Transcriptomics_Homework-2_Charlee-Cobb_cac9995

Charlee Cobb

2023-02-20

Part 1: Answer the following questions. (20 pts) _____

1. Why is it important to know the variance and standard error of a statistic for sample data? How do we calculate these values in R? Understanding variance in data is important because it shows the difference a given point has from the mean. This would show if our data had many points that are outliers or how spread out our data is. Standard error compares the mean of a sample to the mean of the population, and the value helps us decide how representative a sample is for the population. To calculate the standard error in R by getting the value of standard deviation with the function sd(), and dividing that value by the square root of the number of samples. To get variance in R, we can use the var() function on the sample dataset.

2. What are the differences between the varieties of two-sample t-tests, and how can we tell which to use and how do we tell R how to apply the correct test using t-test()? Paired t-test and unpaired t-tests are the varieties of two-sample t-tests. Paired t-tests look at two samples that are related to each other. For example, in the paired t-test we might compare two different observations of one cancer tumor in different from different time points, pretreatmnt and after treatment. With Unpaired t-tests, the two samples are completely independent from each other. In R, you use the t.test() function, and set the flag 'paired' to TRUE for a paired t-test, and FALSE for an unpaired t-test.

3. What is the R function for a nonparametric equivalent to a two-sample t-test? The wilcoxon test using the wilcox_test() function.

4. What statistic is more appropriate when you want to identify interactions between multiple factors? ANOVA statistics are better to use when checking interactions between multiple factors.

5. When is the lm() function more appropriate to use than aov() function to perform an anova analysis? aov() looks at variation within groups and variation between groups without respect to each other. lm() looks for the slope made in the data, and looks at each slope separately.

Part 2: We will be working with a publicly available dataset: GSE63741. The experiment compares expression of a set of genes during different skin diseases. Our goal is to identify the genes that are significantly different from the control (healthy) samples. (80pts)

_____

1. Write a function getPvalue that performs a linear model lm() to compare the control samples to the different skin diseases. (40pts) - The function should have two inputs 1: numerical vector of all values for one gene, 2: a factor that specifies which column belongs to which group. - The function should have one output (a vector of p-values for each disease coefficient.

```
#getPvalue fucntion

getPvalue <- function(vect, fact){
  gene <- unlist(vect, use.names = FALSE)
  p <- lm(gene ~ fact)$coefficients
  return(p)
}
```

2. Use the getPvalue function in a loop or apply function to retrieve the pvalues for each gene. (10pts)

```r
#load data sets
GSE63741 <- read.delim("GSE63741_series_matrix.txt")
sample <- read.delim("sampletype.txt")
```

```
## Warning in read.table(file = file, header = header, sep = sep, quote = quote, :
## incomplete final line found by readTableHeader on 'sampletype.txt'
```

```r
#head(GSE63741) #< used to check object
#head(sample) #< used to check object

#make factor of groups
group_names <- unlist(sample[1,], use.names = FALSE)
#group_names #< used to check object
group_factor <- factor(group_names)
group_factor #< used to check object
```

```
##   [1] Control           Control           Control
##   [4] Control           Control           Control
##   [7] Control           Control           Control
##  [10] Control           Control           Control
##  [13] Control           Control           Control
##  [16] Control           Control           Control
##  [19] Control           Control           Control
##  [22] Control           Control           Control
##  [25] Control           Control           Control
##  [28] Control           Control           Control
##  [31] Atopic Dermatitis Atopic Dermatitis Atopic Dermatitis
##  [34] Atopic Dermatitis Atopic Dermatitis Atopic Dermatitis
##  [37] Atopic Dermatitis Atopic Dermatitis Atopic Dermatitis
##  [40] Atopic Dermatitis Atopic Dermatitis Atopic Dermatitis
##  [43] Atopic Dermatitis Atopic Dermatitis Atopic Dermatitis
##  [46] Atopic Dermatitis Atopic Dermatitis Atopic Dermatitis
##  [49] Atopic Dermatitis Atopic Dermatitis Atopic Dermatitis
##  [52] Atopic Dermatitis Atopic Dermatitis Atopic Dermatitis
##  [55] Atopic Dermatitis Atopic Dermatitis Atopic Dermatitis
##  [58] Atopic Dermatitis Atopic Dermatitis Atopic Dermatitis
##  [61] Lichen Planus     Lichen Planus     Lichen Planus
##  [64] Lichen Planus     Lichen Planus     Lichen Planus
##  [67] Lichen Planus     Lichen Planus     Lichen Planus
##  [70] Lichen Planus     Lichen Planus     Lichen Planus
##  [73] Lichen Planus     Lichen Planus     Lichen Planus
##  [76] Lichen Planus     Lichen Planus     Lichen Planus
##  [79] Lichen Planus     Lichen Planus     Lichen Planus
##  [82] Lichen Planus     Lichen Planus     Lichen Planus
##  [85] Lichen Planus     Lichen Planus     Lichen Planus
##  [88] Lichen Planus     Lichen Planus     Lichen Planus
##  [91] Psoriasis Vulgaris Psoriasis Vulgaris Psoriasis Vulgaris
##  [94] Psoriasis Vulgaris Psoriasis Vulgaris Psoriasis Vulgaris
##  [97] Psoriasis Vulgaris Psoriasis Vulgaris Psoriasis Vulgaris
## [100] Psoriasis Vulgaris Psoriasis Vulgaris Psoriasis Vulgaris
```

```
## [103] Psoriasis Vulgaris Psoriasis Vulgaris Psoriasis Vulgaris
## [106] Psoriasis Vulgaris Psoriasis Vulgaris Psoriasis Vulgaris
## [109] Psoriasis Vulgaris Psoriasis Vulgaris Psoriasis Vulgaris
## [112] Psoriasis Vulgaris Psoriasis Vulgaris Psoriasis Vulgaris
## [115] Psoriasis Vulgaris Psoriasis Vulgaris Psoriasis Vulgaris
## [118] Psoriasis Vulgaris Psoriasis Vulgaris Psoriasis Vulgaris
## [121] Contact Eczema     Contact Eczema     Contact Eczema
## [124] Contact Eczema     Contact Eczema     Contact Eczema
## [127] Contact Eczema     Contact Eczema     Contact Eczema
## [130] Contact Eczema     Contact Eczema     Contact Eczema
## [133] Contact Eczema     Contact Eczema     Contact Eczema
## [136] Contact Eczema     Contact Eczema     Contact Eczema
## [139] Contact Eczema     Contact Eczema     Contact Eczema
## [142] Contact Eczema     Contact Eczema     Contact Eczema
## [145] Contact Eczema     Contact Eczema     Contact Eczema
## [148] Contact Eczema     Contact Eczema     Contact Eczema
## 5 Levels: Atopic Dermatitis Contact Eczema Control ... Psoriasis Vulgaris
```

```r
#making a test run to help model the function
testing <- lm(unlist(GSE63741[1, 2:151], use.names = FALSE) ~ group_factor)$coefficients

#I tried to use the function I worte above, but kept running into bugs when I
#ran this:
#res <- apply(GSE63741, 1, getPvalue(vect = GSE63741[2:151], fact=group_factor) )


#So I wrote the function in-line with the apply function
res <- apply(GSE63741, 1, function(x) lm(x[2:151]~group_factor)$coefficients)
head(res)
```

```
##                                    [,1]        [,2]        [,3]        [,4]
## (Intercept)                  0.07443333  0.15570333  0.01610000 -0.02622333
## group_factorContact Eczema   0.53112667  0.32194333  0.26126667  0.49596667
## group_factorControl         -0.31633000 -0.02461000  0.17079667  0.07442000
## group_factorLichen Planus   -0.35241667  0.30736667  0.03656667 -0.31132000
## group_factorPsoriasis Vulgaris 0.40213667  0.09777333 -0.09789667  0.70829667
##                                    [,5]          [,6]        [,7]
## (Intercept)                  0.15833667 -0.0003066667 -0.04087333
## group_factorContact Eczema   0.62541000  0.4096633333  0.42737000
## group_factorControl          0.08209333 -0.1241533333  0.21642333
## group_factorLichen Planus   -0.00884000  0.3232033333  0.53841000
## group_factorPsoriasis Vulgaris -0.32073000  0.0627633333 -0.44756667
##                                     [,8]        [,9]       [,10]       [,11]
## (Intercept)                  0.35504667 -0.07490667 -0.03669667  0.0895200
## group_factorContact Eczema  -0.29271667 -0.26554333 -0.03889000 -0.4903433
## group_factorControl          0.14833000  0.05488667  0.02372000  0.2073833
## group_factorLichen Planus   -0.06053667 -0.07433667  0.11744667 -0.1631267
## group_factorPsoriasis Vulgaris -0.36303333 -0.10817333  0.22375000 -0.3416600
##                                    [,12]       [,13]       [,14]       [,15]
## (Intercept)                  0.2418800 -0.31199667  0.04077667  0.43421333
## group_factorContact Eczema   0.2999800 -0.04057333  0.12129667 -0.00828000
## group_factorControl         -0.2788700  0.11935333 -0.01644667 -0.32246333
## group_factorLichen Planus    0.1326567 -0.04540333  0.16804000 -0.04010667
## group_factorPsoriasis Vulgaris 0.3534767  0.91890667 -0.15240000 -0.43751000
```

```
##                                    [,16]      [,17]      [,18]       [,19]
## (Intercept)                   0.18101667  0.4178700  0.3812933  0.09925333
## group_factorContact Eczema    0.04620333 -0.2279667  0.2875367  0.12169667
## group_factorControl           0.09316000 -0.3286300 -0.5140433  0.27733333
## group_factorLichen Planus     -0.08688333 -0.3066433  0.3595800 -0.24714333
## group_factorPsoriasis Vulgaris -0.37179333 -0.3651867 -0.2783700 -0.39792333
##                                    [,20]      [,21]      [,22]       [,23]
## (Intercept)                   0.002693333  0.3142533 -0.42635000 -0.07332667
## group_factorContact Eczema    0.130813333  0.6885033  0.20807667  0.01076333
## group_factorControl           -0.041053333 -0.3891933 -0.05574667  0.30908000
## group_factorLichen Planus     0.137963333  0.5798200  0.06329667  0.04389667
## group_factorPsoriasis Vulgaris -0.241746667 -0.5175467  1.03468000 -0.13008333
##                                    [,24]      [,25]      [,26]       [,27]
## (Intercept)                   0.1777633  0.22197667  0.4791867  0.188533333
## group_factorContact Eczema    -0.1564967 -0.03088667 -0.0882000 -0.006006667
## group_factorControl           0.1460200 -0.01753667 -0.2274633  0.043596667
## group_factorLichen Planus     -0.2812133 -0.22768667 -0.2383167 -0.136603333
## group_factorPsoriasis Vulgaris 0.1420633 -0.22179000 -0.1045133 -0.332440000
##                                    [,28]      [,29]      [,30]       [,31]
## (Intercept)                   1.0760333  0.36952000  0.35372333 -0.22846333
## group_factorContact Eczema    0.6027400  0.27493667 -0.02950667  0.31707000
## group_factorControl           -0.8238867 -0.14360000 -0.28027667  0.24115667
## group_factorLichen Planus     -0.2582733  0.01602333 -0.21856667  0.25379667
## group_factorPsoriasis Vulgaris -0.2850200 -0.25564000 -0.48079667 -0.01070667
##                                    [,32]      [,33]      [,34]       [,35]
## (Intercept)                   0.05283000  0.26658333  0.70133000 -0.35161333
## group_factorContact Eczema    -0.11776000 -0.16662667 -0.07071667  0.19840000
## group_factorControl           -0.03517333 -0.03468667 -0.81427333  0.04116667
## group_factorLichen Planus     -0.07646000 -0.34748333 -0.34975667 -0.01011333
## group_factorPsoriasis Vulgaris 0.05433667 -0.19874667  0.02828000  0.66081000
##                                    [,36]      [,37]      [,38]       [,39]
## (Intercept)                   -0.2202700  0.6503133  0.097986667  0.3501733
## group_factorContact Eczema    0.2429633  0.3897900  0.228510000  0.1475433
## group_factorControl           1.1909733 -0.4706200 -0.201173333 -0.4762200
## group_factorLichen Planus     0.3205267  0.3444600 -0.005943333 -0.2683300
## group_factorPsoriasis Vulgaris -0.6598900 -0.4799700 -0.013240000  0.8323300
##                                    [,40]      [,41]      [,42]       [,43]
## (Intercept)                   -0.04122333 -0.21896333 -0.16468000  0.18086667
## group_factorContact Eczema    -0.21886333 -0.21266333 -0.17482667  0.02711667
## group_factorControl           -0.01959333  0.01037667  0.12063667 -0.20462333
## group_factorLichen Planus     -0.27463667 -0.18860667 -0.01830667 -0.05974000
## group_factorPsoriasis Vulgaris 0.00016000 -0.26353333  0.71546333 -0.03506000
##                                    [,44]      [,45]      [,46]
## (Intercept)                   0.62953000  0.09856667  0.240910000
## group_factorContact Eczema    0.02785667  0.15506333 -0.013640000
## group_factorControl           -0.39957667  0.10214667 -0.156970000
## group_factorLichen Planus     -0.21841667 -0.04739667  0.009046667
## group_factorPsoriasis Vulgaris 0.13213000 -0.25597333  0.157733333
##                                    [,47]      [,48]      [,49]       [,50]
## (Intercept)                   0.038503333  0.06108667  0.43623333  0.2917200
## group_factorContact Eczema    -0.257406667 -0.02045667 -0.16421333  0.2903967
## group_factorControl           -0.007153333 -0.23722667 -0.39039000 -0.5454200
## group_factorLichen Planus     0.079580000 -0.07218333 -0.20165333 -0.2193633
## group_factorPsoriasis Vulgaris 0.278596667 -0.04425333  0.07331333  0.3250100
```

4

```
##                                      [,51]         [,52]       [,53]          [,54]
## (Intercept)                    -0.21707667   0.295203333   0.3436467   -0.002260000
## group_factorContact Eczema     -0.14515000   0.387026667  -0.1655000   -0.005186667
## group_factorControl             0.42481333  -0.504423333  -0.1619000    0.088750000
## group_factorLichen Planus      -0.02940333   0.238443333  -0.1534800    0.051756667
## group_factorPsoriasis Vulgaris -0.47091333   0.004933333  -0.1957667   -0.059833333
##                                      [,55]         [,56]       [,57]        [,58]
## (Intercept)                     0.1297500  -0.222756667  -0.0611900    0.4092600
## group_factorContact Eczema      0.0698400   0.103930000   0.2101067   -0.3565500
## group_factorControl            -0.0869900  -0.052910000   0.1285967   -0.1723400
## group_factorLichen Planus      -0.2062633  -0.003726667   0.3272133   -0.2294867
## group_factorPsoriasis Vulgaris -0.2557300   0.687643333   0.2442067   -0.3513567
##                                      [,59]         [,60]       [,61]        [,62]
## (Intercept)                     0.10041667   0.21395000  -0.10453000    0.0199900
## group_factorContact Eczema      0.43833667   0.16510000   0.26152000    0.3877767
## group_factorControl            -0.08905667  -0.20285333  -0.08544000   -0.1807633
## group_factorLichen Planus       0.41770333   0.12698667   0.33157333    0.2821667
## group_factorPsoriasis Vulgaris  0.10482667   0.04805333   0.09550333    0.6230267
##                                      [,63]        [,64]       [,65]        [,66]
## (Intercept)                     0.27696667   0.6386267   0.0448600    0.43044667
## group_factorContact Eczema      0.10735333   1.8172767   0.1082767    0.27374000
## group_factorControl            -0.18565333  -0.8753833  -0.1454167   -0.43122333
## group_factorLichen Planus      -0.10464000   1.2982667   0.2937167    0.03338333
## group_factorPsoriasis Vulgaris -0.01594333  -0.4082233   0.2550867    0.28128333
##                                       [,67]         [,68]         [,69]
## (Intercept)                    -0.106493333  -0.0269600000  -0.01416000
## group_factorContact Eczema     -0.045103333  -0.0003366667   0.15381333
## group_factorControl             0.208653333  -0.0375866667  -0.09609000
## group_factorLichen Planus      -0.001216667   0.0944600000  -0.03515667
## group_factorPsoriasis Vulgaris -0.130630000   0.4546566667  -0.13294333
##                                      [,70]        [,71]       [,72]         [,73]
## (Intercept)                     0.007083333   0.2914633   0.1193867    0.114060000
## group_factorContact Eczema      0.083276667  -0.4929767   0.7036600    0.590700000
## group_factorControl            -0.080113333  -0.1813867  -0.2929300   -0.366963333
## group_factorLichen Planus      -0.029210000  -0.1193633   0.3242567    0.289653333
## group_factorPsoriasis Vulgaris -0.038970000   0.2245200   0.1911533    0.004833333
##                                      [,74]        [,75]       [,76]        [,77]
## (Intercept)                     0.09684000   0.09542333   0.7259133    0.2591733
## group_factorContact Eczema     -0.25200333   0.28280667  -0.1569733    0.1583233
## group_factorControl            -0.35715333  -0.30246333  -0.5372733   -0.2515733
## group_factorLichen Planus      -0.07372333   0.08009667  -0.4968500   -0.0497800
## group_factorPsoriasis Vulgaris  0.86291000   0.27855000  -0.4756433   -0.1888700
##                                      [,78]        [,79]       [,80]        [,81]
## (Intercept)                     0.3184700  -0.01836667  0.04659333    0.2283933
## group_factorContact Eczema      0.1296800  -0.04580333  0.08577333    0.1685433
## group_factorControl            -0.4549567   0.12051333  0.02646667   -0.3137433
## group_factorLichen Planus      -0.3044933  -0.08044333  0.30415667    0.3997133
## group_factorPsoriasis Vulgaris  0.2116300   0.23448667  0.21322333   -0.3044567
##                                      [,82]        [,83]       [,84]        [,85]
## (Intercept)                     0.12861000   0.1188133   0.12753667   0.06062667
## group_factorContact Eczema      0.06062333   0.4385400  -0.26362000  -0.09602667
## group_factorControl            -0.28746333  -0.2826567  -0.31813667   0.09788333
## group_factorLichen Planus      -0.17620667  -0.1626400  -0.03974333  -0.34128000
## group_factorPsoriasis Vulgaris  0.15788333  -0.4682833   0.80165000  -0.05167667
```

```
##                                    [,86]       [,87]       [,88]       [,89]
## (Intercept)                   -0.3106967   0.3908767 -0.11130667 -0.4641400
## group_factorContact Eczema    -0.2167400  -0.2462500 -0.17567667 -0.1574167
## group_factorControl            0.5038733  -0.1659467  0.34486000  0.2490467
## group_factorLichen Planus      0.1862733  -0.4062900  0.08664333 -0.2020833
## group_factorPsoriasis Vulgaris -0.2825200 -0.6501500  0.15115333  0.3070200
##                                    [,90]       [,91]       [,92]       [,93]
## (Intercept)                   -0.4102767 -0.20812667  0.4089767  0.2268933
## group_factorContact Eczema    -0.3561100  0.37441667  0.2241267 -0.2091600
## group_factorControl            0.0015100  0.15931667 -0.0214800 -0.0864100
## group_factorLichen Planus     -0.0173600  0.02649333 -0.0840700 -0.1251167
## group_factorPsoriasis Vulgaris  0.2004033  0.02823000 -1.0994500 -0.2429867
##                                    [,94]       [,95]       [,96]       [,97]
## (Intercept)                    0.8416267 -0.2027600 -0.15760667 -0.01940333
## group_factorContact Eczema     1.1555933 -0.1001100  0.06278667 -0.03635333
## group_factorControl           -0.8542000  0.2943000 -0.18849000 -0.00647000
## group_factorLichen Planus      0.7062633 -0.1049167 -0.15484667 -0.02647000
## group_factorPsoriasis Vulgaris -1.0163400  0.3992500 -0.23374667 -0.18272000
##                                    [,98]       [,99]      [,100]      [,101]
## (Intercept)                    0.2526400 -0.08881667  0.2365967 -0.082116667
## group_factorContact Eczema     0.1254533  0.85309333  0.2681267 -0.267603333
## group_factorControl           -0.3183633  0.06428667 -0.4110700  0.141703333
## group_factorLichen Planus      0.1266500  0.94598000  0.9042933  0.008596667
## group_factorPsoriasis Vulgaris -0.4381333  0.34515333  0.0424000 -0.165813333
##                                   [,102]      [,103]      [,104]      [,105]
## (Intercept)                    0.3483167  0.26062000 -0.23049000 -0.046330000
## group_factorContact Eczema     0.7981867  0.11457667 -0.02060667  0.404680000
## group_factorControl           -0.4097067 -0.08556333  0.06975333 -0.165080000
## group_factorLichen Planus      0.5798967  0.18328667  0.15888333  0.348766667
## group_factorPsoriasis Vulgaris -0.2663333 -0.42957333  0.31875667 -0.003826667
##                                   [,106]      [,107]      [,108]      [,109]
## (Intercept)                    0.26734000  0.03732667  0.2668800 -0.10974333
## group_factorContact Eczema     0.09349333  0.19695667  0.6315967  0.06766667
## group_factorControl           -0.18504333 -0.27113667 -0.3891633  0.11298667
## group_factorLichen Planus     -0.02232000  0.28033667  0.7385233  0.08092000
## group_factorPsoriasis Vulgaris -0.31279000  0.19926667 -0.1892000  0.06536000
##                                   [,110]      [,111]      [,112]      [,113]
## (Intercept)                    0.1250733  0.2846100  0.13509000  0.1603700
## group_factorContact Eczema     0.6454400 -0.2831233  0.13523000  0.1903067
## group_factorControl           -0.1237567 -0.4423867 -0.10950000 -0.0047600
## group_factorLichen Planus      0.8945467 -0.2910033  0.04481667  0.1732233
## group_factorPsoriasis Vulgaris -0.1757567  1.3449567 -0.31765000 -0.2502400
##                                   [,114]      [,115]      [,116]      [,117]
## (Intercept)                   -0.3851867 -0.40423667 -0.23590667  0.1917100
## group_factorContact Eczema    -0.2945200  0.00756000  0.47690333 -0.2604767
## group_factorControl            0.4823400  0.08960333  0.09894333 -0.3326567
## group_factorLichen Planus      0.1876433  0.28529000  0.23963000 -0.6971500
## group_factorPsoriasis Vulgaris  0.2098967  0.54777333  0.03585000  0.6589933
##                                   [,118]      [,119]      [,120]      [,121]
## (Intercept)                   -0.05673333  0.9904333  0.03948667 -0.05060667
## group_factorContact Eczema     0.43277333  0.1693933  0.10363333  0.31051667
## group_factorControl           -0.10575000 -1.1640033  0.04600667  0.17010000
## group_factorLichen Planus      0.42561333  0.0057700  0.13654667  0.46503667
## group_factorPsoriasis Vulgaris  0.18091667  0.5267800 -0.18548667 -0.03834000
```

6

```
##                                   [,122]       [,123]        [,124]       [,125]
## (Intercept)                     0.15878000 -0.06106667 -0.002006667  0.16801000
## group_factorContact Eczema     -0.07725333  0.09434000  0.160233333 -0.32240333
## group_factorControl             0.02714667  0.17287000  0.044996667  0.00597000
## group_factorLichen Planus      -0.04940333  0.13807333  0.136806667  0.04566333
## group_factorPsoriasis Vulgaris -0.25022000  0.43161667  0.239730000 -0.21318667
##                                   [,126]       [,127]       [,128]      [,129]
## (Intercept)                     0.2355233  0.1593433333  0.05594667  0.05792333
## group_factorContact Eczema     -0.7967133 -0.1267600000 -0.30745000  0.35756000
## group_factorControl            -0.1221100  0.1211200000  0.02648000  0.05797667
## group_factorLichen Planus      -0.5441333 -0.0004933333 -0.09901667  0.23285333
## group_factorPsoriasis Vulgaris -0.3491733  0.1612833333  0.18680333 -0.38102667
##                                   [,130]       [,131]       [,132]      [,133]
## (Intercept)                    -0.03665000 -0.06169000 -0.01280667  0.5533000
## group_factorContact Eczema     -0.01823000 -0.02602667  0.13504333 -0.5139133
## group_factorControl            -0.13316000  0.09786667 -0.11306667 -0.9709000
## group_factorLichen Planus      -0.06973333 -0.09709667 -0.01854000 -0.2424800
## group_factorPsoriasis Vulgaris  0.28870000 -0.43076333 -0.08602000 -0.1024733
##                                   [,134]       [,135]      [,136]     [,137]
## (Intercept)                    -0.05085000  0.06889333  0.3761500 -0.2672967
## group_factorContact Eczema      0.21980000 -0.37196000 -0.1962733 -0.4192900
## group_factorControl             0.07842333 -0.01464000 -0.5713400  0.1437400
## group_factorLichen Planus       0.14152333 -0.10498333 -0.1305400 -0.4406567
## group_factorPsoriasis Vulgaris  0.21647667  0.36809667  1.1391833  0.1731433
##                                   [,138]      [,139]      [,140]     [,141]
## (Intercept)                    -0.0710600 -0.22155000  0.2496400  0.15477000
## group_factorContact Eczema     -0.4115667  0.34802333  0.1160200  0.03294333
## group_factorControl            -0.1786333  0.28752667 -0.1918833  0.11245333
## group_factorLichen Planus      -0.3227633 -0.03789667 -0.0333400 -0.31953333
## group_factorPsoriasis Vulgaris  1.0921733 -0.38530667 -0.1337800 -0.37494667
##                                   [,142]      [,143]       [,144]      [,145]
## (Intercept)                     0.59098000 -0.13576000 -0.051990000 -0.25159333
## group_factorContact Eczema     -0.22000667  0.05726667  0.207403333 -0.13938333
## group_factorControl            -0.46340000 -0.13451667 -0.084990000  0.16535667
## group_factorLichen Planus      -0.02586333 -0.06851333 -0.009136667  0.05197667
## group_factorPsoriasis Vulgaris -0.44818333  0.41723333 -0.042780000  0.14273000
##                                   [,146]      [,147]      [,148]      [,149]
## (Intercept)                    -0.12998333  0.5312433  0.24588000  0.08916333
## group_factorContact Eczema      0.25108000 -0.1757267 -0.22358000 -0.01663667
## group_factorControl             0.02324333 -0.5090433  0.01452667 -0.20232000
## group_factorLichen Planus       0.34172000 -0.4119200 -0.24683667 -0.06063000
## group_factorPsoriasis Vulgaris  0.03794667 -0.1083933 -0.35594667 -0.07173000
##                                   [,150]      [,151]      [,152]
## (Intercept)                     0.15762000  0.14569000  0.02729333
## group_factorContact Eczema      0.27008667  0.25806000 -0.20429000
## group_factorControl            -0.32094333  0.01196667  0.06627000
## group_factorLichen Planus       0.06685000  0.00828000 -0.14603000
## group_factorPsoriasis Vulgaris  0.06984333 -0.20771333 -0.09466667
##                                     [,153]      [,154]      [,155]      [,156]
## (Intercept)                     0.1258900000 -0.08028667  0.02502667 -0.4940500
## group_factorContact Eczema     -0.1631500000 -0.00911000  0.13291667 -0.2550867
## group_factorControl             0.0592266667  0.09805000  0.27497000  0.6240233
## group_factorLichen Planus      -0.1978900000 -0.00122000 -0.05797000  0.6291800
## group_factorPsoriasis Vulgaris -0.0005833333 -0.06396000 -0.02159000  0.3672767
```

```
##                             [,157]       [,158]        [,159]
## (Intercept)               0.15754000 -0.220290000  0.190423333
## group_factorContact Eczema  -0.07721333  0.124350000 -0.378143333
## group_factorControl        -0.19191000  0.195210000  0.007843333
## group_factorLichen Planus  -0.08362667 -0.166813333 -0.175810000
## group_factorPsoriasis Vulgaris -0.35640000  0.001243333 -0.331863333
##                             [,160]       [,161]        [,162]       [,163]
## (Intercept)               0.15419333 -0.15823667 -1.33193667 -1.3381500
## group_factorContact Eczema  0.24856333  0.24672333 -0.04197333  0.2405600
## group_factorControl        0.06744333  0.19560333  1.28300000  1.3568967
## group_factorLichen Planus  0.45202667  0.06220667  0.42895667  0.4202667
## group_factorPsoriasis Vulgaris -0.20401667  0.20598333 -0.20309000 -0.1603867
##                             [,164]       [,165]        [,166]       [,167]
## (Intercept)               0.3635633 -0.17078000  0.4446033  0.2827700
## group_factorContact Eczema  0.1278533  0.01485000  0.3440367  0.1169967
## group_factorControl        -0.3079067  0.20964000 -0.3659733  0.0013400
## group_factorLichen Planus  0.4974833  0.03681333  0.4411400 -0.3889633
## group_factorPsoriasis Vulgaris -0.5217933 -0.30570000 -0.4926800 -0.1909833
##                             [,168]       [,169]        [,170]       [,171]
## (Intercept)               -0.30206667  0.28779333 -0.13864333  0.12303667
## group_factorContact Eczema  0.03526333 -0.09896000  0.84802333  0.34451667
## group_factorControl        0.15288667  0.04043333  0.13274333 -0.04562667
## group_factorLichen Planus  0.39313667 -0.18158000  0.60700000  0.29821667
## group_factorPsoriasis Vulgaris  0.26301333 -0.31602333 -0.09979333 -0.20285000
##                             [,172]       [,173]        [,174]       [,175]
## (Intercept)               -0.09683000  0.4627533333  0.2842733  0.62286667
## group_factorContact Eczema  -0.23639333 -0.0008566667  0.2272533  0.22033333
## group_factorControl        0.02136667 -0.1306133333 -0.3205000 -0.12894333
## group_factorLichen Planus  0.14011667 -0.3098166667  0.5111600 -0.05682667
## group_factorPsoriasis Vulgaris  0.41807667 -0.2497700000 -0.1818500 -1.15774667
##                             [,176]       [,177]        [,178]       [,179]
## (Intercept)               -0.20718333  0.3709467  0.08662000 -0.26825000
## group_factorContact Eczema  -0.15037667 -0.2640600 -0.04029667  0.02362000
## group_factorControl        0.05898000 -0.2542533  0.04055667  0.35213000
## group_factorLichen Planus  -0.08319333 -0.3214300  0.15142667  0.02119667
## group_factorPsoriasis Vulgaris  0.09352333 -0.4243767 -0.28163333  0.33895000
##                             [,180]       [,181]        [,182]       [,183]
## (Intercept)               -0.4710467  0.4474600  0.6514200  0.12976667
## group_factorContact Eczema  -0.2059267  0.8653233  0.8086833 -0.03490333
## group_factorControl        0.4882833 -0.4193400 -0.7175900  0.01162667
## group_factorLichen Planus  -0.1576133  0.3665700 -0.4411367 -0.04528000
## group_factorPsoriasis Vulgaris  0.2260167 -0.2311133  0.7333800 -0.31135667
##                             [,184]       [,185]        [,186]       [,187]
## (Intercept)               -0.34497000 -0.10044667  0.10690000 -0.3747333
## group_factorContact Eczema  -0.07622333  0.39891333  0.15746000  0.3459500
## group_factorControl        -0.10950000 -0.13603000 -0.15323000  0.1531500
## group_factorLichen Planus  -0.25037333 -0.04933333 -0.20813667  0.0329900
## group_factorPsoriasis Vulgaris  0.42518667  0.35063333 -0.06784667  0.4133000
##                             [,188]       [,189]        [,190]       [,191]
## (Intercept)               0.7705600 -0.20426000 -0.2017967 -1.25525333
## group_factorContact Eczema  0.5986700  0.06363333  0.0288200 -0.10897667
## group_factorControl        -0.6836233  0.10158667  0.3290967  0.75837333
## group_factorLichen Planus  0.3586667  0.17572667  0.4887600  0.01395333
## group_factorPsoriasis Vulgaris -0.4232333  0.34018333 -0.3688500 -0.54526333
```

```
##                                     [,192]      [,193]      [,194]      [,195]
## (Intercept)                      0.2161033  -0.9306200  -0.25498333 -1.36220333
## group_factorContact Eczema      -0.2903567   0.1536833  -0.17164667  0.16406000
## group_factorControl             -0.1129400   0.9695300   0.28081000  1.16952667
## group_factorLichen Planus       -0.1736967   0.3119033  -0.18929000  0.44127667
## group_factorPsoriasis Vulgaris  -0.8216933   0.3130133  -0.06772333  0.09391667
##                                     [,196]      [,197]      [,198]      [,199]
## (Intercept)                      0.2282933   0.04868667 -0.5471167  -0.45135333
## group_factorContact Eczema      -0.3200600  -0.09053333 -0.1571067  -0.34426000
## group_factorControl              0.1649400  -0.00361000  0.5877767   0.46120000
## group_factorLichen Planus       -0.1533433  -0.34183000 -0.3066200   0.09418333
## group_factorPsoriasis Vulgaris  -0.4924767   0.14150333 -0.3700367  -0.21466000
##                                     [,200]      [,201]      [,202]      [,203]
## (Intercept)                      0.03321000  0.03482667  0.09350667 -0.05510333
## group_factorContact Eczema       0.10844000  0.04058667 -0.12612667 -0.36065667
## group_factorControl             -0.09218333  0.06433667 -0.21424333  0.30137333
## group_factorLichen Planus        0.30867333 -0.43828667 -0.21902333 -0.46983667
## group_factorPsoriasis Vulgaris   0.06164333  0.28061667  0.11254000 -0.35444667
##                                     [,204]      [,205]      [,206]      [,207]
## (Intercept)                      0.3959267  -0.3624700  -0.58565333  0.4836733
## group_factorContact Eczema       0.4868467  -0.3516033   0.05061333 -0.2115467
## group_factorControl             -0.3940433   0.5303900   0.68957667 -0.5279767
## group_factorLichen Planus        0.2007833  -0.2794733   0.19035667 -0.1550000
## group_factorPsoriasis Vulgaris  -0.5156133  -0.3829600  -0.43095333  0.4095200
##                                     [,208]       [,209]      [,210]      [,211]
## (Intercept)                     -0.2905667  -0.643580000 -0.05961333  0.2464800
## group_factorContact Eczema      -0.2306433   0.007646667  0.03366000 -0.3401633
## group_factorControl              0.5707933   0.400756667  0.16343333 -0.0351200
## group_factorLichen Planus        0.1563467  -0.769780000 -0.10194333 -1.1829500
## group_factorPsoriasis Vulgaris   0.1022767  -0.405076667  0.11958000 -0.6853000
##                                     [,212]       [,213]      [,214]      [,215]
## (Intercept)                     -0.2389933   0.121580000  0.24561333  0.5491700
## group_factorContact Eczema       0.1673567   0.286896667 -0.35215667  0.1716867
## group_factorControl              0.4202833  -0.002033333 -0.09063333 -0.3309233
## group_factorLichen Planus       -0.2241133   0.059440000 -0.17275333  0.1034967
## group_factorPsoriasis Vulgaris  -0.1128367  -0.544440000 -0.21299000 -0.5358633
##                                     [,216]      [,217]     [,218]     [,219]
## (Intercept)                     -0.27585333  0.02774000  0.3467633  0.7683500
## group_factorContact Eczema      -0.10399000  0.10039000  0.3656733  0.9525600
## group_factorControl              0.50576667 -0.17081667 -0.3303300 -0.7889633
## group_factorLichen Planus       -0.03669333 -0.02088667  0.2761533  0.7997433
## group_factorPsoriasis Vulgaris  -0.15053000  0.19016667 -0.2140567 -0.4637133
##                                     [,220]    [,221]      [,222]     [,223]
## (Intercept)                     -0.10913333  0.26975 -0.33195000  0.0468400
## group_factorContact Eczema       0.14745667  0.43488 -0.08435667  0.1267967
## group_factorControl              0.06247667 -0.18278  0.26222000 -0.1057867
## group_factorLichen Planus        0.02538333  0.48270 -0.10880333  0.0920800
## group_factorPsoriasis Vulgaris   0.77924667 -0.09641 -0.05010000  0.1920300
##                                     [,224]     [,225]      [,226]     [,227]
## (Intercept)                     -0.0781800  0.6122467  0.22859667  0.30682667
## group_factorContact Eczema      -0.2442667 -0.1956767  0.27564333 -0.34145000
## group_factorControl              0.0891100 -0.3272267 -0.39049667 -0.05635333
## group_factorLichen Planus        0.3187200 -0.5694733  0.06523667  0.84684333
## group_factorPsoriasis Vulgaris  -0.4920700 -0.2928500  0.60266667  0.50756333
```

```
##                               [,228]       [,229]       [,230]       [,231]
## (Intercept)                 0.05731000 -0.01765667 -0.02973333 -0.05214333
## group_factorContact Eczema   0.16159333  0.35706000 -0.17275667  0.35577667
## group_factorControl         -0.05716667  0.08984000  0.22387333 -0.10410000
## group_factorLichen Planus   -0.12844667  0.00153000 -0.04129667  0.71722000
## group_factorPsoriasis Vulgaris -0.18298667 -0.52235000  0.09936667 -0.10772333
##                               [,232]       [,233]      [,234]      [,235]
## (Intercept)                 -0.2665100 -0.068250000  0.2738933  0.04622000
## group_factorContact Eczema   0.2897467 -0.004506667 -0.3683033  0.15229000
## group_factorControl          0.4634367  0.129943333 -0.2942500 -0.08175000
## group_factorLichen Planus    0.1831233  0.040436667 -0.4074833  0.71902000
## group_factorPsoriasis Vulgaris -0.1261267 -0.286360000  0.0993300  0.05614333
##                               [,236]      [,237]      [,238]      [,239]
## (Intercept)                 0.5622233  1.05251667  0.1577167  0.25332667
## group_factorContact Eczema  -0.7798533  0.19485333  0.0959800 -0.31255667
## group_factorControl         -0.2589433 -1.03339333  0.0915300 -0.12674667
## group_factorLichen Planus    0.4153967  0.08062333  0.3193933  0.04410333
## group_factorPsoriasis Vulgaris  0.1625267 -0.35159000 -0.0674400 -0.32077333
##                               [,240]      [,241]      [,242]      [,243]
## (Intercept)                 -0.12175667 -0.2391200  0.1077200 -0.08143667
## group_factorContact Eczema  -0.22502667  0.0249200 -0.1821933  0.14626333
## group_factorControl         -0.07188667  0.4780233  0.3149933  0.10218333
## group_factorLichen Planus   -0.26419333  0.1751733  0.7770600  0.05503333
## group_factorPsoriasis Vulgaris -0.04427000 -0.3285767  0.6606000 -0.01399667
##                               [,244]      [,245]      [,246]      [,247]
## (Intercept)                 0.77339000  0.51650000  0.50710333 -0.14616000
## group_factorContact Eczema  0.12776667 -0.05673667 -0.40364333 -0.10631667
## group_factorControl         -0.44784333 -0.32660667 -0.32139667  0.39042667
## group_factorLichen Planus   -0.02353667  0.21819000 -0.07006667  0.28038000
## group_factorPsoriasis Vulgaris -0.58304333 -0.33544000 -0.56875667  0.05693333
##                               [,248]       [,249]       [,250]       [,251]
## (Intercept)                 0.122683333  0.32351000  0.12517333  0.21260667
## group_factorContact Eczema  -0.008933333 -0.36172333 -0.22943667  0.08742000
## group_factorControl         -0.178416667 -0.36710333 -0.02984333 -0.09832000
## group_factorLichen Planus   0.174506667  0.08298667 -0.35724000  0.05064333
## group_factorPsoriasis Vulgaris -0.340723333  0.41005667 -0.20254000 -0.21821667
##                               [,252]      [,253]      [,254]      [,255]
## (Intercept)                 -0.3371100  0.1707933 -0.11522667 -0.07645000
## group_factorContact Eczema  0.1497767 -0.0759700  0.17227667 -0.61750000
## group_factorControl         0.2204800  0.4108900  0.06577000  0.07014667
## group_factorLichen Planus   0.1887433 -0.2057533  0.19358333 -0.17693000
## group_factorPsoriasis Vulgaris  0.0266200 -0.7593300 -0.08848667 -0.17765667
##                               [,256]       [,257]      [,258]      [,259]
## (Intercept)                 0.2397833 -0.16685333  0.05462667  0.11322333
## group_factorContact Eczema  0.5657167  0.06063667 -0.03913000 -0.06485333
## group_factorControl         -0.1638700  0.30876000  0.15763333  0.00631000
## group_factorLichen Planus   0.3174133  0.55559333 -0.18548333  0.19181333
## group_factorPsoriasis Vulgaris -0.2984833  0.30336667  0.19111333 -0.03843333
##                               [,260]       [,261]       [,262]      [,263]
## (Intercept)                 0.4723967 -0.020036667 -0.4475800 -0.08361667
## group_factorContact Eczema  0.9156733 -0.008556667 -0.5448967  0.23555000
## group_factorControl         -0.5705400  0.173560000  0.5505367  0.05454000
## group_factorLichen Planus   -0.2183433  0.214603333 -0.1078333 -0.61995667
## group_factorPsoriasis Vulgaris -0.6117233 -0.309203333 -0.3379733  1.33034000
```

```
##                                  [,264]       [,265]      [,266]      [,267]
## (Intercept)                    0.95067000 -0.09181333  0.4334533   0.2159233
## group_factorContact Eczema     0.10621667  0.05032667 -0.8238200 -0.1794000
## group_factorControl           -1.14978000  0.06679333 -0.4284367 -0.1841167
## group_factorLichen Planus     -0.04401333 -0.03520667 -0.2335633  0.1512400
## group_factorPsoriasis Vulgaris -0.43556667  0.16745333 -0.6645333 -0.1811467
##                                     [,268]       [,269]      [,270]      [,271]
## (Intercept)                    -0.162883333 -0.20259000 -0.282710000 -0.1114733
## group_factorContact Eczema      0.033906667 -0.01136000 -0.047680000 -0.1350500
## group_factorControl             0.232626667  0.19985000  0.098903333  0.1376833
## group_factorLichen Planus       0.349376667 -0.04968667 -0.050260000  0.1829900
## group_factorPsoriasis Vulgaris  0.005276667  0.12314667  0.007293333  0.0587500
##                                     [,272]      [,273]      [,274]      [,275]
## (Intercept)                     0.14559000 -0.33074333 -0.3349467 -0.66773333
## group_factorContact Eczema     -0.05884000 -0.46048667 -0.1342000 -0.11201667
## group_factorControl            -0.07967333  0.17919333  0.2679533  0.67752667
## group_factorLichen Planus      -0.03018667  0.06769667  0.3549800 -0.02198333
## group_factorPsoriasis Vulgaris -0.26408000 -0.22151667  0.4046400 -0.14861000
##                                     [,276]      [,277]      [,278]      [,279]
## (Intercept)                     0.1052300  0.07009333 -0.01679333  0.2354433
## group_factorContact Eczema     -0.1171600 -0.23220667  0.15243333  0.7408233
## group_factorControl            -0.0391300 -0.11914667  0.07194333 -0.4644433
## group_factorLichen Planus      -0.2270767 -0.33927667 -0.03632333  0.5661900
## group_factorPsoriasis Vulgaris -0.1403633 -0.30355000  0.38635667  0.2530567
##                                      [,280]       [,281]      [,282]      [,283]
## (Intercept)                     0.006483333 -0.47777667  0.2000667  0.09627333
## group_factorContact Eczema      0.073606667 -0.07736333  0.1530300 -0.12424667
## group_factorControl            -0.169443333  0.57622333 -0.1960500  0.01918667
## group_factorLichen Planus      -0.061626667  0.31844667  0.0631000 -0.27253000
## group_factorPsoriasis Vulgaris  0.077686667  0.53875333 -0.3914767  0.38661667
##                                     [,284]      [,285]      [,286]      [,287]
## (Intercept)                    -0.2190233  0.4643000  0.14756667 -0.69754000
## group_factorContact Eczema      0.1356300 -0.2453367 -0.08336667 -0.36362000
## group_factorControl             0.2250267 -0.1665200 -0.11532000  0.64101333
## group_factorLichen Planus      -0.3657167 -0.1930400 -0.04559333  0.43660000
## group_factorPsoriasis Vulgaris -0.2053333 -0.4105667 -0.15652667  0.01531667
##                                     [,288]      [,289]      [,290]      [,291]
## (Intercept)                    -1.1009233 -0.23048333 -0.1576000  0.16493667
## group_factorContact Eczema     -0.4773033 -0.72856000 -0.2758300 -0.27019667
## group_factorControl             1.3804367  0.27122000  0.1981067  0.03233667
## group_factorLichen Planus       0.1887533  0.34535667  0.2073533 -0.34067333
## group_factorPsoriasis Vulgaris  0.2720100  0.04193667  0.4399167 -0.44767333
##                                     [,292]      [,293]      [,294]      [,295]
## (Intercept)                    -0.7070000 -0.2746900 -0.15508333 -0.2069133
## group_factorContact Eczema     -0.3714433 -0.4882733  0.10758667 -0.1347167
## group_factorControl             1.0349233  0.5454733  0.14898333  0.3168500
## group_factorLichen Planus      -0.0341700  0.5834333 -0.07101333  0.3652900
## group_factorPsoriasis Vulgaris  0.1156567  0.5822233  0.08340333 -0.0779600
##                                     [,296]      [,297]      [,298]      [,299]
## (Intercept)                    -0.9085733 -0.15474333  0.1935400 -0.060776667
## group_factorContact Eczema     -0.6715467 -0.02083000  0.1962967  0.066183333
## group_factorControl             0.8850900  0.06113000 -0.1793567  0.117096667
## group_factorLichen Planus       0.2120367  0.05578333 -0.2203233 -0.012423333
## group_factorPsoriasis Vulgaris -0.4668400  0.51349667 -0.3582867  0.003033333
```

```
##                                  [,300]       [,301]      [,302]       [,303]
## (Intercept)                    1.543777 -0.23780333  0.4176400 -0.07083333
## group_factorContact Eczema     1.001417  0.16126000 -0.3600033  0.04735667
## group_factorControl           -1.651143  0.47784000 -0.2716033  0.04208000
## group_factorLichen Planus      -0.194930  0.04548000 -0.3168000 -0.05958000
## group_factorPsoriasis Vulgaris -0.865940 -0.08765667 -0.4796267 -0.20696333
##                                   [,304]      [,305]       [,306]     [,307]
## (Intercept)                    -0.6446200  0.5527500 -0.23072333  0.2695100
## group_factorContact Eczema     -0.8403000  0.2872933  0.07795333  0.7806600
## group_factorControl             0.8578000 -0.3443200  0.42886667 -0.3836800
## group_factorLichen Planus       0.7604633 -0.6601600 -0.07626333  1.3944000
## group_factorPsoriasis Vulgaris  0.9208200 -0.8322633 -0.23950333 -0.2935033
##                                       [,308]       [,309]      [,310]     [,311]
## (Intercept)                    -0.003586667 -0.28063667  0.14452333  0.2717467
## group_factorContact Eczema     -0.042080000  0.18856667  0.09374000 -0.1128300
## group_factorControl             0.195730000 -0.04814333 -0.07659333 -0.1435833
## group_factorLichen Planus      -0.101870000 -0.16631667 -0.14104333 -0.1785367
## group_factorPsoriasis Vulgaris  0.137010000  0.32019000 -0.08973667 -0.3078033
##                                    [,312]     [,313]      [,314]     [,315]
## (Intercept)                    -0.31524333 -0.9283067 -0.29188333 -0.3016600
## group_factorContact Eczema     -0.35333000 -0.3655833 -0.08001333 -0.5279867
## group_factorControl             0.24754667  0.9220767  0.52067000  0.3620933
## group_factorLichen Planus       0.11483667  0.2113100  0.16141333  0.1828700
## group_factorPsoriasis Vulgaris  0.06724667  0.2269133 -0.40849667  0.8359467
##                                    [,316]      [,317]     [,318]     [,319]
## (Intercept)                    -0.2961000 -0.31451667  0.9638733 -0.4840000
## group_factorContact Eczema     -0.5315100 -0.05408667  0.1729567 -0.3713833
## group_factorControl             0.3884867  0.35134667 -0.9049167  0.7243467
## group_factorLichen Planus       0.1511200 -0.02234333  0.1889667  0.1436533
## group_factorPsoriasis Vulgaris  0.3363000 -0.04377333 -0.4829467  0.1325200
##                                    [,320]     [,321]       [,322]     [,323]
## (Intercept)                    -0.07906667 -0.1916333  0.009753333  0.4884833
## group_factorContact Eczema     -0.64178000  0.0017700  0.349953333 -1.0767467
## group_factorControl             0.17422000  0.1749100  0.244030000 -0.2527667
## group_factorLichen Planus       0.06116667  0.1587233  0.078463333  0.5767867
## group_factorPsoriasis Vulgaris  0.13230000 -0.1746133 -0.034053333  0.0400500
##                                    [,324]       [,325]     [,326]     [,327]
## (Intercept)                    0.01267333  0.104910000  0.1041033  0.5454967
## group_factorContact Eczema    -0.06302000  0.193406667  0.1886067 -0.3084733
## group_factorControl            0.01472667 -0.002403333 -0.3421867 -0.1359633
## group_factorLichen Planus     -0.02027000  0.113460000 -0.1758033 -0.9721167
## group_factorPsoriasis Vulgaris -0.22972667 -0.503870000 -0.2106800 -0.7074100
##                                   [,328]      [,329]      [,330]      [,331]
## (Intercept)                    0.2049733  0.08691667  0.25051333 -0.44940000
## group_factorContact Eczema    -0.5885333 -0.26785000  0.07109333 -0.12924000
## group_factorControl           -0.5986900 -0.00163000 -0.10673333  0.85599000
## group_factorLichen Planus      0.1739433 -0.19141333 -0.16457000  0.34726333
## group_factorPsoriasis Vulgaris 1.9297867 -0.16210000 -0.06597667 -0.05696667
##                                     [,332]      [,333]      [,334]     [,335]
## (Intercept)                    -0.09879667 -0.09891667  0.18063667  0.1468333
## group_factorContact Eczema     -0.24435000 -0.02751000 -0.05747667  0.1491233
## group_factorControl             0.20870667  0.15591000 -0.02491333 -0.0337200
## group_factorLichen Planus      -0.16118667  0.02064333 -0.16322667  0.1187033
## group_factorPsoriasis Vulgaris -0.16274000  0.07512667 -0.36811333 -0.6014100
```

```
##                                 [,336]      [,337]      [,338]      [,339]
## (Intercept)                 -0.05475333  0.5430067 -0.05126333 -0.3524933
## group_factorContact Eczema   0.14850667 -0.2097033  0.16478667 -0.1285300
## group_factorControl         -0.08219000  0.1737500  0.02645667  0.6107900
## group_factorLichen Planus   -0.19047333 -0.5669400  0.02715667 -0.1317700
## group_factorPsoriasis Vulgaris 0.27058000 -0.7433433 -0.07912333 -0.4141933
##                                 [,340]      [,341]      [,342]      [,343]
## (Intercept)                  0.001293333  0.19613667  0.7163533  0.002563333
## group_factorContact Eczema   0.258156667  0.22927000 -0.0612800  0.289383333
## group_factorControl          0.262926667 -0.15563000 -0.7119000  0.151223333
## group_factorLichen Planus    0.091980000 -0.26016667 -0.1751467  0.126513333
## group_factorPsoriasis Vulgaris 0.379006667  0.02071333  0.0830700 -0.529323333
##                                 [,344]      [,345]      [,346]      [,347]
## (Intercept)                  -0.1232033  0.25465667 -0.06465667 -0.3690933
## group_factorContact Eczema   -0.5810300 -0.66088333 -0.06350667 -0.2506133
## group_factorControl           0.3115133 -0.06301667  0.06655667  0.4339033
## group_factorLichen Planus    -0.6747633 -0.57396667  0.14772333  0.2531433
## group_factorPsoriasis Vulgaris -0.3647067 -0.17462000  0.01947667  0.7162933
##                                 [,348]      [,349]      [,350]      [,351]
## (Intercept)                  -0.03507000 -0.1818100  0.1595167  0.3930533
## group_factorContact Eczema    0.09081333  0.7347900  0.2772133  0.6867700
## group_factorControl          -0.01438667 -0.2777433 -0.5221433 -0.1574767
## group_factorLichen Planus     0.07197000  0.0553800  0.1231633  0.2297167
## group_factorPsoriasis Vulgaris -0.37362667  0.7239200  0.5550633 -0.1371067
##                                 [,352]      [,353]      [,354]      [,355]
## (Intercept)                   0.0323500 -0.13589333  0.1570200  0.4391500
## group_factorContact Eczema   -0.2158300 -0.81098333  0.4900600  0.1566067
## group_factorControl           0.1246867  0.46475333 -0.3747767 -0.4285900
## group_factorLichen Planus    -0.2977367 -0.02133667  0.1074867  0.2427133
## group_factorPsoriasis Vulgaris -0.2139067  0.10743667  0.4268000 -0.2011100
##                                 [,356]      [,357]      [,358]      [,359]
## (Intercept)                  -0.07161667 -0.0246300  0.05137667  0.25127000
## group_factorContact Eczema    0.30142667  0.2997200  0.09880667 -0.09058667
## group_factorControl           0.11647667 -0.0454700  0.15721000 -0.04391000
## group_factorLichen Planus    -0.04835333 -0.1038700 -0.04636667 -0.30753000
## group_factorPsoriasis Vulgaris 0.12755667  0.1366833 -0.22396000 -0.41503333
##                                 [,360]      [,361]      [,362]      [,363]
## (Intercept)                   0.252180000  0.68916000  0.16988333  0.7728700
## group_factorContact Eczema    0.632306667  0.24381667 -0.01106000  0.4829233
## group_factorControl          -0.007336667 -0.30034000  0.08892667 -0.2651300
## group_factorLichen Planus     0.233420000  0.01794667 -0.08316667  0.3232400
## group_factorPsoriasis Vulgaris -0.220306667 -1.14839333 -0.20078000 -1.2238267
##                                 [,364]      [,365]      [,366]      [,367]
## (Intercept)                   0.09315333  0.4417367 -0.119426667 -0.5256933
## group_factorContact Eczema   -0.06832667 -0.1708267 -0.171426667  0.1369267
## group_factorControl          -0.46823333 -0.1311567  0.172586667  0.2321533
## group_factorLichen Planus    -0.32655333  0.0834300  0.005656667 -0.1574467
## group_factorPsoriasis Vulgaris 0.60329667 -0.3427933  0.173083333  0.3799333
##                                 [,368]      [,369]      [,370]      [,371]
## (Intercept)                  -0.01115333 -0.09050667  0.16312333 -0.02595667
## group_factorContact Eczema    0.13347333 -0.00911000  0.13469333  0.10348333
## group_factorControl          -0.09629333  0.20772667 -0.03096667 -0.10233333
## group_factorLichen Planus     0.13799667 -0.05476000  0.15745333 -0.15998000
## group_factorPsoriasis Vulgaris 0.12068667 -0.00712000 -1.04313333  0.16975333
```

```
##                                  [,372]     [,373]      [,374]      [,375]
## (Intercept)                  -0.1080767 -0.1128767 -0.06126667 -0.0029700
## group_factorContact Eczema    0.1116967  0.4950900  0.23644333  0.1252300
## group_factorControl           0.1713700  0.4026167 -0.13831333 -0.0682100
## group_factorLichen Planus    -0.0095200  0.3570667 -0.18260667 -0.2698100
## group_factorPsoriasis Vulgaris -0.1651267 -0.7414933  0.59073000  0.1805433
##                                  [,376]     [,377]      [,378]      [,379]
## (Intercept)                  -0.6032333  0.09269333 -0.12297333 -0.11658000
## group_factorContact Eczema   -0.0440800 -0.18283667  0.16090000 -0.25649667
## group_factorControl           0.7972167 -0.19794333  0.15772000  0.26948333
## group_factorLichen Planus    -0.2266833 -0.45901333 -0.01567667 -0.04310667
## group_factorPsoriasis Vulgaris  0.9321567  0.80633000 -0.03867667 -0.19553000
##                                    [,380]      [,381]       [,382]
## (Intercept)                   0.333073333 -0.08942000 -0.022323333
## group_factorContact Eczema   -0.093036667 -0.03584333 -0.013590000
## group_factorControl          -0.089640000 -0.15679000  0.007613333
## group_factorLichen Planus    -0.007303333  0.03220667  0.085953333
## group_factorPsoriasis Vulgaris -0.789386667  0.29755667  0.144933333
##                                  [,383]     [,384]     [,385]     [,386]
## (Intercept)                  -0.01994000 -0.08618000 -0.4402267  0.1757267
## group_factorContact Eczema    0.02205667  0.05200333 -0.2967067  0.2340533
## group_factorControl          -0.00792000  0.11180333  0.7733433 -0.3424300
## group_factorLichen Planus     0.02151000  0.01962333 -0.1118033 -0.1105000
## group_factorPsoriasis Vulgaris -0.20513667 -0.29554000 -0.3333567  0.1691733
##                                    [,387]      [,388]     [,389]
## (Intercept)                   0.005116667 -0.164993333  0.03592667
## group_factorContact Eczema    0.031620000  0.003166667  0.26689333
## group_factorControl          -0.132473333  0.267056667  0.06701000
## group_factorLichen Planus    -0.136450000 -0.105100000  0.11600667
## group_factorPsoriasis Vulgaris  0.049856667 -0.186643333 -0.25062667
##                                  [,390]     [,391]     [,392]     [,393]
## (Intercept)                   0.10964667  0.08639333 -0.10219000  0.2955000
## group_factorContact Eczema   -0.11219667  0.07605000  0.03948000  0.0790100
## group_factorControl           0.08825333 -0.20909333  0.21842000 -0.2390600
## group_factorLichen Planus    -0.07800333 -0.12956333  0.11136000 -0.1245067
## group_factorPsoriasis Vulgaris -0.16357333  0.33743667  0.03450667 -0.3918167
##                                  [,394]     [,395]     [,396]     [,397]
## (Intercept)                   0.1088333  0.1851267 -0.19819000  0.04086000
## group_factorContact Eczema    0.1185767  0.2442300  0.30148333  0.02219333
## group_factorControl           0.0069500 -0.1650933  0.15337667 -0.03745333
## group_factorLichen Planus    -0.1076767  0.2035667 -0.16448667 -0.01114667
## group_factorPsoriasis Vulgaris  0.1958400 -0.2281867  0.06163333 -0.15869000
##                                  [,398]     [,399]     [,400]     [,401]
## (Intercept)                   0.01160333  0.13866667 -0.01941667  0.1611533
## group_factorContact Eczema   -0.04248667 -0.03373000  0.09855667 -0.0297500
## group_factorControl          -0.09044000 -0.11232667  0.13972333 -0.1116733
## group_factorLichen Planus    -0.22599667  0.03194667  0.04702333  0.1268333
## group_factorPsoriasis Vulgaris  0.03524333  0.11698333 -0.28189333 -0.2663867
##                                  [,402]     [,403]     [,404]      [,405]
## (Intercept)                   0.6346533  0.11576000  0.16744333 -0.006536667
## group_factorContact Eczema   -0.2986433 -0.07119667 -0.04418667  0.389166667
## group_factorControl          -0.4174567 -0.23625333 -0.37687333 -0.051400000
## group_factorLichen Planus    -0.4246167 -0.08210000 -0.09911000  0.232473333
## group_factorPsoriasis Vulgaris -0.3512300 -0.13599333  0.43257333  0.292640000
```

14

```
##                                    [,406]      [,407]      [,408]        [,409]
## (Intercept)                    -0.07529667 -0.2093633 -0.05355667 -0.160756667
## group_factorContact Eczema      0.07377333  0.2446767  0.17262000 -0.352380000
## group_factorControl             0.24642667  0.1536700  0.05126667  0.283303333
## group_factorLichen Planus       0.09535333 -0.0856400  0.03384667 -0.384070000
## group_factorPsoriasis Vulgaris  0.20547667  0.1232567 -0.07469000  0.001896667
##                                    [,410]      [,411]     [,412]     [,413]
## (Intercept)                     -0.2041700  0.13909667  0.6681100  0.2695167
## group_factorContact Eczema      -0.0688100  0.36280667  1.1654800  0.1355000
## group_factorControl              0.1337467 -0.07678667 -0.5967800 -0.3976600
## group_factorLichen Planus       -0.1995700  0.07092333  0.4987700  0.8616200
## group_factorPsoriasis Vulgaris  -0.1791767 -0.54557667 -0.4411167  0.7713967
##                                    [,414]      [,415]      [,416]     [,417]
## (Intercept)                      0.16672333  0.04878667 -0.06631333  0.2957500
## group_factorContact Eczema       0.20543333 -0.16506333  0.19193000  0.3437533
## group_factorControl             -0.03420333 -0.40772333  0.26041667 -0.2111767
## group_factorLichen Planus        0.27405000 -0.26968000  0.37283000  0.3033967
## group_factorPsoriasis Vulgaris  -0.21223000  1.06267333 -0.15288667 -0.5607900
##                                    [,418]      [,419]     [,420]     [,421]
## (Intercept)                     -0.08465333  0.02929000 0.10276333  0.2899233
## group_factorContact Eczema       0.09272667 -0.39288667 0.15062000 -0.3019233
## group_factorControl              0.03071000 -0.08953333 0.11851333 -0.0943000
## group_factorLichen Planus       -0.06777333  0.07327333 0.01854667 -0.1229167
## group_factorPsoriasis Vulgaris   0.18532333 -0.24008333 0.00839000 -0.1750367
##                                    [,422]      [,423]      [,424]     [,425]
## (Intercept)                      0.12011333  0.06534333 -0.18874667  0.23746000
## group_factorContact Eczema      -0.33711000  0.11368000 -0.24242333 -0.05140000
## group_factorControl             -0.01958667  0.02679333 -0.01081667 -0.19772333
## group_factorLichen Planus       -0.35370667 -0.05589333 -0.44817000 -0.26112000
## group_factorPsoriasis Vulgaris  -0.17784333  0.43613000  0.55187000  0.05586333
##                                    [,426]      [,427]      [,428]     [,429]
## (Intercept)                      0.05121333 -0.22539000 -0.46990000  0.0764700
## group_factorContact Eczema      -0.00429000 -0.07360667 -0.04408333 -0.4503633
## group_factorControl              0.12949667  0.31201000  0.55728000 -0.0222500
## group_factorLichen Planus        0.18752333  0.11917667  0.19989000 -0.4425200
## group_factorPsoriasis Vulgaris  -0.51303667 -0.03258333 -0.07015333  0.1740900
##                                    [,430]       [,431]       [,432]      [,433]
## (Intercept)                     -0.079666667 -0.165336667 -0.1131633 -0.1033233
## group_factorContact Eczema       0.009023333 -0.045390000 -0.2227433 -0.3679000
## group_factorControl              0.187646667  0.336273333  0.3212533 -0.0916100
## group_factorLichen Planus        0.126803333  0.013603333 -0.0196600 -0.2677033
## group_factorPsoriasis Vulgaris   0.256160000  0.009743333 -0.2682100  0.2742067
##                                    [,434]       [,435]      [,436]     [,437]
## (Intercept)                      0.5651033  0.548346667  1.551340  3.4533133
## group_factorContact Eczema       1.0984033 -0.231980000  1.107350 -0.4476400
## group_factorControl             -0.7248933 -0.495490000 -1.706563 -3.7735100
## group_factorLichen Planus        0.3668367 -0.002466667 -0.878150 -0.4007967
## group_factorPsoriasis Vulgaris  -0.2311467 -1.025860000 -1.584553 -2.6719533
##                                    [,438]       [,439]     [,440]     [,441]
## (Intercept)                      0.8844667  0.294666667  0.1391000  1.2325267
## group_factorContact Eczema       1.3608167  0.006703333  0.7883800  0.2380533
## group_factorControl             -1.2319667 -0.395533333  0.5326533 -1.2096433
## group_factorLichen Planus        0.8329433  0.004880000  0.9765933 -0.1897800
## group_factorPsoriasis Vulgaris  -0.8127467  0.060030000 -0.2049433 -0.9950200
```

```
##                                     [,442]      [,443]     [,444]      [,445]
## (Intercept)                     0.41879333  0.02305000  0.4427567  0.4503333
## group_factorContact Eczema      0.17659333 -0.50817333 -0.0732200 -0.3240967
## group_factorControl             0.03707667  0.03651667 -0.6601533 -0.3242867
## group_factorLichen Planus      -1.08573667  0.11589333  2.3050200 -0.2875900
## group_factorPsoriasis Vulgaris -1.79239000 -0.57794333  0.2310333 -0.4195500
##                                     [,446]       [,447]     [,448]     [,449]
## (Intercept)                    -0.45864000 0.043293333  0.02137667 -0.0159500
## group_factorContact Eczema      0.01483667 0.008406667 -0.06124667 -0.5307333
## group_factorControl             0.15881000 0.120650000  0.35950667  0.2234767
## group_factorLichen Planus       0.02336667 0.017250000 -0.64066333 -0.3995033
## group_factorPsoriasis Vulgaris -0.10189000 0.022860000 -0.56207667 -0.2306133
##                                     [,450]     [,451]     [,452]      [,453]
## (Intercept)                     0.009173333  0.0593900 0.00411000  0.32344000
## group_factorContact Eczema     -0.014873333 -0.2384700 0.52355000 -0.02215667
## group_factorControl             0.092916667  0.1071800 0.05161667 -0.30073333
## group_factorLichen Planus       0.066553333  0.0064300 0.20242000 -0.23734000
## group_factorPsoriasis Vulgaris  0.052343333 -0.2382267 0.15843667  0.10692667
##                                     [,454]     [,455]      [,456]      [,457]
## (Intercept)                     0.56820667  0.2475300  0.080510000 -0.13490333
## group_factorContact Eczema      0.62291333  0.2753533 -0.290596667 -0.02744000
## group_factorControl            -0.67532333 -0.1000333  0.008573333  0.26411667
## group_factorLichen Planus       1.04264333  0.1102767  0.006360000  0.17610667
## group_factorPsoriasis Vulgaris -0.07704333 -0.4079500 -0.273046667 -0.04907667
##                                     [,458]     [,459]     [,460]       [,461]
## (Intercept)                    -0.026643333  0.1268533  0.7204633 -0.111486667
## group_factorContact Eczema      0.003183333 -0.4380200 -0.3786900 -0.086113333
## group_factorControl             0.122766667 -0.3392100 -0.3215567  0.246636667
## group_factorLichen Planus      -0.079310000 -0.3055467 -1.0375800  0.037883333
## group_factorPsoriasis Vulgaris -0.232940000 -0.3347433 -0.9737533  0.009616667
##                                      [,462]      [,463]     [,464]     [,465]
## (Intercept)                    -0.02665667 -0.03293000  0.1264367  0.0552800
## group_factorContact Eczema     -0.22954667 -0.05694000 -0.1159333  0.1326033
## group_factorControl            -0.03106333  0.17828000 -0.1945067 -0.1430667
## group_factorLichen Planus       0.23091333 -0.17139667  0.0248800 -0.1777800
## group_factorPsoriasis Vulgaris -0.41953000 -0.08813333  0.1271900 -0.1552800
##                                     [,466]     [,467]     [,468]      [,469]
## (Intercept)                     0.3342233 -0.2536633  0.10482333 -0.03424000
## group_factorContact Eczema      0.1428000 -0.2301800 -0.25907000  0.04399667
## group_factorControl            -0.3945233  0.6690067 -0.10750667  0.10785667
## group_factorLichen Planus      -0.5274733 -0.2323533 -0.38544000  0.12381000
## group_factorPsoriasis Vulgaris -0.7189267 -0.0093200 -0.08459667  0.03046000
##                                     [,470]      [,471]      [,472]     [,473]
## (Intercept)                     0.05094667 -0.07587667 -0.01681333 -0.1124233
## group_factorContact Eczema     -0.41089000 -0.01307000  0.09652667 -0.2927833
## group_factorControl             0.18639667  0.22495333 -0.06072333  0.4352567
## group_factorLichen Planus      -0.20568000  0.03201333  0.06414667  0.6836467
## group_factorPsoriasis Vulgaris -0.07102667 -0.04872667  0.21871333  0.3760367
##                                     [,474]     [,475]     [,476]     [,477]
## (Intercept)                     0.50766333  0.13817333  0.05519000  0.9272567
## group_factorContact Eczema     -0.00581000 -0.18309000 -0.38783667 -0.2694733
## group_factorControl            -0.47308333  0.09365000  0.03569667 -0.7012200
## group_factorLichen Planus       0.18836667  0.06372333  0.12230667 -0.1871767
## group_factorPsoriasis Vulgaris  0.05983667 -0.03743000 -0.48172000 -0.7395567
```

16

```
##                                     [,478]     [,479]      [,480]       [,481]
## (Intercept)                     0.43563667  0.5938900  0.05093000  0.074153333
## group_factorContact Eczema      0.02942667  0.1166100 -0.03921667  0.001943333
## group_factorControl            -0.52321667 -0.6922000  0.14328000 -0.167900000
## group_factorLichen Planus       0.52526667 -0.3020733 -0.07545333  0.235450000
## group_factorPsoriasis Vulgaris -0.07587000  0.2148367  0.25823000  0.016173333
##                                     [,482]     [,483]      [,484]       [,485]
## (Intercept)                     0.10114333  0.06986000 -0.05157667  0.119903333
## group_factorContact Eczema      0.02805000 -0.05812333 -0.05569667 -0.142363333
## group_factorControl            -0.01334333 -0.12936000  0.02026333  0.006446667
## group_factorLichen Planus      -0.19415000 -0.01225000 -0.08589000 -0.023913333
## group_factorPsoriasis Vulgaris  0.02087000  0.00442000  0.05073667  0.055023333
##                                     [,486]     [,487]      [,488]       [,489]
## (Intercept)                    -0.05192667  0.08446667  0.15278333  0.12013000
## group_factorContact Eczema      0.11476000 -0.19927333  0.10127000 -0.30946000
## group_factorControl             0.16940333  0.16204667 -0.02181667 -0.01336333
## group_factorLichen Planus      -0.03679667 -0.31032000 -0.01399333 -0.21232667
## group_factorPsoriasis Vulgaris  0.04667667 -0.29891333 -0.06223667  0.47364667
##                                     [,490]     [,491]      [,492]      [,493]
## (Intercept)                     0.19459000 -0.3259067  0.009653333  0.1543433
## group_factorContact Eczema     -0.01915333 -0.0162700  0.005016667  0.0160700
## group_factorControl             0.02986000  0.4663833  0.294393333  0.0817100
## group_factorLichen Planus       0.09615000 -0.1567200 -0.253276667  0.2433733
## group_factorPsoriasis Vulgaris -0.28583333  0.0786800 -0.012466667 -0.2227767
##                                     [,494]     [,495]      [,496]      [,497]
## (Intercept)                     0.2289967  0.20809667  0.3686700 -0.19841667
## group_factorContact Eczema     -0.3293200 -0.23073000  0.2271300  0.03020000
## group_factorControl            -0.1518600 -0.10461667 -0.2291833  0.22054333
## group_factorLichen Planus      -0.2579533 -0.09121667  0.1476233  0.06411667
## group_factorPsoriasis Vulgaris -0.1492167 -0.50240000 -0.3474733 -0.06299000
##                                     [,498]     [,499]       [,500]       [,501]
## (Intercept)                     0.01620667 -0.21147333 -0.114036667  0.30973667
## group_factorContact Eczema      0.09926667 -0.09466333 -0.007723333 -0.03638333
## group_factorControl            -0.30107333  0.26802333  0.225533333 -0.51580667
## group_factorLichen Planus      -0.39045333  0.37120667  0.040686667 -0.49951333
## group_factorPsoriasis Vulgaris  0.17609667 -0.13320333 -0.402006667  0.53831667
##                                      [,502]      [,503]     [,504]       [,505]
## (Intercept)                     0.740786667  0.10253667 -1.4702033  0.15552000
## group_factorContact Eczema     -0.007196667  0.27195667  0.7020300 -0.10234667
## group_factorControl            -0.390350000 -0.08333667  0.9518733 -0.06498667
## group_factorLichen Planus       0.108100000  0.05059000  0.5018000 -0.02182667
## group_factorPsoriasis Vulgaris -0.996050000  0.72044667 -0.8991667 -0.28789333
##                                     [,506]     [,507]      [,508]      [,509]
## (Intercept)                    -1.339047 -0.6893133  0.11821667 -0.55929333
## group_factorContact Eczema     -0.335950 -0.0325900 -0.03438333 -0.12511667
## group_factorControl             1.260383  0.3176233 -0.10735333  0.37048000
## group_factorLichen Planus       0.135090 -0.1271967 -0.23093333 -0.15125333
## group_factorPsoriasis Vulgaris -0.269690 -0.2371767  0.06605000 -0.09837667
##                                     [,510]     [,511]     [,512]      [,513]
## (Intercept)                    -0.40952333  0.3648900  1.3575933 -0.80580000
## group_factorContact Eczema     -0.08665667 -0.1408900 -0.3504900  0.21207333
## group_factorControl             0.05872667 -0.2661700 -1.5154133  0.51977000
## group_factorLichen Planus      -0.18218333 -0.0168700  0.5882267 -0.09424667
## group_factorPsoriasis Vulgaris  0.23885333 -0.5205667  1.7285467  0.45217667
```

17

```
##                                   [,514]       [,515]       [,516]      [,517]
## (Intercept)                   -0.1128700 -0.003206667 -0.651566667  0.29401333
## group_factorContact Eczema     0.1092800  0.277133333 -0.010100000  0.71731000
## group_factorControl           -0.0615000  0.170353333  0.088503333 -0.27831333
## group_factorLichen Planus      0.1354100  0.078730000 -0.106200000  0.02517333
## group_factorPsoriasis Vulgaris 0.1783967  0.614290000 -0.002583333 -0.24616333
##                                   [,518]     [,519]      [,520]     [,521]
## (Intercept)                   -0.0258800 -1.0885633 -0.05021000 -0.3678267
## group_factorContact Eczema     0.1471667 -0.1728200  0.14473000 -0.2968100
## group_factorControl            0.3600000  1.0332800 -0.03084000  0.0477000
## group_factorLichen Planus      0.2115467  0.1993967 -0.04591667  0.7553433
## group_factorPsoriasis Vulgaris -0.2736967 -0.1985967  0.45346333 -0.1320533
##                                   [,522]      [,523]       [,524]      [,525]
## (Intercept)                    0.4006633 -0.55709333  0.089050000 -0.27777667
## group_factorContact Eczema    -0.2448733 -0.22965000 -0.009686667 -0.13314667
## group_factorControl           -0.1995967  0.09852333 -0.351830000 -0.05078667
## group_factorLichen Planus     -0.5329067 -0.24192333 -0.282153333 -0.20863333
## group_factorPsoriasis Vulgaris -0.5804433  0.33897333  0.322563333  0.51496000
##                                   [,526]      [,527]      [,528]      [,529]
## (Intercept)                    0.07677333 -0.07769333 -0.08166667 -0.07452333
## group_factorContact Eczema     0.04946000  0.06025000  0.17724000  0.18533000
## group_factorControl           -0.06523333  0.09832000 -0.16363333 -0.13220667
## group_factorLichen Planus     -0.08364333 -0.06747333 -0.19234667 -0.07372667
## group_factorPsoriasis Vulgaris -0.09735667 -0.06259667  0.10210333  0.12256000
##                                   [,530]      [,531]      [,532]     [,533]
## (Intercept)                   -0.0945200 -0.095330000 -0.05286667 -0.7993000
## group_factorContact Eczema     0.1636067  0.006473333  0.07349667  0.1151767
## group_factorControl            0.0684800 -0.057373333 -0.07487000  0.5343100
## group_factorLichen Planus     -0.1716933 -0.063673333 -0.17809667  0.1130933
## group_factorPsoriasis Vulgaris -0.1104300 -0.130233333 -0.07905333 -0.0159800
##                                   [,534]     [,535]       [,536]      [,537]
## (Intercept)                    0.07811667  0.2624600  0.003456667 -0.03255333
## group_factorContact Eczema    -0.01800000 -0.2308233 -0.237323333 -0.13583667
## group_factorControl           -0.13015333 -0.3681567 -0.106676667  0.04152667
## group_factorLichen Planus      0.04069667 -0.1350333 -0.178306667 -0.07796333
## group_factorPsoriasis Vulgaris 0.97992333  0.4522467 -0.053293333  0.15222333
##                                   [,538]      [,539]      [,540]      [,541]
## (Intercept)                   -0.29529000 -0.10252667 -0.39113333 -0.08627333
## group_factorContact Eczema     0.05529000  0.21753000  0.01452333  0.07703000
## group_factorControl            0.02102667 -0.09133333  0.28551667 -0.01051000
## group_factorLichen Planus     -0.09974667 -0.10776667 -0.08368333 -0.20652333
## group_factorPsoriasis Vulgaris 0.48934333  0.24138000  0.15230333  0.24424667
##                                   [,542]     [,543]      [,544]      [,545]
## (Intercept)                   -0.4467733  0.36115667  0.02728000  0.005706667
## group_factorContact Eczema    -0.1372533  0.46590333  0.07354333 -0.042760000
## group_factorControl            0.1798567 -0.67196333 -0.15435667 -0.103363333
## group_factorLichen Planus     -0.1402933 -0.05146333 -0.04589000 -0.288086667
## group_factorPsoriasis Vulgaris -0.0862100  0.61149333  0.05911333 -0.245046667
##                                   [,546]      [,547]      [,548]     [,549]
## (Intercept)                    0.06421333 -0.14766667 -0.15258333  0.16186333
## group_factorContact Eczema    -0.22296000  0.09526333  0.04750333 -0.35593000
## group_factorControl           -0.04845333  0.10020000 -0.00787000 -0.08633333
## group_factorLichen Planus     -0.40918000 -0.00126000 -0.17402667 -0.22088333
## group_factorPsoriasis Vulgaris -0.30959667 -0.29109000  0.23475000  0.26666333
```

```
##                                  [,550]      [,551]      [,552]       [,553]
## (Intercept)                   1.1333767 -0.18491000  0.2924000 -0.15383333
## group_factorContact Eczema   -0.3815167 -0.19168000  0.1217333 -0.09464333
## group_factorControl          -0.7070000  0.10087000 -0.2724900  0.26604667
## group_factorLichen Planus    -0.4370567 -0.23595333  0.3581900 -0.21765333
## group_factorPsoriasis Vulgaris -1.3344533  0.02204667  0.6205333 -0.39084000
##                                  [,554]      [,555]      [,556]       [,557]
## (Intercept)                  -0.04984667  0.24270333 -1.0033600 -0.1206467
## group_factorContact Eczema    0.00821000 -0.25514667  0.1297533  0.6456833
## group_factorControl           0.01007667 -0.11762000  1.3264800 -0.4801667
## group_factorLichen Planus    -0.07222333 -0.07847667  0.2855900 -0.5652000
## group_factorPsoriasis Vulgaris 0.27178667 -0.25119000 -0.1873967  0.6100967
##                                  [,558]      [,559]      [,560]       [,561]
## (Intercept)                  -0.06880000  0.1561667 -0.58147333 -0.09739667
## group_factorContact Eczema    0.12256000  0.7434967  0.19917000 -0.04939333
## group_factorControl          -0.01652333 -0.5308267  0.56764000  0.23984000
## group_factorLichen Planus    -0.05864667 -0.6914900 -0.31462667 -0.10524667
## group_factorPsoriasis Vulgaris -0.18525000  2.2903867  0.03441667 -0.03065333
##                                  [,562]      [,563]      [,564]       [,565]
## (Intercept)                   0.03686667 -0.37166333  0.05033667 -0.53646667
## group_factorContact Eczema    0.07541667 -0.21412000  0.98364000  0.26757333
## group_factorControl          -0.02241333  0.78972667 -0.99457667  0.40201333
## group_factorLichen Planus     0.07269000  0.06326667 -0.98212333  0.05082667
## group_factorPsoriasis Vulgaris -0.21775333 -0.13437333 -0.35198000  0.17768000
##                                  [,566]      [,567]      [,568]       [,569]
## (Intercept)                  -0.07443667 -0.11101000 -0.01352667  0.01878333
## group_factorContact Eczema   -0.13497667 -0.02322333  0.04310667  0.31671333
## group_factorControl           0.30381333  0.12186333  0.20741000  0.03918333
## group_factorLichen Planus     0.03034333 -0.12209333 -0.08085667  0.01072667
## group_factorPsoriasis Vulgaris -0.31355667  0.10359667 -0.47181333 -0.02668000
##                                  [,570]      [,571]      [,572]       [,573]
## (Intercept)                   0.02388333  0.12151333  0.10393000  0.09238000
## group_factorContact Eczema    0.29461333 -0.28392333  0.08924667 -0.05501333
## group_factorControl          -0.14314333 -0.03958333 -0.22291667 -0.24645333
## group_factorLichen Planus     0.31340000 -0.13716333 -0.23317333 -0.06498667
## group_factorPsoriasis Vulgaris 0.51326000 -0.04510000  0.30210667  0.39973000
##                                  [,574]      [,575]      [,576]       [,577]
## (Intercept)                  -0.4435967  0.2269867  0.05138333 -0.229966667
## group_factorContact Eczema   -0.1363267  0.0276500  0.08765667  0.007903333
## group_factorControl           0.2482167 -0.4159967 -0.23813667  0.203313333
## group_factorLichen Planus    -0.1781167 -0.1637433 -0.11230333 -0.079753333
## group_factorPsoriasis Vulgaris 0.5554133  0.2666800  0.25229667 -0.298140000
##                                  [,578]      [,579]      [,580]       [,581]
## (Intercept)                  -0.04139667  0.4917133  0.1827833  0.03288333
## group_factorContact Eczema   -0.03540333 -0.3113200  0.2745800 -0.10375000
## group_factorControl          -0.10706667 -0.7591533 -0.1097867 -0.08439333
## group_factorLichen Planus    -0.07185333 -0.4723000  0.2589567 -0.08403333
## group_factorPsoriasis Vulgaris 0.37588333 -0.3917433 -0.1167933  0.09091333
##                                  [,582]      [,583]      [,584]       [,585]
## (Intercept)                   0.14426000  0.03734333  0.18610667 -0.17172000
## group_factorContact Eczema    0.07284000  0.20107333  0.00174000 -0.12157667
## group_factorControl           0.02414667  0.06165000 -0.27211667  0.22626333
## group_factorLichen Planus     0.10786667  0.07452333 -0.07753667  0.01070333
## group_factorPsoriasis Vulgaris -0.28396000 -0.18091667 -0.15000000  0.16869667
```

19

```
##                                   [,586]      [,587]       [,588]       [,589]
## (Intercept)                   -0.04253333 -0.1726733  0.006493333 -0.33575333
## group_factorContact Eczema     0.15931667  0.1434733 -0.322140000  0.03922333
## group_factorControl           -0.22171667  0.1395733  0.182063333  0.43120000
## group_factorLichen Planus      0.05717667 -0.1484267 -0.201726667 -0.00114000
## group_factorPsoriasis Vulgaris 0.07674000  0.2760533  0.326210000  0.10339333
##                                   [,590]      [,591]     [,592]      [,593]
## (Intercept)                    0.28682667 -0.02647333 -0.1886433  0.02299667
## group_factorContact Eczema     0.02365333  0.05430333 -0.0567200 -0.04572667
## group_factorControl           -0.24110333  0.03459667  0.2950833 -0.04068667
## group_factorLichen Planus      -0.24765000 -0.02924333 -0.2114300 -0.26103667
## group_factorPsoriasis Vulgaris -0.14950333 -0.19381333 -0.3093400 -0.39815333
##                                   [,594]      [,595]     [,596]      [,597]
## (Intercept)                   -0.06864333  0.04822667  0.08800667  0.13336000
## group_factorContact Eczema     0.06814667  0.04320333  0.05061667  0.07094000
## group_factorControl            0.24379333 -0.04931667  0.06396000 -0.04100667
## group_factorLichen Planus      0.14418000  0.25220000  0.07951667 -0.07118333
## group_factorPsoriasis Vulgaris 0.37703000 -0.49395000 -0.28955333 -0.15162667
##                                   [,598]      [,599]     [,600]      [,601]
## (Intercept)                    0.17242000 -0.07516000  0.01880667 -0.21758667
## group_factorContact Eczema     0.13198000  0.02765667  0.00819000  0.21789667
## group_factorControl           -0.04097000  0.19026333 -0.00933000  0.10179333
## group_factorLichen Planus      -0.05102333 -0.14331000  0.01602000 -0.02592667
## group_factorPsoriasis Vulgaris -0.19532333 -0.38102667 -0.12052667  0.28535000
##                                   [,602]      [,603]       [,604]       [,605]
## (Intercept)                    0.14924000  0.098270000 -0.06755333 -0.01543333
## group_factorContact Eczema     0.09868333  0.016446667  0.25361000  0.35028000
## group_factorControl           -0.27939667 -0.002353333  0.08426667 -0.17375333
## group_factorLichen Planus      -0.25574000 -0.019663333 -0.11861667  0.21292667
## group_factorPsoriasis Vulgaris 0.02341000 -0.119910000  0.17346333  0.26470000
##                                    [,606]       [,607]     [,608]      [,609]
## (Intercept)                   -0.275160000 -0.09222000  0.9573267  0.06612333
## group_factorContact Eczema    -0.008053333  0.19127000  0.6739200  0.26157333
## group_factorControl           -0.129270000 -0.05219667 -0.9737000 -0.20161333
## group_factorLichen Planus     -0.116636667 -0.03518333  0.6839867 -0.01676333
## group_factorPsoriasis Vulgaris 0.343186667  0.19847333 -0.4484600  0.25347667
##                                    [,610]      [,611]     [,612]     [,613]
## (Intercept)                    0.083790000  0.24550333  0.75822667  0.7566433
## group_factorContact Eczema     0.066206667 -0.02053667  0.17561333  0.3364867
## group_factorControl           -0.008363333  0.18088000 -0.73787000 -0.7333333
## group_factorLichen Planus      0.052563333 -0.69138667  0.32648333  0.6388400
## group_factorPsoriasis Vulgaris -0.396730000 -1.01698000 -0.01962333 -0.5258333
##                                   [,614]      [,615]     [,616]      [,617]
## (Intercept)                   -0.05860667 -0.33727667  0.1992100 -0.10231333
## group_factorContact Eczema    -0.01134667  0.01980667 -0.0204700 -0.14945667
## group_factorControl           -0.03913000 -0.14617000 -0.2226467 -0.07063667
## group_factorLichen Planus      -0.05843667 -0.20651333 -0.1772600 -0.21209000
## group_factorPsoriasis Vulgaris 0.14249000  0.70973667 -0.0792600  0.64046667
##                                   [,618]      [,619]     [,620]      [,621]
## (Intercept)                   -0.10072333 -0.3135367  0.07400667  0.06682333
## group_factorContact Eczema    -0.05400667  0.1500000 -0.08153667  0.33182333
## group_factorControl            0.01672333  0.1141167 -0.07709667 -0.00866000
## group_factorLichen Planus      0.05134667  0.0883800 -0.01060667  0.09285667
## group_factorPsoriasis Vulgaris 0.30900000  0.3866933 -0.14281333 -0.06928000
```

```
##                                 [,622]      [,623]      [,624]      [,625]
## (Intercept)                   0.3222300 -0.04138333  0.0984300  0.11255667
## group_factorContact Eczema    0.2612500 -0.02478000  0.2579533 -0.27127000
## group_factorControl          -0.5083433  0.03915000  0.1301833  0.02303000
## group_factorLichen Planus     0.4624733 -0.08046333  0.1532267  0.05056333
## group_factorPsoriasis Vulgaris 0.1002500 -0.13836333 -0.3798200 -0.27223000
##                                 [,626]       [,627]      [,628]      [,629]
## (Intercept)                   0.196400000  0.30881333 -0.4609033  0.18819000
## group_factorContact Eczema   -0.009983333  0.23858000  0.2185567 -0.04498000
## group_factorControl          -0.103886667 -0.26510000  0.6408667  0.03960333
## group_factorLichen Planus    -0.218983333  0.05029667  0.2081967  0.19642333
## group_factorPsoriasis Vulgaris 0.136980000 -0.20832000 -0.2899633 -0.25133000
##                                 [,630]       [,631]      [,632]      [,633]
## (Intercept)                   0.04137333 -0.358910000 -0.5617767 -0.28542000
## group_factorContact Eczema    0.09236667 -0.332386667 -0.3850933  0.11368667
## group_factorControl          -0.28289667  0.481363333  0.5892233  0.24826000
## group_factorLichen Planus    -0.07767000 -0.002046667  0.4345000 -0.04649333
## group_factorPsoriasis Vulgaris 0.47508667 -0.190686667  0.2701700  0.24527667
##                                 [,634]      [,635]       [,636]      [,637]
## (Intercept)                  -0.04055667 -0.09289667 -0.075916667 -0.27610333
## group_factorContact Eczema   -0.10159667  0.01074000  0.040406667 -0.30745000
## group_factorControl           0.06155667  0.05718667 -0.007363333  0.33355667
## group_factorLichen Planus    -0.20923000 -0.12237333 -0.096706667 -0.00758000
## group_factorPsoriasis Vulgaris -0.00011000  0.18355333 -0.057880000  0.08245333
##                                 [,638]      [,639]      [,640]      [,641]
## (Intercept)                   0.10635333 -0.1533067 -0.1024300  0.5502900
## group_factorContact Eczema   -0.25066333  0.0932400  0.2957967  0.8346833
## group_factorControl          -0.17788000  0.1061700  0.1505967 -0.3289567
## group_factorLichen Planus    -0.14077667 -0.0911400  0.1870833 -0.0483400
## group_factorPsoriasis Vulgaris -0.09710333  0.1221067  0.2923300 -0.6173467
##                                 [,642]      [,643]      [,644]      [,645]
## (Intercept)                  -0.1132167  0.27567000  0.10399333  0.3600133
## group_factorContact Eczema    0.1634067  0.04698333  0.26571000 -0.1156733
## group_factorControl           0.1098733 -0.18544667 -0.19336000 -0.2572733
## group_factorLichen Planus    -0.0514100 -0.07109000 -0.03697333 -0.1944733
## group_factorPsoriasis Vulgaris 0.2058367 -0.25092000 -0.04349667 -0.2308833
##                                 [,646]      [,647]      [,648]       [,649]
## (Intercept)                   0.3071600 -0.06039667  0.1198300 -0.155326667
## group_factorContact Eczema    0.5737233  0.08345333 -0.1513300  0.253820000
## group_factorControl          -0.4570833  0.18392667 -0.1727400  0.242910000
## group_factorLichen Planus     0.2340467  0.04179000 -0.1499933 -0.013676667
## group_factorPsoriasis Vulgaris -0.3224467 -0.03625000 -0.3099233 -0.001386667
##                                 [,650]       [,651]      [,652]
## (Intercept)                  -0.367513333  0.007573333 -0.07341667
## group_factorContact Eczema   -0.006043333  0.075686667 -0.10184000
## group_factorControl           0.252706667  0.003590000 -0.08643667
## group_factorLichen Planus     0.173850000 -0.118003333 -0.21475333
## group_factorPsoriasis Vulgaris 0.520810000  0.004763333 -0.08494333
##                                 [,653]      [,654]      [,655]      [,656]
## (Intercept)                  -0.20544333 -0.41395000  0.1959867  0.01159000
## group_factorContact Eczema   -0.37477000  0.31829000  0.1089533  0.01180333
## group_factorControl           0.32360000  0.28388333 -0.2318267 -0.10958000
## group_factorLichen Planus    -0.03767667  0.68043333 -0.1057333 -0.03195333
## group_factorPsoriasis Vulgaris 0.02644333 -0.02974333  0.1727433  0.27614667
```

```
##                                   [,657]      [,658]      [,659]      [,660]
## (Intercept)                    0.08101333   0.1964200   0.3992567   0.07333000
## group_factorContact Eczema    -0.11059667   0.3476333  -0.2429900   0.07929333
## group_factorControl           -0.11739333  -0.3416467  -0.1044500  -0.25984333
## group_factorLichen Planus     -0.10686000   1.4116733  -0.5028867  -0.02361667
## group_factorPsoriasis Vulgaris -0.35100000   0.2552267  -0.5546267  -0.10233333
##                                   [,661]      [,662]      [,663]      [,664]
## (Intercept)                     0.6854633  -0.1727500   0.3952133   0.8196200
## group_factorContact Eczema     -0.4199000  -1.9935433  -1.0923333  -0.2801367
## group_factorControl            -0.5279733   0.0492600  -0.1380933  -0.8719100
## group_factorLichen Planus      -0.6977600  -0.5653133  -0.0364200   0.0960000
## group_factorPsoriasis Vulgaris -0.7505867   1.1181267   0.3467833   0.3916833
##                                   [,665]      [,666]      [,667]      [,668]
## (Intercept)                     0.4728167   0.9428767  -0.06004667   0.1101100
## group_factorContact Eczema      0.2218700  -0.4757200  -0.21097667   0.1466467
## group_factorControl            -1.1524533  -0.8569867   0.10773333  -0.0581500
## group_factorLichen Planus       0.5087633  -0.2548467  -0.16338333   0.0566400
## group_factorPsoriasis Vulgaris  1.2738367  -0.1096667   0.35602333  -0.1473300
##                                   [,669]      [,670]      [,671]      [,672]
## (Intercept)                    -0.031493333   0.1093767   0.32641667  -0.11342333
## group_factorContact Eczema     -0.003603333   0.2619833   0.13082000  -0.09634333
## group_factorControl             0.112160000   0.3130933  -0.62374667   0.01404000
## group_factorLichen Planus      -0.050290000   0.2103267   0.07259667  -0.05078000
## group_factorPsoriasis Vulgaris -0.194893333  -0.6266667  -0.18976000   0.68172000
##                                   [,673]      [,674]      [,675]      [,676]
## (Intercept)                    -0.1587800   0.2284400   0.10656667  -0.0813500
## group_factorContact Eczema      0.2812567  -0.0126900  -0.05511333  -1.0948467
## group_factorControl             0.3238000  -0.2268233  -0.02508667  -0.0618500
## group_factorLichen Planus       0.1963467  -0.1024633  -0.01433000  -0.3903467
## group_factorPsoriasis Vulgaris -0.0972300   0.1345733   0.01048000   0.6713967
##                                   [,677]      [,678]      [,679]      [,680]
## (Intercept)                     0.0694700  -0.05768667   0.455703333   0.29932667
## group_factorContact Eczema     -0.1914633   0.10130333   0.420820000   0.02219667
## group_factorControl             0.0955900   0.15684333  -0.232393333  -0.80503667
## group_factorLichen Planus       0.7066100  -0.12471000  -0.009993333  -0.03528333
## group_factorPsoriasis Vulgaris  0.4039167  -0.09384667  -0.340026667   0.41173667
##                                   [,681]      [,682]      [,683]      [,684]
## (Intercept)                     0.451696667   0.2780600   0.11807667   0.0726900
## group_factorContact Eczema      0.051610000  -0.1299267  -0.01734333  -0.2286500
## group_factorControl             0.002773333  -0.4966567  -0.12936667  -0.1775433
## group_factorLichen Planus      -0.144713333  -0.2323067  -0.15673333   0.0102400
## group_factorPsoriasis Vulgaris -0.527763333   0.1435100  -0.23511000   0.3541000
##                                   [,685]      [,686]      [,687]      [,688]
## (Intercept)                    -0.1725400  -0.14014000  -0.06170667   0.0504500
## group_factorContact Eczema     -0.2339900  -0.19042000   0.07134000   0.1901967
## group_factorControl             0.1374533   0.01398667   0.16359667   0.1330033
## group_factorLichen Planus      -0.1607767  -0.06094333   0.04494000   0.2408633
## group_factorPsoriasis Vulgaris  0.4788200   0.28032667  -0.23133667  -0.5658300
##                                   [,689]      [,690]      [,691]      [,692]
## (Intercept)                    -0.238463333   0.4857600   4.6392900   3.5318300
## group_factorContact Eczema     -0.002013333   0.3259633   0.1242467   0.3370767
## group_factorControl             0.372723333  -0.7602667  -5.6027667  -4.8149000
## group_factorLichen Planus      -0.318696667  -0.5516767  -0.4138900  -0.3620400
## group_factorPsoriasis Vulgaris -0.175073333   1.6180200   1.7289000   2.1729033
```

```
##                                    [,693]     [,694]     [,695]     [,696]
## (Intercept)                     1.9180267  1.8694000  0.1291167  0.4326867
## group_factorContact Eczema     -0.4620867 -0.2093900  0.2256867 -0.2433567
## group_factorControl            -2.6052300 -2.4491400 -0.2716333 -0.6603800
## group_factorLichen Planus      -0.1535100 -0.9060667 -0.0050100 -0.4213333
## group_factorPsoriasis Vulgaris  0.7640433  2.0667367  0.4208733  0.4866233
##                                      [,697]      [,698]     [,699]    [,700]
## (Intercept)                     0.187986667  0.31193000  0.3418867  0.34738
## group_factorContact Eczema      0.165490000 -0.35736000 -0.5434367 -0.21048
## group_factorControl            -0.162146667 -0.18103667 -0.2847633 -0.39177
## group_factorLichen Planus      -0.044663333 -0.25376000 -0.2429667 -0.01343
## group_factorPsoriasis Vulgaris -0.003296667 -0.04125333  0.3751333  0.12776
##                                    [,701]      [,702]      [,703]      [,704]
## (Intercept)                     0.2808033  0.46144333  0.07288333  0.05974333
## group_factorContact Eczema     -0.2893233  0.27197667  0.24594333  0.19921000
## group_factorControl            -0.1205133 -0.54214333  0.08335000  0.03312667
## group_factorLichen Planus      -0.1759700  0.43921667 -0.23483333  0.14916333
## group_factorPsoriasis Vulgaris -0.1350700  0.01664667 -0.14335000 -0.13731667
##                                      [,705]      [,706]     [,707]      [,708]
## (Intercept)                    -0.25966333 -0.24161667 -0.2931833 -0.31634000
## group_factorContact Eczema     -0.08999000 -0.04863000  0.0146200 -0.05092333
## group_factorControl             0.48671667  0.06923333  0.2221767  0.33205333
## group_factorLichen Planus      -0.29100333 -0.04475000  0.0078800 -0.44383333
## group_factorPsoriasis Vulgaris  0.01039333  0.24747333  0.3806633  0.20997333
##                                     [,709]      [,710]     [,711]      [,712]
## (Intercept)                     0.2950367  0.16007000  0.48797667  0.02426333
## group_factorContact Eczema     -0.5623967  0.02959667  0.59354667 -0.11616000
## group_factorControl            -0.1975833 -0.98093667 -0.14968333  0.11938667
## group_factorLichen Planus      -0.6640367  0.11232667  0.03228333 -0.08863333
## group_factorPsoriasis Vulgaris -0.0205300  0.38792667 -0.13053000 -0.03109000
##                                       [,713]      [,714]      [,715]     [,716]
## (Intercept)                    -0.009423333 -0.54254667  0.04052000  0.1922200
## group_factorContact Eczema     -0.798633333  0.10667000  0.02559333  0.1512767
## group_factorControl             0.074876667  0.38546000 -0.09530667 -0.1680867
## group_factorLichen Planus      -0.216370000 -0.02646333 -0.19821333  0.2130667
## group_factorPsoriasis Vulgaris  0.420936667  0.18527333  0.02485667  0.1065333
##                                     [,717]     [,718]     [,719]      [,720]
## (Intercept)                     0.18795000 -0.0681600 -0.3530200 -0.32107667
## group_factorContact Eczema     -0.14203667  0.1032867 -0.3195767 -0.09812000
## group_factorControl            -0.25606333 -0.1604367  0.3123600  0.32442667
## group_factorLichen Planus      -0.01703333 -0.1407700 -0.5019733 -0.03109667
## group_factorPsoriasis Vulgaris  0.11396667  0.3946267  0.3391700  0.11372000
##                                     [,721]     [,722]     [,723]     [,724]
## (Intercept)                    -0.10859000 -0.2205233  0.04225333 -0.0871200
## group_factorContact Eczema     -0.09528667  0.2824933 -0.01402000 -0.2876967
## group_factorControl             0.25211333  0.2011733 -0.04508667  0.1311700
## group_factorLichen Planus      -0.04301000  0.2112467 -0.08390000 -0.1025300
## group_factorPsoriasis Vulgaris -0.55119667 -0.1655667  0.50617667 -0.2450300
##                                     [,725]      [,726]     [,727]     [,728]
## (Intercept)                     0.264210000 -0.04618333 -0.8122600  0.0090600
## group_factorContact Eczema     -0.223940000  0.03933667  0.1504800 -0.4767100
## group_factorControl            -0.109103333  0.01405000  0.8164433  0.1092500
## group_factorLichen Planus      -0.447326667 -0.12582667  0.1480567 -0.4581833
## group_factorPsoriasis Vulgaris  0.003816667  0.19810333  0.2587400 -0.1586033
```

23

```
##                                     [,729]       [,730]       [,731]
## (Intercept)                      0.12366667   0.16742333   0.01616667
## group_factorContact Eczema      -0.09836333   0.19499667   0.01644667
## group_factorControl             -0.29097667  -0.00008000  -0.01780667
## group_factorLichen Planus       -0.29367667  -0.07267667  -0.19823667
## group_factorPsoriasis Vulgaris   0.08359000  -0.62782333  -0.15215667
##                                     [,732]        [,733]      [,734]      [,735]
## (Intercept)                     -0.2608866667  -0.08735333   0.9666033   0.1290067
## group_factorContact Eczema       0.0165100000  -0.28100000   0.3589500   0.1056400
## group_factorControl              0.2567366667   0.03852667  -1.3723967  -0.1376667
## group_factorLichen Planus        0.0698800000   0.03935333  -0.5398000   0.4007800
## group_factorPsoriasis Vulgaris  -0.0004833333   0.13080333   1.7718667  -0.1892433
##                                     [,736]      [,737]       [,738]      [,739]
## (Intercept)                     -0.98473667  -0.1521500   0.07373333  -0.31739000
## group_factorContact Eczema      -0.35765333   0.0050500  -0.07558000  -0.04159000
## group_factorControl              1.28071333   0.5075700   0.06530000  -0.06371333
## group_factorLichen Planus        0.02876667  -0.1494100  -0.11769667   0.00448000
## group_factorPsoriasis Vulgaris  -0.05051000  -0.6876667  -0.26734000   0.83988667
##                                     [,740]      [,741]       [,742]      [,743]
## (Intercept)                      0.37617000   0.16493667  -0.04364333  -0.2568567
## group_factorContact Eczema       0.28895667   0.06769667   0.25657667   0.0882500
## group_factorControl             -0.06708667  -0.11740333   0.03704000   0.2965567
## group_factorLichen Planus       -0.05228667   0.12661667   0.01653667  -0.0248600
## group_factorPsoriasis Vulgaris  -0.81276333  -0.14791000  -0.01453333   0.4910467
##                                     [,744]      [,745]       [,746]      [,747]
## (Intercept)                      0.04670333  -0.01299000   0.42640000  -0.15251667
## group_factorContact Eczema       0.09209333   0.02389000  -0.30356667  -0.14056000
## group_factorControl             -0.09326667   0.06162667  -0.41266667   0.26661667
## group_factorLichen Planus       -0.15514000  -0.15885333   0.12926000   0.06092667
## group_factorPsoriasis Vulgaris  -0.08560667   0.06657667   0.05670667   0.14433333
##                                     [,748]      [,749]       [,750]      [,751]
## (Intercept)                     -0.1148100  -0.1357667  -0.12257000   0.16728333
## group_factorContact Eczema      -0.5608667  -0.1673333  -0.29821333  -0.33966000
## group_factorControl              0.4658400   0.6185933  -0.18961333  -0.09859667
## group_factorLichen Planus       -0.5205467  -0.0948700  -0.02651333  -0.07733333
## group_factorPsoriasis Vulgaris  -0.7049867  -0.3198933   0.38195333   0.38207667
##                                     [,752]      [,753]       [,754]       [,755]
## (Intercept)                      0.2442533   0.02272667  -0.2288300  -0.004880000
## group_factorContact Eczema      -0.4349233  -0.83687000  -0.5145133  -0.060283333
## group_factorControl             -0.1650467   0.14053333   0.2019100   0.094776667
## group_factorLichen Planus       -0.4024267  -0.10827667  -0.2353600  -0.008176667
## group_factorPsoriasis Vulgaris   0.2398133   0.41276000   0.3220700   0.191170000
##                                     [,756]      [,757]       [,758]      [,759]
## (Intercept)                     -0.08172333   0.21709667   0.17689333  -0.18932000
## group_factorContact Eczema       0.13234667   0.31478667  -0.06159333  -0.12067000
## group_factorControl              0.05002333   0.02834667  -0.15242667  -0.49612667
## group_factorLichen Planus       -0.17227000   0.19923333  -0.14028000  -0.74989000
## group_factorPsoriasis Vulgaris   0.53789000  -0.43781000  -0.06940000   0.05008667
##                                     [,760]      [,761]       [,762]      [,763]
## (Intercept)                      0.4978200  -0.12397000   0.3774900   0.2000000
## group_factorContact Eczema       0.2189033  -0.14091667  -0.0663500   0.1907767
## group_factorControl             -0.4593700   0.17130000  -0.0323900   0.2188767
## group_factorLichen Planus        0.2519900  -0.04851333   0.1049200   0.1614467
## group_factorPsoriasis Vulgaris   0.1771633   0.20407000  -0.5941967  -0.4995700
```

24

```
##                             [,764]      [,765]      [,766]      [,767]
## (Intercept)                 0.4682200   0.2734600   0.1217167  -0.68770333
## group_factorContact Eczema  0.1178167  -0.2906900  -0.6128733  -0.24710667
## group_factorControl         -0.4606700  0.1012833  -0.1542100   0.57840000
## group_factorLichen Planus   -0.3092467 -0.1436300  -0.1374567  -0.18738000
## group_factorPsoriasis Vulgaris 0.6726367 -0.4168367  0.8269433  0.04004333
##                             [,768]      [,769]      [,770]      [,771]
## (Intercept)                 -0.04195667 -0.29027000  3.1675633   0.8338400
## group_factorContact Eczema  -0.38876000  0.24290000 -0.1434500  -0.1558167
## group_factorControl         -0.15571333  0.25188333 -3.8306333  -0.9305700
## group_factorLichen Planus    0.14643667 -0.05953667 -0.5394067   0.0411600
## group_factorPsoriasis Vulgaris -0.10881000 0.02070667  1.5173967   0.5939033
##                             [,772]      [,773]      [,774]      [,775]
## (Intercept)                 -0.23479667  0.1760400  -0.12304667  0.08651667
## group_factorContact Eczema   0.06984667 -0.2222700  -0.09525000 -0.18577000
## group_factorControl          0.20427667 -0.1183233   0.09006000  0.20835667
## group_factorLichen Planus    0.01363000 -0.2038633  -0.06902667 -0.07419667
## group_factorPsoriasis Vulgaris 0.08682000 0.4376133  -0.02557000 -0.52886000
##                             [,776]      [,777]      [,778]      [,779]
## (Intercept)                 0.22146000   0.53526000 -0.11258333 -0.01487333
## group_factorContact Eczema  -0.40372000 -0.22266333  0.04111333 -0.33831667
## group_factorControl         -0.22525333 -0.81879333 -0.10009333 -0.11814333
## group_factorLichen Planus   -0.01237333  0.01052667 -0.14181667 -0.30239333
## group_factorPsoriasis Vulgaris 0.20739667 0.13807000  0.12349667  0.07001333
##                             [,780]      [,781]      [,782]      [,783]
## (Intercept)                 0.21482667  -0.3317033  -0.23306333 -0.51598333
## group_factorContact Eczema  0.17016667  -0.4893367   0.01762667 -0.01925667
## group_factorControl         -0.42628667  0.2842367   0.11562667  0.47907000
## group_factorLichen Planus   -0.02077667 -0.1077700  -0.12570667  0.09645333
## group_factorPsoriasis Vulgaris 0.09062333 -0.1056700  0.32939333 -0.49524667
##                             [,784]      [,785]      [,786]      [,787]
## (Intercept)                 -0.34323000 -0.1794000  0.267596667 -0.25503000
## group_factorContact Eczema  -0.02198667  0.0313100 -0.157893333 -0.12431000
## group_factorControl          0.22113000  0.1412867 -0.280633333  0.35671000
## group_factorLichen Planus   -0.05209667 -0.0554100  0.006696667 -0.07475667
## group_factorPsoriasis Vulgaris 0.21136333 -0.0397900  0.259580000  0.06883000
##                             [,788]      [,789]      [,790]      [,791]
## (Intercept)                 -0.00913000 -0.16645333 -0.07164667 -0.09502667
## group_factorContact Eczema   0.58151333  0.15303333  0.10607000 -0.04690000
## group_factorControl         -0.04777000 -0.11887667 -0.07805333 -0.10632000
## group_factorLichen Planus    0.34437000 -0.23061333 -0.19669333 -0.21753667
## group_factorPsoriasis Vulgaris -0.04274333 0.01009667  0.10854667  0.28047000
##                             [,792]      [,793]      [,794]      [,795]
## (Intercept)                 -0.07164667 -0.003353333  0.02422000 -0.04542333
## group_factorContact Eczema  -0.04813000  0.174880000  0.14469667  0.18211667
## group_factorControl         -0.87224667  0.045073333 -0.11294000 -0.12210333
## group_factorLichen Planus   -0.13139000 -0.052013333 -0.05870667  0.13320000
## group_factorPsoriasis Vulgaris 0.22923333 0.274606667  0.08226667  1.53073000
##                             [,796]      [,797]      [,798]      [,799]
## (Intercept)                 0.002596667 -0.17694000  0.8601600  -0.004553333
## group_factorContact Eczema  0.079353333 -0.05800667  0.2659633  -0.006116667
## group_factorControl         -0.072640000  0.10088667 -0.2208033  -0.119243333
## group_factorLichen Planus   -0.030910000  0.14911667  0.1130967  -0.053813333
## group_factorPsoriasis Vulgaris 0.266156667 0.16562667 -0.9213967  -0.014486667
```

```
##                                   [,800]       [,801]       [,802]       [,803]
## (Intercept)                    -0.14503000  -0.03922667   0.17267000  -0.09157333
## group_factorContact Eczema      0.15693667   0.01412333  -0.04132333  -0.01620000
## group_factorControl             0.04083667  -0.32090333  -0.33117333   0.15374333
## group_factorLichen Planus      -0.01564667  -0.49172333  -0.10300333   0.07527000
## group_factorPsoriasis Vulgaris  0.42786667   0.11557333   0.05382000  -0.11823000
##                                   [,804]       [,805]       [,806]      [,807]
## (Intercept)                    -0.21262667   0.007360000  -0.38505333   0.2465400
## group_factorContact Eczema      0.05484667  -0.009193333  -0.07709667  -0.1497600
## group_factorControl             0.19174667  -0.041803333   0.28096333  -0.4189267
## group_factorLichen Planus      -0.15424333  -0.134760000  -0.08697000  -0.3063067
## group_factorPsoriasis Vulgaris  0.05354000   0.298810000   0.45895667   0.3567400
##                                   [,808]      [,809]       [,810]      [,811]
## (Intercept)                    -0.13173000   0.2665033  -0.02339333  -0.4673467
## group_factorContact Eczema      0.06229333  -0.1119967  -0.09245667  -0.2111867
## group_factorControl             0.11018333  -0.2524200   0.14120667   0.4698000
## group_factorLichen Planus      -0.10372667  -0.1001867   0.20067667  -0.0022700
## group_factorPsoriasis Vulgaris -0.13203000   0.1337800  -0.02699667   0.3060133
##                                   [,812]       [,813]       [,814]       [,815]
## (Intercept)                     0.05285667  -1.43395333   0.316890000   0.05322333
## group_factorContact Eczema     -0.13162000   0.33970667   0.108620000   0.00110000
## group_factorControl             0.06767000   0.87576667  -0.265166667  -0.20258333
## group_factorLichen Planus      -0.06755333   0.01986333   0.009956667   0.04916667
## group_factorPsoriasis Vulgaris  0.24445333  -0.28628667  -0.211913333   0.34101000
##                                    [,816]        [,817]        [,818]       [,819]
## (Intercept)                     0.224056667  -0.123276667  -0.41273333  -0.2272900
## group_factorContact Eczema     -0.196746667   0.090756667  -0.11313667  -0.0479800
## group_factorControl            -0.199826667   0.293873333   0.03068000   0.2585233
## group_factorLichen Planus       0.221083333  -0.001056667  -0.08294333  -0.0826400
## group_factorPsoriasis Vulgaris  0.002626667  -0.345806667   0.25934000  -0.5573067
##                                   [,820]       [,821]       [,822]       [,823]
## (Intercept)                     0.65418000  -0.23537000   0.0567400  -0.11752667
## group_factorContact Eczema      0.61073333  -0.07410667  -0.1983967   0.18870667
## group_factorControl            -0.62831667  -0.02132000   0.0050500   0.05828333
## group_factorLichen Planus       0.03363667  -0.37807667  -0.1932833  -0.09696667
## group_factorPsoriasis Vulgaris -0.82664000   0.93748000   0.5355267   0.14509333
##                                   [,824]      [,825]       [,826]      [,827]
## (Intercept)                     -1.6664200  -0.4407233  -1.9309067   0.2526033
## group_factorContact Eczema       0.6742833   0.1326500   0.5075400  -0.3325933
## group_factorControl              1.0000567   0.2804567   1.1921200  -0.3156767
## group_factorLichen Planus       -0.0922000   0.0095600  -0.0840000  -0.5222667
## group_factorPsoriasis Vulgaris   0.3351667   0.0562800  -0.1337867  -0.2044033
##                                   [,828]      [,829]       [,830]      [,831]
## (Intercept)                     0.01521667  -0.19792667   0.18743333   0.3550367
## group_factorContact Eczema     -0.55281333  -0.22577000   0.27120333  -0.0649200
## group_factorControl             0.40045667  -0.03640333  -0.11638667  -0.1767233
## group_factorLichen Planus      -0.06968333  -0.32219333   0.02490667   0.2246733
## group_factorPsoriasis Vulgaris -0.91131667   0.02326333   0.24797000  -0.4210333
##                                   [,832]       [,833]      [,834]      [,835]
## (Intercept)                    -0.432170000  -0.05475000   0.14014667   0.03385667
## group_factorContact Eczema      0.008826667   0.15072667  -0.07530000  -0.12190333
## group_factorControl             0.443430000   0.04860667  -0.08033667   0.09664667
## group_factorLichen Planus       0.145410000   0.01644667   0.08037000  -0.28822667
## group_factorPsoriasis Vulgaris  0.253320000   0.17700333  -0.23635333  -0.23525667
```

```
##                                [,836]      [,837]      [,838]       [,839]
## (Intercept)                 -0.93207667  0.01922333  0.054160000   0.5970367
## group_factorContact Eczema   0.32265667  0.22061333 -0.143250000   0.6669800
## group_factorControl          0.42666000  0.20344000  0.011760000  -0.3963633
## group_factorLichen Planus    -0.40529000  0.20218000 -0.197923333   0.4919233
## group_factorPsoriasis Vulgaris -0.07883333  0.06355667  0.005336667  -0.6790000
##                                [,840]      [,841]      [,842]      [,843]
## (Intercept)                 -0.04664667 -0.14110667  0.1500067   0.0595100
## group_factorContact Eczema   0.01645333  0.09589000 -0.3693567  -0.2934533
## group_factorControl          0.02130667  0.40455333 -0.1842367  -0.4300100
## group_factorLichen Planus    -0.01749333 -0.05001333 -0.5123200  -0.4052633
## group_factorPsoriasis Vulgaris -0.11507333 -0.17589333  0.4114267   0.4164033
##                                [,844]      [,845]      [,846]      [,847]
## (Intercept)                 -0.2508533 -0.2745133  0.03569000 -0.4622700
## group_factorContact Eczema   0.0178000  0.0326800 -0.06771667 -0.1300967
## group_factorControl          0.4167367 -0.0184400 -0.01857667  0.2192333
## group_factorLichen Planus    0.3362967 -0.0863700 -0.22288000 -0.2242200
## group_factorPsoriasis Vulgaris 0.3342633  0.3130467 -0.07271667  0.1901900
##                                [,848]      [,849]      [,850]       [,851]
## (Intercept)                 -0.3435067  0.03451333 -0.03188000 -0.16485000
## group_factorContact Eczema   0.0080900  0.15606333 -0.07552000  0.05652333
## group_factorControl          0.3354600 -0.06903333  0.07670000  0.28890000
## group_factorLichen Planus    -0.2667067 -0.22965667  0.03589667  0.15661667
## group_factorPsoriasis Vulgaris -0.1398000  0.32162333  0.30081000  0.12059333
##                                [,852]      [,853]      [,854]       [,855]
## (Intercept)                 -1.48167667  0.2857800  0.24347333 -0.237046667
## group_factorContact Eczema   0.42828333  0.5981767 -0.24802000  0.005693333
## group_factorControl          0.89137333 -0.3216700 -0.66979333  0.257916667
## group_factorLichen Planus    0.09847333  1.0512800 -0.09054667  0.049783333
## group_factorPsoriasis Vulgaris -0.57750333 -0.4096600  0.59688000  0.149986667
##                                [,856]       [,857]      [,858]      [,859]
## (Intercept)                 -0.003163333  0.13798333  0.13847000  0.04593000
## group_factorContact Eczema   0.101250000 -0.04635333  0.11232667 -0.26377667
## group_factorControl          0.135756667 -0.14399333 -0.25440333 -0.02971667
## group_factorLichen Planus    0.172893333 -0.01696000  0.03088667 -0.36698333
## group_factorPsoriasis Vulgaris -0.338296667 -0.02170000 -0.10897333  0.37739667
##                                [,860]      [,861]      [,862]      [,863]
## (Intercept)                  0.02844333 -0.2127700  0.27637333 -0.2648933
## group_factorContact Eczema   -0.22848667 -0.0045800  0.05722000 -0.0181000
## group_factorControl           0.02505333  0.1024967  0.17388667  0.1966600
## group_factorLichen Planus    -0.19848667  0.0650200  0.03631667  0.0707100
## group_factorPsoriasis Vulgaris -0.09512000  0.3948033 -0.35142667  0.2868167
##                                [,864]      [,865]      [,866]      [,867]
## (Intercept)                  0.02945000  0.13095333  0.22869000 -0.15876333
## group_factorContact Eczema   -0.07428333 -0.14069333  0.06290667  0.04598333
## group_factorControl           0.09472667 -0.03011000 -0.17813667  0.21592000
## group_factorLichen Planus     0.03150667 -0.06865333 -0.20785333 -0.04874667
## group_factorPsoriasis Vulgaris 0.05369667 -0.14814667 -0.02209667  0.06637000
##                                [,868]       [,869]      [,870]      [,871]
## (Intercept)                  0.124216667  0.06752667  0.3626667   0.03507000
## group_factorContact Eczema   -0.002203333  0.18426333  0.1369600   0.11889667
## group_factorControl          -0.059653333 -0.05202333 -0.2231433   0.03075333
## group_factorLichen Planus    -0.066300000  0.00049000 -0.0290300  -0.12437333
## group_factorPsoriasis Vulgaris -0.020350000  0.32966667 -0.2314233  -0.14406667
```

```
##                                    [,872]      [,873]      [,874]      [,875]
## (Intercept)                    -0.16526667 -0.42239667  0.5463500   0.1888767
## group_factorContact Eczema      0.32604333 -0.09871333 -0.3977067   0.3301333
## group_factorControl            -0.37937333  0.21216333 -0.0743200  -0.0539000
## group_factorLichen Planus      -0.06548333 -0.17766333 -0.2805167   0.0466900
## group_factorPsoriasis Vulgaris  0.43543000  0.40568333 -0.5109500  -0.2260467
##                                    [,876]      [,877]     [,878]      [,879]
## (Intercept)                    -0.02729333 -0.23332000  0.1745000   0.2536333
## group_factorContact Eczema      0.13921333 -0.18185333 -0.1192267  -0.2373567
## group_factorControl             0.30871333 -0.09878333 -0.1058600  -0.1802533
## group_factorLichen Planus       0.02957000 -0.13778667  0.1061700  -0.2932500
## group_factorPsoriasis Vulgaris -0.12229667  0.90321000 -0.3877600  -0.1829667
##                                     [,880]     [,881]      [,882]      [,883]
## (Intercept)                    -0.009226667  0.2891500  0.26259667 -0.2106933
## group_factorContact Eczema     -0.228426667 -0.1182633 -0.13184333  0.2295533
## group_factorControl             0.065646667 -0.3182767 -0.07067333  0.3750467
## group_factorLichen Planus      -0.143893333  0.0459100 -0.06521667  0.1011200
## group_factorPsoriasis Vulgaris  0.429776667 -0.0069000 -0.09340667 -0.0871400
##                                     [,884]     [,885]      [,886]      [,887]
## (Intercept)                    -0.33481667 -1.6003833 -0.29503000 -0.2106567
## group_factorContact Eczema     -0.45540667 -0.8938100 -0.06397333  0.1875833
## group_factorControl             0.13966667  1.4779533  0.15503667  0.1743233
## group_factorLichen Planus       0.01835667  1.2273433 -0.11603333  0.2095400
## group_factorPsoriasis Vulgaris  0.08527667  0.1210067  0.05137000  0.3890200
##                                     [,888]      [,889]     [,890]      [,891]
## (Intercept)                    -0.349093333 -1.3959567  3.0673400 -0.6300533
## group_factorContact Eczema     -0.082723333 -0.3868100 -0.1957500 -0.2083433
## group_factorControl             0.388283333  1.2168067 -3.5030467  0.8556333
## group_factorLichen Planus      -0.005123333 -0.9688400  0.2800867  0.0310100
## group_factorPsoriasis Vulgaris  0.025103333 -0.4812333  0.7061333 -0.5603700
##                                     [,892]      [,893]      [,894]     [,895]
## (Intercept)                    -0.8895133   0.03029333  0.003513333  2.3386267
## group_factorContact Eczema     -0.6969767  -2.12845333 -1.093886667 -0.4270333
## group_factorControl             1.0583467   0.70018000  0.296433333 -3.3587367
## group_factorLichen Planus      -0.2005500   0.81030667  0.133886667  0.5203767
## group_factorPsoriasis Vulgaris -0.6005333  -1.16603000 -0.039470000  1.6691533
##                                     [,896]      [,897]     [,898]       [,899]
## (Intercept)                    -0.5910333  -0.4928233 -0.07535000 -0.59861000
## group_factorContact Eczema     -0.5695633  -0.3606867 -0.43236667 -0.43334667
## group_factorControl             0.7962967   0.7329033 -0.04918333  0.64523667
## group_factorLichen Planus      -0.4731900  -0.1463800 -0.04466667 -0.84522667
## group_factorPsoriasis Vulgaris -1.0386067  -0.7075133  0.10452667  0.02281333
##                                     [,900]      [,901]      [,902]      [,903]
## (Intercept)                     0.05296000  0.2995367 -0.00599000  0.1773500
## group_factorContact Eczema     -0.02295667 -0.0909500 -0.07863667 -0.1084067
## group_factorControl            -0.06862667 -0.2584300  0.10948333 -0.3172033
## group_factorLichen Planus      -0.08603000 -0.2645867  0.09727333 -0.3231333
## group_factorPsoriasis Vulgaris  0.13633333  0.2144633  0.34488333 -0.1511900
##                                     [,904]     [,905]      [,906]       [,907]
## (Intercept)                    -0.2453200  0.2300400  0.237810000  0.023830000
## group_factorContact Eczema      0.0032700 -0.7888767 -0.004036667  0.005833333
## group_factorControl             0.3642467  0.2083800 -0.726356667 -0.061703333
## group_factorLichen Planus      -0.1795633  0.4528300  0.265320000  0.178393333
## group_factorPsoriasis Vulgaris  0.0635700 -0.4617367  0.147956667  0.125273333
```

28

```
##                                      [,908]       [,909]      [,910]       [,911]
## (Intercept)                      -0.27477667   0.5452333   0.3569867   0.06452667
## group_factorContact Eczema        0.54723000  -0.2676800   0.2155667  -0.42514667
## group_factorControl              -0.22783667  -1.0239900  -0.3579167  -0.02666000
## group_factorLichen Planus        -0.01516667  -0.6267233   0.1916133  -0.42869667
## group_factorPsoriasis Vulgaris    0.68723000  -0.0404600   0.2894567  -0.17466667
##                                      [,912]       [,913]      [,914]       [,915]
## (Intercept)                      -0.04342333  -0.1203133   0.3798267  -0.28132333
## group_factorContact Eczema       -0.25820333  -0.1692500   0.0042900  -0.07936333
## group_factorControl               0.17034667   0.1703867  -0.1221733   0.19315333
## group_factorLichen Planus         0.03258000  -0.1760767   0.0568100   0.13303000
## group_factorPsoriasis Vulgaris    0.01458667   0.2562533  -0.5866900   0.15291000
##                                      [,916]       [,917]      [,918]       [,919]
## (Intercept)                       0.24535667   0.59699667   0.2161200   0.15781000
## group_factorContact Eczema       -0.27810667  -1.15348333   0.1334933   0.04484667
## group_factorControl               0.07915667  -0.51712667  -0.1457233  -0.15462667
## group_factorLichen Planus         0.41667667  -0.63336000  -0.0294500  -0.27485333
## group_factorPsoriasis Vulgaris   -0.39637667   0.02170667  -0.0270800  -0.03951333
##                                      [,920]       [,921]      [,922]       [,923]
## (Intercept)                       0.4417700   -0.2612633   0.24171333   0.06760000
## group_factorContact Eczema       -0.4302300   -0.2905033  -0.03151667   0.54359333
## group_factorControl              -0.4759767    0.2735967  -0.13504000  -0.02773333
## group_factorLichen Planus        -0.4597667   -0.1650433  -0.09332333  -0.32760000
## group_factorPsoriasis Vulgaris    1.4261900   -0.4445967   0.27152667   1.02770667
##                                      [,924]       [,925]      [,926]       [,927]
## (Intercept)                      -0.4734100   -1.13642667   0.26363333  -0.4731533
## group_factorContact Eczema       -0.3027467    0.21923667  -0.27421000  -0.0966400
## group_factorControl               0.1354200    0.90951000  -0.02122333   0.4194400
## group_factorLichen Planus        -0.1304033   -0.01308333  -0.13689667  -0.5514667
## group_factorPsoriasis Vulgaris    1.0110933    0.08856667   0.34339000   0.4529033
##                                      [,928]       [,929]      [,930]       [,931]
## (Intercept)                       0.07923333  -0.3497867   0.17914667   0.8114800
## group_factorContact Eczema       -0.04670667  -0.2356867  -0.06029000  -0.4453700
## group_factorControl               0.04481333   0.3357500  -0.31583667  -0.8969033
## group_factorLichen Planus        -0.17349000  -0.3092300  -0.07562333  -0.2481400
## group_factorPsoriasis Vulgaris   -0.05261333   0.1414667   0.10127000   0.1421400
##                                      [,932]       [,933]      [,934]       [,935]
## (Intercept)                      -0.27373667  -0.0512600  -0.07049000  -0.5077233
## group_factorContact Eczema       -0.26012000   0.3567633  -0.05313667  -0.3814533
## group_factorControl               0.32714000  -0.2015433   0.12863667   0.3243000
## group_factorLichen Planus         0.08237333   0.0875600   0.02491333  -0.1309533
## group_factorPsoriasis Vulgaris   -0.63280333  -0.0285500   0.31661333   0.2565033
##                                      [,936]       [,937]      [,938]       [,939]
## (Intercept)                       0.035300000   0.1485433  -0.05354000   0.50543
## group_factorContact Eczema        0.124780000   0.1931033   0.12492667   0.28431
## group_factorControl               0.013020000  -0.1711100  -0.01805667   0.11501
## group_factorLichen Planus         0.009363333   0.0994600   0.02344667   0.00454
## group_factorPsoriasis Vulgaris    0.051206667  -0.0430000  -0.25420333  -1.62764
##                                      [,940]       [,941]      [,942]       [,943]
## (Intercept)                       0.24323333  -0.20350667   0.13203333   0.079173333
## group_factorContact Eczema        0.05791333  -0.11915000  -0.02707333  -0.186436667
## group_factorControl              -0.12119000   0.22179333  -0.07334000   0.008383333
## group_factorLichen Planus        -0.04501667  -0.14414667   0.18434333  -0.077000000
## group_factorPsoriasis Vulgaris   -0.53392000   0.09544333   0.06534000   0.023206667
```

```
##                                   [,944]      [,945]      [,946]       [,947]
## (Intercept)                    -0.1956200  -0.3736300   2.1860800   0.6668400
## group_factorContact Eczema      0.0884900  -0.2095567  -0.6502167   0.1593433
## group_factorControl             0.2609133   0.3705233  -2.4234467  -0.5609200
## group_factorLichen Planus       0.5258533   0.1084333  -0.5687300  -0.1221600
## group_factorPsoriasis Vulgaris -0.2598000   0.1285500   1.0303200   0.1201667
##                                   [,948]      [,949]       [,950]        [,951]
## (Intercept)                     0.00085000  -0.3183767   0.494980000  -0.03514333
## group_factorContact Eczema      0.08871333  -0.2131633  -0.009986667  -0.49834000
## group_factorControl             0.11523667  -0.0256700  -0.504910000   0.22456000
## group_factorLichen Planus       0.03819667  -0.2475033  -0.320690000   0.01055333
## group_factorPsoriasis Vulgaris -0.04280000   0.1106467   0.117543333  -0.44250333
##                                   [,952]       [,953]      [,954]      [,955]
## (Intercept)                    -0.42758000   0.179076667   0.2012167  -0.1313633
## group_factorContact Eczema      0.15305667  -0.003443333  -0.0032300   0.2480100
## group_factorControl             0.52238000  -0.098456667  -0.1525433  -0.1982100
## group_factorLichen Planus       0.02876000  -0.050926667  -0.2061500  -0.4400600
## group_factorPsoriasis Vulgaris -0.03172667  -0.403060000  -0.1328067   1.4495067
##                                   [,956]       [,957]      [,958]       [,959]
## (Intercept)                     0.3139933   0.17553333   1.28301000  -0.06631333
## group_factorContact Eczema      0.3025400   0.10949000  -0.05221333   0.23423000
## group_factorControl            -0.0579500  -0.46624333  -1.41878333   0.05280667
## group_factorLichen Planus       0.0178700  -0.07703667   0.63861000  -0.23956667
## group_factorPsoriasis Vulgaris -0.3562333   0.62039667  -0.99853667  -0.10519333
##                                   [,960]       [,961]      [,962]        [,963]
## (Intercept)                    -0.34125333   0.1266433  -0.101016667  -0.506563333
## group_factorContact Eczema      0.01462667  -0.5199467  -0.003150000  -0.055340000
## group_factorControl             0.18663333  -0.2873667  -0.079586667   0.218836667
## group_factorLichen Planus       0.04840000  -0.4918633  -0.002026667  -0.001446667
## group_factorPsoriasis Vulgaris  0.57835000   0.5427767   0.509786667   0.297726667
##                                   [,964]       [,965]      [,966]       [,967]
## (Intercept)                     0.06266667   0.25317667   4.690000e-03  -0.2182367
## group_factorContact Eczema      0.19164333  -0.02658667   9.333333e-05  -0.1498267
## group_factorControl             0.07699000  -0.28431000  -6.896000e-02   0.1341100
## group_factorLichen Planus      -0.00964000  -0.27524000   7.520000e-02  -0.1256400
## group_factorPsoriasis Vulgaris -0.25751667   0.06279333   2.352267e-01   0.0973900
##                                   [,968]        [,969]      [,970]       [,971]
## (Intercept)                    -0.107943333  -0.07698333   0.19475000   0.0197100
## group_factorContact Eczema      0.210543333   0.16155667   0.09008667  -0.1130767
## group_factorControl             0.096273333   0.05877667  -0.29513333  -0.0162100
## group_factorLichen Planus       0.009936667  -0.02910333   0.36929333  -0.1188533
## group_factorPsoriasis Vulgaris  0.410150000   0.05038333  -0.14442667   0.2511933
##                                   [,972]       [,973]       [,974]
## (Intercept)                    -0.26624333  -0.11377333   0.006826667
## group_factorContact Eczema     -0.05205333  -0.12856667   0.165013333
## group_factorControl             0.39086667   0.03745333   0.083410000
## group_factorLichen Planus      -0.10243000   0.04837667  -0.057630000
## group_factorPsoriasis Vulgaris  0.11747667   0.28854667   0.122953333
##                                   [,975]       [,976]      [,977]       [,978]
## (Intercept)                     0.268343333   0.3998733  -0.5846000   0.14531333
## group_factorContact Eczema     -0.015833333   0.5840233  -0.5273800  -0.21833000
## group_factorControl            -0.255653333  -0.5255633   0.9668900  -0.08770333
## group_factorLichen Planus      -0.328986667   0.3045367  -0.2349067  -0.36939333
## group_factorPsoriasis Vulgaris  0.004563333   0.0079300   0.3602267   0.06703667
```

```
##                                    [,979]       [,980]       [,981]       [,982]
## (Intercept)                     0.2692800  -0.23247667  -0.152870000   0.7562533
## group_factorContact Eczema     -0.0354600   0.07619000   0.109010000  -1.4923167
## group_factorControl            -0.2556167   0.11704000  -0.041590000  -0.7496500
## group_factorLichen Planus      -0.2561267  -0.10316000   0.002953333   0.2917767
## group_factorPsoriasis Vulgaris  0.2337733   0.02481333   0.170606667   0.0673000
##                                    [,983]      [,984]       [,985]       [,986]
## (Intercept)                     0.13263000   0.2049767   0.000860000   0.22056667
## group_factorContact Eczema      0.06810667  -0.0437700  -0.253176667  -0.01883667
## group_factorControl             0.59480667  -0.3604200   0.002806667  -0.39416333
## group_factorLichen Planus       0.35907333   0.3431367  -0.384496667  -0.10241333
## group_factorPsoriasis Vulgaris -1.11036667   0.1959433   0.214396667   0.46705667
##                                    [,987]       [,988]       [,989]      [,990]
## (Intercept)                     0.11062333  -0.34324333  -0.04838667   0.4631067
## group_factorContact Eczema      0.03429667  -0.10148667   0.36413333  -0.0899100
## group_factorControl            -0.03189333   0.40916667  -0.01382333  -0.4972967
## group_factorLichen Planus      -0.37195000  -0.07104667   0.06524667   0.6778867
## group_factorPsoriasis Vulgaris -0.16486667  -0.12622333  -0.04215000  -0.5938400
##                                    [,991]       [,992]       [,993]      [,994]
## (Intercept)                    -0.02410333   0.585343333   0.8520967   0.30852667
## group_factorContact Eczema     -0.10842667  -0.136726667   0.2420933  -0.19856667
## group_factorControl            -0.23357000  -0.009076667  -1.5411000  -0.02395333
## group_factorLichen Planus      -0.22681667  -0.134990000   0.3382800  -0.45085333
## group_factorPsoriasis Vulgaris  0.33702667  -0.528343333   1.2827333   0.16565667
##                                    [,995]      [,996]       [,997]      [,998]
## (Intercept)                    -0.2245533  -0.10945000   0.36907333   0.21981000
## group_factorContact Eczema      0.2297800   0.20856333  -0.08734667   0.42636000
## group_factorControl            -0.0668200   0.12234667  -0.54718333   0.24973333
## group_factorLichen Planus       0.5922567   0.29100000  -0.43376333   0.08843667
## group_factorPsoriasis Vulgaris  0.7240933   0.03791333   0.87492667  -0.72824667
##                                    [,999]      [,1000]       [,1001]      [,1002]
## (Intercept)                    -0.07179667  -0.484503333  -0.14252667   0.01899333
## group_factorContact Eczema     -0.04893000   0.005396667   0.02552667  -0.05082000
## group_factorControl             0.19942333   0.727936667   0.13194000   0.04297000
## group_factorLichen Planus      -0.12133333  -0.100460000  -0.05054333  -0.06406000
## group_factorPsoriasis Vulgaris -0.33206333  -0.185326667   0.13978000  -0.26720333
##                                    [,1003]      [,1004]      [,1005]      [,1006]
## (Intercept)                     0.437053333   1.5595733  -0.08112333  -0.18395333
## group_factorContact Eczema     -0.177363333  -0.2596767   0.01359333  -0.01204667
## group_factorControl            -0.399266667  -1.9630533   0.30358000   0.09229667
## group_factorLichen Planus      -0.008426667   0.0591000  -0.06677000  -0.12787000
## group_factorPsoriasis Vulgaris -0.432143333   0.6407000  -0.23152667  -0.05274333
##                                    [,1007]      [,1008]      [,1009]      [,1010]
## (Intercept)                    -0.3518567   0.2179633  -0.05603333  -0.5369700
## group_factorContact Eczema     -0.0168300  -0.2014467  -0.09586667  -0.2421233
## group_factorControl             0.0942700   0.0960300   0.38834667   0.1100633
## group_factorLichen Planus      -0.2347467   0.0155700   0.21069333  -0.1587067
## group_factorPsoriasis Vulgaris  0.3617933  -0.6471067  -0.14604333   0.4840167
##                                    [,1011]      [,1012]      [,1013]      [,1014]
## (Intercept)                    -0.26337667  -0.33493667  -0.06201000   0.33385333
## group_factorContact Eczema     -0.01318333  -0.05985333  -0.02037333  -0.29851667
## group_factorControl             0.21758000   0.60899333   0.24033333  -0.13978667
## group_factorLichen Planus      -0.03913333  -0.06608667  -0.02792000   0.06179333
## group_factorPsoriasis Vulgaris  0.06084333  -0.64515667  -0.11988000  -0.81285000
```

```
##                                    [,1015]      [,1016]      [,1017]      [,1018]
## (Intercept)                     -0.09203333  -0.1605800   0.008153333  -0.38504667
## group_factorContact Eczema      -0.24471000   0.1248267  -0.050370000   0.02476667
## group_factorControl              0.17206333   0.1263133   0.147376667   0.24874000
## group_factorLichen Planus       -0.23309000   0.2059500   0.198426667   0.04355000
## group_factorPsoriasis Vulgaris   0.67638000   0.5767467  -0.441473333  -0.19679333
##                                    [,1019]     [,1020]     [,1021]     [,1022]
## (Intercept)                     -0.2554167   0.2113400  -0.5389500  -0.3774200
## group_factorContact Eczema      -0.2457733   0.4028400  -0.3905433  -0.1683500
## group_factorControl              0.6320167  -0.2806867   0.2536933   0.2595667
## group_factorLichen Planus        0.2831733   0.2237033   0.0769500  -0.1001533
## group_factorPsoriasis Vulgaris  -0.1106400  -0.2807500   0.3046167   0.4844867
##                                    [,1023]      [,1024]      [,1025]      [,1026]
## (Intercept)                     -0.04622667  -0.06651333  -0.63545333  -0.38589000
## group_factorContact Eczema      -0.20114000  -0.10867000   0.03768667   0.29585000
## group_factorControl              0.07032667   0.15494667   1.01222667   0.33929667
## group_factorLichen Planus       -0.02392667   0.07233000   0.67795667   0.09569333
## group_factorPsoriasis Vulgaris  -0.11023000   0.03867333   0.47342667   0.26013333
##                                    [,1027]     [,1028]      [,1029]      [,1030]
## (Intercept)                      0.3695300  0.02351333  -0.558733333   0.250916667
## group_factorContact Eczema       0.1212733  0.15756000  -0.006123333  -0.267593333
## group_factorControl             -0.5602433  0.33210667   0.240543333  -0.164146667
## group_factorLichen Planus       -0.2112400  0.02344333  -0.150610000   0.001133333
## group_factorPsoriasis Vulgaris   0.1734433  0.01392667   0.451033333   0.082113333
##                                    [,1031]     [,1032]      [,1033]      [,1034]
## (Intercept)                      1.0497633  -0.2334667  -0.13450333  -0.05174667
## group_factorContact Eczema       0.4532700  -0.3865833   0.23519333   0.11236667
## group_factorControl             -0.9016333   0.0257100   0.14589333  -0.31398000
## group_factorLichen Planus       -0.3555233  -0.1269500   0.06990667  -0.05006333
## group_factorPsoriasis Vulgaris  -0.3833367   0.4319733  -0.15820667   0.03933000
##                                    [,1035]      [,1036]      [,1037]      [,1038]
## (Intercept)                     -0.34388667  -0.22938667  -0.36418333  -0.06690667
## group_factorContact Eczema      -0.09388667   0.04808667  -0.29300000   0.43631667
## group_factorControl              0.25033000   0.12578667   0.42223333  -0.07228667
## group_factorLichen Planus        0.09799000  -0.08905000  -0.05127000   0.24301333
## group_factorPsoriasis Vulgaris   0.28799333  -0.02669000  -0.07529333  -0.01083667
##                                    [,1039]      [,1040]      [,1041]      [,1042]
## (Intercept)                     -0.40025000   0.05014000  -0.04954000  -0.13247667
## group_factorContact Eczema      -0.06788667   0.12011333  -0.01492333  -0.10495667
## group_factorControl              0.28297333  -0.09355333  -0.02977000   0.18808667
## group_factorLichen Planus        0.05567333  -0.13679000   0.03223333  -0.27795000
## group_factorPsoriasis Vulgaris   0.39106333   0.36215667   0.10846333  -0.02739667
##                                    [,1043]      [,1044]     [,1045]     [,1046]
## (Intercept)                     -0.7424367  -0.078726667   0.3631867   0.153420000
## group_factorContact Eczema      -0.4270633  -0.006733333   0.1955633  -0.346283333
## group_factorControl              0.6366600   0.006900000  -0.3139133   0.006553333
## group_factorLichen Planus        0.2217667   0.106143333   0.3113767  -0.423716667
## group_factorPsoriasis Vulgaris   0.2143667  -0.461390000  -0.7901667  -0.202200000
##                                    [,1047]     [,1048]     [,1049]     [,1050]
## (Intercept)                     -0.47720333   0.23713000   0.03839667   0.11824000
## group_factorContact Eczema      -0.21173000   0.11813000  -0.18781000  -0.06599333
## group_factorControl              0.56387333  -0.16205333   0.33241000   0.04876667
## group_factorLichen Planus        0.07743333   0.03945333  -0.17607000  -0.11506000
## group_factorPsoriasis Vulgaris  -0.27195000  -0.37881667  -0.66305333  -0.07096667
```

```
##                                  [,1051]     [,1052]    [,1053]     [,1054]
## (Intercept)                   -0.12198000  0.2592833 -0.81534000 -1.6408233
## group_factorContact Eczema     0.24106333 -0.5830600 -0.04390333 -0.1820533
## group_factorControl            0.17321000 -0.4764400  0.45417667  2.0996833
## group_factorLichen Planus      0.11430667 -0.4051033 -0.83969000  0.5077000
## group_factorPsoriasis Vulgaris 0.02246333  0.7763067  0.41994333 -0.1319800
##                                  [,1055]     [,1056]    [,1057]     [,1058]
## (Intercept)                    0.5118067   0.6914600  0.09397333  0.1319233
## group_factorContact Eczema     0.5193933  -0.3241600 -0.42235667  0.2491933
## group_factorControl           -0.5758300  -0.8774300 -0.00361000 -0.2715433
## group_factorLichen Planus      0.3041667  -0.4198333 -0.03403667  0.5099067
## group_factorPsoriasis Vulgaris 0.7905600   1.2011733  0.35254333  0.6908067
##                                  [,1059]     [,1060]    [,1061]     [,1062]
## (Intercept)                   -0.08744667 -0.1495267 -0.4825633  0.06610000
## group_factorContact Eczema     0.00533000 -1.0708933 -0.5034133 -0.04871333
## group_factorControl            0.08833333  0.2407167  0.2820333 -0.13100000
## group_factorLichen Planus     -0.06993000 -0.1411533 -0.1624667  0.35734667
## group_factorPsoriasis Vulgaris -0.03168667 -0.8507233  1.3021267 -0.18254000
##                                  [,1063]     [,1064]    [,1065]     [,1066]
## (Intercept)                    0.1467867   0.09204000  0.2896700  0.27670333
## group_factorContact Eczema    -0.2563100   0.06804667 -0.2101900 -0.21878333
## group_factorControl           -0.2043700  -0.01514333 -0.2140767 -0.26307667
## group_factorLichen Planus     -0.0198200   0.13594667 -0.4037767 -0.34488000
## group_factorPsoriasis Vulgaris 0.2696267  -0.05494333 -0.3679700  0.09610333
##                                  [,1067]     [,1068]    [,1069]     [,1070]
## (Intercept)                   -0.0176400   0.5071267  0.8194233  0.4014433
## group_factorContact Eczema     0.4114100   0.8282833  0.5300533 -0.4803167
## group_factorControl           -0.1756633  -0.6156633 -0.7804833 -0.3318033
## group_factorLichen Planus      0.1616633   0.9193333  0.8671433 -0.4559000
## group_factorPsoriasis Vulgaris 1.0702300   1.0697033  1.2354200  0.4325100
##                                  [,1071]     [,1072]    [,1073]     [,1074]
## (Intercept)                   -0.06090000  0.1884567 -0.4269433 -0.2062833
## group_factorContact Eczema    -0.67431667 -0.5344700 -0.0250800  0.2034167
## group_factorControl            0.29507667 -0.1147033  0.4957667  0.3580100
## group_factorLichen Planus     -0.09026333 -0.3677467 -0.1302067  0.5244833
## group_factorPsoriasis Vulgaris 0.01231667  0.4590267  0.2347100  1.0740433
##                                  [,1075]     [,1076]    [,1077]     [,1078]
## (Intercept)                    1.0354133  -1.26294667 -3.12522667  0.3207633
## group_factorContact Eczema    -0.6963633   0.19585333  0.72457667  0.2237233
## group_factorControl           -1.2703567   0.69617333  1.97051000 -0.4748767
## group_factorLichen Planus     -0.9267933  -0.27927000 -0.22385000 -0.0500300
## group_factorPsoriasis Vulgaris 0.1962033  -0.09271333 -0.01691667  0.4692667
##                                  [,1079]     [,1080]    [,1081]     [,1082]
## (Intercept)                    0.3727433  -0.3028933  0.29676000 -0.06811667
## group_factorContact Eczema     0.1574200  -0.3182900  0.09460667 -0.28747333
## group_factorControl           -0.2153467   0.1087133 -0.49450333 -0.05304333
## group_factorLichen Planus     -0.1094967  -0.3120033 -0.01539667 -0.14280000
## group_factorPsoriasis Vulgaris -0.2724700   0.2555300  0.24854000  0.54005000
##                                  [,1083]     [,1084]    [,1085]     [,1086]
## (Intercept)                    0.23561000  0.02098667  0.05827667  0.26236000
## group_factorContact Eczema     0.00930000  0.16121333 -0.15255000 -0.38340333
## group_factorControl           -0.86996333  0.00465000  0.13310667 -0.04356667
## group_factorLichen Planus     -0.24212000  0.26259667 -0.15771667 -0.33865000
## group_factorPsoriasis Vulgaris 0.06968333 -0.56502000 -0.19145667 -0.06885667
```

33

```
##                                    [,1087]     [,1088]     [,1089]     [,1090]
## (Intercept)                     0.01778333 -0.13079667 -0.45783000  0.14354333
## group_factorContact Eczema      0.01593667 -0.21828000  0.30860667 -0.21597000
## group_factorControl            -0.04091667 -0.01250667  0.01758333 -0.11532667
## group_factorLichen Planus      -0.16725667 -0.30491000  1.03036333 -0.03295333
## group_factorPsoriasis Vulgaris -0.14092667  0.37056667  1.19312333 -0.07623667
##                                    [,1091]     [,1092]     [,1093]     [,1094]
## (Intercept)                      0.7530667  0.001260000  0.15372333  0.2552733
## group_factorContact Eczema      -0.7321500 -0.032266667  0.03767667 -0.4989167
## group_factorControl             -0.3696933 -0.002763333 -0.16414667 -0.2879800
## group_factorLichen Planus       -0.6702167 -0.105143333  0.32923333 -0.0435300
## group_factorPsoriasis Vulgaris  -0.2745333  0.124900000  1.05409000  0.4156567
##                                    [,1095]     [,1096]     [,1097]     [,1098]
## (Intercept)                     0.072396667  0.19121667 -0.05294000  0.4919433
## group_factorContact Eczema     -0.238470000 -0.62437333 -0.14725000  0.2082400
## group_factorControl             0.101180000  0.04610333 -0.01099333 -0.5179433
## group_factorLichen Planus      -0.250620000 -0.32393000 -0.27811000  0.2699233
## group_factorPsoriasis Vulgaris  0.007653333  0.34279333  0.44342667 -0.0669900
##                                     [,1099]    [,1100]     [,1101]    [,1102]
## (Intercept)                      0.3039967 -0.0294300  0.09003333  0.5231333
## group_factorContact Eczema      -0.2699800 -0.1622800 -0.09086000 -0.1367100
## group_factorControl             -0.2756133  0.1025633  0.12985000 -0.2821100
## group_factorLichen Planus        0.6020000 -0.1953067  0.21888333 -0.2952800
## group_factorPsoriasis Vulgaris  -0.2037733  0.2346100  0.07231000 -0.6597933
##                                     [,1103]     [,1104]     [,1105]     [,1106]
## (Intercept)                     -0.03271000  0.08833333 -0.14205333  0.05062333
## group_factorContact Eczema      -0.12176000 -0.06893667 -0.30554667 -0.15466000
## group_factorControl             -0.10433000 -0.23848333  0.35679333  0.09674000
## group_factorLichen Planus        0.07991333 -0.11637333  0.05295333  0.08364667
## group_factorPsoriasis Vulgaris   0.46006667  0.01333333 -0.12603333 -0.37470000
##                                     [,1107]     [,1108]      [,1109]     [,1110]
## (Intercept)                     -0.05921667  0.02153667  0.628193333 0.064980000
## group_factorContact Eczema      -0.22075667 -0.54168333  0.331770000 0.155106667
## group_factorControl             -0.02725000 -0.10085000 -0.829113333 0.009053333
## group_factorLichen Planus        0.01283000  0.24339000 -0.008733333 0.156696667
## group_factorPsoriasis Vulgaris   0.64296000 -0.01528333  0.131373333 0.036570000
##                                     [,1111]    [,1112]     [,1113]      [,1114]
## (Intercept)                      -0.1777400  0.1433000 -0.07334000  0.005186667
## group_factorContact Eczema        0.1844933  0.2534567 -0.12977667 -0.660963333
## group_factorControl              -0.0052600 -0.1123600 -0.01885333 -0.123353333
## group_factorLichen Planus         0.1484100  0.1925133 -0.03951000  0.211430000
## group_factorPsoriasis Vulgaris   -0.0279700  0.0249700  0.13431667  1.496003333
##                                     [,1115]     [,1116]     [,1117]    [,1118]
## (Intercept)                      0.2598033 -0.08880667  0.22084667  0.2804767
## group_factorContact Eczema      -0.1471933  0.09232333 -0.30524333  0.1054633
## group_factorControl             -0.1509667 -0.19361333 -0.06848333 -0.3263900
## group_factorLichen Planus       -0.2736700  0.22085333 -0.26096000  0.2945967
## group_factorPsoriasis Vulgaris   0.0933900  0.36832000  0.08768333 -0.5709200
##                                     [,1119]    [,1120]     [,1121]      [,1122]
## (Intercept)                      0.2081100  0.19748000 -0.18922333 -0.100146667
## group_factorContact Eczema      -0.3291733 -0.19811333 -0.29319667  0.005346667
## group_factorControl             -0.1706000 -0.07721333  0.03969333 -0.097933333
## group_factorLichen Planus       -0.2058767 -0.23549000  0.12363000 -0.053290000
## group_factorPsoriasis Vulgaris   0.7669233  0.84407667  0.75992333  0.319896667
```

34

```
##                                  [,1123]      [,1124]      [,1125]      [,1126]
## (Intercept)                     0.6531567   0.02945000    0.3063800  -0.04436333
## group_factorContact Eczema      0.6814300  -0.03945333    0.3566233  -0.07583333
## group_factorControl            -1.0305167   0.14621667   -0.3287033   0.02527333
## group_factorLichen Planus       0.3078667  -0.07910000    0.2262367  -0.03583667
## group_factorPsoriasis Vulgaris -0.4086667  -0.33990000    0.2232667   0.03313667
##                                  [,1127]      [,1128]      [,1129]      [,1130]
## (Intercept)                    -1.0251867  -0.48083333   -0.0554700   0.17678000
## group_factorContact Eczema     -0.3571633  -0.61004333   -0.8254667  -0.09715333
## group_factorControl             1.1466500   0.73061333    0.1498333   0.13211000
## group_factorLichen Planus       0.1541500   0.02941667   -0.1079400  -0.17046000
## group_factorPsoriasis Vulgaris  0.1364867   0.22716000   -0.4956633  -0.28537333
##                                  [,1131]      [,1132]      [,1133]      [,1134]
## (Intercept)                    -0.11077333   0.9062433    0.1698300  -0.2554033
## group_factorContact Eczema     -0.07508333  -0.0318900    0.1366733  -0.1859733
## group_factorControl             0.08821667  -1.0177600   -0.2117533   0.1351467
## group_factorLichen Planus       0.01401333  -0.1388400    0.1282367  -0.1700600
## group_factorPsoriasis Vulgaris  0.18357667  -0.3219067   -0.2427300   0.5743533
##                                  [,1135]      [,1136]      [,1137]      [,1138]
## (Intercept)                     0.2639867   0.2181400    0.1540633  -1.2181300
## group_factorContact Eczema     -0.2032300   0.7064567   -0.0134900   0.1337367
## group_factorControl            -0.3177400  -0.2626633   -0.2821200   1.0866967
## group_factorLichen Planus       0.4060967   1.1415867    0.3545633   0.4455933
## group_factorPsoriasis Vulgaris -0.5116533   0.3256967    0.3951733  -0.2112333
##                                  [,1139]      [,1140]      [,1141]      [,1142]
## (Intercept)                     0.05610333   0.14401000    0.17028333  -0.03015333
## group_factorContact Eczema      0.13926333  -0.06175333    0.16892000   0.35640667
## group_factorControl            -0.26591000   0.05047667   -0.16390333   0.08341667
## group_factorLichen Planus       0.16389667   0.06042667   -0.04010000   0.25749667
## group_factorPsoriasis Vulgaris  0.04376333  -0.25709333    0.05637667  -0.09360667
##                                  [,1143]      [,1144]      [,1145]      [,1146]
## (Intercept)                     0.09736000   0.11131667   -2.35499667   0.07064333
## group_factorContact Eczema     -0.07102333   0.34947667    1.05512000   0.01672667
## group_factorControl             0.03422333  -0.02575333    1.40351667  -0.08473667
## group_factorLichen Planus       0.03919333   0.11120333    0.06124333   0.19405333
## group_factorPsoriasis Vulgaris -0.03068000  -0.47064000   -0.52318333  -0.19733333
##                                  [,1147]      [,1148]      [,1149]      [,1150]
## (Intercept)                     0.04311667  -0.459563333  -0.09730667  -0.4932400
## group_factorContact Eczema      0.05824667  -0.010100000   0.00178000  -0.4668833
## group_factorControl            -0.26327333   0.136086667   0.20512000   0.3209167
## group_factorLichen Planus       0.00595000   0.004523333   0.05931000  -0.3240067
## group_factorPsoriasis Vulgaris -0.29879000   0.725423333   0.09615333   0.4665867
##                                  [,1151]      [,1152]      [,1153]      [,1154]
## (Intercept)                    -0.09244667  -0.08433333  -0.319986667   0.1074300
## group_factorContact Eczema      0.03677667   0.05687333   0.022566667  -0.0085900
## group_factorControl            -0.14135333   0.08608333   0.004766667  -0.2687167
## group_factorLichen Planus      -0.18658000  -0.13279333   0.208950000   0.1202633
## group_factorPsoriasis Vulgaris  0.15185667  -0.10219333   0.665346667   0.1462667
##                                  [,1155]      [,1156]      [,1157]      [,1158]
## (Intercept)                    -0.09105333  -0.19335000   0.13259667  -0.41883667
## group_factorContact Eczema     -0.16975667   0.07556333  -0.24778667  -0.08253667
## group_factorControl            -0.16564333   0.10724667  -0.10225667   0.27035000
## group_factorLichen Planus      -0.10963000   0.03686333  -0.36959000  -0.14062000
## group_factorPsoriasis Vulgaris  0.64098000   0.30774667  -0.09059667   0.06615667
```

35

```
##                                  [,1159]       [,1160]     [,1161]     [,1162]
## (Intercept)                  -0.09200667 -0.1677300000 -0.2123033 -0.25291333
## group_factorContact Eczema    0.12191000  0.0896800000 -0.0735100  0.12054000
## group_factorControl           0.24102000 -0.0001533333  0.4227633  0.12773333
## group_factorLichen Planus    -0.16097333 -0.1314066667 -0.1625633 -0.02684000
## group_factorPsoriasis Vulgaris -0.17429000  0.2093200000 -0.1980000 -0.03428667
##                                  [,1163]     [,1164]    [,1165]     [,1166]
## (Intercept)                  -0.23522667 -0.0402900  0.10932000 -0.04477333
## group_factorContact Eczema    0.01322667 -0.2463267  0.12230333 -0.44353667
## group_factorControl           0.05420000  0.0394000 -0.19651333  0.21495333
## group_factorLichen Planus    -0.20306333 -0.2488600 -0.08151667  0.41017000
## group_factorPsoriasis Vulgaris  0.25726667 -0.0145200 -0.04174667 -0.19723333
##                                  [,1167]     [,1168]     [,1169]     [,1170]
## (Intercept)                  -0.35498333 -0.35746333 -0.05263667 -0.22453667
## group_factorContact Eczema    0.02303667 -0.29055333 -0.11248333 -0.06912667
## group_factorControl           0.31997667  0.05035667  0.18542000  0.20736000
## group_factorLichen Planus     0.00636000  0.12968333  0.03925667 -0.23732667
## group_factorPsoriasis Vulgaris -0.00659000  0.59651667 -0.25179667  0.16432333
##                                  [,1171]      [,1172]     [,1173]     [,1174]
## (Intercept)                  -0.28276333 -0.422703333 -1.74131333  0.44250000
## group_factorContact Eczema   -0.08425333  0.165663333  0.64900333 -0.09184333
## group_factorControl           0.19113333  0.606576667  1.24968333 -0.49475333
## group_factorLichen Planus     0.00138000 -0.008203333 -0.08120333  0.39607667
## group_factorPsoriasis Vulgaris  0.25966000 -0.073323333 -0.83202000  1.11766333
##                                  [,1175]     [,1176]     [,1177]     [,1178]
## (Intercept)                   0.4597233  0.3097300 -0.19657333  0.02292333
## group_factorContact Eczema    0.1285900  0.3062333  0.06930667  0.11766000
## group_factorControl          -0.9558067 -0.1710100  0.34459667 -0.01396333
## group_factorLichen Planus    -0.1266133  0.2861467  0.03146000  0.13595667
## group_factorPsoriasis Vulgaris  0.4436400 -0.7186400 -0.38919667 -0.09942333
##                                  [,1179]     [,1180]      [,1181]     [,1182]
## (Intercept)                   0.1298400  0.13002000  0.005603333 -0.05551000
## group_factorContact Eczema   -0.7068167  0.03100000 -0.114473333  0.07985333
## group_factorControl          -0.0387200 -0.10431000 -0.065566667  0.13187333
## group_factorLichen Planus    -0.4051067  0.09768667  0.040240000 -0.03651667
## group_factorPsoriasis Vulgaris  0.4680633 -0.11472333  0.286830000 -0.04722333
##                                  [,1183]     [,1184]      [,1185]     [,1186]
## (Intercept)                  -0.10095667 -0.13225333 -0.215033333 -0.6578900
## group_factorContact Eczema    0.02567667  0.06223333 -0.004596667  0.1558200
## group_factorControl           0.02205333  0.31797667  0.109076667  0.5387033
## group_factorLichen Planus    -0.01142333 -0.23947333 -0.011053333 -0.1706233
## group_factorPsoriasis Vulgaris  0.05501333 -0.14345000  0.184193333 -0.1873600
##                                  [,1187]      [,1188]     [,1189]      [,1190]
## (Intercept)                   0.0078300 -0.005926667  0.2217767 -0.008016667
## group_factorContact Eczema   -0.1704900  0.255353333 -0.4897833 -0.045690000
## group_factorControl          -0.1334667 -0.234620000 -0.1618567  0.169466667
## group_factorLichen Planus    -0.1018433  0.040286667 -0.3193933 -0.011210000
## group_factorPsoriasis Vulgaris  0.4207133  0.082576667  0.5865200  0.093183333
##                                  [,1191]     [,1192]     [,1193]     [,1194]
## (Intercept)                   0.48805333 -0.27698333 -0.0006400 -0.03113667
## group_factorContact Eczema    0.08273333 -0.29106000 -0.1591133  0.11504667
## group_factorControl          -0.72905333  0.34582333 -0.1848367  0.03950333
## group_factorLichen Planus    -0.06405667 -0.08278667 -0.0361500  0.07215667
## group_factorPsoriasis Vulgaris  0.28704000  0.42988333  0.5646133 -0.18013667
```

36

```
##                               [,1195]      [,1196]       [,1197]
## (Intercept)                 0.207566667 -0.01825333 -0.008953333
## group_factorContact Eczema   0.038580000 -0.22543000  -0.187123333
## group_factorControl         -0.006536667 -0.23631667   0.077076667
## group_factorLichen Planus    0.312236667  0.48323333  -0.286456667
## group_factorPsoriasis Vulgaris -0.331730000  0.52820667 -0.059296667
##                               [,1198]     [,1199]      [,1200]     [,1201]
## (Intercept)                 -0.50970333  0.4078800 -0.43073000 -0.29018000
## group_factorContact Eczema   0.10595667  0.4579867 -0.24091000  0.08742667
## group_factorControl          0.36929333 -0.3126400  0.23171000  0.23783000
## group_factorLichen Planus   -0.08140000  0.5056800 -0.06352667  0.06751000
## group_factorPsoriasis Vulgaris 0.05067667 -0.4889800  0.48765333  0.31988333
##                               [,1202]     [,1203]      [,1204]     [,1205]
## (Intercept)                  0.1437633  0.111796667 -0.2238000  0.01294000
## group_factorContact Eczema  -0.4205333 -0.007993333 -0.1778867  0.09022667
## group_factorControl         -0.1713400 -0.128193333  0.1077667  0.28642333
## group_factorLichen Planus   -0.0980600  0.225430000  0.2637667 -0.16435333
## group_factorPsoriasis Vulgaris 0.1471900 -0.016220000  0.1863567 -0.16420333
##                               [,1206]     [,1207]     [,1208]     [,1209]
## (Intercept)                 -0.20617000 -0.14777333 -0.1666700  0.28221667
## group_factorContact Eczema  -0.01863667  0.07048000  0.2790933  0.07700667
## group_factorControl          0.15532000 -0.04191333  0.1182600 -0.50452333
## group_factorLichen Planus   -0.00594000  0.05000667  0.3950733 -0.07653333
## group_factorPsoriasis Vulgaris 0.44774000 -0.28059667  0.1253800  0.36396000
##                               [,1210]     [,1211]     [,1212]     [,1213]
## (Intercept)                 -0.7840633 -0.09897667 -0.54028667 -0.1972167
## group_factorContact Eczema  -0.1310033 -0.32164333  0.14149667  0.1457567
## group_factorControl         -0.2435100  0.01968000  1.16328000  0.0973800
## group_factorLichen Planus   -0.2396267 -0.07653000  0.02143667  0.1622400
## group_factorPsoriasis Vulgaris -0.1200300  0.55362333  0.09684333  0.1559500
##                               [,1214]     [,1215]     [,1216]     [,1217]
## (Intercept)                  0.5982467  0.3989267  0.3279933 -0.18133000
## group_factorContact Eczema   0.5946800  0.6744633 -0.4221167  0.05098667
## group_factorControl         -0.5879667 -0.3533067 -0.3570067  0.12488000
## group_factorLichen Planus    0.6057333  0.4363267  0.3439567 -0.20966667
## group_factorPsoriasis Vulgaris 0.0622400 -0.2717667 -0.6605833 -0.11023000
##                               [,1218]     [,1219]     [,1220]     [,1221]
## (Intercept)                 -0.6532967 -0.2289167  0.3763767  1.1768467
## group_factorContact Eczema  -1.2080867 -0.0263100  0.5992967  0.4119200
## group_factorControl          1.0962067 -0.1420200 -0.3044900 -1.0238100
## group_factorLichen Planus   -0.2018500 -0.0463000  1.6179967 -0.4122333
## group_factorPsoriasis Vulgaris -0.7168200  0.8610600  0.0094500  3.8305600
##                               [,1222]     [,1223]     [,1224]     [,1225]
## (Intercept)                  0.5603300 -0.10353333  0.26379667 -0.17888000
## group_factorContact Eczema  -0.2463000 -0.05252000  0.05029667 -0.04573667
## group_factorControl         -0.3218767 -0.12796333 -0.21901333  0.16829000
## group_factorLichen Planus   -0.5411167  0.09622333 -0.05165000 -0.33701333
## group_factorPsoriasis Vulgaris -0.3488533  0.05579000 -0.17605333 -0.01988667
##                               [,1226]     [,1227]    [,1228]     [,1229]
## (Intercept)                  0.5453400  0.08132333 0.3118233 -0.14385333
## group_factorContact Eczema  -0.2823900 -0.11209667 0.0078100  0.00953000
## group_factorControl         -0.5872367  0.08823667 0.0195400 -0.01822667
## group_factorLichen Planus   -0.2101500 -0.18030333 0.1544200  0.06301667
## group_factorPsoriasis Vulgaris -0.0001100 -0.11934333 0.0365400  0.17083000
```

```
##                                   [,1230]       [,1231]     [,1232]      [,1233]
## (Intercept)                   -0.28521333 -0.005073333 -0.02978667  -0.2729433
## group_factorContact Eczema     0.04400333 -0.165886667 -0.24155000  -0.2282867
## group_factorControl           -0.01793667 -0.062643333  0.07552000   0.2310367
## group_factorLichen Planus     -0.06081000  0.120066667 -0.13916333  -0.0516400
## group_factorPsoriasis Vulgaris 0.55494333  0.710006667  0.17692667   0.1109867
##                                   [,1234]     [,1235]     [,1236]      [,1237]
## (Intercept)                    0.135740000  0.3674933  0.24898000   0.55287667
## group_factorContact Eczema    -0.132416667 -0.3002133 -0.18333333   0.15815000
## group_factorControl           -0.059246667 -0.3675333 -0.16176333  -0.42684000
## group_factorLichen Planus     -0.039600000 -0.3204833 -0.01426667   0.20333667
## group_factorPsoriasis Vulgaris -0.009236667 -0.2688833 -0.04493000  -0.07752333
##                                   [,1238]     [,1239]     [,1240]      [,1241]
## (Intercept)                    0.4325467  0.04558333  0.13743000   0.37664333
## group_factorContact Eczema     0.5153767 -0.29334333 -0.24337667  -0.04252667
## group_factorControl           -0.4419633 -0.07933333 -0.28003333  -0.32252000
## group_factorLichen Planus      0.3341300 -0.19201000 -0.08383333   0.14541333
## group_factorPsoriasis Vulgaris -0.4486367 -0.09375333 -0.44874333   0.70811667
##                                   [,1242]     [,1243]     [,1244]      [,1245]
## (Intercept)                   -0.49330333  0.12504333  0.02670667  -0.2461600
## group_factorContact Eczema    -0.45620333  0.21857000 -0.02138000   0.0293400
## group_factorControl            0.61216333  0.06492667  0.11998667   0.2484267
## group_factorLichen Planus      0.09102667  0.10892667  0.06406000  -0.0030700
## group_factorPsoriasis Vulgaris -0.36209333 -0.26219000 -0.41767667  -0.0379900
##                                   [,1246]     [,1247]     [,1248]      [,1249]
## (Intercept)                   -0.06856000  0.1681967  0.23151000  -0.02566000
## group_factorContact Eczema     0.06350333 -0.2346767 -0.28577000   0.03386000
## group_factorControl            0.05772667  0.0267900 -0.05349667   0.05917000
## group_factorLichen Planus      0.36983333 -0.1459367 -0.28684000   0.07283333
## group_factorPsoriasis Vulgaris -0.20805667 -0.1595100 -0.37295667   0.01198667
##                                   [,1250]     [,1251]     [,1252]      [,1253]
## (Intercept)                   -0.09314333 -0.10417000  0.14347333   0.4555467
## group_factorContact Eczema    -0.10022667 -0.09603000 -0.72710000   0.2394633
## group_factorControl            0.02777667  0.05420333 -0.07304667  -0.4428433
## group_factorLichen Planus     -0.15428667 -0.08640667 -0.32540000   0.1624667
## group_factorPsoriasis Vulgaris -0.39256000 -0.06167000 -0.13720333  -0.1661167
##                                   [,1254]     [,1255]     [,1256]      [,1257]
## (Intercept)                   -0.3188033  0.4588267 -0.1409933  -0.24997000
## group_factorContact Eczema     0.0936600  0.2760367 -0.4531467  -0.21987667
## group_factorControl            0.5214633 -0.2839700  0.1187133   0.14271333
## group_factorLichen Planus      0.4581733 -0.1216667  0.0505200  -0.02302667
## group_factorPsoriasis Vulgaris -0.2220233  0.3062033  0.1899433  -0.12339000
##                                   [,1258]     [,1259]     [,1260]      [,1261]
## (Intercept)                   -0.44273333  0.07658667 -0.1603600  -0.35868000
## group_factorContact Eczema    -0.01644333 -0.24295333 -0.1887400   0.08306667
## group_factorControl            0.23177333 -0.10755000  0.2046367   0.46197667
## group_factorLichen Planus     -0.09710333 -0.28523667  0.1699433  -0.13387667
## group_factorPsoriasis Vulgaris 0.42864333 -0.15360667 -0.0910800  -0.34228000
##                                   [,1262]     [,1263]      [,1264]      [,1265]
## (Intercept)                    0.1156733 -0.21197000 -0.103423333 -0.31207333
## group_factorContact Eczema     0.3857833  0.20659000  0.254566667 -0.14976667
## group_factorControl           -0.0723200  0.31356000  0.026796667  0.28727333
## group_factorLichen Planus      0.0131100  0.02995333  0.001526667 -0.09302333
## group_factorPsoriasis Vulgaris -0.0170100 -0.06073667 -0.060070000  0.24964333
```

```
##                                      [,1266]     [,1267]      [,1268]     [,1269]
## (Intercept)                         0.0352700  0.09073333   0.83472000  0.39039000
## group_factorContact Eczema         -0.2100100 -0.20681333   0.15860000  0.07857333
## group_factorControl                 0.0139300 -0.03466333  -0.88809667 -0.44541000
## group_factorLichen Planus          -0.1468967  0.13264333   0.01745667 -0.33724000
## group_factorPsoriasis Vulgaris     -0.2583167 -0.27480000  -0.84494667 -0.12515333
##                                      [,1270]     [,1271]     [,1272]     [,1273]
## (Intercept)                        -0.0689600  0.44450333   0.7811633  0.19183667
## group_factorContact Eczema          0.2895400  0.33644000   0.5679900 -0.06297333
## group_factorControl                -0.4627900 -0.57081000  -1.4093067 -0.32337333
## group_factorLichen Planus          -0.5786167  0.02074333  -0.5406300 -0.28733667
## group_factorPsoriasis Vulgaris      1.6404567  0.06854667   0.6714933  0.27758333
##                                      [,1274]     [,1275]     [,1276]     [,1277]
## (Intercept)                         0.2360967  0.7832600   0.20646333  0.47430333
## group_factorContact Eczema         -0.1917033 -0.9655333   0.04912000  0.07125333
## group_factorControl                -0.4490833 -0.7346000  -0.17316333 -0.71452667
## group_factorLichen Planus          -0.2532867 -0.4330900  -0.11169333 -0.09567667
## group_factorPsoriasis Vulgaris      0.5977733  0.8238267   0.08165333  0.10433333
##                                       [,1278]     [,1279]     [,1280]     [,1281]
## (Intercept)                         0.07072667  0.23885333 -0.6581233 -0.04428333
## group_factorContact Eczema          0.22054000  0.12477333  0.3680233 -0.19368333
## group_factorControl                -0.22152000 -0.11614000  0.2503167 -0.06376333
## group_factorLichen Planus           0.12708333  0.08708333 -0.0744700 -0.24591333
## group_factorPsoriasis Vulgaris      1.25291000 -0.09585000  0.3916800  0.20450667
##                                       [,1282]     [,1283]     [,1284]      [,1285]
## (Intercept)                         0.7363700 -0.29149000 -0.38696000  0.187286667
## group_factorContact Eczema         -0.6678400 -0.01546333  0.06262333 -0.350033333
## group_factorControl                -0.5833133  0.19227000  0.33293000 -0.273446667
## group_factorLichen Planus          -0.7479467  0.02909000 -0.09308333 -0.007163333
## group_factorPsoriasis Vulgaris     -1.2106167 -0.03922667  0.09840333  0.411163333
##                                        [,1286]      [,1287]     [,1288]    [,1289]
## (Intercept)                        -0.1560433333 -0.02481667  0.08522667  0.2204900
## group_factorContact Eczema          0.0001733333 -0.12683667 -0.05889667  0.1565600
## group_factorControl                 0.0004866667 -0.01323000 -0.24239667 -0.1930233
## group_factorLichen Planus          -0.2361700000 -0.06355667 -0.19976333 -0.1791000
## group_factorPsoriasis Vulgaris      0.4425866667  0.76811333  0.05511000  0.0994400
##                                        [,1290]     [,1291]     [,1292]     [,1293]
## (Intercept)                        -0.009996667 -0.26234667  0.7154800  0.15496000
## group_factorContact Eczema         -0.108906667  0.27859000  0.3627900 -0.03615333
## group_factorControl                -0.067240000  0.07517000 -0.7004633 -0.49901333
## group_factorLichen Planus          -0.195153333  0.08039333  0.1498133 -0.37492333
## group_factorPsoriasis Vulgaris      0.318090000  0.12905333  1.2090367  0.12213667
##                                       [,1294]     [,1295]     [,1296]     [,1297]
## (Intercept)                         0.08735333  0.08437333 -0.02190333  0.28659667
## group_factorContact Eczema          0.01818000  0.25747667 -0.07109000  0.05947333
## group_factorControl                -0.36020000 -0.23945333  0.16257667 -0.40248333
## group_factorLichen Planus          -0.20478333 -0.07102667 -0.15039667 -0.14460667
## group_factorPsoriasis Vulgaris     -0.16733000  0.14418000 -0.09069000  0.17101333
##                                        [,1298]      [,1299]    [,1300]     [,1301]
## (Intercept)                        -0.071753333 -0.086453333  0.2986700 -0.43881667
## group_factorContact Eczema          0.150246667 -0.087646667 -0.2377067 -0.11175333
## group_factorControl                 0.096030000  0.166820000 -0.3035667  0.08384333
## group_factorLichen Planus           0.009303333  0.007396667 -0.2832200 -0.09171000
## group_factorPsoriasis Vulgaris      0.801406667  0.132330000 -0.2781500  0.64907000
```

```
##                               [,1302]     [,1303]     [,1304]     [,1305]
## (Intercept)               -0.36170000 -0.21880667  0.7071400   0.4530700
## group_factorContact Eczema  0.30294333  0.01973000 -0.3217400   0.3414100
## group_factorControl         0.38212333  0.22571000 -0.6647700  -0.4677567
## group_factorLichen Planus   0.07968667  0.04471667 -0.5676367   0.8509433
## group_factorPsoriasis Vulgaris 0.01495333 -0.25682333  1.3834933   0.4091900
##                               [,1306]     [,1307]     [,1308]     [,1309]
## (Intercept)               -1.0403300 -0.22038333 -0.4715967 -0.16894333
## group_factorContact Eczema -0.5905100  0.02252667 -0.5988567  0.06476000
## group_factorControl         1.1257800  0.19550667  0.7678067  0.13309000
## group_factorLichen Planus   0.2451433 -0.18203667 -0.0157400  0.09498667
## group_factorPsoriasis Vulgaris -0.1830667  0.02795000 -0.2785600  0.14385333
##                               [,1310]     [,1311]     [,1312]     [,1313]
## (Intercept)               -0.2767233  0.16491667 -0.7802800  0.8792767
## group_factorContact Eczema -0.0288500  0.04809667 -0.6061600  0.3218667
## group_factorControl        -0.0821300 -0.19386667  0.1624933 -0.8899333
## group_factorLichen Planus  -0.0339600 -0.18488000 -0.5124733  0.7291633
## group_factorPsoriasis Vulgaris 0.2479433 -0.37179333 -0.8436367 -0.5819433
##                               [,1314]     [,1315]     [,1316]     [,1317]
## (Intercept)                2.0987200 -0.6754467  0.1028133  0.03706667
## group_factorContact Eczema -0.5433333 -0.8711100 -0.1086900  0.00476000
## group_factorControl        -2.4099100  0.5790433 -0.1838933  0.09296000
## group_factorLichen Planus   0.8242600  0.5091833 -0.1399467  0.09015667
## group_factorPsoriasis Vulgaris 0.8850700  0.3824567  0.1075100 -0.13956667
##                               [,1318]     [,1319]     [,1320]     [,1321]
## (Intercept)                0.3168133 -0.01935333 -0.06867667  0.1838800
## group_factorContact Eczema  0.3658133  0.15654000  0.08855333  0.2363300
## group_factorControl        -0.2734833 -0.06053667  0.05988667 -0.0219900
## group_factorLichen Planus   0.6177000  0.00215000 -0.05504000  0.1023300
## group_factorPsoriasis Vulgaris 0.7146100 -0.17543667 -0.07784667 -0.4119133
##                               [,1322]     [,1323]     [,1324]     [,1325]
## (Intercept)                0.0385300 -0.12771667 -0.05789333 -0.09585667
## group_factorContact Eczema  0.0643600 -0.14125000 -0.11618000 -0.13428667
## group_factorControl        -0.1477033  0.08605333  0.21711333  0.08919000
## group_factorLichen Planus   0.0316900  0.08345000  0.07714000  0.10593667
## group_factorPsoriasis Vulgaris -0.2098700 -0.19447667 -0.13532333 -0.16009333
##                               [,1326]     [,1327]     [,1328]     [,1329]
## (Intercept)               -0.036070000  0.01519333  0.9281800  0.01626667
## group_factorContact Eczema -0.051233333  0.28459000 -0.3534167  0.18503000
## group_factorControl        -0.005786667 -0.01035333 -1.3779300 -0.07148667
## group_factorLichen Planus   0.065636667  0.22076000  0.5294133  0.17256333
## group_factorPsoriasis Vulgaris -0.065056667 -0.11971000  0.3014633 -0.02682333
##                               [,1330]     [,1331]     [,1332]     [,1333]
## (Intercept)               -0.3942267 -0.07400667 -0.0002800 -0.20796000
## group_factorContact Eczema  0.5773467  0.25761000  0.2979833  0.10355333
## group_factorControl         0.3997167  0.26373333 -0.4250233  0.08470333
## group_factorLichen Planus   1.1227000  0.34720333  0.7459967  0.89744000
## group_factorPsoriasis Vulgaris -0.3865400  0.01064000 -0.1564667 -0.43106667
##                               [,1334]     [,1335]     [,1336]     [,1337]
## (Intercept)                0.6011367  0.5414367 -0.1334633  0.7229900
## group_factorContact Eczema  0.4875100  0.5978500 -0.1882200  0.2791100
## group_factorControl        -0.7242433 -0.5407667  0.1579700 -0.7235933
## group_factorLichen Planus   1.0174600  0.8432967  0.2109767  0.6771467
## group_factorPsoriasis Vulgaris -0.2724567 -0.4015133 -0.3618300 -0.8215300
```

```
##                                   [,1338]     [,1339]     [,1340]     [,1341]
## (Intercept)                     0.8685467  0.26106667  0.7652533  0.71076667
## group_factorContact Eczema      0.4689800  0.02792667  0.2601767 -0.03960000
## group_factorControl            -0.8585567 -0.22598333 -0.7232867 -0.45980333
## group_factorLichen Planus       0.8635533 -0.32926000  0.4817733  0.23442667
## group_factorPsoriasis Vulgaris -0.8112367 -1.04050667 -0.7409267  0.02082333
##                                   [,1342]     [,1343]     [,1344]     [,1345]
## (Intercept)                     0.1517833  0.7589267  0.2917067  0.03051333
## group_factorContact Eczema      0.3912833  0.5934867 -0.4041100  0.08331667
## group_factorControl            -0.1609933 -1.0454267 -0.5413200 -0.19118667
## group_factorLichen Planus       0.0411800  0.1517300  0.1992867  0.08397333
## group_factorPsoriasis Vulgaris  0.1630000 -0.3971033  0.4629467  0.01000333
##                                      [,1346]      [,1347]     [,1348]      [,1349]
## (Intercept)                    -0.073743333  0.150616667  0.1988733  0.25956000
## group_factorContact Eczema      0.139203333  0.001703333 -0.3404133 -0.22697333
## group_factorControl            -0.072906667 -0.370066667 -0.1935233 -0.85683333
## group_factorLichen Planus      -0.001743333 -0.097453333 -0.4377267 -0.22420333
## group_factorPsoriasis Vulgaris  0.024543333 -0.178166667  0.3104067 -0.04473667
##                                   [,1350]     [,1351]     [,1352]     [,1353]
## (Intercept)                    -0.05051667  0.9824467  0.4431200  0.6053267
## group_factorContact Eczema     -0.07769000  1.0535533  0.4247300  0.1801033
## group_factorControl            -0.10630333 -1.0255367 -0.4924600 -0.6083800
## group_factorLichen Planus      -0.00171000  0.8979633  0.7779867  0.2449167
## group_factorPsoriasis Vulgaris  0.08663000 -0.2950233 -0.2240967 -0.2777800
##                                   [,1354]     [,1355]     [,1356]     [,1357]
## (Intercept)                     0.05360333 -0.07587333  0.03584333  0.43718333
## group_factorContact Eczema      0.47099333 -0.01730667  0.24946333 -0.28221333
## group_factorControl            -0.31479000  0.15307333  0.12132667 -0.44801667
## group_factorLichen Planus       0.57245667  0.12079000  0.18627667  0.03253667
## group_factorPsoriasis Vulgaris -0.07730000  0.05459667 -0.04548000  1.47053333
##                                     [,1358]     [,1359]     [,1360]     [,1361]
## (Intercept)                    -0.025276667 -0.9813700  0.73507667 -0.43077667
## group_factorContact Eczema      0.195950000  0.1084200 -0.23772000 -0.09113333
## group_factorControl             0.008023333  1.5651900 -0.72238667  0.30026333
## group_factorLichen Planus       0.109953333  0.4500267 -0.07812333 -0.15845667
## group_factorPsoriasis Vulgaris  0.211033333 -0.2215700  2.23501000  0.01398667
##                                   [,1362]     [,1363]      [,1364]     [,1365]
## (Intercept)                     0.6649733 -0.24088000 -0.127013333 -0.1303067
## group_factorContact Eczema     -0.1464233  0.03281333  0.001173333 -0.2727367
## group_factorControl            -1.0722667  0.13400667  0.212180000 -0.1410500
## group_factorLichen Planus      -0.3658067  0.24675000  0.005103333 -0.1348700
## group_factorPsoriasis Vulgaris -0.6467700  0.26923667 -0.025266667 -0.2781867
##                                    [,1366]     [,1367]      [,1368]     [,1369]
## (Intercept)                     0.60156333 -0.1951800 -0.10307667  0.1557600
## group_factorContact Eczema      0.09316333  0.0587000  0.04062667  0.2274100
## group_factorControl            -0.59757333  0.2429567 -0.06015667 -0.2950267
## group_factorLichen Planus       0.24751667 -0.1094467  0.21973667  0.1380567
## group_factorPsoriasis Vulgaris  0.37260333 -0.1721433 -0.19675333 -0.2783133
##                                    [,1370]     [,1371]     [,1372]     [,1373]
## (Intercept)                    -0.35964000  0.16997333 -0.23760333  0.01019333
## group_factorContact Eczema     -0.26486333 -0.06097333 -0.05647333 -0.04459667
## group_factorControl             0.28633333 -0.16227333  0.28037000 -0.01247667
## group_factorLichen Planus      -0.22982333  0.03757000  0.06862000 -0.02168333
## group_factorPsoriasis Vulgaris  0.09996667 -0.25610667 -0.02096000 -0.08616000
```

```
##                                       [,1374]      [,1375]      [,1376]      [,1377]
## (Intercept)                         0.04573667 -0.35451000 -0.1977367 -0.18693667
## group_factorContact Eczema          -0.05157333 -0.08625333  0.1004067  0.14498000
## group_factorControl                 -0.10254000  0.22215667  0.1947000  0.36927667
## group_factorLichen Planus            0.14953333 -0.21441000  0.0215600 -0.05722333
## group_factorPsoriasis Vulgaris       0.11348333  0.18857333 -0.1652900 -0.29048333
##                                       [,1378]      [,1379]      [,1380]     [,1381]
## (Intercept)                          0.33637000  0.412713333  0.3342467  0.3901700
## group_factorContact Eczema           0.11705333  0.125540000  0.1721800 -0.2325333
## group_factorControl                 -0.47154667 -0.852133333 -0.4436533 -0.4769767
## group_factorLichen Planus           -0.09175667  0.003083333  0.3628100 -0.2608067
## group_factorPsoriasis Vulgaris       0.23597000 -0.215623333 -0.1091533  0.2590100
##                                       [,1382]      [,1383]      [,1384]     [,1385]
## (Intercept)                          0.26346000 -0.12644667 -0.01440333  0.2268867
## group_factorContact Eczema           0.27125000 -0.03355333  0.09196000  0.2702700
## group_factorControl                  0.02248667  0.29422333 -0.08728667 -0.2847700
## group_factorLichen Planus           -0.05091000 -0.04334667  0.03901333  0.1816000
## group_factorPsoriasis Vulgaris      -0.66143667 -0.08947667 -0.05557667 -0.1994133
##                                       [,1386]      [,1387]      [,1388]      [,1389]
## (Intercept)                         -0.22514000  0.015060000  0.1985667 -0.19391000
## group_factorContact Eczema           0.18543333  0.105410000 -0.5756267  0.06622000
## group_factorControl                  0.43601333  0.095036667 -0.3507067  0.01000000
## group_factorLichen Planus           -0.05844667 -0.004663333 -0.4198333 -0.04564333
## group_factorPsoriasis Vulgaris      -0.26124000 -0.026956667  0.2091600  0.07120000
##                                       [,1390]      [,1391]      [,1392]     [,1393]
## (Intercept)                         -0.27127000 -0.01169667  0.06602000  0.0503800
## group_factorContact Eczema           0.23850000 -0.08636000  0.17570667 -0.2918633
## group_factorControl                  0.07801000 -0.03673333 -0.09740333 -0.2471733
## group_factorLichen Planus            0.08923333 -0.06069333  0.30040000 -0.3835100
## group_factorPsoriasis Vulgaris       0.07579667 -0.03846333 -0.10199667  0.0839400
##                                       [,1394]      [,1395]        [,1396]      [,1397]
## (Intercept)                         -0.35902000 -0.1636900 -0.0783200000  0.1197300
## group_factorContact Eczema          -0.08027667 -0.0084500  0.0820166667 -0.1521567
## group_factorControl                  0.56316000  0.2697067  0.0820400000 -0.1329067
## group_factorLichen Planus            0.12576333  0.1488533 -0.0004233333 -0.1223067
## group_factorPsoriasis Vulgaris      -0.35733667  0.1292633 -0.2666966667  0.1637467
##                                       [,1398]     [,1399]     [,1400]     [,1401]
## (Intercept)                          0.04403000 -0.3684033  0.05795333  0.3373967
## group_factorContact Eczema           0.14244667 -0.1027833  0.13768667 -0.6166200
## group_factorControl                 -0.21051000  0.3488500 -0.24615667  0.1821967
## group_factorLichen Planus            0.18222333 -0.1300467 -0.09867667 -0.4384000
## group_factorPsoriasis Vulgaris       0.06926333 -0.0302100  0.29941333 -0.8761000
##                                       [,1402]      [,1403]      [,1404]      [,1405]
## (Intercept)                          0.06811000  0.05561333 -0.150560000 -0.2703000
## group_factorContact Eczema           0.31847333  0.26976000 -0.179943333 -0.2622633
## group_factorControl                 -0.06966667 -0.10053667 -0.174230000  0.2165867
## group_factorLichen Planus           -0.09136667  0.94965667 -0.002976667  0.2469900
## group_factorPsoriasis Vulgaris      -0.00572000  0.05002667 -0.153786667 -0.3846500
##                                       [,1406]     [,1407]     [,1408]     [,1409]
## (Intercept)                          0.4019333 -0.2340967  0.08238000 -0.2735733
## group_factorContact Eczema           0.0535500 -0.3876067  0.15936333  0.2038067
## group_factorControl                 -0.5641367  0.4606733 -0.09935667  0.2360067
## group_factorLichen Planus           -0.3203967 -0.1713933  0.02674333 -0.0734400
## group_factorPsoriasis Vulgaris       1.4105900 -0.6448400 -0.04404333 -0.0499400
```

42

```
##                                   [,1410]      [,1411]      [,1412]      [,1413]
## (Intercept)                     -0.7867800 -0.377153333 -0.1939033   0.1675233
## group_factorContact Eczema      -0.8295700  0.062070000  0.1856733   0.2522933
## group_factorControl              1.5965133  0.121093333  0.0096300  -0.1596033
## group_factorLichen Planus       -0.3990633 -0.180176667  0.4046333   0.3966200
## group_factorPsoriasis Vulgaris  -1.1414867  0.001696667  0.0586600   0.3683533
##                                   [,1414]      [,1415]      [,1416]      [,1417]
## (Intercept)                     -0.5638100  0.16342000 -0.203723333  0.23371333
## group_factorContact Eczema       0.0883400  0.08323000  0.005516667  0.05059667
## group_factorControl              0.5556167 -0.01759667  0.235683333 -0.22750667
## group_factorLichen Planus       -0.2344600 -0.15455333 -0.000080000  0.33233667
## group_factorPsoriasis Vulgaris  -0.1746567 -0.13951667 -0.080543333  0.09112667
##                                   [,1418]      [,1419]      [,1420]      [,1421]
## (Intercept)                     -0.09470000 -0.30296333 -0.8221300  -0.32981667
## group_factorContact Eczema      -0.30445667 -0.14440333  0.2411433   0.06123333
## group_factorControl              0.35154667  0.09860667  0.8684333   0.30543333
## group_factorLichen Planus       -0.05170667 -0.38028667  0.7777633   0.09730000
## group_factorPsoriasis Vulgaris  -0.24422667  0.49299000 -0.3806533   0.22438667
##                                   [,1422]      [,1423]      [,1424]      [,1425]
## (Intercept)                      0.2057833  0.33604333  0.3315500  -0.09800333
## group_factorContact Eczema      -0.1472467  0.05323333  0.6651867   0.01053667
## group_factorControl             -0.6594667 -0.20250333 -0.3428533  -0.02770000
## group_factorLichen Planus       -0.4073367  0.10424333  0.4408633  -0.12653333
## group_factorPsoriasis Vulgaris   0.3285467 -0.41686333 -0.3765333  -0.05781667
##                                   [,1426]      [,1427]      [,1428]      [,1429]
## (Intercept)                     -0.8948200  0.046596667 -0.13009333  0.2981667
## group_factorContact Eczema       0.2991933 -0.005333333  0.06443000  0.2471233
## group_factorControl              0.8593100 -0.016113333  0.14089667 -0.2020767
## group_factorLichen Planus        0.7442700 -0.113660000  0.02414667  0.2127367
## group_factorPsoriasis Vulgaris  -0.2690767 -0.055396667 -0.03621667 -0.2894900
##                                   [,1430]      [,1431]      [,1432]      [,1433]
## (Intercept)                      0.5448900 -0.07115000 -0.234373333  0.02710333
## group_factorContact Eczema      -0.0145000  0.02798000  0.091026667 -0.08542000
## group_factorControl             -0.4498567 -0.09297667  0.271370000  0.06588333
## group_factorLichen Planus       -0.2278967 -0.13252667  0.005693333 -0.19810000
## group_factorPsoriasis Vulgaris   0.1144300  0.15157000 -0.332143333 -0.45519000
##                                    [,1434]       [,1435]      [,1436]
## (Intercept)                     -0.1005933333 -0.369023333 -0.09008000
## group_factorContact Eczema      -0.0737100000  0.192213333  0.07217667
## group_factorControl              0.3695466667  0.008696667  0.08773000
## group_factorLichen Planus        0.0003566667  0.089003333 -0.07143667
## group_factorPsoriasis Vulgaris   0.5462866667  0.097593333 -0.25933667
##                                   [,1437]      [,1438]      [,1439]      [,1440]
## (Intercept)                      0.3013133 -0.461266667  0.2553767   0.205726667
## group_factorContact Eczema       0.1886800  0.098203333  0.0889700   0.103616667
## group_factorControl             -0.3539067  0.347940000 -0.0106300  -0.271680000
## group_factorLichen Planus        0.7739267 -0.022813333 -0.3310167  -0.141000000
## group_factorPsoriasis Vulgaris   0.5424200  0.008606667 -0.3871467  -0.005776667
##                                   [,1441]     [,1442]     [,1443]     [,1444]
## (Intercept)                     -0.3630600 -0.4331300 -0.19566333 -0.1143533
## group_factorContact Eczema      -0.7396967 -0.1286667  0.08098667  0.1727433
## group_factorControl              0.2471267  0.1809833 -0.07223667  0.2082767
## group_factorLichen Planus       -0.1657800 -0.1158633  0.02036333  0.1545533
## group_factorPsoriasis Vulgaris   0.3616667 -0.5547167 -0.11631000  0.0783800
```

```
##                                [,1445]      [,1446]      [,1447]      [,1448]
## (Intercept)                  -0.13676000 -0.20693667  0.08180667  0.41410333
## group_factorContact Eczema   -0.10846000 -0.16005333 -0.13080333 -0.01425333
## group_factorControl           0.15023667  0.09803333 -0.31238333 -0.67418333
## group_factorLichen Planus     0.02628333 -0.18158667  0.75011000  0.73214333
## group_factorPsoriasis Vulgaris 0.31921333  0.18215667  0.59903667  0.24925333
##                                [,1449]      [,1450]      [,1451]      [,1452]
## (Intercept)                  -0.07012667 -0.04946000  0.5463800 -0.0705200
## group_factorContact Eczema   -0.29392333 -0.20456667  0.8364833 -0.0614600
## group_factorControl           0.19886667 -0.13007667 -0.4466500  0.1225233
## group_factorLichen Planus    -0.18425667 -0.03816667  0.7256800  0.1400500
## group_factorPsoriasis Vulgaris 0.08589000  0.33349000 -0.6647633  0.4373867
##                                [,1453]      [,1454]      [,1455]      [,1456]
## (Intercept)                  -0.11649333 -0.3731433  0.234313333  0.18998667
## group_factorContact Eczema   -0.03743667  0.2723500 -0.023240000  0.20491667
## group_factorControl           0.17910000  0.3535633  0.001516667  0.04596667
## group_factorLichen Planus    -0.22750000  0.1209567 -0.324483333 -0.06365667
## group_factorPsoriasis Vulgaris -0.06721333 -0.2712833 -0.296510000  0.11164000
##                                [,1457]      [,1458]      [,1459]      [,1460]
## (Intercept)                  -0.003933333  0.4450133 -0.1294333 -0.12916333
## group_factorContact Eczema    0.065350000  0.7709233 -0.1819600  0.06849333
## group_factorControl           0.062046667 -0.3389633  0.1587067  0.13356000
## group_factorLichen Planus    -0.056703333  0.7578433  0.1143733  0.14146333
## group_factorPsoriasis Vulgaris 0.061030000 -0.5122933 -0.1399733 -0.22463333
##                                [,1461]      [,1462]      [,1463]      [,1464]
## (Intercept)                  -1.092326667 -0.05715333 -0.06326667 -0.24667000
## group_factorContact Eczema    0.013606667 -0.03609000  0.01163667  0.11180000
## group_factorControl           1.556973333  0.24372667  0.07586333  0.24498000
## group_factorLichen Planus     0.081460000  0.13780333 -0.01097000 -0.03376667
## group_factorPsoriasis Vulgaris -0.004023333 -0.23976667  0.09088333  0.08949333
##                                [,1465]      [,1466]      [,1467]      [,1468]
## (Intercept)                  -0.15480333  1.43795000  0.1542500 -0.20030667
## group_factorContact Eczema    0.01976667 -0.51652667  0.1061100  0.09582667
## group_factorControl           0.22859000 -1.02958333 -0.1203900  0.09125333
## group_factorLichen Planus    -0.03670000 -0.65391667  0.3210633 -0.09624667
## group_factorPsoriasis Vulgaris -0.09039667  0.09974667 -0.2117067 -0.20438667
##                                [,1469]      [,1470]      [,1471]      [,1472]
## (Intercept)                  -0.1583033  1.2322200  0.003283333 -0.09657333
## group_factorContact Eczema    0.0274200 -0.6697900  0.020673333  0.03635000
## group_factorControl           0.1587233 -1.2094933  0.211933333  0.14423667
## group_factorLichen Planus    -0.1791433 -0.6785633 -0.118163333 -0.12579667
## group_factorPsoriasis Vulgaris -0.1499033  1.3404867 -0.229953333  0.02993000
##                                [,1473]      [,1474]      [,1475]      [,1476]
## (Intercept)                   0.29863000  0.49682333  0.15649000 -0.35941333
## group_factorContact Eczema   -0.09409667 -0.01532667  0.10660667  0.00777000
## group_factorControl          -0.26007333 -0.09604333 -0.08265333  0.52186667
## group_factorLichen Planus    -0.10330333  0.02603000 -0.07853667  0.08483667
## group_factorPsoriasis Vulgaris -0.13035333 -0.91053000 -0.31177667 -0.10876000
##                                [,1477]      [,1478]      [,1479]
## (Intercept)                   0.16561667 -0.0008433333  0.09135333
## group_factorContact Eczema    0.10772000  0.0538033333  0.11549333
## group_factorControl          -0.17742000 -0.2216433333 -0.15785333
## group_factorLichen Planus    -0.05578333  0.0475666667 -0.02122000
## group_factorPsoriasis Vulgaris -0.27003000  0.3393066667  0.01400667
```

44

```
##                                   [,1480]      [,1481]     [,1482]
## (Intercept)                  0.1172133333 -0.1430233 -0.03143333
## group_factorContact Eczema   0.0002133333  0.1664067  0.02533667
## group_factorControl         -0.1984233333  0.1941433  0.11951667
## group_factorLichen Planus   -0.0262733333 -0.1501700  0.01087000
## group_factorPsoriasis Vulgaris -0.1516900000 -0.1424167 -0.06736333
##                                   [,1483]      [,1484]     [,1485]
## (Intercept)                  -0.006743333 -0.008043333  0.14586000
## group_factorContact Eczema   -0.072216667  0.197533333 -0.07277667
## group_factorControl           0.025900000  0.033570000  0.02606333
## group_factorLichen Planus      0.174690000  0.013863333 -0.04865333
## group_factorPsoriasis Vulgaris  0.171870000 -0.371646667  0.04435333
##                                   [,1486]      [,1487]     [,1488]     [,1489]
## (Intercept)                   0.14692667 -0.154826667 -0.1020767  0.16507667
## group_factorContact Eczema   -0.08444667 -0.140866667 -0.2700567  0.06633000
## group_factorControl           0.09775667  0.370696667  0.2221600  0.01538667
## group_factorLichen Planus      0.03407000 -0.187926667  0.0629900  0.27730667
## group_factorPsoriasis Vulgaris -0.36692667 -0.005416667  0.1080500 -0.43877333
##                                   [,1490]      [,1491]     [,1492]     [,1493]
## (Intercept)                  -0.08090000 -0.15787667 -0.09502667 -0.16993333
## group_factorContact Eczema    0.06151667  0.10602667  0.18825333  0.11032000
## group_factorControl           0.07306667  0.10020667  0.22428000  0.19121667
## group_factorLichen Planus      0.04031333  0.01992000  0.03625333 -0.10807333
## group_factorPsoriasis Vulgaris -0.14094333 -0.02551667 -0.33434333 -0.06490333
##                                   [,1494]      [,1495]     [,1496]     [,1497]
## (Intercept)                  -0.3246233 -0.23279000 -0.14462000 -0.12788667
## group_factorContact Eczema    0.2571167  0.02399000 -0.06204667  0.03039333
## group_factorControl           0.2819667  0.30115667  0.29800333  0.25098333
## group_factorLichen Planus     -0.1095933 -0.09963667 -0.15611000 -0.17352333
## group_factorPsoriasis Vulgaris -0.0960300 -0.09591333 -0.42888667 -0.47383333
##                                   [,1498]      [,1499]     [,1500]     [,1501]
## (Intercept)                  -0.09610667 -0.1495633  0.13079333 -0.2548167
## group_factorContact Eczema    0.09745667  0.1606467  0.04585667 -0.2466533
## group_factorControl           0.18795667  0.3595867 -0.02483333  0.2675433
## group_factorLichen Planus     -0.02604000  0.1676767 -0.06709000 -0.2535800
## group_factorPsoriasis Vulgaris -0.16630333 -0.5537100 -0.65979667  0.1140200
##                                   [,1502]      [,1503]     [,1504]     [,1505]
## (Intercept)                  -0.3434467 -0.22024000 -0.19607000 -0.262033333
## group_factorContact Eczema    0.1260800 -0.09471333  0.04079333 -0.003233333
## group_factorControl           0.1908900  0.30080667  0.22061000  0.264390000
## group_factorLichen Planus     -0.0181200 -0.06025000 -0.22401667  0.085240000
## group_factorPsoriasis Vulgaris -0.0035500 -0.07204667 -0.02332333 -0.200416667
##                                   [,1506]      [,1507]     [,1508]     [,1509]
## (Intercept)                  -0.21412000 -0.41138333 -0.2677300 -0.01567333
## group_factorContact Eczema    0.04287000  0.04593333  0.1734500  0.08292333
## group_factorControl           0.36063000  0.20866000  0.1775900  0.18676000
## group_factorLichen Planus     -0.07649667 -0.20783667  0.1956000 -0.11481333
## group_factorPsoriasis Vulgaris -0.14696000  0.12304333 -0.3423433 -0.35307333
##                                   [,1510]      [,1511]     [,1512]     [,1513]
## (Intercept)                  -0.56632667 -0.1858067  0.4231933  0.13352667
## group_factorContact Eczema    0.07349667 -0.1714667 -0.1358200  0.00611000
## group_factorControl           0.39974000  0.3131433 -0.3714600 -0.15321000
## group_factorLichen Planus     -0.29693333 -0.2327733 -0.8757800  0.11832333
## group_factorPsoriasis Vulgaris  0.09735000 -0.2064300  2.5341033 -0.03243667
```

```
##                                        [,1514]     [,1515]      [,1516]      [,1517]
## (Intercept)                         -0.52861667  0.19735000  0.23645000  0.19088667
## group_factorContact Eczema          -0.03703000  0.05482667  0.22568000 -0.17946333
## group_factorControl                  0.45957333 -0.26683000 -0.06646000 -0.07478333
## group_factorLichen Planus           -0.13158667 -0.05530000  0.04065333 -0.48369000
## group_factorPsoriasis Vulgaris       0.02542667  0.11479000 -0.41913667  0.37014333
##                                        [,1518]      [,1519]      [,1520]      [,1521]
## (Intercept)                         -0.03952667  0.006363333 -0.01560667  0.16391333
## group_factorContact Eczema          -0.13188000 -0.157076667  0.09993000 -0.04253667
## group_factorControl                 -0.01687667  0.158066667 -0.18920667 -0.11882000
## group_factorLichen Planus           -0.21414000  0.257660000 -0.08545333 -0.08374667
## group_factorPsoriasis Vulgaris      -0.23925333 -0.124923333  0.19131333 -0.15099667
##                                        [,1522]     [,1523]     [,1524]      [,1525]
## (Intercept)                          0.01151333 -0.9703233  3.7269767  0.007296667
## group_factorContact Eczema          -0.09104000 -0.8529133 -1.1652867 -0.011616667
## group_factorControl                  0.02576333  1.2838400 -3.9655367 -0.101676667
## group_factorLichen Planus           -0.25896000  0.9830367 -0.8779667  0.036793333
## group_factorPsoriasis Vulgaris      -0.28288667  0.1352633  0.6342500  0.539283333
##                                        [,1526]     [,1527]     [,1528]      [,1529]
## (Intercept)                          0.09422333  0.04299333 -0.0055900  0.14646667
## group_factorContact Eczema          -0.01100667 -0.05233667 -0.0638600  0.05303667
## group_factorControl                 -0.13481333 -0.05903333  0.0393600 -0.25087000
## group_factorLichen Planus           -0.07136667 -0.06681333 -0.1323133 -0.11792333
## group_factorPsoriasis Vulgaris       0.05812667 -0.06991667  0.0539900  0.01308000
##                                        [,1530]     [,1531]      [,1532]     [,1533]
## (Intercept)                         -0.38768333 -0.0412400 -0.05028333 -0.1702133
## group_factorContact Eczema           0.29205000 -0.2059767  0.07644000 -0.1763733
## group_factorControl                  0.43941000  0.1872400  0.11563333  0.3212133
## group_factorLichen Planus            0.01081667  0.1198300 -0.03381333 -0.2490367
## group_factorPsoriasis Vulgaris       0.08918000 -0.1634567 -0.14051000  0.0144100
##                                        [,1534]     [,1535]     [,1536]      [,1537]
## (Intercept)                         -0.23524000  0.42848333  1.0710800  0.05681667
## group_factorContact Eczema           0.01185333  0.21161667 -0.6611100 -0.27318667
## group_factorControl                  0.04168667 -0.61708000 -0.9606133  0.06604333
## group_factorLichen Planus            0.08307000  0.07932667 -0.1193267  1.08985333
## group_factorPsoriasis Vulgaris       0.25579667  0.28747000  0.5713467 -0.11101667
##                                         [,1538]      [,1539]     [,1540]     [,1541]
## (Intercept)                         -0.183250000 -0.158703333 -0.8611500  0.1261567
## group_factorContact Eczema           0.150146667 -0.007826667 -0.7606667  0.0442500
## group_factorControl                  0.097040000  0.018136667  1.2722433 -0.1249167
## group_factorLichen Planus           -0.004116667  0.049626667  0.6668800  0.1377967
## group_factorPsoriasis Vulgaris      -0.078226667  0.073053333 -0.0145400 -0.3110800
##                                         [,1542]
## (Intercept)                          0.21159667
## group_factorContact Eczema           0.43074333
## group_factorControl                 -0.21049667
## group_factorLichen Planus            0.20300000
## group_factorPsoriasis Vulgaris      -0.01400333
```
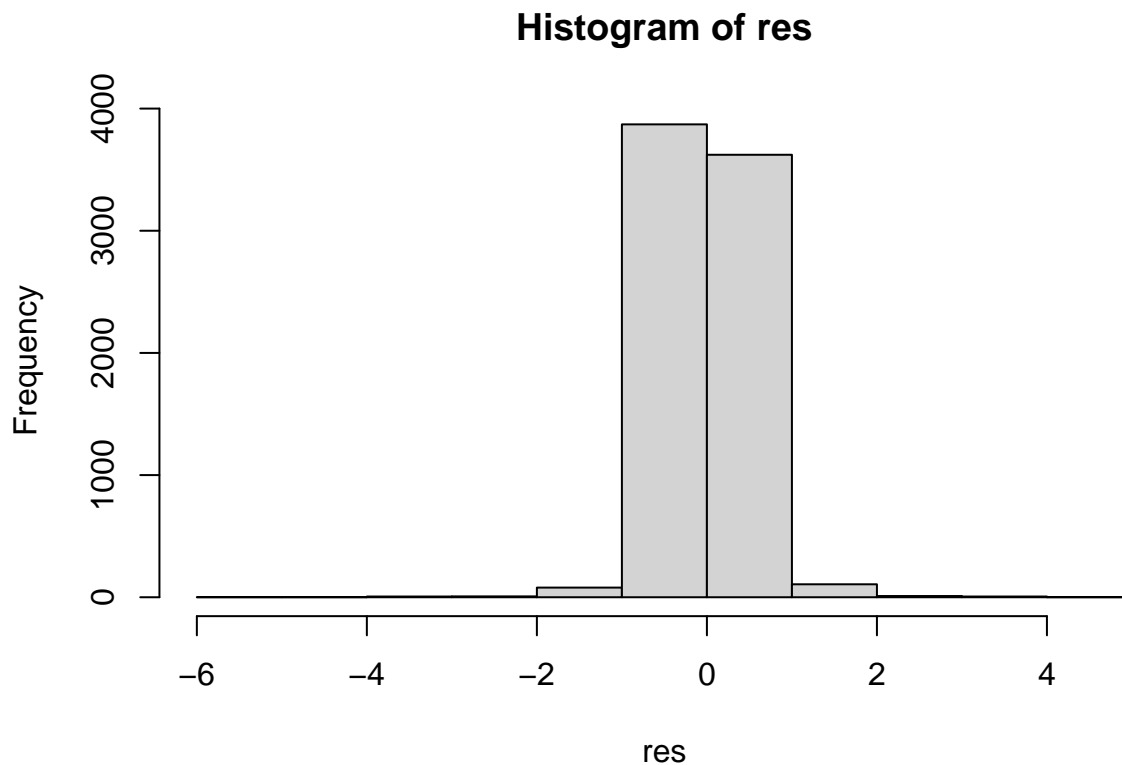
```
hist(res)
```

Histogram of res


```
sum(res < -0.05)
```

```
## [1] 3327
```

3. Adjust the p-values using the FDR method. (20pts)

```
adjusted_pvalue <- p.adjust(res, method = "fdr")
```

4. Gene regulation: How many genes have an adjusted p-value < 0.05 in at least one skin disease? (10pts) in total, 4336 genes had an adjusted p value above 0.05. In Eczema alone, there were 869 genes that have an adjusted p-value over 0.05

```
sum(adjusted_pvalue < 0.05)
```

```
## [1] 4336
```

```
eczema <- res[2,]
adjusted_eczema <-p.adjust(eczema, method = "fdr")
sum(adjusted_eczema < 0.05)
```

```
## [1] 869
```

unrelated test:

```r
#subset data into control and treatment dataframes
control_df <- GSE63741[ ,2:32]
treated_df <- GSE63741[ ,33:151]

head(control_df)
```

```
##    GSM1556392 GSM1556393 GSM1556394 GSM1556395 GSM1556396 GSM1556397 GSM1556398
## 1     -0.6993    -0.4934     0.5509    -0.4515    -0.1735    -0.1904     2.2204
## 2      0.2822    -0.0083     0.1200    -0.1203     0.0694    -0.1778     0.2802
## 3     -0.0570     0.3741     0.2211     0.5450     0.7544     0.1356     0.3549
## 4     -0.3774     0.0224     0.7869    -0.4152    -0.3905     0.1328     1.8175
## 5      0.1696     0.0194    -0.0679     0.1179     1.2186     0.5405     1.1863
## 6      0.1117    -0.5779    -0.5940    -0.3245     0.4999    -0.4563     2.1098
##    GSM1556399 GSM1556400 GSM1556401 GSM1556402 GSM1556403 GSM1556404 GSM1556405
## 1     -1.2883    -0.2921    -1.0131    -1.2474    -0.4971     0.2244    -0.2099
## 2     -0.4640     0.2934     0.3390     0.2935     0.5517    -0.0064    -0.1674
## 3      0.5326     0.2056     0.1683     0.6975     0.2278    -0.1554     0.4804
## 4     -0.8400    -0.1651    -0.0316    -0.4353    -0.8338     0.3637    -0.0537
## 5      0.3580     0.2543    -0.4171     0.3725     1.5596    -0.3998     0.1332
## 6     -0.1679    -1.7652     0.0890    -0.7433    -0.3835    -0.2478    -0.3297
##    GSM1556406 GSM1556407 GSM1556408 GSM1556409 GSM1556410 GSM1556411 GSM1556412
## 1     -0.3982    -0.5971    -0.3420     0.1576    -0.1873     0.4438    -1.6362
## 2      0.3283    -0.2764    -0.3907    -0.0441    -0.2122     0.4669    -0.2391
## 3      0.5702    -0.3757    -0.0979     0.0000     0.4112     0.1056    -0.4727
## 4     -0.1124    -0.1872     0.0136     0.3441    -0.0072     0.5137    -0.9779
## 5      0.3415     0.0627    -0.0263    -0.1650    -0.5200     0.0669    -0.2585
## 6     -0.1671    -0.5028    -0.4399    -0.1795    -0.1424     0.0522    -0.1279
##    GSM1556413 GSM1556414 GSM1556415 GSM1556416 GSM1556417 GSM1556418 GSM1556419
## 1     -0.0798    -1.6305     0.0361     0.2166    -0.5724     0.2058     1.1304
## 2      0.7435     0.0097    -0.2071     0.1969     0.0717    -0.1110     0.7521
## 3      0.0545    -1.4602    -0.0915     0.4507    -0.1659    -0.2022     2.1259
## 4      0.0170    -0.0079    -0.2071     0.3180     0.2612     0.3617     1.1090
## 5      0.1444    -1.1668     1.0033     0.1579     0.1608     0.0107     1.3873
## 6     -0.6236     0.0000    -0.1743     0.2460    -0.1914    -0.1600     0.8210
##    GSM1556420 GSM1556421 GSM1556422
## 1     -0.2907    -0.1527    -0.5363
## 2      0.9689     0.5902     0.0657
## 3      0.3239    -0.0539     0.1660
## 4      0.2073     0.2193    -0.3873
## 5      0.8485     0.1204    -0.0902
## 6      0.3897     0.2459     0.8268
```

```r
head(treated_df)
```

```
##    GSM1556423 GSM1556424 GSM1556425 GSM1556426 GSM1556427 GSM1556428 GSM1556429
## 1      1.0992    -0.0265     0.0041    -0.8048    -0.1102     0.6465     0.8714
## 2      0.5549     0.1792     0.0662    -0.2194     0.0433     0.3238    -0.1218
## 3      0.4107    -0.3648     0.1064     0.8131    -0.2293     0.2332    -0.0850
## 4      1.4174     0.2671    -0.3541    -1.1262    -0.9158     0.3627     0.1117
## 5      2.1307    -0.2444    -0.0425    -0.2581    -0.0808     0.2690     0.1401
## 6     -0.3891     0.0532    -0.6058    -0.0746     0.2567     0.4566    -0.2306
##    GSM1556430 GSM1556431 GSM1556432 GSM1556433 GSM1556434 GSM1556435 GSM1556436
## 1     -0.3670     0.2248    -0.2125     0.0529    -0.1640    -0.6221     0.5945
```

```
## 2    -0.2355    1.2214    0.6463   -0.2018    1.3503   -1.4536    0.5021
## 3    -0.0367    0.8416    0.4359    0.1579    0.2415   -0.3721    0.3828
## 4    -0.5451   -0.1438    0.1885   -0.5764    0.3119   -1.1065    0.3368
## 5     0.1959    1.9724    0.3692   -0.1665    0.4523   -0.3719    0.0159
## 6    -0.0376    0.2640    0.2913    0.3684   -0.8602   -0.2658   -0.2820
##    GSM1556437 GSM1556438 GSM1556439 GSM1556440 GSM1556441 GSM1556442 GSM1556443
## 1    -0.4653    0.3304    0.5888   -0.4639    0.8639    0.7538   -0.2035
## 2     0.4565    0.2869    0.0435    0.2401    0.0305    0.4092    0.2317
## 3    -0.2167   -0.1358    0.1727   -0.1633    0.0412    0.0007   -0.5675
## 4    -1.4809    0.0049    1.0729   -0.1815    0.4504    0.9654    0.2023
## 5     0.0854   -0.0653    0.7950   -0.0125    0.0344   -0.0654    0.1082
## 6     0.1441   -0.0743   -0.4281   -0.4887   -0.8421   -0.5468   -0.2402
##    GSM1556444 GSM1556445 GSM1556446 GSM1556447 GSM1556448 GSM1556449 GSM1556450
## 1     0.7055   -0.2545   -0.7810   -0.1921    0.5473   -0.2998    1.1412
## 2    -0.1454    0.2114   -0.4912   -0.0424    0.1425   -0.3321    0.3961
## 3    -1.4906   -0.0825    0.4070   -1.1635   -0.0170   -0.1992    0.9309
## 4     0.2165   -0.0523   -0.5660   -0.5342    0.4911   -0.0524    0.7743
## 5     1.5034    0.0510    0.0682    0.1548   -0.3936   -0.2289    0.0490
## 6     0.4832    0.2935   -0.1714    0.4099    0.0896    0.2245    1.4283
##    GSM1556451 GSM1556452 GSM1556453 GSM1556454 GSM1556455 GSM1556456 GSM1556457
## 1    -0.6878   -0.0422    0.1580   -0.6568    0.2368    0.2232   -0.5261
## 2     0.5127   -0.1857    0.1759    0.2787    0.1013   -0.0134   -0.0006
## 3     0.2654   -0.0683    0.0386   -0.1170   -0.2997   -0.0657    0.3420
## 4     0.0619    0.2259    0.0647   -0.8267    0.4225    0.1519   -0.1239
## 5    -1.6247    0.2673    0.0091   -0.0811    0.4620    0.2810    0.1362
## 6    -0.0620    0.4004    0.4237    0.7132    0.5776    0.4980    0.0424
##    GSM1556458 GSM1556459 GSM1556460 GSM1556461 GSM1556462 GSM1556463 GSM1556464
## 1    -1.3280    0.2861    0.3597    0.2116   -0.3554   -1.9436    0.5361
## 2     1.2953    0.2248    0.3967    0.2801    0.1671    1.3911    0.5483
## 3    -0.1593   -0.9155   -0.3243   -0.1576    0.0929   -0.0341   -0.1638
## 4    -0.0301    0.5415    0.0444   -0.3264   -0.4134   -0.9926    0.8137
## 5    -0.0606    0.0163   -1.1708   -0.0426   -0.1027    1.6200   -0.4269
## 6     0.0689   -0.4099    0.2005    0.2171    1.0855   -0.0818    1.1227
##    GSM1556465 GSM1556466 GSM1556467 GSM1556468 GSM1556469 GSM1556470 GSM1556471
## 1    -0.2606   -0.3874   -0.0404   -1.3156   -0.9542   -0.6036   -0.2002
## 2     0.5056    0.1228    0.2546    0.3724    0.2641    0.3213    0.2723
## 3    -0.5549    0.6432   -0.0807   -0.5637   -0.0880    0.5957    0.8454
## 4    -0.9421    0.0623    0.3633   -1.2941   -0.0098   -0.8867   -0.0148
## 5     0.2156    0.0127    0.1622   -0.0066    0.2812   -0.0277    0.7961
## 6     0.1533   -0.2562    0.2700    0.0844   -0.4242    0.0789   -0.0091
##    GSM1556472 GSM1556473 GSM1556474 GSM1556475 GSM1556476 GSM1556477 GSM1556478
## 1     0.8389   -0.8018   -0.4436   -0.1531   -0.1725   -0.8192    0.0668
## 2     0.4211    1.2530    0.1773    0.6783    2.8556   -0.0827    0.4320
## 3     0.7630    0.3881   -0.1969   -0.3062   -0.4338    0.8248   -0.0545
## 4    -0.8447   -0.0997   -1.3909   -0.8681   -1.0401   -0.6213    0.3699
## 5    -1.0333    0.6426    0.5259    0.1440    0.2956    0.1726    0.1676
## 6     0.3523    0.8837    0.7601    0.5055    0.5129   -0.1960   -0.0947
##    GSM1556479 GSM1556480 GSM1556481 GSM1556482 GSM1556483 GSM1556484 GSM1556485
## 1     0.3107   -0.2148   -0.3483    1.1313    1.6353    1.2607    0.5791
## 2     0.4046   -0.1440    1.1242    0.3812    0.7220    0.3073    0.2563
## 3     0.7928    0.5105    0.3270   -0.1778    0.6765    0.5809    0.0607
## 4    -0.9754   -0.2247   -1.2609    1.6929    1.2669    0.5643    0.7879
## 5     0.8578    0.1569    0.2145    0.2530   -0.6525    0.1838   -0.2583
## 6     1.0571    0.2794    0.8712   -0.1672   -0.0004   -0.0804    0.1270
```

```
##    GSM1556486 GSM1556487 GSM1556488 GSM1556489 GSM1556490 GSM1556491 GSM1556492
## 1      0.1781     0.1911     0.6108    -1.0345     0.6274    -0.6185     0.0750
## 2      0.0620     0.4242     0.1122     0.3229     0.5828     0.3654     0.6347
## 3     -0.0058    -0.5741    -0.1700    -1.1242     1.7368    -0.8664    -0.3926
## 4      0.3260     0.0462     0.6658    -0.5771     0.9486     0.9336    -0.8131
## 5     -0.0445     0.1924    -0.1113    -0.6985    -0.7961    -0.4142    -0.1683
## 6      0.0124    -0.4984     0.0444    -0.1146    -0.2671    -0.1287    -0.2855
##    GSM1556493 GSM1556494 GSM1556495 GSM1556496 GSM1556497 GSM1556498 GSM1556499
## 1      1.8264     1.1630     0.1700    -0.0002     0.4414     0.1601     0.5636
## 2      0.4159     0.0388     0.4020     0.1591     0.5584    -0.0953    -0.3979
## 3     -0.0172    -0.4175    -0.0376     0.0076     0.0279    -0.3707    -0.1318
## 4      3.5137     2.5013     0.4893     0.0681     0.7164     0.0471     0.8536
## 5      1.4702     0.5915    -0.0531    -0.2840    -0.1454    -0.2966    -0.6803
## 6     -0.1241     2.0615     0.0421     0.0599    -0.0382     0.1119     0.2058
##    GSM1556500 GSM1556501 GSM1556502 GSM1556503 GSM1556504 GSM1556505 GSM1556506
## 1      0.0697     0.7952     1.1674    -0.0124     0.0009     0.2942     0.3489
## 2      0.2471     0.3549     0.2842     0.0173     0.1086     0.0830    -0.1356
## 3      0.1474     0.1400     0.2110    -0.6682    -0.4305    -0.1548    -0.1755
## 4      0.3708     1.1333     1.2973     0.2305     0.2217     0.2891     0.4048
## 5     -0.2873    -0.0737    -0.0077    -0.2126    -0.1140    -0.2432     0.0566
## 6      0.3479     0.6577     0.0069    -0.1399    -0.0706     0.1474     0.1060
##    GSM1556507 GSM1556508 GSM1556509 GSM1556510 GSM1556511 GSM1556512 GSM1556513
## 1      1.7786     0.4867    -0.7754     1.6934    -0.5102     0.5327     0.3077
## 2      1.9083    -0.9970     0.3614    -0.2853     0.4054     0.3524     0.6692
## 3     -0.8554     1.8819    -0.2004    -0.3729    -0.7812     0.4208     0.0712
## 4      1.4455    -0.0588    -0.8406     2.2498    -0.3127     0.6377    -0.0064
## 5     -0.6983    -0.4178     0.2748    -1.2557     0.0193     0.0570     1.9444
## 6      0.3095    -0.2706    -0.0176    -0.1384    -0.0250    -0.3404     0.5390
##    GSM1556514 GSM1556515 GSM1556516 GSM1556517 GSM1556518 GSM1556519 GSM1556520
## 1      0.5796     0.1797     1.2284     0.1267     0.5751     0.5157     0.2929
## 2      0.3989     0.7408     0.7842     0.4360     0.5615     0.8465     0.6338
## 3     -0.1828     0.3704     0.1804     0.3905    -0.0854     0.3621     0.0997
## 4      0.9696     0.4688     0.4703    -0.2721    -0.0330     0.7225     0.0296
## 5      0.4393     1.4929     0.5456     0.1304     0.3945     0.7174     0.8109
## 6     -0.0273     0.5925     0.5413     0.3618     0.7478     0.4853     0.8337
##    GSM1556521 GSM1556522 GSM1556523 GSM1556524 GSM1556525 GSM1556526 GSM1556527
## 1     -0.2051     1.2112     0.1914     0.8350     0.4226     0.1045     0.9151
## 2      0.5032     0.2515     0.0112    -0.6011     0.4403     1.1677     0.5111
## 3     -0.3485    -0.0443    -0.0957     0.4352     0.2388     1.2358     0.3229
## 4     -0.6053     0.7347     0.0248     0.4434     0.3907    -0.6142     1.6634
## 5      1.2506     0.1868    -0.0018     1.4322     1.6873     0.3733    -0.0171
## 6      1.1541     0.2286     0.1447    -0.3038     0.6037     1.0828     0.1519
##    GSM1556528 GSM1556529 GSM1556530 GSM1556531 GSM1556532 GSM1556533 GSM1556534
## 1      1.7919     0.5280     1.1263     1.7295     0.0810     0.1057     0.6195
## 2      0.0498     0.9821     0.5327     2.1930    -0.2089     0.1980     0.0365
## 3      0.6501     0.1636     0.5697     1.7051    -0.2664     0.0777    -0.0105
## 4     -0.0168     0.8386     0.5349     1.2878    -0.3985     0.5979    -0.0042
## 5      0.8143     1.5241     1.2937     4.2058     0.2606    -0.1735     1.0191
## 6      0.9898     0.5778     0.5610     1.9503    -0.4368    -0.4755     0.2770
##    GSM1556535 GSM1556536 GSM1556537 GSM1556538 GSM1556539 GSM1556540 GSM1556541
## 1      0.1223     1.9150    -0.0929    -0.1236     1.4730     0.9669     0.1110
## 2     -0.0753    -0.1833     0.9970     0.4887     0.7410     0.1347     0.7362
## 3      0.6973    -0.1782    -0.1297     0.1859     0.4133     0.7249     0.3471
## 4      0.2653     2.2417    -0.2732     0.0552     2.6820     1.8280    -0.5709
```

```
## 5     0.1569    -0.0700     0.3950     0.2445     0.9167     1.1415     0.3400
## 6    -0.4402    -0.1051     0.6891     0.1092     0.8577    -0.0853     1.0160
```

```
#calculate the means of each row, then save those means in a vector
control_means <- rowMeans(control_df)
treated_means <- rowMeans(treated_df)

#testing to see lm between vector of means
head(control_means)
```

```
## [1] -0.25139355  0.12898387  0.18622258  0.03414839  0.22976452 -0.09377419
```

```
lm(control_means ~ treated_means)
```

```
##
## Call:
## lm(formula = control_means ~ treated_means)
##
## Coefficients:
##   (Intercept)  treated_means
##      -0.003330      -0.005391
```