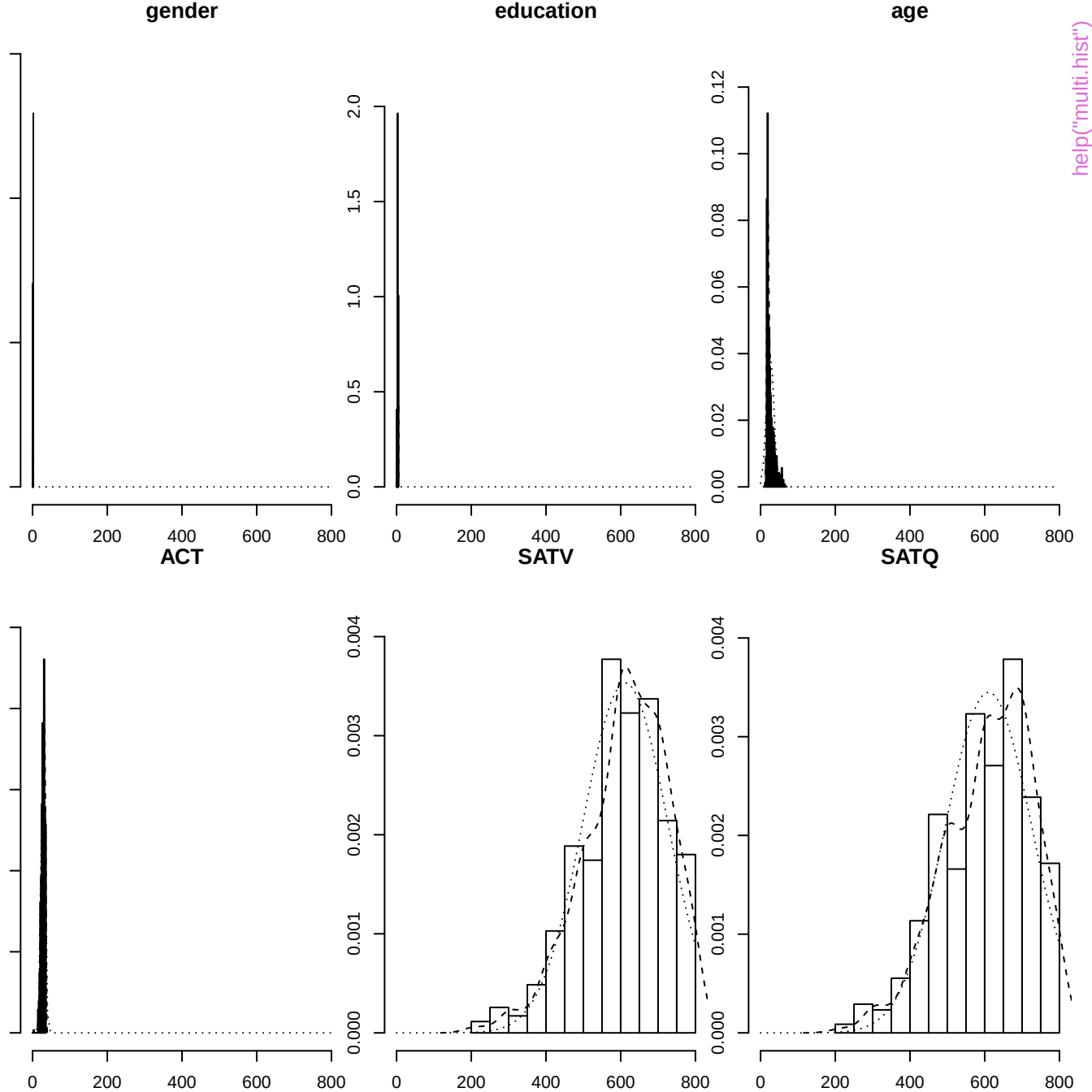

gender
education
age
ACT
SATV
SATQ
0.0
0.5
1.0
1.5
2.0
0.00
0.02
0.04
0.06
0.08
0.10
0.000
0.001
0.002
0.003
0.004
0
200
400
600
800
help("multi.hist")

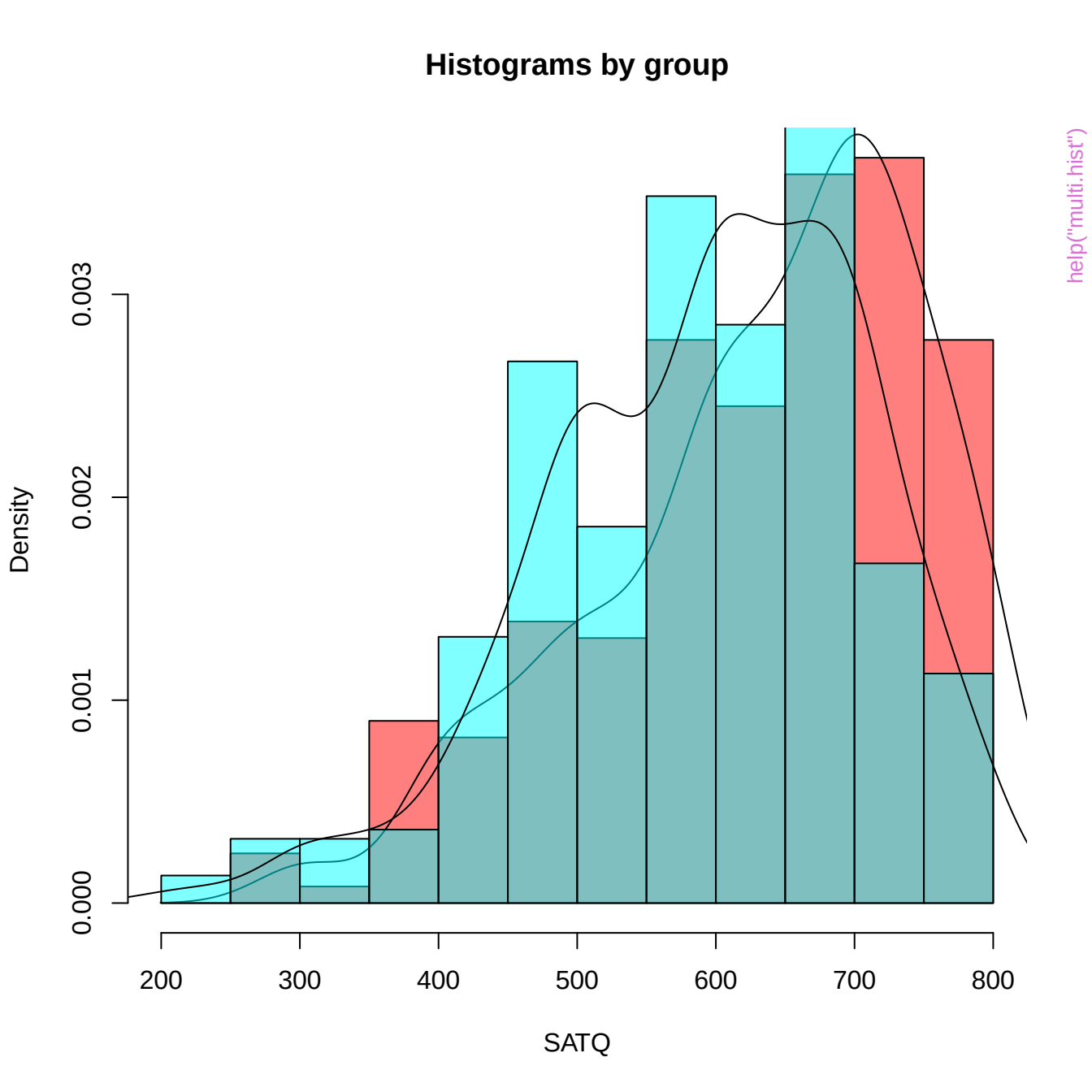

gender
education
age
ACT
SATV
SATQ
0.0
0.5
1.0
1.5
2.0
0.00
0.02
0.04
0.06
0.08
0.10
0.000
0.001
0.002
0.003
0.004
0
200
400
600
800
help("multi.hist")

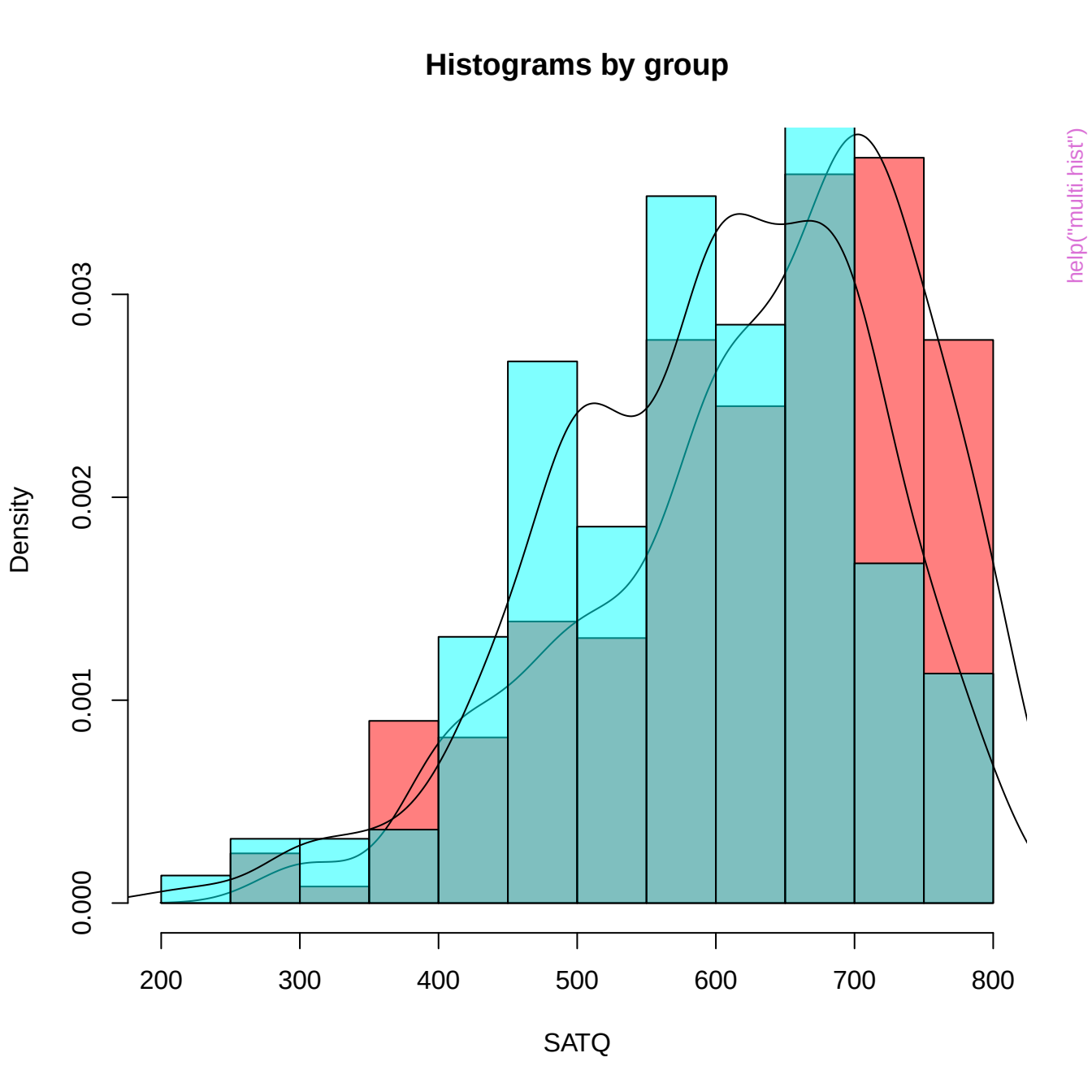

gender
education
age
ACT
SATV
SATQ
0.0
0.5
1.0
1.5
2.0
0.00
0.02
0.04
0.06
0.08
0.10
0.000
0.001
0.002
0.003
0.004
0
200
400
600
800
help("multi.hist")


gender
education
age
ACT
SATV
SATQ
0.0
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")

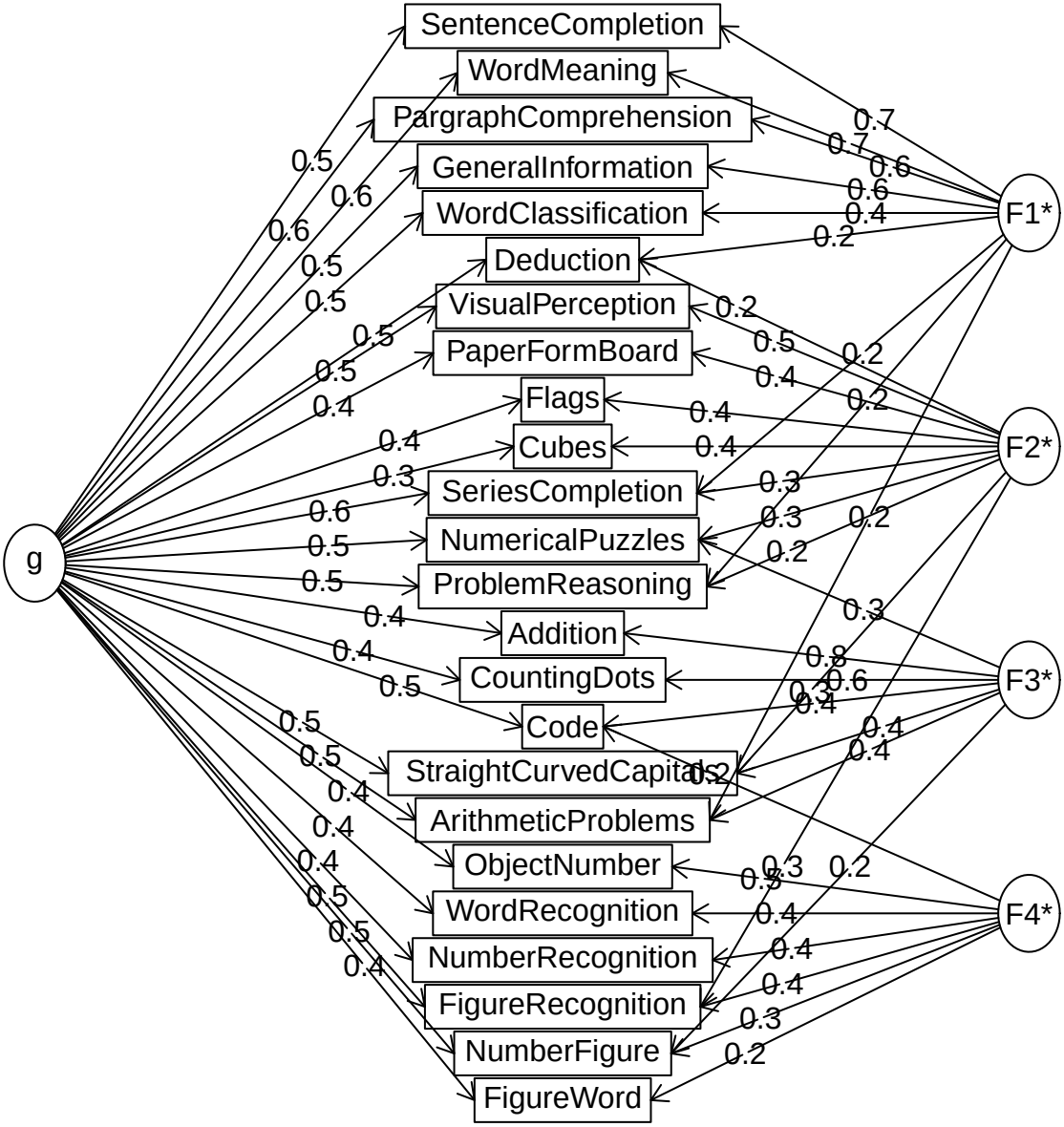

gender
education
age
ACT
SATV
SATQ
0
50
100
200
300
0
200
400
600
800
help("multi.hist")


gender
education
age
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
0.12
0
200
400
600
800
ACT
SATV
SATQ
0.000
0.001
0.002
0.003
0.004


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

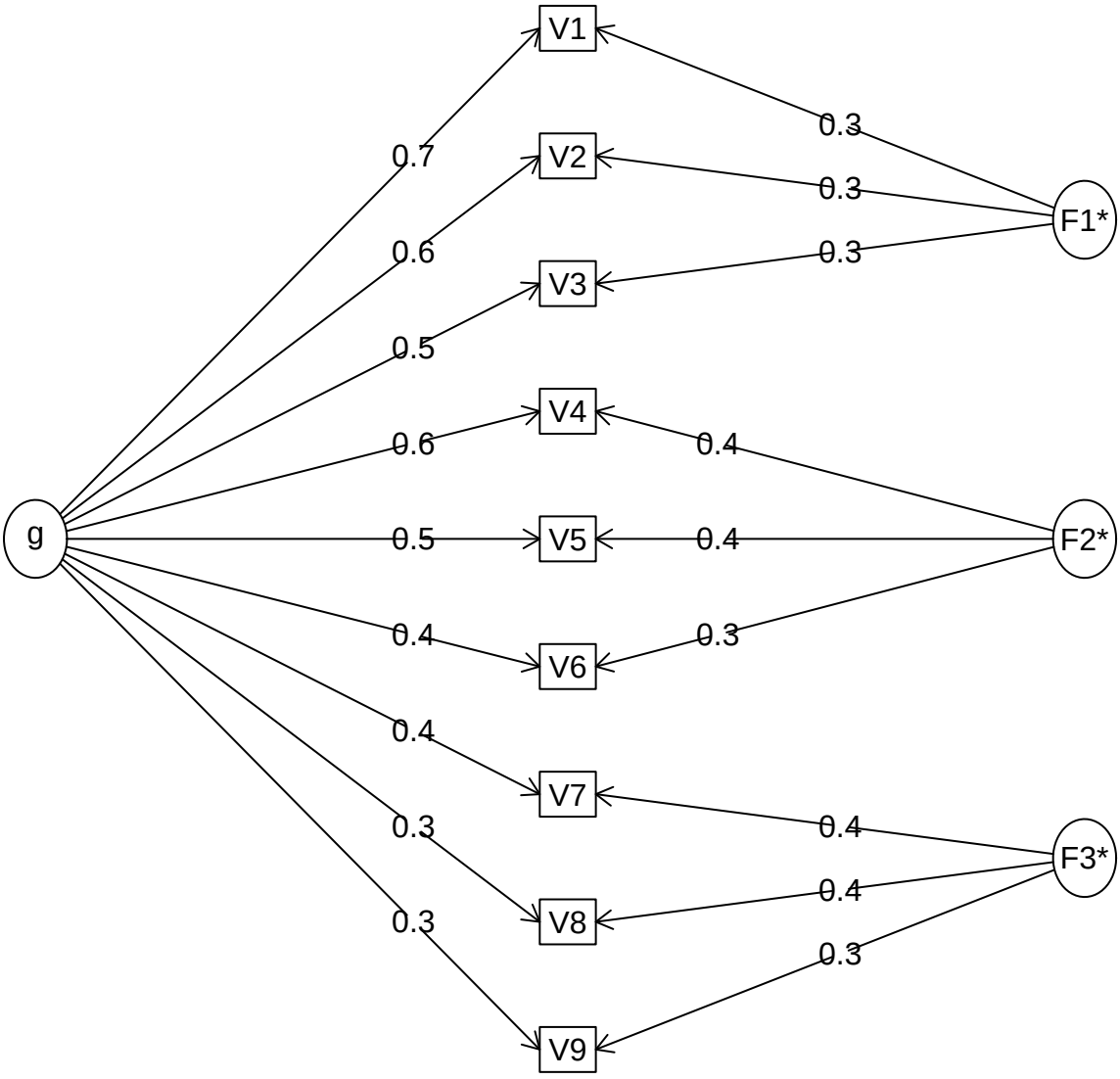

Histograms by group
help("multi.hist")
Density
0.000
0.001
0.002
0.003
200
300
400
500
600
700
800
SATQ

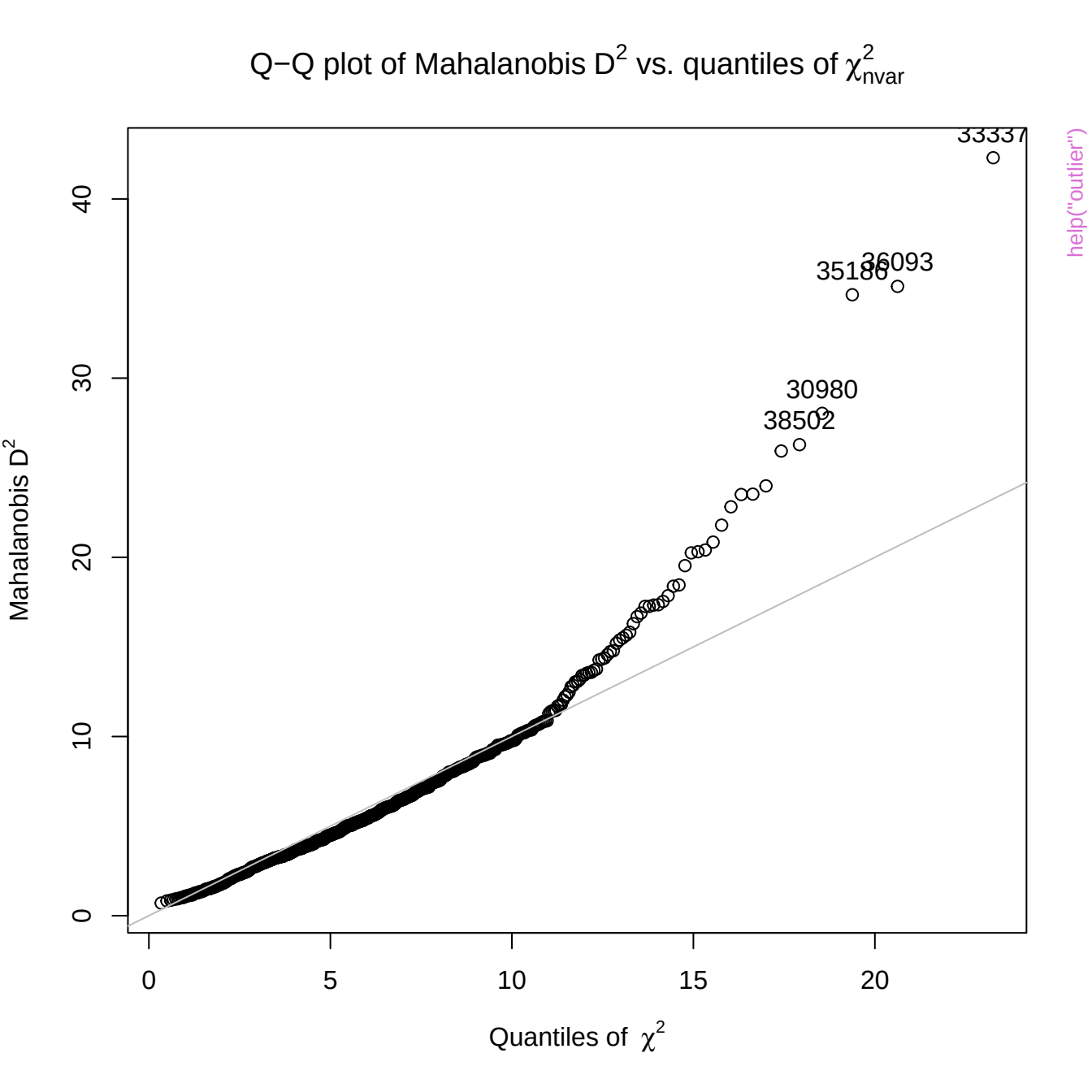
Omega

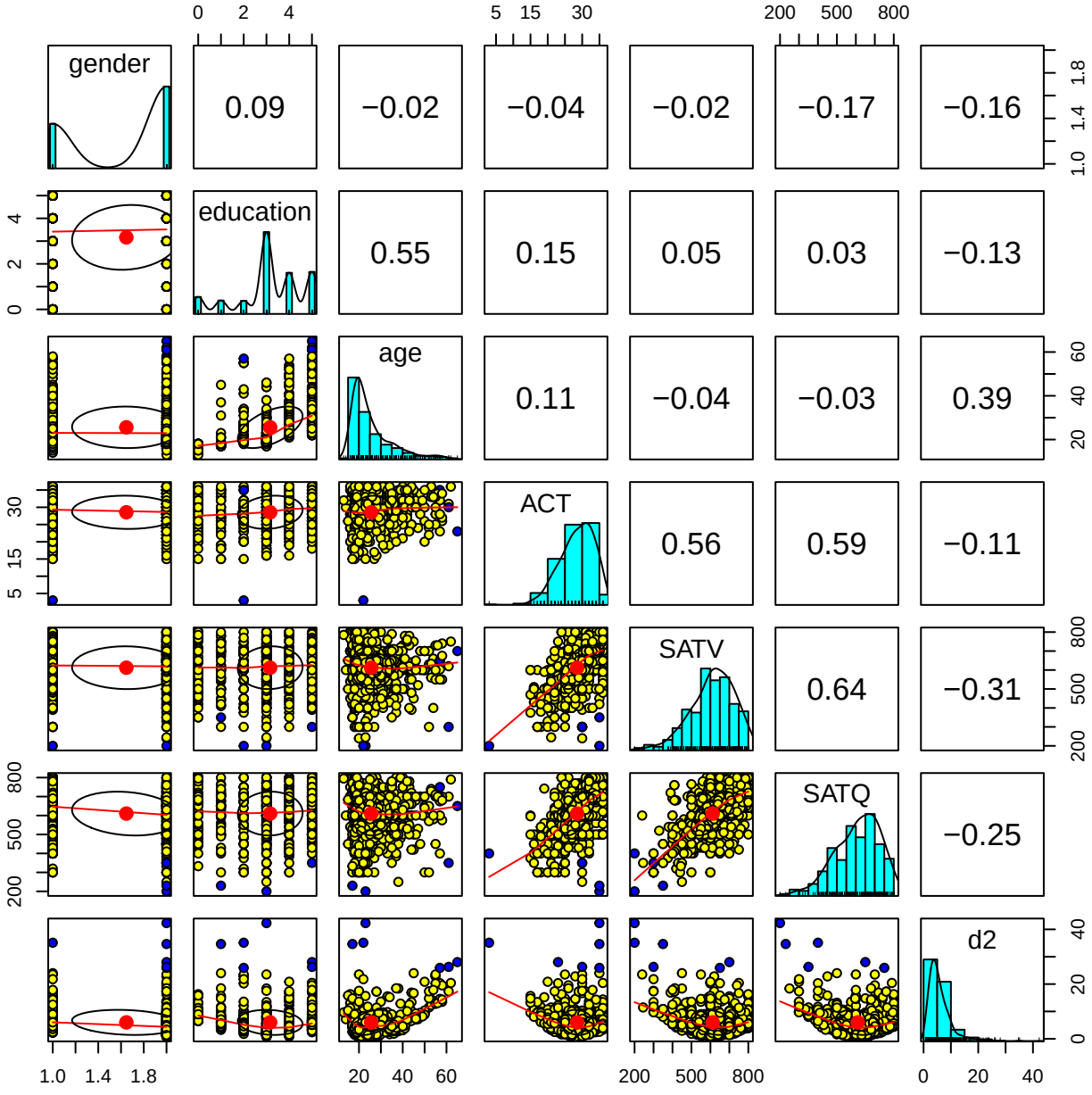


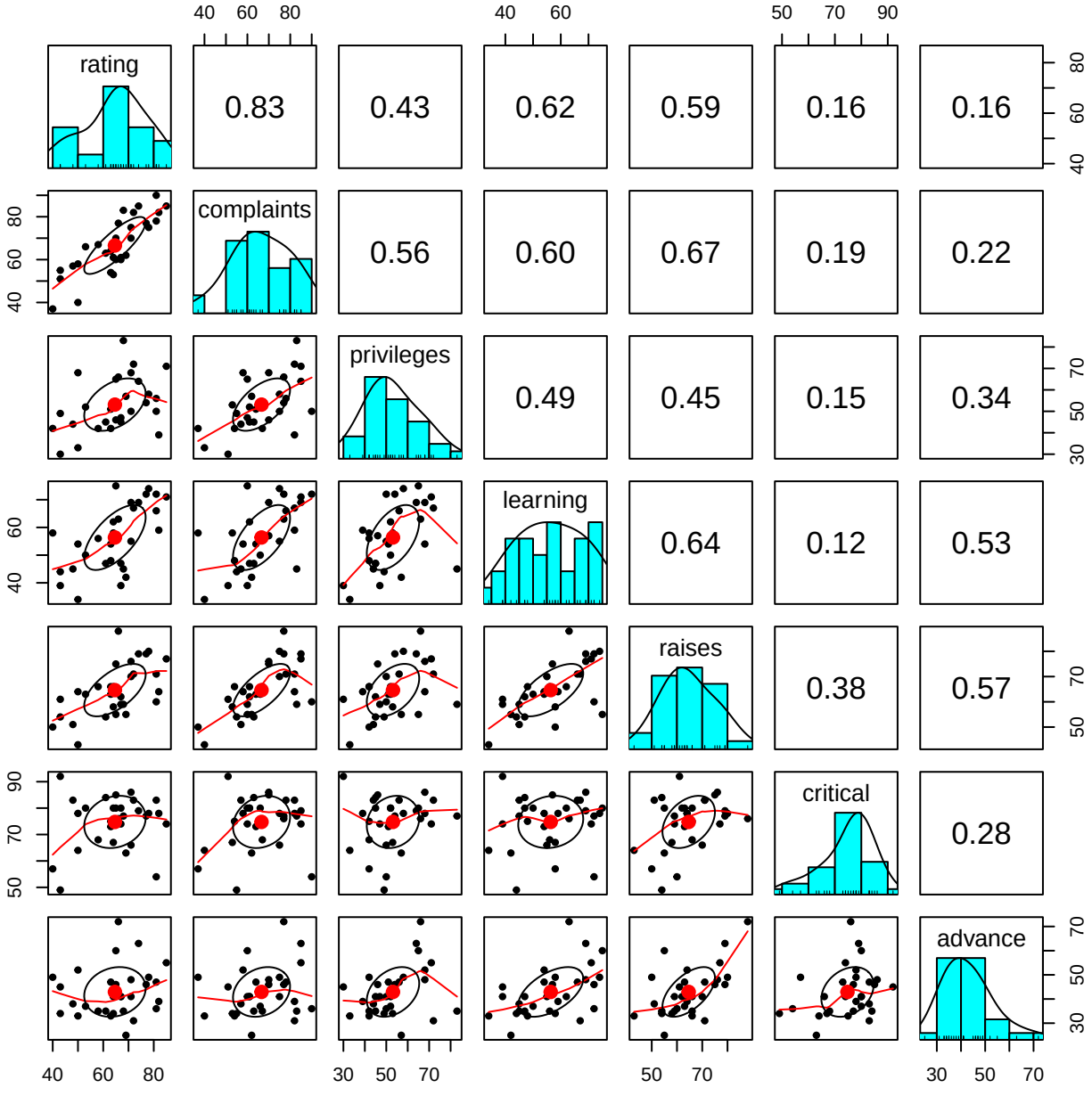
help("omega.graph")

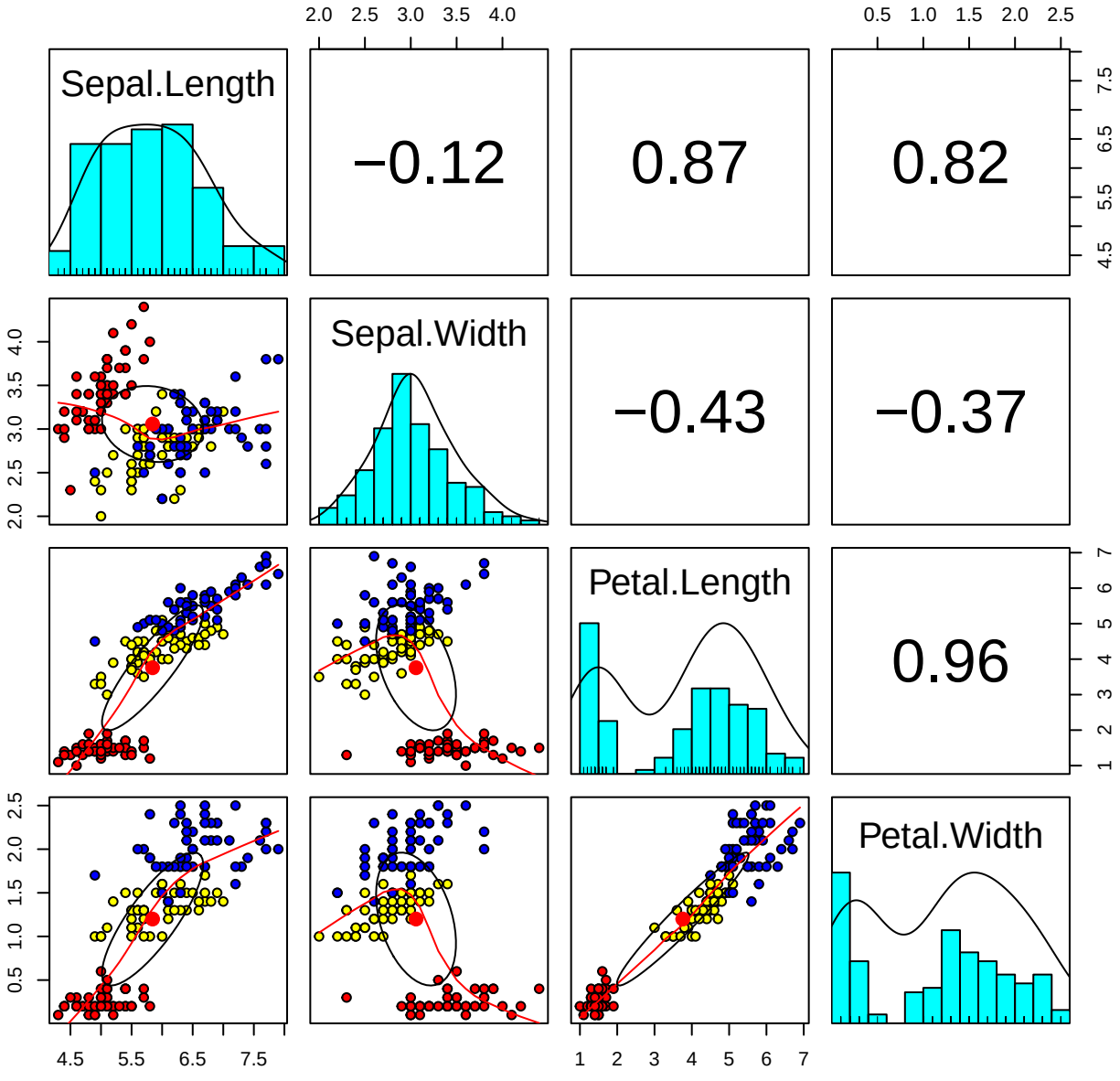
Omega

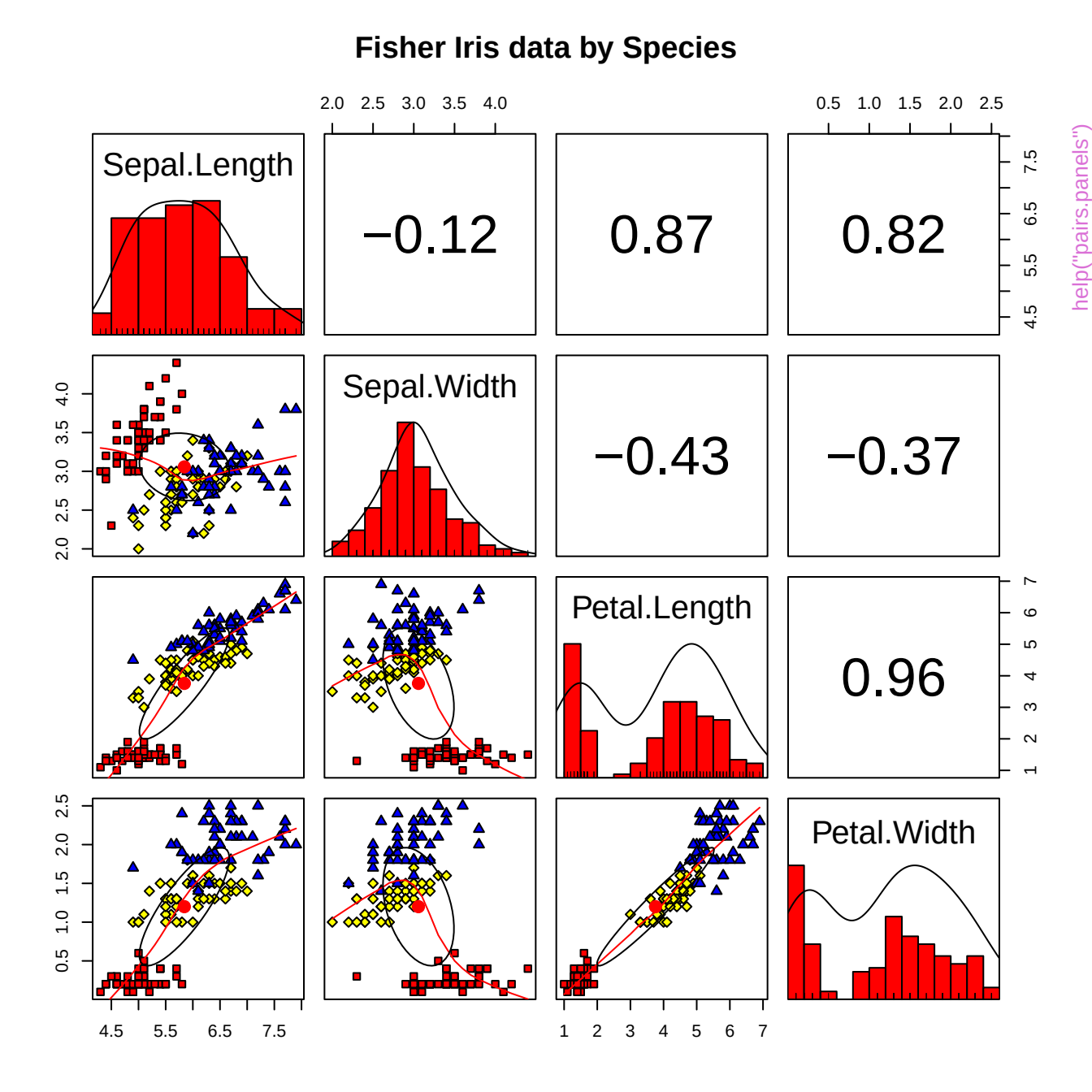


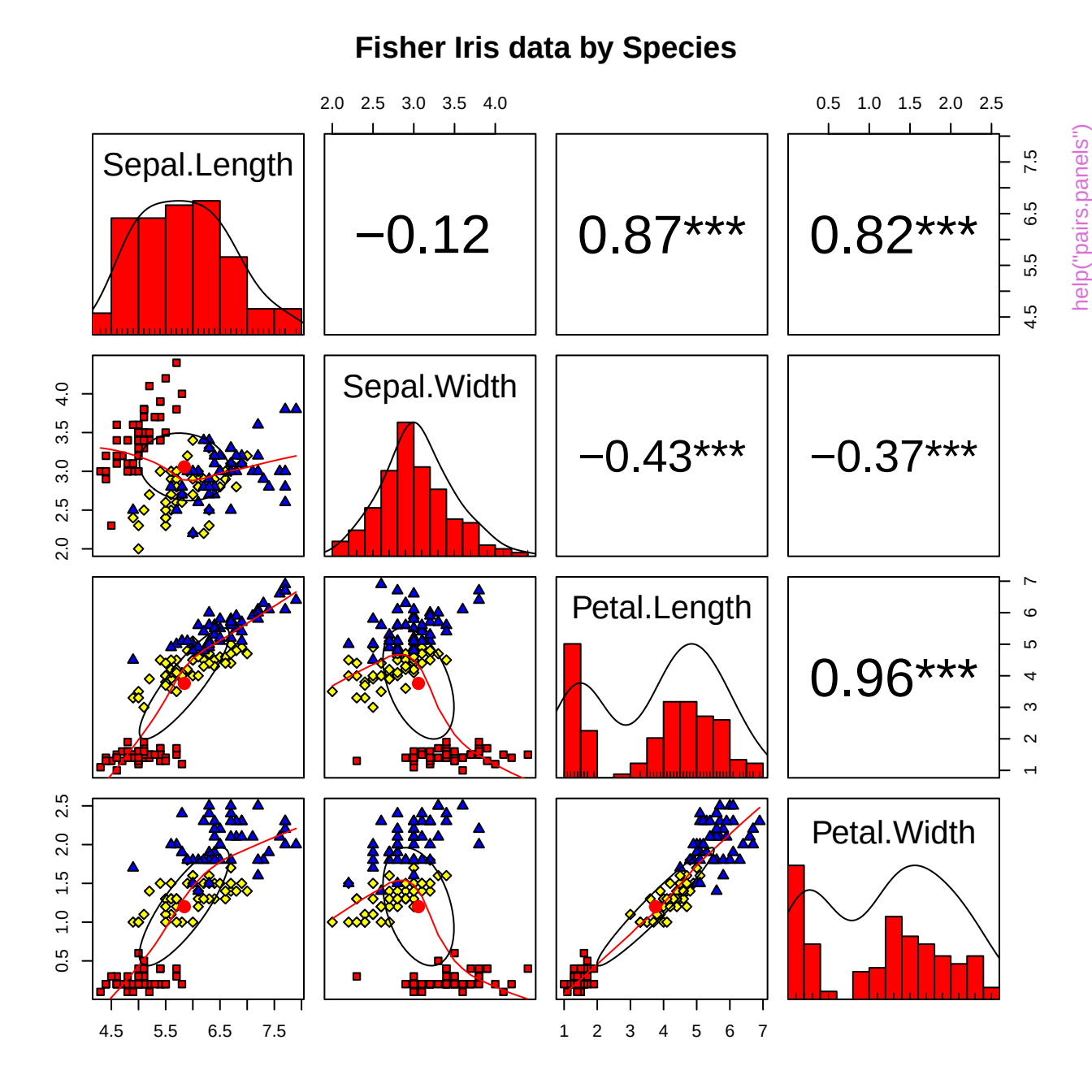

Q−Q plot of Mahalanobis D2 vs. quantiles of χ2nvar
Mahalanobis D2
Quantiles of χ2
0
10
20
30
40
0
5
10
15
20
33337
36093
35186
30980
38502
help("outlier")

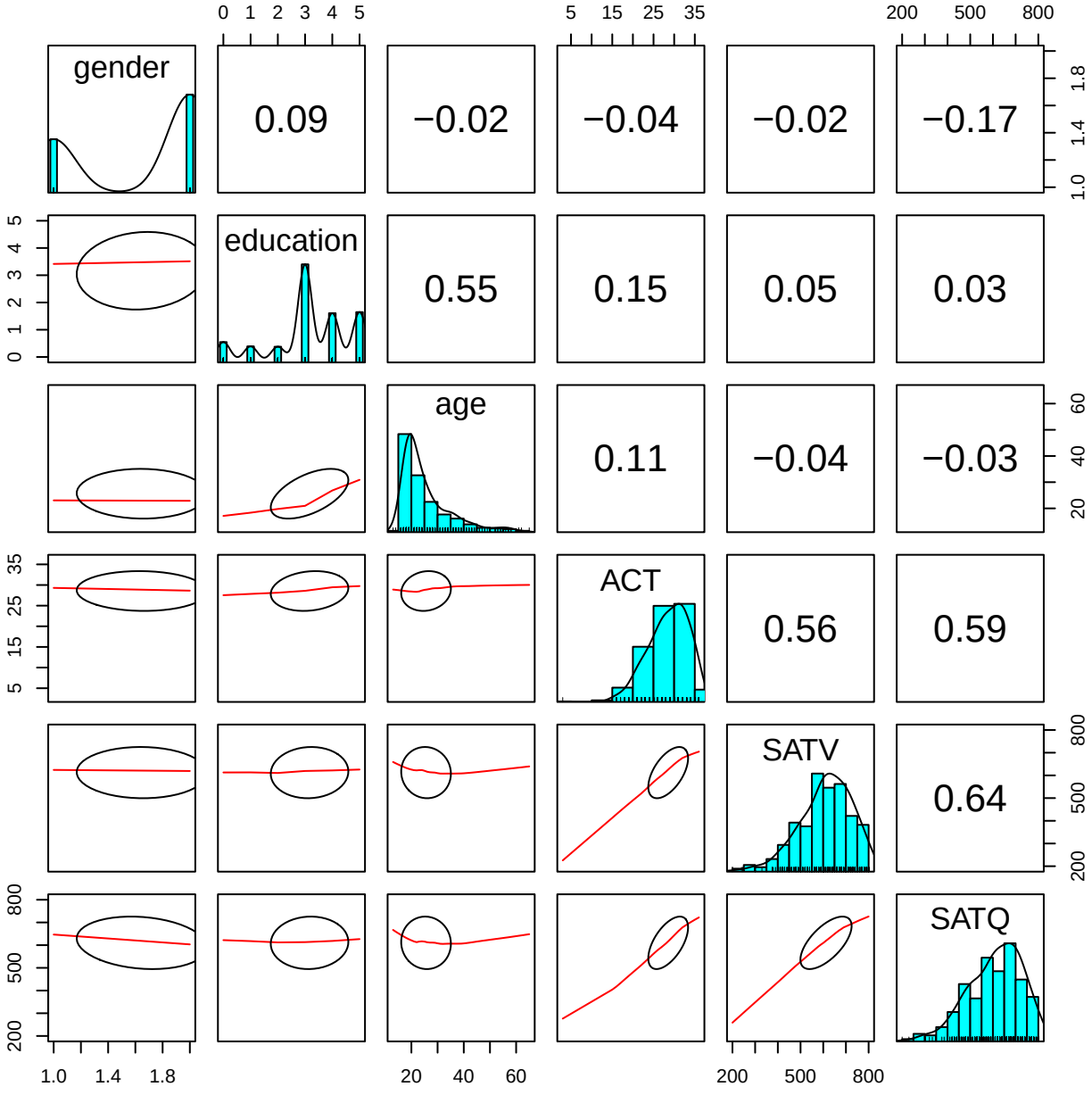

gender
education
age
ACT
SATV
SATQ
d2
0.09
−0.02
−0.04
−0.02
−0.17
−0.16
0.55
0.15
0.05
0.03
−0.13
0.11
−0.04
−0.03
0.39
0.56
0.59
−0.11
0.64
−0.31
−0.25
help("outlier")

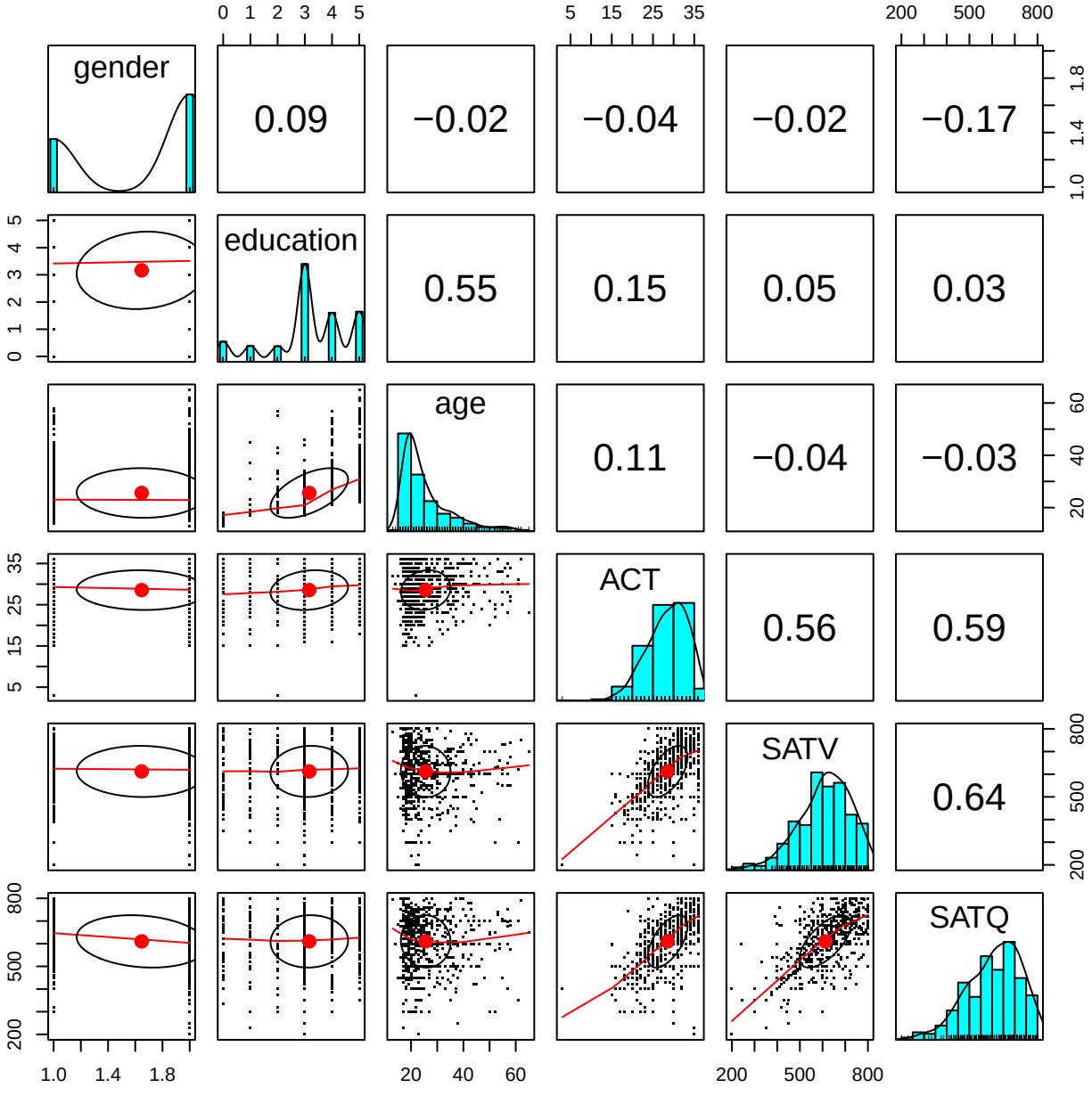

rating
complaints
privileges
learning
raises
critical
advance
0.83
0.43
0.62
0.59
0.16
0.16
0.56
0.60
0.67
0.19
0.22
0.49
0.45
0.15
0.34
0.64
0.12
0.53
0.38
0.57
0.28
help("pairs.panels")

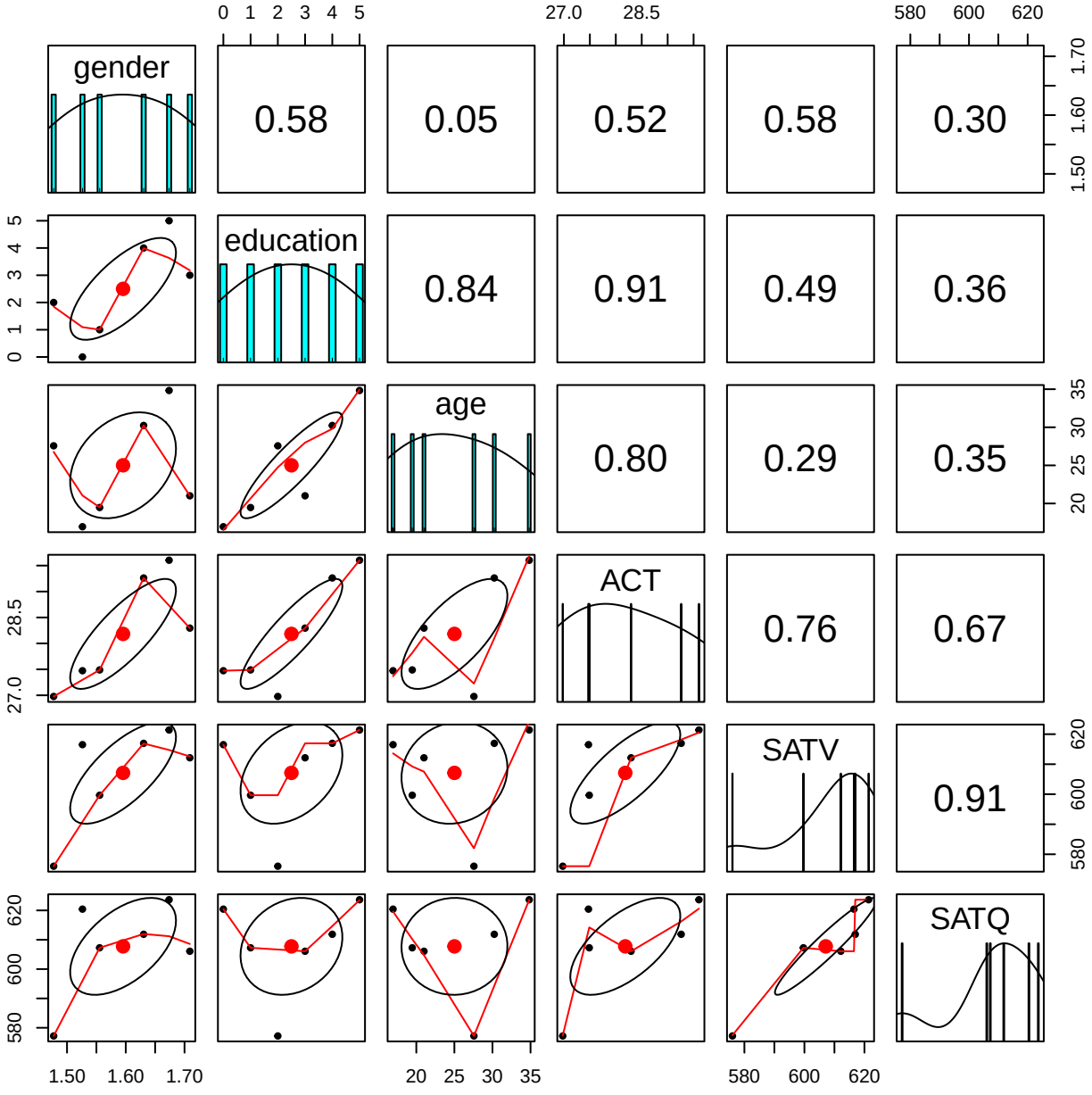

Fisher Iris data by Species
Sepal.Length
Sepal.Width
Petal.Length
Petal.Width
−0.12
0.87
0.82
−0.43
−0.37
0.96
help("pairs.panels")

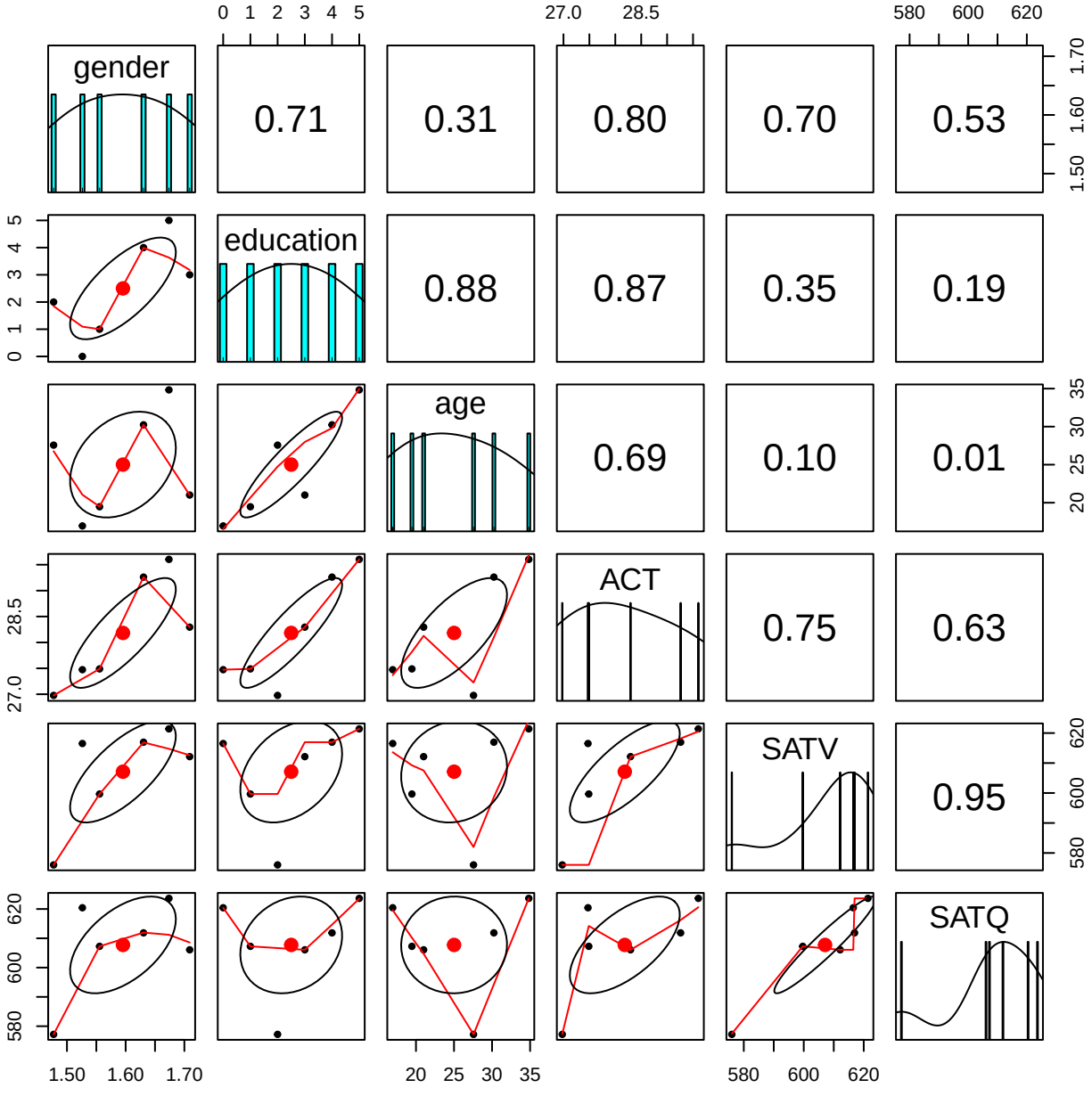

Fisher Iris data by Species
Sepal.Length
Sepal.Width
Petal.Length
Petal.Width
−0.12
0.87
0.82
−0.43
−0.37
0.96
help("pairs.panels")

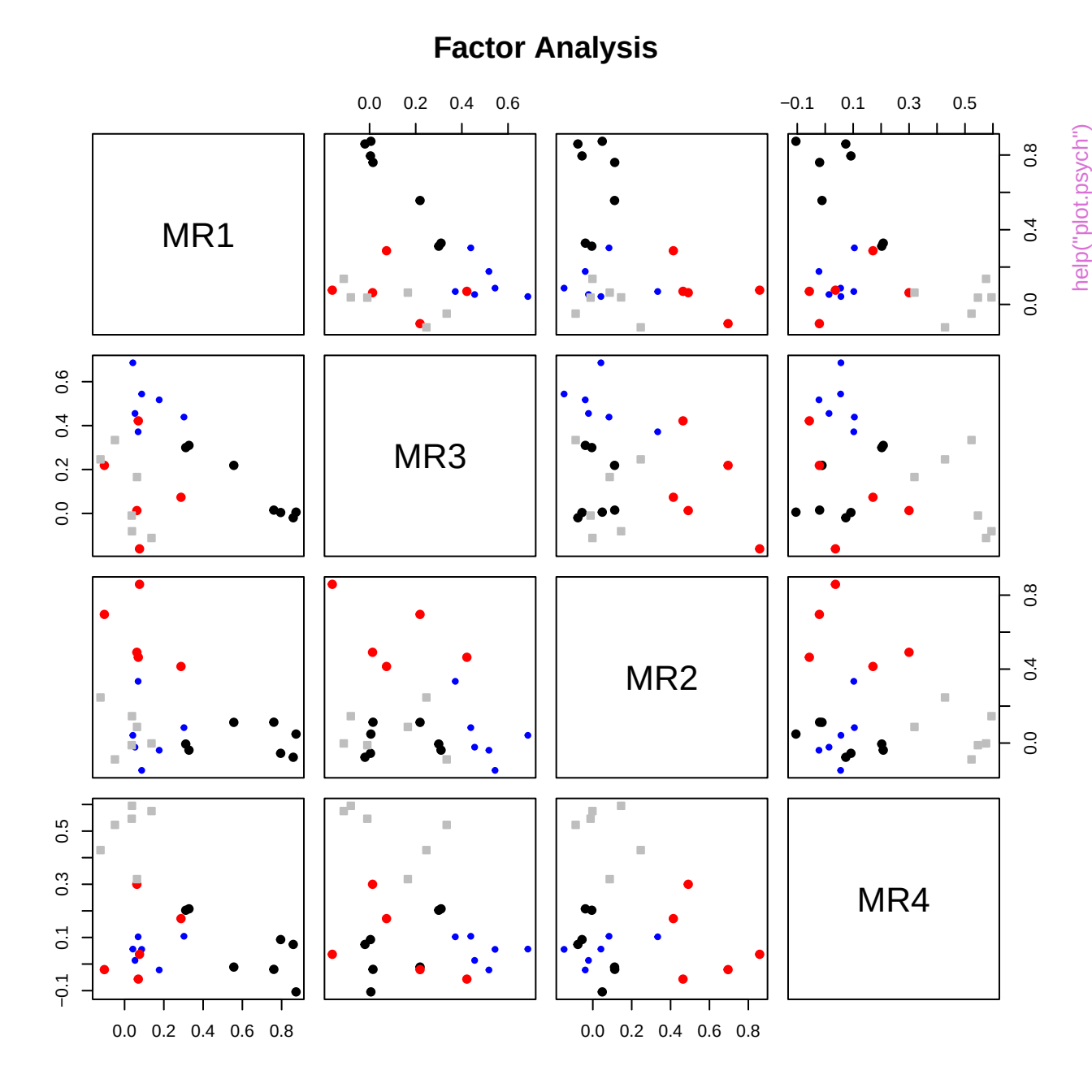

Fisher Iris data by Species
Sepal.Length
Sepal.Width
Petal.Length
Petal.Width
−0.12
0.87***
0.82***
−0.43***
−0.37***
0.96***
help("pairs.panels")

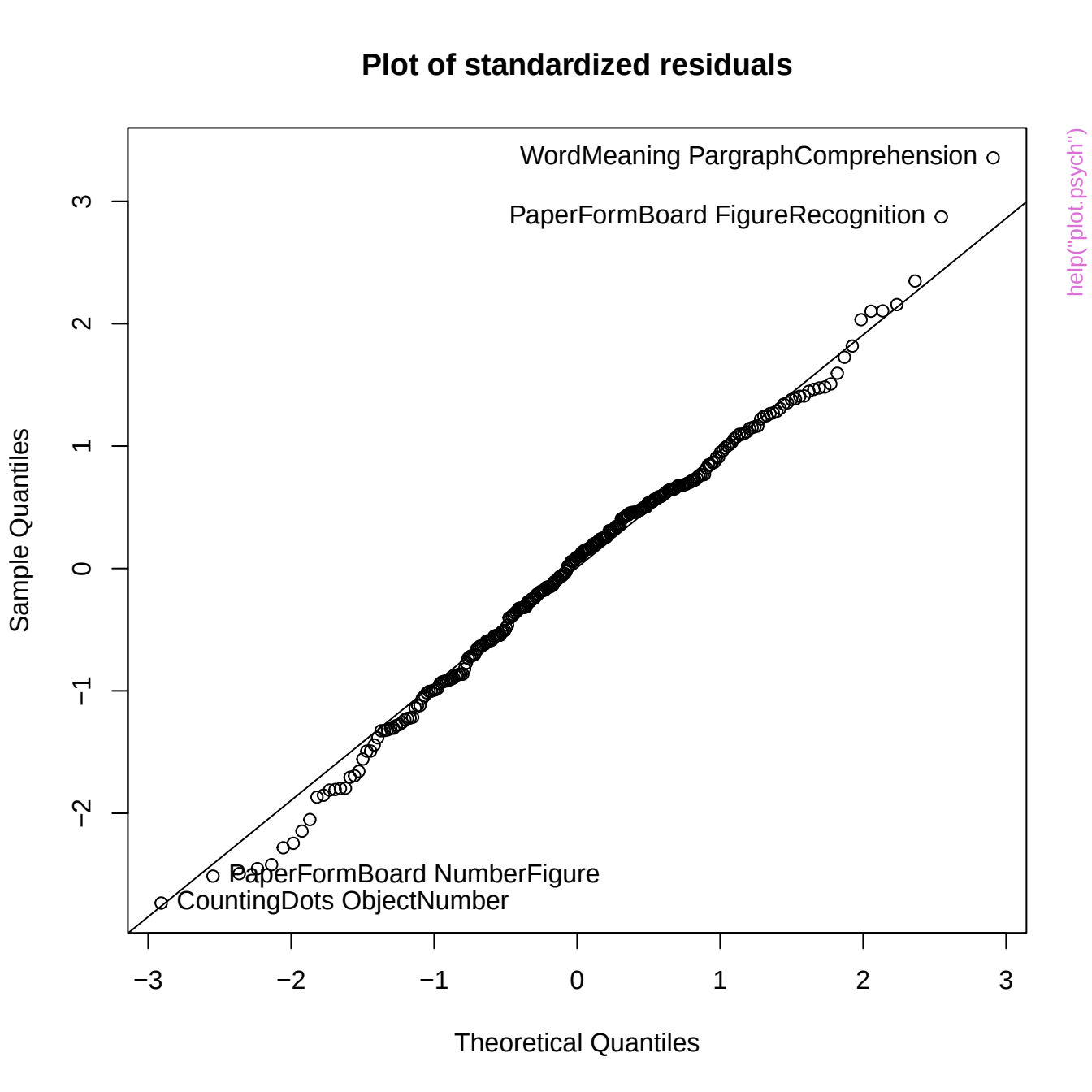

gender
education
age
ACT
SATV
SATQ
0.09
−0.02
−0.04
−0.02
−0.17
0.55
0.15
0.05
0.03
0.11
−0.04
−0.03
0.56
0.59
0.64
help("pairs.panels")

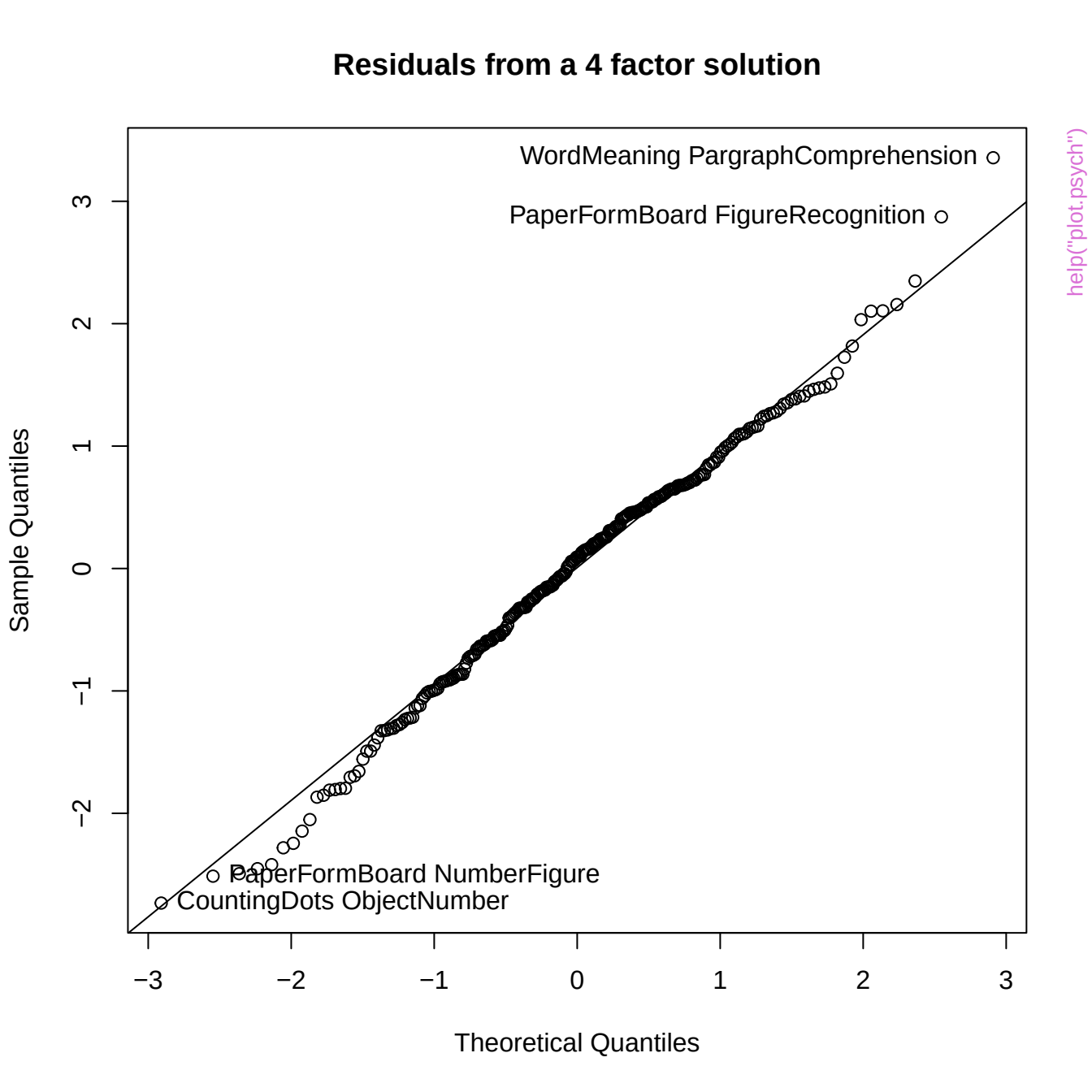



gender
education
age
ACT
SATV
SATQ
0.58
0.05
0.52
0.58
0.30
0.84
0.91
0.49
0.36
0.80
0.29
0.35
0.76
0.67
0.91
0 1 2 3 4 5
27.0 28.5
580 600 620
1.50 1.60 1.70
20 25 30 35
help("pairs.panels")

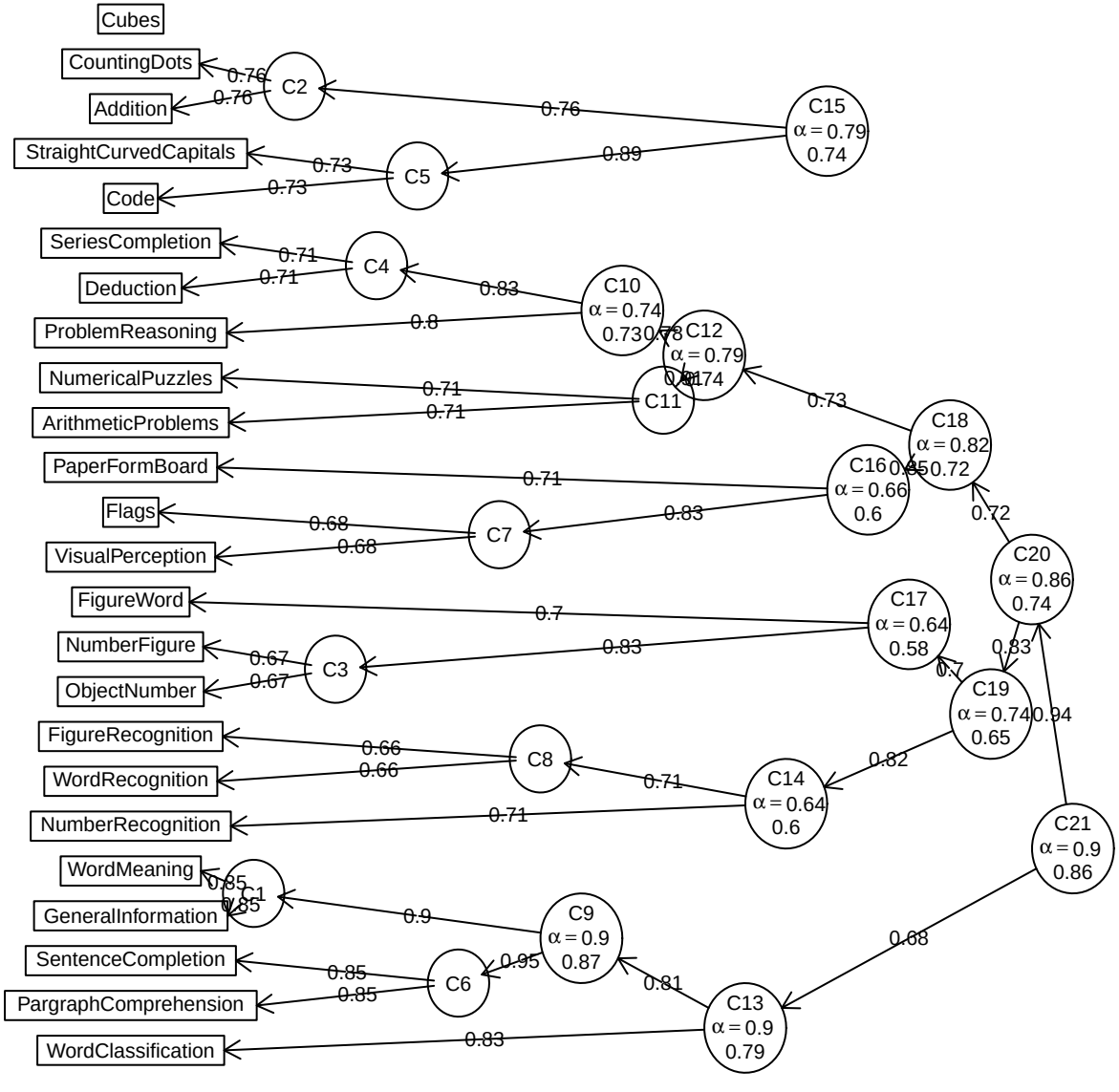

gender
education
age
ACT
SATV
SATQ
0.71
0.31
0.80
0.70
0.53
0.88
0.87
0.35
0.19
0.69
0.10
0.01
0.75
0.63
0.95
help("pairs.panels")

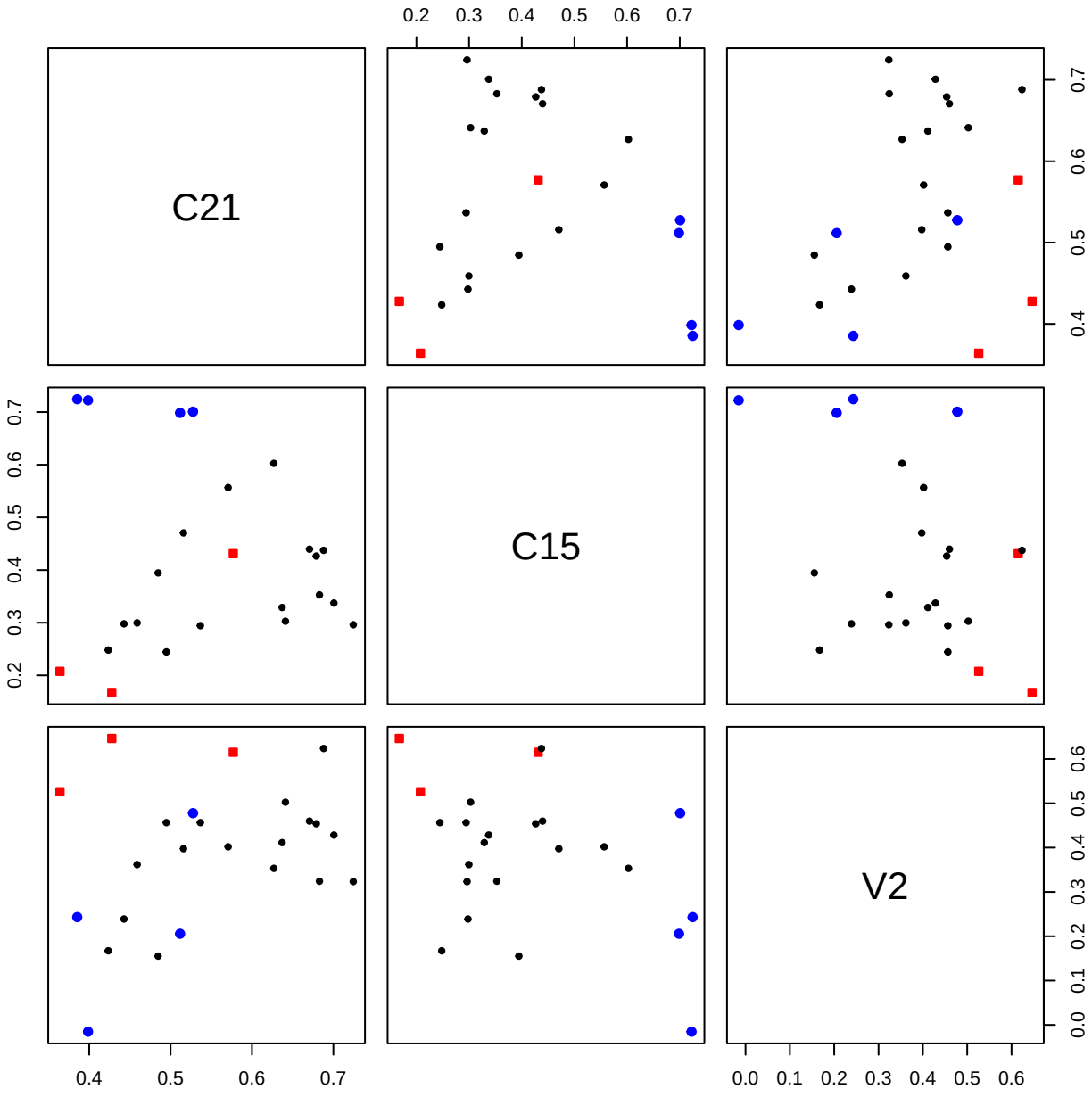

Factor Analysis
MR1
MR3
MR2
MR4
help("plot.psych")


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")

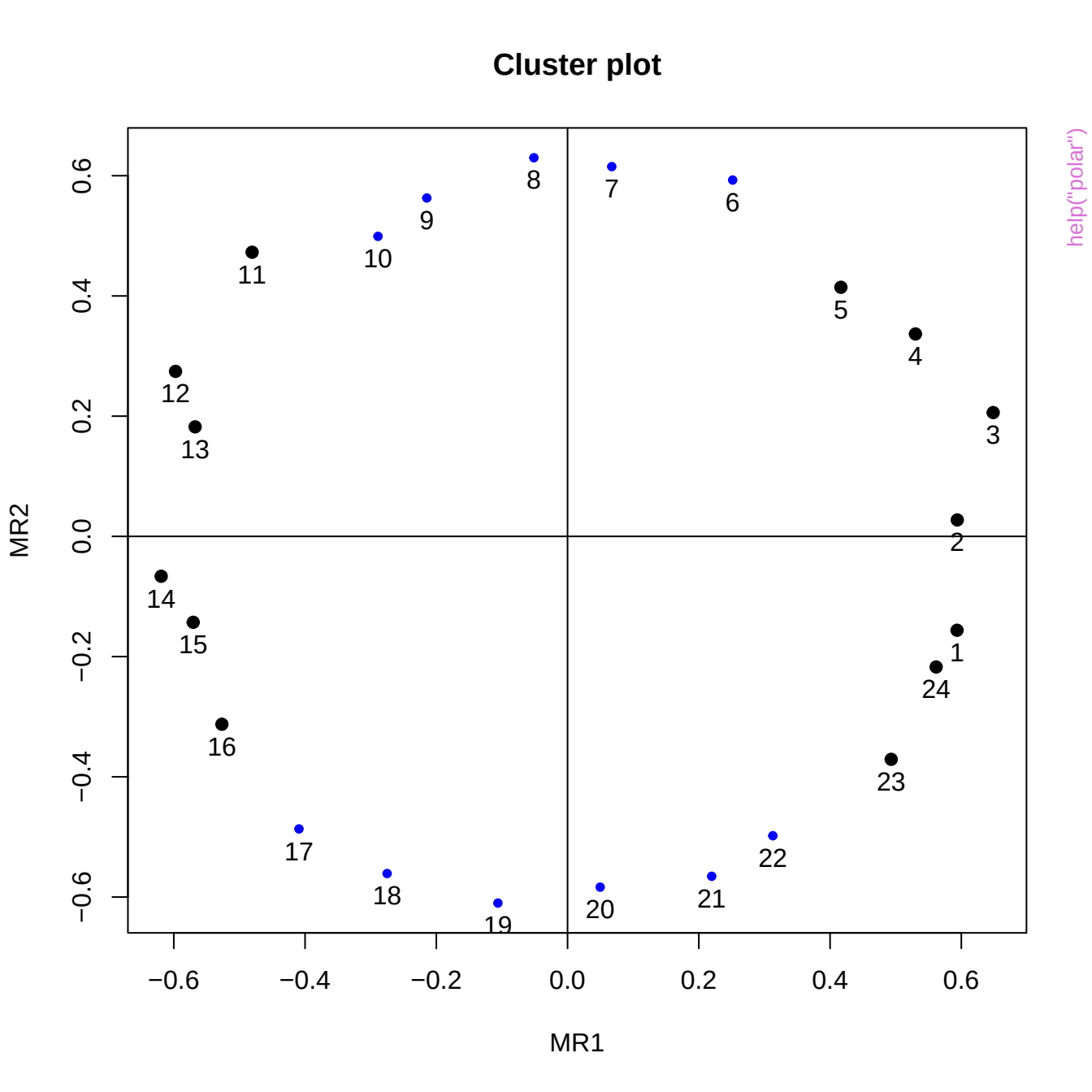

Residuals from a 4 factor solution
WordMeaning PargraphComprehension
PaperFormBoard FigureRecognition
PaperFormBoard NumberFigure
CountingDots ObjectNumber
Sample Quantiles
Theoretical Quantiles
−3
−2
−1
0
1
2
3
help("plot.psych")

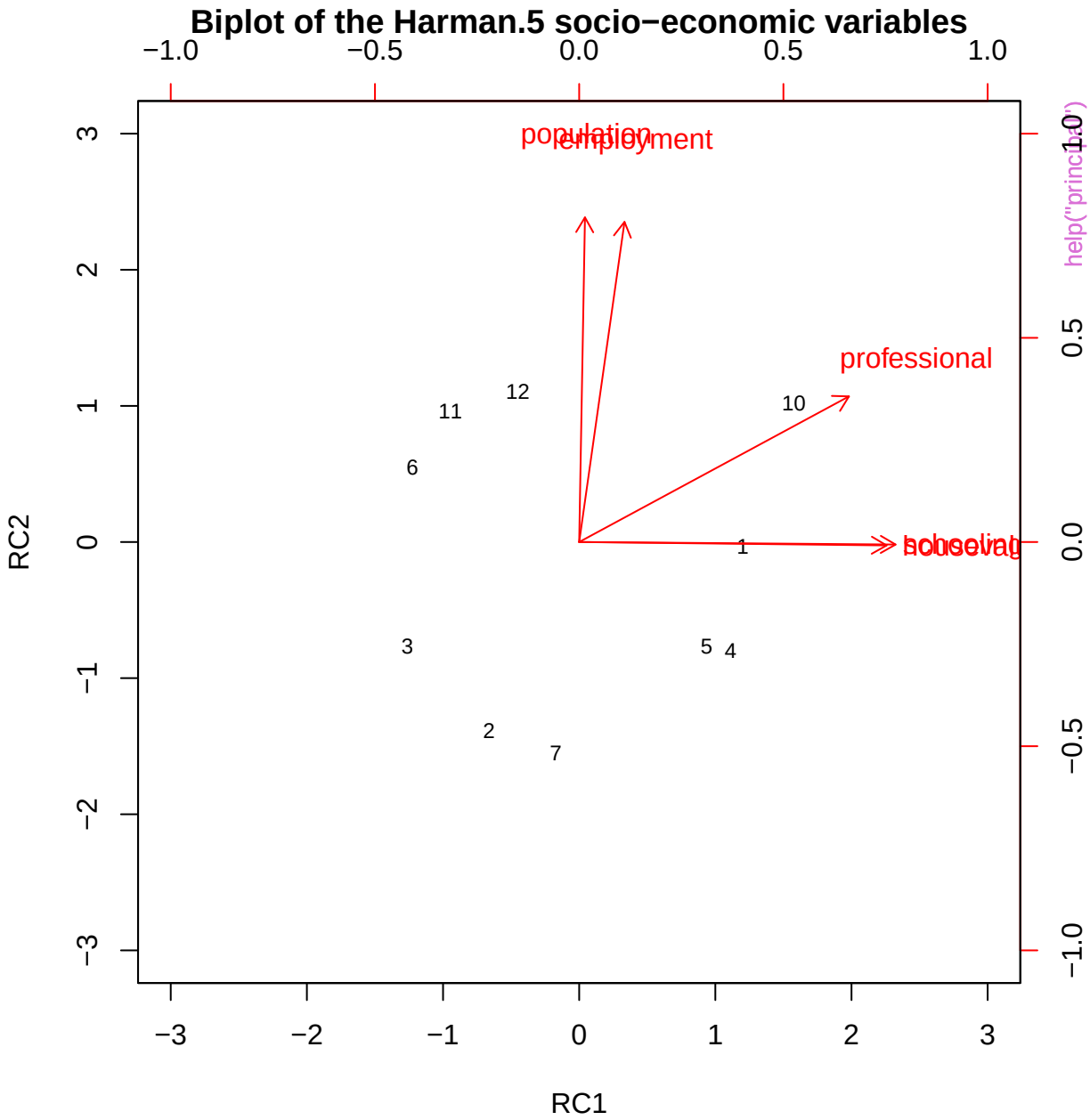
ICLUST

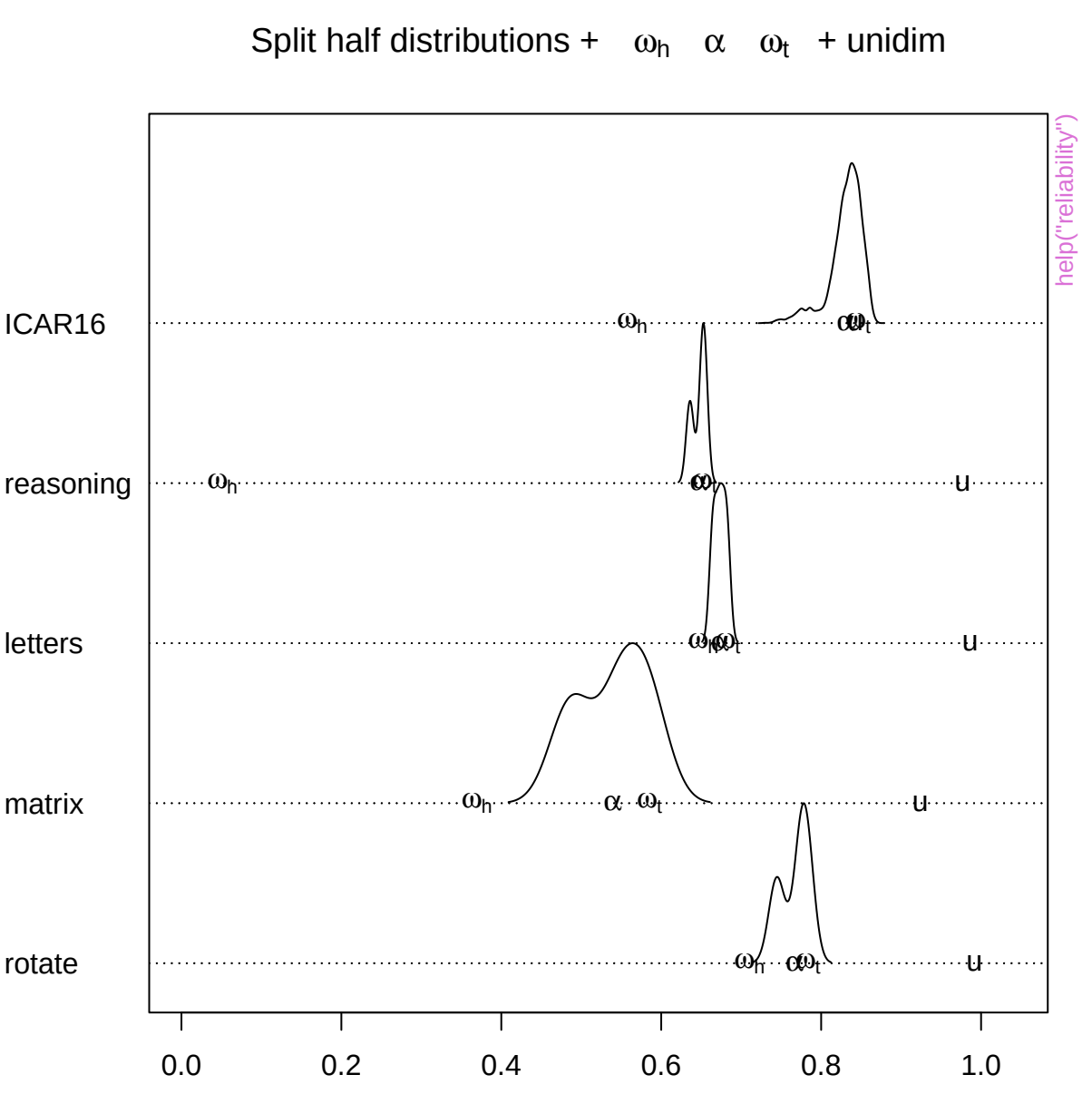

Cubes
CountingDots
Addition
StraightCurvedCapitals
Code
SeriesCompletion
Deduction
ProblemReasoning
NumericalPuzzles
ArithmeticProblems
PaperFormBoard
Flags
VisualPerception
FigureWord
NumberFigure
ObjectNumber
FigureRecognition
WordRecognition
NumberRecognition
WordMeaning
GeneralInformation
SentenceCompletion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

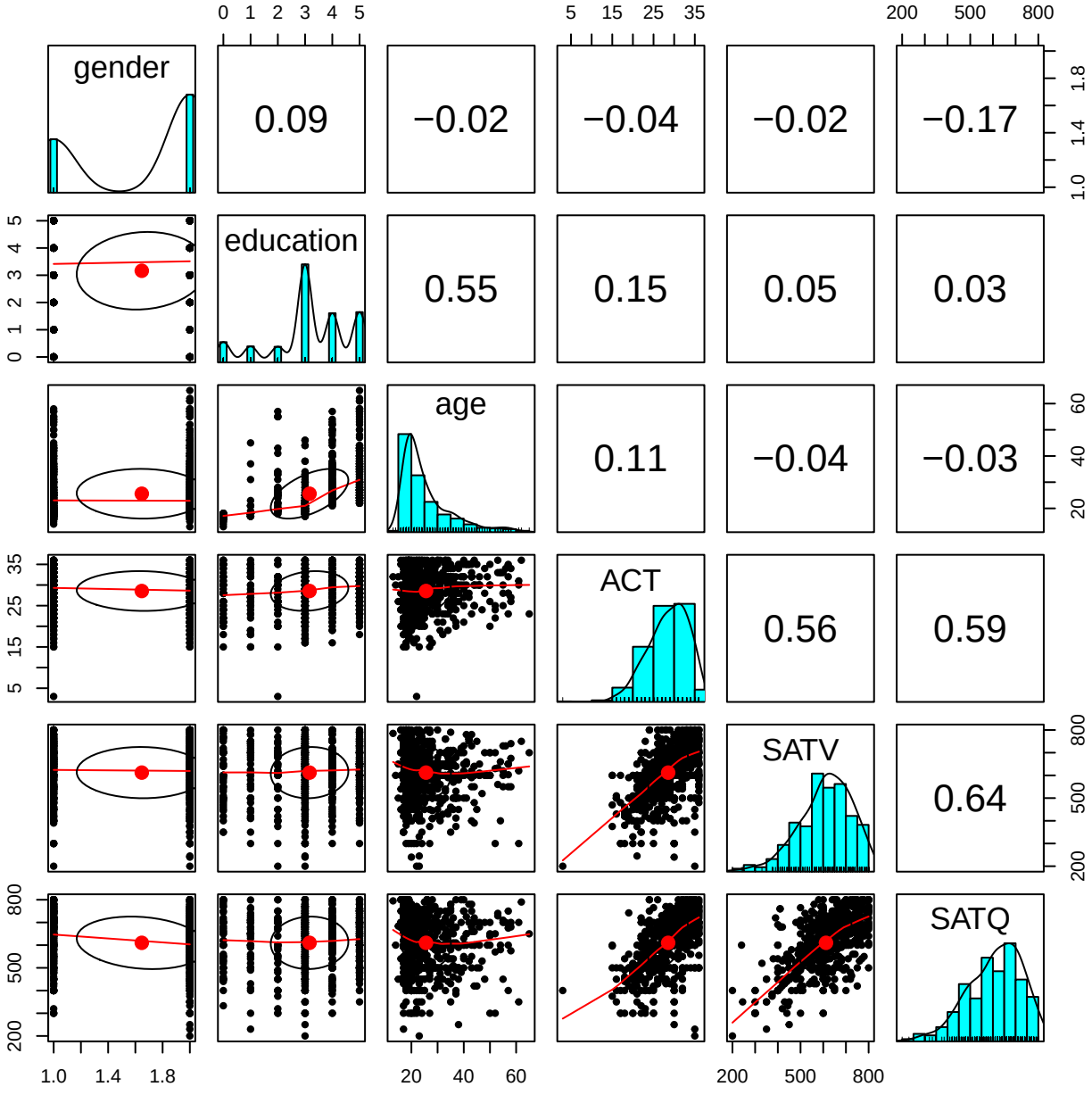


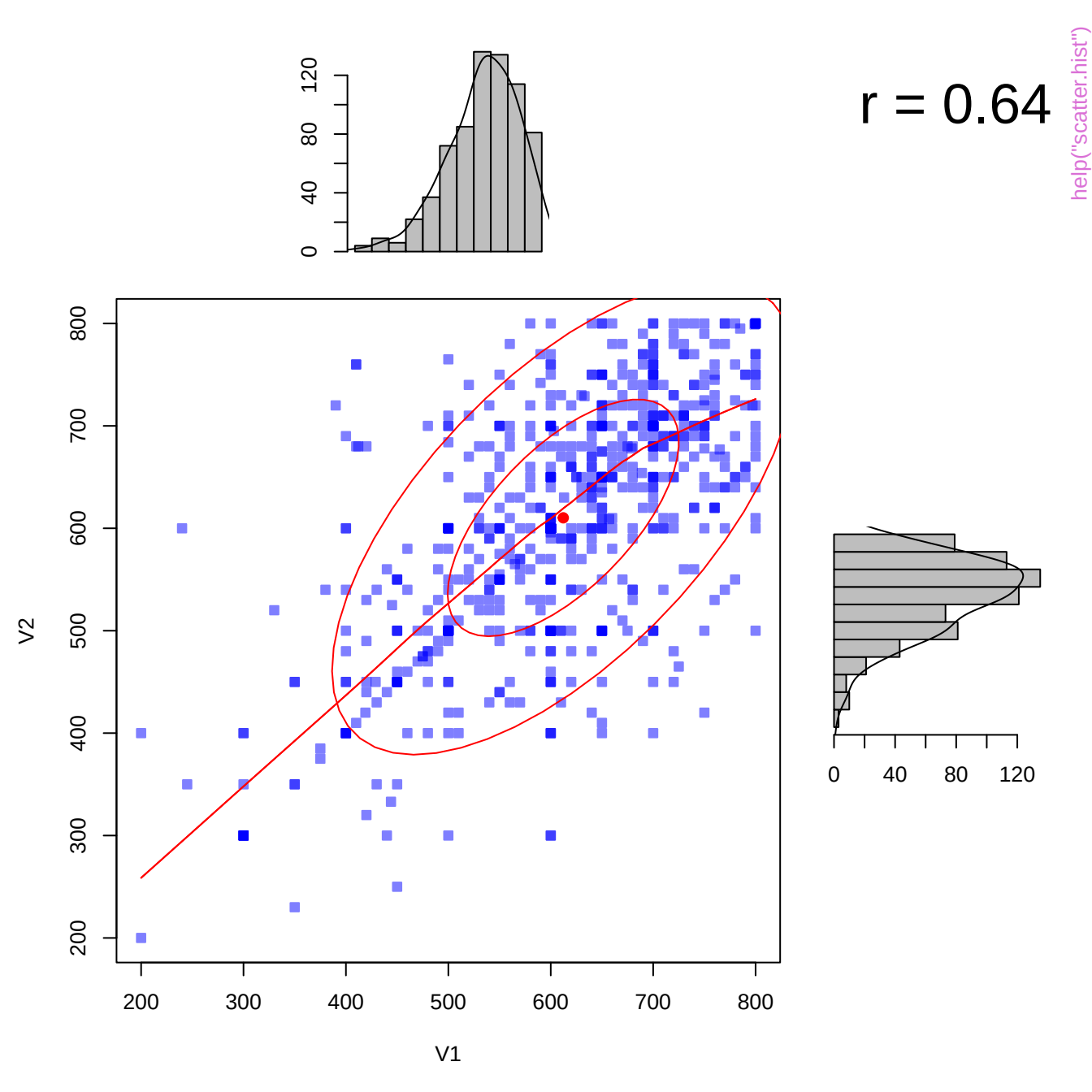
help("plot.psych")

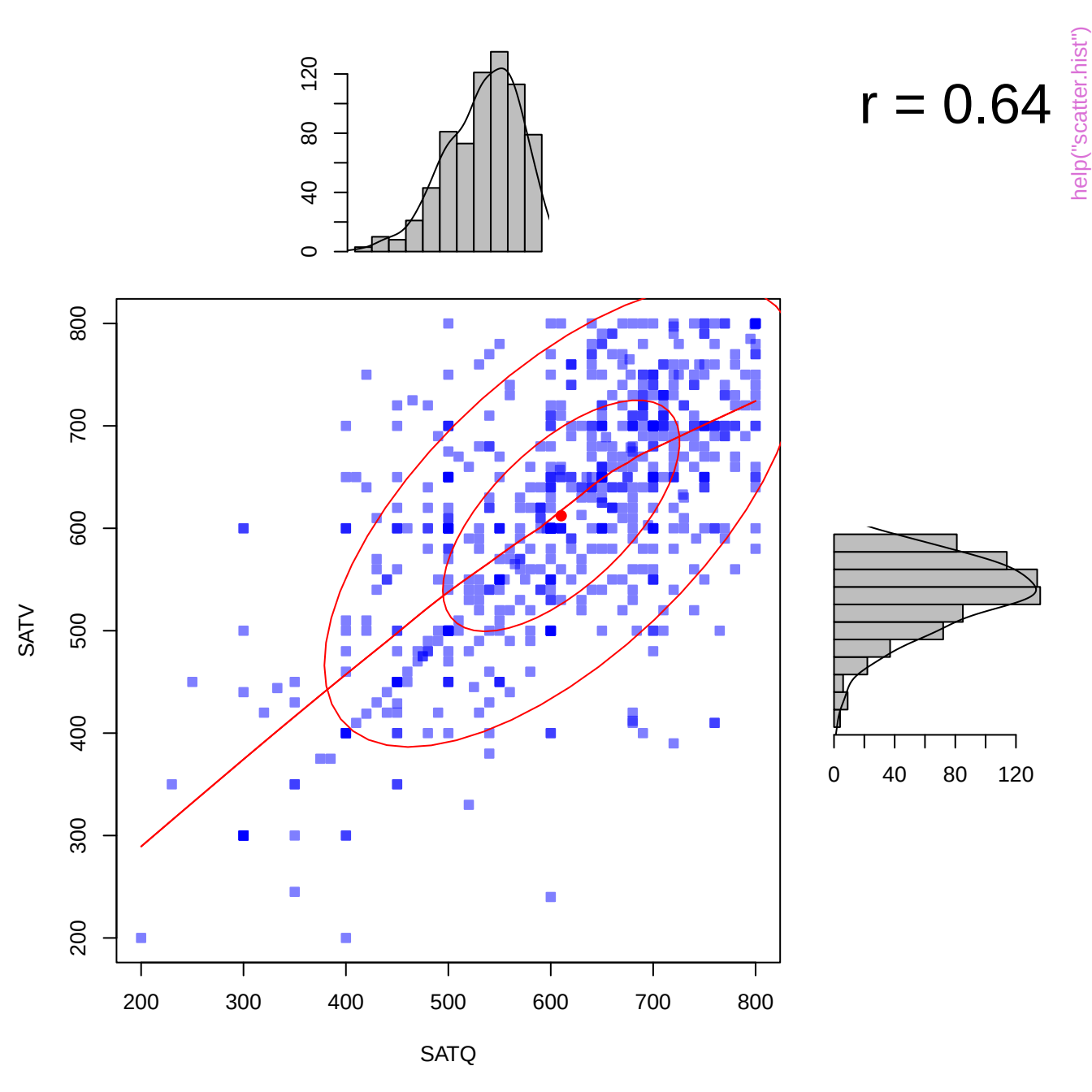

Cluster plot
MR2
MR1
help("polar")
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
8
7
6
9
10
11
5
4
12
3
13
2
14
15
1
24
16
23
17
22
18
21
19
20

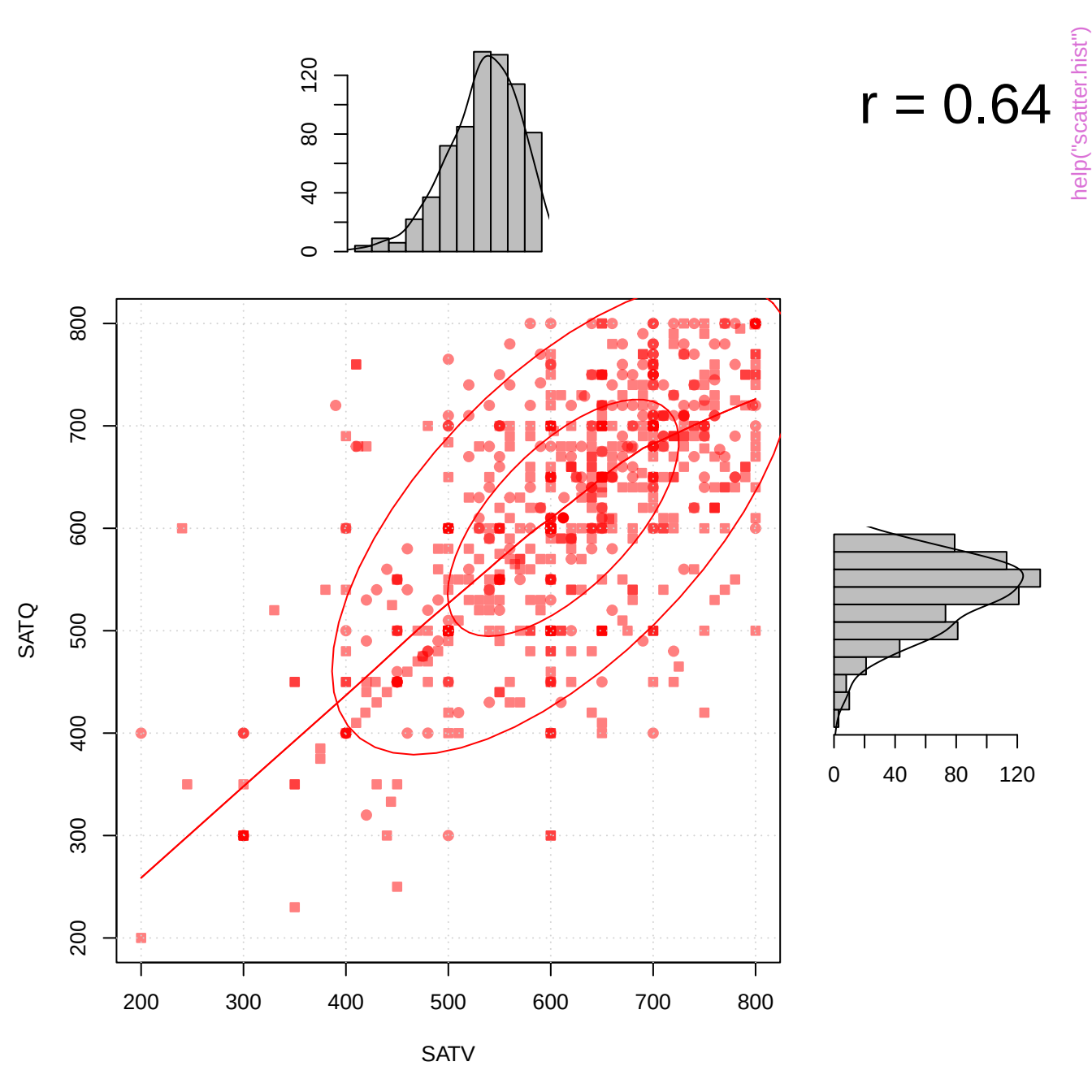

Biplot of the Harman.5 socio−economic variables
−1.0
−0.5
0.0
0.5
1.0
population
employment
professional
housevalue
schooling
12
11
10
6
1
3
5
4
2
7
RC2
RC1
help("princomp")

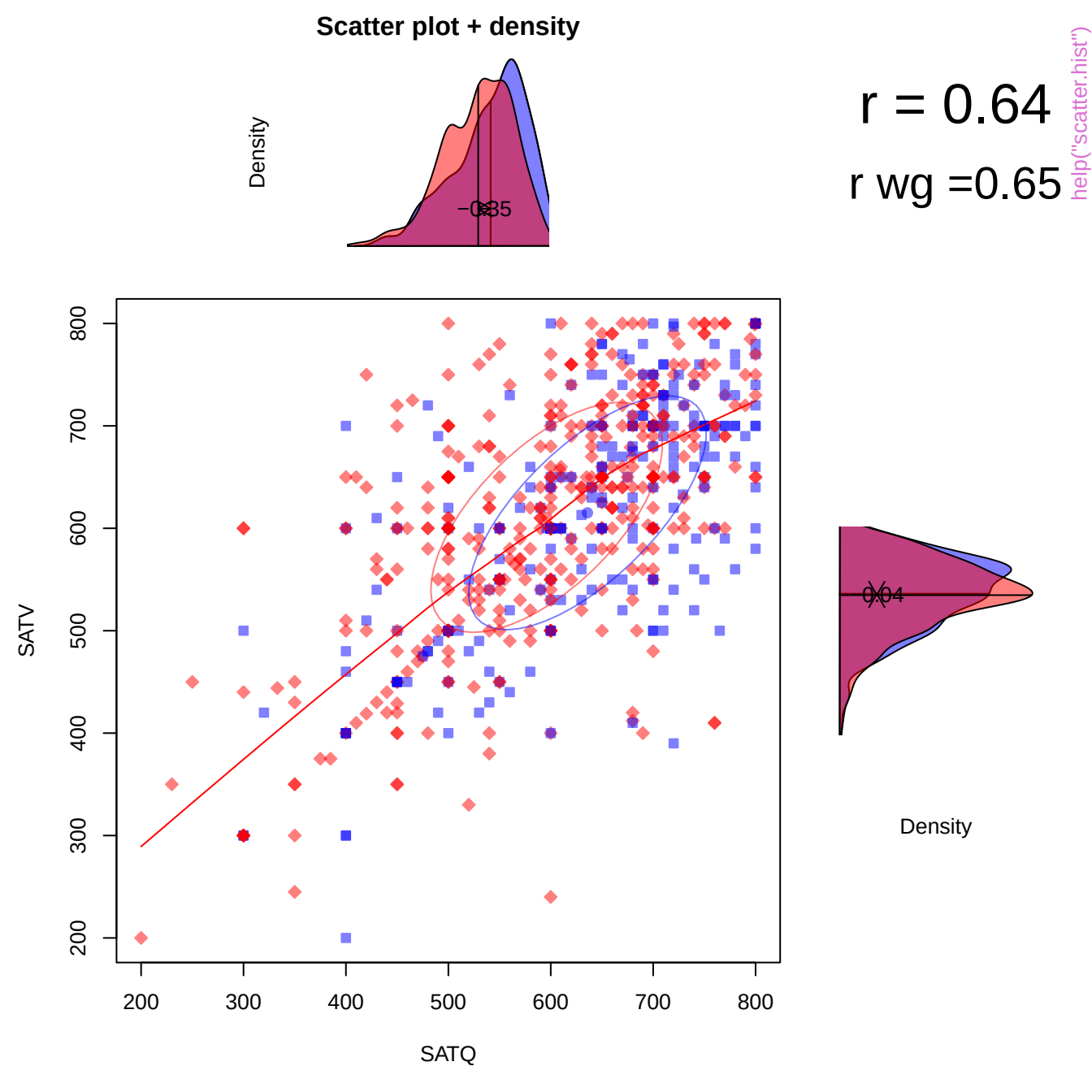

Split half distributions + ωh α ωt + unidim
help("reliability")
ICAR16
reasoning
letters
matrix
rotate
ωh
ωt
α
u
0.0
0.2
0.4
0.6
0.8
1.0


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")

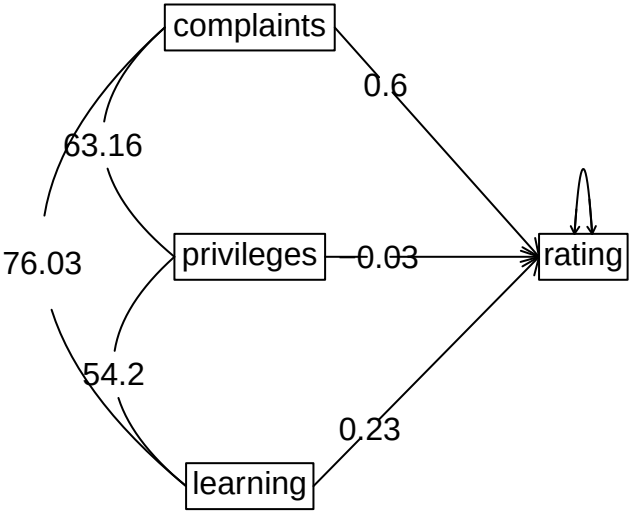

r = 0.64
help("scatter.hist")
0
40
80
120
V2
200
300
400
500
600
700
800
V1


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


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


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

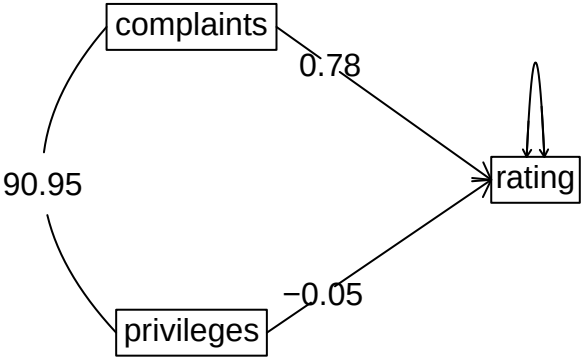
Regression Models



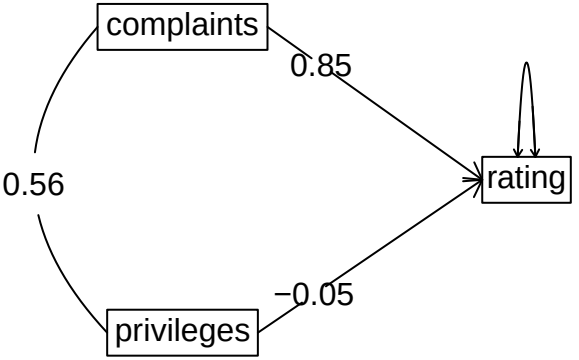
help("scoreWtd")

Regression Models

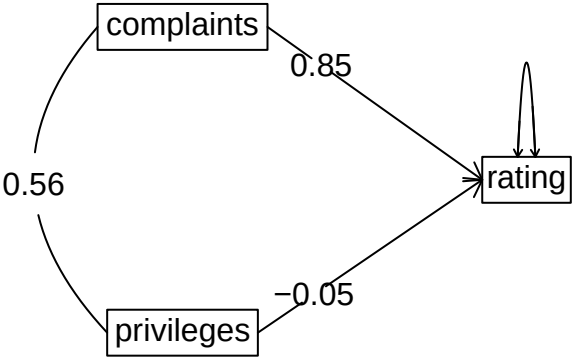
help("set.cor")



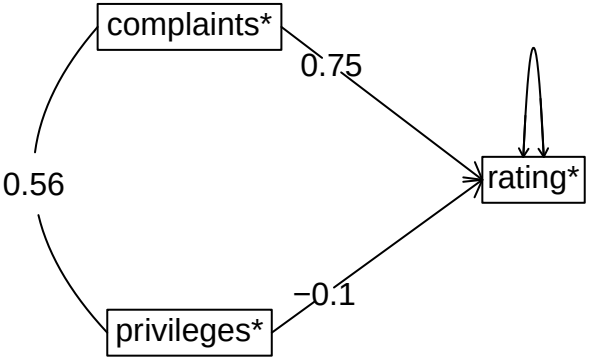
Regression Models



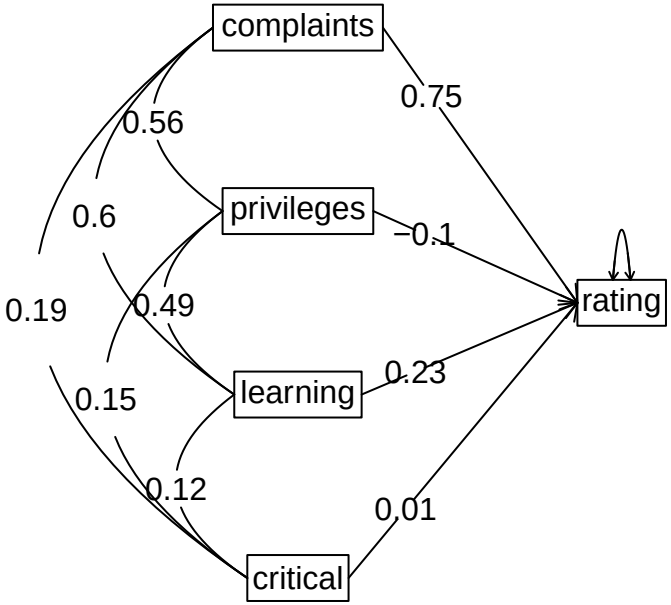
Regression Models



Regression Models

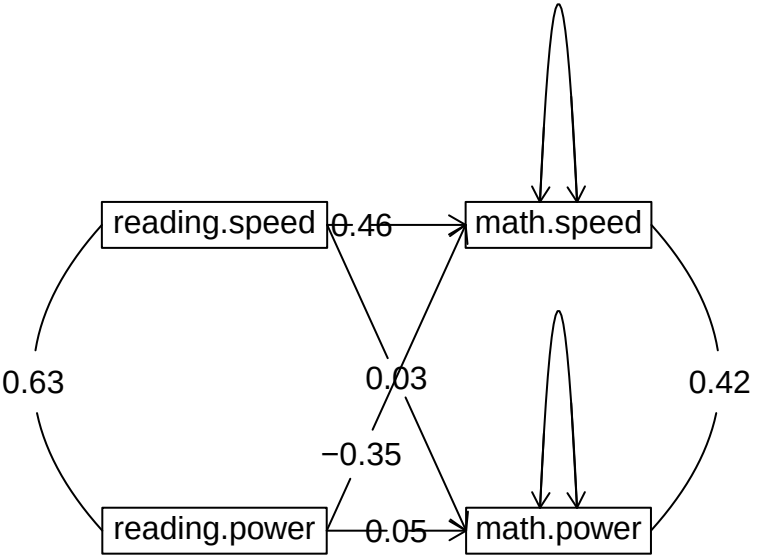


Regression Models



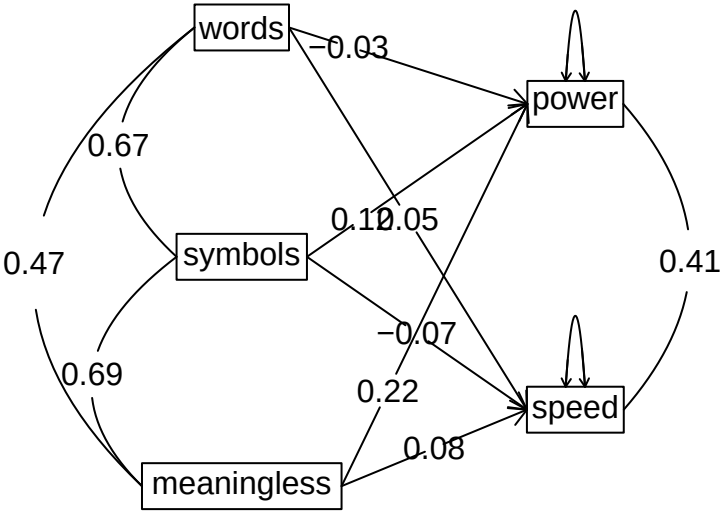
help("set.cor")

Regression Models



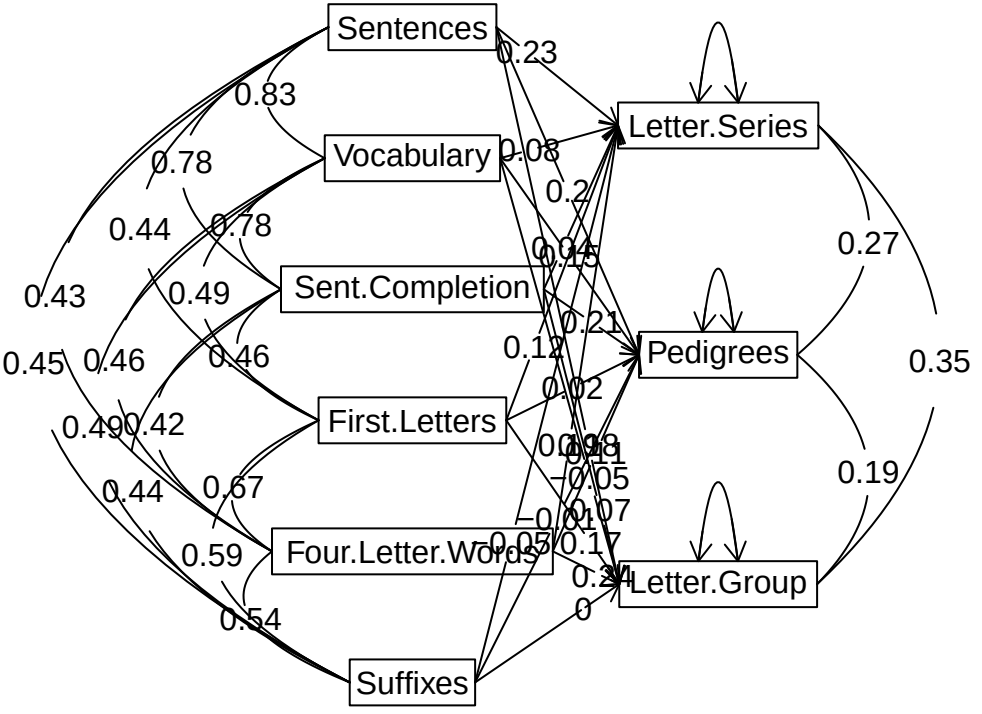
help("set.cor")

Regression Models

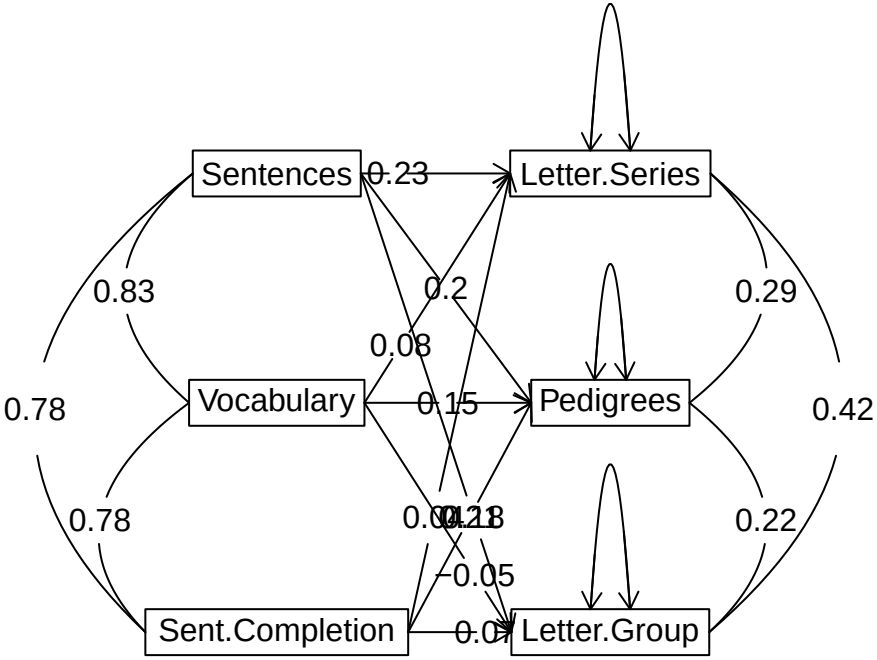


help("set.cor")

Regression Models

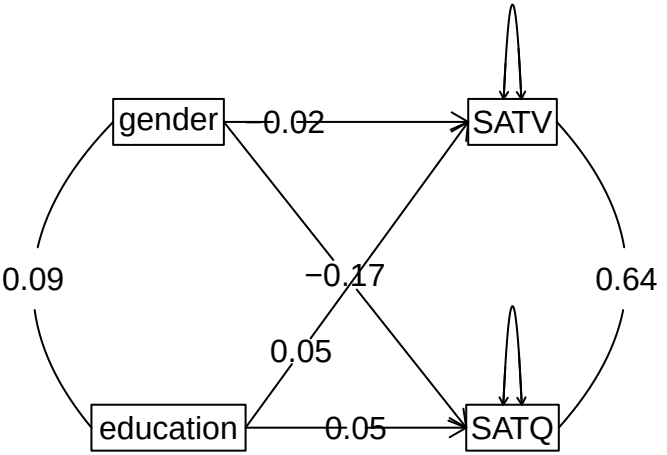


Regression Models



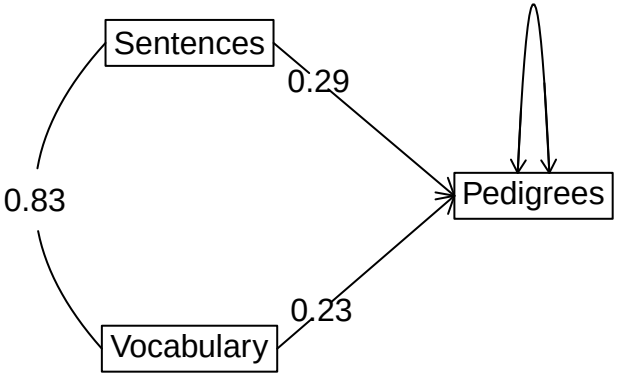
help("set.cor")

Regression Models



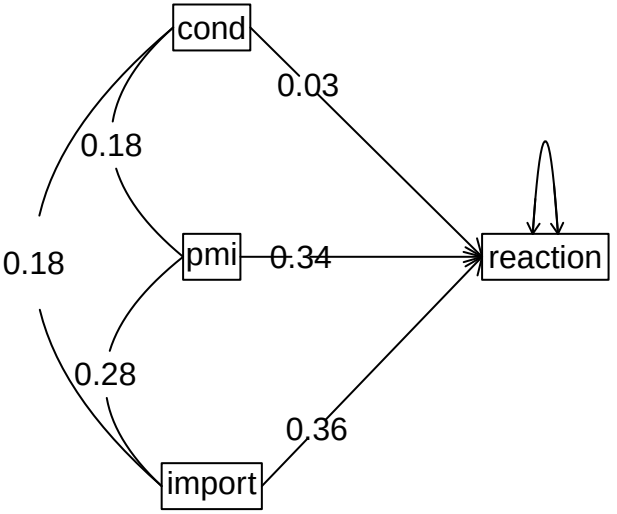
help("set.cor")

Regression Models



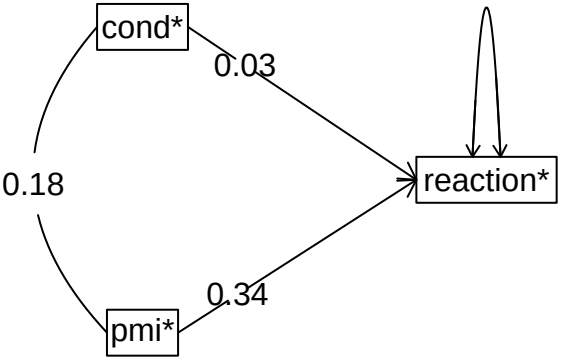
help("set.cor")

Regression Models



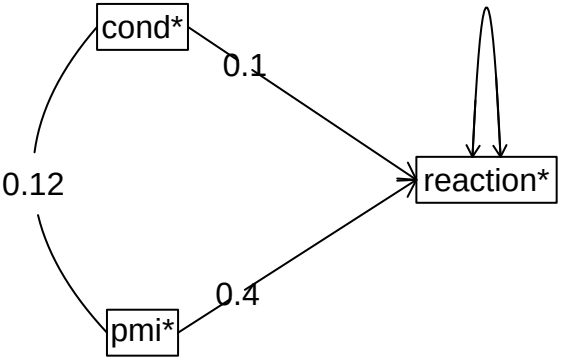
help("set.cor")

Partial out importance

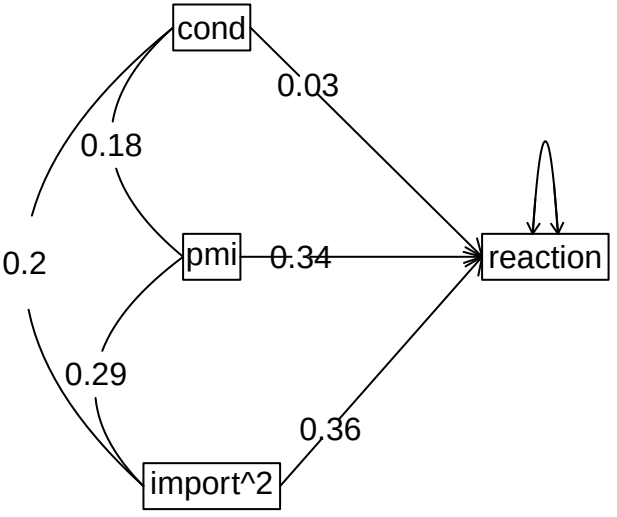


help("set.cor")

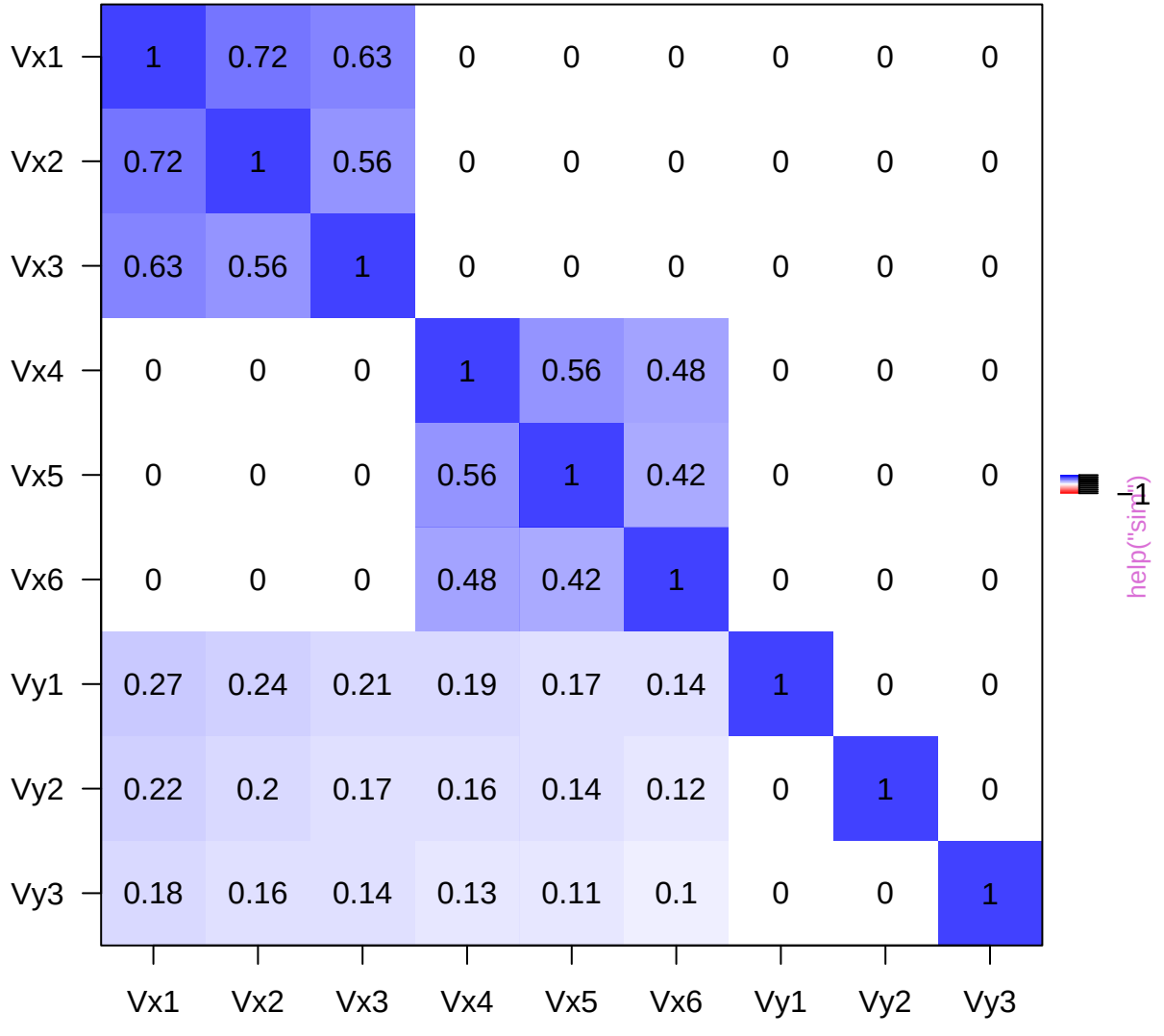
Partial out importance

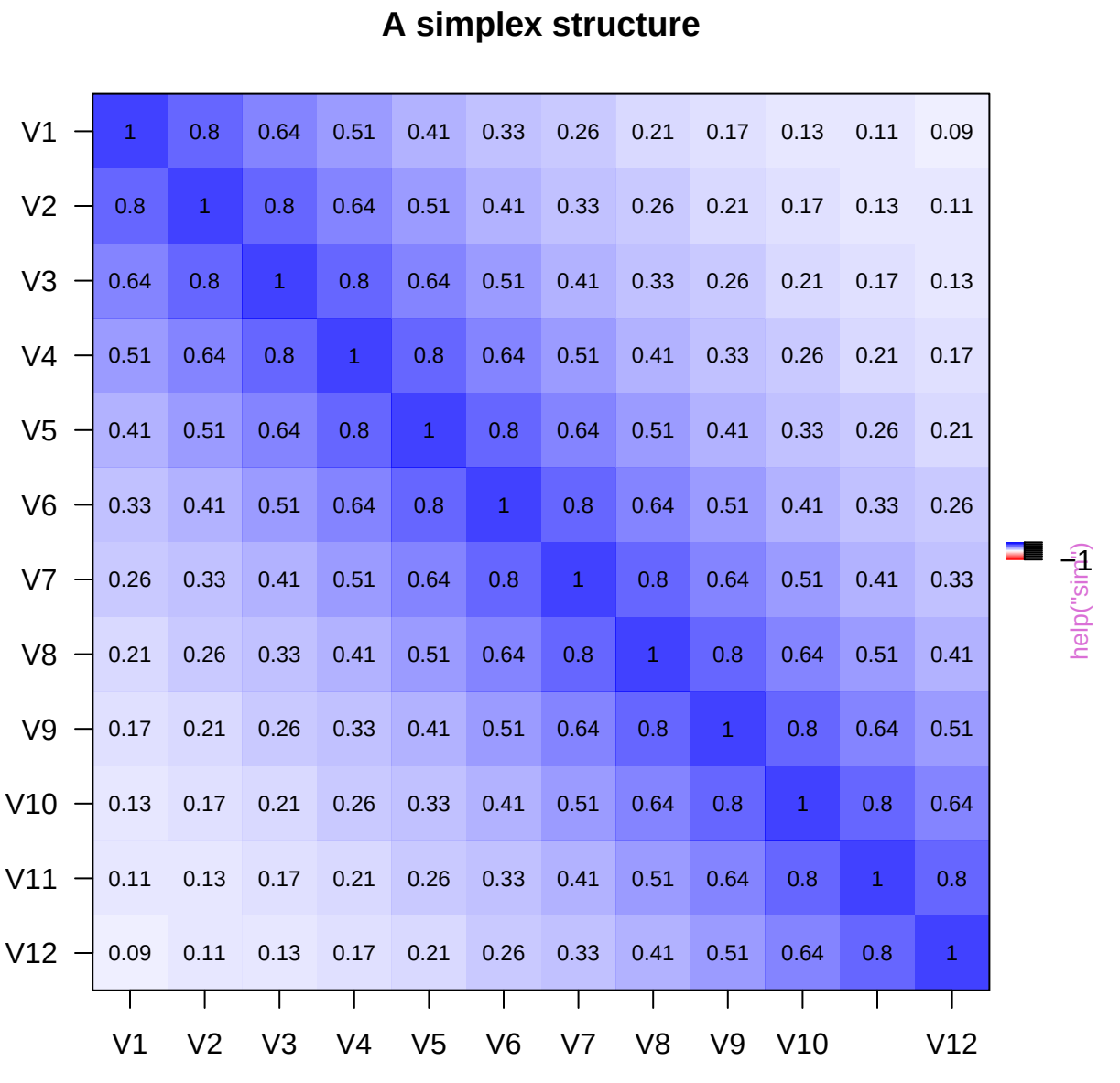


Regression Models

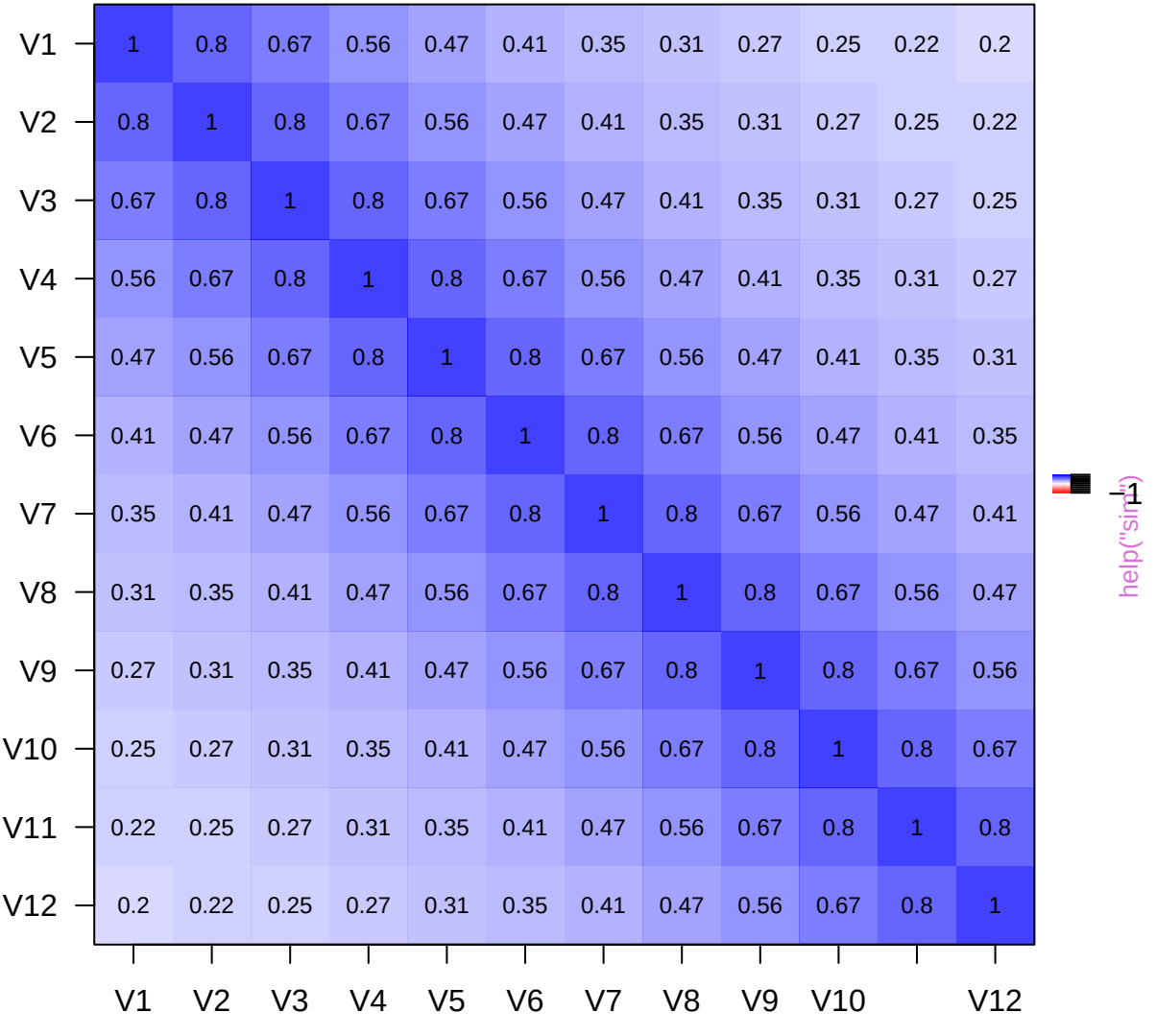


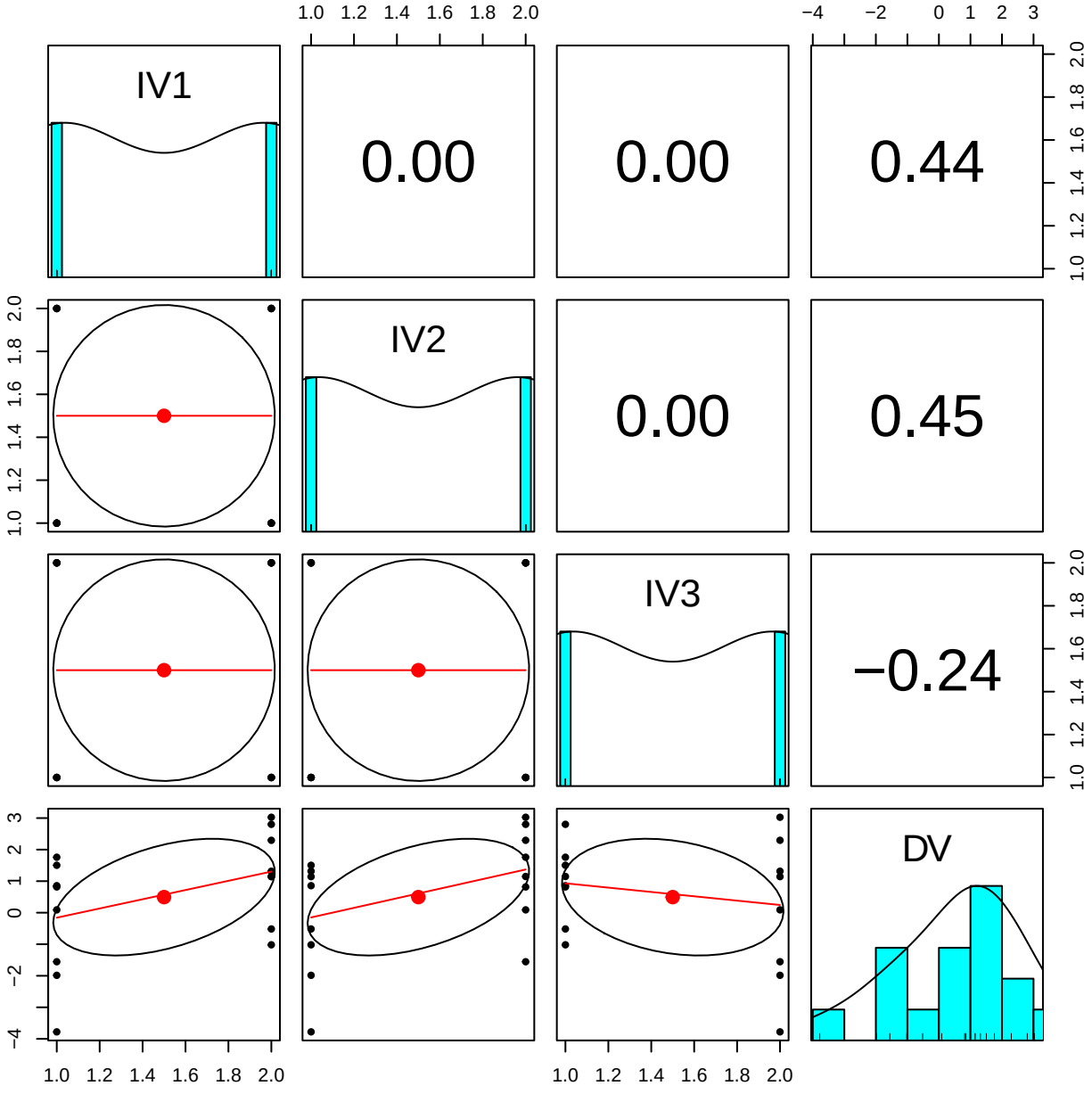
help("set.cor")


Vx1 1 0.72 0.63 0 0 0 0 0 0
Vx2 0.72 1 0.56 0 0 0 0 0 0
Vx3 0.63 0.56 1 0 0 0 0 0 0
Vx4 0 0 0 1 0.56 0.48 0 0 0
Vx5 0 0 0 0.56 1 0.42 0 0 0
Vx6 0 0 0 0.48 0.42 1 0 0 0
Vy1 0.27 0.24 0.21 0.19 0.17 0.14 1 0 0
Vy2 0.22 0.2 0.17 0.16 0.14 0.12 0 1 0
Vy3 0.18 0.16 0.14 0.13 0.11 0.1 0 0 1
Vx1 Vx2 Vx3 Vx4 Vx5 Vx6 Vy1 Vy2 Vy3
1
help("sin")

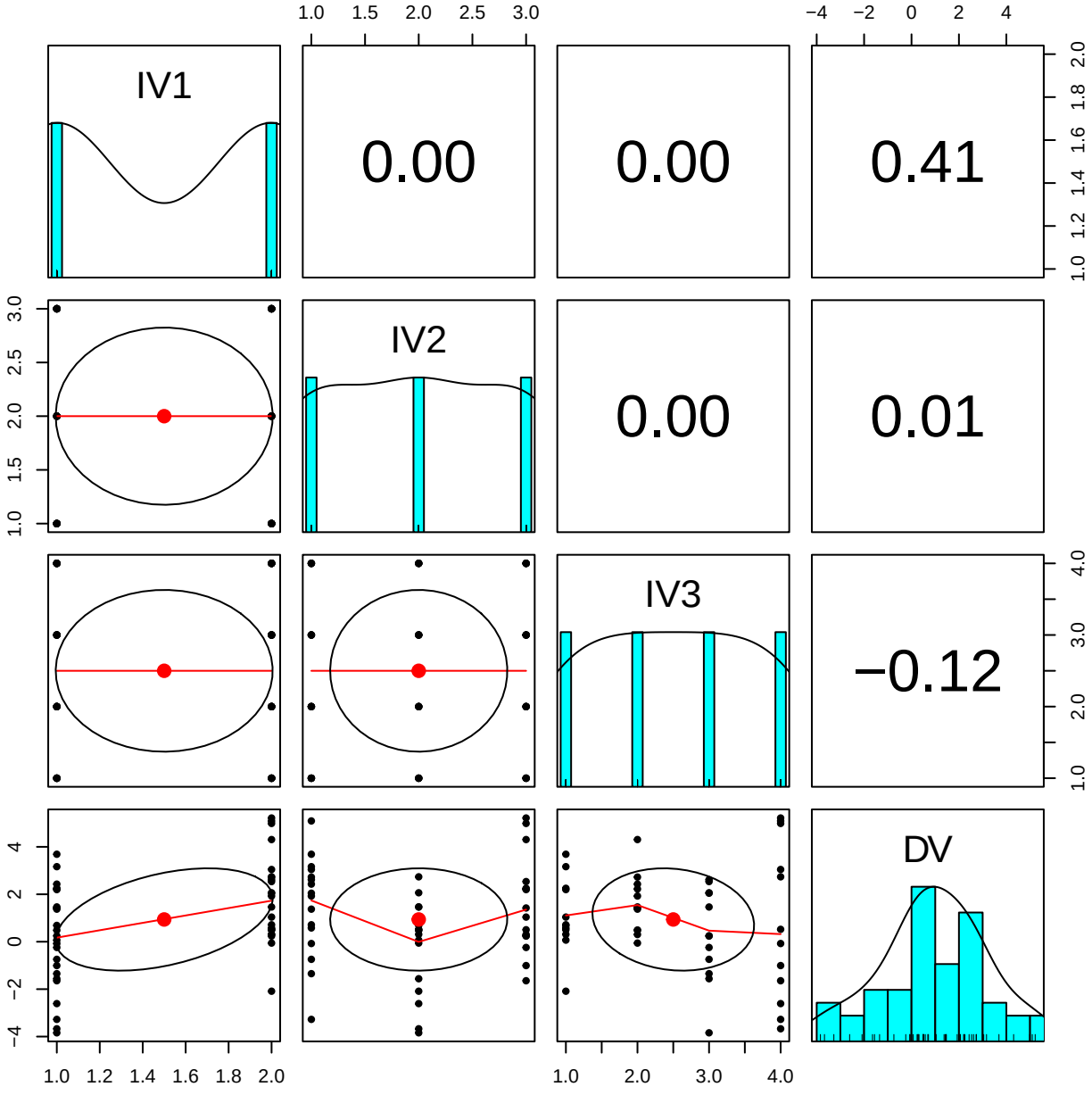

A simplex structure
V1 1 0.8 0.64 0.51 0.41 0.33 0.26 0.21 0.17 0.13 0.11 0.09
V2 0.8 1 0.8 0.64 0.51 0.41 0.33 0.26 0.21 0.17 0.13 0.11
V3 0.64 0.8 1 0.8 0.64 0.51 0.41 0.33 0.26 0.21 0.17 0.13
V4 0.51 0.64 0.8 1 0.8 0.64 0.51 0.41 0.33 0.26 0.21 0.17
V5 0.41 0.51 0.64 0.8 1 0.8 0.64 0.51 0.41 0.33 0.26 0.21
V6 0.33 0.41 0.51 0.64 0.8 1 0.8 0.64 0.51 0.41 0.33 0.26
V7 0.26 0.33 0.41 0.51 0.64 0.8 1 0.8 0.64 0.51 0.41 0.33
V8 0.21 0.26 0.33 0.41 0.51 0.64 0.8 1 0.8 0.64 0.51 0.41
V9 0.17 0.21 0.26 0.33 0.41 0.51 0.64 0.8 1 0.8 0.64 0.51
V10 0.13 0.17 0.21 0.26 0.33 0.41 0.51 0.64 0.8 1 0.8 0.64
V11 0.11 0.13 0.17 0.21 0.26 0.33 0.41 0.51 0.64 0.8 1 0.8
V12 0.09 0.11 0.13 0.17 0.21 0.26 0.33 0.41 0.51 0.64 0.8 1
V1 V2 V3 V4 V5 V6 V7 V8 V9 V10 V12
1
help("sim")

State Trait Auto Regressive Simplex

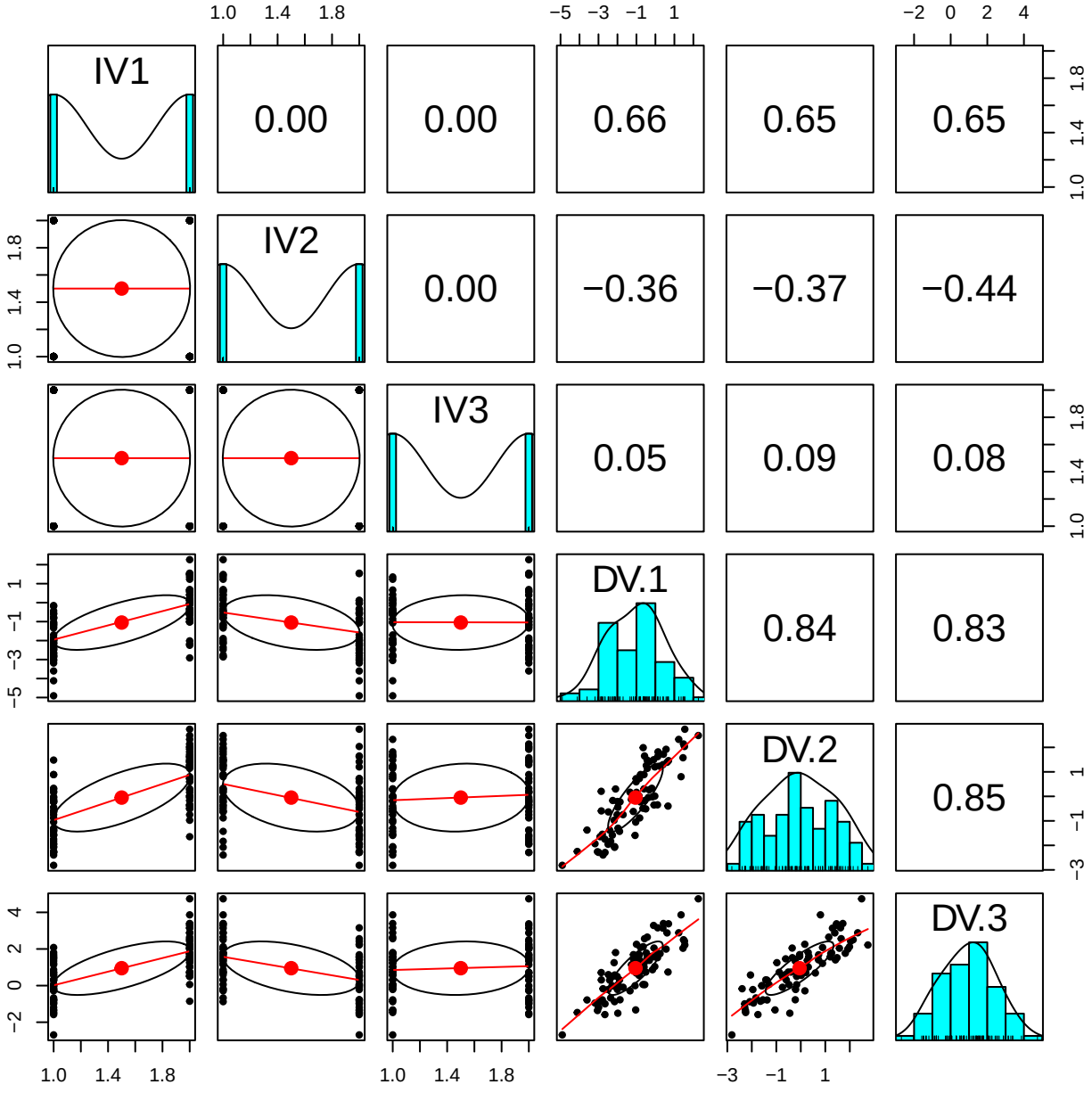




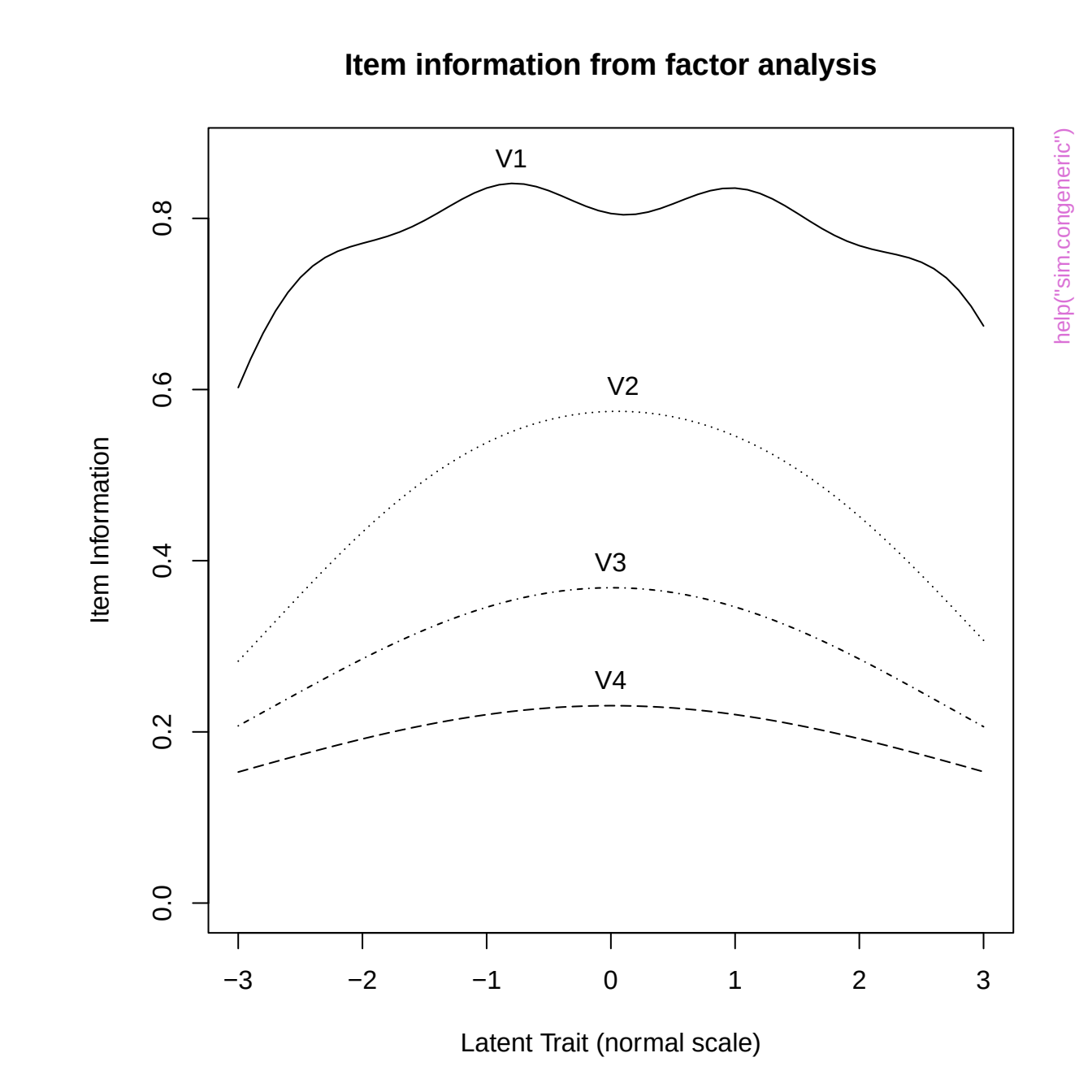
help("sim.anova")

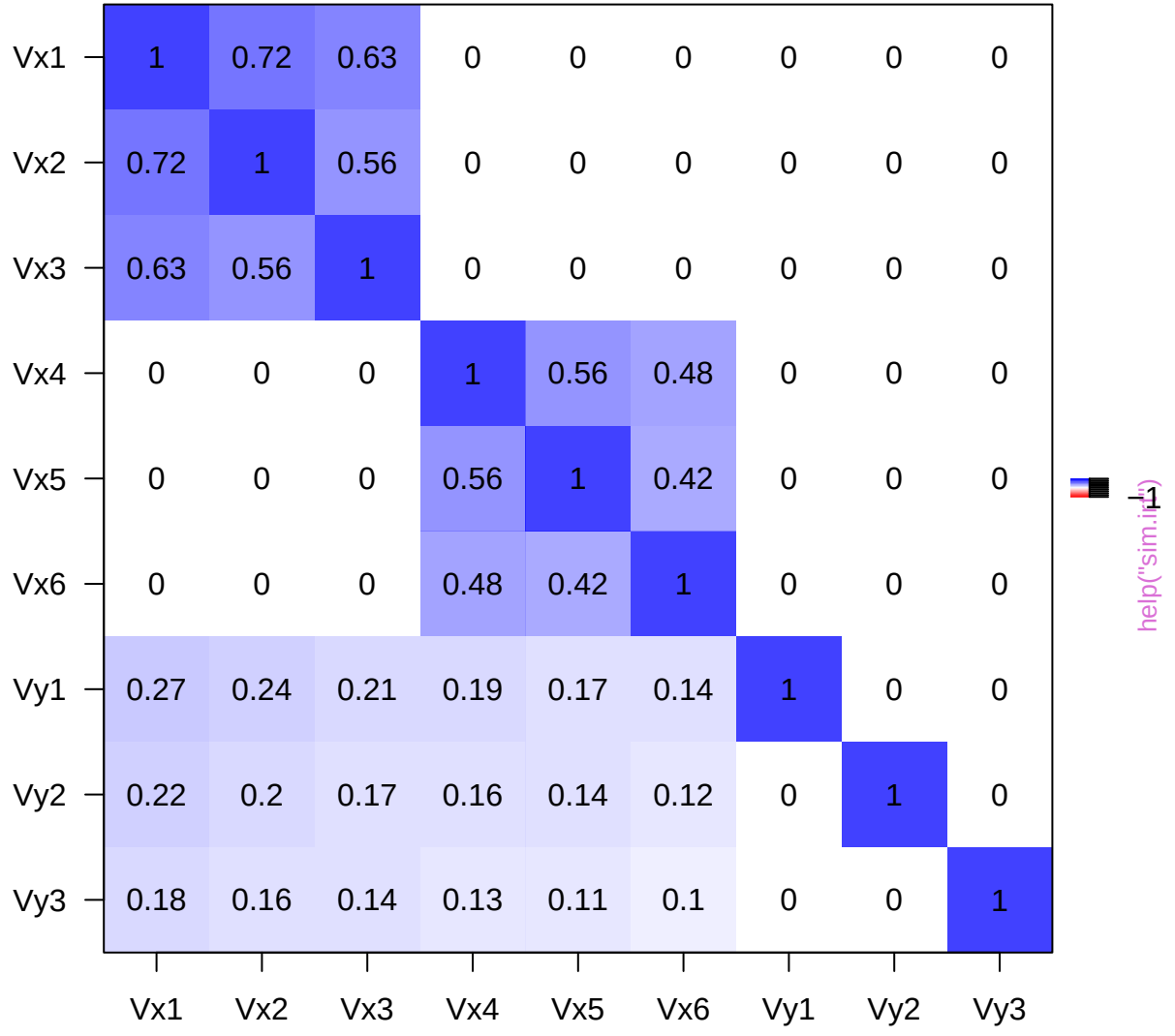


help("sim.anova")

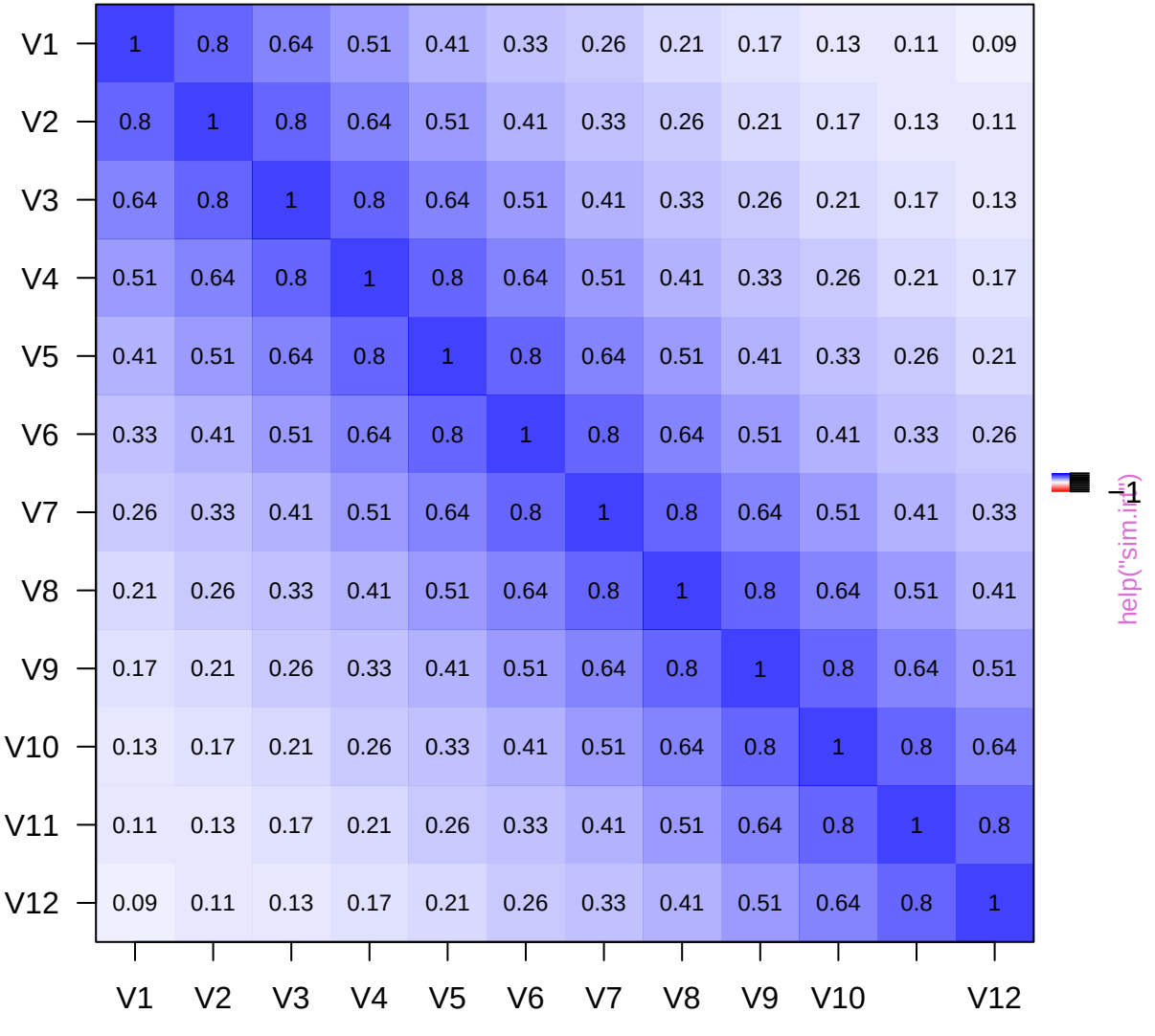


help("sim.anova")

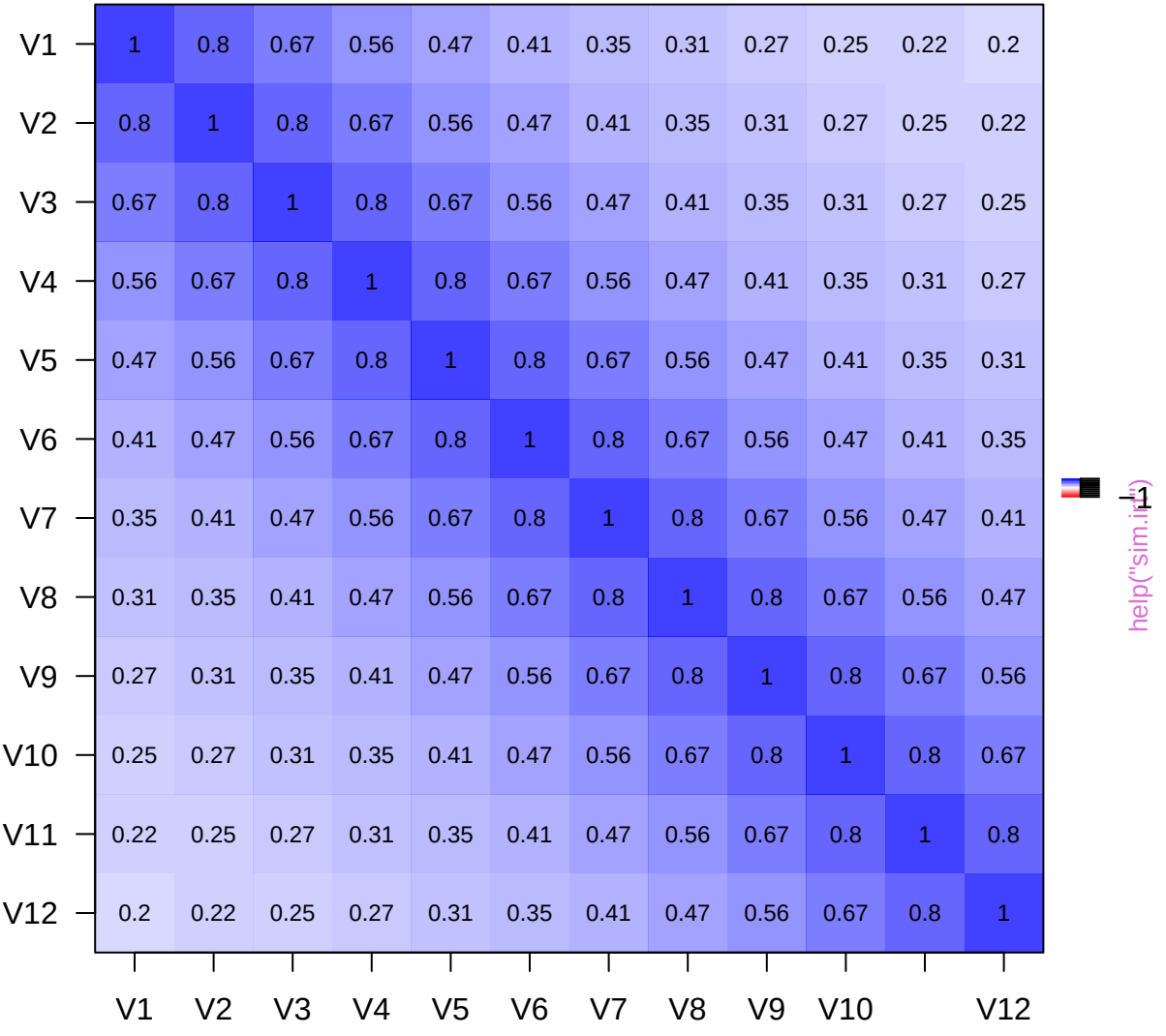

Item information from factor analysis
V1
V2
V3
V4
Item Information
0.0
0.2
0.4
0.6
0.8
−3
−2
−1
0
1
2
3
Latent Trait (normal scale)
help("sim.congeneric")

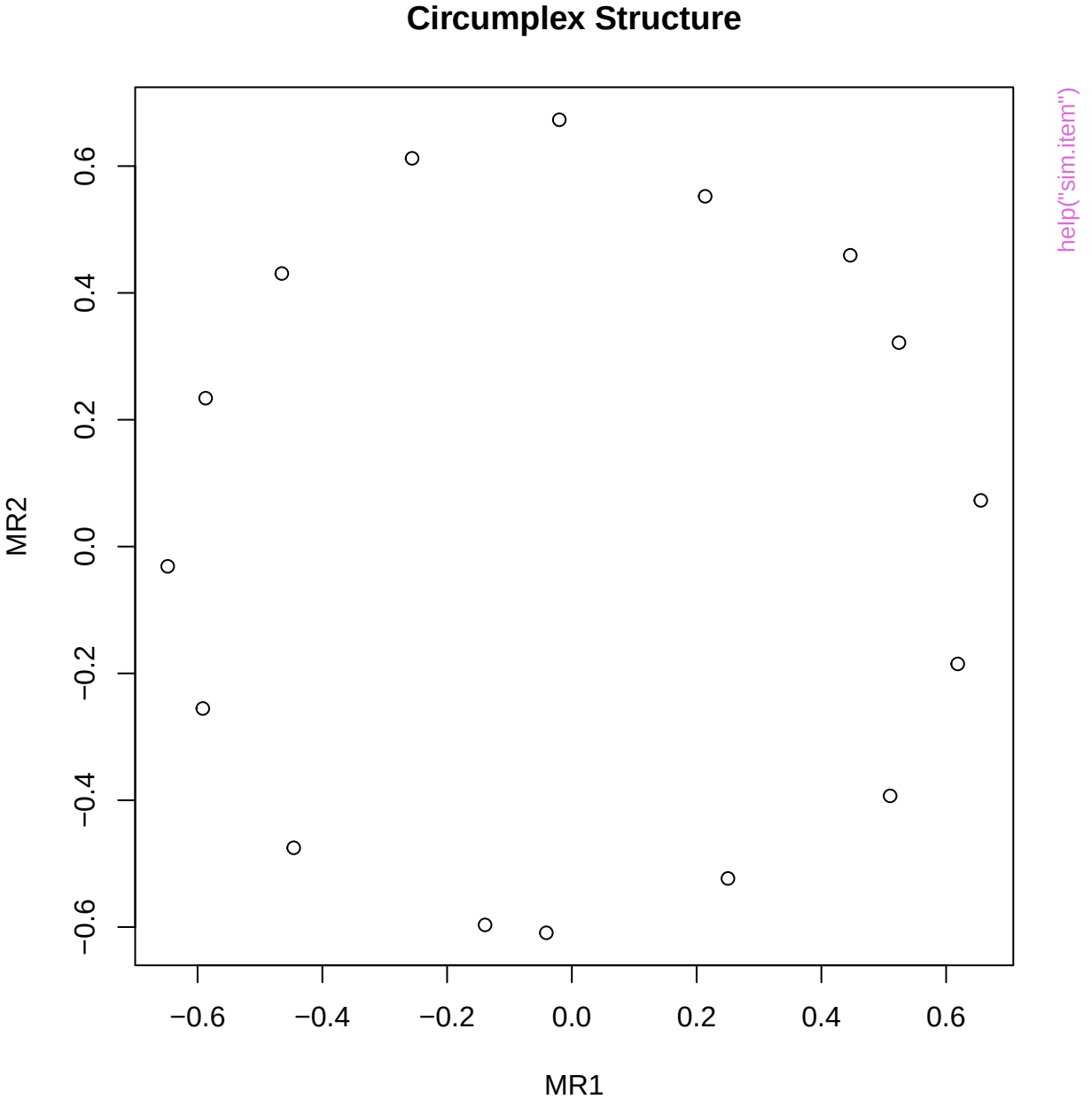

Vx1 1 0.72 0.63 0 0 0 0 0 0
Vx2 0.72 1 0.56 0 0 0 0 0 0
Vx3 0.63 0.56 1 0 0 0 0 0 0
Vx4 0 0 0 1 0.56 0.48 0 0 0
Vx5 0 0 0 0.56 1 0.42 0 0 0
Vx6 0 0 0 0.48 0.42 1 0 0 0
Vy1 0.27 0.24 0.21 0.19 0.17 0.14 1 0 0
Vy2 0.22 0.2 0.17 0.16 0.14 0.12 0 1 0
Vy3 0.18 0.16 0.14 0.13 0.11 0.1 0 0 1
Vx1 Vx2 Vx3 Vx4 Vx5 Vx6 Vy1 Vy2 Vy3
1
help("sim.ip")

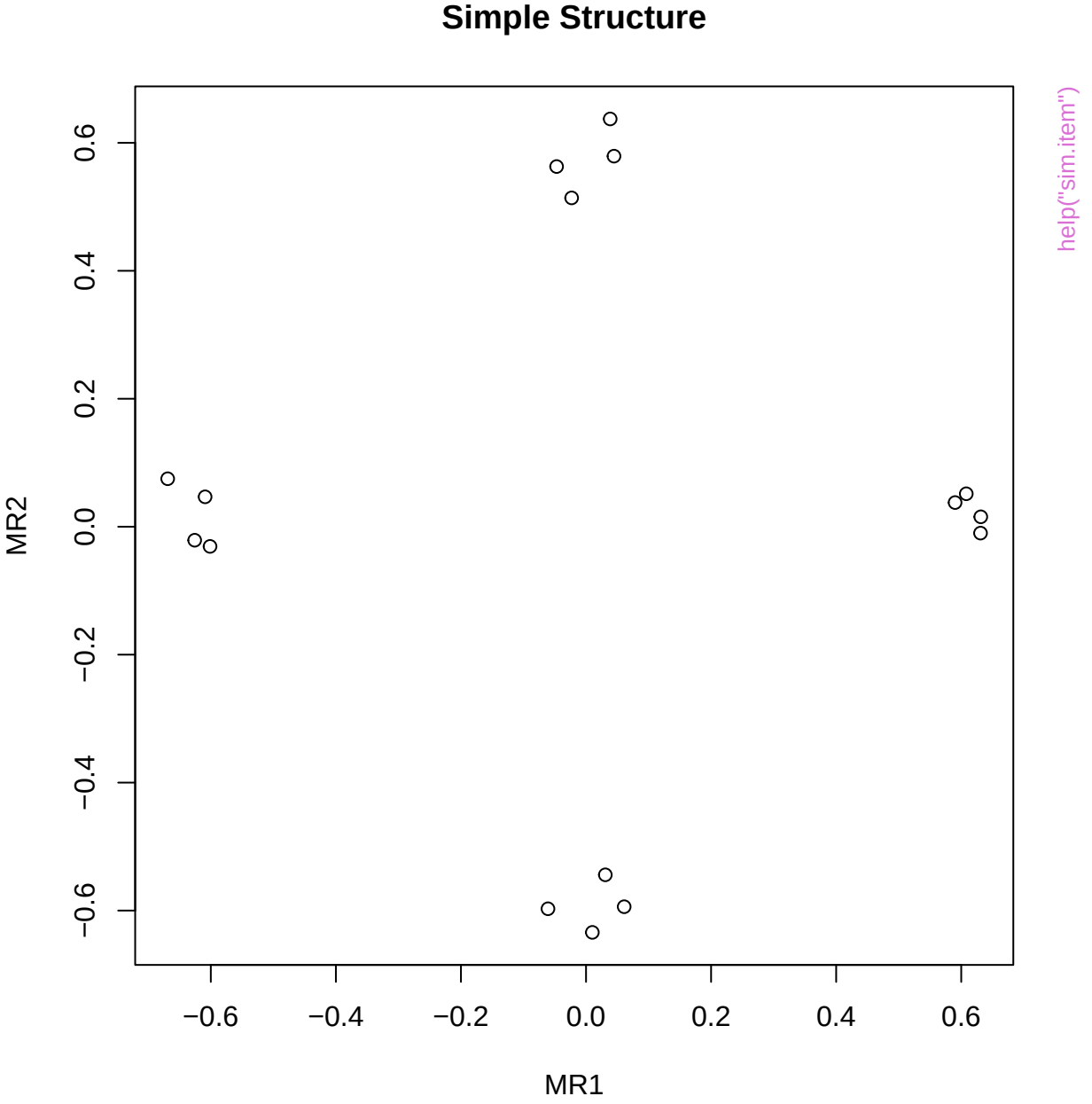
A simplex structure

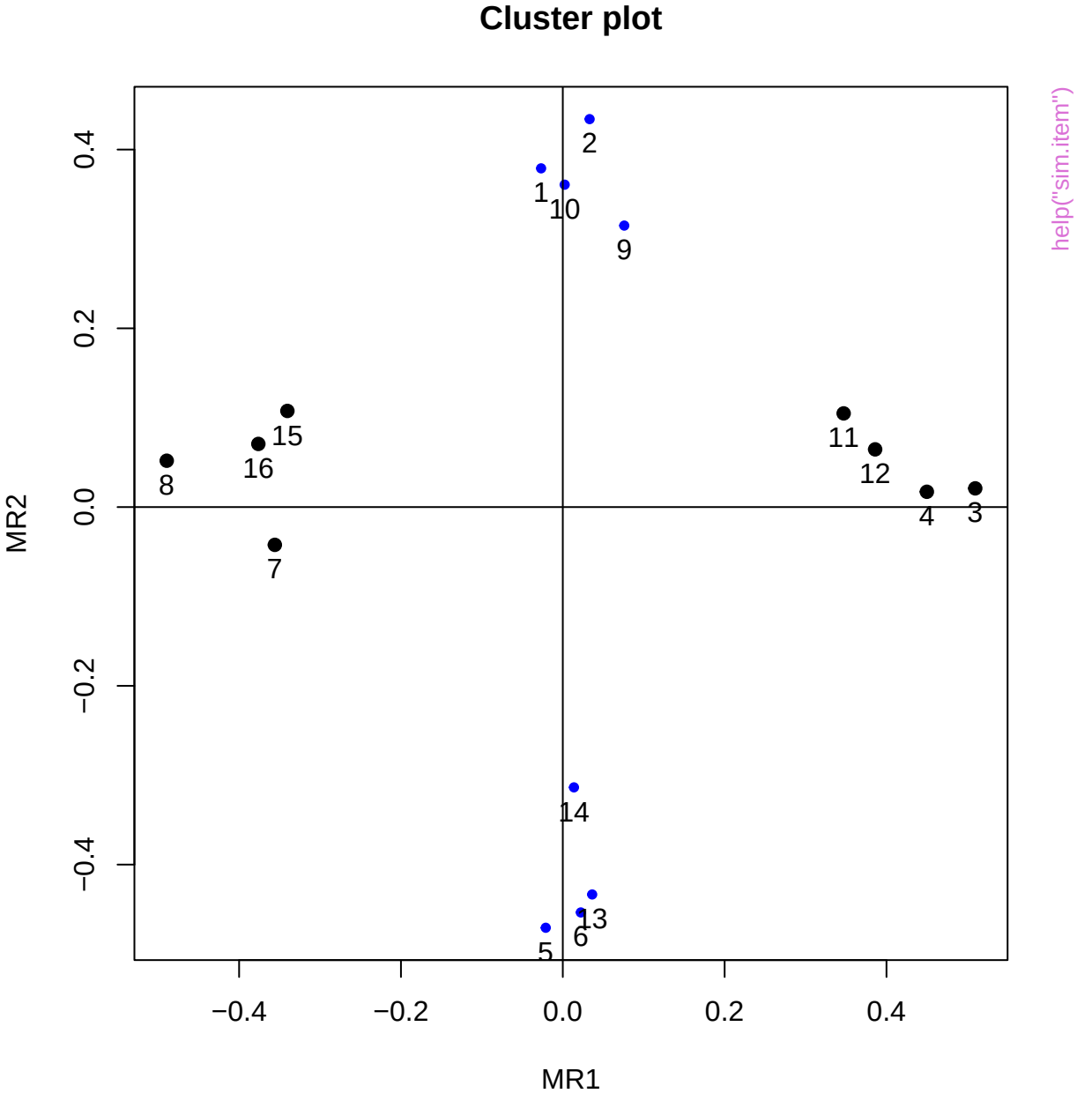


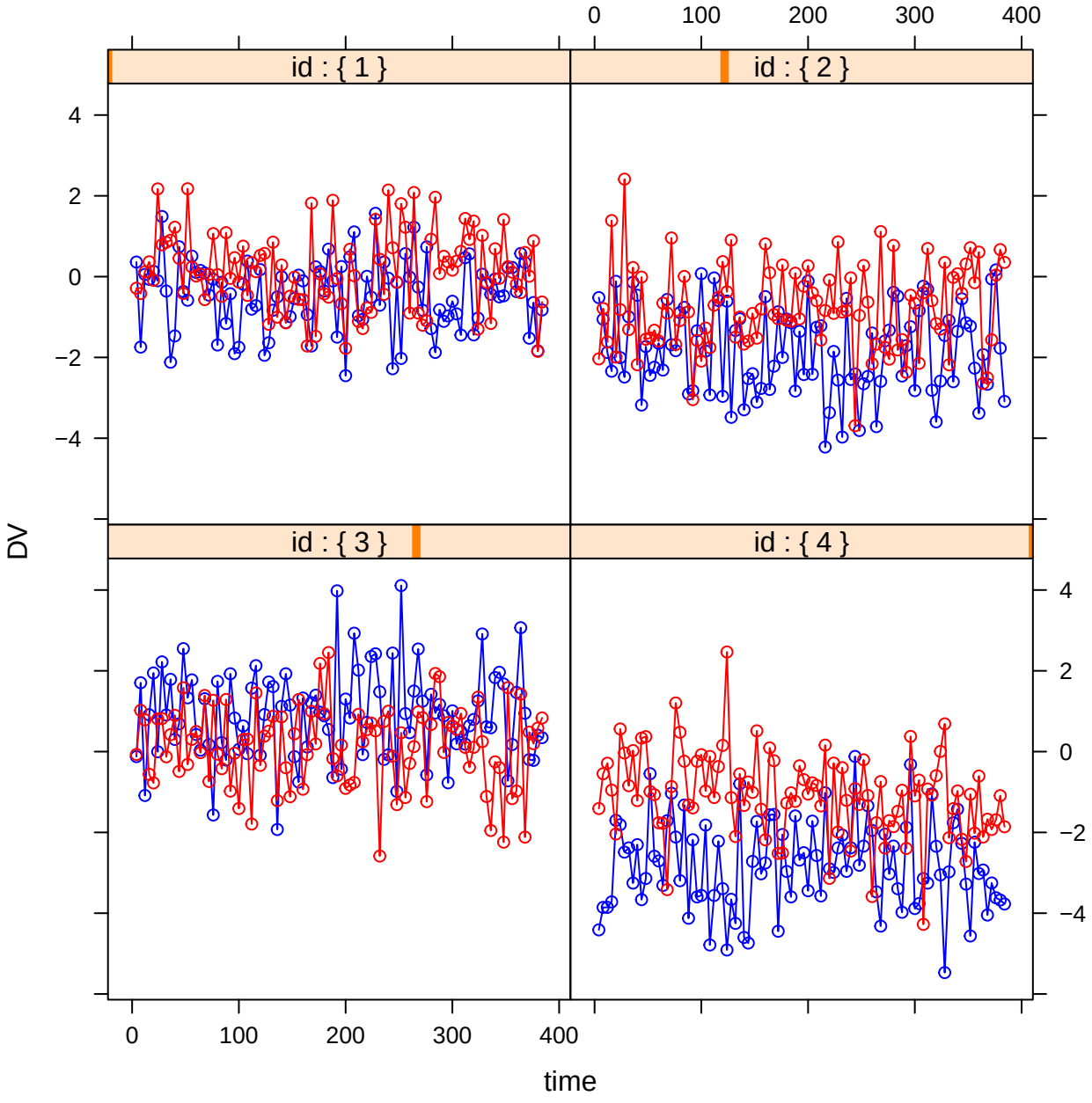
State Trait Auto Regressive Simplex

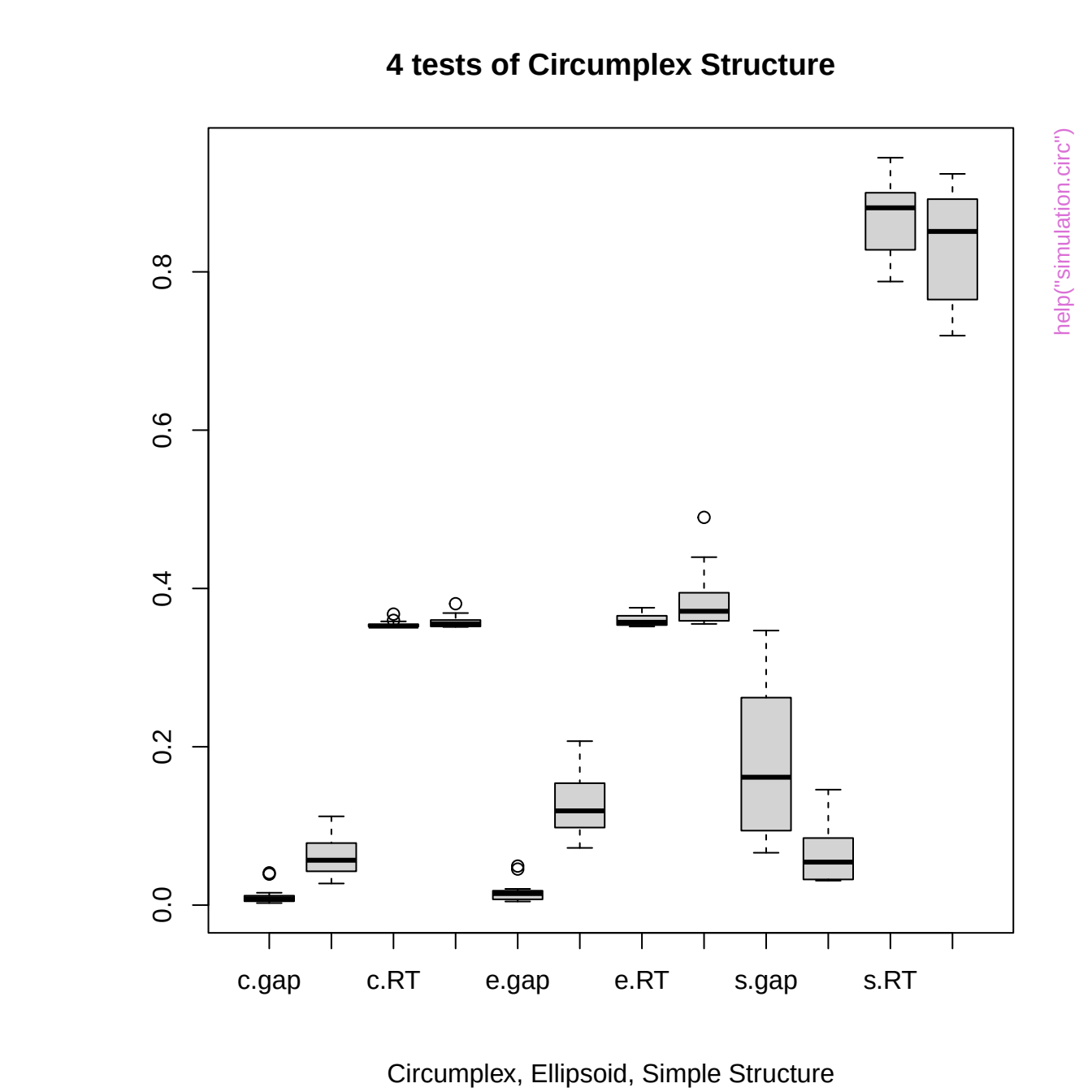



Circumplex Structure
MR2
MR1
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
help("sim.item")

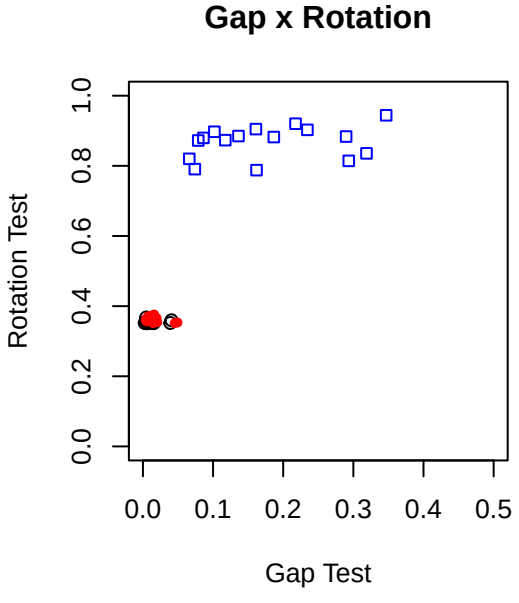

Simple Structure
MR2
MR1
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
help("sim.item")

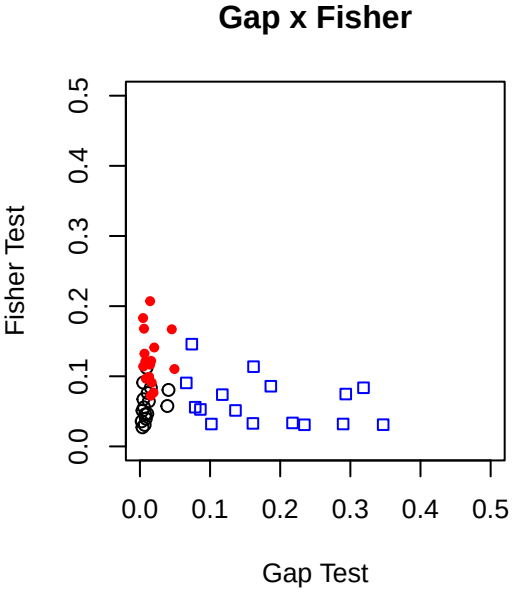

Cluster plot
MR2
MR1
0.4
0.2
0.0
−0.2
−0.4
−0.4
−0.2
0.0
0.2
0.4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
help("sim.item")


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

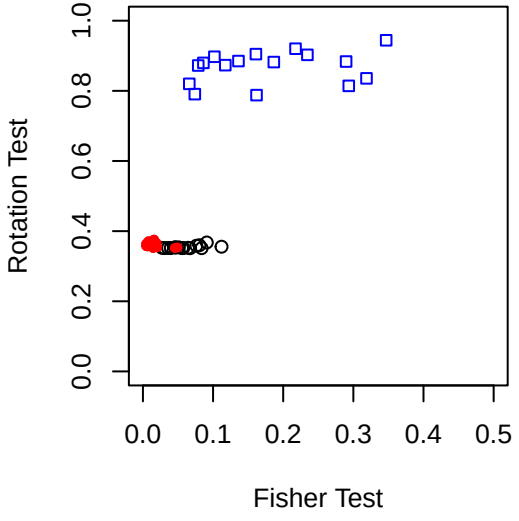

4 tests of Circumplex Structure
help("simulation.circ")
0.0
0.2
0.4
0.6
0.8
c.gap
c.RT
e.gap
e.RT
s.gap
s.RT
Circumplex, Ellipsoid, Simple Structure

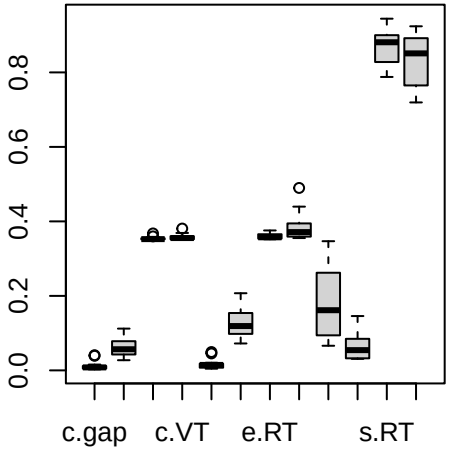
Circumplex Tests for Circumplex, Ellipsoid, and Simple Structure

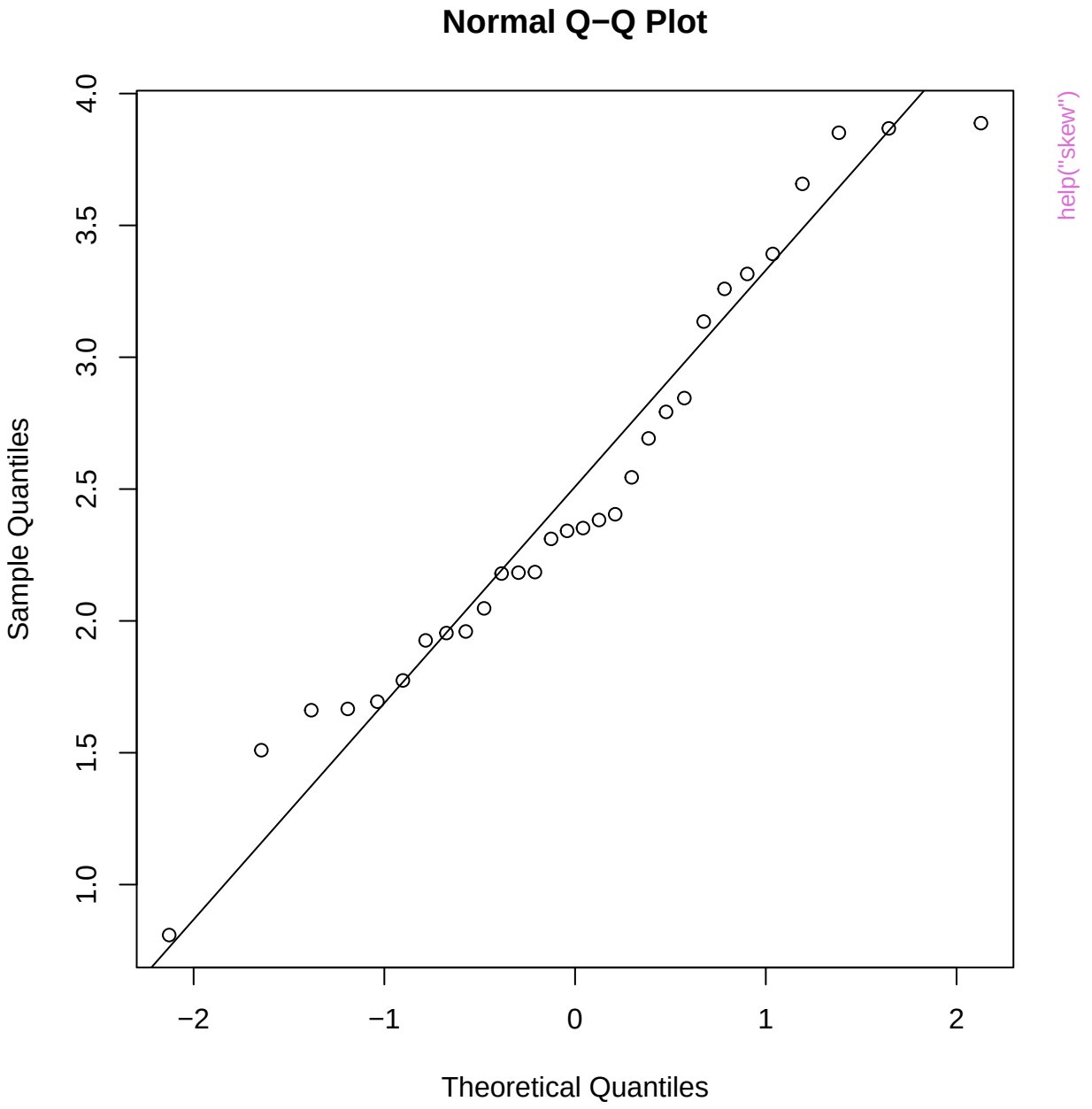


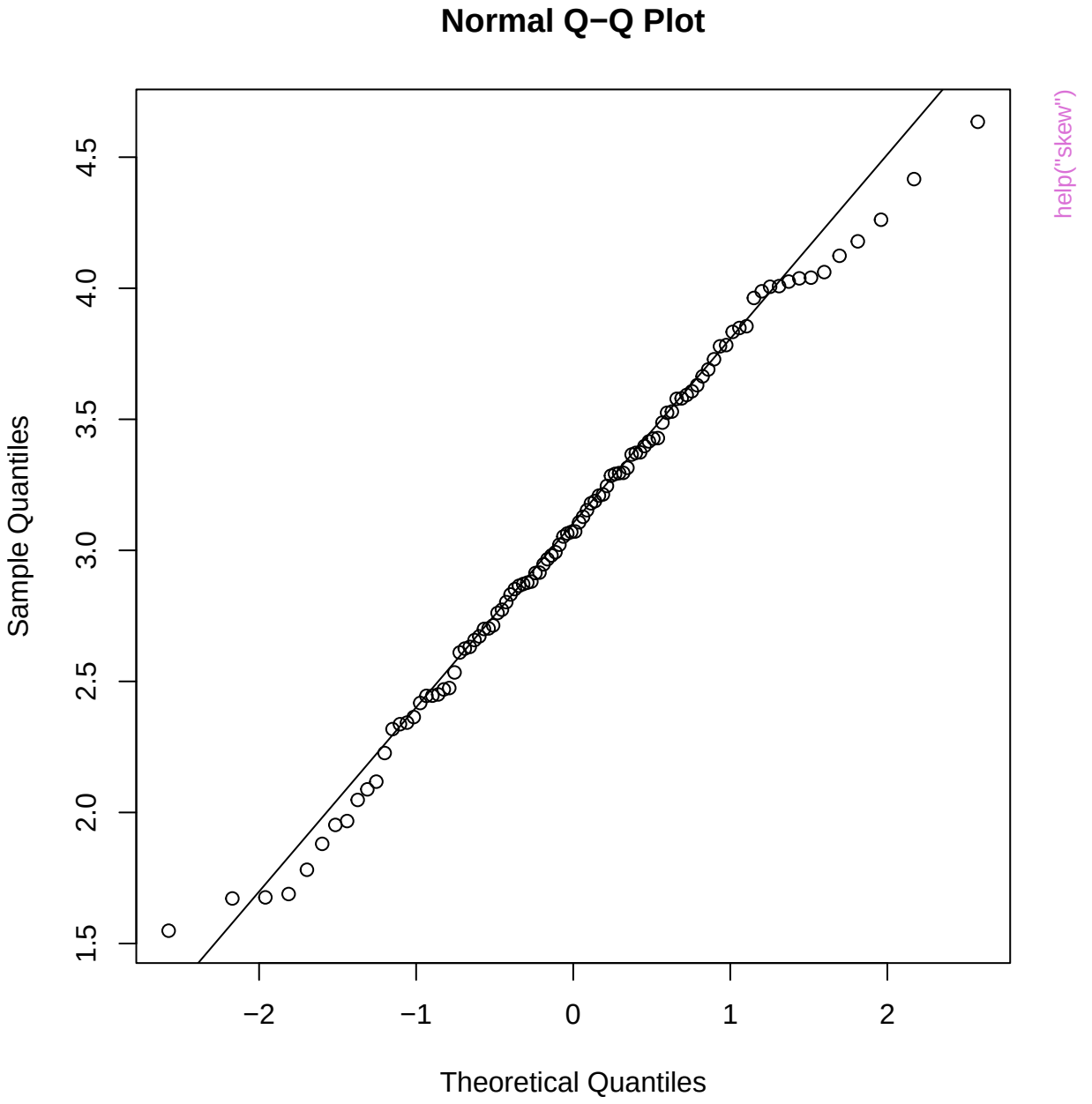


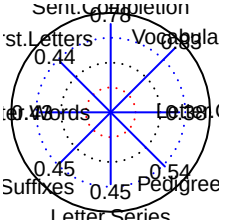
help("simulation.circ")

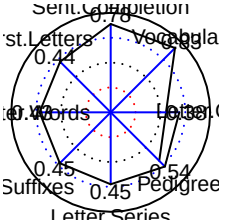




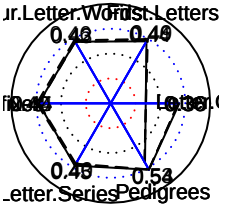

Normal Q−Q Plot
Sample Quantiles
Theoretical Quantiles
1.0
1.5
2.0
2.5
3.0
3.5
4.0
−2
−1
0
1
2
help("skew")

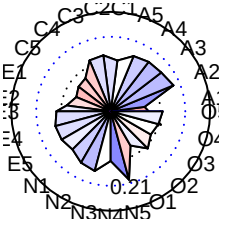

Normal Q−Q Plot
Sample Quantiles
Theoretical Quantiles
1.5
2.0
2.5
3.0
3.5
4.0
4.5
−2
−1
0
1
2
help("skew")

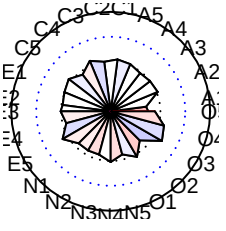

Sentences
Sent.Completion
0.78
st.Letters
Vocabula
0.44
0.45
Pedigree
0.45
0.54
Letter.Series

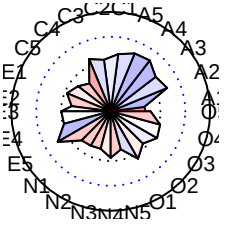

Sentences
Sent.Completion
0.78
st.Letters
Vocabula
0.44
0.45
Pedigree
0.45
0.54
Letter.Series

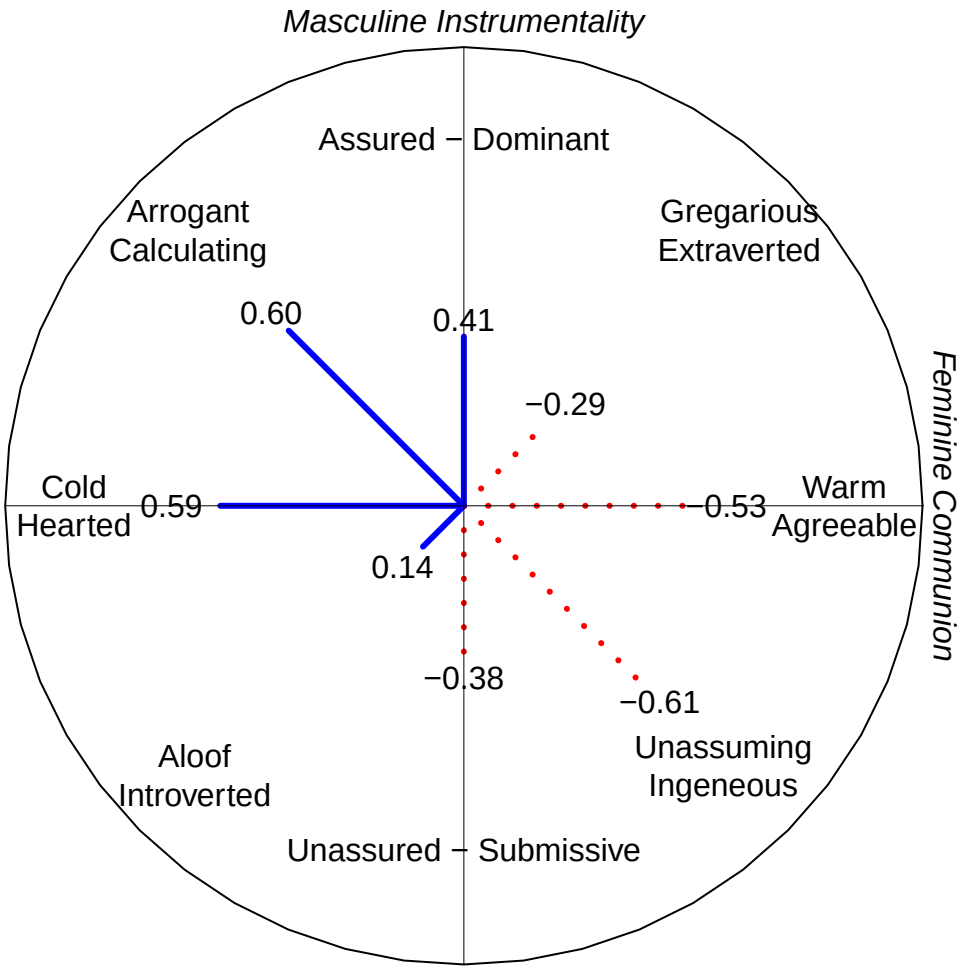
help("spider")

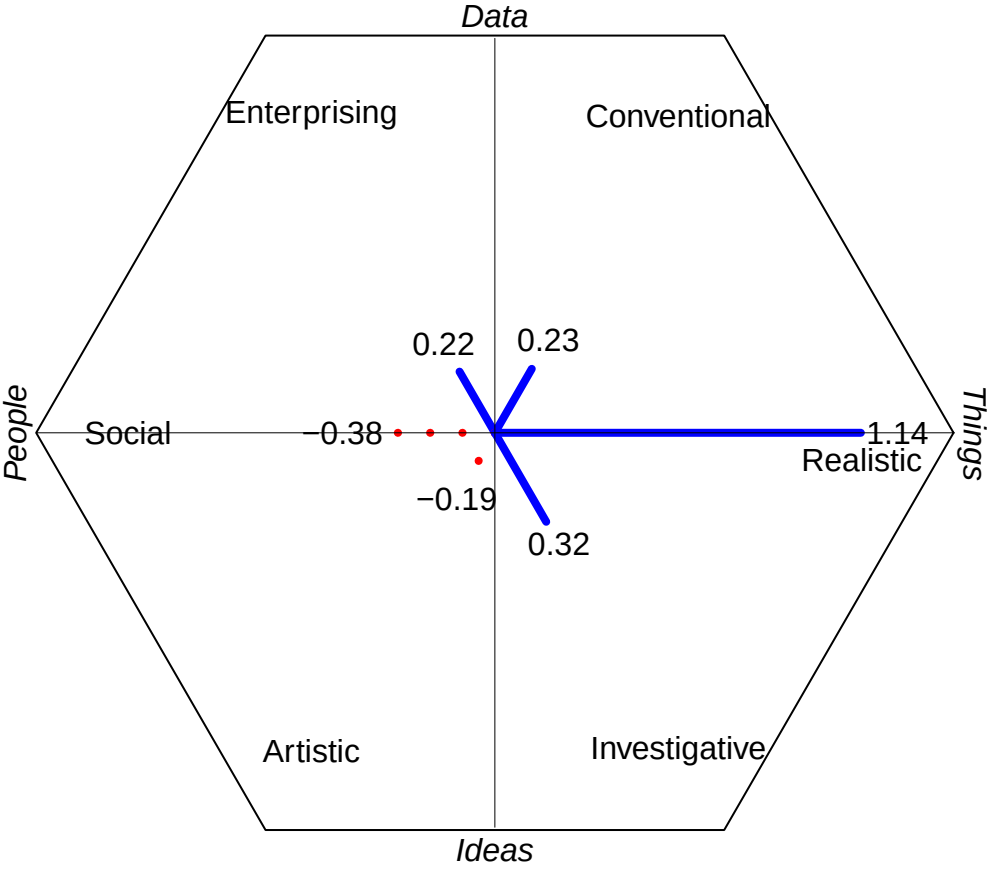

Sentences
0.48
0.48
0.45
0.54
Pedigrees


gender
0.21


education

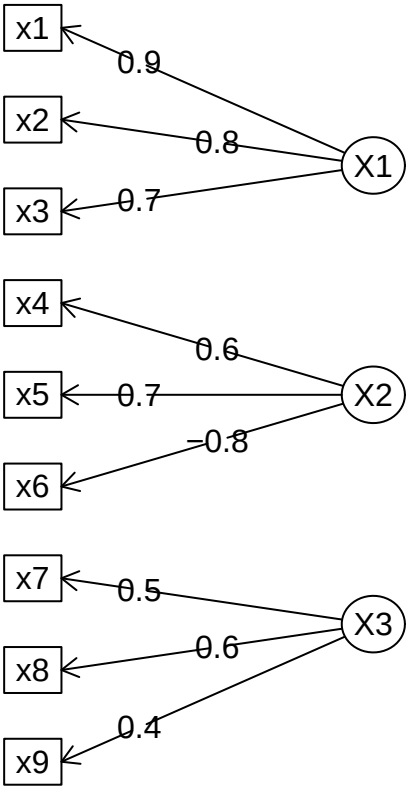

age


Data from Lippa (2001)
Masculine Instrumentality
Assured − Dominant
Arrogant
Calculating
Gregarious
Extraverted
0.60
0.41
−0.29
Cold
Hearted
0.59
−0.53
Warm
Agreeable
0.14
−0.38
−0.61
Unassuming
Ingeneous
Aloof
Introverted
Unassured − Submissive
Feminine Communion
help("spider")

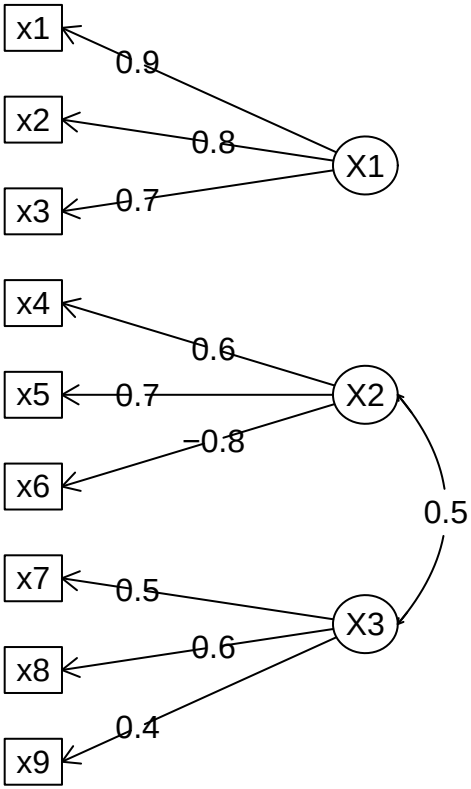

Data
Enterprising
Conventional
0.22
0.23
People
Social
−0.38
1.14
Realistic
Things
−0.19
0.32
Artistic
Investigative
Ideas

help("spider")

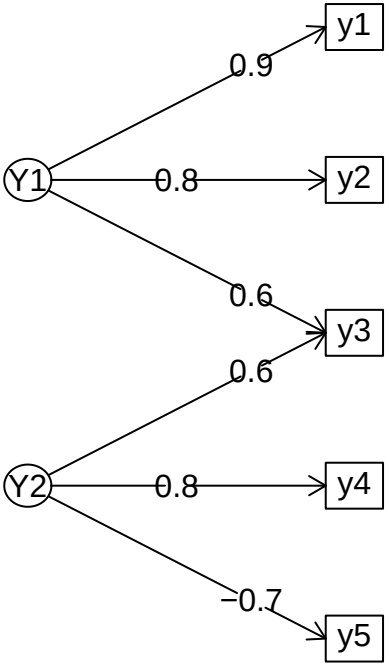
A measurement model for x



A measurement model for x

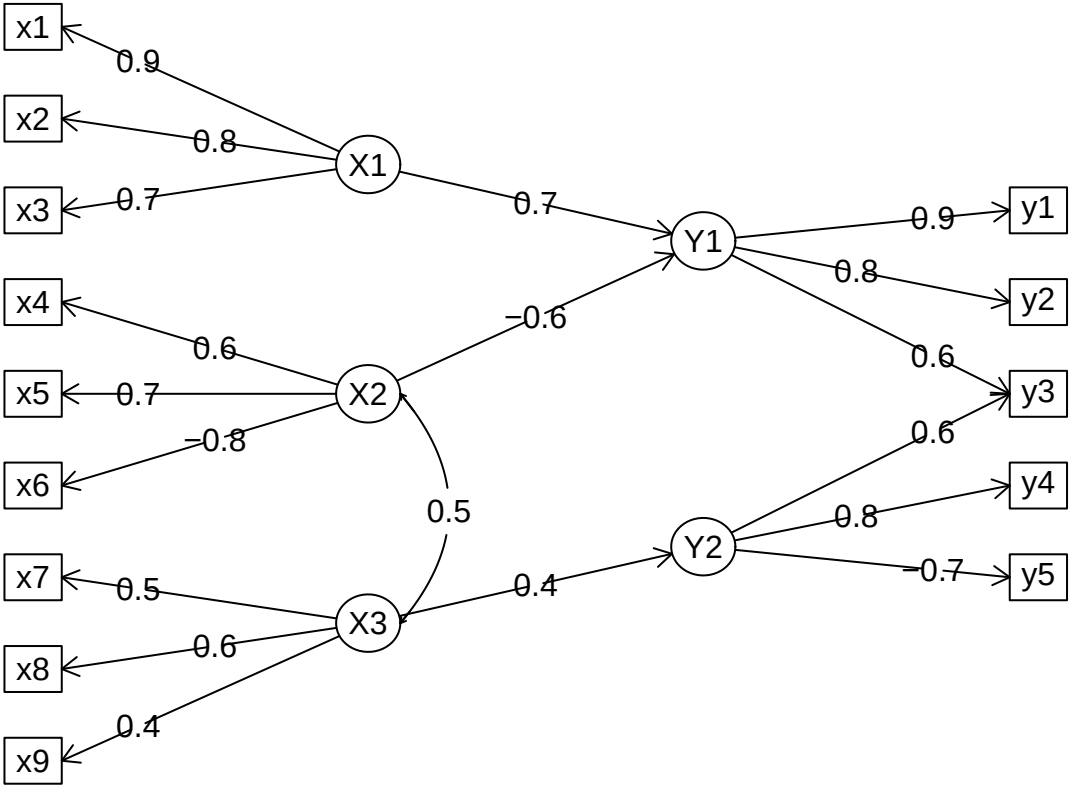


A measurement model for y



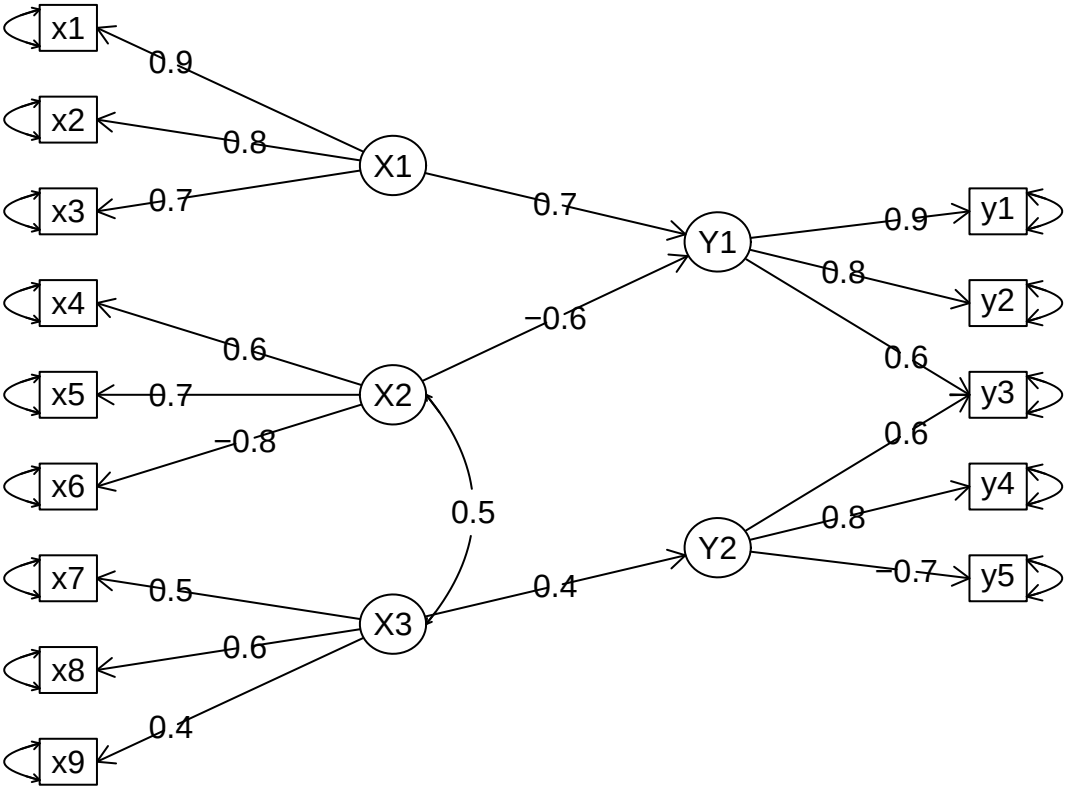
help("structure.diagram")

A structural path diagram



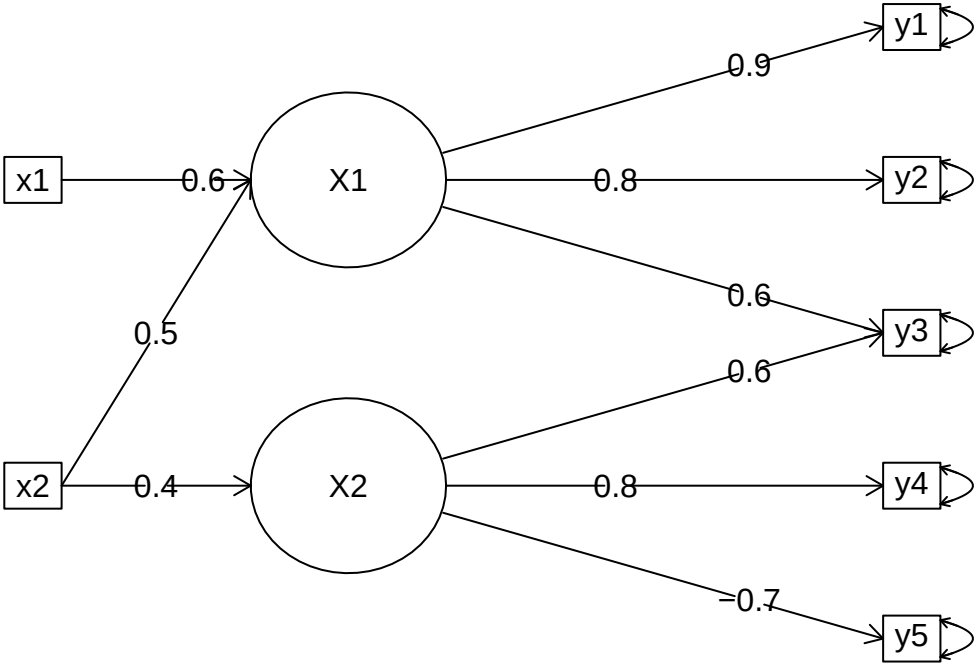
help("structure.diagram")

A structural path diagram

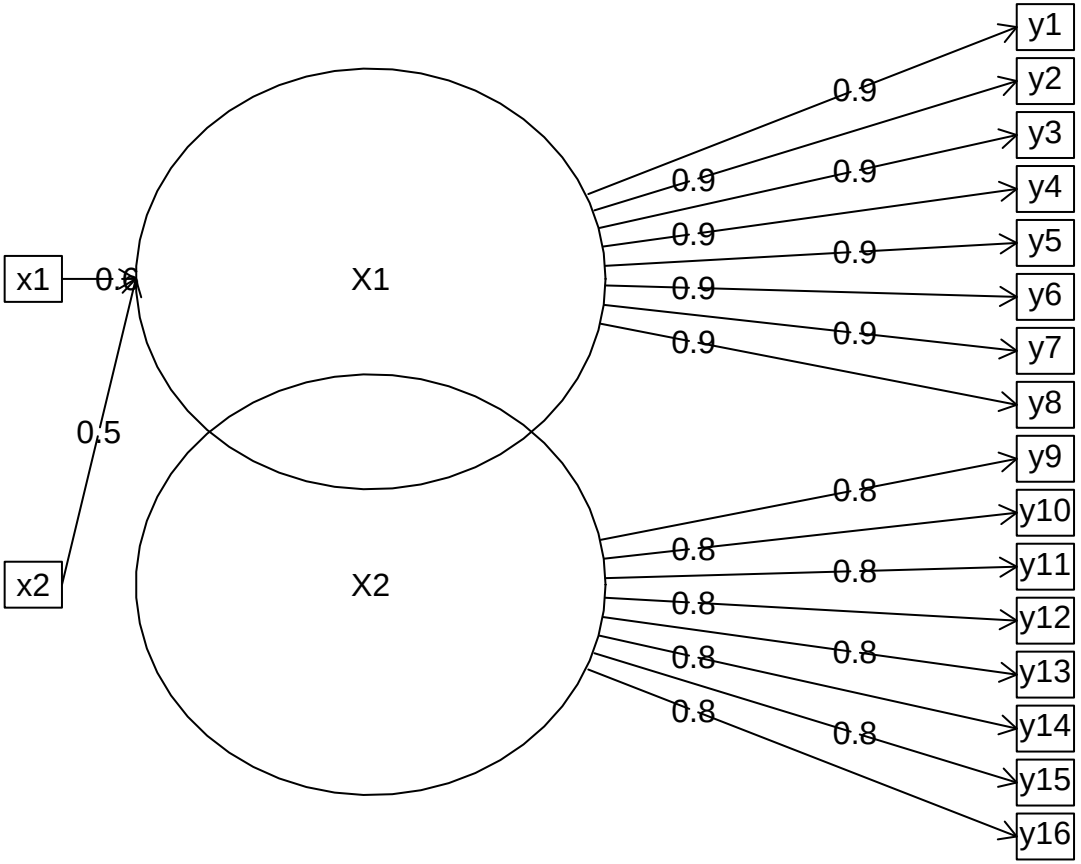


help("structure.diagram")

A mimic diagram

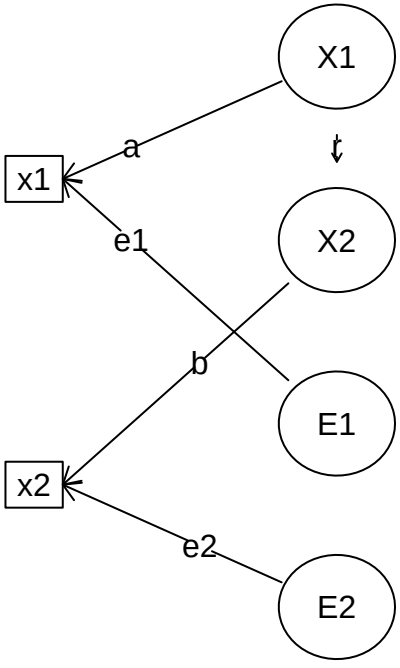


Structural model

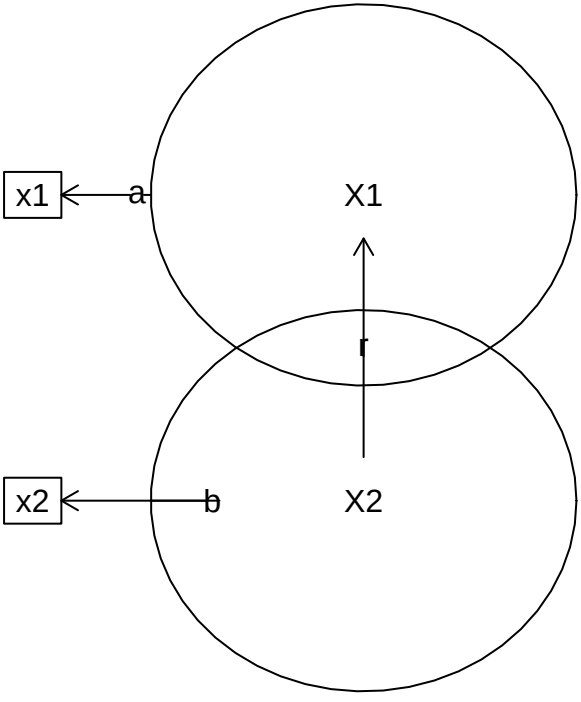


help("structure.diagram")

A symbolic model

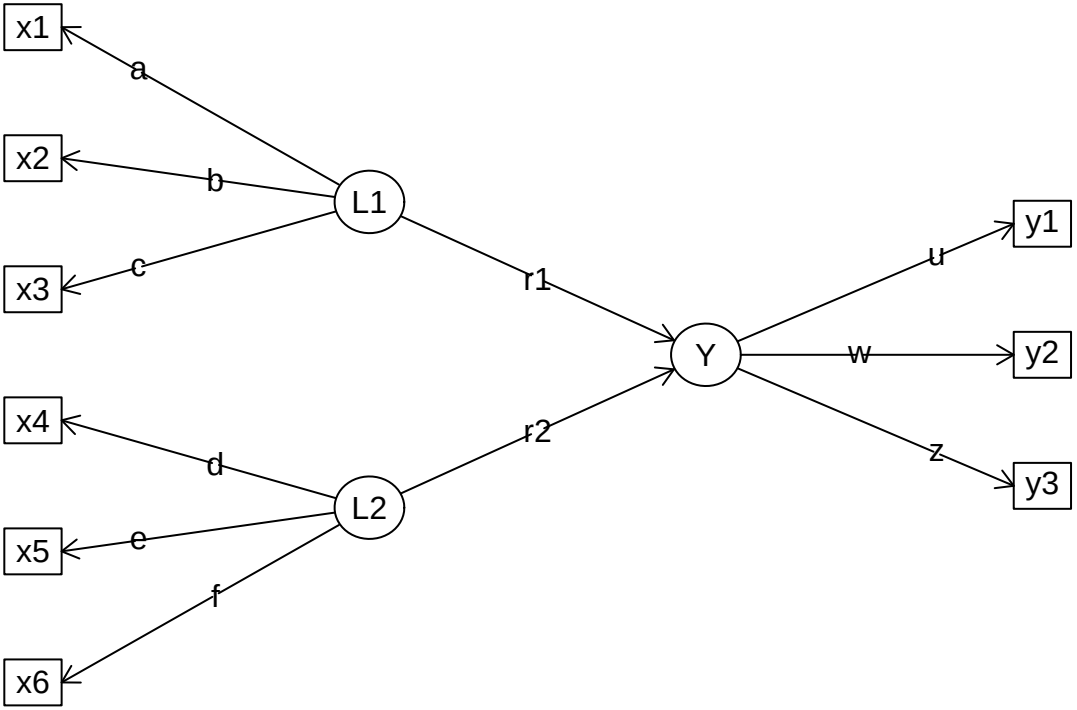


an alternative representation



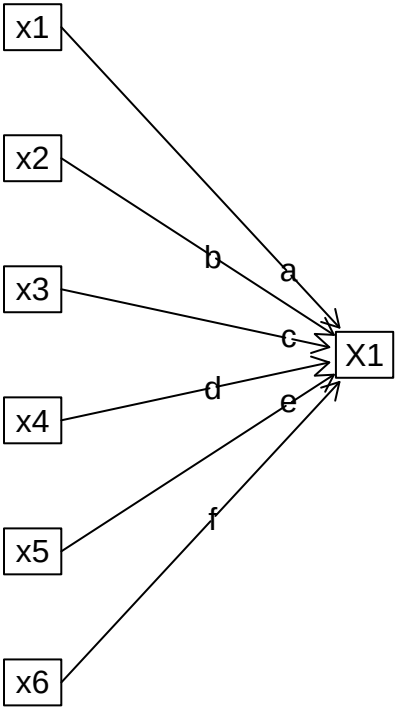
help("structure.diagram")

Structural model



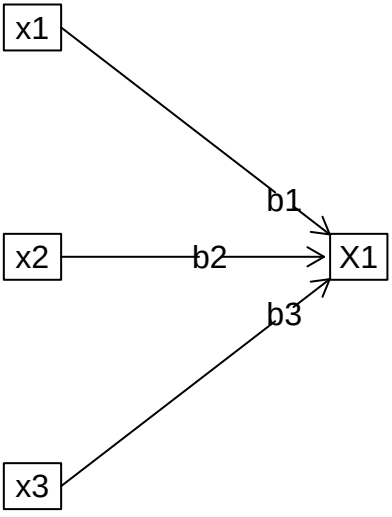
help("structure.diagram")

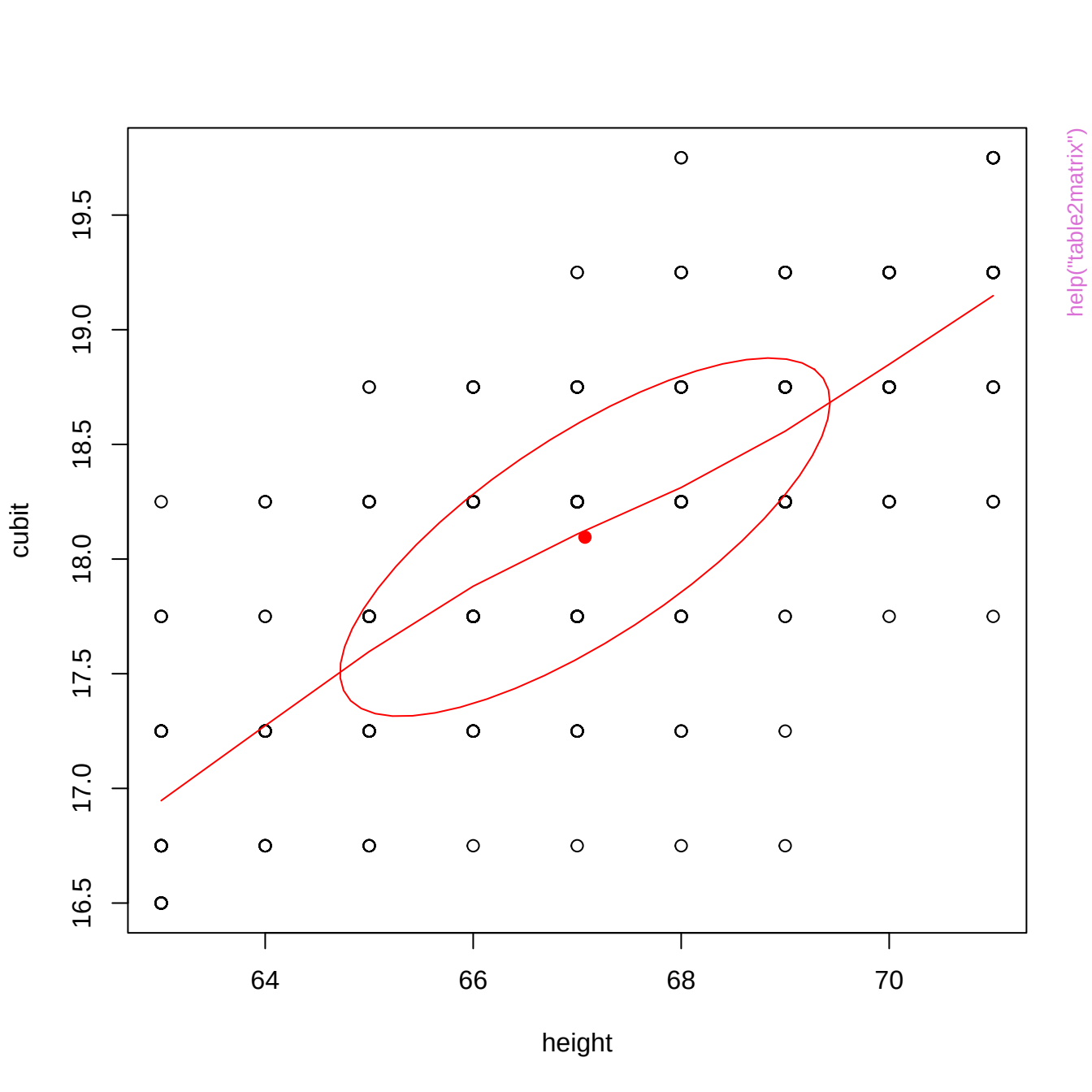
Regression model



help("structure.diagram")

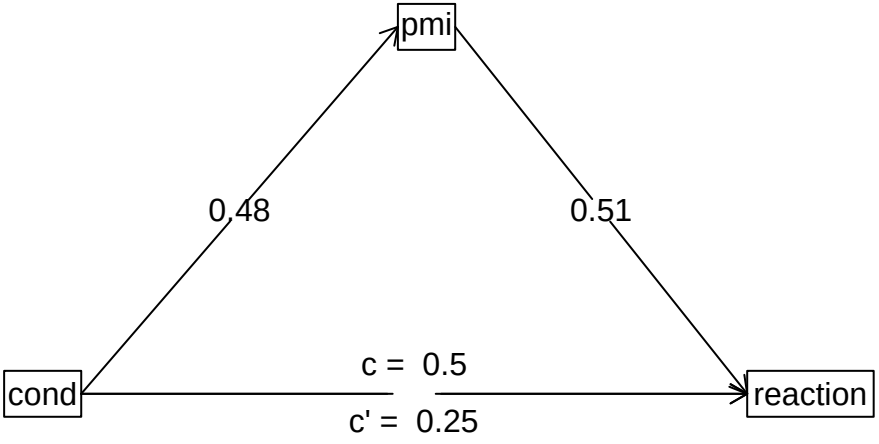
Regression model

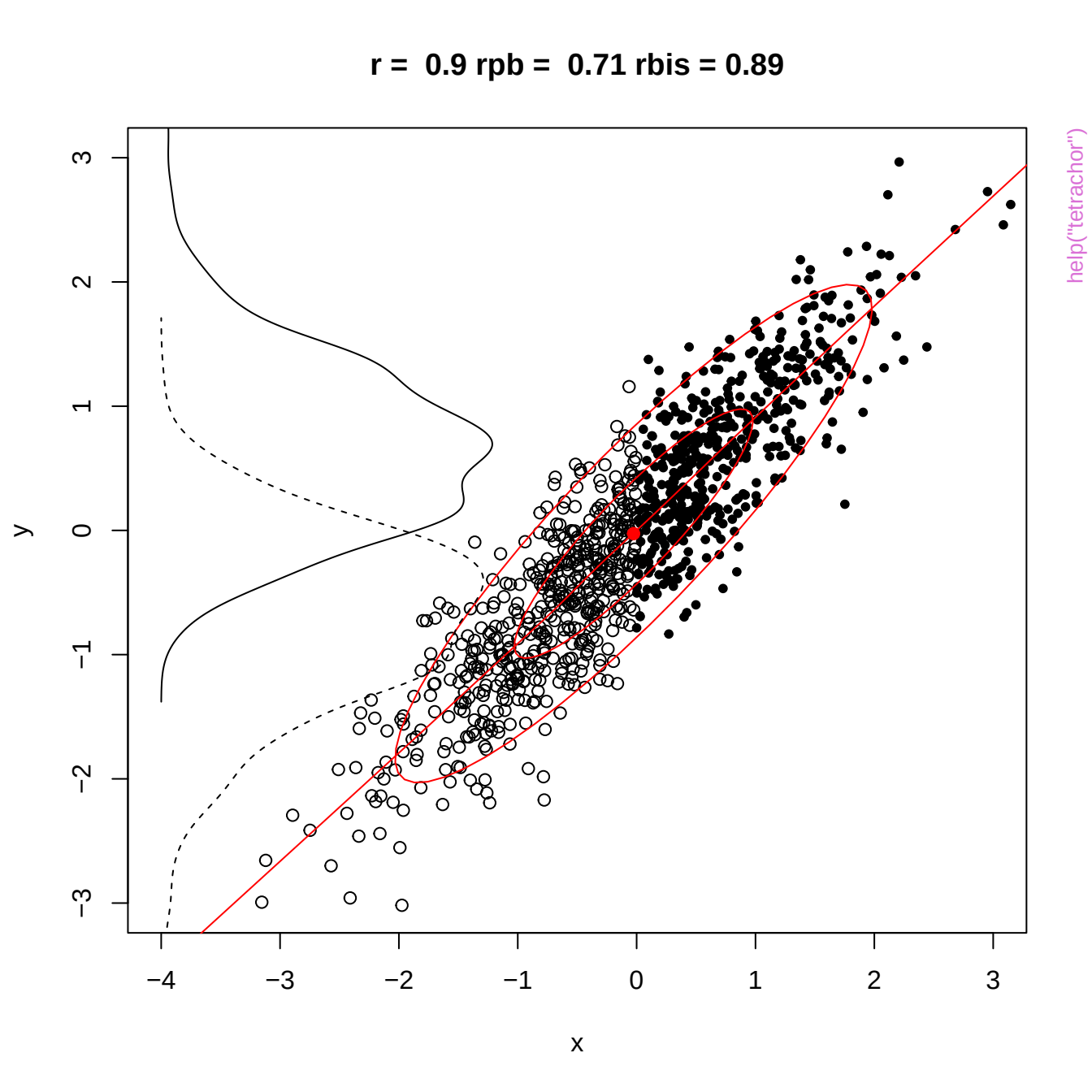


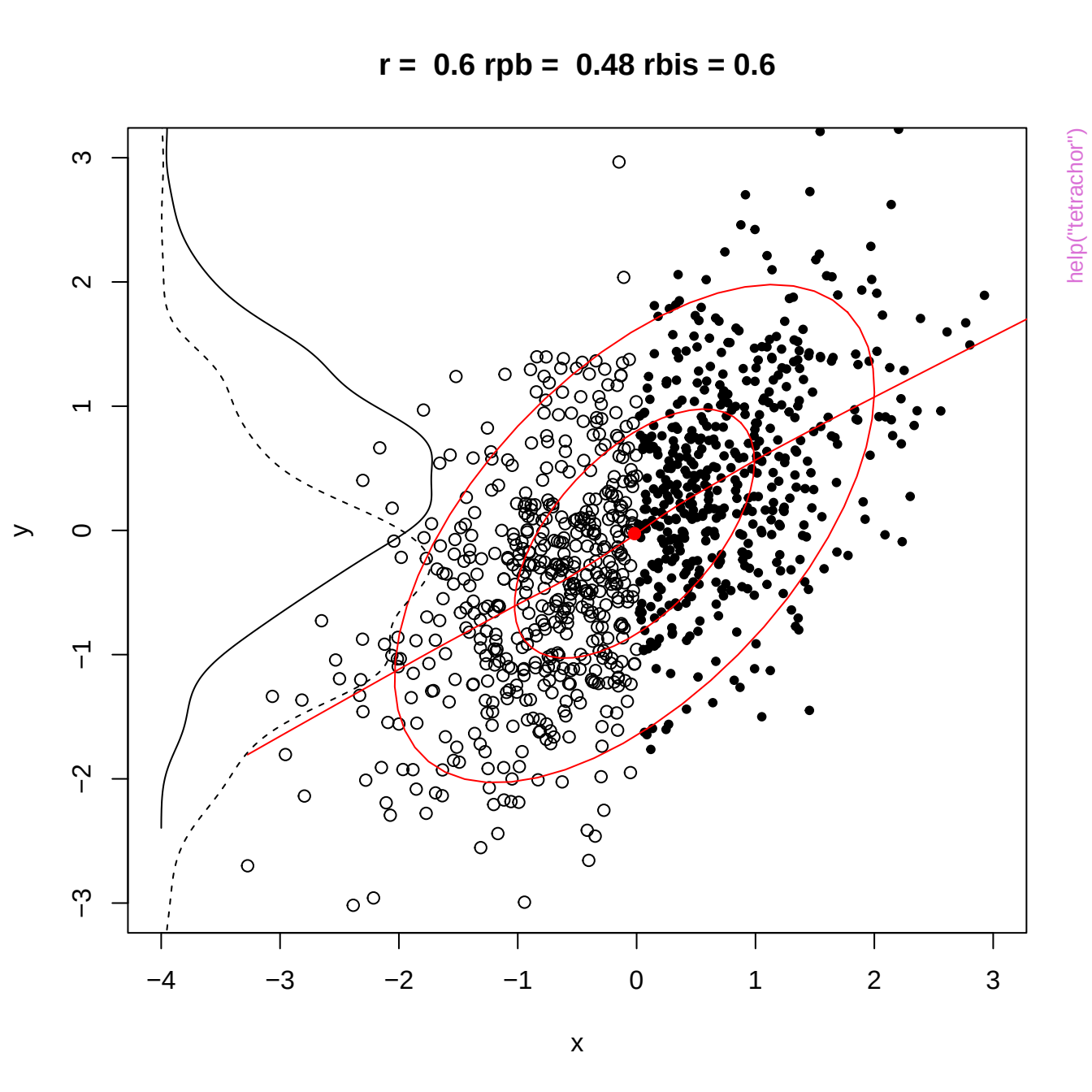


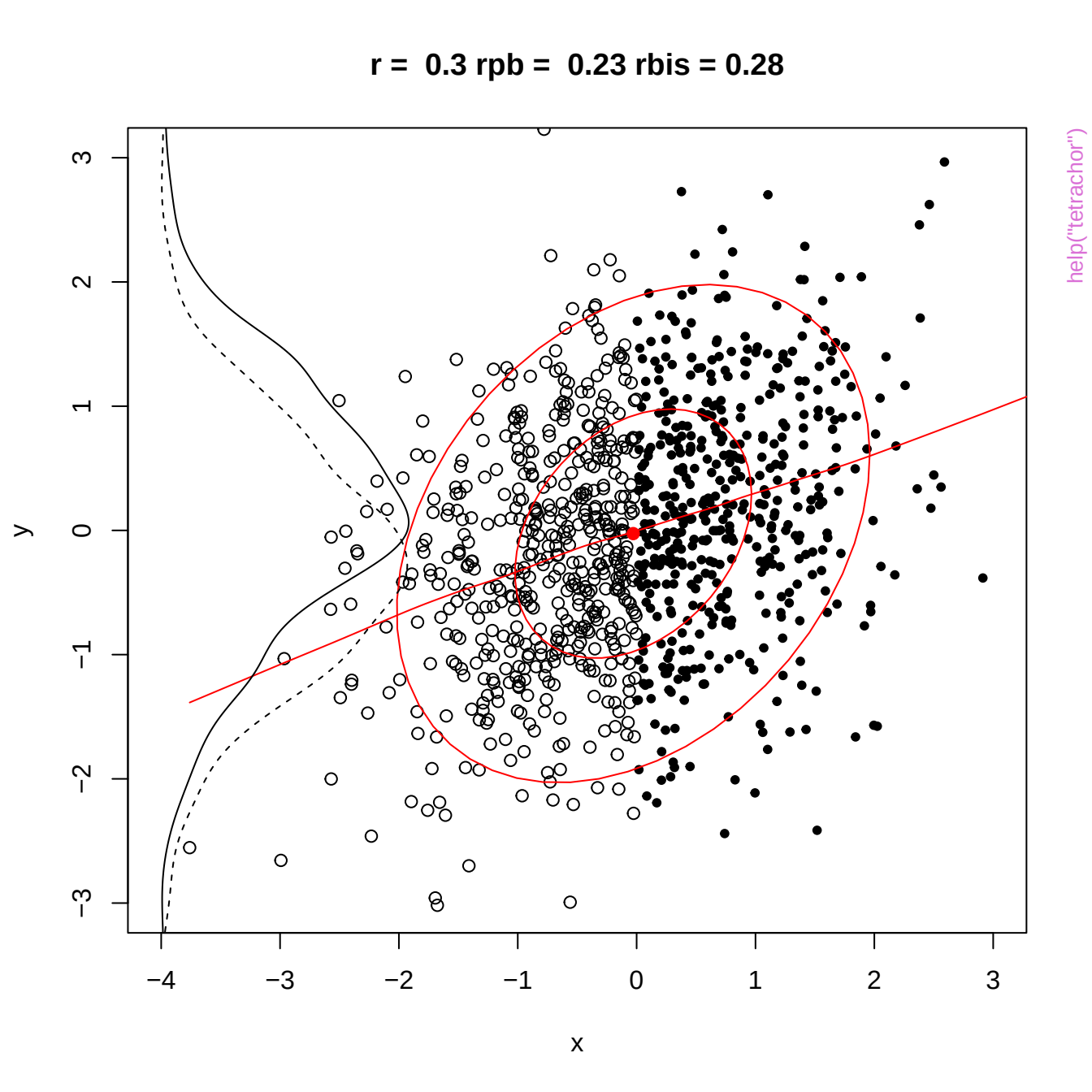
help("table2matrix")

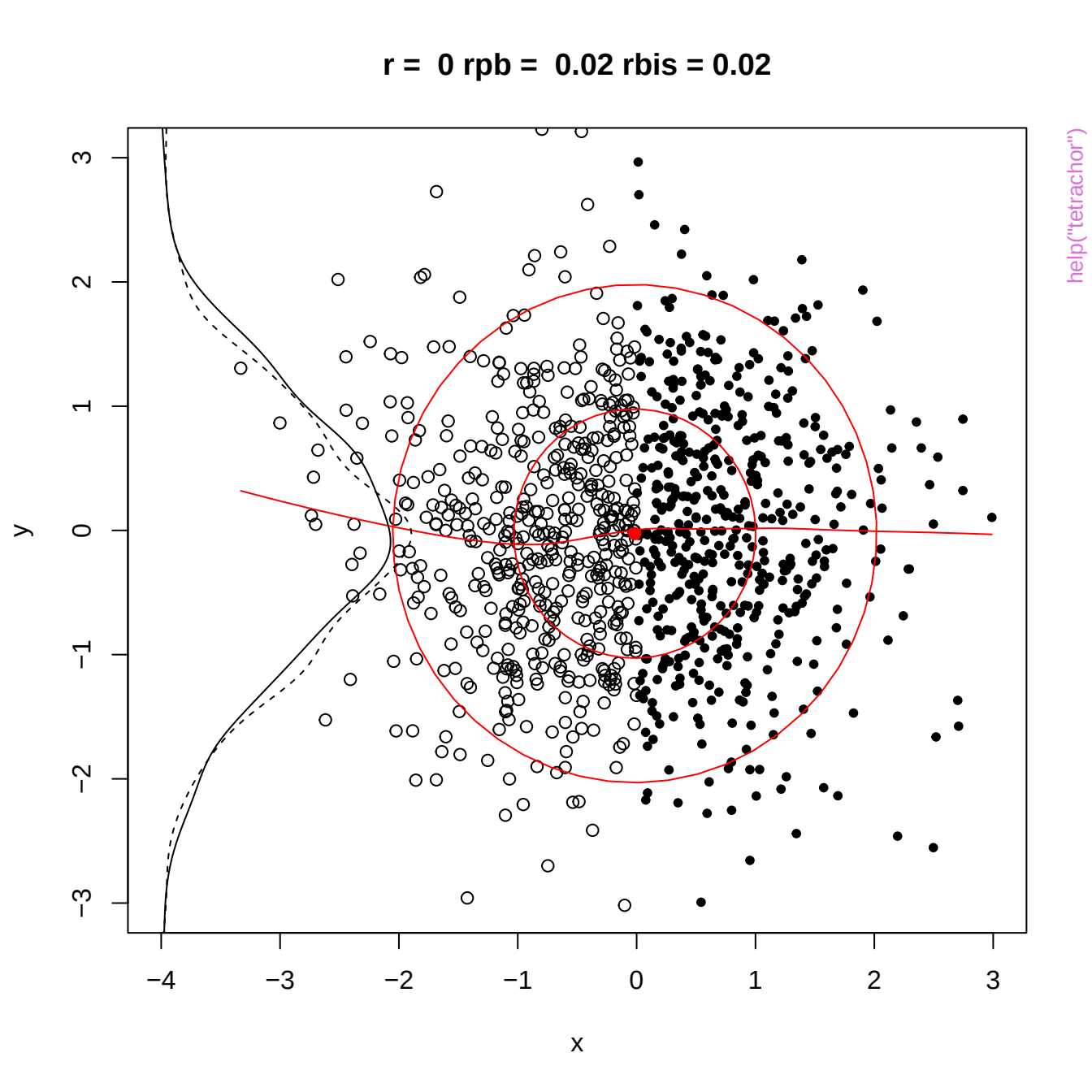
Mediation

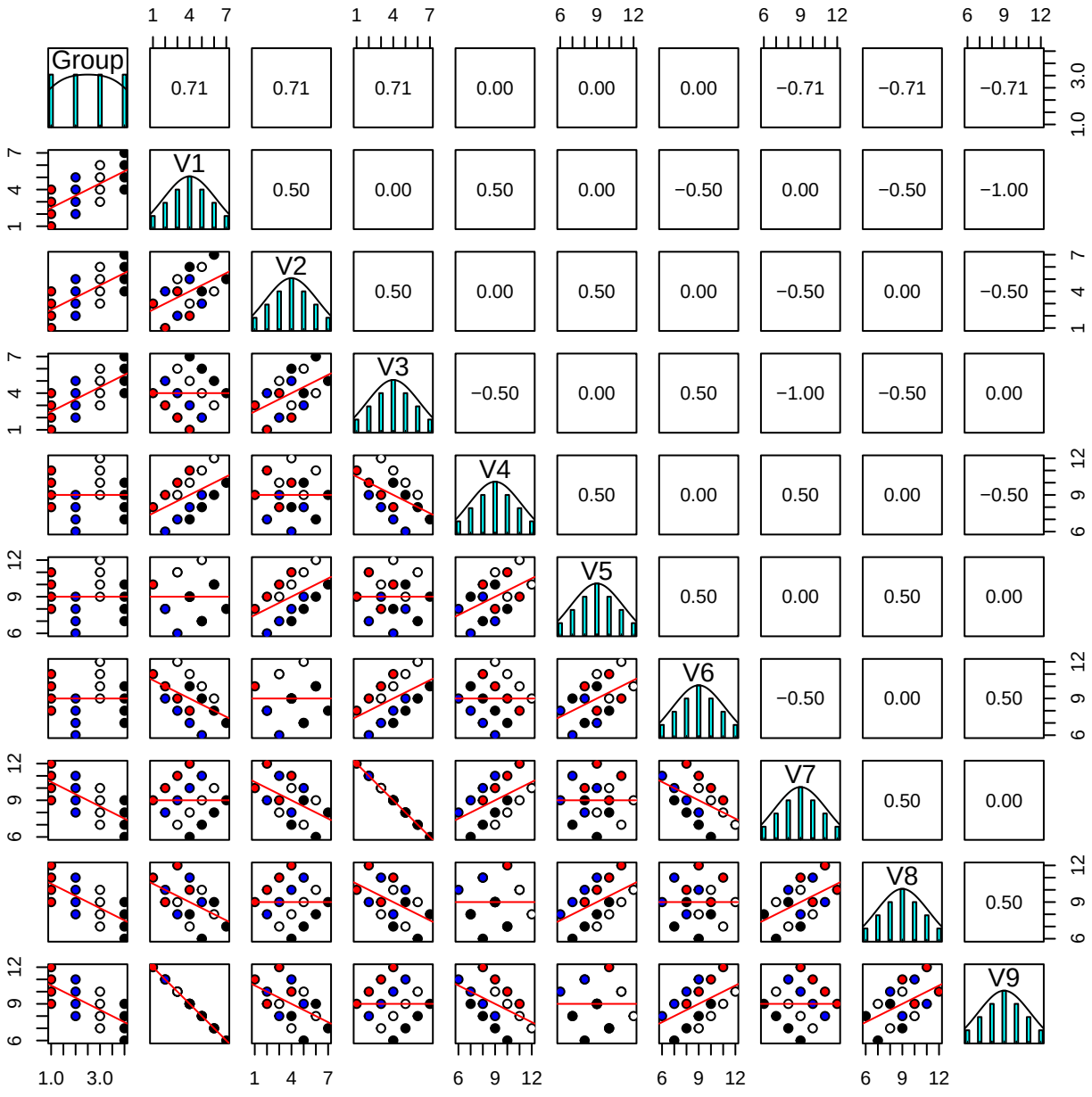



r = 0.9 rpb = 0.71 rbis = 0.89
help("tetrachor")
y
x
3
2
1
0
−1
−2
−3
−4
−3
−2
−1
0
1
2
3


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
help("withinBetween")