DSCI 310

**Activity on visual perception and elemental groupings**

Consider the following headline:

Despite growth, rural Americans have consistently lower levels of smartphone ownership than urbanites and suburbanites.

Suppose that the headline is based on the following data:

Year	Residence	% with smartphone
2011	Rural	21
2011	Suburban	37
2011	Urban	38
2016	Rural	58
2016	Suburban	78
2016	Urban	77
2021	Rural	80
2021	Suburban	84
2021	Urban	89

The visualization below has been created to accompany this headline:
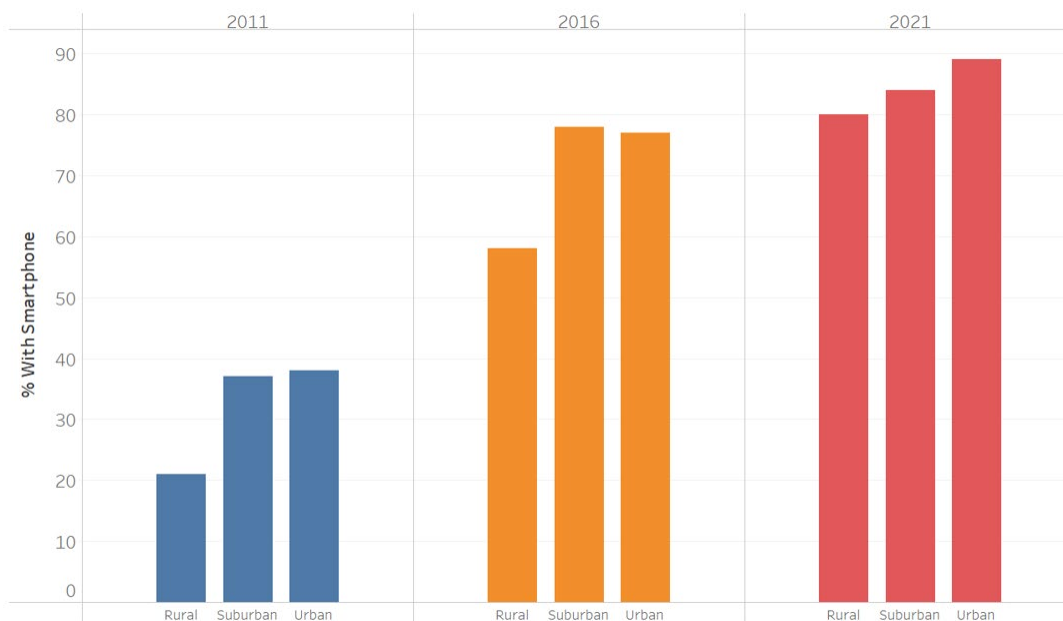
(Data and headline motivated by Pew Research article; 2016 percentages "guesstimated" here.)

A. Which data points does the visualization show as a single "elemental grouping," i.e., which data points does the visualization communicate "belong together"? Identify the Gestalt principles that employed to communicate these groupings.

B. Which data points constitute a single elemental grouping (belong together), according to the headline? Where are these data points in the visualization? What aspects of the design are working against seeing these sets of data points as elemental groupings?

C. Sketch at least two redesigns of this visualization that you think would better accompany the headline provided. For each, identify the Gestalt principles you are using to emphasize the elemental groupings and facilitate their comparisons.