COVID-19 Worldwide and in Colorado Peer Review

This is an excellent and well thought out visualization project, and virtually all of my critiques are minor. My biggest concern overall is that the project is somewhat over-ambitious given the time frame we have, but all of the proposed visualizations make sense and feel cohesive.

Task 1

The "COVID-19 Worldwide Browser" using an effective choropleth map approach to give the user a sense of which countries have been most affected by the pandemic. The filtering control panel is intuitive and offers the user a variety of views to drill down into worldwide trends, both in terms of COVID-19 cases and COVID-19-related deaths. The legend is not visible in this document, but it appears that different hues represent bins of a categorical variable. If this is correct, I'm curious about how these bins were chosen, and whether it might be better to represent these attributes using luminance or saturation instead, so that the numeric attributes are represented more continuously. If this makes the map more difficult to read, then it might be worth looking into a control panel option that allows the user to adjust bin sizes instead (within reasonable limits of the chosen color scheme). Also, it might be nice to use two different color schemes for cases and deaths, so that the user has a visual cue about which data they are looking at.

The second part of task 1 seems slightly harder to accomplish using this visualization. As I understand it, line charts showing deaths or cases over time will show up at the bottom of the visualization when users click on a specific country. This is a great idea for providing the user with additional detail, but I don't think it allows for easy comparison between countries because user will have to keep a mental map while clicking back and forth between countries. The ability to select multiple countries would be helpful, or perhaps a plot could replace the planned data table with derived indexes.

Task 2

This task is slightly difficult to evaluate, because I'm not quite sure what the designer means by "test efficiency." If it's the percentage of the total population that has been tested, then I think this could be easily incorporated into the worldwide browser by adding tests to the deaths/cases dropdown option in the control panel.

Task 3

This task is well-addressed in the design plan, but I'm not sure how useful Scagnostics would be in this context. As I understand it, Scagnostics are most useful when the user needs to examine the relationship between many quantitative attributes, but there are so many pairwise combinations that a SPLOM is overwhelming. In this case there are really only 4 correlations necessary, so I think the small multiples approach would be more effective. Unless I'm misunderstanding the smoking and asthma data and there is further information about additional lung diseases, in which case Scagnostics would be an excellent approach. It might also be interesting to provide ways for the user to drill down further into the county-level data,

perhaps to answer questions like, “which counties are particularly hard hit by COVID-19?” or “are counties with heavy smoking more or less likely to test their population?”

Tasks 4 and 5

A text-based visualization for summarizing COVID-19 research papers is a fantastic idea, but the approach could use a little bit more detail. It’s not clear how the top search results will be chosen based on user keyword searches. For example, if a user were to input the keywords “COVID” and “asthma,” these would likely be present in thousands of research articles, and it’s not clear how the top results would be selected. Perhaps the user could select the most important attributes, such as journal impact factor and number of citations (if these data are available). Also, this approach is very similar to something like Google scholar, and doesn’t have as much of a visual component as the previous tasks. Would it be possible to add some sort of network visualization, that the user searches for a risk factor and sees a network of papers containing the keyword, connected by author or another attribute of interest?

Great job with this visualization design! I love the different tasks and related views that you’ve selected and think this will be a genuinely useful tool. Also, I’m so impressed with (if a little worried by) the scope of the project and the number of ideas you’ve incorporated.