Package ‘BaM’

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Title Functions and datasets for books by Jeff Gill.

Description Books is ``Bayesian Methods: A Social and Behavioral
Sciences Approach, Second Edition published by CRC Press, 2007''

Depends R (>= 1.4.1), bayesm, coda, MASS, stats, mice, survival,foreign,nnet

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R topics documented:

`actuarial` *actuarial*

Description

Actuarial data.

Usage

```
data(actuarial)
```

Source

Scollnik, D. P. M. (2001).

Actuarial Modeling with MCMC and BUGS. *North American Actuarial Journal* 5, 95-124.

---

afghan.deaths *afghan.deaths*

Description

NATO fatalities in Afghanistan. See page 365

Usage

```
data(afghan.deaths)
```

---

africa *africa*

Description

African Coups Data, pp. 551-552.

Usage

```
data(africa)
```

Source

Bratton, M. and Van De Walle, N. (1994). Neopatrimonial Regimes and Political Transitions in Africa. *World Politics* 46, 453-489.

`bcp` *bcp*

Description

Implementation of bcp function, see pages 362-363.

Usage

```
bcp(theta.matrix,y,a,b,g,d)
```

Arguments

`theta.matrix`	theta.matrix
`y`	Counts of Coal Mining Disasters
`a`	Alpha Value in the lambda Prior
`b`	Beta Value in the lambda Prior
`g`	Gamma Value in the phi Prior
`d`	Delta Value in the phi Prior

`biv.exp` *biv.exp*

Description

Simple Metropolis algorithm demonstration using a bivariate exponential target from Chapter 1 (pages 33-37).

Usage

```
biv.exp(x,y,L1,L2,L)
```

Arguments

`x`	starting point for the x vector
`y`	starting point for the y vector
`L1`	event intensity for the x dimension
`L2`	event intensity fot the y dimension
`L`	shared event intensity

biv.norm.post *biv.norm.post*

Description

A function to calculate posterior quantities of the bivariate normal. See pages 79-86

Usage

```
biv.norm.post(data.mat,alpha,beta,m,n0=5)
```

Arguments

data.mat	A matrix with two columns of normally distributed data
alpha	Wishart first (scalar) parameter
beta	Wishart second (matrix) parameter
m	prior mean for mu
n0	prior confidence parameter

Examples

```
## Not run:
{
data.n10 <- rmultinorm(10, c(1,3), matrix(c(1.0,0.7,0.7,3.0),2,2))
rep.mat <- NULL; reps <- 1000
for (i in 1:reps)
rep.mat <- rbind(rep.mat, biv.norm.post(data.n10,3, matrix(c(10,5,5,10),2,2),c(2,2)))
round(normal.posterior.summary(rep.mat),3)

rwishart <- function(df, p = nrow(SqrtSigma), SqrtSigma = diag(p))  {
   if((Ident <- missing(SqrtSigma)) && missing(p)) stop("either p or SqrtSigma must be specified")
    Z <- matrix(0, p, p)
    diag(Z) <- sqrt(rchisq(p, df:(df-p+1)))
    if(p > 1) {
        pseq <- 1:(p-1)
        Z[rep(p*pseq, pseq) + unlist(lapply(pseq, seq))] <- rnorm(p*(p-1)/2)
    }
    if(Ident) crossprod(Z)
    else crossprod(Z

}
if(Ident) crossprod(Z)
else crossprod(Z)
if(Ident) crossprod(Z)
else crossprod(Z)
}

## End(Not run)
```

`cabinet.duration` *cabinet.duration*

Description

Cabinet duration (constitutional inter-election period) for eleven Western European countries from 1945 to 1980..

Usage

```
cabinet.duration
```

Format

A data frame with 115 observations on the following 2 variables.

A data frame with 115 observations

References

Browne, E. C., Frendreis, J. P., and Gleiber, D. W. (1986). The Process of Cabinet Dissolution: An Exponential Model of Duration and Stability in Western Democracies. *American Journal of Political Science* 30, 628-650.

`cand.gen` *cand.gen*

Description

Simple Metropolis algorithm demonstration using a bivariate exponential target from Chapter 1 (pages 33-37).

Usage

```
cand.gen(max.x,max.y)
```

Arguments

`max.x`	Maximum Value of X Random Variable
`max.y`	Maximum Value of Y Random Variable

`child` *child*

Description

Child Support Collection Policies. See page 128

Usage

`child`

Format

A data frame with single column.

SCCOLL Change in Child Support collections

ACES Chapters per Population

INSTABIL Policy Instability

AAMBIG Policy Ambiguity

CSTAFF Change in Agency Staffing

ARD State Divorce Rate

ASLACK Organizational Slack

AEXPEND State Level Expenditures

Source

Meier, K.J. and Keisler, L.R. (1996). Public Administration as a Science of the Artificial: A Method for Prescription

Public Administration Review 56, 459-466.

`china.wars` *china.wars*

Description

Modeling code for the example of ancient Chinese wars. See page 125-127.

coal.mining.disasters *coal.mining.disasters*

Description

British Coal Mining Disasters.

Usage

```
coal.mining.disasters
```

Source

Lynn, R. and Vanhanen, T. (2001). National IQ and Economic Development. *Mankind Quarterly* LXI, 415-437.

Examples

```
## Not run:
{
#data(iq)
    n <- length(iq[,1])
    t.iq <- (iq[,1]-mean(iq[,1]))/(sd(iq[,1])/sqrt(n))
    r.t <- (rt(100000, n-1)*(sd(iq)/sqrt(n))) + mean(iq)
    quantile(r.t,c(0.01,0.10,0.25,0.5,0.75,0.90,0.99))
    r.sigma.sq <- 1/rgamma(100000,shape=(n-2)/2, rate=var(iq[,1])*(n-1)/2)
    quantile(sqrt(r.sigma.sq), c(0.01,0.10,0.25,0.5,0.75,0.90,0.99))

}

## End(Not run)
```

contracep *contracep*

Description

Contraception Data by country. See page 416

Usage

```
data(contracep)
```

Source

Wong, G. Y. and Mason, W. M. (1985). The Hierarchical Logistic Regression Model for Multilevel Analysis. *Journal of the American Statistical Association* 80, 513-524.

DA_cwp *DA_cwp*

Description

Da_cwp

Usage

```
DA_cwp
```

dmultinorm *dmultinorm*

Description

dmultinorm function, see page 393.

Usage

```
dmultinorm(xval,yval,mu.vector,sigma.matrix)
```

Arguments

`xval`	Vector of X Random Variables
`yval`	Vector of Y Random Variables
`mu.vector`	Mean Vector
`sigma.matrix`	Matrix of Standard Deviations

dp *dp*

Description

Death Penalty Data, See Page 189.

Usage

```
data(dp)
```

Source

Norrander, B. (2000). The Multi-Layered Impact of Public Opinion on Capital Punishment Implementation in the American States. *Political Research Quarterly* 53, 771-793.

durations.hpd *durations.hpd*

Description

Simple HPD calculator from Chapter 2 (page 51).

Usage

```
simple.hpd(support,fn.eval,start,stop,target=0.90,tol=0.01)
```

Arguments

`support`	x-axis values
`fn.eval`	function values at x-axis points
`start`	starting point in the vectors
`stop`	stoppng point in the vectors
`target`	Desired X Level
`tol`	Tolerance for round-off

Examples

```
## Not run:
{
data(cabinet.duration)
  ruler <- seq(0.45,0.75,length=10000)
  g.vals <- round(dgamma(ruler,shape=sum(N), rate=sum(N*dur)),2)
  start.point  <- 1000; stop.point <- length(g.vals)
  simple.hpd(ruler,g.vals,start.point,stop.point)
}

## End(Not run)
```

elicspend *elicspend*

Description

Campaign spending data. See page 164

Usage

```
data(elicspend)
```

`ethnic.immigration` *ethnic.immigration*

Description

Ethnic Immigration data. see page 280.

Usage

```
data(ethnic.immigration)
```

Source

Peach, C. (1997).

Postwar Migration to Europe: Reflux, Influx, Refuge. *Social Science Quarterly* 78, 269-283.

`executions` *executions*

Description

Execution data.

Usage

```
data(executions)
```

`experts` *Campaign fundraisign elicitations*

Description

Fabricated data on campaign fundraising elicitations. See page 164

Usage

```
experts(q1,q2,q3)
```

Arguments

`q1`	the 0.1 quantile
`q2`	the 0.5 quantile
`q3`	the 0.9 quantile

References

None

`expo.gibbs` *expo.gibbs*

Description

Simple Gibbs sampler demonstration on conditional exponentials from Chapter 1 (pages 30-33).

Usage

```
expo.gibbs(B,k,m)
```

Arguments

`B`	an upper bound
`k`	length of the subchains
`m`	number of iterations

`expo.metrop` *expo.metrop*

Description

Simple Metropolis algorithm demonstration using a bivariate exponential target from Chapter 1 (pages 33-37).

Usage

```
expo.metrop(m,x,y,L1,L2,L,B)
```

Arguments

`m`	number of iterations
`x`	starting point for the x vector
`y`	starting point for the y vector
`L1`	event intensity for the x dimension
`L2`	event intensity fot the y dimension
`L`	shared event intensity
`B`	upper bound

`fdr` *fdr*

Description

FDR election data. See page 562

Usage

```
data(fdr)
```

`hanjack` *hanjack*

Description

1964 presidential election data. See page 245

Usage

```
hanjack(N,F,L,W,K,IND,DEM,WR,WD,SD)
```

Arguments

`N`	number of cases in the group
`F`	Observed cell proportion voting for Johnson
`L`	log-ratio of this proportion, see p. 246
`W`	collects the inverse of the diagonal of the matrix for the group-weighting from $[N_iP_i(1-P_i)]$
`K`	constant
`IND`	indifference to the election
`DEM`	stated preference for Democratic party issues
`WR`	Weak Republican
`WD`	Weak Democrat
`SD`	Strong Democrat

References

Hanushek, E. A. and Jackson, J. E. (1977). *Statistical Methods for Social Scientists* San Diego, Academic Press

`hit.run` *hit.run*

Description

Implementation of hit.run algorithm, p. 377.

Usage

```
hit.run(theta.mat,reps,I.mat)
```

Arguments

`theta.mat`	theta.mat
`reps`	reps
`I.mat`	I.mat

Examples

```
## Not run:
#code to implement graph on p. 378, see page 393.

num.sims <- 10000
Sig.mat <- matrix(c(1.0,0.95,0.95,1.0),2,2)
walks<-rbind(c(-3,-3),matrix(NA,nrow=(num.sims-1),ncol=2))
walks <- hit.run(walks,num.sims,Sig.mat)
z.grid <- outer(seq(-3,3,length=100),seq(-3,3,length=100),
FUN=dmultinorm,c(0,0),Sig.mat)
contour(seq(-3,3,length=100),seq(-3,3,length=100),z.grid,
levels=c(0.05,0.1,0.2))
points(walks[5001:num.sims,],pch=".")



## End(Not run)
```

`iq` *iq data frame*

Description

IQ data for 80 countries. See pages 93-95

Usage

```
data(iq)
```

Source

Lynn, R. and Vanhanen, T. (2001). National IQ and Economic Development. *Mankind Quarterly* LXI, 415-437.

Examples

```
## Not run:
{
n <- length(iq[,1])
t.iq <- (iq[,1]-mean(iq[,1]))/(sd(iq[,1])/sqrt(n))
r.t <- (rt(100000, n-1)*(sd(iq)/sqrt(n))) + mean(iq)
quantile(r.t,c(0.01,0.10,0.25,0.5,0.75,0.90,0.99))
r.sigma.sq <- 1/rgamma(100000,shape=(n-2)/2, rate=var(iq[,1])*(n-1)/2)
quantile(sqrt(r.sigma.sq), c(0.01,0.10,0.25,0.5,0.75,0.90,0.99))
}

## End(Not run)
```

`italy.parties` *italy.parties*

Description

Italian Parties Data. See page 389

Usage

```
data(italy.parties)
```

`marriage.rates` *marriage.rates*

Description

Italian Marriage Rates. See page 409

Usage

```
data(marriage.rates)
```

Source

Columbo, B. (1952).

Preliminary Analysis of Recent Demographic Trends in Italy. *Population Index* 18, 265-279.

metropolis *metropolis*

Description

Implementation of metropolis function, p. 375.

Usage

```
metropolis(theta.matrix,reps,I.mat)
```

Arguments

theta.matrix	theta.matrix
reps	reps
I.mat	I.mat

mhplot.walk.MH *mhplot.walk.MH*

Description

Code used for figure 9.4, see page 392..

Usage

```
## S3 method for class 'MH'
 mhplot.walk( walk.mat )
```

Arguments

walk.mat	walk.mat

`military` *military*

Description

A function to calculate posterior quantities of the bivariate normal. See pages 79-86

Usage

```
data(military)
```

Source

Faber, J. (1989) *Annual Data on Nine Economic and Military Characteristics of 78 Nations (SIRE NATDAT), 1948-1983.* Ann Arbor: Inter-University Consortium for Political and Social Research and Amsterdam, and Amsterdam, the Netherlands: Europa Institute, Steinmetz Archive

`nc.sub.dat` *nc.sub.dat*

Description

North Carolina county level health data from the 2000 U.S. census and North Carolina public records.

Usage

```
nc.sub.dat
```

Format

Substantiated.Abuse Substantiated.Abuse:within family documented abuse for the county

Percent.Poverty percent within the county living in poverty, U.S. definition

Total.Population Total Population/1000

References

United States Census , North Carolina Division of Public Health, Women's and Children's Health Section in Conjunction with State Center for Health Statistics.

`norm.known.var` *norm.known.var*

Description

A function to calculate posterior quanties for a normal-normal model with known variance (pages 74-77). It produces the posterior mean, variance, and 95% credible interval for user-specified prior.

Usage

```
n.post1(data.vec,pop.var,prior.mean,prior.var)
```

Arguments

`data.vec`	a vector of assumed normally distributed data
`pop.var`	known population variance
`prior.mean`	mean of specified prior distribution for mu
`prior.var`	variance of specified prior distribution for mu

`normal.posterior.summary` *normal posterior summary*

Description

A function to calculate posterior quantities of bivariate normals. See pages 79-86.

Usage

```
normal.posterior.summary(reps)
```

Arguments

`reps`	a matrix where the columns are defined as in the output of biv.norm.post:

`opic` *opic*

Description

private capital investment data.See Page 390.

Usage

```
data(opic)
```

pbc.vote *pbc.vote*

Description

Precinct level data for Palm Beach County, Florida from the 2000 U.S. Presidential election

Usage

```
pbc.vote
```

Format

A data frame where each case (row) is one of 516 precincts. The column variables are defined by:

avgage Average age of precinct voters

technology Voting Technology

badballots combined overvotes and undervotes

size Total ballots cast

Republican Republican

npa No party affiliation

white White

bla Black

his Hispanic

int Independent party

new Registered to vote after June 30, 2000

Source

Conell, C. and Cohn, S. (1995). Learning from Other People's Actions: Environmental Variation and Diffusion in French Coal Mining Strikes, 1890-1935 *American Journal of Sociology* LI, American Journal of Sociology.

Examples

```
## Not run:
{
        n <- length(strikes)
        r <- 1
        s.y <- sum(strikes)

        p.posterior.1000000 <- rbeta(1000000,n*r,s.y+0.5)
        length(p.posterior.1000000[p.posterior.1000000<0.05])/1000000

        par(mar=c(3,3,3,3))
```

```
        ruler <- seq(0,1,length=1000)
        beta.vals <- dbeta(ruler,n*r,s.y+0.5)
        plot(ruler[1:200],beta.vals[1:200],yaxt="n",main="",ylab="",type="l")
        mtext(side=2,line=1,"Density")
        for (i in 1:length(ruler))
        if (ruler[i] < 0.05)
        segments(ruler[i],0,ruler[i],beta.vals[i])
        segments(0.04,3,0.02,12.2)
        text(0.02,12.8,"0.171")
}

## End(Not run)
```

`recidivism` *recidivism*

Description

Recidivism Rates. See page 207

Usage

```
data(recidivism)
```

`retail.sales` *retail.sales*

Description

Retail Sales Data. See page 402

Usage

```
data(retail.sales)
```

`rmultnorm` *rmultnorm*

Description

a function to generate random multivariate Gaussians

Usage

```
rmultnorm(n,mu,vmat,tol=1e-07)
```

Arguments

`n`	n
`mu`	mu
`vmat`	vmat
`tol`	tol

`romney` *romney*

Description

Analysis of cultural consensus data using binomial likelihood and beta prior.

Usage

```
romney()
```

`sir` *sir*

Description

Implementation of Rubin's Sir, see pages 338-341.

Usage

```
sir(data.mat,theta.vector,theta.mat,M,m,tol=1e-06,ll.func,df=0)
```

Arguments

data.mat	A matrix with two columns of normally distributed data
theta.vector	The initial coefficient estimates
theta.mat	The initial vc matrix
M	The number of draws
m	The desired number of accepted values
tol	The rounding/truncing tolerance
ll.func	loglike function for empirical posterior
df	The df for using the t distribution as the approx distribution

Examples

```
## Not run:


sir <- function(data.mat,theta.vector,theta.mat,M,m,tol=1e-06,ll.func,df=0)  {
    importance.ratio <- rep(NA,M)
    rand.draw    <- rmultnorm(M,theta.vector,theta.mat,tol = 1e-04)
    if (df > 0)
        rand.draw <- rand.draw/(sqrt(rchisq(M,df)/df))

    empirical.draw.vector <- apply(rand.draw,1,ll.func,data.mat)
    if (sum(is.na(empirical.draw.vector)) == 0)  {
print("SIR: finished generating from posterior density function")
     print(summary(empirical.draw.vector))
    }
    else {
print(paste("SIR: found",sum(is.na(empirical.draw.vector)),
"NA(s) in generating from posterior density function, quiting"))
return()
    }

    if (df == 0)  {
        normal.draw.vector <- apply(rand.draw,1,normal.posterior.ll,data.mat)
    }
    else {
theta.mat <- ((df-2)/(df))*theta.mat
        normal.draw.vector <- apply(rand.draw,1,t.posterior.ll,data.mat,df)
    }
    if (sum(is.na(normal.draw.vector)) == 0)  {
print("SIR: finished generating from approximation distribution")
     print(summary(normal.draw.vector))
    }
    else {
print(paste("SIR: found",sum(is.na(normal.draw.vector)),
"NA(s) in generating from approximation distribution, quiting"))
return()
    }
```

```
    importance.ratio <- exp(empirical.draw.vector - normal.draw.vector)
    importance.ratio[is.finite=F] <- 0
    importance.ratio <- importance.ratio/max(importance.ratio)
    if (sum(is.na(importance.ratio)) == 0)  {
print("SIR: finished calculating importance weights")
     print(summary(importance.ratio))
    }
    else  {
print(paste("SIR: found",sum(is.na(importance.ratio)),
"NA(s) in calculating importance weights, quiting"))
return()
    }

    accepted.mat <- rand.draw[1:2,]
    while(nrow(accepted.mat) < m+2)  {
rand.unif <- runif(length(importance.ratio))
accepted.loc <- seq(along=importance.ratio)[(rand.unif-tol) <= importance.ratio]
rejected.loc <- seq(along=importance.ratio)[(rand.unif-tol) > importance.ratio]
accepted.mat <- rbind(accepted.mat,rand.draw[accepted.loc,])
rand.draw <- rand.draw[rejected.loc,]
importance.ratio <- importance.ratio[rejected.loc]
print(paste("SIR: cycle complete,",(nrow(accepted.mat)-2),"now accepted"))
    }
    accepted.mat[3:nrow(accepted.mat),]
}

# The following are log likelihood functions that can be plugged into the sir
function above.

logit.posterior.ll <- function(theta.vector,X)  {
    Y <- X[,1]
    X[,1] <- rep(1,nrow(X))
    sum( -log(1+exp(-X
         -log(1+exp(X
}

normal.posterior.ll <- function(coef.vector,X)  {
    dimnames(coef.vector) <- NULL
    Y <- X[,1]
    X[,1] <- rep(1,nrow(X))
    e <- Y - X
    sigma <- var(e)
    return(-nrow(X)*(1/2)*log(2*pi)
           -nrow(X)*(1/2)*log(sigma)
           -(1/(2*sigma))*(t(Y-X
                             (Y-X
}

t.posterior.ll <- function(coef.vector,X,df)  {
    Y <- X[,1]
    X[,1] <- rep(1,nrow(X))
    e <- Y - X
    sigma <- var(e)*(df-2)/(df)
```

```
    d <- length(coef.vector)
    return(log(gamma((df+d)/2)) - log(gamma(df/2))
                                - (d/2)*log(df)
        -(d/2)*log(pi) - 0.5*(log(sigma))
        -((df+d)/2*sigma)*log(1+(1/df)*
                          (t(Y-X
                            (Y-X
}


probit.posterior.ll <- function (theta.vector,X,tol = 1e-05)  {
    Y <- X[,1]
    X[,1] <- rep(1,nrow(X))
    Xb <- X
    h <- pnorm(Xb)
    h[h<tol] <- tol
    g <- 1-pnorm(Xb)
    g[g<tol] <- tol
    sum( log(h)*Y + log(g)*(1-Y) )
}


## End(Not run)
```

strikes *strikes*

Description

Counts of French coal mining strikes. See page 235-238

Usage

```
strikes
```

Format

A data frame with single column.

Source

Conell, C. and Cohn, S. (1995). Learning from Other People's Actions: Environmental Variation and Diffusion in French Coal Mining Strikes, 1890-1935 *American Journal of Sociology* LI, American Journal of Sociology.

Examples

```
## Not run:
{
n <- length(strikes)
r <- 1
s.y <- sum(strikes)

p.posterior.1000000 <- rbeta(1000000,n*r,s.y+0.5)
length(p.posterior.1000000[p.posterior.1000000<0.05])/1000000

par(mar=c(3,3,3,3))
ruler <- seq(0,1,length=1000)
beta.vals <- dbeta(ruler,n*r,s.y+0.5)
plot(ruler[1:200],beta.vals[1:200],yaxt="n",main="",ylab="",type="l")
mtext(side=2,line=1,"Density")
for (i in 1:length(ruler))
    if (ruler[i] < 0.05)
        segments(ruler[i],0,ruler[i],beta.vals[i])
segments(0.04,3,0.02,12.2)
text(0.02,12.8,"0.171")
}

## End(Not run)
```

---

t.ci *Analysis of Cultural Consensus Data*

Description

Analysis of cultural consensus data using binomial likelihood and beta prior.

Usage

```
## S3 method for class 'ci'
t(coefs, cov.mat,level = 0.95, degrees = Inf,quantiles= c(0.025,0.500,0.975))
```

Arguments

`coefs`	vector of coefficient estimates, usually posterior means
`cov.mat`	variance-covariance matrix
`level`	desired coverage level
`degrees`	degrees of freedom parameter for students-t distribution assumption
`quantiles`	vcector of desired CDF points(quantiles) to return

Examples

```
## Not run:

# Examples on pages 225-226.
# READ IN THE DATA AND USE MULTIPLE IMPUTATION ON MISSING
data(pbc.vote)
X <- cbind(tech, new, turnout, rep, whi)
Y <- badballots
library(nnet); library(mice)
imp.X <- mice(X)
X <- as.matrix(cbind(rep(1,nrow(X)), complete(imp.X)))

# UNINFORMED PRIOR ANALYSIS
bhat <- solve(t(X)
s2 <- t(Y- X
R <- solve(t(X)
        s2/(nrow(X)-ncol(X)-2))[1,1]
uninformed.table <- t.ci.table(bhat,R,
        degrees=nrow(X)-ncol(X))[[2]]
alpha <- (nrow(X)-ncol(X)-1)/2
beta <- 0.5*s2*(nrow(X)-ncol(X))
sort.inv.gamma.sample <- sort(1/rgamma(10000,alpha,beta))
sqrt.sort.inv.gamma.sample <- sqrt(sort.inv.gamma.sample)
uninformed.table <- rbind(uninformed.table,
       c( mean(sqrt.sort.inv.gamma.sample),
      sqrt(var(sqrt.sort.inv.gamma.sample)),
               sqrt.sort.inv.gamma.sample[250],
               sqrt.sort.inv.gamma.sample[5000],
               sqrt.sort.inv.gamma.sample[9750] ))

# CONJUGATE PRIOR ANALYSIS
A <- 3; B <- 9
BBeta <- rep(0,6); Sigma <- diag(c(2,2,2,2,2,2))
tB <- solve(solve(Sigma)
    + t(X)
ts <- 2*B + s2*(nrow(X)-ncol(X)) + (t(BBeta)-t(tB))
     solve(Sigma)
R <- diag(ts/(nrow(X)+A-ncol(X)-2))*
     solve(solve(Sigma)+t(X)
conjugate.table<-t.ci.table(tB,R,
    degrees=nrow(X)+A-ncol(X)-3)[[2]]
sort.inv.gamma.sample <- sort(1/rgamma(10000,alpha,beta))
sqrt.sort.inv.gamma.sample <- sqrt(sort.inv.gamma.sample)
conjugate.table<- rbind(conjugate.table,
    c( mean(sqrt.sort.inv.gamma.sample),
   sqrt(var(sqrt.sort.inv.gamma.sample)),
            sqrt.sort.inv.gamma.sample[250],
            sqrt.sort.inv.gamma.sample[5000],
            sqrt.sort.inv.gamma.sample[9750] ))
```

```
## End(Not run)
```

---

terrorism *terrorism*

Description

Terrrism Data, See page 187

Usage

```
data(terrorism)
```

References

Falkenrath, R. (2001).

Analytical Models and Policy Prescription: Understanding Recent Innovation in U.S. Counterterrorism. *Studies in Conflict and Terrorism* 24, 159-181.

---

texas *texas*

Description

Texas Poverty Data. See Page 304.

Usage

```
data(texas)
```

References

The data consist of 1989 county level economic and demographic variables for the 196 nonmetropolitan counties in Texas out of all 2276 nonmetropolitan U.S. counties ("ERS Typology," http://www.census.gov/).

walk.G *walk.G*

Description

Code used for figure 9.2, see page 392.. This example is named plot.walk.G in the text, but was renamed to conform with CRAN standards.

Usage

```
## S3 method for class 'G'
walk(walk.mat,sim.rm,X=1,Y=2)
```

Arguments

`walk.mat`	walk.mat
`sim.rm`	sim.rm
`X`	X
`Y`	Y

wars *wars*

Description

wars data

Usage

```
data(wars)
```

Format

A data frame with 115 observations on the following 2 variables.

ONSET Onset Date

TERM Termination date

EXTENT Extent

ETHNIC Ethnicity

DIVERSE Ethnic Diversity

DYADS Allied Dyads

POL.LEV Political Level

COMPLEX Political Complexity

POLAR Polar

BALANCE Capability balance type

TEMPOR temporal context type

DURATION constant

ALLIANCE alliance

SCOPE scope

References

Hanushek, E. A. and Jackson, J. E. (1977). *Statistical Methods for Social Scientists* San Diego, Academic Press.

Index