Project III

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<u>Proposed Scope of Improvement and Have Executed Improvements</u>: Your project TF should have provided feedback for your Project II submission. For the meeting you should have implemented obvious suggestions by your TF. By the meeting you should have resolved all bugs of your visualization. For more general and more far-reaching comments please come prepared to further address and discuss this feedback and how you plan to remedy the issues with your Project II. Additionally, you may need to extend your dataset to extend the overall scope of the project. Other ways to extend the scope include adding an additional view or extending your current visualization. Please come prepared with two sketches proposing two different alternate designs for your visualization improvements.

The current plan is to extend the scope of the project by incorporating nationwide data. The initial visualization focused on state by state changes in firearm homicides over time. When we looked at the change in the map as a whole we could see an overall downward trend. The expansion will utilize the nationwide map's feature to show changes over time and compare it with other nationwide data.

Possible nationwide data to include:
- Age of firearm homicide victims in each year
- Circumstances of firearm homicides in each year

<u>Proposed Scope of Storytelling</u>: In order to integrate a successful storytelling aspect to your visualization, we suggest finding an "Opening" a "Middle" and a "Closing" in the story you tell. Please come prepared with two sketches proposing two different alternate designs for your storytelling aspect.

Despite recent events our data shows a general positive trend toward less gun homicides. The nationwide data shows a similar trend for the most part. Fewer people per 100k were the victims of gun crime as time went on, and what data we did find shows a possible decrease in gun ownership (at least up to 2011). We also noticed based on our Firearm type filter that handguns seem to be responsible for the majority of firearm-related homicides. It may be interesting to add a graph that charts the total number of homicides nationwide over time to confirm that these numbers are indeed going down as a whole.

Part of the story, although maybe not part of the visualization, is the unavailability of reliable gun

ownership data.

It may make sense to remove some of the filtering on the map and instead show a series of maps to tell a story more effectively. For example, the year filter could be removed, and instead there could be a map for each year (small multiples) that could then each be filtered by firearm type. This would immediately show the trends in the map coloring without the user having to switch between years.

Another possibility we may pursue is to hone in on an individual state or city and supplement with additional data to tell a story. For example, Louisiana remains in the 5+ firearm homicides per 100k people category for all the years we show data for. It might be interesting to create an svg map of Louisiana only and see if we can get firearm data city by city. It may also be interesting to get some information on individual victim's stories and include that as part of telling a story.

Some more interesting links/possible directions to explore:
Firearm Licensees by State
Gun Laws by State
New York City Gun Permit Maps
Gun Ownership Statistics and Firearm Sales Statistics - somewhat sketchy source
Why there's no reliable gun sales data?
Gun Deaths since Newtown
Brady Campaign to Prevent Gun Violence
Firearm Storage Practices and Rates of Unintentional Firearm Deaths in the United States
http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-gun-policy-and-research/resources/health_and_crime_data_sources
http://www.americanprogress.org/wp-content/uploads/2013/03/AmericaUnderTheGun.pdf
Injury Prevention & Control: Data & Statistics
Crime trends in New Orleans - has specific data about gun homicides, could be very useful
New Orleans crime rates and statistics
FBI crime data by city - doesn't seem to be broken down by weapon type though
FBI UCR Data Tool
more FBI data that we didn't see before - includes some stuff by city, still not broken down by weapon (click "Offenses Known to Law Enforcement" title on the main Crime in the US page for each year)
FBI 2009 crime by state by city and Louisiana crime by city (2009)
Bureau of Justice Statistics - Guns Used in Crime - includes firearm definitions
Bureau of Justice Statistics - Firearms and Crime Statistics
    Stolen Firearm statistics
    Weapon Use and Violent Crime, 1993-2001 - contains more demographic data of victims (earlier years than our other data though)
Gun Law Ranking

<u>Proposed Implementation Plan</u>: Extending the scope of the project might included using more complicated technologies than those used in Project II. If this is the case, please come prepared to discuss which different technologies you have designated as options and the pros and cons for or against said options.

Some possibilities:

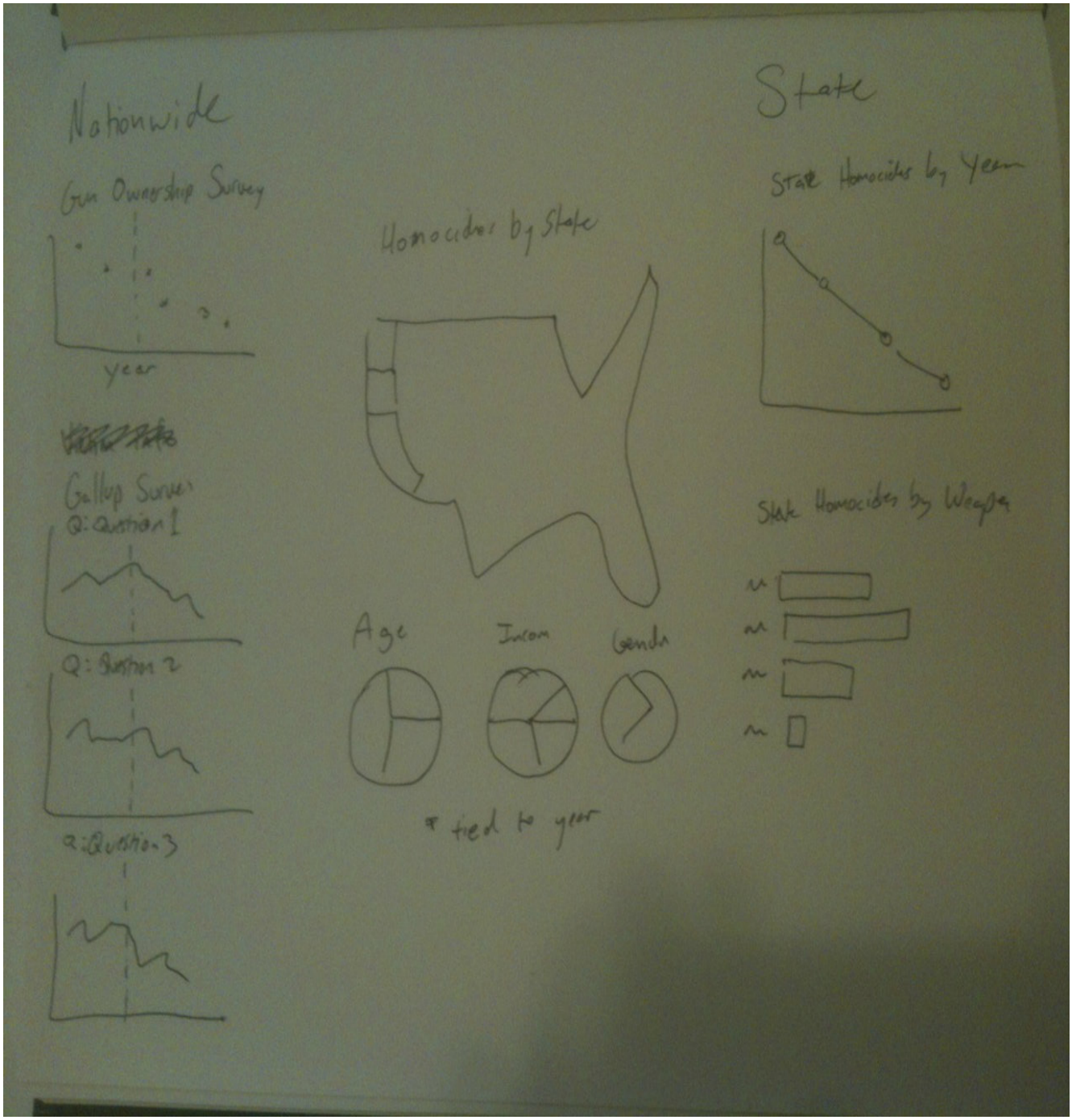
- The nationwide graphs can be used to change the year of the map.
- Different data can be displayed on the nationwide map.
- Using small multiples of the map for each year as discussed above.
- Have a graph appear when each year is selected that shows nationwide data for that year.
- Graph total nationwide firearm homicides over time.
- Look into Louisiana's especially high firearm homicide rate.
- Add a map that color encodes by gun law data - use old map and new map to draw out interesting correlations to tell a story.

Bug fixes, etc.:

- We will remove the color coding of the Firearm Homicides by Weapon bar graph, since it's not really necessary.
- Finding a solution to the hover problem on the line graph.
- We are not sure switching to a pure svg map and abandoning Datamaps would be worth it at this point if the only benefit it to highlight the selected state in the map.

TF Feedback from our meeting on 04/17:

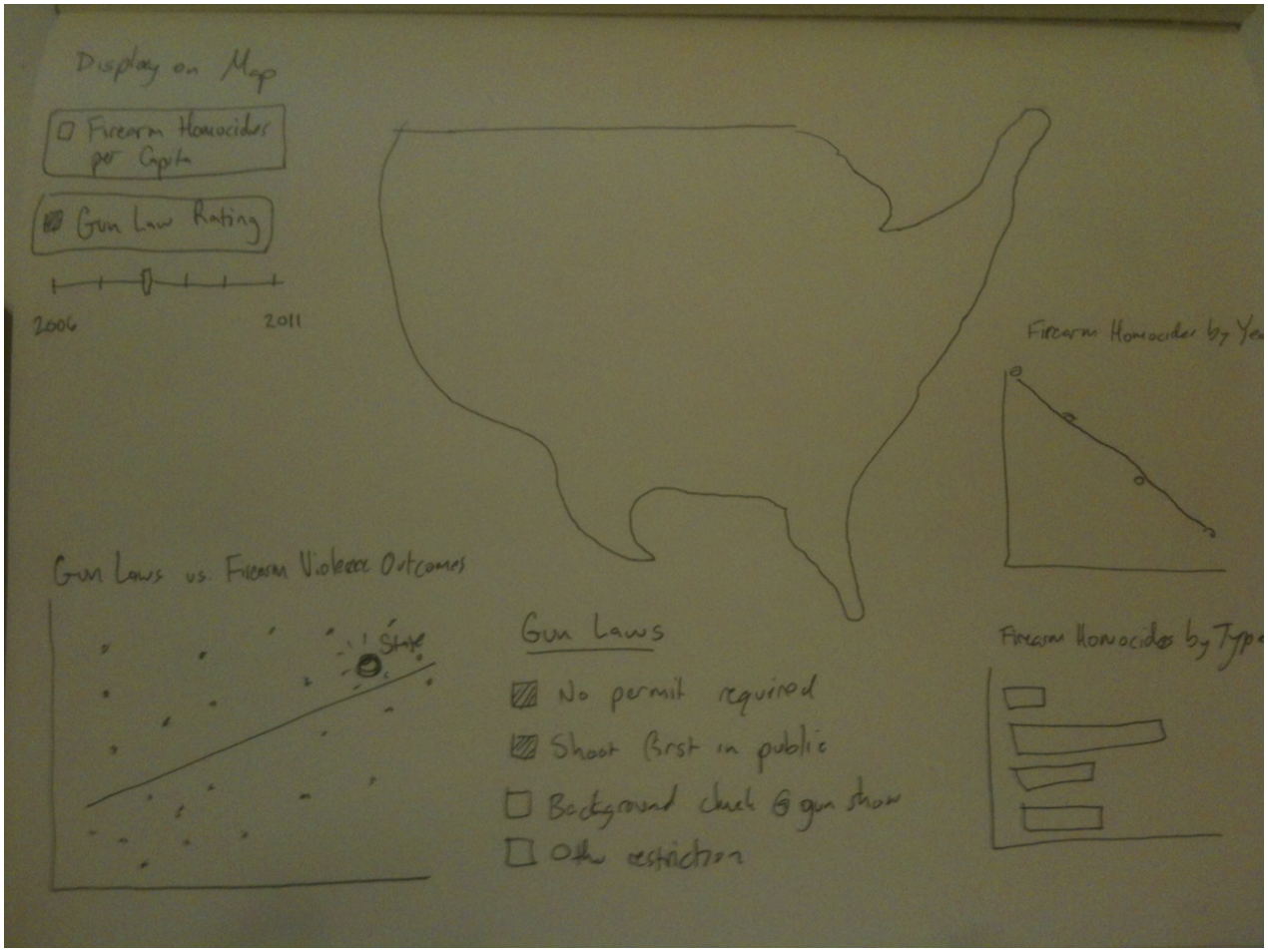
- Don't need to be constrained by state by state data
- Fix consistency of Bar graph title
- Fix line graph highlighting
- Bring in more data/ additional visualizations to tell an interesting story
- Could bring in individual victims stories, individual state, etc. - individual city data (bigger map of Louisiana w/ data, info on gun laws in that state, add in opinion info from Gallup poll for that state)
- Focus/goal now is to tell a story - just need to add some additional data to show this
- Gun laws by state visualization



<u>Timeline of Project Completion</u>: We expect for you to have a clear outline of what must get done, what would be nice to get done and develop a timeline for the project group.We expect that tasks will be distributed fairly across partners keeping in mind factors such as abilities and dependencies.

- We planned to each do some individual research after meeting w/ our TF to see what data was available out of our possibilities, as this will affect what we ultimately add to our visualization.

- Based on our research, we decided to pursue adding state by state firearm regulations/laws to our visualization to tell a story. We need to create categories for different types of regulation and we plan to create a second choropleth map with this data. When each state is clicked, a smaller chart will be created that breaks down the details of that state's gun laws.
- We will then look for interesting correlations and narrate these in more detail to tell a story.
- We will decide together on which gun law data sources to use and create categories. Josh will aim to get the second Datamaps choropleth going by Wed. 04/24. Meanwhile, Lauren will work on the bugs left over in Project 2. Then Lauren will implement the breakdown graph on click of each state by 04/27. We will then look at the data and draw out interesting observations to tell our story by 04/30. Then we will have a few days to fix bugs/wrap up/make our screencast. We will update our process book as we go along.



4/22/2013

Josh looked for sources of firearm law data by state. The Guardian visualization gave a link to the site smartgunlaws.org which does a great job of monitoring and categorizing gun laws. Unfortunately the site does not offer its gun data in a friendly format, asking users to search the

site state by state. It would be possible to scrape, but difficult because most pages container the information in paragraph form as opposed to a table or other easy to read format.

Josh went back to the Guardian visualization and used the developer tools in Google Chrome to search through the code, hoping to find the gun law data in an accessible format. He hit the jackpot and found exactly what was needed: a JSON file organized by state containing all the data from the visualization. Josh also found a key of the descriptions for each category in the JSON from the Guardian.

Josh modified the python JSON creator to include this data in the main JSON variable used in Project II. He added a second variable for the key.

Lauren and Josh may need to use the gun data to come up with their own rating system or adapt the one from smartgunlaws.org. For the state-by-state breakdowns of gun laws it might be cool to use the visualization to show how we came to a rating. This could be just numbers or a bidirectional bar graph.

Open carry in public HG	(-5)
Open carry in public Rifle	(-1)
Restricted in churches	(+3)
Restricted in arenas	(+5)
Total	(2)

04/23/2013

Lauren worked on some bug fixes, including removing color encoding from the bar graph (not really needed) and the hovering/brushing issue.

In terms of the hover/brushing issue, I think we're kind of in catch 22- Lauren programmed it so that the rectangle that blocks the hover gets a width of 0 on brushend, which makes the hovering possible, and then on click the height of the rectangle is increased again so brushing is possible- the problem is, even though the click brings the rectangle back, the dragging doesn't really work unless you let go and click and drag again because the event hasn't really "caught" yet.

Also thought about changing the dot hover function to a click function instead, but this would still require minimizing the background rectangle somehow, and thus the problem of being able to switch back and forth smoothly between hovering and brushing still remains.

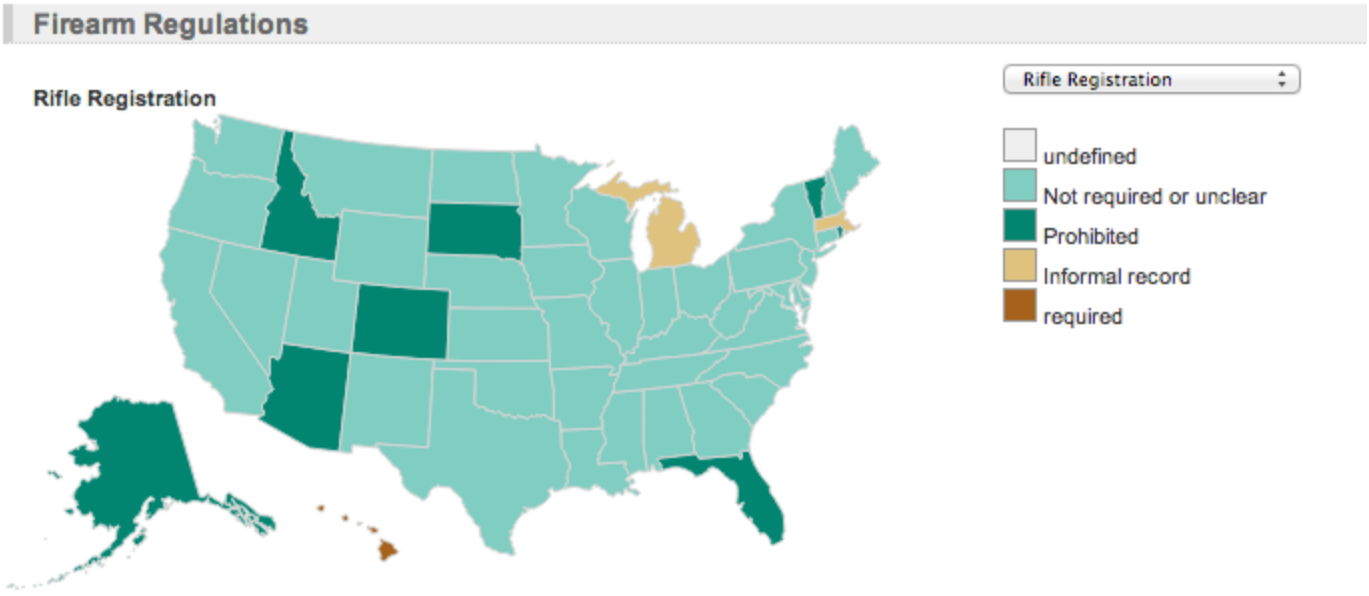
Only other idea at this point is to have a checkbox or something that the user can toggle to enable either hovering or brushing, but that's kind of annoying. It seems like the nature of the brushing function is to draw the rectangle on top of everything, as its needed for the drag to work.

Lauren also set up a new blank map and key for the gun law data display.

04/24/2013
Josh spent some time encoding the gun law data on a datamaps map. He started out with the red, white, and blue color scheme that the Guardian visualization used. There are 20 laws in total that we have data for, so we will need to decide whether we want to do separate maps for each, or just have some sort of filter on the one map that redraws it for each law. Then we can either create our own rating system to "grade" each state based on the composite of their laws (may need additional data in order to determine how much each law matters), or use the rating system from smartgunlaws.org: http://smartgunlaws.org/wp-content/uploads/2012/11/Point-Assignment-Methodology.pdf. This covers 29 laws, however, so our version would be incomplete.

We also discussed and decided to just remove the hovering functionality from the line graph, and only have brushing implemented. We felt at this point it wasn't worth putting in more time to try to get both working at once. The user can still select a single year to display on the bar graph with the brush, or using the year filter on the map. Lauren removed the hovering.

04/27/2013
Lauren went into Josh's initial implementation of the gun law data on a map, and separated it out so that the original homicide data map could be viewed side by side with the gun laws map. She created a dynamically generated dropdown filter for the gun law map so the viewer can easily redraw the map based on different laws. She also implemented a basic use of the intro.js plugin to be filled in later. Gave the gun law map a new color scheme from color brewer, but may tweak it later:



Josh then created a dynamically generated key for the gun map that says what each color means for each of the law map views. We are having some trouble with "undefined"s appearing

in the key that we need to fix.

We were hoping to be able to dynamically update the tooltip on the map based on which law filter was selected, but we can't get it working. This may be another thing about datamaps that is pretty much impossible to customize. We will probably just use the state name and show the other info to the side.

04/29/2013
Lauren set up the click function on the states in the gun law map so that a list of all the details for that state's laws will show up to the right of the map on click. Borrowed some jquery UI classes to create expandable/collapsable elements in the list so the details of each law can be hidden and shown:

Also did some resizing and rearranging of all the elements on our index page so the info can be more easily viewed all together. Beginning to try to figure out exactly what our story will be. Early indications are showing that there may be no strong correlation shown in our data between gun homicides and laws. However, the first map still shows that handguns are overwhelmingly responsible for gun homicides, and the law map shows that for most states, the laws pertaining to handguns are nonexistent or undefined, so this may be where our story lies.

04/30/2013
We're having troubling tying gun laws to gun deaths, but some others may have tied unemployment to gun deaths.

http://www.theatlanticcities.com/neighborhoods/2012/12/geography-us-gun-violence/4171/

Lauren fixed the law map filter so it starts on the 'score' map. Maybe we should adapt this further

and actually give the different score ranges grades? This map needs to be given a sequential color scheme, while the individual law map renderings should use a diverging color scheme since we are using a
AWFUL
BAD
NONE, UNCLEAR
GOOD
GREAT
rating system to determine color categories.

05/01/2013 - 05/02/2013

Josh created another bar graph to how the number of national firearm homicides with a given type of firearm for a particular law category.
Lauren linked all the graphs together so that everything updated when a new filter selection is made or a new state is clicked. We also worked to expand our description of the visualization/the short tour using intro.js. Ultimately, we found that it is difficult to show a correlation between a state's homicide rate and it's gun laws- using 4 states as examples that a user can interactively view, we tell this story with our visualization.