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1 #Only run to regenerate dataset
2 if(FALSE){
3 cens <- read.csv('usa.9.csv')
4 cens$MTONGUED <- NULL
5 cens$BPLD <- NULL
6 cens$MBPLD <- NULL
7 cens$FBPLD <- NULL
8
9 #Create indicator variables for those born in Slavic countries, to Slavic parents
10 #Create indicator for those born in USA, of a Slavic parent
11 estat <- c(451:452, 454:465)
12 cens$fgcn <- with(cens, BPL %in% estat & MBPL %in% estat & FBPL %in% estat)
13 cens$sgcn <- with(cens, BPL <=120 & (MBPL %in% estat | FBPL %in% estat))
14
15 cens[with(cens, fgen==T | sgen==T & YEAR %in% c(1940, 1950)),
16         "PERWT"] <- cens[with(cens, fgen==T | sgen==T & YEAR %in% c(1940,1950)), "SLWT"]
17 }
18 png("~/public_html/DartmouthShare/p2/Rplot%03d.png")
19
20 lvec <- c(3,2,4,5,6,1)
21 for (i in unique(cens$YEAR)){
22   ages <- with(cens, cens[YEAR==i & fgen==T,"AGE"])
23   agew <- with(cens, cens[YEAR==i & fgen==T,"PERWT"])
24
25   #For every year, plot relative frequency of the ages of Slavic immigrants
26   if(which(i == unique(cens$YEAR)) == 1)
27     plot(T, xlim=c(0,90), ylim=c(0,0.035),
28          xlab="Age", ylab="Relative frequency", main="Slavic immigrants by decade", type="n")
29
30   lines(density(ages, na.rm=T, adjust=2.5, weights=agew/sum(agew)),
31         lty=lvec[which(i == unique(cens$YEAR))],
32         lwd=which(i == unique(cens$YEAR))/2 +1)
33
34   #Add legends
35   if(which(i == rev(unique(cens$YEAR))) == 1)
36     legend("topright", legend=unique(cens$YEAR), lty=lvec, lwd=(1:6)/2+1)
37 }
38 #Do the same for the second generation (the children)...
39 for (i in unique(cens$YEAR)){
40   ages <- with(cens, cens[YEAR==i & sgen==T,"AGE"])
41   agew <- with(cens, cens[YEAR==i & sgen==T,"PERWT"])
42
43   if(which(i == unique(cens$YEAR)) == 1)
44     plot(T, xlim=c(0,70), ylim=c(0,0.065),
45          xlab="Age", ylab="Relative frequency", main="Second generation Slavic immigrants", type="n")
46
47   lines(density(ages, na.rm=T, adjust=2.5, weights=agew/sum(agew)),
48         lty=lvec[which(i == unique(cens$YEAR))],
49         lwd=which(i == unique(cens$YEAR))/2 +1)
50
51   if(which(i == rev(unique(cens$YEAR))) == 1)
52     legend("topright", legend=unique(cens$YEAR), lty=lvec, lwd=(1:6)/2+1)
53 }
54
55 #Population pyramid function
56 poppyr <- function(x, main="", xticks=5000, add=F, xout=20000, ststage=F,
57                  fcol=rgb(0,0,1,0.3), mcol=rgb(1,0,0,0.3), leg=F){
58   agetab <- aggregate(PERWT ~ AGE + SEX, x, sum)
59
60   #Set up plot framing
61   if(!add){
62     xlimits <- c(-max(agetab$PERWT), max(agetab$PERWT))
63     xlimits <- c(min(-xout, xlimits[1]), max(xout, xlimits[2]))
64     ylimits <- c(min(agetab$AGE - 0.5), max(agetab$AGE + 0.5))

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65     if(stdage) ylimits <- c(-0.5, stdage + 0.5)
66     plot(T, xlim=xlimits, xaxt="n", xlab="Population (in 1000's)", ylab="Age",
67          ylim=ylimits, type="n", main=main)
68     abline(v=0, lty=3)
69     labspots <- (round(xlimits[1]/xticks):round(xlimits[2]/xticks))*xticks
70     axis(1, at = labspots, labels = abs(labspots/1000))
71     if(leg) legend("topright", legend=c("Male", "Female"), border=F, fill=c(mcol, fcol))
72   }
73
74   #Add a pyramid side for Men
75   gentab <- agetab[agetab$SEX==1, c("AGE", "PERWT")]
76   rect(xleft=-gentab$PERWT, xright=0, col=mcol, border=NA,
77        ybottom=gentab$AGE-0.5, ytop=gentab$AGE+0.5)
78   #Add side for women
79   gentab <- agetab[agetab$SEX==2, c("AGE", "PERWT")]
80   rect(xright=gentab$PERWT, xleft=0, col=fcol, border=NA,
81        ybottom=gentab$AGE-0.5, ytop=gentab$AGE+0.5)
82 }
83
84 #Create relevant filters
85 twenties <- with(cens, fgen==T & YEAR==1930 & (YRIMMIG - YEAR) <= 10 & (YRIMMIG - YEAR) < 0)
86 ninties <- with(cens, fgen==T & YEAR==1900 & (YRIMMIG - YEAR) <= 10 & (YRIMMIG - YEAR) < 0)
87 ohs <- with(cens, fgen==T & YEAR==1910 & (YRIMMIG - YEAR) <= 10 & (YRIMMIG - YEAR) < 0)
88
89 #Plot pyramids with function for 90's, 00's
90 mcols <- c(rgb(1,0.2,0.6,0.4), rgb(1,0.6,0.2,0.3), rgb(0.5,0.5,0.7,0.4))
91 fcols <- c(rgb(0.2,0.6,1,0.4), rgb(0.6,0.2,1,0.3), rgb(0.5,0.7,0.5,0.5))
92 poppyr(cens[ohs,], mcol=mcols[2], fcol=fcols[2], main="Slavic immigration in decades before WWI")
93 poppyr(cens[ninties,], add=T, mcol=mcols[1], fcol=fcols[1])
94 legend("topright", legend=c("Men 1890's", "Men 1900's", "Women 1890's", "Women 1900's"), border=F,
95        fill=c(mcols[1:2], fcols[1:2]))
96 abline(h=weighted.mean(cens[ohs, "AGE"], cens[ohs, "PERWT"]), lty=3)
97 abline(h=weighted.mean(cens[ninties, "AGE"], cens[ninties, "PERWT"]), lty=3)
98
99 #Plot pyramids for 00's and 20's
100 poppyr(cens[twenties,], mcol=mcols[2], fcol=fcols[2], main="Slavic immigration before/after WWI")
101 poppyr(cens[ohs,], add=T, mcol=mcols[1], fcol=fcols[1])
102 legend("topright", legend=c("Men 1900's", "Men 1920's", "Women 1900's", "Women 1920's"), border=F,
103        fill=c(mcols[1:2], fcols[1:2]))
104 abline(h=weighted.mean(cens[ohs, "AGE"], cens[ohs, "PERWT"]), lty=3)
105 abline(h=weighted.mean(cens[twenties, "AGE"], cens[twenties, "PERWT"]), lty=3)
106
107 #Plot pyramids for 30 and 50
108 poppyr(cens[cens$fgen==T & cens$YEAR==1930,], mcol=mcols[2], fcol=fcols[2],
109        main="Slavic immigrants before/after Depression and WWII")
110 poppyr(cens[cens$fgen==T & cens$YEAR==1950,], add=T, mcol=mcols[1], fcol=fcols[1])
111 legend("topright", legend=c("Men 1950", "Men 1930", "Women 1950", "Women 1930"), border=F,
112        fill=c(mcols[1:2], fcols[1:2]))
113 abline(h=weighted.mean(cens[cens$fgen==T & cens$YEAR==1930, "AGE"],
114                        cens[cens$fgen==T & cens$YEAR==1930, "PERWT"]), lty=3)
115 abline(h=weighted.mean(cens[cens$fgen==T & cens$YEAR==1950, "AGE"],
116                        cens[cens$fgen==T & cens$YEAR==1950, "PERWT"]), lty=3)
117
118 #Plot cohort of kids from 1930 through time
119 poppyr(cens[cens$sgen==T & cens$YEAR==1930 & cens$AGE <= 19,], mcol=mcols[3], fcol=fcols[3],
120        main="Truncated pyramids for second generation Slavs", stdage=40, xticks=50000, xout=250000)
121 poppyr(cens[cens$sgen==T & cens$YEAR==1940 & cens$AGE %in% 10:29,], add=T, mcol=mcols[2], fcol=fcols[2])
122 poppyr(cens[cens$sgen==T & cens$YEAR==1950 & cens$AGE %in% 20:39,], add=T, mcol=mcols[1], fcol=fcols[1])
123 legend("topright", legend=c("Men 1950", "Men 1940", "Men 1930", "Women 1950", "Women 1940", "Women 1930"),
124        border=F, fill=c(mcols, fcols))
125
126 #Plot ratio share of children
127 slavdf <- aggregate(PERWT ~ YEAR + AGE + sgen, with(cens, cens[BPL <= 120 & YEAR %in% c(1930,1950),]), sum)
128 slavdf[slavdf$YEAR==1930,]$AGE <- slavdf[slavdf$YEAR==1930,]$AGE + 20

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129 slavdf[slavdf$YEAR==1930,]$PERWT <- 1/slavdf[slavdf$YEAR==1930,]$PERWT
130 slavdf <- aggregate(PERWT ~ AGE + sgen, slavdf, prod)
131
132 #Plot ratio of 1930 cohorts accounted for in 1950
133 plot(PERWT ~ AGE, slavdf[slavdf$AGE %in% 20:39 & slavdf$sgen==F,], xlab="Age",
134       ylab="1950 age cohorts as share of 1930 cohorts", ylim=c(0,1.4), pch=13, cex=1.8,
135       main="Share of 1930 cohorts remaining in 1950")
136 points(PERWT ~ AGE, slavdf[slavdf$AGE %in% 20:39 & slavdf$sgen==T,], pch=12, cex=1.8)
137 abline(h=c(mean(slavdf[slavdf$AGE %in% 20:39 & slavdf$sgen==T,"PERWT"]),
138            mean(slavdf[slavdf$AGE %in% 20:39 & slavdf$sgen==F,"PERWT"])), lty=3)
139 legend("topright", legend=c("Native-born Americans", "Second generation Slavs"), pch=c(13,12), pt.cex=1.8)
140
141 dev.off()
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