No evidence of "healthy neuroticism" in the Hawaii Personality and Health Cohort : Analysis Code and Results

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```
rm(list=ls())
knitr::opts_chunk$set(echo = TRUE)
options(width=120)
```

1 Environment

1.1 Packages

```
library(knitr)
library(haven)
library(foreign)
library(tidyverse)
library(stargazer)
library(MASS)
library(lavaan)
library(psych)
library(memisc)
library(kutils)
library(sjPlot)

set.seed(1959)
```

```
sessionInfo()

## R version 3.4.2 (2017-09-28)
## Platform: x86_64-apple-darwin15.6.0 (64-bit)
## Running under: macOS High Sierra 10.13.2
##
## Matrix products: default
## BLAS: /Library/Frameworks/R.framework/Versions/3.4/Resources/lib/libRblas.0.dylib
## LAPACK: /Library/Frameworks/R.framework/Versions/3.4/Resources/lib/libRlapack.dylib
##
## locale:
## [1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets  methods   base
##
## other attached packages:
##  [1] sjPlot_2.4.0       kutils_1.0         memisc_0.99.8      lattice_0.20-35    psych_1.7.8        lavaan_0.5-23.1097
##  [7] MASS_7.3-47        stargazer_5.2      dplyr_0.7.4        purrr_0.2.4        readr_1.1.1        tidyr_0.7.1
## [13] tibble_1.3.3       ggplot2_2.2.1      tidyverse_1.1.1    foreign_0.8-69     haven_1.1.0        knitr_1.17
##
## loaded via a namespace (and not attached):
##  [1] nlme_3.1-131       pbkrtest_0.4-7     lubridate_1.6.0    httr_1.2.1         TMB_1.7.11         tools_3.4.2
##  [7] DT_0.2             R6_2.2.2           sjlabelled_1.0.4   lazyeval_0.2.1     mgcv_1.8-20        colorspace_1.3-2
## [13] nnet_7.3-12        tidyselect_0.1.1   mnormt_1.5-5       compiler_3.4.2     rvest_0.3.2        quantreg_5.33
## [19] SparseM_1.77       xml2_1.1.1         sandwich_2.3-4     effects_4.0-0      scales_0.5.0       lmtest_0.9-35
## [25] mvtnorm_1.0-6      quadprog_1.5-5     blme_1.0-4         digest_0.6.12      stringr_1.2.0      pbivnorm_0.6.0
## [31] minqa_1.2.4        stringdist_0.9.4.4 htmltools_0.3.6    pkgconfig_2.0.1    lme4_1.1-13        highr_0.6
```

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```
## [37] htmlwidgets_0.9    pwr_1.2-1          rlang_0.1.4        readxl_1.0.0       shiny_1.0.3        bindr_0.1
## [43] zoo_1.8-0          jsonlite_1.5       car_2.1-5          magrittr_1.5       modeltools_0.2-21  bayesplot_1.4.0
## [49] Matrix_1.2-11      Rcpp_0.12.13       munsell_0.4.3      abind_1.4-5        prediction_0.2.0   merTools_0.3.0
## [55] stringi_1.1.5      multcomp_1.4-6     snakecase_0.5.1    carData_3.0-0      plyr_1.8.4         grid_3.4.2
## [61] parallel_3.4.2     sjmisc_2.6.1       forcats_0.2.0      ggeffects_0.2.2    splines_3.4.2      sjstats_0.12.0
## [67] hms_0.3            codetools_0.2-15   reshape2_1.4.2     stats4_3.4.2       glue_1.1.1         evaluate_0.10.1
## [73] modelr_0.1.0       httpuv_1.3.5       nloptr_1.0.4       MatrixModels_0.4-1 cellranger_1.1.0   gtable_0.2.0
## [79] assertthat_0.2.0   openxlsx_4.0.17    mime_0.5           coin_1.2-0         xtable_1.8-2       broom_0.4.2
## [85] survey_3.32-1      coda_0.19-1        survival_2.41-3    arm_1.9-3          glmmTMB_0.1.1      bindrcpp_0.2
## [91] TH.data_1.0-8
```

1.2 Load data

We load in the data, which is stored as an Rdata file. This contains a data frame of the variables of interest and a vector of the personality items text.

```
load("HealthyNData.Rdata")
```

2 Trait measures

We create a list which identifies which items load onto which personality scales and in what direction.

```
adult.personality.list <- list(
  Extra = c("PQ2","PQ32","-PQ62","-PQ92",
            "PQ7","PQ37","-PQ67","-PQ97",
            "PQ12","PQ42","PQ72","-PQ102",
            "PQ17","PQ47","PQ77","-PQ107",
            "PQ22","PQ52","PQ82","PQ112",
            "PQ27","PQ57","PQ87","PQ117"),
  Agree = c("PQ4","PQ34","PQ64","-PQ94",
            "-PQ9","-PQ39","-PQ69","-PQ99",
            "PQ14","PQ44","-PQ74","-PQ104",
            "-PQ19","-PQ49","-PQ79","-PQ109",
            "-PQ24","-PQ54","-PQ84","-PQ114",
            "PQ29","PQ59","-PQ89","-PQ119"),
  Con = c("PQ5","PQ35","PQ65","PQ95",
          "PQ10","-PQ40","-PQ70","-PQ100",
          "PQ15","PQ45","-PQ75","-PQ105",
          "PQ20","PQ50","-PQ80","-PQ110",
          "PQ25","PQ55","-PQ85","-PQ115",
          "-PQ30","-PQ60","-PQ90","-PQ120"),
  Neur = c("PQ1","PQ31","PQ61","PQ91",
           "PQ6","PQ36","PQ66","-PQ96",
           "PQ11","PQ41","PQ71","-PQ101",
           "PQ16","PQ46","PQ76","-PQ106",
           "PQ21","-PQ51","-PQ81","-PQ111",
           "PQ26","PQ56","PQ86","-PQ116"),
  Open = c("PQ3","PQ33","PQ63","PQ93",
           "PQ8","PQ38","-PQ68","-PQ98",
           "PQ13","PQ43","-PQ73","-PQ103",
           "PQ18","-PQ48","-PQ78","-PQ108",
           "PQ23","-PQ53","-PQ83","-PQ113",
           "PQ28","PQ58","-PQ88","-PQ118"))
```

Only neuroticism and conscientiousness will be used in the analyses. However, we will score all the Big Five traits. This allows for easy inspection of neuroticism and conscientiousness, as it allows us to compare the reliabilities to these other measures and to confirm that the traits are negatively correlated with neuroticism and positively correlated with conscientiousness, as in other studies.

We present descriptive statistics of the neuroticism and conscientiousness items in Tables 1 and 2.

```
n.desc <- describe(ori.health[,gsub("-","",adult.personality.list$Neur)], fast=T)
rownames(n.desc) <- personality.text[gsub("-","",adult.personality.list$Neur)]

stargazer(n.desc, rownames = T, title="Descriptives of adult neuroticism items",
          summary=F, label="tab.neuritems", font.size = "small", out="tables/NDescribe.tex")
```

	vars	n	mean	sd	min	max	range	se
Worry about things	1	796	3.643	1.075	1	5	4	0.038
Fear for the worst	2	795	2.771	1.152	1	5	4	0.041
Am afraid of many things	3	796	2.202	1.013	1	5	4	0.036
Get stressed out easily	4	796	2.595	1.091	1	5	4	0.039
Get angry easily	5	794	2.685	1.093	1	5	4	0.039
Get irritated easily	6	795	2.840	1.100	1	5	4	0.039
Lose my temper	7	795	2.364	1.072	1	5	4	0.038
Am not easily annoyed	8	795	3.333	0.963	1	5	4	0.034
Often feel blue	9	793	2.247	1.171	1	5	4	0.042
Dislike myself	10	795	1.950	1.024	1	5	4	0.036
Am often "down in the dumps"	11	796	2.039	1.011	1	5	4	0.036
Feel comfortable with myself	12	795	4.011	0.938	1	5	4	0.033
Find it difficult to approach others	13	794	2.709	1.163	1	5	4	0.041
Am afraid to draw attention to myself	14	795	3.289	1.055	1	5	4	0.037
Only feel comfortable with friends	15	795	2.819	1.146	1	5	4	0.041
Am not bothered by difficult social situations	16	794	2.877	1.112	1	5	4	0.039
Go on binges (overeating, gambling, etc.)	17	795	2.196	1.223	1	5	4	0.043
Rarely overindulge	18	791	3.255	1.028	1	5	4	0.037
Easily resist temptations	19	792	3.254	0.987	1	5	4	0.035
Am able to control my cravings	20	795	3.358	0.988	1	5	4	0.035
Panic easily	21	794	2.275	1.117	1	5	4	0.040
Get overwhelmed by events	22	795	2.863	1.060	1	5	4	0.038
Feel that I can't deal with things	23	794	2.151	0.971	1	5	4	0.034
Remain calm under pressure	24	796	3.779	0.972	1	5	4	0.034

Table 1: Descriptives of adult neuroticism items

```
c.desc <- describe(ori.health[,gsub("-","",adult.personality.list$Con)], fast=T)
rownames(c.desc) <- personality.text[gsub("-","",adult.personality.list$Con)]

stargazer(c.desc, rownames = T, title="Descriptives of adult conscientiousness items",
          summary=F, label="tab.conitems", font.size = "small", out="tables/CDescribe.tex")
```

Traits are scored using the scoreItems function in the psych Revelle (2017) package.

```
adult.personality.keys <- make.keys(
  nvars=120,
  keys.list = adult.personality.list,
  item.labels = colnames(ori.health)[grepl("^PQ", colnames(ori.health))])

adult.personality.scores <- scoreItems(
  keys = adult.personality.keys,
  items=ori.health[,grepl("^PQ", colnames(ori.health))],
  impute = "none")

adult.personality.scores

## Call: scoreItems(keys = adult.personality.keys, items = ori.health[,
##     grepl("^PQ", colnames(ori.health))], impute = "none")
##
## (Standardized) Alpha:
##       Extra Agree  Con Neur Open
## alpha  0.89  0.82 0.88 0.88 0.76
##
## Standard errors of unstandardized Alpha:
##        Extra  Agree    Con  Neur  Open
## ASE   0.0067 0.0097 0.0071 0.007 0.012
##
## Standardized Alpha of observed scales:
##      Extra Agree  Con Neur Open
## [1,]  0.88  0.82 0.88 0.88 0.76
```

	vars	n	mean	sd	min	max	range	se
Complete tasks successfully	1	795	4.410	0.677	1	5	4	0.024
Am really good at what I do	2	794	4.214	0.705	1	5	4	0.025
Handle tasks smoothly	3	794	3.995	0.681	1	5	4	0.024
Know how to get things done	4	793	4.148	0.701	1	5	4	0.025
Like to tidy up	5	795	3.922	1.027	1	5	4	0.036
Often forget to put things back in their proper place	6	794	2.286	1.177	1	5	4	0.042
Leave a mess in my room	7	796	2.443	1.243	1	5	4	0.044
Leave my belongings around	8	795	2.189	1.177	1	5	4	0.042
Keep my promises	9	794	4.504	0.601	1	5	4	0.021
Tell the truth	10	795	4.426	0.655	1	5	4	0.023
Break rules	11	794	2.068	0.968	1	5	4	0.034
Break my promises	12	794	1.662	0.753	1	5	4	0.027
Work hard	13	795	4.561	0.643	1	5	4	0.023
Do more than what's expected of me	14	796	4.168	0.749	1	5	4	0.027
Do just enough work to get by	15	794	1.899	0.925	1	5	4	0.033
Put little time and effort into my work	16	794	1.820	1.041	1	5	4	0.037
Am always prepared	17	795	3.816	0.839	1	5	4	0.030
Carry out my plans	18	796	4.275	0.692	1	5	4	0.025
Waste my time	19	796	2.364	0.978	1	5	4	0.035
Have difficulty starting tasks	20	795	2.360	1.029	1	5	4	0.037
Jump into things without thinking	21	795	2.396	1.072	1	5	4	0.038
Make rash decisions	22	795	2.284	0.991	1	5	4	0.035
Rush into things	23	795	2.302	0.974	1	5	4	0.035
Act without thinking	24	796	2.067	0.926	1	5	4	0.033

Table 2: Descriptives of adult conscientiousness items

```
##
## Average item correlation:
##           Extra Agree  Con Neur Open
## average.r  0.24  0.16 0.23 0.23 0.12
##
##  Guttman 6* reliability:
##          Extra Agree  Con Neur Open
## Lambda.6  0.93  0.89 0.92 0.92 0.85
##
## Signal/Noise based upon av.r :
##              Extra Agree Con Neur Open
## Signal/Noise   7.7   4.4 7.1  7.3  3.2
##
## Scale intercorrelations corrected for attenuation
##  raw correlations below the diagonal, alpha on the diagonal
##  corrected correlations above the diagonal:
##
## Note that these are the correlations of the complete scales based on the correlation matrix,
##  not the observed scales based on the raw items.
##       Extra Agree   Con  Neur  Open
## Extra  0.89  0.25  0.43 -0.53  0.46
## Agree  0.21  0.82  0.47 -0.41  0.29
## Con    0.38  0.40  0.88 -0.58  0.13
## Neur  -0.46 -0.35 -0.51  0.88 -0.19
## Open   0.38  0.23  0.11 -0.16  0.76
##
##  In order to see the item by scale loadings and frequency counts of the data
##  print with the short option = FALSE
```

```
ori.health <- cbind(ori.health, adult.personality.scores$scores)
```

2.0.1 Facet measures of neuroticism

Structural equation modeling was used to estimate the bifactor structure of the facets. We used the lavaan Rosseel (2017) package for these models.

```
neur.items <- adult.personality.list$Neur
neur.keys <- ifelse(grepl("-", neur.items), -1, 1)
neur.items <- gsub("-","", neur.items)
neur.items.df <- as.data.frame(reverse.code(keys=neur.keys, items = ori.health[,neur.items]))
colnames(neur.items.df) <- gsub("-","", colnames(neur.items.df))

facet.model <- '
g.Neur =~ PQ1 + PQ31 + PQ61 + PQ91 + PQ6 + PQ36 + PQ66 + PQ96 + PQ11 + PQ41 + PQ71 + PQ101 +
          PQ16 + PQ46 + PQ76 + PQ106 + PQ21 + PQ51 + PQ81 + PQ111 + PQ26 + PQ56 + PQ86 + PQ116

Anxiety =~ PQ1 + PQ31 + PQ61 + PQ91

Anger =~ PQ6 + PQ36 + PQ66 + PQ96

Depression =~ PQ71 + PQ41 + PQ11 + PQ101

SelfConsciousness =~ PQ16 + PQ46 + PQ76 + PQ106

Immoderation =~ PQ21 + PQ51 + PQ81 + PQ111

Vulnerability =~ PQ56 + PQ26 + PQ86 + PQ116

g.Neur ~~ 0*Anxiety
g.Neur ~~ 0*Anger
g.Neur ~~ 0*Depression
g.Neur ~~ 0*SelfConsciousness
g.Neur ~~ 0*Immoderation
g.Neur ~~ 0*Vulnerability

'

facet.fit <- cfa(model=facet.model, data = neur.items.df, missing = "fiml")
#summary(facet.fit, fit.measures=T, standardized =T)

semTable(object = facet.fit, params = c("loadings", "residuals"),
         standardized = T, longtable = T, file="tables/FacetFit.tex")
```

Parameter	Unstandarized Estimate	SE	Standardized Estimate	SE
	Factor Loadings			
g.Neur				
PQ1	1.00*	0.00	1.00	0.00
PQ31	1.63	0.22	0.79	0.04
PQ61	1.62	0.25	0.76	0.04
PQ91	1.67	0.20	0.94	0.04
PQ6	1.03	0.16	0.61	0.05
PQ36	1.42	0.20	0.71	0.04
PQ66	1.31	0.19	0.65	0.05
PQ96	0.71	0.14	0.33	0.04
PQ11	2.18	0.28	0.77	0.04
PQ41	2.15	0.32	0.73	0.04
PQ71	2.04	0.27	0.75	0.04
PQ101	1.38	0.22	0.49	0.04
PQ16	1.54	0.27	0.51	0.04
PQ46	0.89	0.18	0.38	0.04
PQ76	1.21	0.22	0.41	0.04
PQ106	0.53	0.15	0.22	0.04
PQ21	1.25	0.22	0.38	0.05
PQ51	0.43	0.13	0.16	0.04
PQ81	0.17	0.12	0.11	0.04
PQ111	0.82	0.17	0.30	0.04
PQ26	1.54	0.22	0.83	0.04
PQ56	1.50	0.22	0.73	0.04
PQ86	1.70	0.26	0.71	0.04
PQ116	0.98	0.16	0.60	0.04
Anxiety				
PQ1	1.00*	0.00	1.00	0.00
PQ31	0.87	0.11	0.05	0.03
PQ61	0.58	0.10	-0.06	0.03
PQ91	1.20	0.12	0.08	0.03

Anger				
PQ6	1.00*	0.00	1.00	0.00
PQ36	0.83	0.05	0.59	0.04
PQ66	0.88	0.05	0.71	0.04
PQ96	0.29	0.05	0.28	0.05
Depression				
PQ71	1.00*	0.00	1.00	0.00
PQ41	0.13	0.18	0.12	0.03
PQ11	1.53	0.31	0.27	0.03
PQ101	-0.04	0.17	0.10	0.03
SelfConsciousness				
PQ16	1.00*	0.00	1.00	0.00
PQ46	0.75	0.12	0.18	0.03
PQ76	1.03	0.14	0.30	0.04
PQ106	0.23	0.10	0.05	0.03
Immoderation				
PQ21	1.00*	0.00	1.00	0.00
PQ51	1.08	0.21	0.16	0.04
PQ81	1.09	0.22	0.11	0.04
PQ111	1.08	0.19	0.23	0.04
Vulnerability				
PQ56	1.00*	0.00	1.00	0.00
PQ26	1.60	0.19	0.05	0.02
PQ86	0.36	0.11	0.02	0.03
PQ116	0.97	0.15	-0.00	0.03
		Variances		
PQ1	0.74	0.05	16.12	.000
PQ31	0.78	0.04	18.07	.000
PQ61	0.61	0.03	18.16	.000
PQ91	0.43	0.03	12.78	.000
PQ6	0.36	0.04	10.01	.000
PQ36	0.48	0.03	14.83	.000
PQ66	0.40	0.03	13.38	.000
PQ96	0.80	0.04	19.55	.000
PQ11	0.40	0.08	5.30	.000
PQ41	0.49	0.04	12.11	.000
PQ71	0.35	0.03	10.26	.000
PQ101	0.65	0.04	16.55	.000
PQ16	0.72	0.06	12.05	.000
PQ46	0.83	0.05	15.62	.000
PQ76	0.77	0.06	11.98	.000
PQ106	1.18	0.06	19.66	.000
PQ21	1.12	0.07	16.27	.000
PQ51	0.82	0.06	14.57	.000
PQ81	0.75	0.05	14.23	.000
PQ111	0.68	0.05	13.60	.000
PQ26	0.55	0.05	12.05	.000
PQ56	0.69	0.04	17.98	.000
PQ86	0.57	0.03	17.27	.000
PQ116	0.68	0.04	18.04	.000

Note. * Indicates parameters fixed for model identification. $\chi^2(213)= 493.25$, $p = .000$; CFI = 0.95; TLI = 0.94; RMSEA = 0.04.

2.1 Remove cases without data

```
ori.health <- subset(ori.health, !is.na(Neur) | !is.na(ChildNeur))
ori.health <- subset(ori.health, !is.na(Chronic) | !is.na(SelfRatedHealth)
                     | !is.na(HeartCondition)| !is.na(NumberChronic)
                     | !is.na(Cigarettes_Ever)| !is.na(Cigarettes)| !is.na(Alcohol_Ever)
                     | !is.na(Alcohol_Days)| !is.na(Alcohol_Drinks)| !is.na(Alcohol_Binge)
                     | !is.na(Exercise_Stren)| !is.na(Exercise_Moder)| !is.na(Exercise_Mild)
                     | !is.na(Flossing)| !is.na(BloodSugar)
                     | !is.na(ChoHDLratio) | !is.na(SysBP) | !is.na(WaistHip))

HasChildP <- ifelse(!is.na(ori.health$ChildNeur), 1, 0)
HasAdultP <- ifelse(!is.na(ori.health$Neur), 1, 0)
```

2.2 Demographics

Study variables, with the exception of the personality items, are summarized in Table 4. Descriptions of the demographic variables are presented in Table 5.

```
stargazer(ori.health[,-which(grepl("^PQ",colnames(ori.health)))],
          title = "Descriptive statistics of study variables",
          label="tab.describe", out="tables/AllDescribe.tex")
```

Statistic	N	Mean	St. Dev.	Min	Max
pchid	1,114	1,332.917	816.744	2	2,716
gender	1,114	0.487	0.500	0	1
income	640	3.652	1.043	1	5
highgrd	1,037	6.891	1.805	2	9
culture1	1,079	5.943	2.079	3	12
parhomch	728	2.247	1.622	0	4
momeduc	833	4.848	2.253	1	9
dadeduc	819	5.156	2.669	1	9
wealthy	693	3.165	0.694	1	5
ChildExtra	1,104	0.007	1.003	−4.144	3.243
ChildAgree	1,104	0.029	0.992	−3.225	2.800
ChildCon	1,104	0.093	1.002	−3.535	3.090
ChildNeur	1,104	−0.016	1.011	−2.685	3.379
ChildOpen	1,104	0.090	1.009	−2.544	3.122
SelfRatedHealth	847	3.362	0.997	1	5
Cigarettes_Ever	846	0.483	0.500	0	1
Cigarettes	846	0.344	0.909	0	4
Alcohol_Ever	804	0.859	0.348	0	1
Alcohol_Days	840	1.680	1.970	0	6
Alcohol_Drinks	841	1.285	1.621	0	6
Alcohol_Binge	842	0.580	1.494	0	6
HeartCondition	842	0.134	0.341	0	1
NumberChronic	851	0.713	0.980	0	8
Chronic	851	0.469	0.499	0	1
Exercise_Stren	745	1.984	1.195	1	5
Exercise_Moder	739	2.691	1.285	1	5
Exercise_Mild	746	2.933	1.343	1	5
Flossing	748	1.592	0.802	1	3
UrinePro	810	1.107	0.444	1	5
BloodSugar	768	100.681	26.142	65	348
Trigly	767	133.751	121.029	20	1,917
HDL	768	50.992	16.047	10	135
ChoHDLratio	765	4.285	1.531	1.800	27.100
SysBP	823	122.394	15.723	77.000	200.000
DiasBP	822	76.725	9.775	48.000	119.000
WaistHip	819	0.879	0.087	0.623	1.188
BMI	821	29.022	6.861	16.217	66.492
clinic1_age	823	51.000	2.933	45	60
Q5_age	796	53.141	2.033	49.083	59.333
Q6_age	700	58.235	1.992	54.000	62.667
Q7_age	839	60.089	2.031	56.112	64.578
Extra	796	3.410	0.531	1.792	4.708
Agree	796	3.850	0.399	2.208	4.875
Con	796	4.012	0.461	2.458	5.000
Neur	796	2.573	0.548	1.125	4.375
Open	796	3.175	0.419	1.833	4.750

Table 4: Descriptive statistics of study variables

Variable	Description	Labels	Sample Sizes
pchid	participant ID number		
gender	self-reported gender	0 - *female*	571
		1 - *male*	543
income	self-reported maximum lifetime income	1 - *Less than $10,000*	11
		2 - *$10,000-$29,999*	58
		3 - *$30,000-$59,999*	258
		4 - *$60,000-$79,999*	129
		5 - *$80,000 or more*	184
highgrd	highest level of education	2 - *junior high/intermediate school*	2
		3 - *some high school*	24
		4 - *high school grad/GED*	189
		5 - *some technical school*	39
		6 - *technical/nursing school grad*	30
		7 - *some college/community college*	285
		8 - *college grad*	268
		9 - *postgrad/professional degree*	200
culture1	racial/ethnic background	3 - *Caucasian*	216
		4 - *Chinese*	67
		5 - *Filipino*	100
		6 - *Hawaiian/part Hawaiian*	213
		7 - *Japanese*	373
		8 - *Korean*	8
		9 - *Latino*	28
		10 - *Okinawan*	44
		11 - *Other Pacific Islander*	8
		12 - *Other*	22
parhomch	parents own home during childhood	0 - *in none of 4 periods*	156
		1 - *in one of 4 periods*	152
		2 - *in two of 4 periods*	44
		3 - *in three of 4 periods*	108
		4 - *in four of 4 periods*	268
momeduc	mother's highest level of education	1 - *eighth grade or less*	83
		2 - *junior high/intermediate school*	23
		3 - *some high school*	58
		4 - *high school grad/GED*	337
		5 - *some technical school*	44
		6 - *technical/nursing school grad*	59
		7 - *some college/community college*	75
		8 - *college grad*	98
		9 - *postgrad/professional degree*	56
dadeduc	father's highest level of education	1- *eighth grade or less*	114
		2 - *junior high/intermediate school*	32
		3 - *some high school*	62
		4 - *high school grad/GED*	198
		5 - *some technical school*	68
		6 - *technical/nursing school grad*	46
		7 - *some college/community college*	70
		8 - *college grad*	100
		9 - *postgrad/professional degree*	129
wealthy	perceived wealth	1 - *almost no assets/income*	12
		2 - *low income/assets*	66
		3 - *average income/assets*	428
		4 - *high income/assets*	170
		5 - *very high income/assets*	17

Table 5: Descriptive statistics of study variables

```
ori.health <- subset(ori.health,
                     select = c(pchid, gender, highgrd, culture1, wealthy,
                                Q5_age, Q6_age, Q7_age, clinic1_age,
                                Neur, Con, ChildNeur, ChildCon,
                                income,parhomch, momeduc, dadeduc, Chronic,
                                PQ1, PQ6, PQ11, PQ16, PQ21, PQ26, PQ31, PQ36,
                                PQ41, PQ46, PQ51, PQ56, PQ61, PQ66, PQ71, PQ76,
                                PQ81, PQ86, PQ91, PQ96, PQ101, PQ106,
                                PQ111, PQ116,
                                SelfRatedHealth,
                                HeartCondition, NumberChronic,
                                Cigarettes_Ever, Cigarettes,
                                Alcohol_Ever, Alcohol_Days, Alcohol_Drinks,
                                Alcohol_Binge,
                                Exercise_Stren, Exercise_Moder,
                                Exercise_Mild, Flossing,
                                BloodSugar, ChoHDLratio, SysBP, WaistHip))
save(ori.health, file="oriHealthData.Rdata")
```

Some transformations:

```
# income,education, and personaity are standardized
ori.health$income_c <- as.numeric(scale(ori.health$income))
ori.health$highgrd_c <- as.numeric(scale(ori.health$highgrd))
ori.health$Neur_c <- as.numeric(scale(ori.health$Neur, center = T, scale = F))
ori.health$Con_c <- as.numeric(scale(ori.health$Con, center = T, scale = F))
ori.health$ChildNeur <- as.numeric(scale(ori.health$ChildNeur, center = T, scale = F))
ori.health$ChildCon <- as.numeric(scale(ori.health$ChildCon, center = T, scale = F))

#create factor score from parental homeownership, mother education and father education
round(cor(ori.health[,c("parhomch", "momeduc", "dadeduc")], use="pairwise"),2)

##          parhomch momeduc dadeduc
## parhomch     1.00    0.24    0.25
## momeduc      0.24    1.00    0.66
## dadeduc      0.25    0.66    1.00

ori.health$parhomch.z <- as.numeric(scale(ori.health$parhomch))
ori.health$momeduc.z <- as.numeric(scale(ori.health$momeduc))
ori.health$dadeduc.z <- as.numeric(scale(ori.health$dadeduc))

ori.health$childses <- rowMeans(ori.health[,c("parhomch.z", "momeduc.z", "dadeduc.z")], na.rm=T)

ori.health$Q5_age_c <- as.numeric(scale(ori.health$Q5_age))
ori.health$Q6_age_c <- as.numeric(scale(ori.health$Q6_age))
ori.health$Q7_age_c <- as.numeric(scale(ori.health$Q7_age))
ori.health$clinic1_age_c <- as.numeric(scale(ori.health$clinic1_age))
ori.health$gender <- as.numeric(scale(ori.health$gender))

#standardize continuous outcomes
ori.health$SelfRatedHealth <- as.numeric(scale(ori.health$SelfRatedHealth))
ori.health$Exercise_Moder <- as.numeric(scale(ori.health$Exercise_Moder))
ori.health$Exercise_Mild <- as.numeric(scale(ori.health$Exercise_Mild))
ori.health$Flossing <- as.numeric(scale(ori.health$Flossing))
ori.health$BloodSugar <- as.numeric(scale(ori.health$BloodSugar))
ori.health$ChoHDLratio <- as.numeric(scale(ori.health$ChoHDLratio))
ori.health$SysBP <- as.numeric(scale(ori.health$SysBP))
ori.health$WaistHip <- as.numeric(scale(ori.health$WaistHip))
```

3 Analyses: Main effects of neuroticism

3.1 Zero-order Correlations

```
corr.neur <- corr.test(y = ori.health[,c("Neur_c","ChildNeur")],
                       x = ori.health[,c("SelfRatedHealth","Cigarettes_Ever", "Cigarettes",
                                         "Alcohol_Ever", "Alcohol_Days", "Alcohol_Drinks",
                                         "Alcohol_Binge",
                                         "Exercise_Stren", "Exercise_Moder",
                                         "Exercise_Mild","Flossing",
                                         "HeartCondition", "NumberChronic",
```

```
                                        "BloodSugar",
                                        "ChoHDLratio", "SysBP", "WaistHip")],adjust = "none")

cors <- cor.ci(ori.health[, c("Neur_c","ChildNeur","SelfRatedHealth","Cigarettes_Ever",
                              "Cigarettes","Alcohol_Ever", "Alcohol_Days", "Alcohol_Drinks",
                              "Alcohol_Binge","Exercise_Stren", "Exercise_Moder", "Exercise_Mild",
                              "Flossing", "HeartCondition", "NumberChronic",
                              "BloodSugar","ChoHDLratio", "SysBP", "WaistHip")],
               plot = F)

corr.est <- as.data.frame(cors$rho[,c("Neur_c","ChildNeur")])
corr.est <- corr.est[-which(rownames(corr.est) %in% c("Neur_c","ChildNeur")), ]
corr.est$health <- rownames(corr.est)
corr.est <- gather(corr.est, key = "personality", value = "est", 1:2)
corci <- cors$ci
corci <- corci[grepl("Ner", rownames(corci)) | grepl("ChldN", rownames(corci)), ]
corci <- corci[-which(rownames(corci) == "Ner_c-ChldN"), ]
corci$personality <- ifelse(grepl("Ner", rownames(corci)), "Neur_c", "ChildNeur")
corci$health <- gsub("Ner_c-", "", rownames(corci))
corci$health <- gsub("ChldN-", "", corci$health)
corci$health <- recode(corci$health,recodes = "'SlfRH' = 'SelfRatedHealth';
       'Cgr_E' = 'Cigarettes_Ever';
       'Cgrtt' = 'Cigarettes';
       'Alc_E' = 'Alcohol_Ever';
       'Alchl_Dy' = 'Alcohol_Days';
       'Alchl_Dr' = 'Alcohol_Drinks';
       'Alc_B' = 'Alcohol_Binge';
       'Exr_S' = 'Exercise_Stren';
       'Exrcs_Md' = 'Exercise_Moder';
       'Exrcs_Ml' = 'Exercise_Mild';
       'Flssn' = 'Flossing';
       'HrtCn' = 'HeartCondition';
       'NmbrC' = 'NumberChronic';
       'BldSg' = 'BloodSugar';
       'ChHDL' = 'ChoHDLratio';
       'SysBP' = 'SysBP';
       'WstHp' = 'WaistHip'")
corci <- merge(corr.est, corci, by=c("health","personality"))
corci$est <- ifelse(corci$p < .05,
                    paste(round(corci$est,2),"*",sep=""),
                    round(corci$est,2))
corci$cor <- paste(corci$est, " [", round(corci$lower, 2), ", ", round(corci$upper,2),"]", sep="")
corci <- subset(corci, select=c(health, personality, cor))
corci <- spread(corci, key = "personality", value = "cor")
```

3.2 Regression estimates - SRH and Outcomes

```
neur.srh <- lm(SelfRatedHealth ~ Neur_c + gender + Q6_age_c,
               data = ori.health)
neur.heart <- glm(HeartCondition ~ Neur_c + gender + Q6_age_c,
                  data = ori.health,
                  family = "binomial")
neur.cond <- glm(NumberChronic ~ Neur_c + gender + Q6_age_c,
                    data = ori.health,
                 family = "poisson")
```

The stargazer package Hlavac (2015) was used to summarize the models in formatted tables. We extract the bootstrapped coefficients, confidence intervals and significance from the boot output.

```
childneur.srh <- lm(SelfRatedHealth ~ ChildNeur + gender + Q6_age_c,
                    data = ori.health)
childneur.heart <- glm(HeartCondition ~ ChildNeur + gender + Q6_age_c,
                       data = ori.health,
                       family = "binomial")
childneur.cond <- glm.nb(NumberChronic ~ ChildNeur + gender + Q6_age_c,
                         data = ori.health)
```

3.3 Regression estimates - Behavior

	Neur_c	ChildNeur
SelfRatedHealth	-0.37∗	-0.06
Cigarettes_Ever	0.07∗	0.02
Cigarettes	0.09∗	-0.01
Alcohol_Ever	0.05	-0.07
Alcohol_Days	-0.03	-0.02
Alcohol_Drinks	0.01	-0.05
Alcohol_Binge	0.05	-0.02
Exercise_Stren	-0.1∗	-0.04
Exercise_Moder	-0.05	-0.03
Exercise_Mild	-0.06	0
Flossing	0.06	-0.05
HeartCondition	0.08∗	-0.03
NumberChronic	0.15∗	0.02
BloodSugar	0.08	-0.03
ChoHDLratio	0.01	-0.04
SysBP	0.01	0.03
WaistHip	0.08∗	-0.07

Table 6: Correlations between neuroticism and health measures

	Dependent variable:		
	SelfRatedHealth	HeartCondition	NumberChronic
	OLS	*logistic*	*Poisson*
	(1)	(2)	(3)
Neur_c	−0.593*	0.213	0.246*
	(−0.728, −0.458)	(−0.245, 0.672)	(0.072, 0.420)
gender	−0.057	0.235	−0.091
	(−0.131, 0.017)	(−0.017, 0.487)	(−0.191, 0.009)
Q6_age_c	−0.006	0.139	0.030
	(−0.080, 0.068)	(−0.116, 0.394)	(−0.068, 0.128)
Constant	0.038	−2.009*	−0.402*
	(−0.036, 0.112)	(−2.263, −1.755)	(−0.502, −0.302)
Observations	587	584	590
R^2	0.114		
Adjusted R^2	0.110		
Log Likelihood		−211.522	−659.157
Akaike Inf. Crit.		431.043	1,326.314
Residual Std. Error	0.913 (df = 583)		
F Statistic	25.089* (df = 3; 583)		
Note:			* $p < .05$

Table 7: Main effect of neuroticism predicting self-rated health and outcomes

	Dependent variable:		
	SelfRatedHealth	HeartCondition	NumberChronic
	OLS	*logistic*	*negative binomial*
	(1)	(2)	(3)
ChildNeur	−0.083*	−0.007	0.074
	(−0.156, −0.010)	(−0.237, 0.224)	(−0.026, 0.173)
gender	−0.051	0.237*	−0.069
	(−0.125, 0.023)	(0.008, 0.467)	(−0.170, 0.033)
Q6_age_c	−0.005	0.236*	0.073
	(−0.078, 0.069)	(0.004, 0.468)	(−0.027, 0.174)
Constant	0.024	−1.957*	−0.397*
	(−0.049, 0.098)	(−2.189, −1.726)	(−0.498, −0.297)
Observations	687	684	691
R^2	0.009		
Adjusted R^2	0.005		
Log Likelihood		−256.349	−768.174
θ			3.184* (1.053)
Akaike Inf. Crit.		520.698	1,544.348
Residual Std. Error	0.982 (df = 683)		
F Statistic	2.048 (df = 3; 683)		
Note:			* $p < .05$

Table 8: Main effect of childhood neuroticism predicting self-rated health and outcomes

```
neur.cige <- glm(Cigarettes_Ever ~ Neur_c + gender + Q6_age_c,
                 data = ori.health,
                 family = "binomial")
neur.cig <- glm.nb(Cigarettes ~ Neur_c + gender + Q6_age_c,
                   data = ori.health)
neur.alce <- glm(Alcohol_Ever ~ Neur_c + gender + Q6_age_c,
                 data = ori.health,
                 family = "binomial")
neur.alcy <- glm.nb(Alcohol_Days ~ Neur_c + gender + Q6_age_c,
                    data = ori.health)
neur.alck <- glm.nb(Alcohol_Drinks ~ Neur_c + gender + Q6_age_c,
                    data = ori.health)
neur.alcb <- glm.nb(Alcohol_Binge ~ Neur_c + gender + Q6_age_c,
                    data = ori.health)
```

```
childneur.cige <- glm(Cigarettes_Ever ~ ChildNeur + gender + Q6_age_c,
                      data = ori.health,
                      family = "binomial")
childneur.cig <- glm.nb(Cigarettes ~ ChildNeur + gender + Q6_age_c,
                        data = ori.health)
childneur.alce <- glm(Alcohol_Ever ~ ChildNeur + gender + Q6_age_c,
                      data = ori.health,
                      family = "binomial")
childneur.alcy <- glm.nb(Alcohol_Days ~ ChildNeur + gender + Q6_age_c,
                         data = ori.health)
childneur.alck <- glm.nb(Alcohol_Drinks ~ ChildNeur + gender + Q6_age_c,
                         data = ori.health)
childneur.alcb <- glm.nb(Alcohol_Binge ~ ChildNeur + gender + Q6_age_c,
                         data = ori.health)
```

```
neur.exst <- glm.nb(Exercise_Stren ~ Neur_c + gender + Q7_age_c,
                    data = ori.health)
neur.exmr <- lm(Exercise_Moder ~ Neur_c + gender + Q7_age_c,
                data = ori.health)
```

	Dependent variable:					
	Cigarettes_Ever	Cigarettes	Alcohol_Ever	Alcohol_Days	Alcohol_Drinks	Alcohol_Binge
	logistic	*negative binomial*	*logistic*	*negative binomial*	*negative binomial*	*negative binomial*
	(1)	(2)	(3)	(4)	(5)	(6)
Neur_c	0.250	0.610*	0.449*	−0.020	0.091	0.530*
	(−0.048, 0.548)	(0.060, 1.160)	(0.011, 0.886)	(−0.219, 0.178)	(−0.093, 0.274)	(0.050, 1.009)
gender	0.083	0.099	0.176	0.112*	0.314*	0.733*
	(−0.080, 0.246)	(−0.205, 0.402)	(−0.064, 0.416)	(0.003, 0.220)	(0.213, 0.414)	(0.469, 0.996)
Q6_age_c	0.049	−0.108	0.212	0.027	−0.035	−0.134
	(−0.113, 0.212)	(−0.412, 0.196)	(−0.021, 0.445)	(−0.082, 0.135)	(−0.135, 0.066)	(−0.398, 0.130)
Constant	−0.048	−1.306*	1.791*	0.564*	0.225*	−0.807*
	(−0.210, 0.115)	(−1.609, −1.003)	(1.547, 2.036)	(0.456, 0.673)	(0.125, 0.325)	(−1.070, −0.544)
Observations	588	588	558	583	583	584
Log Likelihood	−405.419	−338.398	−231.913	−1,049.806	−895.211	−461.597
θ		0.099* (0.019)		0.836* (0.093)	1.435* (0.216)	0.131* (0.020)
Akaike Inf. Crit.	818.838	684.797	471.826	2,107.611	1,798.422	931.194
Note:						* $p < .05$

Table 9: Main effect of neuroticism predicting unhealthy behaviors

	Dependent variable:					
	Cigarettes_Ever	Cigarettes	Alcohol_Ever	Alcohol_Days	Alcohol_Drinks	Alcohol_Binge
	logistic	*negative binomial*	*logistic*	*negative binomial*	*negative binomial*	*negative binomial*
	(1)	(2)	(3)	(4)	(5)	(6)
ChildNeur	0.071	0.037	−0.104	−0.013	0.005	0.067
	(−0.078, 0.221)	(−0.223, 0.298)	(−0.313, 0.106)	(−0.115, 0.089)	(−0.090, 0.100)	(−0.173, 0.306)
gender	0.131	0.295*	0.142	0.123*	0.324*	0.688*
	(−0.021, 0.282)	(0.031, 0.559)	(−0.079, 0.362)	(0.020, 0.226)	(0.228, 0.421)	(0.445, 0.932)
Q6_age_c	0.035	−0.122	0.241*	0.028	−0.039	−0.126
	(−0.115, 0.185)	(−0.385, 0.142)	(0.024, 0.458)	(−0.075, 0.131)	(−0.135, 0.057)	(−0.368, 0.116)
Constant	−0.093	−1.138*	1.758*	0.544*	0.208*	−0.735*
	(−0.243, 0.058)	(−1.400, −0.876)	(1.537, 1.980)	(0.442, 0.646)	(0.112, 0.304)	(−0.977, −0.493)
Observations	688	689	651	685	683	685
Log Likelihood	−474.236	−440.145	−273.535	−1,222.630	−1,047.177	−559.561
θ		0.110* (0.018)		0.782* (0.080)	1.257* (0.166)	0.127* (0.017)
Akaike Inf. Crit.	956.471	888.290	555.070	2,453.260	2,102.354	1,127.121
Note:						* $p < .05$

Table 10: Main effect of childhood neuroticism predicting unhealthy behaviors

```
neur.exml <- lm(Exercise_Mild ~ Neur_c + gender + Q7_age_c,
                data = ori.health)
neur.floss <- lm(Flossing ~ Neur_c + gender + Q7_age_c,
                 data = ori.health)
```

	Dependent variable:			
	Exercise_Stren	Exercise_Moder	Exercise_Mild	Flossing
	negative binomial	*OLS*	*OLS*	*OLS*
	(1)	(2)	(3)	(4)
Neur_c	−0.107	−0.094	−0.100	0.108
	(−0.215, 0.001)	(−0.240, 0.052)	(−0.247, 0.046)	(−0.034, 0.251)
gender	0.077*	0.011	−0.026	0.135*
	(0.020, 0.135)	(−0.068, 0.091)	(−0.105, 0.053)	(0.057, 0.212)
Q7_age_c	−0.002	−0.010	0.047	−0.092*
	(−0.060, 0.056)	(−0.090, 0.069)	(−0.032, 0.126)	(−0.170, −0.014)
Constant	0.652*	−0.009	−0.038	−0.016
	(0.595, 0.710)	(−0.088, 0.070)	(−0.117, 0.041)	(−0.093, 0.061)
Observations	602	598	604	605
R^2		0.003	0.006	0.030
Adjusted R^2		−0.002	0.001	0.025
Log Likelihood	−917.538			
θ	46,187.200 (273,761.500)			
Akaike Inf. Crit.	1,843.077			
Residual Std. Error		0.987 (df = 594)	0.985 (df = 600)	0.966 (df = 601)
F Statistic		0.583 (df = 3; 594)	1.196 (df = 3; 600)	6.152* (df = 3; 601)
Note:				* $p < .05$

Table 11: Main effect of neuroticism predicting healthy behaviors

```
childneur.exst <- glm.nb(Exercise_Stren ~ ChildNeur + gender + Q7_age_c,
                         data = ori.health)
childneur.exmr <- lm(Exercise_Moder ~ ChildNeur + gender + Q7_age_c,
                     data = ori.health)
childneur.exml <- lm(Exercise_Mild ~ ChildNeur + gender + Q7_age_c,
                     data = ori.health)
childneur.floss <- lm(Flossing ~ ChildNeur + gender + Q7_age_c,
                      data = ori.health)
```

3.4 Regression estimates - Clinic outcomes

```
neur.blsg <- lm(BloodSugar ~ Neur_c + gender + clinic1_age_c,
                data = ori.health)
neur.ratio <- lm(ChoHDLratio ~ Neur_c + gender + clinic1_age_c,
                 data = ori.health)
neur.bp <- lm(SysBP ~ Neur_c + gender + clinic1_age_c,
              data = ori.health)
neur.wh <- lm(WaistHip ~ Neur_c + gender + clinic1_age_c,
              data = ori.health)
```

```
childneur.blsg <- lm(BloodSugar ~ ChildNeur + gender + clinic1_age_c,
                     data = ori.health)
childneur.ratio <- lm(ChoHDLratio ~ ChildNeur + gender + clinic1_age_c,
                      data = ori.health)
childneur.bp <- lm(SysBP ~ ChildNeur + gender + clinic1_age_c, data = ori.health)
childneur.wh <- lm(WaistHip ~ ChildNeur + gender + clinic1_age_c, data = ori.health)
```

	Dependent variable:			
	Exercise_Stren	Exercise_Moder	Exercise_Mild	Flossing
	negative binomial	*OLS*	*OLS*	*OLS*
	(1)	(2)	(3)	(4)
ChildNeur	−0.011	−0.026	0.003	−0.025
	(−0.062, 0.040)	(−0.098, 0.047)	(−0.070, 0.075)	(−0.096, 0.046)
gender	0.080*	0.009	0.024	0.149*
	(0.028, 0.131)	(−0.065, 0.082)	(−0.049, 0.097)	(0.077, 0.221)
Q7_age_c	−0.014	0.006	0.060	−0.076*
	(−0.066, 0.038)	(−0.068, 0.079)	(−0.013, 0.133)	(−0.148, −0.004)
Constant	0.686*	−0.002	0.001	0.004
	(0.635, 0.738)	(−0.075, 0.070)	(−0.071, 0.073)	(−0.067, 0.075)
Observations	736	730	737	739
R^2		0.001	0.004	0.028
Adjusted R^2		−0.003	0.0002	0.024
Log Likelihood	−1,147.031			
θ	42,980.290 (234,570.400)			
Akaike Inf. Crit.	2,302.062			
Residual Std. Error		1.000 (df = 726)	0.997 (df = 733)	0.985 (df = 735)
F Statistic		0.209 (df = 3; 726)	1.049 (df = 3; 733)	7.140* (df = 3; 735)
Note:				* $p < .05$

Table 12: Main effect of childhood neuroticism predicting healthy behaviors

	Dependent variable:			
	BloodSugar	ChoHDLratio	SysBP	WaistHip
	(1)	(2)	(3)	(4)
Neur_c	0.135	0.023	0.020	0.170*
	(−0.001, 0.272)	(−0.129, 0.174)	(−0.118, 0.158)	(0.057, 0.284)
gender	0.144*	0.275*	0.156*	0.686*
	(0.069, 0.218)	(0.192, 0.358)	(0.081, 0.231)	(0.624, 0.747)
clinic1_age_c	0.031	0.035	−0.007	0.117*
	(−0.048, 0.110)	(−0.053, 0.123)	(−0.087, 0.073)	(0.051, 0.182)
Constant	−0.023	0.001	−0.048	0.020
	(−0.098, 0.052)	(−0.083, 0.084)	(−0.123, 0.027)	(−0.041, 0.082)
Observations	562	561	593	591
R^2	0.032	0.072	0.027	0.461
Adjusted R^2	0.027	0.067	0.023	0.459
Residual Std. Error	0.903 (df = 558)	1.002 (df = 557)	0.929 (df = 589)	0.760 (df = 587)
F Statistic	6.138* (df = 3; 558)	14.318* (df = 3; 557)	5.548* (df = 3; 589)	167.582* (df = 3; 587)
Note:				* $p < .05$

Table 13: Main effect of neuroticism predicting clinic measures

	Dependent variable:			
	BloodSugar	ChoHDLratio	SysBP	WaistHip
	(1)	(2)	(3)	(4)
ChildNeur	−0.021	−0.014	0.049	0.009
	(−0.095, 0.052)	(−0.085, 0.056)	(−0.021, 0.118)	(−0.044, 0.061)
gender	0.123*	0.274*	0.143*	0.663*
	(0.051, 0.195)	(0.205, 0.344)	(0.074, 0.212)	(0.611, 0.715)
clinic1_age_c	0.048	−0.007	0.026	0.105*
	(−0.024, 0.121)	(−0.078, 0.063)	(−0.043, 0.094)	(0.053, 0.157)
Constant	0.006	−0.004	0.008	0.018
	(−0.065, 0.078)	(−0.073, 0.066)	(−0.061, 0.076)	(−0.034, 0.070)
Observations	750	747	802	799
R^2	0.018	0.076	0.022	0.449
Adjusted R^2	0.014	0.072	0.018	0.447
Residual Std. Error	1.002 (df = 746)	0.968 (df = 743)	0.989 (df = 798)	0.746 (df = 795)
F Statistic	4.630* (df = 3; 746)	20.231* (df = 3; 743)	6.013* (df = 3; 798)	216.056* (df = 3; 795)
Note:				* $p < .05$

Table 14: Main effect of childhood neuroticism predicting clinic measures

4 Analyses: Neuroticism by conscientiousness

4.1 Regression estimates - SRH and Outcomes

```
con.srh <- lm(SelfRatedHealth ~ Neur_c*Con_c + gender + Q6_age_c, data = ori.health)
con.heart <- glm(HeartCondition ~ Neur_c*Con_c + gender + Q6_age_c, data = ori.health,
                 family = "binomial")
con.cond <- glm(NumberChronic ~ Neur_c*Con_c + gender + Q6_age_c, data = ori.health,
                family = "poisson")
```

4.2 Regression estimates - Behavior

```
con.cige <- glm(Cigarettes_Ever ~ Neur_c*Con_c + gender + Q6_age_c,
                data = ori.health, family = "binomial")
con.cig <- glm.nb(Cigarettes ~ Neur_c*Con_c + gender + Q6_age_c,
                  data = ori.health)
con.alce <- glm(Alcohol_Ever ~ Neur_c*Con_c + gender + Q6_age_c,
                data = ori.health, family = "binomial")
con.alcy <- glm.nb(Alcohol_Days ~ Neur_c*Con_c + gender + Q6_age_c,
                   data = ori.health)
con.alck <- glm.nb(Alcohol_Drinks ~ Neur_c*Con_c + gender + Q6_age_c,
                   data = ori.health)
con.alcb <- glm.nb(Alcohol_Binge ~ Neur_c*Con_c + gender + Q6_age_c,
                   data = ori.health)
```

Here we plot the significant interaction predict binge drinking. We use the sjPlot package Ldecke (2017).

```
pdf("plots/int_con_alcb.pdf")
sjp.int(con.alcb, type="eff", mdrt.values = "meansd", swap.pred = T,
        axis.title = "Neuroticism", legend.title = "Conscientiousness",
        legend.labels = c("-1SD", "Mean", "+1SD"), show.ci = T,
        title="Interaction of adult conscientiousness and neuroticism on binge drinking")
dev.off()
```

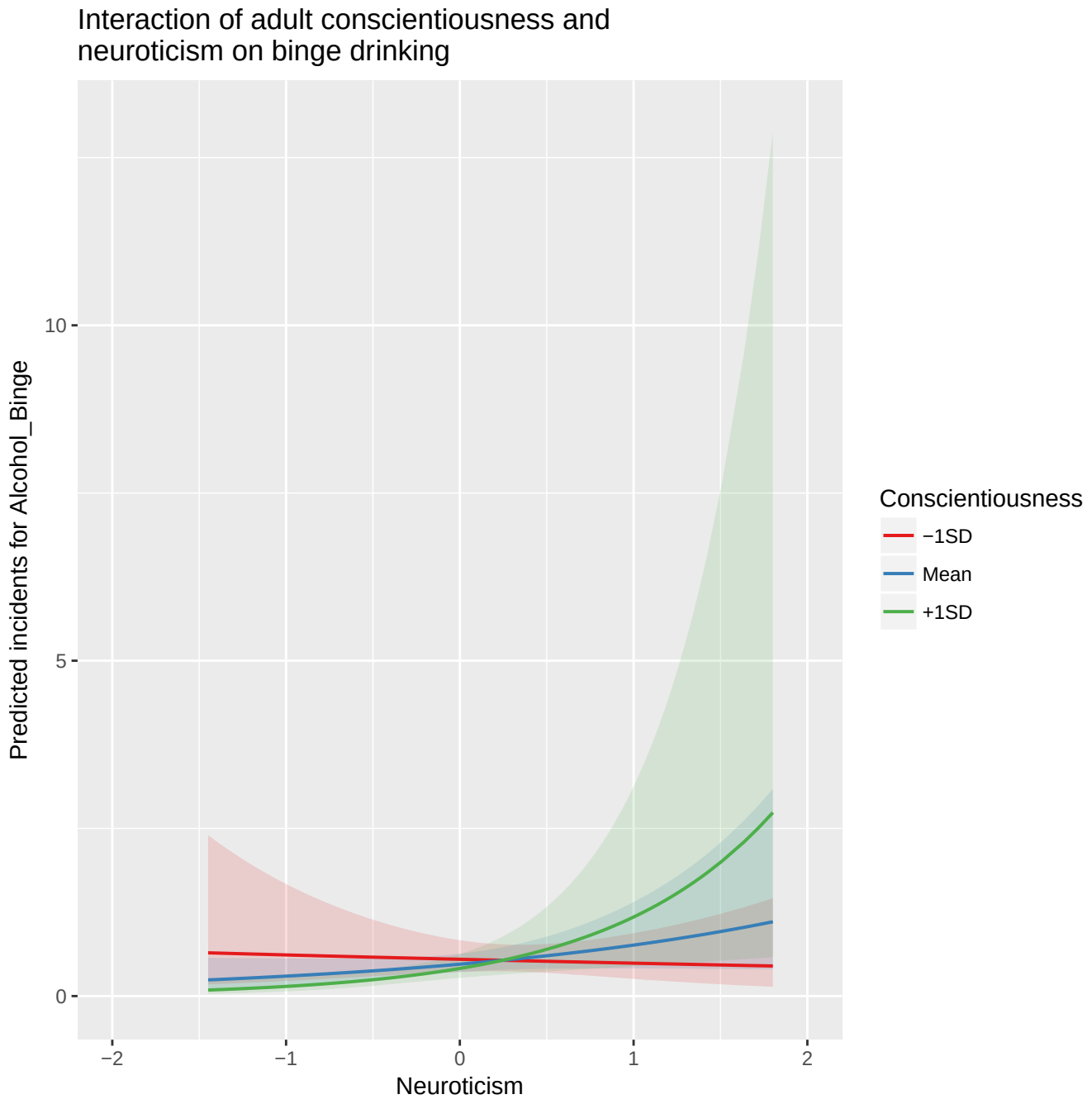
	Dependent variable:		
	SelfRatedHealth	HeartCondition	NumberChronic
	OLS	*logistic*	*Poisson*
	(1)	(2)	(3)
Neur_c	−0.541*	0.227	0.227*
	(−0.698, −0.384)	(−0.301, 0.755)	(0.027, 0.428)
Con_c	0.131	0.081	−0.045
	(−0.057, 0.319)	(−0.557, 0.719)	(−0.294, 0.203)
gender	−0.052	0.230	−0.093
	(−0.127, 0.023)	(−0.025, 0.485)	(−0.193, 0.008)
Q6_age_c	−0.004	0.133	0.029
	(−0.078, 0.070)	(−0.123, 0.388)	(−0.069, 0.128)
Neur_c:Con_c	0.106	0.797	−0.017
	(−0.170, 0.383)	(−0.286, 1.881)	(−0.376, 0.342)
Constant	0.049	−1.929*	−0.403*
	(−0.033, 0.131)	(−2.201, −1.657)	(−0.513, −0.294)
Observations	587	584	590
R^2	0.118		
Adjusted R^2	0.111		
Log Likelihood		−210.304	−659.082
Akaike Inf. Crit.		432.609	1,330.165
Residual Std. Error	0.912 (df = 581)		
F Statistic	15.571* (df = 5; 581)		
Note:			* $p < .05$

Table 15: Interaction of conscientiousness and neuroticism predicting self-rated health and outcomes

	Dependent variable:					
	Cigarettes_Ever	Cigarettes	Alcohol_Ever	Alcohol_Days	Alcohol_Drinks	Alcohol_Binge
	logistic	*negative binomial*	*logistic*	*negative binomial*	*negative binomial*	*negative binomial*
	(1)	(2)	(3)	(4)	(5)	(6)
Neur_c	0.171	0.571	0.434	−0.047	0.087	0.444
	(−0.175, 0.517)	(−0.063, 1.205)	(−0.084, 0.952)	(−0.278, 0.184)	(−0.126, 0.300)	(−0.108, 0.996)
Con_c	−0.183	−0.058	0.048	−0.060	−0.013	−0.311
	(−0.598, 0.231)	(−0.824, 0.709)	(−0.560, 0.657)	(−0.335, 0.215)	(−0.267, 0.242)	(−0.973, 0.351)
gender	0.074	0.096	0.173	0.107	0.314*	0.686*
	(−0.091, 0.238)	(−0.210, 0.402)	(−0.069, 0.416)	(−0.002, 0.217)	(0.213, 0.415)	(0.422, 0.950)
Q6_age_c	0.045	−0.113	0.210	0.024	−0.034	−0.184
	(−0.118, 0.208)	(−0.417, 0.192)	(−0.024, 0.444)	(−0.084, 0.133)	(−0.135, 0.066)	(−0.448, 0.080)
Neur_c:Con_c	0.040	0.197	0.416	0.047	−0.049	1.264*
	(−0.572, 0.652)	(−0.956, 1.351)	(−0.418, 1.249)	(−0.358, 0.452)	(−0.424, 0.326)	(0.181, 2.347)
Constant	−0.040	−1.282*	1.846*	0.571*	0.219*	−0.690*
	(−0.219, 0.140)	(−1.614, −0.949)	(1.574, 2.117)	(0.452, 0.690)	(0.108, 0.330)	(−0.972, −0.407)
Observations	588	588	558	583	583	584
Log Likelihood	−405.038	−338.350	−231.450	−1,049.692	−895.175	−459.445
θ		0.099* (0.019)		0.837* (0.094)	1.435* (0.216)	0.135* (0.020)
Akaike Inf. Crit.	822.076	688.701	474.901	2,111.383	1,802.350	930.891
Note:						* $p < .05$

Table 16: Interaction of conscientiousness and neuroticism predicting unhealthy behaviors

```
## pdf
##   2
```




```
con.exst <- glm.nb(Exercise_Stren ~ Neur_c*Con_c + gender + Q7_age_c,
                   data = ori.health)
con.exmr <- lm(Exercise_Moder ~ Neur_c*Con_c + gender + Q7_age_c,
               data = ori.health)
con.exml <- lm(Exercise_Mild ~ Neur_c*Con_c + gender + Q7_age_c,
               data = ori.health)
con.floss <- lm(Flossing ~ Neur_c*Con_c + gender + Q7_age_c,
                data = ori.health)
```

	Dependent variable:			
	Exercise_Stren	Exercise_Moder	Exercise_Mild	Flossing
	negative binomial	*OLS*	*OLS*	*OLS*
	(1)	(2)	(3)	(4)
Neur_c	−0.053	−0.091	−0.013	0.053
	(−0.181, 0.075)	(−0.265, 0.083)	(−0.187, 0.161)	(−0.117, 0.222)
Con_c	0.115	0.002	0.187	−0.114
	(−0.036, 0.265)	(−0.204, 0.208)	(−0.018, 0.391)	(−0.314, 0.086)
gender	0.084*	0.010	−0.017	0.131*
	(0.026, 0.142)	(−0.070, 0.090)	(−0.097, 0.062)	(0.053, 0.209)
Q7_age_c	0.001	−0.011	0.052	−0.095*
	(−0.057, 0.059)	(−0.091, 0.069)	(−0.028, 0.131)	(−0.172, −0.017)
Neur_c:Con_c	−0.039	0.120	0.077	−0.155
	(−0.239, 0.160)	(−0.153, 0.394)	(−0.199, 0.352)	(−0.423, 0.112)
Constant	0.647*	0.007	−0.027	−0.037
	(0.583, 0.711)	(−0.080, 0.095)	(−0.113, 0.060)	(−0.122, 0.048)
Observations	602	598	604	605
R^2		0.004	0.012	0.034
Adjusted R^2		−0.004	0.003	0.026
Log Likelihood	−916.313			
θ	46,749.410 (277,100.300)			
Akaike Inf. Crit.	1,844.626			
Residual Std. Error		0.988 (df = 592)	0.984 (df = 598)	0.966 (df = 599)
F Statistic		0.498 (df = 5; 592)	1.416 (df = 5; 598)	4.202* (df = 5; 599)
Note:				* $p < .05$

Table 17: Interaction of conscientiousness and neuroticism predicting healthy behaviors

4.3 Regression estimates - Clinic outcomes

```
con.blsg <- lm(BloodSugar ~ Neur_c*Con_c + gender + clinic1_age_c,
               data = ori.health)
con.ratio <- lm(ChoHDLratio ~ Neur_c*Con_c + gender + clinic1_age_c,
                data = ori.health)
con.bp <- lm(SysBP ~ Neur_c*Con_c + gender + clinic1_age_c,
             data = ori.health)
con.wh <- lm(WaistHip ~ Neur_c*Con_c + gender + clinic1_age_c,
             data = ori.health)
```

	Dependent variable:			
	BloodSugar	ChoHDLratio	SysBP	WaistHip
	(1)	(2)	(3)	(4)
Neur_c	0.082	−0.004	0.098	0.148*
	(−0.080, 0.243)	(−0.184, 0.175)	(−0.064, 0.259)	(0.015, 0.281)
Con_c	−0.121	−0.064	0.165	−0.051
	(−0.317, 0.074)	(−0.281, 0.153)	(−0.028, 0.358)	(−0.210, 0.107)
gender	0.140*	0.272*	0.159*	0.684*
	(0.065, 0.215)	(0.189, 0.356)	(0.084, 0.234)	(0.622, 0.746)
clinic1_age_c	0.029	0.034	−0.006	0.116*
	(−0.050, 0.108)	(−0.054, 0.122)	(−0.085, 0.074)	(0.050, 0.182)
Neur_c:Con_c	−0.039	0.086	0.242	0.014
	(−0.319, 0.241)	(−0.225, 0.398)	(−0.035, 0.518)	(−0.214, 0.243)
Constant	−0.030	0.011	−0.014	0.021
	(−0.113, 0.054)	(−0.082, 0.104)	(−0.097, 0.069)	(−0.047, 0.090)
Observations	562	561	593	591
R^2	0.035	0.073	0.037	0.462
Adjusted R^2	0.026	0.064	0.029	0.457
Residual Std. Error	0.903 (df = 556)	1.003 (df = 555)	0.926 (df = 587)	0.761 (df = 585)
F Statistic	4.001* (df = 5; 556)	8.687* (df = 5; 555)	4.556* (df = 5; 587)	100.359* (df = 5; 585)
Note:				* $p < .05$

Table 18: Interaction of conscientiousness and neuroticism predicting clinic measures

5 Analyses: Childhood neuroticism by childhood conscientiousness

5.1 Regression estimates - SRH and Outcomes

```
set.seed(1959)
childcon.srh <- lm(SelfRatedHealth ~ ChildNeur*ChildCon + gender + Q6_age_c,
                   data = ori.health)
childcon.heart <- glm(HeartCondition ~ ChildNeur*ChildCon + gender + Q6_age_c,
                      data = ori.health,
                      family = "binomial")
childcon.cond <- glm(NumberChronic ~ ChildNeur*ChildCon + gender + Q6_age_c,
                     data = ori.health,
                     family = "poisson")
```

	Dependent variable:		
	SelfRatedHealth	HeartCondition	NumberChronic
	OLS	*logistic*	*Poisson*
	(1)	(2)	(3)
ChildNeur	−0.083*	−0.014	0.073
	(−0.156, −0.009)	(−0.243, 0.216)	(−0.017, 0.163)
ChildCon	0.035	0.051	−0.066
	(−0.043, 0.113)	(−0.191, 0.293)	(−0.162, 0.029)
gender	−0.041	0.244*	−0.087
	(−0.118, 0.036)	(0.006, 0.483)	(−0.183, 0.009)
Q6_age_c	−0.004	0.239*	0.071
	(−0.078, 0.069)	(0.007, 0.472)	(−0.020, 0.162)
ChildNeur:ChildCon	−0.006	0.101	0.025
	(−0.077, 0.065)	(−0.112, 0.313)	(−0.061, 0.111)
Constant	0.023	−1.969*	−0.398*
	(−0.051, 0.097)	(−2.203, −1.734)	(−0.490, −0.307)
Observations	687	684	691
R^2	0.010		
Adjusted R^2	0.003		
Log Likelihood		−255.892	−773.183
Akaike Inf. Crit.		523.784	1,558.365
Residual Std. Error	0.983 (df = 681)		
F Statistic	1.393 (df = 5; 681)		
Note:			* $p < .05$

Table 19: Interaction of childhood conscientiousness and neuroticism predicting self-rated health and outcomes

5.2 Regression estimates - Behavior

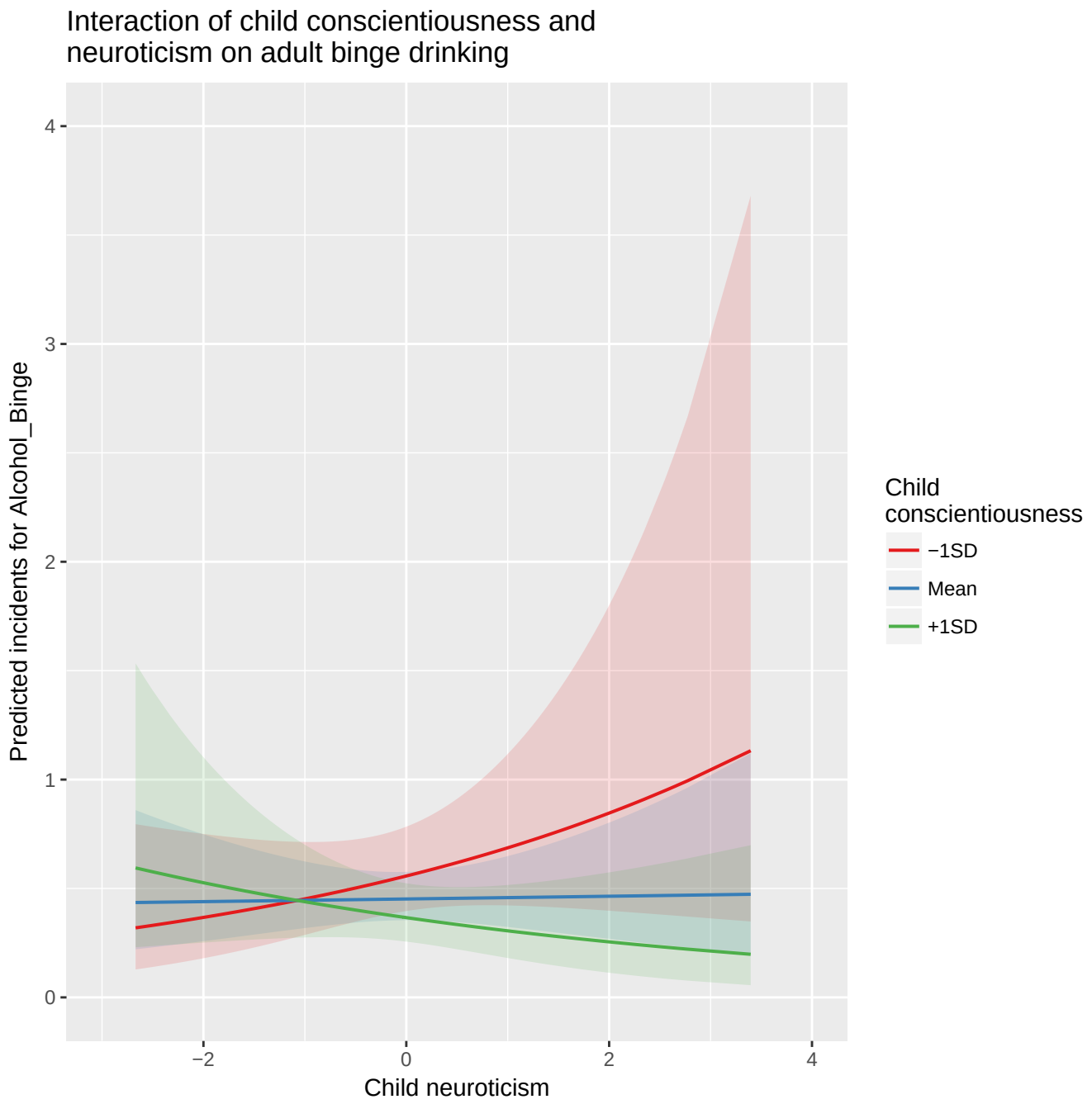
```
childcon.cige <- glm(Cigarettes_Ever ~ ChildNeur*ChildCon + gender + Q6_age_c,
                     data = ori.health,
                     family = "binomial")
childcon.cig <- glm.nb(Cigarettes ~ ChildNeur*ChildCon + gender + Q6_age_c,
                       data = ori.health)
childcon.alce <- glm(Alcohol_Ever ~ ChildNeur*ChildCon + gender + Q6_age_c,
                     data = ori.health,
                     family = "binomial")
childcon.alcy <- glm.nb(Alcohol_Days ~ ChildNeur*ChildCon + gender + Q6_age_c,
                        data = ori.health)
childcon.alck <- glm.nb(Alcohol_Drinks ~ ChildNeur*ChildCon + gender + Q6_age_c,
                        data = ori.health)
childcon.alcb <- glm.nb(Alcohol_Binge ~ ChildNeur*ChildCon + gender + Q6_age_c,
                        data = ori.health)
```

	Dependent variable:					
	Cigarettes_Ever	Cigarettes	Alcohol_Ever	Alcohol_Days	Alcohol_Drinks	Alcohol_Binge
	logistic	*negative binomial*	*logistic*	*negative binomial*	*negative binomial*	*negative binomial*
	(1)	(2)	(3)	(4)	(5)	(6)
ChildNeur	0.078	0.027	−0.091	−0.007	0.008	0.024
	(−0.074, 0.230)	(−0.233, 0.287)	(−0.301, 0.119)	(−0.110, 0.095)	(−0.088, 0.103)	(−0.217, 0.264)
ChildCon	−0.323*	−0.184	0.055	−0.017	−0.041	−0.214
	(−0.489, −0.157)	(−0.461, 0.092)	(−0.173, 0.284)	(−0.126, 0.092)	(−0.143, 0.060)	(−0.470, 0.041)
gender	0.052	0.242	0.167	0.123*	0.320*	0.667*
	(−0.107, 0.210)	(−0.029, 0.514)	(−0.063, 0.397)	(0.016, 0.229)	(0.220, 0.420)	(0.418, 0.916)
Q6_age_c	0.030	−0.116	0.244*	0.028	−0.040	−0.112
	(−0.122, 0.182)	(−0.378, 0.146)	(0.027, 0.462)	(−0.075, 0.130)	(−0.136, 0.056)	(−0.352, 0.129)
ChildNeur:ChildCon	−0.024	−0.044	−0.144	−0.061	−0.077	−0.199
	(−0.172, 0.124)	(−0.296, 0.207)	(−0.336, 0.049)	(−0.160, 0.039)	(−0.170, 0.016)	(−0.436, 0.038)
Constant	−0.079	−1.147*	1.772*	0.545*	0.210*	−0.756*
	(−0.231, 0.073)	(−1.408, −0.886)	(1.548, 1.996)	(0.443, 0.648)	(0.114, 0.306)	(−0.997, −0.515)
Observations	688	689	651	685	683	685
Log Likelihood	−466.715	−439.143	−272.363	−1,221.847	−1,045.634	−557.042
θ		0.113* (0.018)		0.787* (0.081)	1.272* (0.169)	0.131* (0.018)
Akaike Inf. Crit.	945.431	890.287	556.726	2,455.695	2,103.267	1,126.084
Note:						* $p < .05$

Table 20: Interaction of childhood conscientiousness and neuroticism predicting unhealthy behaviors

```
pdf("plots/int_childcon_alcb.pdf")
sjp.int(childcon.alcb, type="eff", mdrt.values = "meansd",
        swap.pred = T,  legend.labels = c("-1SD", "Mean", "+1SD"), show.ci = T,
        axis.title = "Child neuroticism", legend.title = "Child conscientiousness",
        title = "Interaction of child conscientiousness and neuroticism on adult binge drinking")
dev.off()

## pdf
##   2
```




```
childcon.exst <- glm.nb(Exercise_Stren ~ ChildNeur*ChildCon + gender + Q7_age_c,
                        data = ori.health)
childcon.exmr <- lm(Exercise_Moder ~ ChildNeur*ChildCon + gender + Q7_age_c,
                    data = ori.health)
childcon.exml <- lm(Exercise_Mild ~ ChildNeur*ChildCon + gender + Q7_age_c,
                    data = ori.health)
childcon.floss <- lm(Flossing ~ ChildNeur*ChildCon + gender + Q7_age_c,
                     data = ori.health)
```

5.3 Regression estimates - Clinic outcomes

	Dependent variable:			
	Exercise_Stren	Exercise_Moder	Exercise_Mild	Flossing
	negative binomial	*OLS*	*OLS*	*OLS*
	(1)	(2)	(3)	(4)
ChildNeur	−0.012	−0.027	0.001	−0.024
	(−0.063, 0.039)	(−0.100, 0.045)	(−0.071, 0.074)	(−0.096, 0.047)
ChildCon	−0.017	−0.052	−0.056	−0.046
	(−0.070, 0.036)	(−0.127, 0.024)	(−0.131, 0.019)	(−0.120, 0.028)
gender	0.074*	−0.005	0.009	0.137*
	(0.020, 0.128)	(−0.081, 0.071)	(−0.067, 0.084)	(0.063, 0.212)
Q7_age_c	−0.015	0.003	0.057	−0.078*
	(−0.067, 0.037)	(−0.071, 0.076)	(−0.016, 0.130)	(−0.151, −0.006)
ChildNeur:ChildCon	0.020	0.006	−0.006	−0.021
	(−0.026, 0.066)	(−0.060, 0.072)	(−0.072, 0.060)	(−0.087, 0.044)
Constant	0.686*	−0.002	0.002	0.005
	(0.635, 0.737)	(−0.075, 0.071)	(−0.070, 0.074)	(−0.066, 0.076)
Observations	736	730	737	739
R^2		0.004	0.007	0.031
Adjusted R^2		−0.003	0.0004	0.024
Log Likelihood	−1,146.372			
θ	43,245.880 (236,023.700)			
Akaike Inf. Crit.	2,304.745			
Residual Std. Error		1.000 (df = 724)	0.997 (df = 731)	0.986 (df = 733)
F Statistic		0.514 (df = 5; 724)	1.063 (df = 5; 731)	4.622* (df = 5; 733)
Note:				* $p < .05$

Table 21: Interaction of childhood conscientiousness and childconoticism predicting healthy behaviors

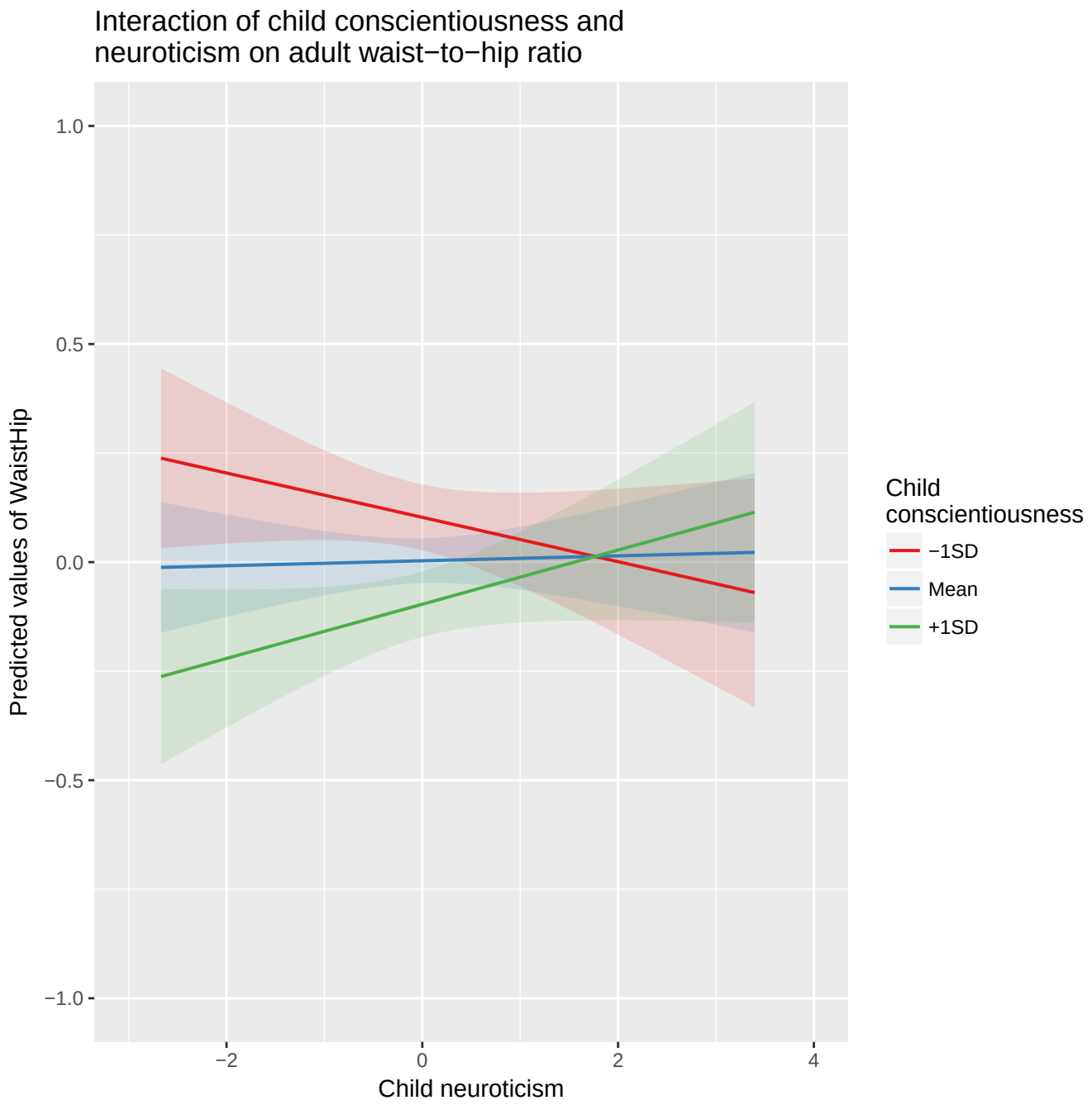
```
childcon.blsg <- lm(BloodSugar ~ ChildNeur*ChildCon + gender + clinic1_age_c,
                    data = ori.health)
childcon.ratio <- lm(ChoHDLratio ~ ChildNeur*ChildCon + gender + clinic1_age_c,
                     data = ori.health)
childcon.bp <- lm(SysBP ~ ChildNeur*ChildCon + gender + clinic1_age_c,
                  data = ori.health)
childcon.wh <- lm(WaistHip ~ ChildNeur*ChildCon + gender + clinic1_age_c,
                  data = ori.health)
```

	Dependent variable:			
	BloodSugar	ChoHDLratio	SysBP	WaistHip
	(1)	(2)	(3)	(4)
ChildNeur	−0.023	−0.017	0.049	0.005
	(−0.096, 0.050)	(−0.087, 0.054)	(−0.021, 0.119)	(−0.047, 0.057)
ChildCon	−0.084*	−0.109*	−0.031	−0.099*
	(−0.160, −0.008)	(−0.183, −0.036)	(−0.104, 0.042)	(−0.153, −0.044)
gender	0.094*	0.237*	0.133*	0.628*
	(0.018, 0.171)	(0.164, 0.311)	(0.059, 0.206)	(0.573, 0.682)
clinic1_age_c	0.043	−0.014	0.024	0.098*
	(−0.030, 0.116)	(−0.084, 0.056)	(−0.045, 0.093)	(0.047, 0.150)
ChildNeur:ChildCon	0.004	0.022	−0.009	0.056*
	(−0.066, 0.073)	(−0.045, 0.089)	(−0.075, 0.056)	(0.007, 0.105)
Constant	0.007	−0.003	0.008	0.017
	(−0.065, 0.079)	(−0.072, 0.066)	(−0.060, 0.077)	(−0.035, 0.068)
Observations	750	747	802	799
R^2	0.025	0.087	0.023	0.462
Adjusted R^2	0.018	0.081	0.017	0.459
Residual Std. Error	1.000 (df = 744)	0.963 (df = 741)	0.990 (df = 796)	0.738 (df = 793)
F Statistic	3.738* (df = 5; 744)	14.107* (df = 5; 741)	3.749* (df = 5; 796)	136.262* (df = 5; 793)
Note:				* $p < .05$

Table 22: Interaction of childhood conscientiousness and neuroticism predicting clinic measures

```
pdf("plots/int_childcon_wh.pdf")
sjp.int(childcon.wh, type="eff", mdrt.values = "meansd", swap.pred = T,
        legend.labels = c("-1SD", "Mean", "+1SD"), show.ci = T,
        axis.title = "Child neuroticism", legend.title = "Child conscientiousness",
        title = "Interaction of child conscientiousness and neuroticism on adult waist-to-hip ratio")
dev.off()

## pdf
##   2
```



6 Analyses: Facets of neuroticism

6.1 Regression estimates - SRH and Outcomes

```
facets.srh <- 'SelfRatedHealth ~ g.Neur + Anxiety + Anger +
               Depression + SelfConsciousness + Immoderation +
               Vulnerability + gender + Q6_age_c'

facets.srh <- paste(facet.model, facets.srh, sep="\n")
```

```
facets.srh <- cfa(facets.srh, ori.health)

facets.heart <- 'HeartCondition ~ g.Neur + Anxiety +
                 Anger + Depression + SelfConsciousness +
                 Immoderation + Vulnerability + gender + Q6_age_c'

facets.heart <- paste(facet.model, facets.heart, sep="\n")
facets.heart <- cfa(facets.heart, ori.health)

facets.cond <- 'NumberChronic ~ g.Neur + Anxiety + Anger +
                Depression + SelfConsciousness + Immoderation +
                Vulnerability + gender + Q6_age_c '

facets.cond <- paste(facet.model, facets.cond, sep="\n")
facets.cond <- cfa(facets.cond, ori.health)
```

```
semTable(object = facets.srh, file="tables/facetsSRH.tex", longtable = T)
semTable(facets.heart, file="tables/facetsHeart.tex",  longtable = T)
semTable(facets.cond, file="tables/facetsCond.tex",  longtable = T)
```

Predictor	Self Rated Health	Heart Condition	Number Chronic
g.Neur	-0.55∗	-0.01	0.1
	(-0.72, -0.38)	(-0.06, 0.05)	(-0.05, 0.24)
Anxiety	-0.58	0.02	0.3
	(-1.92, 0.77)	(-0.28, 0.32)	(-0.52, 1.12)
Anger	0.01	0	0.02
	(-0.25, 0.27)	(-0.07, 0.06)	(-0.16, 0.2)
Depression	0.7	0.1	-0.16
	(-0.46, 1.86)	(-0.13, 0.33)	(-0.78, 0.46)
SelfConsciousness	-0.25	0.05	0.16
	(-0.57, 0.07)	(-0.03, 0.14)	(-0.09, 0.4)
Immoderation	-0.68∗	0.02	0.48∗
	(-1.17, -0.2)	(-0.09, 0.12)	(0.15, 0.8)
Vulnerability	4.63	0.64	-1.52
	(-4.93, 14.19)	(-1.64, 2.92)	(-7.05, 4.02)

Table 23: Regression estimates from structural equation models predicting self-rated health and outcomes from bifactor model

6.2 Regression estimates - Behavior

```
facets.cige <- 'Cigarettes_Ever ~ g.Neur + Anxiety +
                Anger + Depression + SelfConsciousness +
                Immoderation + Vulnerability + gender + Q6_age_c
'

facets.cige <- paste(facet.model, facets.cige, sep="\n")
facets.cige <- cfa(facets.cige, ori.health)

facets.cig <- 'Cigarettes ~ g.Neur + Anxiety + Anger +
               Depression + SelfConsciousness + Immoderation +
               Vulnerability + gender + Q6_age_c
'

facets.cig <- paste(facet.model, facets.cig, sep="\n")
facets.cig <- cfa(facets.cig, ori.health)

facets.alce <- 'Alcohol_Ever ~ g.Neur + Anxiety + Anger +
                Depression + SelfConsciousness + Immoderation +
                Vulnerability + gender + Q6_age_c
'

facets.alce <- paste(facet.model, facets.alce, sep="\n")
facets.alce <- cfa(facets.alce, ori.health, ordered = "Alcohol_Ever")
```

```
facets.alcy <- 'Alcohol_Days ~ g.Neur + Anxiety + Anger +
                Depression + SelfConsciousness + Immoderation +
                Vulnerability + gender + Q6_age_c '

facets.alcy <- paste(facet.model, facets.alcy, sep="\n")
facets.alcy <- cfa(facets.alcy, ori.health)

facets.alck <- 'Alcohol_Drinks ~ g.Neur + Anxiety + Anger +
                Depression + SelfConsciousness + Immoderation +
                Vulnerability + gender + Q6_age_c '

facets.alck <- paste(facet.model, facets.alck, sep="\n")
facets.alck <- cfa(facets.alck, ori.health)

facets.alcb <- 'Alcohol_Binge ~ g.Neur + Anxiety + Anger +
                Depression + SelfConsciousness + Immoderation +
                Vulnerability + gender + Q6_age_c '

facets.alcb <- paste(facet.model, facets.alcb, sep="\n")
facets.alcb <- cfa(facets.alcb, ori.health)
```

```
semTable(facets.cige, file="tables/facetsCigE.tex",  longtable = T)
semTable(facets.cig, file="tables/facetsCig.tex",  longtable = T)
semTable(facets.alce, file="tables/facetsAlcE.tex",  longtable = T)
semTable(facets.alcy, file="tables/facetsAlcY.tex",  longtable = T)
semTable(facets.alck, file="tables/facetsAlcK.tex",  longtable = T)
semTable(facets.alcb, file="tables/facetsAlcB.tex",  longtable = T)
```

Predictor	Cigarettes ever	Number of cigarettes	Alcohol ever	Alcohol days	Alcohol drinks	Binge drinking
g.Neur	0.06	0.18*	0.31	-0.08	0.14	0.24
	(-0.02, 0.14)	(0.04, 0.32)	(-0.34, 0.96)	(-0.4, 0.24)	(-0.11, 0.38)	(0, 0.47)
Anxiety	-0.1	-0.25	2.59	-0.41	-1.05	-1.3
	(-0.51, 0.31)	(-0.97, 0.47)	(-4.05, 9.23)	(-2.34, 1.52)	(-2.9, 0.8)	(-3.41, 0.82)
Anger	0.03	0.08	0.02	0.18	0.17	0.17
	(-0.07, 0.12)	(-0.07, 0.24)	(-0.41, 0.46)	(-0.26, 0.63)	(-0.21, 0.54)	(-0.25, 0.58)
Depression	-0.13	0.04	0.72	0.42	0.49	0.66
	(-0.42, 0.16)	(-0.49, 0.58)	(-0.72, 2.16)	(-1.18, 2.02)	(-1.05, 2.03)	(-1.16, 2.48)
SelfConsciousness	-0.02	-0.05	1.44	0.05	-0.18	-0.16
	(-0.14, 0.11)	(-0.26, 0.16)	(-1.65, 4.53)	(-0.44, 0.54)	(-0.61, 0.25)	(-0.6, 0.29)
Immoderation	0.14	-0.01	2.11	0.05	0.28	0.37
	(-0.02, 0.3)	(-0.28, 0.26)	(-2.49, 6.7)	(-0.66, 0.75)	(-0.35, 0.91)	(-0.3, 1.04)
Vulnerability	-1.24	-1.02	-4.12	3.99	4.84	6.61
	(-5.02, 2.54)	(-6.49, 4.45)	(-13.64, 5.4)	(-9.01, 16.99)	(-8.07, 17.76)	(-8.91, 22.13)

Table 24: Regression estimates from structural equation models predicting risk behaviors from bifactor model

```
facets.exst <- 'Exercise_Stren ~ g.Neur + Anxiety + Anger +
                Depression + SelfConsciousness + Immoderation +
                Vulnerability + gender + Q7_age_c
'

facets.exst <- paste(facet.model, facets.exst, sep="\n")
facets.exst <- cfa(facets.exst, ori.health)

facets.exmr <- 'Exercise_Moder ~ g.Neur + Anxiety + Anger +
                Depression + SelfConsciousness + Immoderation +
                Vulnerability + gender + Q7_age_c
'

facets.exmr <- paste(facet.model, facets.exmr, sep="\n")
facets.exmr <- cfa(facets.exmr, ori.health)

facets.exml <- 'Exercise_Mild ~ g.Neur + Anxiety + Anger +
                Depression + SelfConsciousness + Immoderation +
                Vulnerability + gender + Q7_age_c
'
```

```
facets.exml <- paste(facet.model, facets.exml, sep="\n")
facets.exml <- cfa(facets.exml, ori.health)

facets.floss <- 'Flossing ~ g.Neur + Anxiety + Anger +
                 Depression + SelfConsciousness + Immoderation +
                 Vulnerability + gender + Q7_age_c
'

facets.floss <- paste(facet.model, facets.floss, sep="\n")
facets.floss <- cfa(facets.floss, ori.health)
```

```
semTable(facets.exst, file="tables/facetsExSt.tex",  longtable = T)
semTable(facets.exmr, file="tables/facetsExMr.tex",  longtable = T)
semTable(facets.exml, file="tables/facetsExMl.tex",  longtable = T)
semTable(facets.floss, file="tables/facetsFloss.tex",  longtable = T)
```

Predictor	Strenous exercise	Moderate exercise	Mild exercise	Flossing
g.Neur	-0.28	-0.02	-0.1	0.05
	(-0.61, 0.05)	(-0.3, 0.26)	(-0.38, 0.18)	(-0.23, 0.33)
Anxiety	-0.33	0.8	0.41	-0.15
	(-2.03, 1.37)	(-1.17, 2.78)	(-1, 1.83)	(-1.55, 1.26)
Anger	0.09	0.01	0.01	-0.08
	(-0.14, 0.33)	(-0.23, 0.25)	(-0.19, 0.21)	(-0.28, 0.11)
Depression	-0.33	-0.42*	-0.33	0.29
	(-0.73, 0.06)	(-0.82, -0.03)	(-0.67, 0)	(-0.05, 0.63)
SelfConsciousness	-0.25	-0.05	-0.11	0.05
	(-0.54, 0.05)	(-0.33, 0.24)	(-0.35, 0.13)	(-0.19, 0.29)
Immoderation	-0.36	-0.44	-0.41*	0.37*
	(-0.8, 0.08)	(-0.89, 0.01)	(-0.79, -0.03)	(0.01, 0.73)
Vulnerability	0.63	-0.9	-0.28	0.29
	(-1.39, 2.64)	(-3.28, 1.48)	(-1.95, 1.4)	(-1.4, 1.97)

Table 25: Regression estimates from structural equation models predicting healthy behaviors from bifactor model

6.3 Regression estimates - Clinic outcomes

```
facets.blsg <- 'BloodSugar ~ g.Neur + Anxiety + Anger +
                Depression + SelfConsciousness + Immoderation +
                Vulnerability + gender + clinic1_age_c
'

facets.blsg <- paste(facet.model, facets.blsg, sep="\n")
facets.blsg <- cfa(facets.blsg, ori.health)

facets.ratio <- 'ChoHDLratio ~ g.Neur + Anxiety + Anger +
                 Depression + SelfConsciousness + Immoderation +
                 Vulnerability + gender + clinic1_age_c

'

facets.ratio <- paste(facet.model, facets.ratio, sep="\n")
facets.ratio <- cfa(facets.ratio, ori.health)

facets.bp <- 'SysBP ~ g.Neur + Anxiety + Anger +
              Depression + SelfConsciousness + Immoderation +
              Vulnerability + gender + clinic1_age_c
'

facets.bp <- paste(facet.model, facets.bp, sep="\n")
facets.bp <- cfa(facets.bp, ori.health)

facets.wh <- 'WaistHip ~ g.Neur + Anxiety + Anger +
              Depression + SelfConsciousness + Immoderation +
              Vulnerability + gender + clinic1_age_c
```

```
Depression ~~ 0*Depression'

facets.wh <- paste(facet.model, facets.wh, sep="\n")
facets.wh <- cfa(facets.wh, ori.health)
```

```
semTable(facets.blsg, file="tables/facetsBlsg.tex",  longtable = T)
semTable(facets.ratio, file="tables/facetsRatio.tex",  longtable = T)
semTable(facets.bp, file="tables/facetsBP.tex",  longtable = T)
semTable(facets.wh, file="tables/facetsWh.tex",  longtable = T)
```

Predictor	Blood sugar	ChoHDL ratio	Blood pressure	Waist-hip ratio
g.Neur	0.26	-0.03	0.05	0.34*
	(-0.03, 0.54)	(-0.32, 0.26)	(-0.2, 0.3)	(0.09, 0.59)
Anxiety	1.2	1.03	0.2	-0.01
	(-0.81, 3.22)	(-0.67, 2.73)	(-0.84, 1.25)	(-0.97, 0.96)
Anger	-0.03	-0.05	0.08	-0.01
	(-0.24, 0.17)	(-0.25, 0.15)	(-0.06, 0.22)	(-0.17, 0.15)
Depression	-0.71	-0.26	-0.4	0.35
	(-1.8, 0.38)	(-1.12, 0.61)	(-1.02, 0.22)	(-0.2, 0.9)
SelfConsciousness	0	0	0.01	0.24
	(-0.36, 0.36)	(-0.3, 0.31)	(-0.23, 0.24)	(-0.05, 0.53)
Immoderation	0.36	0.6*	0.32	0.99*
	(-0.15, 0.87)	(0.08, 1.11)	(-0.04, 0.68)	(0.43, 1.55)
Vulnerability	-1.55	-1.36	-0.64	-0.13
	(-3.97, 0.88)	(-3.36, 0.64)	(-1.98, 0.7)	(-1.33, 1.07)

Table 26: Regression estimates from structural equation models predicting clinical outcomes from bifactor model

7 Analyses: Neuroticism by situation (max income)

7.1 Regression estimates - SRH and Outcomes

```
set.seed(1959)
inc.srh <- lm(SelfRatedHealth ~ Neur_c*income_c + gender + Q6_age_c,
              data = ori.health)
inc.heart <- glm(HeartCondition ~ Neur_c*income_c + gender + Q6_age_c,
                 data = ori.health,
                 family = "binomial")
inc.cond <- glm(NumberChronic ~ Neur_c*income_c + gender + Q6_age_c,
                data = ori.health,
                family = "poisson")
```

7.2 Regression estimates - Behavior

```
inc.cige <- glm(Cigarettes_Ever ~ Neur_c*income_c + gender + Q6_age_c,
                data = ori.health,
                family = "binomial")
inc.cig <- glm.nb(Cigarettes ~ Neur_c*income_c + gender + Q6_age_c,
                  data = ori.health)
inc.alce <- glm(Alcohol_Ever ~ Neur_c*income_c + gender + Q6_age_c,
                data = ori.health,
                family = "binomial")
inc.alcy <- glm.nb(Alcohol_Days ~ Neur_c*income_c + gender + Q6_age_c,
                   data = ori.health)
inc.alck <- glm.nb(Alcohol_Drinks ~ Neur_c*income_c + gender + Q6_age_c,
                   data = ori.health)
inc.alcb <- glm.nb(Alcohol_Binge ~ Neur_c*income_c + gender + Q6_age_c,
                   data = ori.health)
```

	Dependent variable:		
	SelfRatedHealth	HeartCondition	NumberChronic
	OLS	*logistic*	*Poisson*
	(1)	(2)	(3)
Neur_c	−0.544*	0.072	0.166
	(−0.698, −0.390)	(−0.485, 0.630)	(−0.058, 0.391)
income_c	0.178*	−0.158	−0.090
	(0.091, 0.265)	(−0.469, 0.153)	(−0.217, 0.037)
gender	−0.116*	0.337*	−0.068
	(−0.202, −0.030)	(0.021, 0.652)	(−0.195, 0.060)
Q6_age_c	−0.040	0.304	0.128*
	(−0.122, 0.043)	(−0.007, 0.616)	(0.005, 0.252)
Neur_c:income_c	−0.017	0.033	0.050
	(−0.165, 0.131)	(−0.495, 0.561)	(−0.161, 0.261)
Constant	0.085*	−2.038*	−0.493*
	(0.002, 0.169)	(−2.352, −1.724)	(−0.618, −0.368)
Observations	416	414	418
R^2	0.151		
Adjusted R^2	0.141		
Log Likelihood		−148.549	−437.842
Akaike Inf. Crit.		309.098	887.684
Residual Std. Error	0.863 (df = 410)		
F Statistic	14.577* (df = 5; 410)		
Note:			* $p < .05$

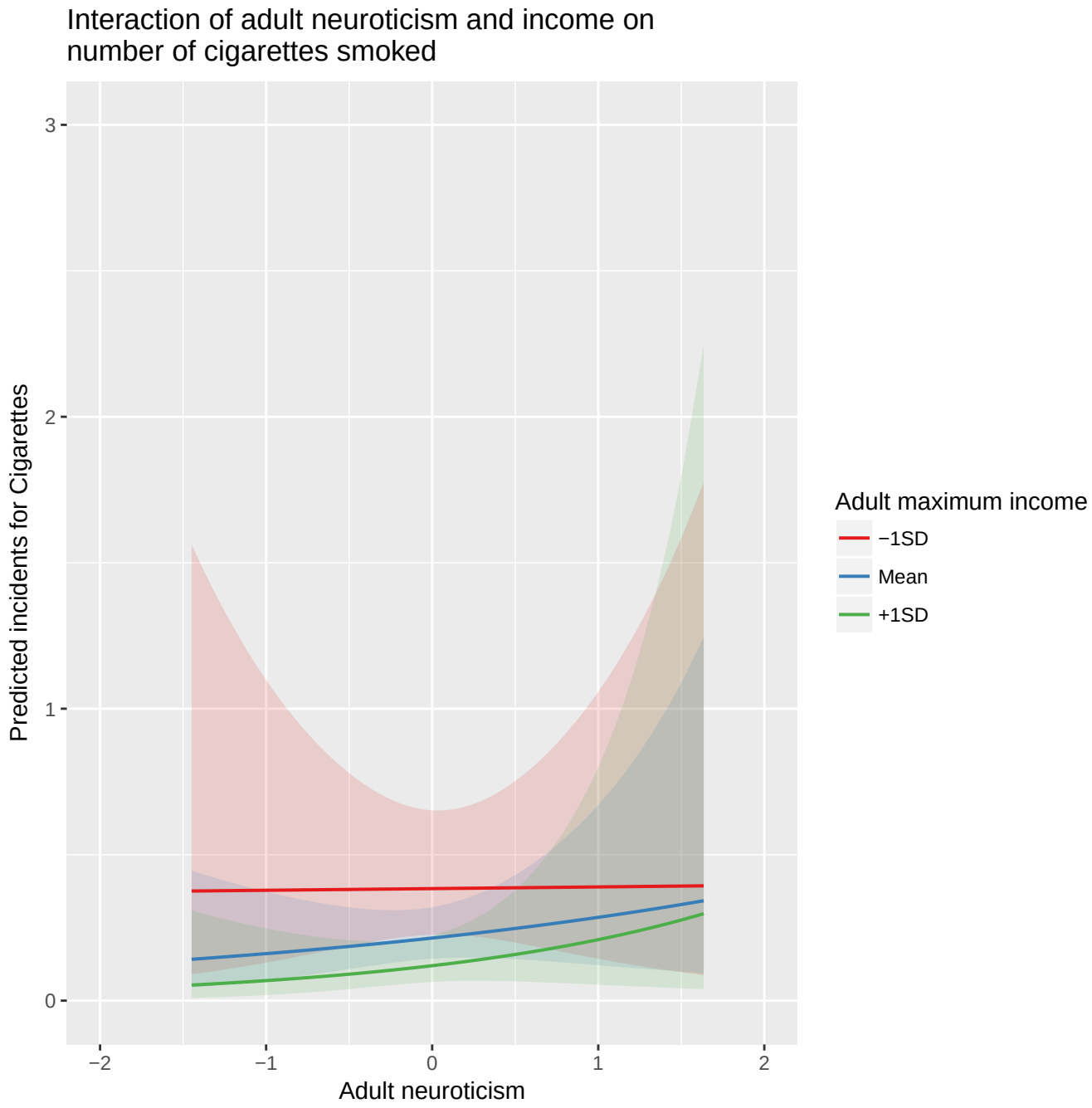
Table 27: Interaction of socioeconomic status and neuroticism predicting self-rated health and outcomes

	Dependent variable:					
	Cigarettes_Ever	Cigarettes	Alcohol_Ever	Alcohol_Days	Alcohol_Drinks	Alcohol_Binge
	logistic	*negative binomial*	*logistic*	*negative binomial*	*negative binomial*	*negative binomial*
	(1)	(2)	(3)	(4)	(5)	(6)
Neur_c	0.338	0.281	0.641*	0.007	0.086	0.312
	(−0.024, 0.701)	(−0.460, 1.021)	(0.084, 1.198)	(−0.223, 0.238)	(−0.126, 0.298)	(−0.291, 0.915)
income_c	−0.160	−0.577*	0.381*	0.233*	0.088	−0.002
	(−0.364, 0.044)	(−0.988, −0.165)	(0.081, 0.681)	(0.102, 0.363)	(−0.031, 0.207)	(−0.337, 0.334)
gender	0.148	0.096	0.070	0.085	0.283*	0.833*
	(−0.055, 0.350)	(−0.311, 0.504)	(−0.222, 0.362)	(−0.043, 0.214)	(0.164, 0.401)	(0.493, 1.172)
Q6_age_c	0.120	−0.159	0.151	−0.028	−0.072	−0.026
	(−0.074, 0.314)	(−0.556, 0.238)	(−0.125, 0.428)	(−0.150, 0.095)	(−0.186, 0.041)	(−0.350, 0.299)
Neur_c:income_c	0.071	0.268	0.075	0.044	0.194	0.617*
	(−0.278, 0.420)	(−0.432, 0.969)	(−0.434, 0.584)	(−0.182, 0.270)	(−0.015, 0.404)	(0.011, 1.223)
Constant	−0.089	−1.525*	1.833*	0.542*	0.201*	−0.974*
	(−0.285, 0.107)	(−1.925, −1.126)	(1.526, 2.140)	(0.417, 0.668)	(0.086, 0.317)	(−1.301, −0.647)
Observations	417	416	399	414	414	415
Log Likelihood	−284.237	−209.278	−163.550	−743.837	−626.457	−301.343
θ		0.087* (0.021)		0.948* (0.131)	1.778* (0.357)	0.127* (0.024)
Akaike Inf. Crit.	580.474	430.557	339.100	1,499.674	1,264.914	614.685
Note:						* $p < .05$

Table 28: Interaction of socioeconomic status and neuroticism predicting unhealthy behaviors

```
pdf("plots/int_income_cig.pdf")
sjp.int(inc.cig, type="eff", mdrt.values = "meansd", swap.pred = T,
        legend.labels = c("-1SD", "Mean", "+1SD"), show.ci = T,
        axis.title = "Adult neuroticism", legend.title = "Adult maximum income",
        title = "Interaction of adult neuroticism and income on number of cigarettes smoked")
dev.off()

## pdf
##   2
```



```
inc.exst <- glm.nb(Exercise_Stren ~ Neur_c*income_c + gender + Q7_age_c,
                   data = ori.health)
inc.exmr <- lm(Exercise_Moder ~ Neur_c*income_c + gender + Q7_age_c,
               data = ori.health)
inc.exml <- lm(Exercise_Mild ~ Neur_c*income_c + gender + Q7_age_c,
               data = ori.health)
inc.floss <- lm(Flossing ~ Neur_c*income_c + gender + Q7_age_c,
                data = ori.health)
```

	Dependent variable:			
	Exercise_Stren	Exercise_Moder	Exercise_Mild	Flossing
	negative binomial	*OLS*	*OLS*	*OLS*
	(1)	(2)	(3)	(4)
Neur_c	−0.094	−0.082	−0.101	0.033
	(−0.212, 0.024)	(−0.238, 0.075)	(−0.261, 0.058)	(−0.122, 0.187)
income_c	0.080*	−0.012	−0.021	−0.151*
	(0.013, 0.147)	(−0.102, 0.078)	(−0.111, 0.069)	(−0.240, −0.063)
gender	0.043	0.024	−0.006	0.153*
	(−0.021, 0.108)	(−0.062, 0.111)	(−0.093, 0.082)	(0.067, 0.239)
Q7_age_c	−0.011	0.017	0.064	−0.081
	(−0.073, 0.051)	(−0.067, 0.101)	(−0.021, 0.149)	(−0.164, 0.003)
Neur_c:income_c	−0.043	0.068	0.090	−0.088
	(−0.161, 0.075)	(−0.088, 0.224)	(−0.070, 0.249)	(−0.242, 0.066)
Constant	0.646*	−0.019	−0.025	−0.024
	(0.582, 0.710)	(−0.104, 0.066)	(−0.110, 0.061)	(−0.107, 0.060)
Observations	514	511	517	517
R^2		0.005	0.011	0.050
Adjusted R^2		−0.005	0.001	0.041
Log Likelihood	−782.351			
θ	47,235.070 (299,275.200)			
Akaike Inf. Crit.	1,576.703			
Residual Std. Error		0.969 (df = 505)	0.980 (df = 511)	0.959 (df = 511)
F Statistic		0.462 (df = 5; 505)	1.085 (df = 5; 511)	5.410* (df = 5; 511)
Note:				* $p < .05$

Table 29: Interaction of socioeconomic status and sesoticism predicting healthy behaviors

7.3 Regression estimates - Clinic outcomes

```
inc.blsg <- lm(BloodSugar ~ Neur_c*income_c + gender + clinic1_age_c,
               data = ori.health)
inc.ratio <- lm(ChoHDLratio ~ Neur_c*income_c + gender + clinic1_age_c,
                data = ori.health)
inc.bp <- lm(SysBP ~ Neur_c*income_c + gender + clinic1_age_c,
             data = ori.health)
inc.wh <- lm(WaistHip ~ Neur_c*income_c + gender + clinic1_age_c,
             data = ori.health)
```

	Dependent variable:			
	BloodSugar	ChoHDLratio	SysBP	WaistHip
	(1)	(2)	(3)	(4)
Neur_c	0.181*	0.003	0.009	0.178*
	(0.001, 0.361)	(−0.146, 0.153)	(−0.159, 0.177)	(0.035, 0.322)
income_c	−0.088	−0.120*	−0.033	−0.091*
	(−0.190, 0.014)	(−0.206, −0.035)	(−0.127, 0.060)	(−0.171, −0.012)
gender	0.158*	0.282*	0.154*	0.703*
	(0.060, 0.256)	(0.200, 0.364)	(0.063, 0.245)	(0.626, 0.781)
clinic1_age_c	0.085	0.083	0.023	0.140*
	(−0.018, 0.189)	(−0.004, 0.169)	(−0.073, 0.118)	(0.059, 0.222)
Neur_c:income_c	0.014	0.078	0.113	0.116
	(−0.159, 0.186)	(−0.066, 0.222)	(−0.048, 0.275)	(−0.021, 0.254)
Constant	−0.017	0.010	−0.041	0.051
	(−0.114, 0.080)	(−0.071, 0.091)	(−0.131, 0.049)	(−0.026, 0.127)
Observations	372	371	391	389
R^2	0.047	0.122	0.032	0.474
Adjusted R^2	0.034	0.110	0.020	0.467
Residual Std. Error	0.939 (df = 366)	0.783 (df = 365)	0.888 (df = 385)	0.753 (df = 383)
F Statistic	3.611* (df = 5; 366)	10.182* (df = 5; 365)	2.562* (df = 5; 385)	68.927* (df = 5; 383)
Note:				* $p < .05$

Table 30: Interaction of socioeconomic status and neuroticism predicting clinic measures

8 Analyses: Neuroticism by situation (education)

8.1 Regression estimates - SRH and Outcomes

```
set.seed(1959)
edu.srh <- lm(SelfRatedHealth ~ Neur_c*highgrd_c + gender + Q6_age_c,
              data = ori.health)
edu.heart <- glm(HeartCondition ~ Neur_c*highgrd_c + gender + Q6_age_c,
                 data = ori.health,
                 family = "binomial")
edu.cond <- glm(NumberChronic ~ Neur_c*highgrd_c + gender + Q6_age_c,
                data = ori.health,
                family = "poisson")
```

8.2 Regression estimates - Behavior

```
edu.cige <- glm(Cigarettes_Ever ~ Neur_c*highgrd_c + gender + Q6_age_c,
                data = ori.health,
                family = "binomial")
edu.cig <- glm.nb(Cigarettes ~ Neur_c*highgrd_c + gender + Q6_age_c,
                  data = ori.health)
edu.alce <- glm(Alcohol_Ever ~ Neur_c*highgrd_c + gender + Q6_age_c,
                data = ori.health,
                family = "binomial")
edu.alcy <- glm.nb(Alcohol_Days ~ Neur_c*highgrd_c + gender + Q6_age_c,
                   data = ori.health)
edu.alck <- glm.nb(Alcohol_Drinks ~ Neur_c*highgrd_c + gender + Q6_age_c,
                   data = ori.health)
edu.alcb <- glm.nb(Alcohol_Binge ~ Neur_c*highgrd_c + gender + Q6_age_c,
                   data = ori.health)
```

	Dependent variable:		
	SelfRatedHealth	HeartCondition	NumberChronic
	OLS	*logistic*	*Poisson*
	(1)	(2)	(3)
Neur_c	−0.552*	0.231	0.243*
	(−0.689, −0.416)	(−0.245, 0.706)	(0.064, 0.421)
highgrd_c	0.215*	−0.007	−0.129*
	(0.134, 0.297)	(−0.293, 0.278)	(−0.236, −0.022)
gender	−0.067	0.231	−0.090
	(−0.140, 0.006)	(−0.023, 0.484)	(−0.191, 0.010)
Q6_age_c	−0.030	0.146	0.041
	(−0.104, 0.044)	(−0.113, 0.406)	(−0.060, 0.143)
Neur_c:highgrd_c	−0.004	−0.046	−0.169
	(−0.151, 0.144)	(−0.556, 0.464)	(−0.353, 0.014)
Constant	−0.005	−1.990*	−0.405*
	(−0.079, 0.070)	(−2.254, −1.727)	(−0.509, −0.301)
Observations	576	573	579
R^2	0.161		
Adjusted R^2	0.154		
Log Likelihood		−210.042	−641.898
Akaike Inf. Crit.		432.084	1,295.797
Residual Std. Error	0.887 (df = 570)		
F Statistic	21.941* (df = 5; 570)		
Note:			* $p < .05$

Table 31: Interaction of socioeconomic status and neuroticism predicting self-rated health and outcomes

	Dependent variable:					
	Cigarettes_Ever	Cigarettes	Alcohol_Ever	Alcohol_Days	Alcohol_Drinks	Alcohol_Binge
	logistic	*negative binomial*	*logistic*	*negative binomial*	*negative binomial*	*negative binomial*
	(1)	(2)	(3)	(4)	(5)	(6)
Neur_c	0.186	0.366	0.400	0.032	0.071	0.475
	(−0.135, 0.507)	(−0.167, 0.899)	(−0.060, 0.861)	(−0.174, 0.238)	(−0.119, 0.260)	(−0.017, 0.968)
highgrd_c	−0.537*	−0.694*	−0.213	0.175*	−0.064	−0.307*
	(−0.737, −0.337)	(−1.000, −0.388)	(−0.498, 0.071)	(0.051, 0.300)	(−0.175, 0.047)	(−0.594, −0.019)
gender	0.062	0.030	0.200	0.115*	0.300*	0.733*
	(−0.107, 0.232)	(−0.264, 0.323)	(−0.043, 0.443)	(0.006, 0.224)	(0.199, 0.401)	(0.467, 1.000)
Q6_age_c	0.124	−0.110	0.234	0.006	−0.025	−0.074
	(−0.047, 0.296)	(−0.410, 0.191)	(−0.002, 0.470)	(−0.104, 0.115)	(−0.128, 0.077)	(−0.344, 0.196)
Neur_c:highgrd_c	−0.262	−0.120	−0.039	−0.018	−0.017	−0.109
	(−0.633, 0.110)	(−0.674, 0.434)	(−0.555, 0.476)	(−0.244, 0.208)	(−0.219, 0.184)	(−0.631, 0.413)
Constant	0.030	−1.376*	1.832*	0.533*	0.233*	−0.787*
	(−0.144, 0.205)	(−1.673, −1.080)	(1.572, 2.092)	(0.420, 0.645)	(0.129, 0.336)	(−1.058, −0.516)
Observations	577	577	548	573	572	573
Log Likelihood	−382.106	−328.263	−227.459	−1,032.245	−878.426	−452.590
θ		0.125* (0.025)		0.861* (0.098)	1.446* (0.221)	0.133* (0.020)
Akaike Inf. Crit.	776.212	668.527	466.917	2,076.491	1,768.852	917.179
Note:						* $p < .05$

Table 32: Interaction of socioeconomic status and neuroticism predicting unhealthy behaviors

```
edu.exst <- glm.nb(Exercise_Stren ~ Neur_c*highgrd_c + gender + Q7_age_c,
                   data = ori.health)
edu.exmr <- lm(Exercise_Moder ~ Neur_c*highgrd_c + gender + Q7_age_c,
               data = ori.health)
edu.exml <- lm(Exercise_Mild ~ Neur_c*highgrd_c + gender + Q7_age_c,
               data = ori.health)
edu.floss <- lm(Flossing ~ Neur_c*highgrd_c + gender + Q7_age_c,
                data = ori.health)
```

	Dependent variable:			
	Exercise_Stren	Exercise_Moder	Exercise_Mild	Flossing
	negative binomial	*OLS*	*OLS*	*OLS*
	(1)	(2)	(3)	(4)
Neur_c	−0.109	−0.114	−0.125	0.086
	(−0.221, 0.003)	(−0.265, 0.038)	(−0.276, 0.026)	(−0.060, 0.233)
highgrd_c	0.003	0.005	0.005	−0.097*
	(−0.061, 0.068)	(−0.083, 0.094)	(−0.084, 0.093)	(−0.183, −0.011)
gender	0.076*	0.013	−0.025	0.137*
	(0.018, 0.134)	(−0.068, 0.093)	(−0.105, 0.055)	(0.060, 0.215)
Q7_age_c	0.001	−0.004	0.057	−0.081*
	(−0.059, 0.062)	(−0.087, 0.079)	(−0.026, 0.139)	(−0.161, −0.001)
Neur_c:highgrd_c	−0.008	0.126	0.129	−0.045
	(−0.127, 0.111)	(−0.035, 0.287)	(−0.033, 0.291)	(−0.201, 0.111)
Constant	0.651*	−0.005	−0.029	−0.012
	(0.591, 0.710)	(−0.087, 0.077)	(−0.111, 0.053)	(−0.091, 0.068)
Observations	590	586	592	593
R^2		0.007	0.011	0.041
Adjusted R^2		−0.001	0.002	0.032
Log Likelihood	−899.981			
θ	45,751.350 (274,227.200)			
Akaike Inf. Crit.	1,811.962			
Residual Std. Error		0.989 (df = 580)	0.987 (df = 586)	0.958 (df = 587)
F Statistic		0.830 (df = 5; 580)	1.293 (df = 5; 586)	4.956* (df = 5; 587)
Note:				* $p < .05$

Table 33: Interaction of socioeconomic status and sesoticism predicting healthy behaviors

8.3 Regression estimates - Clinic outcomes

```
edu.blsg <- lm(BloodSugar ~ Neur_c*highgrd_c + gender + clinic1_age_c,
               data = ori.health)
edu.ratio <- lm(ChoHDLratio ~ Neur_c*highgrd_c + gender + clinic1_age_c,
                data = ori.health)
edu.bp <- lm(SysBP ~ Neur_c*highgrd_c + gender + clinic1_age_c,
             data = ori.health)
edu.wh <- lm(WaistHip ~ Neur_c*highgrd_c + gender + clinic1_age_c,
             data = ori.health)
```

	Dependent variable:			
	BloodSugar	ChoHDLratio	SysBP	WaistHip
	(1)	(2)	(3)	(4)
Neur_c	0.104	−0.022	−0.023	0.131*
	(−0.038, 0.246)	(−0.179, 0.135)	(−0.167, 0.121)	(0.015, 0.247)
highgrd_c	−0.130*	−0.130*	−0.119*	−0.143*
	(−0.210, −0.051)	(−0.218, −0.043)	(−0.199, −0.039)	(−0.207, −0.078)
gender	0.144*	0.270*	0.160*	0.689*
	(0.068, 0.220)	(0.186, 0.354)	(0.084, 0.236)	(0.628, 0.750)
clinic1_age_c	0.035	0.045	−0.002	0.122*
	(−0.045, 0.115)	(−0.043, 0.134)	(−0.083, 0.078)	(0.057, 0.187)
Neur_c:highgrd_c	−0.046	0.044	0.126	0.053
	(−0.193, 0.101)	(−0.119, 0.207)	(−0.024, 0.276)	(−0.068, 0.174)
Constant	−0.018	0.010	−0.031	0.039
	(−0.096, 0.060)	(−0.076, 0.096)	(−0.109, 0.047)	(−0.024, 0.102)
Observations	547	546	578	576
R^2	0.052	0.084	0.046	0.484
Adjusted R^2	0.043	0.075	0.038	0.479
Residual Std. Error	0.905 (df = 541)	1.001 (df = 540)	0.930 (df = 572)	0.748 (df = 570)
F Statistic	5.953* (df = 5; 541)	9.865* (df = 5; 540)	5.562* (df = 5; 572)	106.927* (df = 5; 570)
Note:				* $p < .05$

Table 34: Interaction of socioeconomic status and neuroticism predicting clinic measures

9 Analyses: Neuroticism by situation (Childhood SES)

9.1 Regression estimates - SRH and Outcomes

```
childses.srh <- lm(SelfRatedHealth ~ ChildNeur*childses + gender + Q6_age_c,
                   data = ori.health)
childses.heart <- glm(HeartCondition ~ ChildNeur*childses + gender + Q6_age_c,
                      data = ori.health,
                      family = "binomial")
childses.cond <- glm(NumberChronic ~ ChildNeur*childses + gender + Q6_age_c,
                     data = ori.health,
                     family = "poisson")
```

9.2 Regression estimates - Behavior

```
childses.cige <- glm(Cigarettes_Ever ~ ChildNeur*childses + gender + Q6_age_c,
                     data = ori.health,
                     family = "binomial")
childses.cig <- glm.nb(Cigarettes ~ ChildNeur*childses + gender + Q6_age_c,
                       data = ori.health)
childses.alce <- glm(Alcohol_Ever ~ ChildNeur*childses + gender + Q6_age_c,
                     data = ori.health,
                     family = "binomial")
childses.alcy <- glm.nb(Alcohol_Days ~ ChildNeur*childses + gender + Q6_age_c,
                        data = ori.health)
childses.alck <- glm.nb(Alcohol_Drinks ~ ChildNeur*childses + gender + Q6_age_c,
                        data = ori.health)
childses.alcb <- glm.nb(Alcohol_Binge ~ ChildNeur*childses + gender + Q6_age_c,
                        data = ori.health)
```

	Dependent variable:		
	SelfRatedHealth	HeartCondition	NumberChronic
	OLS	*logistic*	*Poisson*
	(1)	(2)	(3)
ChildNeur	−0.089*	−0.001	0.087
	(−0.161, −0.017)	(−0.237, 0.236)	(−0.005, 0.178)
childses	0.286*	−0.310*	−0.161*
	(0.195, 0.378)	(−0.609, −0.011)	(−0.277, −0.045)
gender	−0.051	0.255*	−0.067
	(−0.124, 0.021)	(0.023, 0.487)	(−0.159, 0.026)
Q6_age_c	−0.044	0.291*	0.096*
	(−0.116, 0.029)	(0.044, 0.538)	(0.002, 0.191)
ChildNeur:childses	−0.046	−0.080	0.041
	(−0.134, 0.042)	(−0.372, 0.212)	(−0.071, 0.154)
Constant	0.032	−1.984*	−0.404*
	(−0.040, 0.104)	(−2.222, −1.746)	(−0.497, −0.311)
Observations	681	679	685
R^2	0.064		
Adjusted R^2	0.057		
Log Likelihood		−251.356	−765.378
Akaike Inf. Crit.		514.713	1,542.755
Residual Std. Error	0.956 (df = 675)		
F Statistic	9.165* (df = 5; 675)		
Note:			* $p < .05$

Table 35: Interaction of socioeconomic status and neuroticism predicting self-rated health and outcomes

	Dependent variable:					
	Cigarettes_Ever	Cigarettes	Alcohol_Ever	Alcohol_Days	Alcohol_Drinks	Alcohol_Binge
	logistic	*negative binomial*	*logistic*	*negative binomial*	*negative binomial*	*negative binomial*
	(1)	(2)	(3)	(4)	(5)	(6)
ChildNeur	0.084	0.116	−0.093	−0.007	−0.008	0.061
	(−0.069, 0.237)	(−0.145, 0.377)	(−0.306, 0.120)	(−0.108, 0.095)	(−0.104, 0.087)	(−0.183, 0.304)
childses	−0.235*	−0.532*	−0.150	0.230*	0.016	−0.020
	(−0.430, −0.040)	(−0.867, −0.198)	(−0.424, 0.124)	(0.101, 0.359)	(−0.106, 0.138)	(−0.330, 0.291)
gender	0.133	0.275*	0.133	0.133*	0.312*	0.678*
	(−0.020, 0.287)	(0.015, 0.534)	(−0.089, 0.355)	(0.031, 0.235)	(0.215, 0.408)	(0.432, 0.924)
Q6_age_c	0.069	−0.028	0.247*	0.003	−0.040	−0.104
	(−0.086, 0.224)	(−0.295, 0.238)	(0.030, 0.463)	(−0.099, 0.105)	(−0.137, 0.057)	(−0.351, 0.143)
ChildNeur:childses	0.165	0.284	−0.082	−0.075	−0.052	0.084
	(−0.026, 0.355)	(−0.038, 0.606)	(−0.343, 0.179)	(−0.200, 0.050)	(−0.170, 0.065)	(−0.215, 0.383)
Constant	−0.109	−1.246*	1.764*	0.535*	0.206*	−0.742*
	(−0.261, 0.043)	(−1.507, −0.984)	(1.540, 1.987)	(0.433, 0.636)	(0.109, 0.302)	(−0.988, −0.497)
Observations	682	683	646	680	678	680
Log Likelihood	−465.284	−433.625	−270.441	−1,209.293	−1,037.123	−552.068
θ		0.125* (0.021)		0.821* (0.086)	1.281* (0.172)	0.124* (0.017)
Akaike Inf. Crit.	942.569	879.251	552.883	2,430.585	2,086.247	1,116.136
Note:						* $p < .05$

Table 36: Interaction of socioeconomic status and neuroticism predicting unhealthy behaviors

```
childses.exst <- glm.nb(Exercise_Stren ~ ChildNeur*childses + gender + Q7_age_c,
                        data = ori.health)
childses.exmr <- lm(Exercise_Moder ~ ChildNeur*childses + gender + Q7_age_c,
                    data = ori.health)
childses.exml <- lm(Exercise_Mild ~ ChildNeur*childses + gender + Q7_age_c,
                    data = ori.health)
childses.floss <- lm(Flossing ~ ChildNeur*childses + gender + Q7_age_c,
                     data = ori.health)
```

	Dependent variable:			
	Exercise_Stren	Exercise_Moder	Exercise_Mild	Flossing
	negative binomial	*OLS*	*OLS*	*OLS*
	(1)	(2)	(3)	(4)
ChildNeur	0.0002	−0.013	0.010	−0.022
	(−0.053, 0.053)	(−0.088, 0.062)	(−0.064, 0.084)	(−0.095, 0.051)
childses	0.003	0.071	0.076	−0.129*
	(−0.063, 0.068)	(−0.020, 0.163)	(−0.015, 0.167)	(−0.218, −0.039)
gender	0.077*	−0.015	−0.009	0.167*
	(0.023, 0.130)	(−0.090, 0.061)	(−0.084, 0.066)	(0.094, 0.241)
Q7_age_c	−0.012	−0.011	0.051	−0.068
	(−0.066, 0.042)	(−0.087, 0.065)	(−0.024, 0.126)	(−0.143, 0.006)
ChildNeur:childses	−0.060	−0.062	−0.040	0.065
	(−0.124, 0.005)	(−0.153, 0.029)	(−0.130, 0.050)	(−0.023, 0.154)
Constant	0.686*	−0.007	−0.026	0.002
	(0.633, 0.739)	(−0.082, 0.068)	(−0.100, 0.048)	(−0.071, 0.074)
Observations	690	683	691	693
R^2		0.007	0.009	0.050
Adjusted R^2		−0.0004	0.002	0.043
Log Likelihood	−1,069.463			
θ	44,893.040 (250,561.300)			
Akaike Inf. Crit.	2,150.927			
Residual Std. Error		0.994 (df = 677)	0.987 (df = 685)	0.973 (df = 687)
F Statistic		0.948 (df = 5; 677)	1.277 (df = 5; 685)	7.190* (df = 5; 687)
Note:				* $p < .05$

Table 37: Interaction of socioeconomic status and childsesoticism predicting healthy behaviors

9.3 Regression estimates - Clinic outcomes

```
childses.blsg <- lm(BloodSugar ~ ChildNeur*childses + gender + clinic1_age_c,
                    data = ori.health)
childses.ratio <- lm(ChoHDLratio ~ ChildNeur*childses + gender + clinic1_age_c,
                     data = ori.health)
childses.bp <- lm(SysBP ~ ChildNeur*childses + gender + clinic1_age_c,
                  data = ori.health)
childses.wh <- lm(WaistHip ~ ChildNeur*childses + gender + clinic1_age_c,
                  data = ori.health)
```

```
pdf("plots/int_childses_ratio.pdf")
sjp.int(childses.ratio, type="eff", mdrt.values = "meansd",
        legend.labels = c("-1SD", "Mean", "+1SD"), show.ci = T,
```

	Dependent variable:			
	BloodSugar	ChoHDLratio	SysBP	WaistHip
	(1)	(2)	(3)	(4)
ChildNeur	−0.024	−0.019	0.034	−0.001
	(−0.100, 0.053)	(−0.098, 0.060)	(−0.039, 0.108)	(−0.060, 0.057)
childses	−0.150*	−0.052	−0.088*	−0.114*
	(−0.239, −0.062)	(−0.143, 0.040)	(−0.174, −0.002)	(−0.183, −0.046)
gender	0.119*	0.255*	0.163*	0.659*
	(0.044, 0.193)	(0.178, 0.332)	(0.090, 0.235)	(0.601, 0.716)
clinic1_age_c	0.064	0.012	0.004	0.114*
	(−0.013, 0.140)	(−0.067, 0.091)	(−0.071, 0.079)	(0.055, 0.174)
ChildNeur:childses	0.035	−0.0004	0.057	0.043
	(−0.056, 0.126)	(−0.094, 0.093)	(−0.031, 0.144)	(−0.027, 0.113)
Constant	−0.031	−0.024	−0.043	−0.007
	(−0.105, 0.043)	(−0.101, 0.052)	(−0.115, 0.029)	(−0.064, 0.051)
Observations	638	636	677	675
R^2	0.039	0.067	0.036	0.448
Adjusted R^2	0.031	0.060	0.029	0.443
Residual Std. Error	0.950 (df = 632)	0.980 (df = 630)	0.948 (df = 671)	0.755 (df = 669)
F Statistic	5.126* (df = 5; 632)	9.102* (df = 5; 630)	5.022* (df = 5; 671)	108.421* (df = 5; 669)
Note:				* $p < .05$

Table 38: Interaction of socioeconomic status and neuroticism predicting clinic measures

```
        axis.title = "Child neuroticism", legend.title = "Child SES",
        title = "Interaction of child SES and neuroticism on adult cholesterol-HDL ratio")
dev.off()

## pdf
##   2
```

10 Analyses: Neuroticism by situation (health problems)

10.1 Regression estimates - SRH and Outcomes

```
health.srh <- lm(SelfRatedHealth ~ Neur_c*Chronic + gender + Q6_age_c,
                 data = ori.health)
```

10.2 Regression estimates - Behavior

```
health.cige <- glm(Cigarettes_Ever ~ Neur_c*Chronic + gender + Q6_age_c,
                   data = ori.health,
                   family = "binomial")
health.cig <- glm.nb(Cigarettes ~ Neur_c*Chronic + gender + Q6_age_c,
                     data = ori.health)
health.alce <- glm(Alcohol_Ever ~ Neur_c*Chronic + gender + Q6_age_c,
                   data = ori.health,
```

	Dependent variable:
	SelfRatedHealth
Neur_c	−0.472*
	(−0.655, −0.290)
Chronic	−0.465*
	(−0.611, −0.320)
gender	−0.073*
	(−0.146, −0.001)
Q6_age_c	0.015
	(−0.057, 0.087)
Neur_c:Chronic	−0.148
	(−0.412, 0.115)
Constant	0.259*
	(0.160, 0.357)
Observations	587
R^2	0.172
Adjusted R^2	0.165
Residual Std. Error	0.884 (df = 581)
F Statistic	24.190* (df = 5; 581)
Note:	* $p < .05$

Table 39: Interaction of health and neuroticism predicting self-rated health

```
                  family = "binomial")
health.alcy <- glm.nb(Alcohol_Days ~ Neur_c*Chronic + gender + Q6_age_c,
                      data = ori.health)
health.alck <- glm.nb(Alcohol_Drinks ~ Neur_c*Chronic + gender + Q6_age_c,
                      data = ori.health)
health.alcb <- glm.nb(Alcohol_Binge ~ Neur_c*Chronic + gender + Q6_age_c,
                      data = ori.health)
```

```
health.exst <- glm.nb(Exercise_Stren ~ Neur_c*Chronic + gender + Q7_age_c,
                      data = ori.health)
health.exmr <- lm(Exercise_Moder ~ Neur_c*Chronic + gender + Q7_age_c,
                  data = ori.health)
health.exml <- lm(Exercise_Mild ~ Neur_c*Chronic + gender + Q7_age_c,
                  data = ori.health)
health.floss <- lm(Flossing ~ Neur_c*Chronic + gender + Q7_age_c,
                   data = ori.health)
```

10.3 Regression estimates - Clinic outcomes

```
health.blsg <- lm(BloodSugar ~ Neur_c*Chronic + gender + clinic1_age_c,
                  data = ori.health)
health.ratio <- lm(ChoHDLratio ~ Neur_c*Chronic + gender + clinic1_age_c,
                   data = ori.health)
health.bp <- lm(SysBP ~ Neur_c*Chronic + gender + clinic1_age_c,
                data = ori.health)
health.wh <- lm(WaistHip ~ Neur_c*Chronic + gender + clinic1_age_c,
                data = ori.health)
```

```
#save environment so models can be used to create graphics
save(list=ls(), file="HealthyNModels.Rdata")
```

	Dependent variable:					
	Cigarettes_Ever	Cigarettes	Alcohol_Ever	Alcohol_Days	Alcohol_Drinks	Alcohol_Binge
	logistic	*negative binomial*	*logistic*	*negative binomial*	*negative binomial*	*negative binomial*
	(1)	(2)	(3)	(4)	(5)	(6)
Neur_c	0.112	0.237	−0.164	−0.014	0.048	0.448
	(−0.302, 0.527)	(−0.545, 1.018)	(−0.790, 0.461)	(−0.282, 0.255)	(−0.198, 0.294)	(−0.203, 1.099)
Chronic	0.148	0.366	−0.410	−0.320*	−0.281*	−0.384
	(−0.182, 0.477)	(−0.244, 0.977)	(−0.897, 0.076)	(−0.538, −0.102)	(−0.484, −0.078)	(−0.916, 0.149)
gender	0.091	0.119	0.172	0.093	0.305*	0.713*
	(−0.073, 0.255)	(−0.183, 0.421)	(−0.072, 0.416)	(−0.014, 0.201)	(0.205, 0.405)	(0.450, 0.976)
Q6_age_c	0.041	−0.123	0.231	0.032	−0.028	−0.139
	(−0.122, 0.205)	(−0.425, 0.180)	(−0.006, 0.467)	(−0.076, 0.140)	(−0.128, 0.073)	(−0.402, 0.125)
Neur_c:Chronic	0.256	0.621	1.275*	0.060	0.169	0.285
	(−0.346, 0.857)	(−0.480, 1.721)	(0.375, 2.174)	(−0.336, 0.456)	(−0.199, 0.537)	(−0.676, 1.245)
Constant	−0.124	−1.525*	1.999*	0.699*	0.339*	−0.659*
	(−0.347, 0.100)	(−1.948, −1.102)	(1.647, 2.350)	(0.554, 0.843)	(0.207, 0.472)	(−1.010, −0.307)
Observations	588	588	558	583	583	584
Log Likelihood	−404.687	−337.032	−225.639	−1,045.708	−891.232	−460.515
θ		0.103* (0.020)		0.867* (0.099)	1.500* (0.231)	0.133* (0.020)
Akaike Inf. Crit.	821.374	686.065	463.279	2,103.416	1,794.465	933.031
Note:						* $p < .05$

Table 40: Interaction of health status and neuroticism predicting unhealthy behaviors

	Dependent variable:			
	Exercise_Stren	Exercise_Moder	Exercise_Mild	Flossing
	negative binomial	*OLS*	*OLS*	*OLS*
	(1)	(2)	(3)	(4)
Neur_c	−0.071	−0.033	0.038	0.106
	(−0.218, 0.077)	(−0.239, 0.174)	(−0.166, 0.242)	(−0.091, 0.302)
Chronic	−0.074	−0.167	0.041	0.151
	(−0.197, 0.049)	(−0.337, 0.004)	(−0.127, 0.210)	(−0.011, 0.313)
gender	0.067*	0.003	−0.032	0.171*
	(0.006, 0.127)	(−0.081, 0.088)	(−0.116, 0.051)	(0.090, 0.251)
Q7_age_c	0.001	−0.006	0.051	−0.122*
	(−0.059, 0.062)	(−0.091, 0.079)	(−0.032, 0.135)	(−0.203, −0.041)
Neur_c:Chronic	−0.049	−0.071	−0.279	0.024
	(−0.278, 0.180)	(−0.383, 0.240)	(−0.590, 0.033)	(−0.274, 0.322)
Constant	0.692*	0.082	−0.054	−0.095
	(0.611, 0.773)	(−0.032, 0.196)	(−0.167, 0.058)	(−0.204, 0.013)
Observations	547	543	549	550
R^2		0.009	0.011	0.051
Adjusted R^2		−0.00001	0.002	0.042
Log Likelihood	−833.382			
θ	48,270.160 (300,272.200)			
Akaike Inf. Crit.	1,678.764			
Residual Std. Error		0.995 (df = 537)	0.988 (df = 543)	0.954 (df = 544)
F Statistic		0.999 (df = 5; 537)	1.259 (df = 5; 543)	5.840* (df = 5; 544)
Note:				* $p < .05$

Table 41: Interaction of health status and healthoticism predicting healthy behaviors

	Dependent variable:			
	BloodSugar	ChoHDLratio	SysBP	WaistHip
	(1)	(2)	(3)	(4)
Neur_c	0.013	0.039	−0.024	0.073
	(−0.201, 0.228)	(−0.198, 0.275)	(−0.236, 0.188)	(−0.097, 0.242)
Chronic	0.462*	0.134	0.318*	0.411*
	(0.295, 0.629)	(−0.049, 0.318)	(0.156, 0.480)	(0.282, 0.541)
gender	0.187*	0.276*	0.195*	0.706*
	(0.104, 0.269)	(0.185, 0.367)	(0.115, 0.276)	(0.642, 0.771)
clinic1_age_c	−0.001	0.051	−0.023	0.084*
	(−0.089, 0.086)	(−0.045, 0.148)	(−0.109, 0.064)	(0.015, 0.153)
Neur_c:Chronic	0.186	0.046	0.063	0.143
	(−0.114, 0.486)	(−0.284, 0.376)	(−0.232, 0.357)	(−0.094, 0.379)
Constant	−0.235*	−0.058	−0.187*	−0.184*
	(−0.350, −0.119)	(−0.186, 0.069)	(−0.299, −0.075)	(−0.274, −0.094)
Observations	485	484	510	508
R^2	0.096	0.075	0.065	0.503
Adjusted R^2	0.087	0.065	0.056	0.498
Residual Std. Error	0.924 (df = 479)	1.017 (df = 478)	0.921 (df = 504)	0.734 (df = 502)
F Statistic	10.177* (df = 5; 479)	7.729* (df = 5; 478)	7.023* (df = 5; 504)	101.435* (df = 5; 502)
Note:				* $p < .05$

Table 42: Interaction of health status and neuroticism predicting clinic measures

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