Analiza studije razumijevanja riječi

Grupa **sudo**3 May 2017

Opis eksperimenta

Nad velikim brojem ispitanika proveden je eksperiment razumijevanja engleskog jezika. Ispitanicima su dana dva zadatka te su oba ponavljana više puta. Prvi zadatak (dalje: **A**) bavi se prepoznavanjem ispravne riječi, prilikom čega je ispitanik za zadani niz znakova morao odrediti radi li se o ispravnoj riječi engleskog jezika, a drugi zadatak (dalje: **B**) se bavi pravilnim izgovaranjem zadane riječi. Za svaku riječ i svakog ispitanika mjereno je vrijeme rješavanja svakog zadatka, te niz podataka o ispitaniku.

Ishodi eksperimenta

Cilj eksperimenta je naučiti kako mjerene veličine ispitanika utječu na vrijeme potrebno za rješavanje pojedinih zadataka. Na temelju tih podataka može se odgovoriti na neka zanimljiva pitanja poput: utječe li dob na brzinu rješavanja zadataka, kako na brzinu rješavanja utječe duljina zadane riječi, je li riječ kraća ukoliko se češće pojavljuje, itd.

Skup podataka

Za određivanje ishoda eksperimenta potreban nam je skup podataka eksperimenta. Programski jezik R sadrži skup podataka već provedenog eksperimenta te nam dopušta uključivanje tog skupa te analizu podataka. Podaci se nalaze u paketu languageR. Nakon instaliranja paketa, podaci se mogu učitati naredbom require(languageR) te dohvatiti s naredbom data(english). Kompletno dohvaćanje i uključivanje podataka prikazano je kodom ispod.

```
require(languageR, quietly = TRUE)
data(english)
```

Podaci se sada mogu koristiti naredbom english, npr. deskriptivna statistika može se dobiti naredbom summary(english), a pregled prvih par redova podataka može se pregledati naredbom head(english).

Ishodi eksperimenta

Utjecaj dobi na brzinu rješavanja

Pitamo se utječe li dobna razlika između starijih i mlađih ispitanika na brzinu rješavanja zadataka? Uspoređujući srednje vrijednosti logaritama vremena za rješavanje A i B zadataka mlađih i starijih ispitanika te gledajući dijagrame, možemo zaključiti da su mlađi u prosjeku brže rješavali oba zadatka. *t-testom* potvrđujemo naš zaključak.

```
young = english[english$AgeSubject == "young", ] # mladi
old = english[english$AgeSubject == "old", ] # stari

# vrijeme potrebno mlađima za rješavanje prvog zadatka
RTlexdec_young = young[, "RTlexdec"]
```

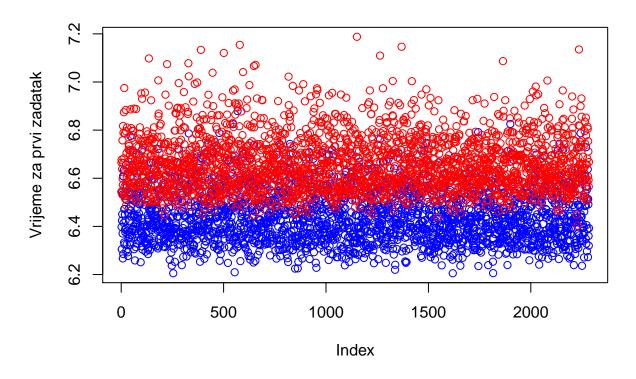
```
# vrijeme potrebno starijima za rješavanje prvog zadatka
RTlexdec_old = old[, "RTlexdec"]

# vrijeme potrebno mlađima za rješavanje drugog zadatka
RTnaming_young = young[, "RTnaming"]

# vrijeme potrebno starijima za rješavanje drugog zadatka
RTnaming_old = old[, "RTnaming"]

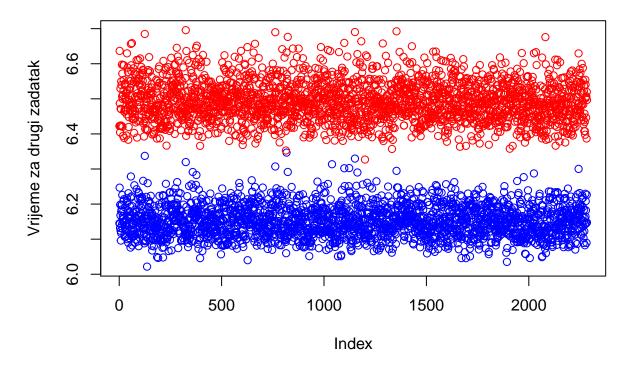
plot(RTlexdec_young, col = 'blue',
    ylim = c(min(english$RTlexdec), max(english$RTlexdec)),
    ylab = "Vrijeme za prvi zadatak")

points(RTlexdec_old, col='red')
```



```
plot(RTnaming_young, col = 'blue',
    ylim = c(min(english$RTnaming), max(english$RTnaming)),
    ylab = "Vrijeme za drugi zadatak")

points(RTnaming_old, col='red')
```



```
# testiranje jednakosti varijance prije t-testa
var.test(RTlexdec_young, RTlexdec_old)
```

```
##
## F test to compare two variances
##
## data: RTlexdec_young and RTlexdec_old
## F = 0.84625, num df = 2283, denom df = 2283, p-value = 6.737e-05
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
## 0.7795831 0.9186270
## sample estimates:
## ratio of variances
## 0.8462542

t.test(RTlexdec_young, RTlexdec_old, alt = "less", var.equal = TRUE)
##
```

```
##
## Two Sample t-test
##
## data: RTlexdec_young and RTlexdec_old
## t = -67.468, df = 4566, p-value < 2.2e-16
## alternative hypothesis: true difference in means is less than 0
## 95 percent confidence interval:
## -Inf -0.2163149
## sample estimates:
## mean of x mean of y</pre>
```

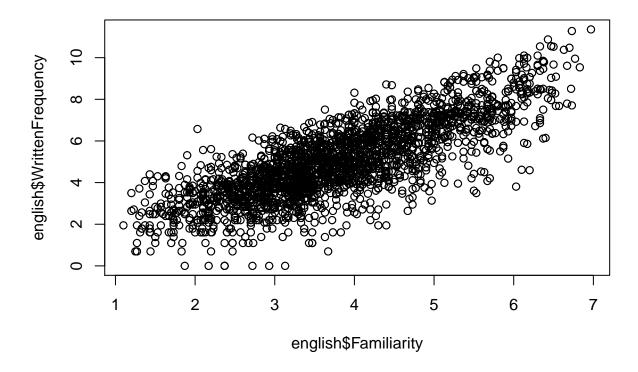
Prepoznatljivost riječi s obzirom na frekvenciju pojavljivanja

Zanima nas jesu li riječi koje se više pojavljuje prepoznatljivije? Računamo korelaciju između prepoznatljivosti riječi i njenog pojavljivanja u tekstovima. Dobivamo korelaciju ~0.8, što nam potvrđuje da su te dvije stavke povezane, tj. riječi koje se više pojavljuju su prepoznatljivije. To također vidimo i iz dijagrama rasipanja.

cor(english\$Familiarity, english\$WrittenFrequency)

[1] 0.7912556

plot(english\$Familiarity, english\$WrittenFrequency)



Utjecaj glasa prvog slova na prepoznatljivost riječi

Je li riječ koja počinje na samoglasnik u odnosu na suglasnik ljudima prepoznatljivija? Uzimamo skup riječi koje počinju sa samoglasnikom, te skup riječi koje počinju sa suglasnikom te računamo srednju vrijednost. Kod samoglasnika dobivamo srednju vrijednost 4.0, a kod suglasnika 3.79, što bi nas moglo dovesti do zaključka da riječi koje počinju sa samoglasnikom su prepoznatljivije. No testiranjem putem *t-testa* zaključujemo da ne postoji razlika između prepoznatljivosti riječi koje počinju samoglasnikom u odnosu na one koje počinju suglasnikom.

firstVowel = english[english\$CV == "V",] #riječi koje počinju sa samoglasnikom firstConsonant = english[english\$CV == "C",] # riječi koje počinju sa suglasnikom mean(firstConsonant\$Familiarity)

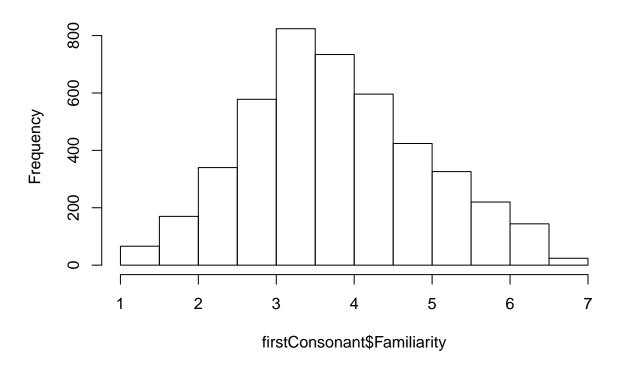
[1] 3.789892

mean(firstVowel\$Familiarity)

[1] 4.002951

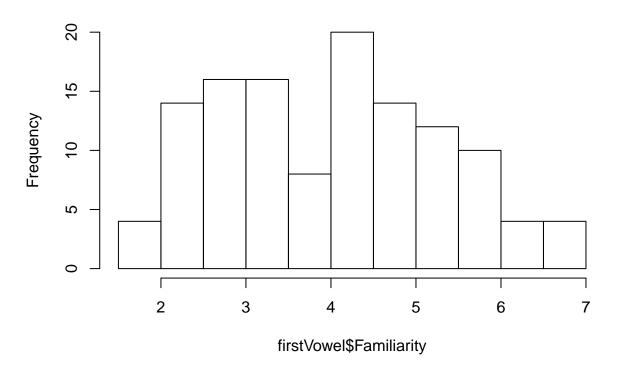
hist(firstConsonant\$Familiarity)

Histogram of firstConsonant\$Familiarity



hist(firstVowel\$Familiarity)

Histogram of firstVowel\$Familiarity



prije testiranja t-testom trebamo zaključiti jesu li varijance jednake u oba slučaja var.test(firstConsonant\$Familiarity, firstVowel\$Familiarity)

```
##
##
   F test to compare two variances
##
## data: firstConsonant$Familiarity and firstVowel$Familiarity
## F = 0.78386, num df = 4445, denom df = 121, p-value = 0.04732
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
## 0.5971133 0.9971773
## sample estimates:
## ratio of variances
t.test(firstVowel$Familiarity, firstConsonant$Familiarity, alt = "greater", var.equal = TRUE)
##
##
   Two Sample t-test
## data: firstVowel$Familiarity and firstConsonant$Familiarity
## t = 2.0207, df = 4566, p-value = 0.02168
## alternative hypothesis: true difference in means is greater than 0
## 95 percent confidence interval:
## 0.03959434
## sample estimates:
## mean of x mean of y
```

4.002951 3.789892

```
#cor(english$WrittenSpokenFrequencyRatio, english$RTlexdec)
moreSpoken = english[english$WrittenSpokenFrequencyRatio > 0, ]
#je li riječi koje se više govore, dakle writespokefrequncyratio < 0 imaju i veći rezultat na RTnamingu
numericYoung = young[sapply(english, is.numeric)]
numericOld = old[sapply(english, is.numeric)]
cor(numericOld)
                                     RTlexdec
                                                 RTnaming Familiarity
## RTlexdec
                                  1.000000000 0.47595619 -0.59316152
## RTnaming
                                  0.475956189 1.00000000 -0.36727278
## Familiarity
                                 -0.593161523 -0.36727278 1.00000000
                                 -0.588817331 -0.37743805 0.79125559
## WrittenFrequency
                                 ## WrittenSpokenFrequencyRatio
## FamilySize
                                 -0.476038415 -0.34380160 0.59191973
## DerivationalEntropy
                                 -0.227361700 -0.19078486 0.22071588
## InflectionalEntropy
                                 -0.133746023 -0.10379678 0.10795420
## NumberSimplexSynsets
                                 -0.430603048 -0.29746167 0.51065170
## NumberComplexSynsets
                                 -0.446757721 -0.30041977 0.51001913
## LengthInLetters
                                 ## Ncount
                                 -0.090285280 -0.30851653 0.09650461
## MeanBigramFrequency
                                 0.001193374 0.15809308 0.02962138
## FrequencyInitialDiphone
                                 -0.126830596 -0.17413651 0.12847193
## ConspelV
                                 -0.042823578 -0.10612119 0.07451417
## ConspelN
                                 -0.146739131 -0.13972865 0.21437628
## ConphonV
                                 -0.024206204 -0.01682665 0.05408975
## ConphonN
                                 -0.116204184 -0.06897988 0.16180440
## ConfriendsV
                                 -0.035811221 -0.11150685 0.04584224
## ConfriendsN
                                 -0.166402178 -0.16480882 0.20673977
## ConffV
                                 -0.024348152  0.01867552  0.05610343
## ConffN
                                 -0.006441035 0.02846785 0.02945722
## ConfbV
                                 -0.021548161 0.05399780 0.05687343
## ConfbN
                                 -0.016866073 0.04826245
                                                          0.05199653
## NounFrequency
                                 -0.224178647 -0.16992671 0.38119070
## VerbFrequency
                                 -0.106122080 -0.08588008 0.23817700
## FrequencyInitialDiphoneWord
                                 -0.068564757 0.05186360
                                                          0.09106333
## FrequencyInitialDiphoneSyllable -0.057340164 0.07299776
                                                          0.07354114
## CorrectLexdec
                                  -0.668025863 -0.36244072 0.46188432
##
                                  WrittenFrequency
## RTlexdec
                                      -0.58881733
## RTnaming
                                      -0.37743805
## Familiarity
                                       0.79125559
## WrittenFrequency
                                       1.00000000
## WrittenSpokenFrequencyRatio
                                       0.07158067
## FamilySize
                                       0.66253864
## DerivationalEntropy
                                       0.25522889
## InflectionalEntropy
                                      -0.04048005
## NumberSimplexSynsets
                                       0.55874958
## NumberComplexSynsets
                                       0.59105478
## LengthInLetters
                                      -0.06663196
## Ncount
                                       0.10492564
```

```
## MeanBigramFrequency
                                         0.07758879
## FrequencyInitialDiphone
                                         0.16748670
## ConspelV
                                         0.05864228
## ConspelN
                                         0.28248908
## ConphonV
                                         0.08201255
## ConphonN
                                         0.22245283
## ConfriendsV
                                         0.02146455
## ConfriendsN
                                         0.26326498
## ConffV
                                         0.08162166
## ConffN
                                         0.05028101
## ConfbV
                                         0.11975724
## ConfbN
                                         0.10409106
## NounFrequency
                                         0.46955152
## VerbFrequency
                                         0.27879235
## FrequencyInitialDiphoneWord
                                         0.10827895
## FrequencyInitialDiphoneSyllable
                                         0.09111661
## CorrectLexdec
                                         0.42216174
##
                                   WrittenSpokenFrequencyRatio
                                                                  FamilySize
## RTlexdec
                                                    0.033889838 -0.476038415
## RTnaming
                                                    0.126014566 -0.343801604
                                                   -0.189898811 0.591919733
## Familiarity
## WrittenFrequency
                                                    0.071580669 0.662538635
## WrittenSpokenFrequencyRatio
                                                    1.000000000 -0.108801543
## FamilySize
                                                   -0.108801543 1.000000000
## DerivationalEntropy
                                                  -0.010987756 0.692088896
## InflectionalEntropy
                                                  -0.118804044 0.101743523
## NumberSimplexSynsets
                                                  -0.085088573 0.590763556
## NumberComplexSynsets
                                                  -0.104598273 0.645411663
## LengthInLetters
                                                   0.204091196 -0.122995009
## Ncount
                                                   -0.188200595 0.174107015
## MeanBigramFrequency
                                                   0.191513493 -0.001056468
## FrequencyInitialDiphone
                                                   0.020799272 0.126804334
## ConspelV
                                                   -0.157689304 0.110812602
## ConspelN
                                                   -0.057307387 0.249522442
                                                   -0.034796879 0.050171973
## ConphonV
## ConphonN
                                                   -0.025856126 0.161531494
## ConfriendsV
                                                  -0.136348207 0.079271194
## ConfriendsN
                                                   -0.055568525 0.242711641
                                                   -0.026731676 0.080362377
## ConffV
## ConffN
                                                   -0.003403134 0.059199476
## ConfbV
                                                   0.093614167 0.050020822
                                                   0.070239322 0.038457171
## ConfbN
## NounFrequency
                                                    0.012482293 0.417794301
## VerbFrequency
                                                   -0.096554415 0.114132925
## FrequencyInitialDiphoneWord
                                                    0.002627022 0.096705342
## FrequencyInitialDiphoneSyllable
                                                    0.012872673 0.086426850
## CorrectLexdec
                                                    0.030779921 0.342795052
##
                                   DerivationalEntropy InflectionalEntropy
## RTlexdec
                                          -0.227361700
                                                               -0.133746023
                                                               -0.103796784
## RTnaming
                                          -0.190784864
                                                                0.107954197
## Familiarity
                                           0.220715880
## WrittenFrequency
                                           0.255228886
                                                               -0.040480046
## WrittenSpokenFrequencyRatio
                                          -0.010987756
                                                               -0.118804044
## FamilySize
                                           0.692088896
                                                               0.101743523
```

##	DerivationalEntropy	1.00000000	-0.050795034
	${\tt InflectionalEntropy}$	-0.050795034	1.00000000
##	NumberSimplexSynsets	0.223943027	0.398736053
##	NumberComplexSynsets	0.331924999	0.005589502
##	LengthInLetters	-0.104860729	0.052485031
##	Ncount	0.123827732	-0.003252708
##	MeanBigramFrequency	-0.020837051	0.024789643
##	FrequencyInitialDiphone	0.083835479	-0.034461207
##	ConspelV	0.046117273	0.140798520
##	ConspelN	0.137519738	0.046826086
##	ConphonV	-0.002754648	0.082962738
##	ConphonN	0.074468614	0.031410725
##	ConfriendsV	0.028929529	0.131247972
##	ConfriendsN	0.131756437	0.067675205
##	ConffV	0.041097365	0.014388810
##	ConffN	0.040363830	0.010758578
##	ConfbV	0.007743200	0.002863801
##	ConfbN	0.011462290	-0.007583063
##	NounFrequency	0.172254519	-0.114401007
##	VerbFrequency	-0.019725738	0.094002603
##	FrequencyInitialDiphoneWord	0.029479534	0.052469468
##	${\tt FrequencyInitialDiphoneSyllable}$	0.027755605	0.050939450
##	CorrectLexdec	0.180487660	0.171827106
##		${\tt NumberSimplexSynsets}$	${\tt NumberComplexSynsets}$
##	RTlexdec	-0.4306030480	-0.446757721
##	RTnaming	-0.2974616697	-0.300419766
##	Familiarity	0.5106516971	0.510019126
##	WrittenFrequency	0.5587495840	0.591054783
##	WrittenSpokenFrequencyRatio	-0.0850885729	-0.104598273
##	FamilySize	0.5907635556	0.645411663
##	DerivationalEntropy	0.2239430269	0.331924999
##	${\tt InflectionalEntropy}$	0.3987360535	0.005589502
##	NumberSimplexSynsets	1.000000000	0.524536500
##	NumberComplexSynsets	0.5245365002	1.000000000
##	LengthInLetters	-0.0063644110	-0.120445975
##	Ncount	0.1129586209	0.137748482
##	MeanBigramFrequency	0.0539689516	-0.023604116
	FrequencyInitialDiphone	0.0571276406	0.103684145
	ConspelV	0.1660590990	0.071760775
##	ConspelN	0.2275859556	0.193733204
##	ConphonV	0.0747186906	0.047783270
	ConphonN	0.1443620165	0.142498720
##	ConfriendsV	0.1546554020	0.037761099
##	ConfriendsN	0.2524518522	0.180629522
##	ConffV	0.0362906719	0.082102822
##	ConffN	0.0227783558	0.057010830
##	ConfbV	0.0215807967	0.052172715
##	ConfbN	0.0002057108	0.049175194
##	NounFrequency	0.2380855612	0.349469930
	VerbFrequency	0.1887961418	0.092248597
	${\tt FrequencyInitialDiphoneWord}$	0.1270081956	0.058217178
	${\tt FrequencyInitialDiphoneSyllable}$	0.1160585801	0.047009152
##	CorrectLexdec	0.3378478571	0.306192922
##		LengthInLetters	Ncount

```
## RTlexdec
                                       0.072262724 -0.090285280
## RTnaming
                                       0.313274483 -0.308516534
## Familiarity
                                      -0.082152716 0.096504609
## WrittenFrequency
                                      -0.066631955 0.104925644
## WrittenSpokenFrequencyRatio
                                       0.204091196 -0.188200595
## FamilySize
                                      -0.122995009 0.174107015
## DerivationalEntropy
                                      -0.104860729 0.123827732
                                       0.052485031 -0.003252708
## InflectionalEntropy
## NumberSimplexSynsets
                                      -0.006364411 0.112958621
## NumberComplexSynsets
                                      -0.120445975 0.137748482
## LengthInLetters
                                       1.000000000 -0.625129141
                                      -0.625129141 1.000000000
## Ncount
## MeanBigramFrequency
                                       0.790492091 -0.387546284
## FrequencyInitialDiphone
                                      -0.060443836 0.135888890
## ConspelV
                                      -0.226416938 0.474710938
## ConspelN
                                      -0.170022083 0.346547943
## ConphonV
                                      -0.202368726 0.210193628
## ConphonN
                                      -0.205167896 0.190732679
## ConfriendsV
                                      -0.192199942 0.436821402
                                      -0.156898314 0.340831193
## ConfriendsN
## ConffV
                                      -0.019244458 0.076838593
## ConffN
                                       0.010765359 0.069850580
## ConfbV
                                      -0.040037290 -0.036034465
## ConfbN
                                       -0.069985486 -0.042132633
## NounFrequency
                                       -0.035331865 0.035870248
## VerbFrequency
                                       -0.083729951 0.053361797
## FrequencyInitialDiphoneWord
                                       0.155454553 0.007890710
## FrequencyInitialDiphoneSyllable
                                       0.150391668 0.021719522
## CorrectLexdec
                                       0.051533809 0.011743055
##
                                   MeanBigramFrequency
## RTlexdec
                                           0.001193374
## RTnaming
                                           0.158093082
## Familiarity
                                           0.029621385
## WrittenFrequency
                                           0.077588795
## WrittenSpokenFrequencyRatio
                                           0.191513493
## FamilySize
                                          -0.001056468
## DerivationalEntropy
                                          -0.020837051
## InflectionalEntropy
                                           0.024789643
## NumberSimplexSynsets
                                           0.053968952
## NumberComplexSynsets
                                          -0.023604116
## LengthInLetters
                                           0.790492091
## Ncount
                                          -0.387546284
## MeanBigramFrequency
                                           1.000000000
## FrequencyInitialDiphone
                                           0.324815461
## ConspelV
                                          -0.091270605
## ConspelN
                                           0.060952203
## ConphonV
                                           -0.122457211
## ConphonN
                                          -0.064645303
## ConfriendsV
                                          -0.078215883
## ConfriendsN
                                           0.049075415
## ConffV
                                           0.072593437
## ConffN
                                           0.113704972
## ConfbV
                                           0.002954953
## ConfbN
                                           -0.019550727
```

```
## NounFrequency
                                           0.043361959
## VerbFrequency
                                          -0.045835069
## FrequencyInitialDiphoneWord
                                           0.214165942
## FrequencyInitialDiphoneSyllable
                                           0.201570329
## CorrectLexdec
                                           0.062652364
##
                                   FrequencyInitialDiphone
                                                              ConspelV
## RTlexdec
                                             -0.1268305962 -0.04282358
                                             -0.1741365090 -0.10612119
## RTnaming
## Familiarity
                                              0.1284719337 0.07451417
## WrittenFrequency
                                              0.1674867041 0.05864228
## WrittenSpokenFrequencyRatio
                                              0.0207992723 -0.15768930
                                              0.1268043344 0.11081260
## FamilySize
## DerivationalEntropy
                                              0.0838354786 0.04611727
                                             -0.0344612070 0.14079852
## InflectionalEntropy
## NumberSimplexSynsets
                                              0.0571276406 0.16605910
## NumberComplexSynsets
                                              0.1036841450 0.07176077
                                             -0.0604438357 -0.22641694
## LengthInLetters
## Ncount
                                              0.1358888899 0.47471094
## MeanBigramFrequency
                                              0.3248154611 -0.09127061
## FrequencyInitialDiphone
                                              1.000000000 -0.05573050
## ConspelV
                                             -0.0557304958 1.00000000
## ConspelN
                                              0.0309540623 0.64214341
## ConphonV
                                             -0.0142352920 0.54021641
## ComphonN
                                              0.0104023606 0.41727634
## ConfriendsV
                                             -0.0495263185 0.91949493
## ConfriendsN
                                              0.0362062483 0.62267751
## ConffV
                                             -0.0001697975 0.23618800
## ConffN
                                              0.0021493798 0.16655427
## ConfbV
                                              0.0334157038 0.04946527
## ConfbN
                                              0.0191463198 0.02724069
## NounFrequency
                                              0.0985964971 -0.01696005
## VerbFrequency
                                              0.0557187478 0.06291967
## FrequencyInitialDiphoneWord
                                              0.1310981285 0.11861458
## FrequencyInitialDiphoneSyllable
                                              0.1188976490 0.12276477
## CorrectLexdec
                                              0.0353472391
                                                            0.06541108
                                      ConspelN
                                                   ConphonV
                                                               ConphonN
## RTlexdec
                                   -0.14673913 -0.024206204 -0.11620418
## RTnaming
                                   -0.13972865 -0.016826655 -0.06897988
## Familiarity
                                    0.21437628 0.054089750 0.16180440
## WrittenFrequency
                                    0.28248908 0.082012553 0.22245283
## WrittenSpokenFrequencyRatio
                                   -0.05730739 -0.034796879 -0.02585613
## FamilySize
                                    0.24952244 0.050171973 0.16153149
## DerivationalEntropy
                                    0.13751974 -0.002754648 0.07446861
## InflectionalEntropy
                                    0.04682609 0.082962738 0.03141073
## NumberSimplexSynsets
                                    0.22758596 0.074718691 0.14436202
## NumberComplexSynsets
                                    0.19373320  0.047783270  0.14249872
## LengthInLetters
                                   -0.17002208 -0.202368726 -0.20516790
## Ncount
                                    0.34654794 0.210193628 0.19073268
## MeanBigramFrequency
                                    0.06095220 -0.122457211 -0.06464530
## FrequencyInitialDiphone
                                    0.03095406 -0.014235292 0.01040236
                                    0.64214341 0.540216414 0.41727634
## ConspelV
## ConspelN
                                    1.00000000 0.380474673 0.65365781
## ConphonV
                                    0.38047467 1.000000000 0.66588359
                                    0.65365781 0.665883587 1.00000000
## ConphonN
```

```
## ConfriendsV
                                   0.55820343 0.533170763
                                                            0.38675454
                                   0.88292615 0.378854310
## ConfriendsN
                                                            0.65028040
## ConffV
                                   0.27788182 0.039617689
                                                            0.08270634
## ConffN
                                   0.34213915 0.060092579
                                                            0.09538521
## ConfbV
                                   0.14221895
                                              0.741851531
                                                            0.56997101
## ConfbN
                                   0.14531495 0.609947163
                                                            0.66832337
## NounFrequency
                                   0.11924516 -0.008769463
                                                            0.08519330
## VerbFrequency
                                   0.12533768 0.064268066
                                                            0.10336888
## FrequencyInitialDiphoneWord
                                   0.11832011 0.029920110
                                                            0.05363076
## FrequencyInitialDiphoneSyllable
                                   0.11843351
                                              0.033639918
                                                            0.05429738
## CorrectLexdec
                                   0.11622722 0.025359696
                                                            0.08609851
##
                                  ConfriendsV ConfriendsN
                                                                  ConffV
## RTlexdec
                                  -0.03581122 -0.166402178 -0.0243481525
## RTnaming
                                  -0.11150685 -0.164808821
                                                            0.0186755191
                                                            0.0561034304
## Familiarity
                                   0.04584224 0.206739773
## WrittenFrequency
                                   0.02146455 0.263264980
                                                            0.0816216587
## WrittenSpokenFrequencyRatio
                                  -0.13634821 -0.055568525 -0.0267316761
## FamilySize
                                   0.07927119 0.242711641
                                                            0.0803623769
## DerivationalEntropy
                                   0.02892953 0.131756437
                                                            0.0410973651
## InflectionalEntropy
                                   0.13124797 0.067675205
                                                            0.0143888100
## NumberSimplexSynsets
                                   0.15465540 0.252451852 0.0362906719
## NumberComplexSynsets
                                   0.03776110 0.180629522 0.0821028216
## LengthInLetters
                                  -0.19219994 -0.156898314 -0.0192444580
## Ncount
                                   0.43682140 0.340831193
                                                            0.0768385931
## MeanBigramFrequency
                                  -0.07821588 0.049075415 0.0725934375
## FrequencyInitialDiphone
                                  -0.04952632 0.036206248 -0.0001697975
## ConspelV
                                   0.91949493 0.622677513
                                                           0.2361879962
## ConspelN
                                   0.55820343 0.882926151
                                                            0.2778818176
## ConphonV
                                   0.53317076 0.378854310
                                                           0.0396176894
                                                            0.0827063427
## ConphonN
                                   0.38675454 0.650280396
## ConfriendsV
                                   1.00000000 0.649018597 -0.1205452871
## ConfriendsN
                                   0.64901860
                                               1.000000000
                                                            0.0065361208
## ConffV
                                  -0.12054529
                                               0.006536121
                                                            1.000000000
## ConffN
                                                            0.8241820547
                                  -0.10390690 0.020956643
## ConfbV
                                   0.01094067 0.083786596
                                                            0.0729283492
## ConfbN
                                  -0.01072111 0.089220835
                                                            0.0683948055
## NounFrequency
                                  -0.02244854 0.120108606
                                                            0.0367115079
## VerbFrequency
                                   0.00393842 0.118902818 0.1198303241
## FrequencyInitialDiphoneWord
                                               0.115161203
                                                           0.0058281749
                                   0.12811075
## FrequencyInitialDiphoneSyllable 0.13787711 0.121747881 -0.0110108598
## CorrectLexdec
                                   ##
                                                     ConfbV
                                                                   ConfbN
                                        ConffN
## RTlexdec
                                  -0.006441035 -0.021548161 -0.0168660734
## RTnaming
                                   0.028467854 0.053997800 0.0482624530
## Familiarity
                                   0.029457215
                                                0.056873430 0.0519965301
## WrittenFrequency
                                                0.119757242 0.1040910628
                                   0.050281007
## WrittenSpokenFrequencyRatio
                                  -0.003403134
                                                0.093614167
                                                             0.0702393218
## FamilySize
                                   0.059199476
                                                0.050020822 0.0384571715
## DerivationalEntropy
                                   0.040363830
                                                0.007743200 0.0114622898
## InflectionalEntropy
                                   0.010758578
                                                0.002863801 -0.0075830633
## NumberSimplexSynsets
                                                            0.0002057108
                                   0.022778356
                                                0.021580797
## NumberComplexSynsets
                                   0.057010830 0.052172715 0.0491751942
## LengthInLetters
                                   0.010765359 -0.040037290 -0.0699854865
## Ncount
                                   0.069850580 -0.036034465 -0.0421326334
```

```
## MeanBigramFrequency
                                   ## FrequencyInitialDiphone
                                   0.002149380
                                               0.033415704 0.0191463198
## ConspelV
                                   0.166554266 0.049465271 0.0272406932
## ConspelN
                                   ## ConphonV
                                   0.060092579
                                               0.741851531
                                                           0.6099471634
## ConphonN
                                  ## ConfriendsV
                                  -0.103906902 0.010940674 -0.0107211109
## ConfriendsN
                                   0.020956643
                                               0.083786596 0.0892208353
## ConffV
                                   0.824182055
                                               0.072928349 0.0683948055
## ConffN
                                   1.000000000
                                               0.114815595 0.0933643088
## ConfbV
                                   0.114815595
                                               1.00000000 0.8424469664
## ConfbN
                                   0.093364309
                                               0.842446966
                                                           1.0000000000
## NounFrequency
                                   0.010288796
                                               0.021685118
                                                           0.0252276045
## VerbFrequency
                                   0.082163492
                                               0.050519739 0.0329567506
## FrequencyInitialDiphoneWord
                                   0.003618182 -0.019915368 -0.0188858839
## FrequencyInitialDiphoneSyllable -0.008732692 -0.027020380 -0.0244143624
## CorrectLexdec
                                  -0.001161557 0.013122768 0.0065748431
##
                                  NounFrequency VerbFrequency
## RTlexdec
                                                -0.106122080
                                   -0.224178647
## RTnaming
                                   -0.169926708 -0.085880078
## Familiarity
                                    0.381190698
                                                 0.238176996
## WrittenFrequency
                                                 0.278792355
                                    0.469551521
## WrittenSpokenFrequencyRatio
                                    0.012482293 -0.096554415
## FamilySize
                                    0.417794301
                                                 0.114132925
## DerivationalEntropy
                                    0.172254519 -0.019725738
## InflectionalEntropy
                                   -0.114401007
                                                 0.094002603
## NumberSimplexSynsets
                                    0.238085561
                                                 0.188796142
## NumberComplexSynsets
                                    0.349469930
                                                 0.092248597
## LengthInLetters
                                                -0.083729951
                                   -0.035331865
## Ncount
                                    0.035870248
                                                 0.053361797
## MeanBigramFrequency
                                    0.043361959
                                                -0.045835069
## FrequencyInitialDiphone
                                    0.098596497
                                                 0.055718748
## ConspelV
                                   -0.016960053
                                                 0.062919672
## ConspelN
                                    0.119245162
                                                 0.125337679
## ConphonV
                                   -0.008769463
                                                 0.064268066
## ConphonN
                                    0.085193295
                                                 0.103368885
## ConfriendsV
                                   -0.022448538
                                                 0.003938420
## ConfriendsN
                                    0.120108606
                                                 0.118902818
## ConffV
                                    0.036711508
                                                 0.119830324
## ConffN
                                    0.010288796
                                                 0.082163492
## ConfbV
                                    0.021685118
                                                 0.050519739
## ConfbN
                                    0.025227604
                                                 0.032956751
## NounFrequency
                                    1.000000000
                                                -0.003117231
## VerbFrequency
                                                 1.00000000
                                   -0.003117231
## FrequencyInitialDiphoneWord
                                    0.047626002
                                                 0.069596145
## FrequencyInitialDiphoneSyllable
                                    0.034300335
                                                 0.055821617
## CorrectLexdec
                                    0.116741614
                                                 0.042103421
##
                                  FrequencyInitialDiphoneWord
## RTlexdec
                                                -0.068564757
## RTnaming
                                                 0.051863602
## Familiarity
                                                 0.091063334
## WrittenFrequency
                                                 0.108278953
## WrittenSpokenFrequencyRatio
                                                 0.002627022
## FamilySize
                                                 0.096705342
```

```
## DerivationalEntropy
                                                     0.029479534
## InflectionalEntropy
                                                     0.052469468
## NumberSimplexSynsets
                                                     0.127008196
## NumberComplexSynsets
                                                     0.058217178
## LengthInLetters
                                                     0.155454553
## Ncount
                                                     0.007890710
## MeanBigramFrequency
                                                     0.214165942
## FrequencyInitialDiphone
                                                     0.131098129
## ConspelV
                                                     0.118614576
## ConspelN
                                                     0.118320106
## ConphonV
                                                     0.029920110
## ConphonN
                                                     0.053630763
## ConfriendsV
                                                     0.128110751
## ConfriendsN
                                                     0.115161203
## ConffV
                                                     0.005828175
## ConffN
                                                     0.003618182
## ConfbV
                                                    -0.019915368
## ConfbN
                                                    -0.018885884
## NounFrequency
                                                     0.047626002
## VerbFrequency
                                                     0.069596145
## FrequencyInitialDiphoneWord
                                                     1.00000000
## FrequencyInitialDiphoneSyllable
                                                     0.978742189
## CorrectLexdec
                                                     0.066467537
                                    {\tt FrequencyInitialDiphoneSyllable}
## RTlexdec
                                                        -0.057340164
## RTnaming
                                                         0.072997756
## Familiarity
                                                         0.073541144
                                                         0.091116609
## WrittenFrequency
## WrittenSpokenFrequencyRatio
                                                         0.012872673
## FamilySize
                                                         0.086426850
## DerivationalEntropy
                                                         0.027755605
## InflectionalEntropy
                                                         0.050939450
## NumberSimplexSynsets
                                                         0.116058580
## NumberComplexSynsets
                                                         0.047009152
## LengthInLetters
                                                         0.150391668
## Ncount
                                                         0.021719522
## MeanBigramFrequency
                                                         0.201570329
## FrequencyInitialDiphone
                                                         0.118897649
## ConspelV
                                                         0.122764768
## ConspelN
                                                         0.118433514
## ConphonV
                                                         0.033639918
## ConphonN
                                                         0.054297378
## ConfriendsV
                                                         0.137877114
## ConfriendsN
                                                         0.121747881
## ConffV
                                                        -0.011010860
## ConffN
                                                        -0.008732692
## ConfbV
                                                        -0.027020380
## ConfbN
                                                        -0.024414362
## NounFrequency
                                                         0.034300335
## VerbFrequency
                                                         0.055821617
## FrequencyInitialDiphoneWord
                                                         0.978742189
## FrequencyInitialDiphoneSyllable
                                                         1.00000000
## CorrectLexdec
                                                         0.061269227
##
                                    CorrectLexdec
```

##	RTlexdec	-0.668025863
##	RTnaming	-0.362440720
##	Familiarity	0.461884316
##	WrittenFrequency	0.422161740
##	WrittenSpokenFrequencyRatio	0.030779921
##	FamilySize	0.342795052
##	DerivationalEntropy	0.180487660
##	InflectionalEntropy	0.171827106
##	NumberSimplexSynsets	0.337847857
##	NumberComplexSynsets	0.306192922
##	LengthInLetters	0.051533809
##	Ncount	0.011743055
##	MeanBigramFrequency	0.062652364
##	${\tt FrequencyInitialDiphone}$	0.035347239
##	ConspelV	0.065411078
##	ConspelN	0.116227221
##	ConphonV	0.025359696
##	ConphonN	0.086098509
##	ConfriendsV	0.062455932
##	ConfriendsN	0.139276302
##	ConffV	0.014231026
##	ConffN	-0.001161557
##	ConfbV	0.013122768
##	ConfbN	0.006574843
##	NounFrequency	0.116741614
##	VerbFrequency	0.042103421
##	${\tt FrequencyInitialDiphoneWord}$	0.066467537
##	${\tt FrequencyInitialDiphoneSyllable}$	0.061269227
##	CorrectLexdec	1.000000000

cor(numericYoung)

	RTlexdec	RTnaming	Familiarity
RTlexdec	1.000000000	0.30624638	-0.66702516
RTnaming	0.306246378	1.00000000	-0.29059952
Familiarity	-0.667025156	-0.29059952	1.00000000
WrittenFrequency	-0.643425446	-0.28731234	0.79125559
WrittenSpokenFrequencyRatio	0.080701892	0.13211444	-0.18989881
FamilySize	-0.514469499	-0.26646711	0.59191973
DerivationalEntropy	-0.228576807	-0.15266940	0.22071588
InflectionalEntropy	-0.115608179	-0.04485241	0.10795420
NumberSimplexSynsets	-0.444052038	-0.19653334	0.51065170
NumberComplexSynsets	-0.484361907	-0.22851499	0.51001913
LengthInLetters	0.068292238	0.35653197	-0.08215272
Ncount	-0.095868200	-0.36392371	0.09650461
MeanBigramFrequency	0.006476457	0.18606975	0.02962138
FrequencyInitialDiphone	-0.081900464	-0.23553856	0.12847193
ConspelV	-0.050467760	-0.06624607	0.07451417
ConspelN	-0.157921045	-0.10050016	0.21437628
ConphonV	-0.037881801	0.03064434	0.05408975
ConphonN	-0.112573337	-0.02718737	0.16180440
ConfriendsV	-0.036994904	-0.07995335	0.04584224
ConfriendsN	-0.166049444	-0.14257294	0.20673977
ConffV	-0.02222592	0.03950505	0.05610343
ConffN	-0.009761968	0.05486205	0.02945722
	RTnaming Familiarity WrittenFrequency WrittenSpokenFrequencyRatio FamilySize DerivationalEntropy InflectionalEntropy NumberSimplexSynsets NumberComplexSynsets LengthInLetters Ncount MeanBigramFrequency FrequencyInitialDiphone ConspelV ConspelN ConphonV ConphonN ConfriendsV ConfriendsN	RTlexdec 1.000000000 RTnaming 0.306246378 Familiarity -0.667025156 WrittenFrequency -0.643425446 WrittenSpokenFrequencyRatio 0.080701892 FamilySize -0.514469499 DerivationalEntropy -0.228576807 InflectionalEntropy -0.115608179 NumberSimplexSynsets -0.444052038 NumberComplexSynsets -0.484361907 LengthInLetters 0.068292238 Ncount -0.095868200 MeanBigramFrequency 0.006476457 FrequencyInitialDiphone -0.081900464 ConspelV -0.050467760 ConspelN -0.157921045 ConphonV -0.037881801 ConphonN -0.112573337 ConfriendsV -0.036994904 ConfriendsN -0.166049444 ConffV -0.022222592	RTlexdec 1.000000000 0.30624638 RTnaming 0.306246378 1.00000000 Familiarity -0.667025156 -0.29059952 WrittenFrequency -0.643425446 -0.28731234 WrittenSpokenFrequencyRatio 0.080701892 0.13211444 FamilySize -0.514469499 -0.26646711 DerivationalEntropy -0.228576807 -0.15266940 InflectionalEntropy -0.115608179 -0.04485241 NumberSimplexSynsets -0.444052038 -0.19653334 NumberComplexSynsets -0.484361907 -0.22851499 LengthInLetters 0.068292238 0.35653197 Ncount -0.095868200 -0.36392371 MeanBigramFrequency 0.006476457 0.18606975 FrequencyInitialDiphone -0.081900464 -0.23553856 ConspelV -0.050467760 -0.06624607 ConspelN -0.157921045 -0.10050016 ConphonV -0.037881801 0.03064434 ConphonN -0.112573337 -0.02718737 ConfriendsV -0.036994904 -0.07995335 ConfriendsN -0.166049444 -0.14257294 ConffV -0.022222592 0.03950505

```
## ConfbV
                                   -0.043037920 0.08432589 0.05687343
## ConfbN
                                   -0.036391162  0.07447171  0.05199653
## NounFrequency
                                   -0.249821359 -0.12880064 0.38119070
                                   -0.110125191 -0.08729293 0.23817700
## VerbFrequency
                                   -0.051335195 0.09761221
## FrequencyInitialDiphoneWord
                                                             0.09106333
## FrequencyInitialDiphoneSyllable -0.042469235 0.12193735 0.07354114
## CorrectLexdec
                                   -0.612354512 -0.22988359 0.61593275
##
                                   WrittenFrequency
## RTlexdec
                                        -0.64342545
## RTnaming
                                        -0.28731234
## Familiarity
                                         0.79125559
## WrittenFrequency
                                         1.00000000
## WrittenSpokenFrequencyRatio
                                         0.07158067
                                         0.66253864
## FamilySize
## DerivationalEntropy
                                        0.25522889
## InflectionalEntropy
                                        -0.04048005
## NumberSimplexSynsets
                                        0.55874958
## NumberComplexSynsets
                                        0.59105478
## LengthInLetters
                                        -0.06663196
## Ncount
                                         0.10492564
## MeanBigramFrequency
                                         0.07758879
## FrequencyInitialDiphone
                                         0.16748670
## ConspelV
                                         0.05864228
## ConspelN
                                         0.28248908
## ConphonV
                                         0.08201255
## ConphonN
                                         0.22245283
## ConfriendsV
                                         0.02146455
## ConfriendsN
                                         0.26326498
## ConffV
                                         0.08162166
## ConffN
                                         0.05028101
## ConfbV
                                         0.11975724
## ConfbN
                                         0.10409106
## NounFrequency
                                         0.46955152
## VerbFrequency
                                         0.27879235
## FrequencyInitialDiphoneWord
                                         0.10827895
## FrequencyInitialDiphoneSyllable
                                         0.09111661
## CorrectLexdec
                                         0.52259421
##
                                   WrittenSpokenFrequencyRatio FamilySize
## RTlexdec
                                                   0.080701892 -0.514469499
## RTnaming
                                                   0.132114440 -0.266467114
## Familiarity
                                                  -0.189898811 0.591919733
                                                   0.071580669 0.662538635
## WrittenFrequency
## WrittenSpokenFrequencyRatio
                                                   1.000000000 -0.108801543
## FamilySize
                                                  -0.108801543 1.000000000
## DerivationalEntropy
                                                  -0.010987756 0.692088896
                                                  -0.118804044 0.101743523
## InflectionalEntropy
## NumberSimplexSynsets
                                                  -0.085088573 0.590763556
## NumberComplexSynsets
                                                  -0.104598273   0.645411663
## LengthInLetters
                                                   0.204091196 -0.122995009
## Ncount
                                                  -0.188200595 0.174107015
## MeanBigramFrequency
                                                   0.191513493 -0.001056468
## FrequencyInitialDiphone
                                                   0.020799272 0.126804334
## ConspelV
                                                  -0.157689304 0.110812602
## ConspelN
                                                  -0.057307387 0.249522442
```

```
## ConphonV
                                                    -0.034796879 0.050171973
## ConphonN
                                                    -0.025856126
                                                                  0.161531494
                                                   -0.136348207
## ConfriendsV
                                                                  0.079271194
## ConfriendsN
                                                   -0.055568525
                                                                  0.242711641
## ConffV
                                                    -0.026731676
                                                                  0.080362377
## ConffN
                                                    -0.003403134 0.059199476
## ConfbV
                                                                  0.050020822
                                                    0.093614167
## ConfbN
                                                    0.070239322
                                                                  0.038457171
## NounFrequency
                                                    0.012482293
                                                                  0.417794301
## VerbFrequency
                                                   -0.096554415
                                                                  0.114132925
## FrequencyInitialDiphoneWord
                                                    0.002627022
                                                                  0.096705342
## FrequencyInitialDiphoneSyllable
                                                    0.012872673
                                                                  0.086426850
## CorrectLexdec
                                                    -0.004411617
                                                                  0.405063992
##
                                    DerivationalEntropy InflectionalEntropy
## RTlexdec
                                           -0.228576807
                                                                -0.115608179
## RTnaming
                                           -0.152669404
                                                                -0.044852413
## Familiarity
                                            0.220715880
                                                                 0.107954197
## WrittenFrequency
                                            0.255228886
                                                                -0.040480046
## WrittenSpokenFrequencyRatio
                                                                -0.118804044
                                           -0.010987756
## FamilySize
                                            0.692088896
                                                                 0.101743523
## DerivationalEntropy
                                            1.00000000
                                                                -0.050795034
## InflectionalEntropy
                                           -0.050795034
                                                                 1.00000000
## NumberSimplexSynsets
                                            0.223943027
                                                                 0.398736053
## NumberComplexSynsets
                                            0.331924999
                                                                 0.005589502
## LengthInLetters
                                           -0.104860729
                                                                 0.052485031
## Ncount
                                            0.123827732
                                                                -0.003252708
## MeanBigramFrequency
                                           -0.020837051
                                                                 0.024789643
## FrequencyInitialDiphone
                                            0.083835479
                                                                -0.034461207
## ConspelV
                                            0.046117273
                                                                 0.140798520
## ConspelN
                                            0.137519738
                                                                 0.046826086
## ConphonV
                                           -0.002754648
                                                                 0.082962738
## ConphonN
                                            0.074468614
                                                                 0.031410725
## ConfriendsV
                                            0.028929529
                                                                 0.131247972
## ConfriendsN
                                                                 0.067675205
                                            0.131756437
## ConffV
                                            0.041097365
                                                                 0.014388810
## ConffN
                                            0.040363830
                                                                 0.010758578
## ConfbV
                                            0.007743200
                                                                 0.002863801
## ConfbN
                                            0.011462290
                                                                -0.007583063
## NounFrequency
                                            0.172254519
                                                                -0.114401007
## VerbFrequency
                                                                 0.094002603
                                           -0.019725738
## FrequencyInitialDiphoneWord
                                                                 0.052469468
                                            0.029479534
## FrequencyInitialDiphoneSyllable
                                            0.027755605
                                                                 0.050939450
## CorrectLexdec
                                            0.211362354
                                                                 0.205277742
##
                                    NumberSimplexSynsets NumberComplexSynsets
## RTlexdec
                                           -0.4440520384
                                                                  -0.484361907
## RTnaming
                                           -0.1965333396
                                                                  -0.228514990
## Familiarity
                                            0.5106516971
                                                                   0.510019126
## WrittenFrequency
                                            0.5587495840
                                                                   0.591054783
## WrittenSpokenFrequencyRatio
                                           -0.0850885729
                                                                  -0.104598273
## FamilySize
                                            0.5907635556
                                                                   0.645411663
## DerivationalEntropy
                                            0.2239430269
                                                                   0.331924999
## InflectionalEntropy
                                            0.3987360535
                                                                   0.005589502
## NumberSimplexSynsets
                                            1.0000000000
                                                                   0.524536500
## NumberComplexSynsets
                                            0.5245365002
                                                                   1.00000000
```

```
## LengthInLetters
                                           -0.0063644110
                                                                 -0.120445975
## Ncount
                                            0.1129586209
                                                                  0.137748482
## MeanBigramFrequency
                                           0.0539689516
                                                                 -0.023604116
## FrequencyInitialDiphone
                                           0.0571276406
                                                                  0.103684145
## ConspelV
                                           0.1660590990
                                                                  0.071760775
## ConspelN
                                           0.2275859556
                                                                  0.193733204
## ConphonV
                                           0.0747186906
                                                                  0.047783270
## ConphonN
                                           0.1443620165
                                                                  0.142498720
## ConfriendsV
                                           0.1546554020
                                                                  0.037761099
## ConfriendsN
                                           0.2524518522
                                                                  0.180629522
## ConffV
                                           0.0362906719
                                                                  0.082102822
## ConffN
                                           0.0227783558
                                                                  0.057010830
## ConfbV
                                           0.0215807967
                                                                  0.052172715
## ConfbN
                                           0.0002057108
                                                                  0.049175194
                                                                  0.349469930
## NounFrequency
                                           0.2380855612
## VerbFrequency
                                           0.1887961418
                                                                  0.092248597
## FrequencyInitialDiphoneWord
                                           0.1270081956
                                                                  0.058217178
## FrequencyInitialDiphoneSyllable
                                            0.1160585801
                                                                  0.047009152
## CorrectLexdec
                                           0.3900884514
                                                                  0.373633794
##
                                   LengthInLetters
                                                         Ncount
## RTlexdec
                                       0.068292238 -0.095868200
## RTnaming
                                       0.356531971 -0.363923711
                                      -0.082152716 0.096504609
## Familiarity
## WrittenFrequency
                                       -0.066631955 0.104925644
## WrittenSpokenFrequencyRatio
                                       0.204091196 -0.188200595
## FamilySize
                                      -0.122995009 0.174107015
## DerivationalEntropy
                                      -0.104860729 0.123827732
                                       0.052485031 -0.003252708
## InflectionalEntropy
## NumberSimplexSynsets
                                      -0.006364411 0.112958621
## NumberComplexSynsets
                                      -0.120445975 0.137748482
## LengthInLetters
                                       1.000000000 -0.625129141
## Ncount
                                      -0.625129141 1.000000000
## MeanBigramFrequency
                                       0.790492091 -0.387546284
                                      -0.060443836 0.135888890
## FrequencyInitialDiphone
## ConspelV
                                      -0.226416938 0.474710938
## ConspelN
                                      -0.170022083 0.346547943
## ConphonV
                                      -0.202368726 0.210193628
## ConphonN
                                      -0.205167896 0.190732679
## ConfriendsV
                                      -0.192199942 0.436821402
## ConfriendsN
                                      -0.156898314 0.340831193
## ConffV
                                      -0.019244458 0.076838593
## ConffN
                                       0.010765359 0.069850580
                                      -0.040037290 -0.036034465
## ConfbV
                                      -0.069985486 -0.042132633
## ConfbN
## NounFrequency
                                      -0.035331865 0.035870248
## VerbFrequency
                                      -0.083729951 0.053361797
## FrequencyInitialDiphoneWord
                                       0.155454553 0.007890710
## FrequencyInitialDiphoneSyllable
                                       0.150391668 0.021719522
## CorrectLexdec
                                       0.047375147 0.020203531
                                   MeanBigramFrequency
                                           0.006476457
## RTlexdec
## RTnaming
                                           0.186069747
## Familiarity
                                           0.029621385
## WrittenFrequency
                                           0.077588795
```

```
## WrittenSpokenFrequencyRatio
                                           0.191513493
## FamilySize
                                          -0.001056468
## DerivationalEntropy
                                          -0.020837051
                                           0.024789643
## InflectionalEntropy
## NumberSimplexSynsets
                                           0.053968952
## NumberComplexSynsets
                                         -0.023604116
## LengthInLetters
                                           0.790492091
## Ncount
                                          -0.387546284
## MeanBigramFrequency
                                           1.000000000
## FrequencyInitialDiphone
                                           0.324815461
## ConspelV
                                          -0.091270605
## ConspelN
                                           0.060952203
## ConphonV
                                          -0.122457211
## ConphonN
                                          -0.064645303
## ConfriendsV
                                          -0.078215883
## ConfriendsN
                                           0.049075415
## ConffV
                                           0.072593437
## ConffN
                                           0.113704972
## ConfbV
                                           0.002954953
## ConfbN
                                          -0.019550727
## NounFrequency
                                           0.043361959
## VerbFrequency
                                          -0.045835069
## FrequencyInitialDiphoneWord
                                           0.214165942
## FrequencyInitialDiphoneSyllable
                                           0.201570329
## CorrectLexdec
                                           0.070021458
                                   FrequencyInitialDiphone
                                                              ConspelV
## RTlexdec
                                             -0.0819004642 -0.05046776
                                             -0.2355385582 -0.06624607
## RTnaming
                                              ## Familiarity
## WrittenFrequency
                                              0.1674867041 0.05864228
## WrittenSpokenFrequencyRatio
                                              0.0207992723 -0.15768930
## FamilySize
                                              0.1268043344 0.11081260
## DerivationalEntropy
                                              0.0838354786 0.04611727
## InflectionalEntropy
                                             -0.0344612070 0.14079852
## NumberSimplexSynsets
                                              0.0571276406 0.16605910
                                              0.1036841450 0.07176077
## NumberComplexSynsets
## LengthInLetters
                                             -0.0604438357 -0.22641694
## Ncount
                                              0.1358888899 0.47471094
## MeanBigramFrequency
                                              0.3248154611 -0.09127061
## FrequencyInitialDiphone
                                              1.000000000 -0.05573050
## ConspelV
                                             -0.0557304958 1.00000000
                                              0.0309540623 0.64214341
## ConspelN
                                             -0.0142352920 0.54021641
## ConphonV
## ConphonN
                                              0.0104023606 0.41727634
## ConfriendsV
                                             -0.0495263185 0.91949493
## ConfriendsN
                                              0.0362062483 0.62267751
## ConffV
                                             -0.0001697975 0.23618800
## ConffN
                                              0.0021493798 0.16655427
## ConfbV
                                              0.0334157038 0.04946527
                                              0.0191463198 0.02724069
## ConfbN
                                              0.0985964971 -0.01696005
## NounFrequency
## VerbFrequency
                                              0.0557187478 0.06291967
## FrequencyInitialDiphoneWord
                                              0.1310981285 0.11861458
## FrequencyInitialDiphoneSyllable
                                              0.1188976490 0.12276477
```

```
## CorrectLexdec
                                             0.0614539159
                                                          0.04395399
##
                                     ConspelN
                                                 ConphonV
                                                             ConphonN
## RTlexdec
                                  -0.15792104 -0.037881801 -0.11257334
                                  ## RTnaming
## Familiarity
                                   0.21437628 0.054089750
                                                           0.16180440
                                   ## WrittenFrequency
## WrittenSpokenFrequencyRatio
                                  -0.05730739 -0.034796879 -0.02585613
## FamilySize
                                   0.24952244 0.050171973
                                                           0.16153149
## DerivationalEntropy
                                   0.13751974 -0.002754648
                                                           0.07446861
## InflectionalEntropy
                                   0.04682609 0.082962738
                                                           0.03141073
## NumberSimplexSynsets
                                   0.22758596 0.074718691
                                                           0.14436202
## NumberComplexSynsets
                                   0.19373320 0.047783270
                                                           0.14249872
## LengthInLetters
                                  -0.17002208 -0.202368726 -0.20516790
## Ncount
                                   0.34654794 0.210193628 0.19073268
## MeanBigramFrequency
                                   0.06095220 -0.122457211 -0.06464530
## FrequencyInitialDiphone
                                   0.03095406 -0.014235292
                                                           0.01040236
## ConspelV
                                   0.64214341 0.540216414
                                                           0.41727634
## ConspelN
                                   1.00000000 0.380474673
                                                           0.65365781
## ConphonV
                                   0.38047467 1.000000000
                                                           0.66588359
## ConphonN
                                   0.65365781 0.665883587
                                                           1.00000000
## ConfriendsV
                                   0.55820343 0.533170763
                                                           0.38675454
## ConfriendsN
                                   0.88292615 0.378854310
                                                           0.65028040
## ConffV
                                   0.27788182 0.039617689
                                                           0.08270634
## ConffN
                                   0.34213915 0.060092579
                                                           0.09538521
## ConfbV
                                   0.14221895 0.741851531
                                                           0.56997101
## ConfbN
                                   0.14531495 0.609947163
                                                           0.66832337
## NounFrequency
                                   0.11924516 -0.008769463
                                                           0.08519330
## VerbFrequency
                                   0.12533768 0.064268066
                                                           0.10336888
## FrequencyInitialDiphoneWord
                                   0.11832011 0.029920110
                                                           0.05363076
## FrequencyInitialDiphoneSyllable
                                   0.11843351 0.033639918
                                                           0.05429738
## CorrectLexdec
                                   0.10661819
                                              0.019815156
                                                           0.06443153
##
                                  ConfriendsV ConfriendsN
                                                                 ConffV
## RTlexdec
                                  -0.03699490 -0.166049444 -0.0222225919
## RTnaming
                                  -0.07995335 -0.142572945
                                                           0.0395050527
## Familiarity
                                   0.04584224
                                              0.206739773
                                                           0.0561034304
                                                           0.0816216587
                                             0.263264980
## WrittenFrequency
                                   0.02146455
## WrittenSpokenFrequencyRatio
                                  -0.13634821 -0.055568525 -0.0267316761
## FamilySize
                                   0.07927119 0.242711641
                                                           0.0803623769
## DerivationalEntropy
                                   0.02892953
                                              0.131756437
                                                           0.0410973651
## InflectionalEntropy
                                   0.13124797 0.067675205
                                                           0.0143888100
## NumberSimplexSynsets
                                   0.15465540 0.252451852
                                                           0.0362906719
## NumberComplexSynsets
                                   0.03776110 0.180629522
                                                           0.0821028216
## LengthInLetters
                                  -0.19219994 -0.156898314 -0.0192444580
## Ncount
                                   0.43682140 0.340831193 0.0768385931
## MeanBigramFrequency
                                  -0.07821588 0.049075415 0.0725934375
## FrequencyInitialDiphone
                                  -0.04952632
                                              0.036206248 -0.0001697975
## ConspelV
                                   0.91949493
                                              0.622677513
                                                           0.2361879962
## ConspelN
                                   0.55820343  0.882926151
                                                           0.2778818176
                                                           0.0396176894
## ConphonV
                                   0.53317076 0.378854310
## ConphonN
                                   0.38675454 0.650280396
                                                           0.0827063427
## ConfriendsV
                                   1.00000000 0.649018597 -0.1205452871
## ConfriendsN
                                   0.64901860 1.000000000 0.0065361208
## ConffV
                                  -0.12054529 0.006536121 1.0000000000
## ConffN
                                  -0.10390690 0.020956643 0.8241820547
```

```
## ConfbV
                                  0.01094067 0.083786596
                                                           0.0729283492
## ConfbN
                                  -0.01072111 0.089220835
                                                           0.0683948055
## NounFrequency
                                  -0.02244854 0.120108606
                                                           0.0367115079
                                                           0.1198303241
## VerbFrequency
                                  0.00393842 0.118902818
## FrequencyInitialDiphoneWord
                                   0.12811075
                                             0.115161203
                                                           0.0058281749
## FrequencyInitialDiphoneSyllable 0.13787711 0.121747881 -0.0110108598
## CorrectLexdec
                                   0.03964770 0.126738786 0.0036638250
##
                                       ConffN
                                                    ConfbV
                                                                  ConfbN
## RTlexdec
                                  -0.009761968 -0.043037920 -0.0363911616
## RTnaming
                                   ## Familiarity
                                   0.029457215
                                               0.056873430 0.0519965301
## WrittenFrequency
                                  0.050281007
                                               0.119757242 0.1040910628
## WrittenSpokenFrequencyRatio
                                  -0.003403134
                                               0.093614167
                                                           0.0702393218
                                               0.050020822 0.0384571715
## FamilySize
                                   0.059199476
                                               0.007743200 0.0114622898
## DerivationalEntropy
                                   0.040363830
## InflectionalEntropy
                                  0.010758578
                                               0.002863801 -0.0075830633
## NumberSimplexSynsets
                                  0.022778356
                                               0.021580797
                                                           0.0002057108
## NumberComplexSynsets
                                   0.057010830 0.052172715 0.0491751942
## LengthInLetters
                                  0.010765359 -0.040037290 -0.0699854865
## Ncount
                                   0.069850580 -0.036034465 -0.0421326334
## MeanBigramFrequency
                                  ## FrequencyInitialDiphone
                                   0.002149380 0.033415704 0.0191463198
## ConspelV
                                  0.166554266  0.049465271  0.0272406932
                                               0.142218950 0.1453149511
## ConspelN
                                  0.342139148
## ConphonV
                                  0.060092579 0.741851531 0.6099471634
## ConphonN
                                  0.095385208  0.569971012  0.6683233736
## ConfriendsV
                                 -0.103906902
                                               0.010940674 -0.0107211109
## ConfriendsN
                                  0.020956643
                                               0.083786596 0.0892208353
## ConffV
                                  0.824182055
                                               0.072928349 0.0683948055
## ConffN
                                  1.000000000
                                               0.114815595 0.0933643088
## ConfbV
                                  0.114815595
                                               1.00000000 0.8424469664
## ConfbN
                                   0.093364309
                                               0.842446966
                                                           1.0000000000
## NounFrequency
                                   0.010288796
                                               ## VerbFrequency
                                   0.082163492  0.050519739  0.0329567506
## FrequencyInitialDiphoneWord
                                   0.003618182 -0.019915368 -0.0188858839
## FrequencyInitialDiphoneSyllable -0.008732692 -0.027020380 -0.0244143624
## CorrectLexdec
                                  -0.011619964 0.001102480 0.0026703749
##
                                  NounFrequency VerbFrequency
## RTlexdec
                                   -0.249821359
                                                -0.110125191
## RTnaming
                                   -0.128800638 -0.087292933
                                                 0.238176996
## Familiarity
                                    0.381190698
## WrittenFrequency
                                                 0.278792355
                                    0.469551521
## WrittenSpokenFrequencyRatio
                                    0.012482293 -0.096554415
## FamilySize
                                                 0.114132925
                                    0.417794301
## DerivationalEntropy
                                    0.172254519
                                                -0.019725738
## InflectionalEntropy
                                                 0.094002603
                                   -0.114401007
## NumberSimplexSynsets
                                    0.238085561
                                                 0.188796142
## NumberComplexSynsets
                                    0.349469930
                                                 0.092248597
## LengthInLetters
                                   -0.035331865
                                                -0.083729951
## Ncount
                                    0.035870248
                                                 0.053361797
## MeanBigramFrequency
                                    0.043361959
                                                -0.045835069
## FrequencyInitialDiphone
                                   0.098596497
                                                 0.055718748
## ConspelV
                                   -0.016960053
                                                 0.062919672
## ConspelN
                                    0.119245162
                                                 0.125337679
```

```
## ConphonV
                                     -0.008769463
                                                     0.064268066
## ConphonN
                                      0.085193295
                                                     0.103368885
## ConfriendsV
                                     -0.022448538
                                                     0.003938420
## ConfriendsN
                                      0.120108606
                                                     0.118902818
## ConffV
                                      0.036711508
                                                    0.119830324
## ConffN
                                      0.010288796
                                                    0.082163492
## ConfbV
                                      0.021685118
                                                     0.050519739
## ConfbN
                                      0.025227604
                                                    0.032956751
## NounFrequency
                                      1.000000000 -0.003117231
## VerbFrequency
                                     -0.003117231
                                                     1.00000000
## FrequencyInitialDiphoneWord
                                      0.047626002
                                                     0.069596145
## FrequencyInitialDiphoneSyllable
                                      0.034300335
                                                     0.055821617
## CorrectLexdec
                                      0.147286936
                                                     0.059809820
##
                                    FrequencyInitialDiphoneWord
## RTlexdec
                                                    -0.051335195
## RTnaming
                                                     0.097612207
## Familiarity
                                                     0.091063334
## WrittenFrequency
                                                     0.108278953
## WrittenSpokenFrequencyRatio
                                                     0.002627022
## FamilySize
                                                     0.096705342
## DerivationalEntropy
                                                     0.029479534
## InflectionalEntropy
                                                     0.052469468
## NumberSimplexSynsets
                                                     0.127008196
## NumberComplexSynsets
                                                     0.058217178
## LengthInLetters
                                                     0.155454553
## Ncount
                                                     0.007890710
## MeanBigramFrequency
                                                     0.214165942
## FrequencyInitialDiphone
                                                     0.131098129
## ConspelV
                                                     0.118614576
## ConspelN
                                                     0.118320106
## ConphonV
                                                     0.029920110
## ConphonN
                                                     0.053630763
## ConfriendsV
                                                     0.128110751
## ConfriendsN
                                                     0.115161203
## ConffV
                                                     0.005828175
## ConffN
                                                     0.003618182
## ConfbV
                                                    -0.019915368
## ConfbN
                                                    -0.018885884
## NounFrequency
                                                     0.047626002
## VerbFrequency
                                                     0.069596145
## FrequencyInitialDiphoneWord
                                                     1.00000000
## FrequencyInitialDiphoneSyllable
                                                     0.978742189
## CorrectLexdec
                                                     0.065042509
##
                                    FrequencyInitialDiphoneSyllable
## RTlexdec
                                                        -0.042469235
## RTnaming
                                                         0.121937348
## Familiarity
                                                         0.073541144
## WrittenFrequency
                                                         0.091116609
## WrittenSpokenFrequencyRatio
                                                         0.012872673
## FamilySize
                                                         0.086426850
## DerivationalEntropy
                                                         0.027755605
## InflectionalEntropy
                                                         0.050939450
## NumberSimplexSynsets
                                                         0.116058580
## NumberComplexSynsets
                                                         0.047009152
```

```
## LengthInLetters
                                                         0.150391668
## Ncount
                                                         0.021719522
## MeanBigramFrequency
                                                         0.201570329
## FrequencyInitialDiphone
                                                         0.118897649
## ConspelV
                                                         0.122764768
## ConspelN
                                                         0.118433514
## ConphonV
                                                         0.033639918
## ConphonN
                                                         0.054297378
## ConfriendsV
                                                         0.137877114
## ConfriendsN
                                                         0.121747881
## ConffV
                                                        -0.011010860
## ConffN
                                                        -0.008732692
## ConfbV
                                                        -0.027020380
## ConfbN
                                                        -0.024414362
## NounFrequency
                                                         0.034300335
## VerbFrequency
                                                         0.055821617
## FrequencyInitialDiphoneWord
                                                         0.978742189
## FrequencyInitialDiphoneSyllable
                                                         1.00000000
## CorrectLexdec
                                                         0.059635526
##
                                    CorrectLexdec
## RTlexdec
                                     -0.612354512
## RTnaming
                                     -0.229883595
## Familiarity
                                      0.615932753
## WrittenFrequency
                                      0.522594211
## WrittenSpokenFrequencyRatio
                                     -0.004411617
## FamilySize
                                      0.405063992
## DerivationalEntropy
                                      0.211362354
## InflectionalEntropy
                                      0.205277742
## NumberSimplexSynsets
                                      0.390088451
## NumberComplexSynsets
                                      0.373633794
## LengthInLetters
                                      0.047375147
## Ncount
                                      0.020203531
## MeanBigramFrequency
                                      0.070021458
## FrequencyInitialDiphone
                                      0.061453916
## ConspelV
                                      0.043953990
## ConspelN
                                      0.106618187
## ConphonV
                                      0.019815156
## ConphonN
                                      0.064431532
## ConfriendsV
                                      0.039647703
## ConfriendsN
                                      0.126738786
## ConffV
                                      0.003663825
## ConffN
                                     -0.011619964
## ConfbV
                                      0.001102480
## ConfbN
                                      0.002670375
## NounFrequency
                                      0.147286936
## VerbFrequency
                                      0.059809820
## FrequencyInitialDiphoneWord
                                      0.065042509
## FrequencyInitialDiphoneSyllable
                                      0.059635526
## CorrectLexdec
                                      1.000000000
diff = cor(numericOld) - cor(numericYoung)
diff
##
                                         RTlexdec
                                                       RTnaming Familiarity
                                     0.000000000 0.169709811 0.07386363
## RTlexdec
```

```
## RTnaming
                                   0.0738636332 -0.076673265 0.00000000
## Familiarity
                                   0.0546081154 -0.090125714
## WrittenFrequency
                                                              0.00000000
## WrittenSpokenFrequencyRatio
                                  -0.0468120539 -0.006099874
                                                              0.00000000
## FamilySize
                                   0.0384310841 -0.077334490
                                                              0.0000000
## DerivationalEntropy
                                   0.0012151069 -0.038115460 0.00000000
## InflectionalEntropy
                                  -0.0181378441 -0.058944371
                                                              0.0000000
## NumberSimplexSynsets
                                   0.0134489904 -0.100928330
                                                              0.00000000
                                   0.0376041861 -0.071904776
## NumberComplexSynsets
                                                              0.0000000
## LengthInLetters
                                   0.0039704855 -0.043257488
                                                              0.0000000
## Ncount
                                   0.0055829196 0.055407177
                                                              0.0000000
## MeanBigramFrequency
                                  -0.0052830838 -0.027976665
                                                              0.00000000
## FrequencyInitialDiphone
                                  -0.0449301320 0.061402049
                                                              0.0000000
## ConspelV
                                   0.0076441826 -0.039875118
                                                              0.0000000
## ConspelN
                                   0.0111819135 -0.039228492
                                                              0.00000000
## ConphonV
                                   0.0136755967 -0.047470997
                                                              0.0000000
                                  -0.0036308471 -0.041792508
## ConphonN
                                                              0.0000000
## ConfriendsV
                                   0.0011836832 -0.031553502
                                                              0.00000000
## ConfriendsN
                                  -0.0003527338 -0.022235877
                                                              0.0000000
## ConffV
                                  -0.0021255605 -0.020829534
                                                              0.00000000
                                   0.0033209332 -0.026394194
## ConffN
                                                              0.0000000
## ConfbV
                                   0.0214897596 -0.030328088
                                                              0.00000000
## ConfbN
                                   0.0195250882 -0.026209252
                                                              0.00000000
## NounFrequency
                                   0.0256427127 -0.041126070
                                                              0.00000000
                                   0.0040031108 0.001412855
## VerbFrequency
                                                              0.0000000
## FrequencyInitialDiphoneWord
                                  -0.0172295618 -0.045748605
                                                              0.0000000
## FrequencyInitialDiphoneSyllable -0.0148709286 -0.048939592
                                                              0.0000000
## CorrectLexdec
                                  -0.0556713501 -0.132557125 -0.15404844
##
                                  WrittenFrequency
## RTlexdec
                                        0.05460812
## RTnaming
                                       -0.09012571
## Familiarity
                                        0.0000000
## WrittenFrequency
                                        0.0000000
## WrittenSpokenFrequencyRatio
                                        0.0000000
## FamilySize
                                        0.0000000
## DerivationalEntropy
                                        0.0000000
## InflectionalEntropy
                                        0.00000000
## NumberSimplexSynsets
                                        0.00000000
## NumberComplexSynsets
                                        0.0000000
## LengthInLetters
                                        0.0000000
## Ncount
                                        0.0000000
## MeanBigramFrequency
                                        0.0000000
## FrequencyInitialDiphone
                                        0.0000000
## ConspelV
                                        0.0000000
## ConspelN
                                        0.0000000
## ConphonV
                                        0.0000000
## ConphonN
                                        0.0000000
## ConfriendsV
                                        0.0000000
## ConfriendsN
                                        0.0000000
## ConffV
                                        0.0000000
                                        0.0000000
## ConffN
## ConfbV
                                        0.0000000
## ConfbN
                                        0.0000000
## NounFrequency
                                        0.0000000
```

```
## VerbFrequency
                                         0.0000000
## FrequencyInitialDiphoneWord
                                         0.0000000
## FrequencyInitialDiphoneSyllable
                                         0.0000000
  CorrectLexdec
                                        -0.10043247
                                   WrittenSpokenFrequencyRatio FamilySize
## RTlexdec
                                                  -0.046812054
                                                                0.03843108
## RTnaming
                                                  -0.006099874 -0.07733449
                                                   0.000000000
## Familiarity
                                                                0.00000000
## WrittenFrequency
                                                   0.000000000
                                                                0.0000000
## WrittenSpokenFrequencyRatio
                                                   0.00000000
                                                                0.00000000
## FamilySize
                                                   0.000000000
                                                                0.0000000
## DerivationalEntropy
                                                   0.00000000
                                                                0.0000000
## InflectionalEntropy
                                                   0.000000000
                                                                0.0000000
## NumberSimplexSynsets
                                                                0.0000000
                                                   0.000000000
## NumberComplexSynsets
                                                   0.00000000
                                                                0.00000000
## LengthInLetters
                                                   0.00000000
                                                                0.0000000
## Ncount
                                                   0.000000000
                                                                0.00000000
## MeanBigramFrequency
                                                   0.000000000
                                                                0.0000000
## FrequencyInitialDiphone
                                                   0.000000000
                                                                0.00000000
## ConspelV
                                                   0.000000000
                                                                0.00000000
## ConspelN
                                                   0.000000000
                                                                0.00000000
## ConphonV
                                                   0.000000000
                                                                0.00000000
## ConphonN
                                                   0.000000000
                                                                0.00000000
## ConfriendsV
                                                   0.000000000
                                                                0.0000000
## ConfriendsN
                                                   0.000000000
                                                                0.00000000
## ConffV
                                                   0.000000000
                                                                0.00000000
## ConffN
                                                   0.00000000
                                                                0.00000000
## ConfbV
                                                   0.000000000
                                                                0.0000000
## ConfbN
                                                   0.00000000
                                                                0.0000000
## NounFrequency
                                                   0.000000000
                                                                0.0000000
## VerbFrequency
                                                   0.000000000
                                                                0.0000000
## FrequencyInitialDiphoneWord
                                                   0.000000000
                                                                0.0000000
## FrequencyInitialDiphoneSyllable
                                                   0.000000000
                                                                0.00000000
## CorrectLexdec
                                                   0.035191538 -0.06226894
##
                                   DerivationalEntropy InflectionalEntropy
## RTlexdec
                                           0.001215107
                                                               -0.01813784
## RTnaming
                                          -0.038115460
                                                               -0.05894437
## Familiarity
                                           0.00000000
                                                                0.0000000
## WrittenFrequency
                                           0.00000000
                                                                0.0000000
## WrittenSpokenFrequencyRatio
                                                                0.0000000
                                           0.00000000
## FamilySize
                                                                0.0000000
                                           0.00000000
## DerivationalEntropy
                                           0.00000000
                                                                0.0000000
## InflectionalEntropy
                                           0.00000000
                                                                0.0000000
## NumberSimplexSynsets
                                           0.00000000
                                                                0.0000000
## NumberComplexSynsets
                                           0.00000000
                                                                0.0000000
## LengthInLetters
                                           0.00000000
                                                                0.0000000
## Ncount
                                           0.00000000
                                                                0.0000000
## MeanBigramFrequency
                                           0.00000000
                                                                0.0000000
## FrequencyInitialDiphone
                                           0.00000000
                                                                0.0000000
## ConspelV
                                           0.00000000
                                                                0.0000000
## ConspelN
                                           0.00000000
                                                                0.0000000
## ConphonV
                                           0.00000000
                                                                0.0000000
## ConphonN
                                           0.00000000
                                                                0.0000000
## ConfriendsV
                                           0.00000000
                                                                0.0000000
```

```
## ConfriendsN
                                           0.00000000
                                                                0.0000000
  ConffV
                                           0.00000000
                                                                0.0000000
## ConffN
                                           0.00000000
                                                                0.0000000
## ConfbV
                                           0.00000000
                                                                0.0000000
## ConfbN
                                           0.00000000
                                                                0.0000000
## NounFrequency
                                                                0.0000000
                                           0.00000000
## VerbFrequency
                                                                0.0000000
                                           0.00000000
## FrequencyInitialDiphoneWord
                                           0.00000000
                                                                0.0000000
  FrequencyInitialDiphoneSyllable
                                           0.00000000
                                                                0.0000000
## CorrectLexdec
                                          -0.030874694
                                                                -0.03345064
##
                                   NumberSimplexSynsets NumberComplexSynsets
## RTlexdec
                                             0.01344899
                                                                  0.03760419
                                            -0.10092833
                                                                 -0.07190478
## RTnaming
                                                                  0.0000000
## Familiarity
                                             0.00000000
## WrittenFrequency
                                             0.0000000
                                                                  0.00000000
## WrittenSpokenFrequencyRatio
                                             0.0000000
                                                                  0.0000000
## FamilySize
                                                                  0.00000000
                                             0.0000000
## DerivationalEntropy
                                             0.0000000
                                                                  0.0000000
## InflectionalEntropy
                                             0.0000000
                                                                  0.0000000
## NumberSimplexSynsets
                                             0.0000000
                                                                  0.0000000
## NumberComplexSynsets
                                             0.0000000
                                                                  0.0000000
## LengthInLetters
                                             0.00000000
                                                                  0.0000000
## Ncount
                                             0.0000000
                                                                  0.0000000
## MeanBigramFrequency
                                             0.0000000
                                                                  0.0000000
## FrequencyInitialDiphone
                                             0.0000000
                                                                  0.0000000
## ConspelV
                                             0.0000000
                                                                  0.0000000
## ConspelN
                                             0.0000000
                                                                  0.0000000
## ConphonV
                                                                  0.00000000
                                             0.0000000
## ConphonN
                                             0.0000000
                                                                  0.0000000
## ConfriendsV
                                             0.0000000
                                                                  0.0000000
## ConfriendsN
                                             0.00000000
                                                                  0.0000000
## ConffV
                                             0.0000000
                                                                  0.0000000
## ConffN
                                             0.0000000
                                                                  0.0000000
## ConfbV
                                             0.0000000
                                                                  0.00000000
## ConfbN
                                             0.0000000
                                                                  0.0000000
## NounFrequency
                                             0.0000000
                                                                  0.0000000
## VerbFrequency
                                             0.0000000
                                                                  0.0000000
## FrequencyInitialDiphoneWord
                                             0.0000000
                                                                  0.0000000
## FrequencyInitialDiphoneSyllable
                                             0.0000000
                                                                  0.0000000
## CorrectLexdec
                                                                 -0.06744087
                                            -0.05224059
##
                                   LengthInLetters
                                                         Ncount
## RTlexdec
                                       0.003970485
                                                    0.005582920
## RTnaming
                                      -0.043257488
                                                    0.055407177
## Familiarity
                                       0.00000000
                                                    0.00000000
## WrittenFrequency
                                       0.000000000
                                                    0.00000000
## WrittenSpokenFrequencyRatio
                                       0.000000000
                                                    0.00000000
## FamilySize
                                       0.000000000
                                                    0.00000000
## DerivationalEntropy
                                       0.000000000
                                                    0.00000000
## InflectionalEntropy
                                       0.000000000
                                                    0.00000000
## NumberSimplexSynsets
                                       0.000000000
                                                    0.00000000
## NumberComplexSynsets
                                       0.000000000
                                                    0.00000000
## LengthInLetters
                                       0.000000000
                                                    0.00000000
## Ncount
                                       0.000000000
                                                    0.00000000
## MeanBigramFrequency
                                       0.00000000 0.00000000
```

```
## FrequencyInitialDiphone
                                       0.00000000 0.00000000
## ConspelV
                                       0.00000000 0.00000000
## ConspelN
                                       0.000000000
                                                   0.00000000
## ConphonV
                                       0.00000000 0.00000000
## ConphonN
                                       0.00000000 0.00000000
## ConfriendsV
                                       0.00000000 0.00000000
## ConfriendsN
                                       0.00000000 0.00000000
## ConffV
                                       0.00000000 0.00000000
## ConffN
                                       0.000000000
                                                   0.000000000
## ConfbV
                                       0.00000000
                                                   0.00000000
## ConfbN
                                       0.000000000
                                                   0.000000000
## NounFrequency
                                       0.000000000
                                                   0.00000000
## VerbFrequency
                                       0.00000000
                                                   0.000000000
## FrequencyInitialDiphoneWord
                                                   0.000000000
                                       0.000000000
## FrequencyInitialDiphoneSyllable
                                       0.00000000 0.00000000
## CorrectLexdec
                                       0.004158661 -0.008460476
##
                                   MeanBigramFrequency
## RTlexdec
                                          -0.005283084
## RTnaming
                                          -0.027976665
## Familiarity
                                          0.00000000
## WrittenFrequency
                                           0.00000000
## WrittenSpokenFrequencyRatio
                                           0.00000000
## FamilySize
                                          0.00000000
## DerivationalEntropy
                                           0.00000000
## InflectionalEntropy
                                          0.00000000
## NumberSimplexSynsets
                                           0.00000000
## NumberComplexSynsets
                                           0.00000000
## LengthInLetters
                                           0.00000000
## Ncount
                                          0.00000000
## MeanBigramFrequency
                                           0.00000000
## FrequencyInitialDiphone
                                          0.00000000
## ConspelV
                                           0.00000000
## ConspelN
                                           0.00000000
## ConphonV
                                           0.00000000
## ConphonN
                                           0.00000000
## ConfriendsV
                                          0.00000000
## ConfriendsN
                                          0.00000000
## ConffV
                                          0.00000000
## ConffN
                                           0.00000000
## ConfbV
                                           0.00000000
## ConfbN
                                           0.00000000
## NounFrequency
                                           0.00000000
## VerbFrequency
                                           0.00000000
## FrequencyInitialDiphoneWord
                                           0.00000000
## FrequencyInitialDiphoneSyllable
                                           0.00000000
## CorrectLexdec
                                          -0.007369094
##
                                   FrequencyInitialDiphone
                                                               ConspelV
                                                            0.007644183
## RTlexdec
                                               -0.04493013
## RTnaming
                                                0.06140205 -0.039875118
## Familiarity
                                                0.00000000
                                                            0.00000000
## WrittenFrequency
                                                0.00000000
                                                            0.00000000
## WrittenSpokenFrequencyRatio
                                                0.00000000 0.000000000
## FamilySize
                                                0.00000000 0.000000000
## DerivationalEntropy
                                                0.00000000 0.000000000
```

```
## InflectionalEntropy
                                                0.00000000
                                                            0.000000000
## NumberSimplexSynsets
                                                            0.00000000
                                                0.00000000
## NumberComplexSynsets
                                                0.00000000
                                                            0.00000000
## LengthInLetters
                                                0.00000000
                                                            0.00000000
## Ncount
                                                0.00000000
                                                            0.00000000
## MeanBigramFrequency
                                                0.00000000
                                                            0.00000000
## FrequencyInitialDiphone
                                                0.00000000
                                                            0.00000000
  ConspelV
                                                0.00000000
                                                            0.00000000
  ConspelN
                                                0.00000000
                                                            0.00000000
  ConphonV
                                                0.00000000
                                                            0.00000000
  ConphonN
                                                0.00000000
                                                            0.000000000
  ConfriendsV
                                                0.00000000
                                                            0.00000000
  ConfriendsN
                                                0.00000000
                                                            0.00000000
                                                            0.00000000
## ConffV
                                                0.00000000
## ConffN
                                                            0.00000000
                                                0.00000000
## ConfbV
                                                0.00000000
                                                            0.00000000
## ConfbN
                                                0.00000000
                                                            0.00000000
## NounFrequency
                                                0.00000000
                                                            0.000000000
  VerbFrequency
                                                0.00000000
                                                            0.00000000
## FrequencyInitialDiphoneWord
                                                0.00000000
                                                            0.00000000
  FrequencyInitialDiphoneSyllable
                                                0.00000000
                                                            0.00000000
  CorrectLexdec
                                               -0.02610668
                                                            0.021457088
##
                                       ConspelN
                                                   ConphonV
                                                                ConphonN
## RTlexdec
                                    0.011181913
                                                 0.01367560 -0.003630847
## RTnaming
                                   -0.039228492 -0.04747100 -0.041792508
## Familiarity
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
  WrittenFrequency
                                                             0.00000000
                                    0.000000000
                                                 0.00000000
## WrittenSpokenFrequencyRatio
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
## FamilySize
                                    0.00000000
                                                              0.00000000
                                                 0.00000000
## DerivationalEntropy
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
## InflectionalEntropy
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
  NumberSimplexSynsets
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
  NumberComplexSynsets
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
## LengthInLetters
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
  Ncount
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
## MeanBigramFrequency
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
## FrequencyInitialDiphone
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
  ConspelV
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
                                                              0.00000000
  ConspelN
                                                 0.00000000
##
                                    0.00000000
  ConphonV
##
                                    0.000000000
                                                 0.00000000
                                                              0.00000000
  ConphonN
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
  ConfriendsV
                                    0.000000000
                                                 0.00000000
                                                             0.00000000
  ConfriendsN
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
## ConffV
                                    0.000000000
                                                 0.00000000
                                                             0.00000000
## ConffN
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
## ConfbV
                                                              0.00000000
                                    0.000000000
                                                 0.00000000
## ConfbN
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
## NounFrequency
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
## VerbFrequency
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
## FrequencyInitialDiphoneWord
                                    0.00000000
                                                 0.00000000
                                                              0.00000000
## FrequencyInitialDiphoneSyllable
                                                              0.00000000
                                    0.00000000
                                                 0.00000000
## CorrectLexdec
                                    0.009609034
                                                 0.00554454
                                                             0.021666978
##
                                    ConfriendsV
                                                  ConfriendsN
                                                                     ConffV
## RTlexdec
                                    0.001183683 -0.0003527338 -0.002125561
```

```
## RTnaming
                                   -0.031553502 -0.0222358766 -0.020829534
## Familiarity
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
  WrittenFrequency
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
  WrittenSpokenFrequencyRatio
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
  FamilySize
                                    0.00000000
                                                 0.0000000000
                                                               0.00000000
## DerivationalEntropy
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
  InflectionalEntropy
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
  NumberSimplexSynsets
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
  NumberComplexSynsets
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
  LengthInLetters
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
  Ncount
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
  MeanBigramFrequency
                                    0.000000000
                                                 0.000000000
                                                               0.00000000
   FrequencyInitialDiphone
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
                                                 0.000000000
   ConspelV
                                    0.00000000
                                                               0.00000000
  ConspelN
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
  ConphonV
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
  ConphonN
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
   ConfriendsV
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
  ConfriendsN
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
## ConffV
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
## ConffN
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
## ConfbV
                                                 0.000000000
                                    0.00000000
                                                               0.00000000
## ConfbN
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
## NounFrequency
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
  VerbFrequency
                                    0.000000000
                                                 0.000000000
                                                               0.00000000
  FrequencyInitialDiphoneWord
                                    0.00000000
                                                 0.000000000
                                                               0.00000000
  FrequencyInitialDiphoneSyllable
                                                               0.00000000
                                    0.00000000
                                                 0.000000000
##
  CorrectLexdec
                                    0.022808229
                                                 0.0125375157
                                                               0.010567201
##
                                         ConffN
                                                     ConfbV
                                                                  ConfbN
## RTlexdec
                                    0.003320933
                                                 0.02148976
                                                             0.019525088
  RTnaming
                                   -0.026394194
                                                -0.03032809 -0.026209252
  Familiarity
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
   WrittenFrequency
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
  WrittenSpokenFrequencyRatio
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
## FamilySize
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
## DerivationalEntropy
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
## InflectionalEntropy
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
## NumberSimplexSynsets
                                                 0.00000000
                                                             0.00000000
                                    0.00000000
  NumberComplexSynsets
                                                 0.00000000
                                                             0.00000000
                                    0.00000000
  LengthInLetters
##
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
  Ncount
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
  MeanBigramFrequency
                                    0.00000000
                                                 0.00000000
                                                             0.000000000
  FrequencyInitialDiphone
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
  ConspelV
                                    0.00000000
                                                 0.0000000
                                                             0.00000000
  ConspelN
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
  ConphonV
                                    0.000000000
                                                 0.00000000
                                                             0.00000000
  ConphonN
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
   ConfriendsV
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
                                                             0.00000000
  ConfriendsN
                                    0.00000000
                                                 0.00000000
## ConffV
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
## ConffN
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
## ConfbV
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
## ConfbN
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
## NounFrequency
                                    0.00000000
                                                 0.00000000
                                                             0.00000000
```

```
## VerbFrequency
                                    0.000000000
                                                 0.00000000
                                                             0.00000000
## FrequencyInitialDiphoneWord
                                    0.000000000
                                                 0.00000000
                                                             0.000000000
## FrequencyInitialDiphoneSyllable
                                    0.000000000
                                                 0.00000000
                                                              0.00000000
  CorrectLexdec
                                                 0.01202029
                                                             0.003904468
                                    0.010458407
                                   NounFrequency VerbFrequency
## RTlexdec
                                                    0.004003111
                                      0.02564271
## RTnaming
                                     -0.04112607
                                                    0.001412855
## Familiarity
                                      0.00000000
                                                    0.00000000
## WrittenFrequency
                                      0.00000000
                                                    0.00000000
## WrittenSpokenFrequencyRatio
                                      0.00000000
                                                    0.00000000
## FamilySize
                                      0.00000000
                                                    0.00000000
## DerivationalEntropy
                                      0.00000000
                                                    0.00000000
## InflectionalEntropy
                                      0.00000000
                                                    0.00000000
                                                    0.00000000
## NumberSimplexSynsets
                                      0.00000000
## NumberComplexSynsets
                                      0.00000000
                                                    0.00000000
## LengthInLetters
                                      0.0000000
                                                    0.00000000
## Ncount
                                      0.00000000
                                                    0.00000000
## MeanBigramFrequency
                                      0.00000000
                                                    0.00000000
## FrequencyInitialDiphone
                                      0.00000000
                                                    0.00000000
## ConspelV
                                      0.00000000
                                                    0.00000000
## ConspelN
                                      0.00000000
                                                    0.00000000
## ConphonV
                                                    0.00000000
                                      0.00000000
## ConphonN
                                      0.00000000
                                                    0.00000000
## ConfriendsV
                                      0.00000000
                                                    0.00000000
## ConfriendsN
                                      0.00000000
                                                    0.00000000
## ConffV
                                      0.00000000
                                                    0.00000000
## ConffN
                                      0.00000000
                                                    0.00000000
## ConfbV
                                      0.00000000
                                                    0.00000000
## ConfbN
                                      0.00000000
                                                    0.00000000
## NounFrequency
                                      0.00000000
                                                    0.00000000
## VerbFrequency
                                      0.00000000
                                                    0.00000000
## FrequencyInitialDiphoneWord
                                      0.0000000
                                                    0.00000000
## FrequencyInitialDiphoneSyllable
                                      0.0000000
                                                    0.00000000
## CorrectLexdec
                                      -0.03054532
                                                   -0.017706399
                                   FrequencyInitialDiphoneWord
##
## RTlexdec
                                                   -0.017229562
## RTnaming
                                                   -0.045748605
## Familiarity
                                                    0.00000000
## WrittenFrequency
                                                    0.00000000
## WrittenSpokenFrequencyRatio
                                                    0.00000000
## FamilySize
                                                    0.00000000
## DerivationalEntropy
                                                    0.00000000
## InflectionalEntropy
                                                    0.00000000
  NumberSimplexSynsets
                                                    0.00000000
## NumberComplexSynsets
                                                    0.00000000
## LengthInLetters
                                                    0.00000000
## Ncount
                                                    0.00000000
## MeanBigramFrequency
                                                    0.00000000
## FrequencyInitialDiphone
                                                    0.00000000
## ConspelV
                                                    0.00000000
## ConspelN
                                                    0.00000000
## ConphonV
                                                    0.00000000
## ConphonN
                                                    0.00000000
## ConfriendsV
                                                    0.00000000
```

```
0.00000000
## ConfriendsN
## ConffV
                                                    0.00000000
                                                    0.00000000
## ConffN
## ConfbV
                                                    0.00000000
## ConfbN
                                                    0.00000000
## NounFrequency
                                                    0.00000000
## VerbFrequency
                                                    0.00000000
## FrequencyInitialDiphoneWord
                                                    0.00000000
## FrequencyInitialDiphoneSyllable
                                                    0.00000000
## CorrectLexdec
                                                    0.001425028
##
                                   FrequencyInitialDiphoneSyllable
## RTlexdec
                                                       -0.014870929
                                                       -0.048939592
## RTnaming
                                                        0.00000000
## Familiarity
## WrittenFrequency
                                                        0.00000000
## WrittenSpokenFrequencyRatio
                                                        0.00000000
## FamilySize
                                                        0.00000000
## DerivationalEntropy
                                                        0.00000000
## InflectionalEntropy
                                                        0.00000000
## NumberSimplexSynsets
                                                        0.00000000
## NumberComplexSynsets
                                                        0.00000000
## LengthInLetters
                                                        0.00000000
## Ncount
                                                        0.00000000
## MeanBigramFrequency
                                                        0.00000000
## FrequencyInitialDiphone
                                                        0.00000000
## ConspelV
                                                        0.00000000
## ConspelN
                                                        0.00000000
## ConphonV
                                                        0.00000000
## ConphonN
                                                        0.00000000
## ConfriendsV
                                                        0.00000000
## ConfriendsN
                                                        0.00000000
## ConffV
                                                        0.00000000
## ConffN
                                                        0.00000000
## ConfbV
                                                        0.00000000
## ConfbN
                                                        0.00000000
## NounFrequency
                                                        0.00000000
## VerbFrequency
                                                        0.00000000
## FrequencyInitialDiphoneWord
                                                        0.00000000
## FrequencyInitialDiphoneSyllable
                                                        0.00000000
## CorrectLexdec
                                                        0.001633701
##
                                   CorrectLexdec
## RTlexdec
                                     -0.055671350
## RTnaming
                                     -0.132557125
                                    -0.154048437
## Familiarity
## WrittenFrequency
                                     -0.100432471
## WrittenSpokenFrequencyRatio
                                     0.035191538
## FamilySize
                                     -0.062268940
## DerivationalEntropy
                                    -0.030874694
## InflectionalEntropy
                                    -0.033450636
## NumberSimplexSynsets
                                     -0.052240594
## NumberComplexSynsets
                                    -0.067440872
## LengthInLetters
                                     0.004158661
## Ncount
                                    -0.008460476
## MeanBigramFrequency
                                    -0.007369094
```

##	FrequencyInitialDiphone	-0.026106677
##	ConspelV	0.021457088
##	ConspelN	0.009609034
##	ConphonV	0.005544540
##	ConphonN	0.021666978
##	ConfriendsV	0.022808229
##	ConfriendsN	0.012537516
##	ConffV	0.010567201
##	ConffN	0.010458407
##	ConfbV	0.012020288
##	ConfbN	0.003904468
##	NounFrequency	-0.030545323
##	VerbFrequency	-0.017706399
##	FrequencyInitialDiphoneWord	0.001425028
##	${\tt FrequencyInitialDiphoneSyllable}$	0.001633701
##	CorrectLexdec	0.000000000