

Critique of Martin Bonny's Flow Visualization of Messi's Goals

<https://a.flow.gl/flow/3e6avg/display>

For this assignment, I decided to choose a visualization that dwells in something I am interested in. For this reason, I chose to search for a visualization in soccer as it is something I am both interested in and informed in. In my search, I came across this interesting visualization that shows Lionel Messi's goals throughout his international and club career from the previous season (21/22) to the beginning of his career (04/05). The visualization not only displays his goals, but a few different interesting attributes in a unique way.

This visualization deals with all of Lionel Messi's goals up to last season so all the representations in this visualization categorizes his goals in different ways. It first categorizes all the goals Messi has scored by the competition they were scored in. Afterwards, they are categorized by the season they were scored in. Then, the goals are categorized by the team that has conceded them. It also categorizes the goals by the year and month when they were scored which is different from when categorized by season due to a season falling under two separate years. Next, the goals are categorized by what minute in the match they were scored with along with if they were scored at home or in the away stadium. Following this, the concept of location is visualized again, but this time the goals are categorized and displayed where in the world they were scored in. Finally, the goals are displayed on a picture of a goal and presents where the goals were scored in the goal. All of this data is categorical and nominal. These visualizations can provide us with information that can answer various questions such as "What team has Lionel Messi scored on the most?", "What was Lionel Messi's most prolific season/year?", "Does Lionel Messi perform in away matches as equally as home matches in terms of goalscoring?" and many more questions.

Beginning with the first visual, the goals are displayed in a bar chart consisting of soccer balls color coded to the tournament the goals were scored in. Since this is categorical data, the identity channel is used in the form of color. The height of the bar is quantitative which would fall under the magnitude channel, in this case aligned position. These color coded soccer balls follow the rest of the visuals as they help distinct in what competition the goals were scored in. The next visual is again a bar chart consisting of the color coded soccer balls depicting the goals in each season. This visual is succeeded by a bar chart of the amount of goals each team has conceded. The top 5 teams with most goals conceded have their crest displayed as well. The following visual is more complicated as it is a 3D bar chart where x and y axis represent the month and year, and z axis displays the amount of goals, again with the color coded soccer balls. Subsequently, the next visual is a 3D bar chart as well, although smaller, as the x and y axis display the time (in minutes) and home/away venue, while again the z axis displays the amount of goals scored. One of the more interesting visuals in this visualization is the visual involving the location of the goals. The goals are plotted on a world globe and stacks the goals that are scored in the same location forming bars. Lastly, the goals are plotted on top of a visual of a goal to display where the goals were scored similar to a scatterplot. All of these visuals involve the color coded soccer balls which as previously stated uses the identity channel in the form of color. The height/z axis of these bar charts all present the quantitative attribute of the amount of goals and use the magnitude channel of aligned position.

The visualization is pretty effective in encoding the correct channels to the correct attributes. One can easily visually tell which category in any visual has the highest amount of goals. The expressiveness of the last visual is very nice and follows the expressive principle as well. This visualization, while great has some few flaws. For example, all of the soccer balls are equally sized as they should be. However, since the 2D bars are made up of the soccer balls, the 2D bars are slightly skewed length-wise where there aren't many goals due to the fact there aren't enough soccer balls to make a bar the same length as a bar with more goals. While the possibility of misleading is not likely, since one can just count the amount of

soccer balls in the smaller bars, it still affects the visualizualtion visually making it awkward to look at. The soccer balls are not all stacked consecutively for reasons unknown to me, which again make it somewhat awkward to look since there are gaps in the 2D bars. This problem does not occur in the 3D bars since each ball is stacked on top of one another. However due to this, the world visual has a stack of soccer balls significantly higher than the rest due to Lionel Messi scoring most of his goals at the home stadium of his club, which is logical. This is not a flaw but just an amusing observation. Some things I would change is that I would add the numbers on the height of the bars/z axis so one could estimate the amount of goals visually. I would also address what I stated earlier about the soccer balls not being consecutively stacked in the 2D bars and make them consecutive(no gaps). I would also make the colors of the soccer balls more distinguishable because some of the colors are too similar. Finally, I would add a legend of the colors of the soccer balls to all the visuals because after the first visual, one can't tell which color correlates to which competition without going back to the first visual. The visuals do a great job in categorizing Lionel Messi's goals. The way each visual flows from one to the other is very satisfying and the interactive interface just adds to it. It is very interesting to see visually where in the world Messi has scored his goals along with where in the goal he has scored his goals. Overall, I think this is a fine visualization that succeeds in doing its job while being visually appealing to even people who do not follow soccer.