```
options(scipen=7)

#Do not regenerate data unless necessary
if(TRUE){
cens <- read.csv("usa6.csv")
#relevant <- names(cens)[1:15]
#cens <- cens[,relevant]

#Filter only
bwheads <- with(cens, unique(cens[(RACED==100 | RACE==2) & RELATE==1 & HISPAN==0,
                                  c("SERIAL", "YEAR")]))
#Not using RELATED==1112 because 'partner' is inconsistently defined
bwspouse <- with(cens, unique(cens[(RACED==100 | RACE==2) & RELATE==2 & HISPAN==0,
                                  c("SERIAL", "YEAR")]))
bwbiochild <- with(cens, unique(cens[(RACED==100 | RACE==2) & RELATED==301 & HISPAN==0,
                                  c("SERIAL","YEAR")]))

bwcouple <- unique(rbind(bwheads, bwspouse)[duplicated(rbind(bwheads, bwspouse)),])
bwfam <- unique(rbind(bwcouple, bwbiochild)[duplicated(rbind(bwcouple, bwbiochild)),])

allkids <- with(cens, merge(cens[(RACED==100 | RACE==2) & RELATED==301 & HISPAN==0, ], bwfam))
allheads <- with(cens, merge(cens[RELATE==1 & HISPAN==0, ],
                             bwfam))[,c("YEAR", "SERIAL", "RACE", "RACED", "SEX", "HISPAN")]
allspouses <- with(cens, merge(cens[RELATE==2 & HISPAN==0, ],
                               bwfam))[,c("YEAR", "SERIAL", "RACE", "RACED", "SEX", "HISPAN")]
names(allheads) <- c("YEAR", "SERIAL", "hhRACE", "hhRACED", "hhSEX", "hhHISPAN")
names(allspouses) <- c("YEAR", "SERIAL", "spRACE", "spRACED", "spSEX", "spHISPAN")

allkids <- merge(allkids, allheads, all.x=T)
allkids <- merge(allkids, allspouses, all.x=T)

allkids <- with(allkids, allkids[spSEX != hhSEX,])
allkids$momRACE <- with(allkids, ((hhSEX - 1) * hhRACE) + ((spSEX - 1) * spRACE))
allkids$dadRACE <- with(allkids, ((-hhSEX + 2) * hhRACE) + ((-spSEX + 2) * spRACE))
}
png("~/public_html/DartmouthShare/Rplot%03d.png")

#Non-mixed race kids by race
with(allkids[allkids$spRACE == allkids$hhRACE,],
        barplot(xtabs(PERWT ~ RACE + YEAR)/1000000, beside=T,
                        ylim=c(0, 60),legend=c("White", "Black"),
                        main="Children of same race parents",
                        ylab="Case count (millions)", xlab="Census year"))

#Mixed race kids by race
with(allkids[allkids$spRACE != allkids$hhRACE,],
        barplot(xtabs(PERWT ~ RACE + YEAR)/1000, beside=T,
                        ylim=c(0, 120), legend=c("White", "Black"),
                        main="Biracial children by race declaration",
                        ylab="Case count (thousands)", xlab="Census year"))

#Number of estimated mixed race children
with(allkids[allkids$spRACE != allkids$hhRACE,],
        barplot(xtabs(PERWT ~ I(REGION %in% 30:40) + YEAR)/1000,
                ylim=c(0, 170), legend=c("Other regions", "South"),
                main="Biracial children by census year",
                ylab="Total count (thousands)", xlab="Census year"))

#Mixed race children in South by race declaration
with(allkids[allkids$spRACE != allkids$hhRACE & allkids$REGION %in% 30:40,],
        spineplot(xtabs(PERWT ~ YEAR + RACE),
                        yaxlabels=c("White", "Black"),
                        xlab="Census year",
                        ylab="Proportion by declared race",
                        main="Race declaration of biracial children in the South"))

#Mixed race children of white census takers
with(allkids[allkids$spRACE != allkids$hhRACE & allkids$hhRACE == 1,],
        spineplot(xtabs(PERWT ~ YEAR + RACE),
                yaxlabels=c("White", "Black"),
                xlab="Census year", ylab="Proportion by declared race",
                main="Biracial children of white census respondents"))

dev.off()
#savehistory()
#save.image()
```