News

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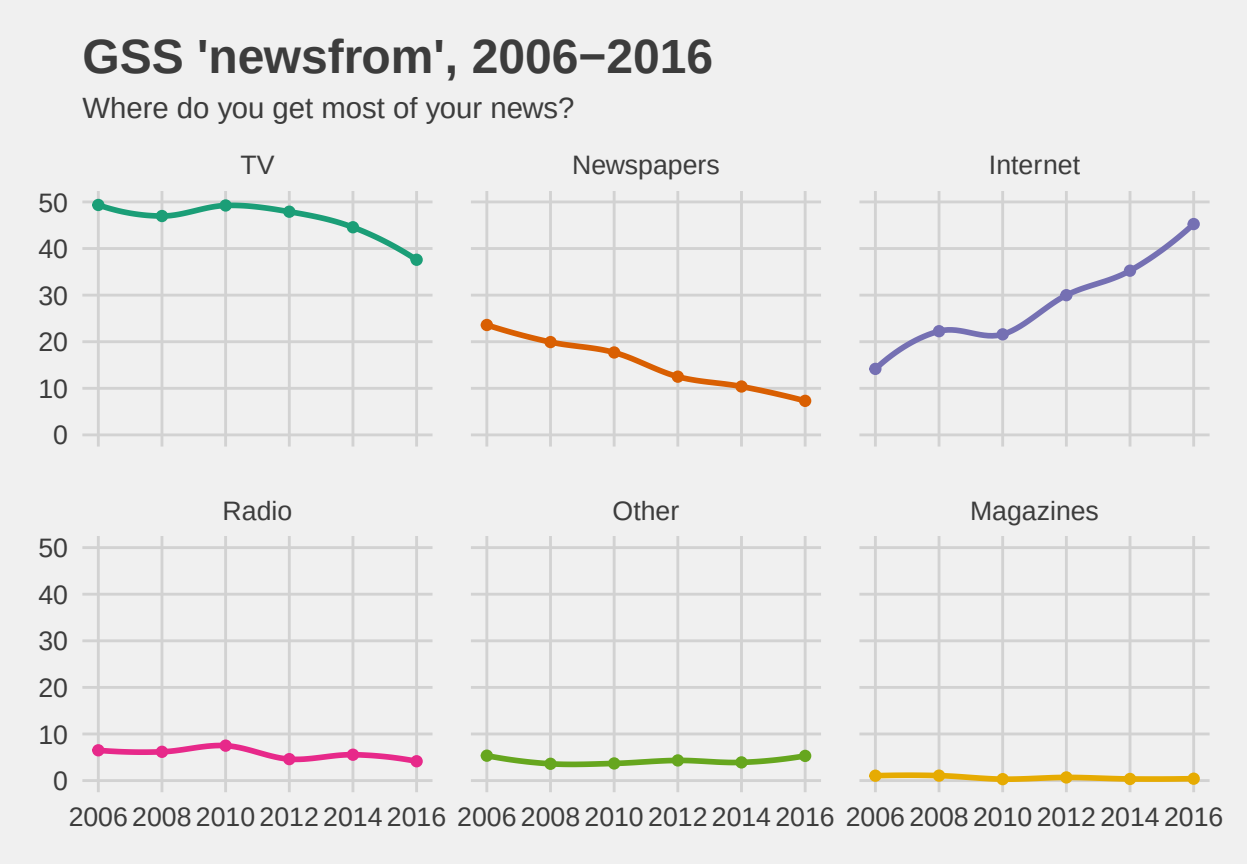
```
library(foreign)
library(dplyr)
library(ggplot2)
library(ggthemes)
library(srvyr)
library(tidyr)
library(RColorBrewer)
options(survey.lonely.psu = "adjust") #center variance contribution around grand mean
#options(survey.lonely.psu = "certainty") #make no contribution to variance

gss <- read.dta(file="C:/Users/DELL/Documents/UMN/GSS_stata/GSS7216_R1a.dta",
                convert.factors = F, missing.type = F)

gss <- gss %>% filter(!is.na(vpsu) & !is.na(vstrat)) %>%
  mutate(weight=ifelse(year<2004, wtssall, wtssnr))
  #https://gssdataexplorer.norc.org/pages/show?page=gss%2Fweighting
  #2004 onward adjusted for nonresponse, WTSSNR used 2004+
  #'72, '73, '74 unweighted, removed to have 1975-2016 weighted series



cces <- read.dta(file="C:/Users/DELL/Documents/UMN/TSP/cces_allyears_old.dta", convert.factors = F, miss
        mutate(weight=(ifelse(is.na(weight), 1, weight))) #missing weights as 1 for now - Andrew check
```

newsfrom (2006-2016)

We are interested in how people get information about events in the news. Where do you get most of your information about current news events - newspapers, magazines, the Internet, books or other printed materials, TV, radio, government agencies, family, friends, colleagues, or some other source?

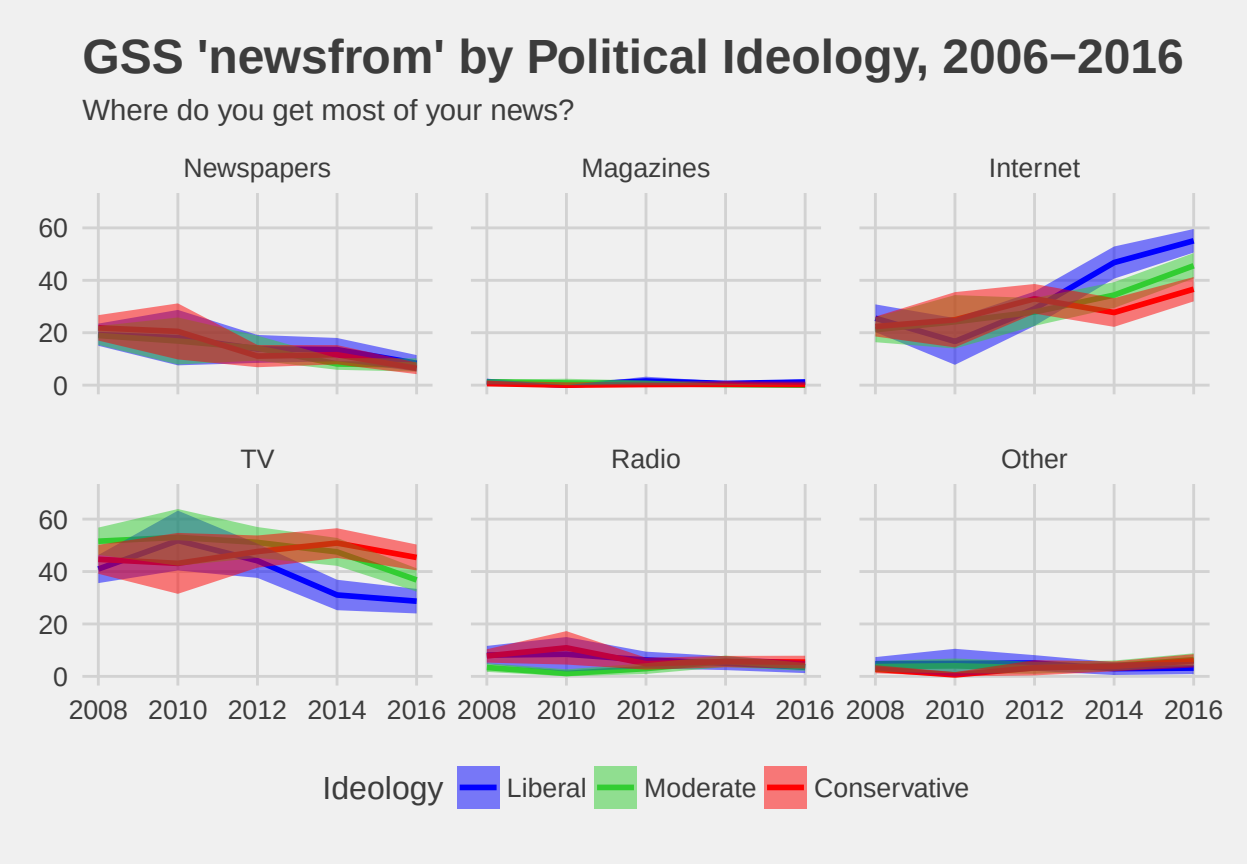
```
gss.design.newsfrom <- gss %>%
  select("year","newsfrom","sample","weight", "vpsu", "vstrat") %>%
  mutate(Newspapers=ifelse(newsfrom==1, ifelse(is.na(newsfrom),NA,1), 0),
         Magazines=ifelse(newsfrom==2,ifelse(is.na(newsfrom),NA,1),0),
         Internet=ifelse(newsfrom==3,ifelse(is.na(newsfrom),NA,1),0),
         Other=ifelse(newsfrom==4|newsfrom==10|newsfrom==7|newsfrom==8|newsfrom==9,ifelse(is.na(newsfro
         TV=ifelse(newsfrom==5,ifelse(is.na(newsfrom),NA,1),0),
         Radio=ifelse(newsfrom==6,ifelse(is.na(newsfrom),NA,1),0)) %>%
  as_survey_design(ids= vpsu, weights= weight, strata= vstrat, nest=T) %>%
  filter(!is.na(newsfrom)) %>%
  group_by(year) %>%
  summarize(Newspapers = survey_mean(Newspapers, vartype=c("se", "ci")),
            Magazines = survey_mean(Magazines, vartype=c("se", "ci")),
            Internet = survey_mean(Internet, vartype=c("se", "ci")),
            Other = survey_mean(Other, vartype=c("se", "ci")),
```

```
            TV = survey_mean(TV, vartype=c("se", "ci")),
            Radio = survey_mean(Radio, vartype=c("se", "ci"))) %>%
  gather(key=key, value=value, -year) %>%
  separate(key, into=c("response","stat"), sep="_") %>%
  mutate(stat=ifelse(is.na(stat), "mean", stat), value=value*100) %>%
  spread(key=stat, value=value) %>%
  mutate(response=factor(response,
                         levels=c("TV","Newspapers","Internet","Radio","Other","Magazines"),
                         labels=c("TV","Newspapers","Internet","Radio","Other","Magazines")))

ggplot(gss.design.newsfrom)+
  geom_point(aes(x=year, y=mean,  color=response))+
  scale_color_brewer(type="qual", palette="Dark2")+
  facet_wrap(~response)+
  geom_smooth(aes(x=year, y=mean, color=response), method="loess", se=T, size=1)+
  ggtitle("GSS 'newsfrom', 2006-2016", subtitle = "Where do you get most of your news?")+
  scale_x_continuous(limits=c(2006,2016), breaks=seq(2006,2016,2))+
  scale_y_continuous(limits=c(0, 50))+
  xlab("Year")+ylab("Percent of Population (GSS)")+
  theme_fivethirtyeight()+
  theme(legend.position="none", panel.spacing = unit(1, "lines"))
```



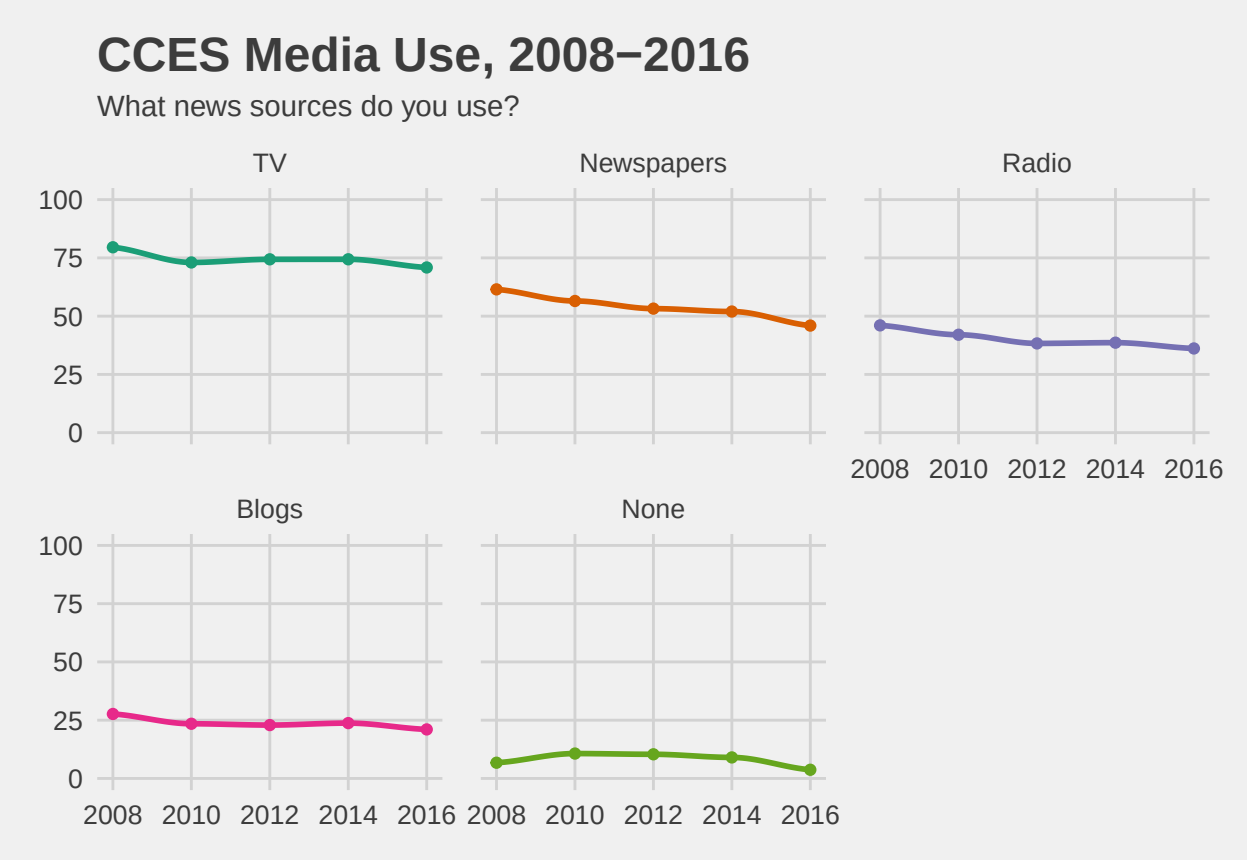
newsfrom (2006-2016) by Political Ideology

```
gss.ideo.design.newsfrom <- gss %>%
  select("year","newsfrom","sample","weight", "vpsu", "vstrat", "polviews") %>%
  mutate(Newspapers=ifelse(newsfrom==1, ifelse(is.na(newsfrom),NA,1), 0),
         Magazines=ifelse(newsfrom==2,ifelse(is.na(newsfrom),NA,1),0),
         Internet=ifelse(newsfrom==3,ifelse(is.na(newsfrom),NA,1),0),
         Other=ifelse(newsfrom==4|newsfrom==10|newsfrom==7|newsfrom==8|newsfrom==9,ifelse(is.na(newsfro
         TV=ifelse(newsfrom==5,ifelse(is.na(newsfrom),NA,1),0),
         Radio=ifelse(newsfrom==6,ifelse(is.na(newsfrom),NA,1),0),
        Ideology=dplyr::recode(polviews, `1`="Liberal", `2`="Liberal", `3`= "Liberal",
                               `4`="Moderate", `5`="Conservative", `6`= "Conservative",
                               `7` = "Conservative")) %>%
  as_survey_design(ids= vpsu, weights= weight, strata= vstrat, nest=T) %>%
  filter(!is.na(newsfrom) & !is.na(polviews)) %>%
  group_by(year, Ideology) %>%
  summarize(Newspapers = survey_mean(Newspapers, vartype=c("se", "ci")),
            Magazines = survey_mean(Magazines, vartype=c("se", "ci")),
            Internet = survey_mean(Internet, vartype=c("se", "ci")),
            Other = survey_mean(Other, vartype=c("se", "ci")),
            TV = survey_mean(TV, vartype=c("se", "ci")),
            Radio = survey_mean(Radio, vartype=c("se", "ci"))) %>%
  gather(key=key, value=value, -c(year, Ideology)) %>%
  separate(key, into=c("response","stat"), sep="_") %>%
  mutate(stat=ifelse(is.na(stat), "mean", stat), value=value*100) %>%
  spread(key=stat, value=value) %>%
  mutate(response=factor(response,
                         levels=c("Newspapers","Magazines","Internet","TV","Radio","FriendsFamily","Oth
                         labels=c("Newspapers","Magazines","Internet","TV","Radio","Friends and Family"
         low=ifelse(low < 0, 0, low),
         Ideology=factor(Ideology,
                         levels=c("Liberal","Moderate","Conservative")))

ggplot(gss.ideo.design.newsfrom)+
  geom_line(aes(x=year, y=mean,  color=Ideology), size=1)+
  scale_color_manual(name="Ideology",
                     values = c("blue","limegreen", "red"),
                     labels = c("Liberal","Moderate","Conservative"))+
  facet_wrap(~response)+
  geom_ribbon(aes(x=year, ymin=low, ymax=upp, fill=Ideology), alpha=.5)+
  scale_fill_manual(name="Ideology",
                     values = c("blue","limegreen", "red"),
                     labels = c("Liberal","Moderate","Conservative"))+
  ggtitle("GSS 'newsfrom' by Political Ideology, 2006-2016", subtitle = "Where do you get most of your n
  scale_x_continuous(limits=c(2008,2016), breaks=seq(2008,2016,2))+
  scale_y_continuous(limits=c(0, 70))+
  xlab("Year")+ylab("Percent of Population")+
  theme_fivethirtyeight()+
  theme(panel.spacing = unit(1, "lines"))
```


GSS 'newsfrom' by Political Ideology, 2006−2016
Where do you get most of your news?
Newspapers
Magazines
Internet
TV
Radio
Other
60
40
20
0
2008
2010
2012
2014
2016
Ideology
Liberal
Moderate
Conservative

CCES Use indicators

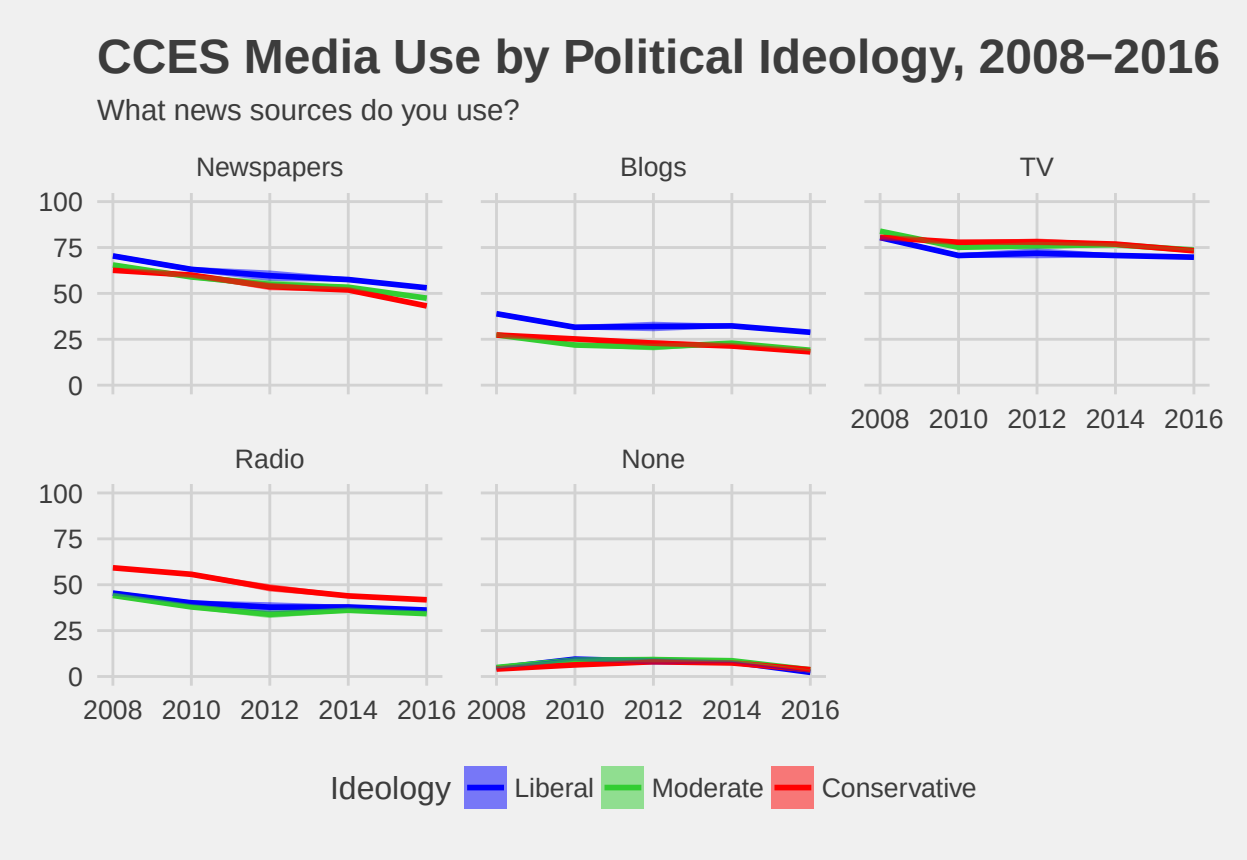
```
cces.design.use <- cces %>%
  select("year","blog","tv","newspap", "radio", "none","weight", "id") %>%
  mutate(Newspapers=ifelse(newspap==1, ifelse(is.na(newspap),NA,1), 0),
         Blogs=ifelse(blog==1,ifelse(is.na(blog),NA,1),0),
         TV=ifelse(tv==1,ifelse(is.na(tv),NA,1),0),
         Radio=ifelse(radio==1,ifelse(is.na(radio),NA,1),0),
         None=ifelse(none==1,ifelse(is.na(none),NA,1),0)) %>%
  as_survey_design(id=id,  weights= weight) %>%
  filter(!is.na(Newspapers)) %>% #all have 33 missing
  group_by(year) %>%
  summarize(Newspapers = survey_mean(Newspapers, vartype=c("se", "ci")),
            Blogs = survey_mean(Blogs, vartype=c("se", "ci")),
            TV = survey_mean(TV, vartype=c("se", "ci")),
            Radio = survey_mean(Radio, vartype=c("se", "ci")),
            None = survey_mean(None, vartype=c("se", "ci"))) %>%
  gather(key=key, value=value, -year) %>%
  separate(key, into=c("response","stat"), sep="_") %>%
  mutate(stat=ifelse(is.na(stat), "mean", stat), value=value*100) %>%
  spread(key=stat, value=value) %>%
  mutate(response=factor(response,
                         levels=c("TV","Newspapers","Radio","Blogs","None"),
                         labels=c("TV","Newspapers","Radio","Blogs","None")))

ggplot(cces.design.use)+
  geom_point(aes(x=year, y=mean,  color=response))+
  scale_color_brewer(type="qual", palette="Dark2")+
  facet_wrap(~response)+
  geom_smooth(aes(x=year, y=mean, color=response), method="loess", se=T, size=1)+
  ggtitle("CCES Media Use, 2008-2016", subtitle = "What news sources do you use?")+
  labs( fill="Response")+
  scale_x_continuous(limits=c(2008,2016), breaks=seq(2008,2016,2))+
  scale_y_continuous(limits=c(0, 100))+
  xlab("Year")+ylab("Percent of Population")+
  theme_fivethirtyeight()+
  theme(legend.position="none", panel.spacing = unit(1, "lines"))
```



By Political Ideology

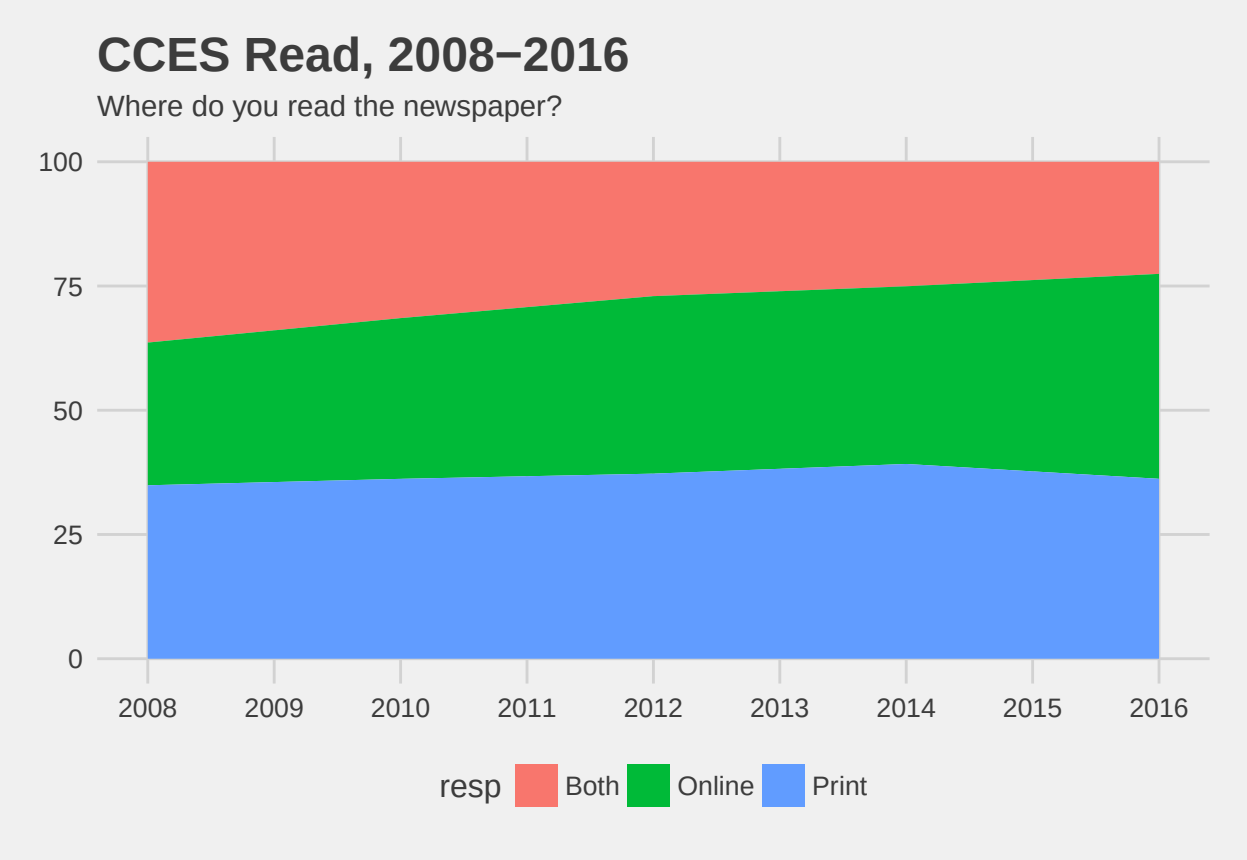
```
cces.ideo.design.use <- cces %>%
  select("year","blog","tv","newspap", "radio", "none","weight", "id", "ideo5") %>%
  mutate(Newspapers=ifelse(newspap==1, ifelse(is.na(newspap),NA,1), 0),
         Blogs=ifelse(blog==1,ifelse(is.na(blog),NA,1),0),
         TV=ifelse(tv==1,ifelse(is.na(tv),NA,1),0),
         Radio=ifelse(radio==1,ifelse(is.na(radio),NA,1),0),
         None=ifelse(none==1,ifelse(is.na(none),NA,1),0),
         Ideology=dplyr::recode(ideo5, `1`="Liberal", `2`="Liberal", `3`= "Moderate",
                                `4`="Conservative", `5`="Conservative")) %>%
  as_survey_design(id=id,  weights= weight) %>%
  filter(!is.na(Newspapers) & !is.na(Ideology)) %>%
  group_by(year, Ideology) %>%
  summarize(Newspapers = survey_mean(Newspapers, vartype=c("se", "ci")),
            Blogs = survey_mean(Blogs, vartype=c("se", "ci")),
            TV = survey_mean(TV, vartype=c("se", "ci")),
            Radio = survey_mean(Radio, vartype=c("se", "ci")),
            None = survey_mean(None, vartype=c("se", "ci"))) %>%
  gather(key=key, value=value, -c(year, Ideology)) %>%
  separate(key, into=c("response","stat"), sep="_") %>%
  mutate(stat=ifelse(is.na(stat), "mean", stat), value=value*100) %>%
  spread(key=stat, value=value) %>%
  mutate(response=factor(response,
```

```
                        levels=c("Newspapers","Blogs","TV","Radio","None"),
                        labels=c("Newspapers","Blogs","TV","Radio","None")),
         Ideology=factor(Ideology,
                        levels=c("Liberal","Moderate","Conservative")))

ggplot(cces.ideo.design.use)+
  geom_line(aes(x=year, y=mean,  color=Ideology), size=1)+
  scale_color_manual(name="Ideology",
                     values = c("blue","limegreen", "red"),
                     labels = c("Liberal","Moderate","Conservative"))+
  facet_wrap(~response)+
  geom_ribbon(aes(x=year, ymin=low, ymax=upp, fill=Ideology), alpha=.5)+
  scale_fill_manual(name="Ideology",
                     values = c("blue","limegreen", "red"),
                     labels = c("Liberal","Moderate","Conservative"))+
  ggtitle("CCES Media Use by Political Ideology, 2008-2016", subtitle = "What news sources do you use?")
  scale_x_continuous(limits=c(2008,2016), breaks=seq(2008,2016,2))+
  scale_y_continuous(limits=c(0, 100))+
  xlab("Year")+ylab("Percent of Population")+
  theme_fivethirtyeight()+
  theme(panel.spacing = unit(1, "lines"))
```

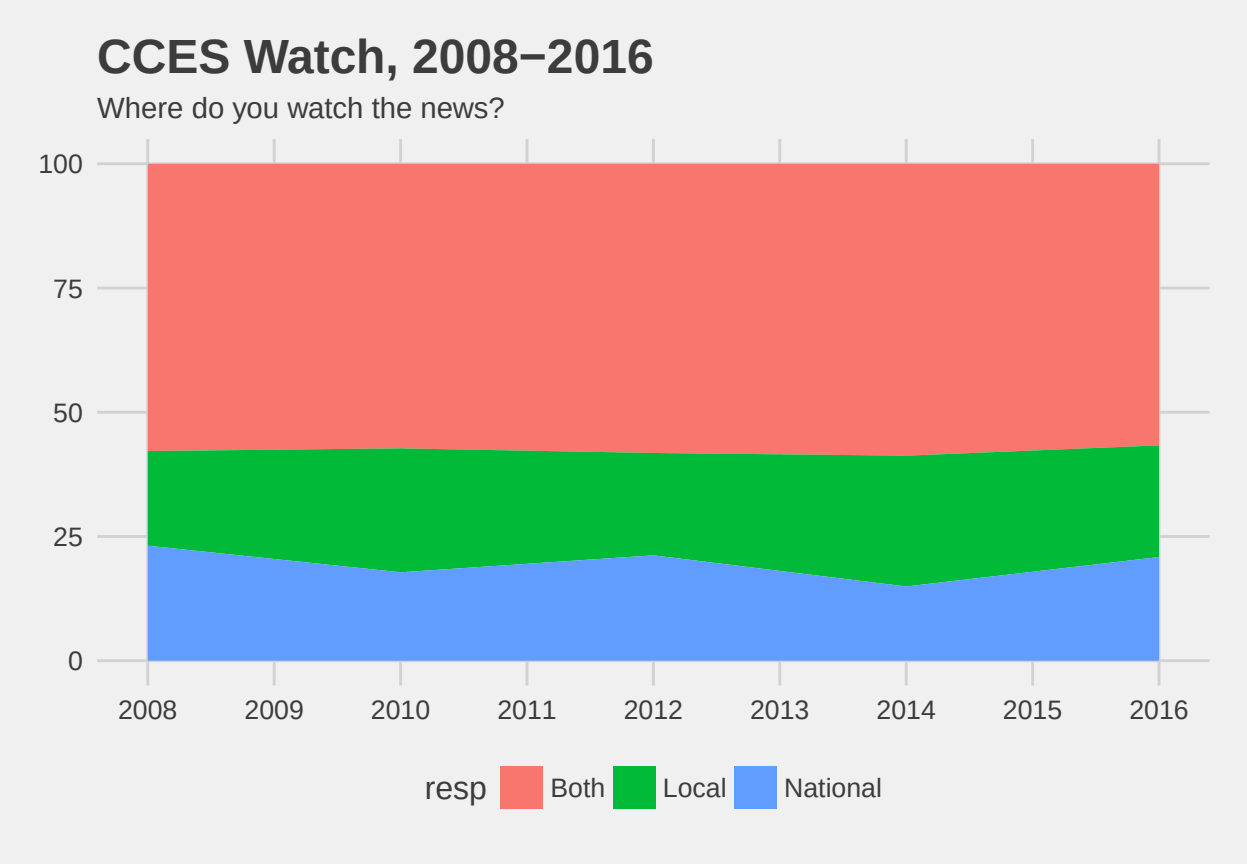


CCES watch/read

```
cces.wr.design <- cces %>%
  select("year","watch","read","weight", "id") %>%
  mutate(Watch.Local=ifelse(watch==1,1,0),
         Watch.National=ifelse(watch==2,1,0),
         Watch.Both=ifelse(watch==3,1,0),
         Read.Print=ifelse(read==1,1,0),
         Read.Online=ifelse(read==2,1,0),
         Read.Both=ifelse(read==3,1,0)) %>%
  as_survey_design(id=id,  weights= weight) %>%
  filter(!is.na(watch) & !is.na(read)) %>%
  group_by(year) %>%
  summarize(WatchxLocal= survey_mean(Watch.Local, vartype=c("se", "ci")),
            WatchxNational = survey_mean(Watch.National, vartype=c("se", "ci")),
            WatchxBoth = survey_mean(Watch.Both, vartype=c("se", "ci")),
            ReadxPrint = survey_mean(Read.Print, vartype=c("se", "ci")),
            ReadxOnline = survey_mean(Read.Online, vartype=c("se", "ci")),
            ReadxBoth = survey_mean(Read.Both, vartype=c("se", "ci"))) %>%
  gather(key=key, value=value, -year) %>%
  separate(key, into=c("response","stat"), sep="_") %>%
  mutate(stat=ifelse(is.na(stat), "mean", stat), value=value*100) %>%
  spread(key=stat, value=value) %>%
  separate(response, into=c("var","resp"), sep = "x") %>%
  mutate(variable=factor(var,
                         levels=c("Read","Watch"),
                         labels=c("Read","Watch")))

cces.watch <- cces.wr.design %>% filter(var=="Watch")
cces.read <- cces.wr.design %>% filter(var=="Read")


ggplot(cces.read)+
  geom_area(aes(x=year, y=mean,  fill=resp))+
  ggtitle("CCES Read, 2008-2016", subtitle = "Where do you read the newspaper?")+
  scale_x_continuous(limits=c(2008,2016), breaks=seq(2008,2016,1))+
  xlab("Year")+ylab("Percent of Population")+
  labs(color="Response")+
  theme_fivethirtyeight()
```




```
ggplot(cces.watch)+
  geom_area(aes(x=year, y=mean,  fill=resp))+
  ggtitle("CCES Watch, 2008-2016", subtitle = "Where do you watch the news?")+
  scale_x_continuous(limits=c(2008,2016), breaks=seq(2008,2016,1))+
  xlab("Year")+ylab("Percent of Population")+
  labs(color="Response")+
  theme_fivethirtyeight()
```


CCES Watch, 2008−2016
Where do you watch the news?
100
75
50
25
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
resp
Both
Local
National