```
## Warning in readChar(con, 5L, useBytes = TRUE): cannot open compressed
file 'EnvSelFluA.RData', probable reason 'No such file or directory'
## Error in readChar(con, 5L, useBytes = TRUE): cannot open the connection
## Warning in readChar(con, 5L, useBytes = TRUE): cannot open compressed
file 'EnvQGA.RData', probable reason 'No such file or directory'
## Error in readChar(con, 5L, useBytes = TRUE): cannot open the connection
## Error in library(xtable):  there is no package called 'xtable'
## Error in library(MCMCglmm):  there is no package called 'MCMCglmm'
```

```
setPar()
plot(SelAByYear, x=2006:2015, ylim=c(min( CISelAByYear), max( CISelAByYear)), xlab="Year", y

## Error in xy.coords(x, y, xlabel, ylabel, log):  object 'SelAByYear'
not found

abline(h=0)

## Error in int_abline(a = a, b = b, h = h, v = v, untf = untf, ...):
plot.new has not been called yet

arrows(x0 = 2006:2015,x1 = 2006:2015,code = 3, y0 = CISelAByYear[1,],
       y1 = CISelAByYear[2,], angle = 90,length = 0.1)

## Error in arrows(x0 = 2006:2015, x1 = 2006:2015, code = 3, y0 = CISelAByYear[1,
:  object 'CISelAByYear' not found

abline(h=coefficients(m0all)[2], lty=2, lwd=5)

## Error in coefficients(m0all):  object 'm0all' not found

lowm0all <- coefficients(m0all)[2]+1.96*sm0all$coefficients[2,2]

## Error in coefficients(m0all):  object 'm0all' not found

highm0all <- coefficients(m0all)[2]-1.96*sm0all$coefficients[2,2]

## Error in coefficients(m0all):  object 'm0all' not found

polygon(x=c(2005,2016,2016,2005),y=c(lowm0all,lowm0all, highm0all, highm0all),
        fillOddEven = TRUE, col=rgb(0.1,0.1,0.1,0.3), lty=2)

## Error in xy.coords(x, y):  object 'lowm0all' not found

#points(x=2006:2015,y=unlist(coefficients(mmRnoCorfitness)$Year["StMass"]), pch=17)
```

```
setPar()
plot(SelAByYearRho, x=2006:2015, ylim=c(min( CISelAByYearRho), max( CISelAByYearRho)), xlab=
```

```
## Error in xy.coords(x, y, xlabel, ylabel, log):  object 'SelAByYearRho'
not found
```

```
abline(h=0)
```

```
## Error in int_abline(a = a, b = b, h = h, v = v, untf = untf, ...):
plot.new has not been called yet
```

```
arrows(x0 = 2006:2015,x1 = 2006:2015,code = 3, y0 = CISelAByYearRho[1,],
       y1 = CISelAByYearRho[2,], angle = 90,length = 0.1)
```

```
## Error in arrows(x0 = 2006:2015, x1 = 2006:2015, code = 3, y0 = CISelAByYearRho[1,
:  object 'CISelAByYearRho' not found
```

```
abline(h=coefficients(m0allRho)[2], lty=2, lwd=5)
```

```
## Error in coefficients(m0allRho):  object 'm0allRho' not found
```

```
sm0allRho <- summary(m0allRho)
```

```
## Error in summary(m0allRho):  object 'm0allRho' not found
```

```
lowm0allRho <- coefficients(m0allRho)[2]+1.96*sm0allRho$coefficients[2,2]
```

```
## Error in coefficients(m0allRho):  object 'm0allRho' not found
```

```
highm0allRho <- coefficients(m0allRho)[2]-1.96*sm0allRho$coefficients[2,2]
```

```
## Error in coefficients(m0allRho):  object 'm0allRho' not found
```

```
polygon(x=c(2005,2016,2016,2005),y=c(lowm0allRho,lowm0allRho, highm0allRho, highm0allRho),
        fillOddEven = TRUE, col=rgb(0.1,0.1,0.1,0.5), lty=2)
```

```
## Error in xy.coords(x, y):  object 'lowm0allRho' not found
```

```
setPar()
plot(SelAByYearPhi, x=2006:2015, ylim=c(min( CISelAByYearPhi, na.rm=TRUE), max( CISelAByYear
```

```
## Error in xy.coords(x, y, xlabel, ylabel, log):  object 'SelAByYearPhi'
not found
```

```
abline(h=0)
```

```
## Error in int_abline(a = a, b = b, h = h, v = v, untf = untf, ...):
plot.new has not been called yet
```

```
arrows(x0 = 2006:2015,x1 = 2006:2015,code = 3, y0 = CISelAByYearPhi[1,],
       y1 = CISelAByYearPhi[2,], angle = 90,length = 0.1)
```

```
## Error in arrows(x0 = 2006:2015, x1 = 2006:2015, code = 3, y0 = CISelAByYearPhi[1,
:  object 'CISelAByYearPhi' not found
```

```
abline(h=coefficients(m0allphi)[2], lty=2, lwd=5)

## Error in coefficients(m0allphi):  object 'm0allphi' not found

lowm0allphi <- coefficients(m0allphi)[2]+1.96*sm0allphi$coefficients[2,2]

## Error in coefficients(m0allphi):  object 'm0allphi' not found

highm0allphi <- coefficients(m0allphi)[2]-1.96*sm0allphi$coefficients[2,2]

## Error in coefficients(m0allphi):  object 'm0allphi' not found

polygon(x=c(2005,2016,2016,2005),y=c(lowm0allphi,lowm0allphi, highm0allphi, highm0allphi),
        fillOddEven = TRUE, col=rgb(0.1,0.1,0.1,0.5), lty=2 )

## Error in xy.coords(x, y):  object 'lowm0allphi' not found
```

Correlation fertility viability

```
cor.test(YearPheno$Phi,YearPheno$Rho)

## Error in cor.test(YearPheno$Phi, YearPheno$Rho):  object 'YearPheno'
not found
```

```
rounding <- 3

BetaGlm<- c(paste(round(sm0all$coefficients[2,1],rounding)," (",round(sm0all$coefficients[2,
            paste(round(sm0allRho$coefficients[2,1],rounding)," (",round(sm0allRho$coefficie
            paste(round(sm0allphi$coefficients[2,1],rounding)," (",round(sm0allphi$coefficie

## Error in paste(round(sm0all$coefficients[2, 1], rounding), " (",
round(sm0all$coefficients[2, :  object 'sm0all' not found

SDyears <- c(sd(SelAByYear),sd(SelAByYearRho),sd(SelAByYearPhi, na.rm=TRUE))

## Error in is.data.frame(x):  object 'SelAByYear' not found

SEyears <- c(mean(SeSelAByYear), mean(SeSelAByYearRho),mean(SeSelAByYearPhi,na.rm=T))

## Error in mean(SeSelAByYear):  object 'SeSelAByYear' not found

BetaGLMM <- c(paste(round(smmARnoCorfitness$coefficients[2,1],rounding)," (",round(smmARnoCo
            paste(round(smmRnoCorrho$coefficients[2,1],rounding)," (",round(smmRnoCorrho$coe
            paste(round(smmRnoCorphi$coefficients[2,1],rounding)," (",round(smmRnoCorphi$coe

## Error in paste(round(smmARnoCorfitness$coefficients[2, 1], rounding),
:  object 'smmARnoCorfitness' not found

SigmaA <- c(sqrt(as.numeric(smmARnoCorfitness$varcor$Year.1)),
            sqrt(as.numeric(smmRnoCorrho$varcor$Year.1)),
sqrt(as.numeric(smmRnoCorphi$varcor$Year.1)))
```

```
## Error in eval(expr, envir, enclos):  object 'smmARnoCorfitness'
not found
```

```
SigRat <- c(smmARnoCorfitness$coefficients[2,1]/sqrt(as.numeric(smmARnoCorfitness$varcor$Yea
            smmRnoCorrho$coefficients[2,1]/sqrt(as.numeric(smmRnoCorrho$varcor$Year.1)),
            smmRnoCorphi$coefficients[2,1]/sqrt(as.numeric(smmRnoCorphi$varcor$Year.1)))
```

```
## Error in eval(expr, envir, enclos):  object 'smmARnoCorfitness'
not found
```

```
psigmaA <- c(fitnessAanova$`Pr(>Chisq)`[2]/2, RhoAanova$`Pr(>Chisq)`[2]/2, PhiAanova$`Pr(>Ch
```

```
## Error in eval(expr, envir, enclos):  object 'fitnessAanova' not
found
```

```
confsigma <- c(paste("[",round(CImmARnoCorfitness[2,1],rounding),";",round(CImmARnoCorfitnes
               paste("[",round(CImmRnoCorrho[2,1],rounding),";",round(CImmRnoCorrho[2,2],rou
               paste("[",round(CImmRnoCorphi[2,1],rounding),";",round(CImmRnoCorphi[2,2],rou
```

```
## Error in paste("[", round(CImmARnoCorfitness[2, 1], rounding), ";",
round(CImmARnoCorfitness[2, :  object 'CImmARnoCorfitness' not found
```

```
TabSel <- data.frame(BetaGlm = BetaGlm, B=SDyears, C=SEyears , D=BetaGLMM , E=SigmaA, DD =co
```

```
## Error in data.frame(BetaGlm = BetaGlm, B = SDyears, C = SEyears,
D = BetaGLMM, :  object 'BetaGlm' not found
```

```
## Error in print(xtable(TabSel, digits = c(rep(3, 7), -1, 3), caption
= strCaption, :  could not find function "xtable"
```

Correlation between selection and evolution

```
posterior.mode(as.mcmc(SelToG))
```

```
## Error in eval(expr, envir, enclos):  could not find function "posterior.mode"
```

```
HPDinterval(as.mcmc(SelToG))
```

```
## Error in eval(expr, envir, enclos):  could not find function "HPDinterval"
```

```
szgr <- 2
szax <- 1.3
marr <- c(4, 4, 1, 1) + 0.1
par(las=1,mar=marr, cex=szgr, cex.lab=szax , cex.axis=szax, lwd=2 , las=1)

bbv <- boxplot(bvpairwise,ylab="Change in breeding values (g)", xlab="Year", range = 1,cex=1
```

```
## Error in boxplot(bvpairwise, ylab = "Change in breeding values (g)",
xlab = "Year", :  object 'bvpairwise' not found
```

```
polygon(x = c(2006,2008:2014,2016,2016,2014:2008,2006) -2006, y = c(LowDrift,rev(HighDrit))
```

```
## Error in xy.coords(x, y):  object 'LowDrift' not found
```

```
bbv$stats
```

```
## Error in eval(expr, envir, enclos):  object 'bbv' not found
```

```
bbv$group
```

```
## Error in eval(expr, envir, enclos):  object 'bbv' not found
```

```
abline(h=0)
```

```
## Error in int_abline(a = a, b = b, h = h, v = v, untf = untf, ...):
plot.new has not been called yet
```

```
density(bvpairwise[,1])
```

```
## Error in density(bvpairwise[, 1]):  object 'bvpairwise' not found
```

```
setPar()
par(mar=c(4, 6, 1, 1) + 0.1)
Betas <- matrix(sapply(X = list(BetaP1, BetaE1, BetaG1, BetaP2, BetaE2, BetaG2), posterior.m
```

```
## Error in match.fun(FUN): object 'posterior.mode' not found
```

```
BetasCI <- sapply(X = list(BetaP1, BetaE1, BetaG1, BetaP2, BetaE2, BetaG2), HPDinterval)
```

```
## Error in match.fun(FUN): object 'HPDinterval' not found
```

```
x <- barplot(Betas, beside=TRUE, ylim=c(min(BetasCI),max(BetasCI)),names.arg = c("Postive se
```

```
## Error in barplot(Betas, beside = TRUE, ylim = c(min(BetasCI), max(BetasCI)),
:  object 'Betas' not found
```

```
abline(h=0)
```

```
## Error in int_abline(a = a, b = b, h = h, v = v, untf = untf, ...):
plot.new has not been called yet
```

```
arrows(x0 = x, y0=BetasCI[1,],y1=BetasCI[2,],angle = 90,code = 3)
```

```
## Error in arrows(x0 = x, y0 = BetasCI[1, ], y1 = BetasCI[2, ], angle
= 90, :  object 'x' not found
```

```
mtext(side=2, "Selection gradients", line=4, las=0, cex=szax*szgr)
```

```
## Error in mtext(side = 2, "Selection gradients", line = 4, las =
0, cex = szax * :  plot.new has not been called yet
```

```
setPar()
par(mar=c(4, 6, 1, 1) + 0.1)
Betas <- matrix(sapply(X = list(BetaP1, BetaE1, BetaG1, BetaP2, BetaE2, BetaG2), posterior.m

## Error in match.fun(FUN): object 'posterior.mode' not found

BetasCI <- sapply(X = list(BetaP1, BetaE1, BetaG1, BetaP2, BetaE2, BetaG2), HPDinterval)

## Error in match.fun(FUN): object 'HPDinterval' not found

x <- barplot(Betas, beside=TRUE, ylim=c(min(BetasCI),max(BetasCI)),names.arg = c("Postive se

## Error in barplot(Betas, beside = TRUE, ylim = c(min(BetasCI), max(BetasCI)),
:  object 'Betas' not found

abline(h=0)

## Error in int_abline(a = a, b = b, h = h, v = v, untf = untf, ...):
plot.new has not been called yet

arrows(x0 = x, y0=BetasCI[1,],y1=BetasCI[2,],angle = 90,code = 3)

## Error in arrows(x0 = x, y0 = BetasCI[1, ], y1 = BetasCI[2, ], angle
= 90, :  object 'x' not found

mtext(side=2, "Selection gradients", line=4, las=0, cex=szax*szgr)

## Error in mtext(side = 2, "Selection gradients", line = 4, las =
0, cex = szax * :  plot.new has not been called yet
```

```
posterior.mode(BetaG1 - BetaE1)

## Error in eval(expr, envir, enclos):  could not find function "posterior.mode"

HPDinterval(BetaG1 - BetaE1)

## Error in eval(expr, envir, enclos):  could not find function "HPDinterval"

mean((BetaG1 - BetaE1)>0)*2

## Error in mean((BetaG1 - BetaE1) > 0):  object 'BetaG1' not found

posterior.mode(BetaG2 - BetaE2)

## Error in eval(expr, envir, enclos):  could not find function "posterior.mode"

HPDinterval(BetaG2 - BetaE2)

## Error in eval(expr, envir, enclos):  could not find function "HPDinterval"

mean((BetaG2 - BetaE2)>0)*2
```

```
## Error in mean((BetaG2 - BetaE2) > 0):  object 'BetaG2' not found
```

```
posterior.mode(BetaE1 - BetaE2)
```

```
## Error in eval(expr, envir, enclos):  could not find function "posterior.mode"
```

```
HPDinterval(BetaE1 - BetaE2)
```

```
## Error in eval(expr, envir, enclos):  could not find function "HPDinterval"
```

```
mean((BetaE1 - BetaE2)<0)*2
```

```
## Error in mean((BetaE1 - BetaE2) < 0):  object 'BetaE1' not found
```

```
posterior.mode(BetaG1 - BetaG2)
```

```
## Error in eval(expr, envir, enclos):  could not find function "posterior.mode"
```

```
HPDinterval(BetaG1 - BetaG2)
```

```
## Error in eval(expr, envir, enclos):  could not find function "HPDinterval"
```

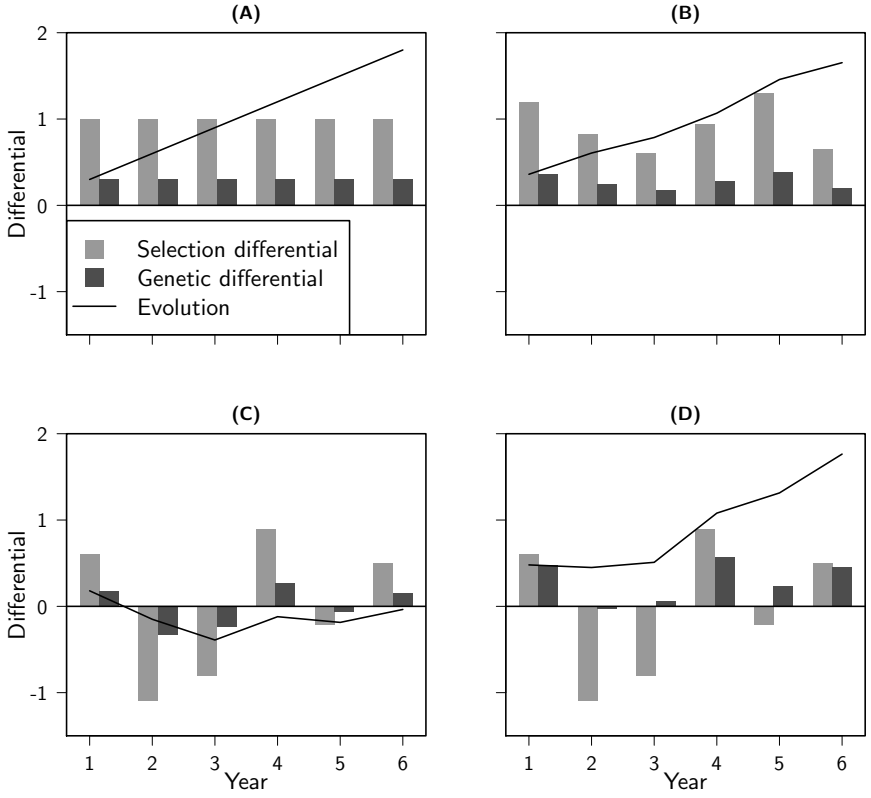
```
mean((BetaG1 - BetaG2)>0)*2
```

```
## Error in mean((BetaG1 - BetaG2) > 0):  object 'BetaG1' not found
```

```
mat <- matrix(c(1, 2, 3, 4),ncol = 2, byrow = TRUE)
layout(mat, widths = rep.int(1, ncol(mat)), heights = c(1,1), respect = FALSE )

szgr <- 2
szax <- 1.3

par(las=1, cex=szgr, cex.lab=szax , cex.axis=szax, lwd=5 ,pch=16, las=1,
    oma=c(0,0,0,0))

barcol = grey(level = c(0.6,0.3))

nyears <- 6
h2 <- 0.3

### Graph constant
par(mar=c(3, 4, 2, 1) + 0.1)
constant_selcov <- rep(1, times=nyears)
constant_evol <- constant_selcov * h2

constant_tp <- as.matrix(rbind(constant_selcov, constant_evol))

cumulative_constant <- cumsum(constant_evol)
```

```r
xb1 <- barplot(height = constant_tp, ylim = c(-1.5,2), beside = TRUE,
               main="\\textbf{(A)}", yaxt="n", border = NA, col = barcol )
legend(x = "bottomleft", legend = c("Selection differential", "Genetic differential", "Evolu
               bty = "o",
       col = c(barcol,"black"),
       lty = c(0, 0, 1), lwd = c(0, 0, 5),
       pch = c(22, 22, NA),
       pt.bg = c(barcol, NA),
       pt.cex = 3, cex=1.5)
axis(side=2, at = c(-1,0,1,2))
axis(side=1, at = seq(from=min(xb1), to=max(xb1), length.out = nyears),
     labels = FALSE,tick = TRUE)
mtext(text = "Differential", side = 2, line = 2, cex=3, las=0)
abline(h=0)

lines(x=seq(from=min(xb1), to=max(xb1), length.out = nyears), y=cumulative_constant)
box(which = "plot", lty = "solid")
### Graph fluctuation
par(mar=c(3, 3, 2, 2) + 0.1)

flu_selcov <- c(1.2,0.82,0.6,0.94,1.3,0.65)
flu_evol <- flu_selcov * h2

flu_tp <- as.matrix(rbind(flu_selcov, flu_evol))

cumulative_flu <- cumsum(flu_evol)

xb2 <- barplot(height = flu_tp, ylim = c(-1.5,2), beside = TRUE,
               main="\\textbf{(B)}", yaxt="n", border = NA, col = barcol )
axis(side=2, at = c(-1,0,1,2), labels = FALSE, tick = TRUE)
axis(side=1, at = seq(from=min(xb1), to=max(xb1), length.out = nyears),
     labels = FALSE,tick = TRUE)
abline(h=0)

lines(x=seq(from=min(xb2), to=max(xb2), length.out = nyears), y=cumulative_flu)
box(which = "plot", lty = "solid")

### Graph reversal
par(mar=c(3, 4, 2,1) + 0.1)
rev_selcov <- c(0.6,-1.1,-0.8,0.9,-0.22,0.5)
rev_evol <- rev_selcov * h2

rev_tp <- as.matrix(rbind(rev_selcov, rev_evol))

cumulative_rev <- cumsum(rev_evol)
```

```
xb3 <- barplot(height = rev_tp, ylim = c(-1.5,2), beside = TRUE,
               main="\\textbf{(C)}", yaxt="n", border = NA, col = barcol )
axis(side=2, at = c(-1,0,1,2))
axis(side=1, at = seq(from=min(xb1), to=max(xb1), length.out = nyears),
     labels = 1:6,tick = TRUE)
mtext(text = "Differential", side = 2, line = 2, cex=3, las=0)
abline(h=0)

lines(x=seq(from=min(xb3), to=max(xb3), length.out = nyears), y=cumulative_rev)
box(which = "plot", lty = "solid")
mtext(text = "Year", side = 1, line = 2, cex=3)


### Graph decoupling + flu
par(mar=c(3, 3, 2, 2) + 0.1)
dec_selcov <- c(0.6,-1.1,-0.8,0.9,-0.22,0.5)
dec_evol <- 0.3+dec_selcov * h2

dec_tp <- as.matrix(rbind(dec_selcov, dec_evol))

cumulative_dec <- cumsum(dec_evol)

xb5 <- barplot(height = dec_tp, ylim = c(-1.5,2), beside = TRUE,
               main="\\textbf{(D)}", yaxt="n", border = NA, col = barcol )
axis(side=2, at = c(-1,0,1,2), labels = FALSE, tick = TRUE)
axis(side=1, at = seq(from=min(xb1), to=max(xb1), length.out = nyears),
     labels = 1:6,tick = TRUE)
abline(h=0)

lines(x=seq(from=min(xb5), to=max(xb5), length.out = nyears), y=cumulative_dec)
box(which = "plot", lty = "solid")
mtext(text = "Year", side = 1, line = 2,cex = 3)
```


(A)
(B)
(C)
(D)
Differential
Year
Selection differential
Genetic differential
Evolution
2
1
0
-1
1
2
3
4
5
6