Mosaic Plots

SPSS

There is no mosaic plot procedure available in SPSS, but there is a macro created by Andrew Wheeler, which will generate a mosaic, https://andrewpwheeler.wordpress.com/2013/04/21/spineplots-in-spss/.

```
output close ALL.

*  Mosaic plot set up for SPSS by Andrew Wheeler.
* https://andrewpwheeler.wordpress.com/2013/04/21/spineplots-in-spss/.

*replace with your own file path.
GET FILE='c:\jason\spsswin\uvclass\quinnipiac2020.sav'.

* rename the variables of interested to dimstack and dimcol for use with the macro.
rename variables (response=DimStack)(ind=DimCol).

**********************************************************************.
*Plots to make Mosaic Macro, tested on V20.
*I know for a fact V15 does not work, as it does not handle
*coloring the boxes correctly when using the link.hull function.

*These files must be downloaded and stored in an accessible location
*Change this to whereever you save the MosaicPlot macro.
FILE HANDLE data /name = "c:\jason\spsswin\cdaclass\MosaicPlot".
INSERT FILE = "c:\jason\spsswin\cdaclass\MacroMosaic.sps".

*Making random categorical data.
dataset close ALL.
output close ALL.

*set mprint on.
!makespine Cat1 = DimStack Cat2 = DimCol.
*Example Graph - need to just replace Cat1 and Cat2 where appropriate.
dataset activate spinedata.
rename variables (DimStack = Cat1)(DimCol = Cat2).
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=X2 X1 Y1 Y2 myID Cat1 Cat2 Xmiddle
  MISSING = VARIABLEWISE
  /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
 SOURCE: s=userSource(id("graphdataset"))
 DATA: Y2=col(source(s), name("Y2"))
 DATA: Y1=col(source(s), name("Y1"))
 DATA: X2=col(source(s), name("X2"))
 DATA: X1=col(source(s), name("X1"))
 DATA: Xmiddle=col(source(s), name("Xmiddle"))
 DATA: myID=col(source(s), name("myID"), unit.category())
 DATA: Cat1=col(source(s), name("Cat1"), unit.category())
 DATA: Cat2=col(source(s), name("Cat2"), unit.category())
 TRANS: y_temp = eval(1)
 SCALE: linear(dim(2), min(0), max(1.05))
 GUIDE: axis(dim(1), label("Prop. Cat 2"))
 GUIDE: axis(dim(2), label("Prop. Cat 1 within Cat 2"))
 ELEMENT: polygon(position(link.hull((X1 + X2)*(Y1 + Y2))), color.interior(Cat1), split(Cat2))
 ELEMENT: point(position(Xmiddle*y_temp), label(Cat2), transparency.exterior(transparency."1"))
END GPL.
```
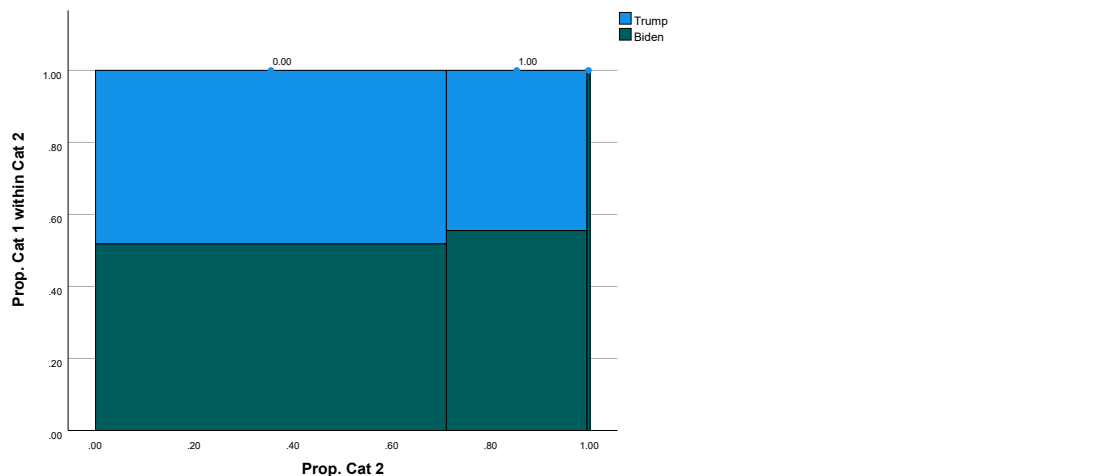
R

```r
library(MASS)
tbl = table(d$ind, d$response)
tbl
#measures of association
library(vcd)
data <- matrix(c(338,363,125,156),ncol=2,byrow=TRUE)
assocstats(data)

#categorical figures
#uses vcd library called above
#transform variable to factor
d$response <- factor(d$response)
#table of counts created as tbl above is needed for mosaic
#dimnames assigns labels for categories
dimnames(tbl) = list(ind = c("Party","Independent"),response = c("Trump","Biden"))

mosaic(tbl,main ="Quinnipiac Poll Data", gp = gpar(fill=c('lightblue', 'pink')))
```
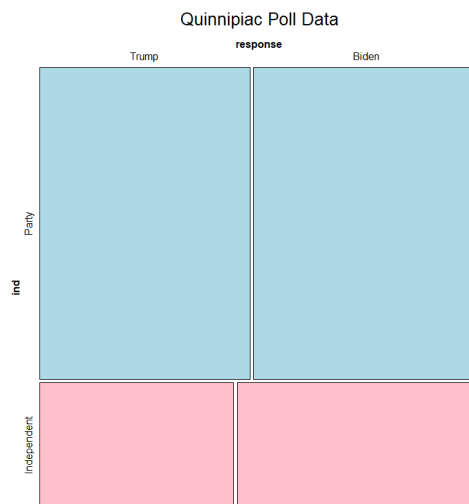

For lots more plotting ideas in R, see Pilhoefer, A., & Unwin, A. (2013). New approaches in visualization of categorical data: R package extracat. *Journal of Statistical Software, 53*(7), 1-25.

SAS

To ensure the plot is generated make sure you comment out the two lines at the top that I usually use:

```sas
*ods results off; *ods listing;

/*Mosaic plot */
ods graphics on;   *also comm out the ods results off line at the top using *;
proc freq data=one;
tables ind*response / norow chisq plots=MOSAIC;
run;
```
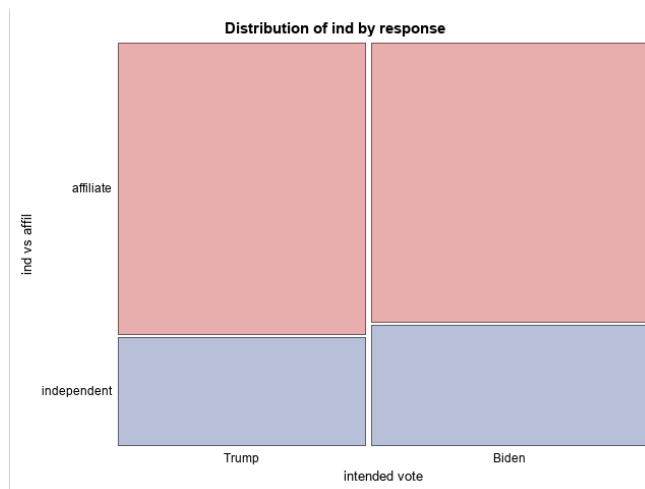

For lots more on graphics for categorical data with SAS, see Friendly, M. (2001). Visualizing categorical data. SAS publishing.