```
R version 3.2.1 (2015-06-18) -- "World-Famous Astronaut"
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Platform: x86_64-apple-darwin13.4.0 (64-bit)

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  Natural language support but running in an English locale

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Type 'q()' to quit R.

[R.app GUI 1.66 (6956) x86_64-apple-darwin13.4.0]

>
> rm(list=ls(all=TRUE))
>
> library(Zelig)
Warning: namespace ‘Rgraphviz’ is not available and has been replaced
by .GlobalEnv when processing object ‘’
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by .GlobalEnv when processing object ‘’
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by .GlobalEnv when processing object ‘’
Warning messages:
1: package ‘Zelig’ was built under R version 3.2.4
2: replacing previous import by ‘splines::splineDesign’ when loading ‘VGAM’
> library(miscTools)
>
> set.seed(123)
>
> #setwd("replication_archive/Cellphones/")
> setwd("~/Dropbox/beliefs_incomplete data/Paper/PSRM/final/replication_archive/Cellphones/")
>
>
> ### Load the data
> load("data.rda")
> data <- new
> rm(new)
>
>
> ### Run original models from Table 1: Logit (m2) and Fixed Effects OLS (m6)
> data <- subset(data, select=c("conf2008_dum", "cell_dum_07", "pre2000_count", "bdist1", "capdist", "pop2005", "mnt", "irri", "gcppc00", "cell_dum_07", "cow"))
> data$cow <- as.factor(data$cow)
> data <- data[complete.cases(data)==T,]
>
>
> ### Run the sensitivity analysis
> etavec <- seq(0, 0.022, length.out=50)
>
> results2 <- results6 <- NULL
>
> for(i in 1:length(etavec)){
+     res2 <- res6 <- NULL
+     for(j in 1:500){
+         # create data given eta
+         data$conf2008_true <- NA
+         data$conf2008_true[data$conf2008_dum==0 & data$cell_dum_07==0] <- rbinom(length(data$conf2008_true[data$conf2008_dum==0 & data$cell_dum_07==0]), 1, etavec[i])
+         data$conf2008_true[data$conf2008_dum!=0 | data$cell_dum_07!=0] <- data$conf2008_dum[data$conf2008_dum!=0 | data$cell_dum_07!=0]
+
+         # run the models with the simulated data
+         m2 <- zelig(conf2008_true ~ cell_dum_07 + pre2000_count + bdist1 + capdist + pop2005 + mnt + irri + gcppc00, model="logit", data=data, cite=F)
+         m6 <- zelig(conf2008_true ~ cell_dum_07 + pre2000_count + bdist1 + capdist + pop2005 + mnt + irri + gcppc00 + factor(cow), model="ls", data=data, cite=F)
+
+         # save the coefficients and standard errors, as well as the number of units with cellphone coverage that have a violent event
+         est2 <- m2$getcoef()[[1]][2]
+         err2 <- sqrt(m2$getvcov()[[1]][2,2])
+         res2 <- rbind(res2, c(est2, err2, sum(data$conf2008_true)))
+
+         est6 <- m6$getcoef()[[1]][2]
+         err6 <- sqrt(m6$getvcov()[[1]][2,2])
+         res6 <- rbind(res6, c(est6, err6, sum(data$conf2008_true)))
+
+     }
+     results2 <- rbind(results2, c(etavec[i], colMedians(res2)))
+     results6 <- rbind(results6, c(etavec[i], colMedians(res6)))
+ }
There were 50 or more warnings (use warnings() to see the first 50)
>
>
> colnames(results2) <- colnames(results6) <- c("phimax", "pointest", "stderr", "number")
>
>
> ### create confidence intervals
> results2 <- as.data.frame(results2)
> results6 <- as.data.frame(results6)
>
> results2$lowerci95 <- results2$pointest + qnorm(0.025)*results2$stderr
> results2$upperci95 <- results2$pointest + qnorm(0.975)*results2$stderr
>
> results6$lowerci95 <- results6$pointest + qnorm(0.025)*results6$stderr
> results6$upperci95 <- results6$pointest + qnorm(0.975)*results6$stderr
>
>
>
> ### FIGURE 20
>
> ### Panel (a)
> results <- results2
>
> quartz(type="pdf", width=5, height=5, file="output/cellphones_m1.pdf")
> par(mar = c(4,4,0.3,0.3), mgp=c(2.5,1,0), family="CMU Serif")
> plot(1:length(results$pointest), results$pointest, type="n", ylim=c(min(results$lowerci95), max(results$upperci95)), xlab = "Percent Additional Events in Non-Cellphone Units",
ylab="Coefficient", xaxt="n")
> polygon(c(1:length(results$pointest), rev(1:length(results$pointest))), c(results$lowerci95,rev(results$upperci95)), col="grey", border=NA)
>
> points(1:length(results$pointest), results$pointest, type="l", lwd=3)
> axis(1, at=seq(1, 50, length.out=5), labels = seq(0, 80, length.out=5), las=2)
> abline(h=0, col = "black", lwd=2)
> lines(c(1,1), c(results$lowerci95[1], results$upperci95[1]), lwd=3)
> points(1, results$pointest[1], pch=16)
> dev.off()
```

```
null device
          1
>
>
> ### Panel (b)
> results <- results6
>
> quartz(type="pdf", width=5, height=5, file="output/cellphones_m5.pdf")
> par(mar = c(4,4,0.3,0.3), mgp=c(2.5,1,0), family="CMU Serif")
> plot(1:length(results$pointest), results$pointest, type="n", ylim=c(min(results$lowerci95), max(results$upperci95)), xlab = "Percent Additional Events in Non-Cellphone Units",
ylab="Coefficient", xaxt="n")
> polygon(c(1:length(results$pointest), rev(1:length(results$pointest))), c(results$lowerci95,rev(results$upperci95)), col="grey80", border=NA)
>
> points(1:length(results$pointest), results$pointest, type="l", lwd=3)
> axis(1, at=seq(1, 50, length.out=5), labels = seq(0, 80, length.out=5), las=2)
> abline(h=0, col = "black", lwd=2)
> lines(c(1,1), c(results$lowerci95[1], results$upperci95[1]), lwd=3)
> points(1, results$pointest[1], pch=16)
> dev.off()
null device
          1
>
>
>
> ### FIGURE 19
> results <- results2
>
> # total events where C=0
> sumnull <- sum(data$conf2008_dum[data$cell_dum_07==0])
>
> # total events where C=1
> sumone <- sum(data$conf2008_dum[data$cell_dum_07==1])
>
> # total number of cells where C=0
> cellnull <- length(data$conf2008_dum[data$cell_dum_07==0])
>
>
> quartz(type="pdf", width=5, height=5, file="output/cellphones_descr.pdf")
> par(mar = c(4,4,0.3,0.3), mgp=c(2.5,1,0), family="CMU Serif")
> plot(etavec, (results$number-sumone)/cellnull, type="l" , ylim=c(0, (0.002+max((results$number-sumone)/cellnull))), lwd=3, xlab=expression(eta), ylab=c("P(T'=1)"))
> dev.off()
null device
          1
>
```