DATA VISUALIZATION

UNIT – V (PART – I)

Proportions and Percentages

1. Scatterplots
2. Stacked Bars
3. Regression and Trend Lines
4. The Quadrant Chart

Scatterplots

- It's great to hear that you appreciate scatterplots! They are indeed a powerful tool for visualizing and analyzing data, providing a quick and intuitive way to identify patterns, trends, and outliers.

- They create a two-dimensional plane in which a whole host of comparisons can be made in an instant.

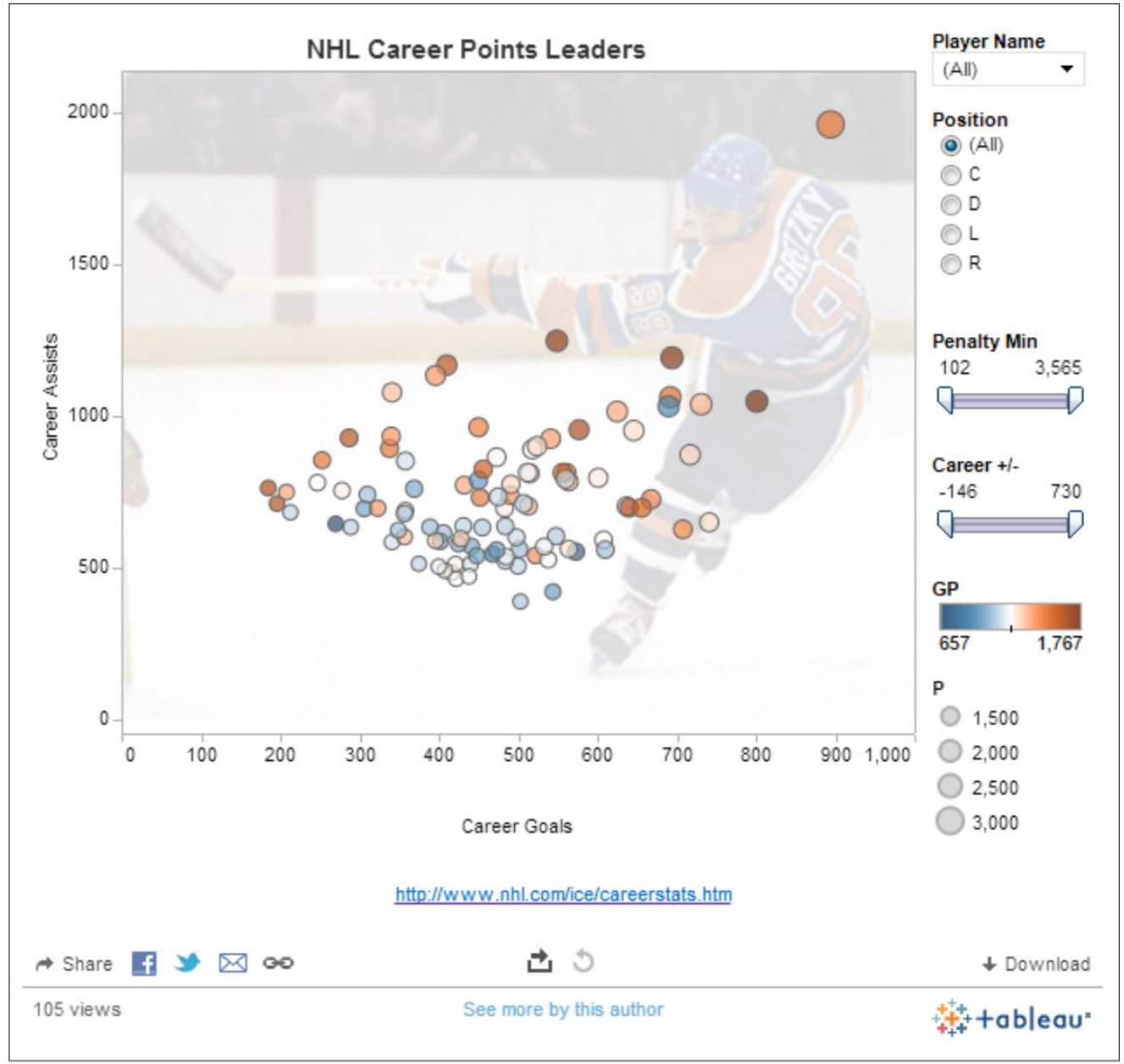

Figure 8-1. My first Tableau Public visualization: a scatterplot dashboard of career stats (photo by B. Bennett/Getty Images)

Scatterplots

- Let's explore how to create this scatterplot.
- First, we'll connect to the spreadsheet that contains the top 100 players, which you can find online here.

- Once we've connected to the spreadsheet, it's a simple matter of Ctrl-selecting Player, G (for goals), and A (for assists), and then clicking on scatterplots in the Show Me panel, as shown in Figure 8-2

Figure 8-2. Creating a scatterplot using Show Me

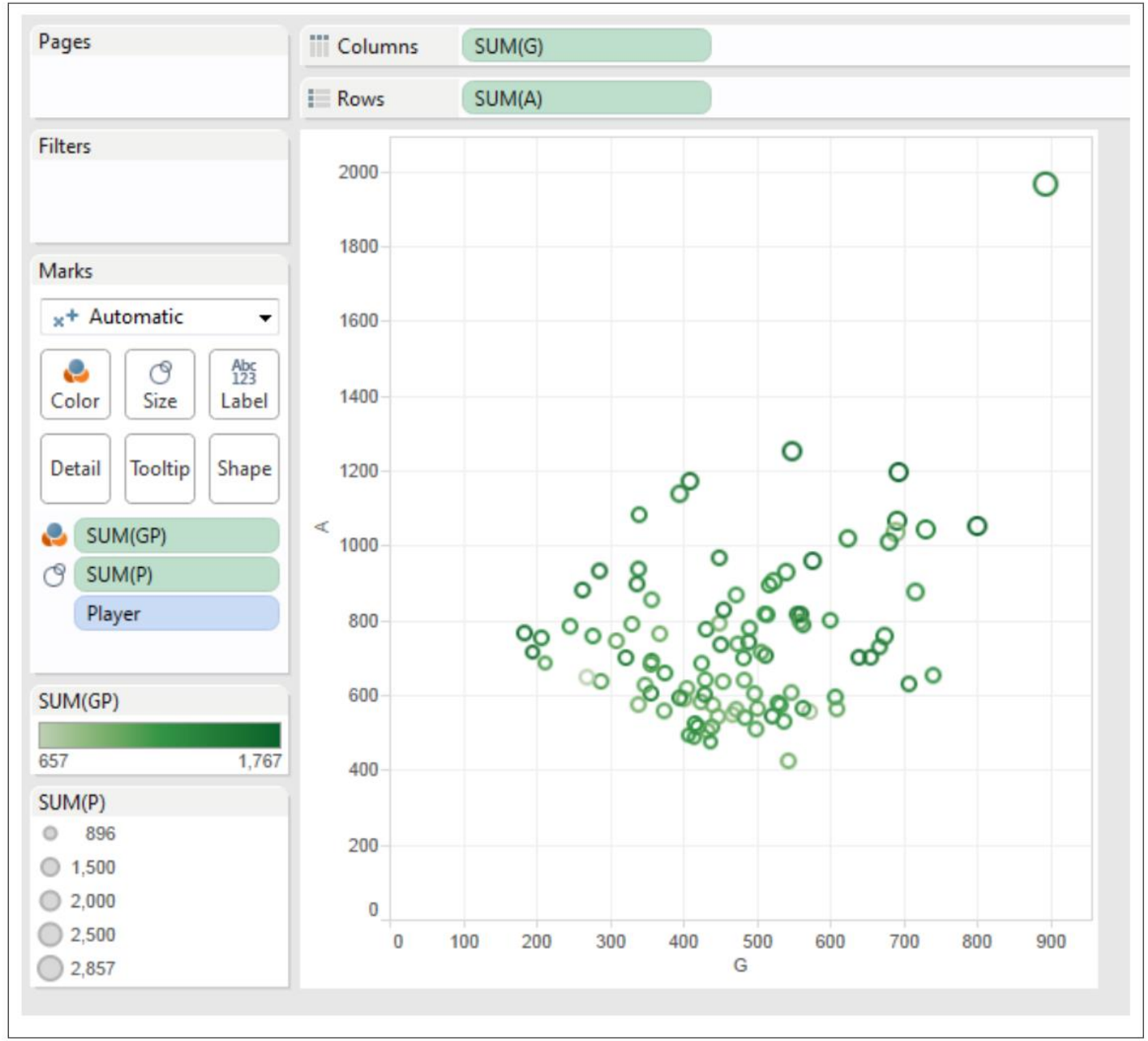

Figure 8-3. Scatterplot with added encodings for size and color

Figure 8-4. Additional formatting to the scatterplot

Scatterplots

Who Is Who?

- There are three ways to communicate who is who: labels, tooltips, and annotations.
- Let's consider them one at a time

Labels:

- If we take Player from the Dimensions panel and drag it onto the Label shelf, Tableau attempts to add as many labels as it can without creating a messy view.
- The result is shown in Figure 8-5

Figure 8-5. Adding labels to scatterplots

Scatterplots

Who Is Who?

- There are three ways to communicate who is who: labels, tooltips, and annotations.
- Let's consider them one at a time

Tooltips:

- What about the other points without labels? How can we see who they are?
- Tableau has a great feature called Tooltips, which appear when a person interacting with the chart hovers the mouse cursor over an individual mark (or circle, in this case).

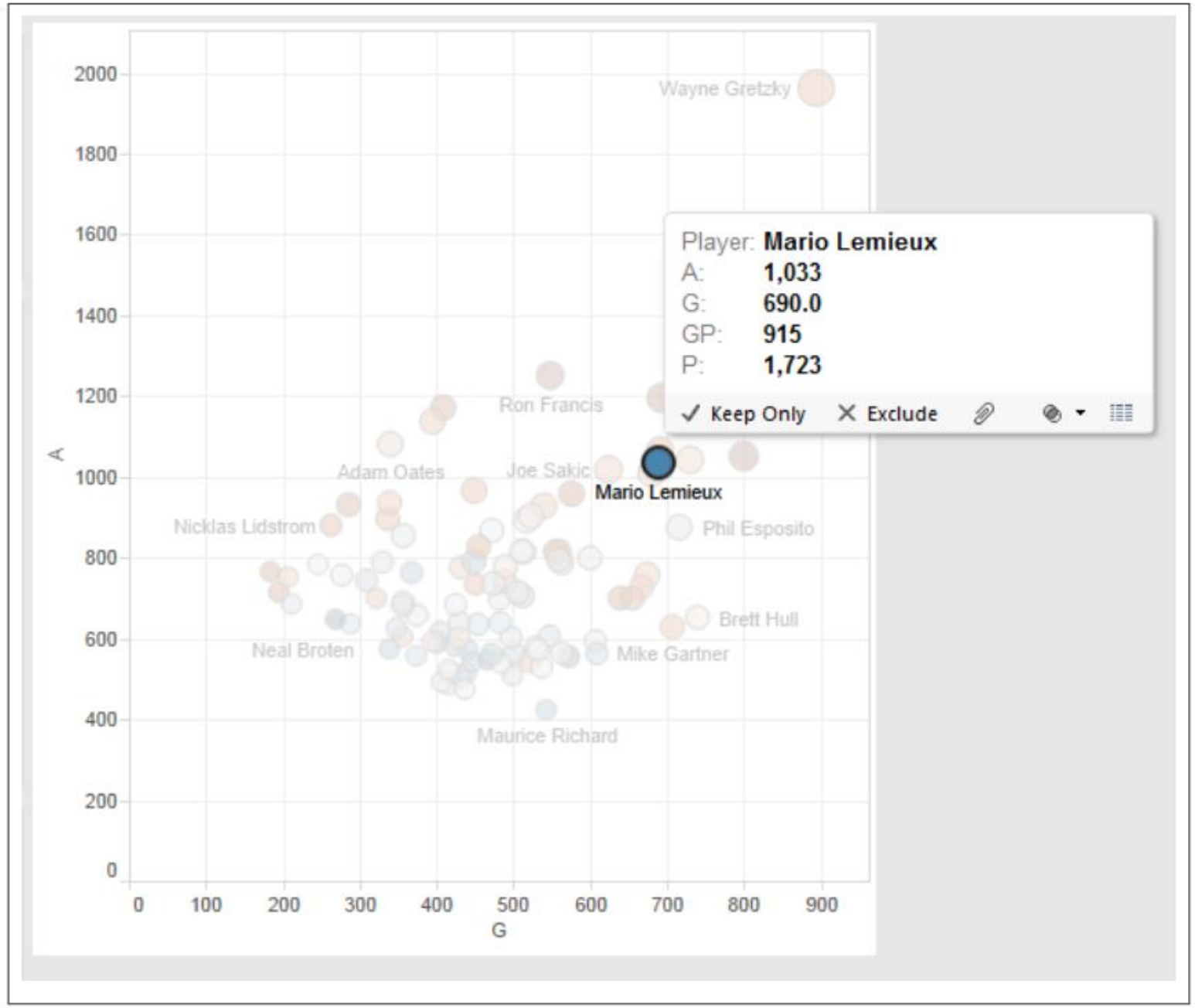

Figure 8-6. Hovering and clicking reveals tooltips

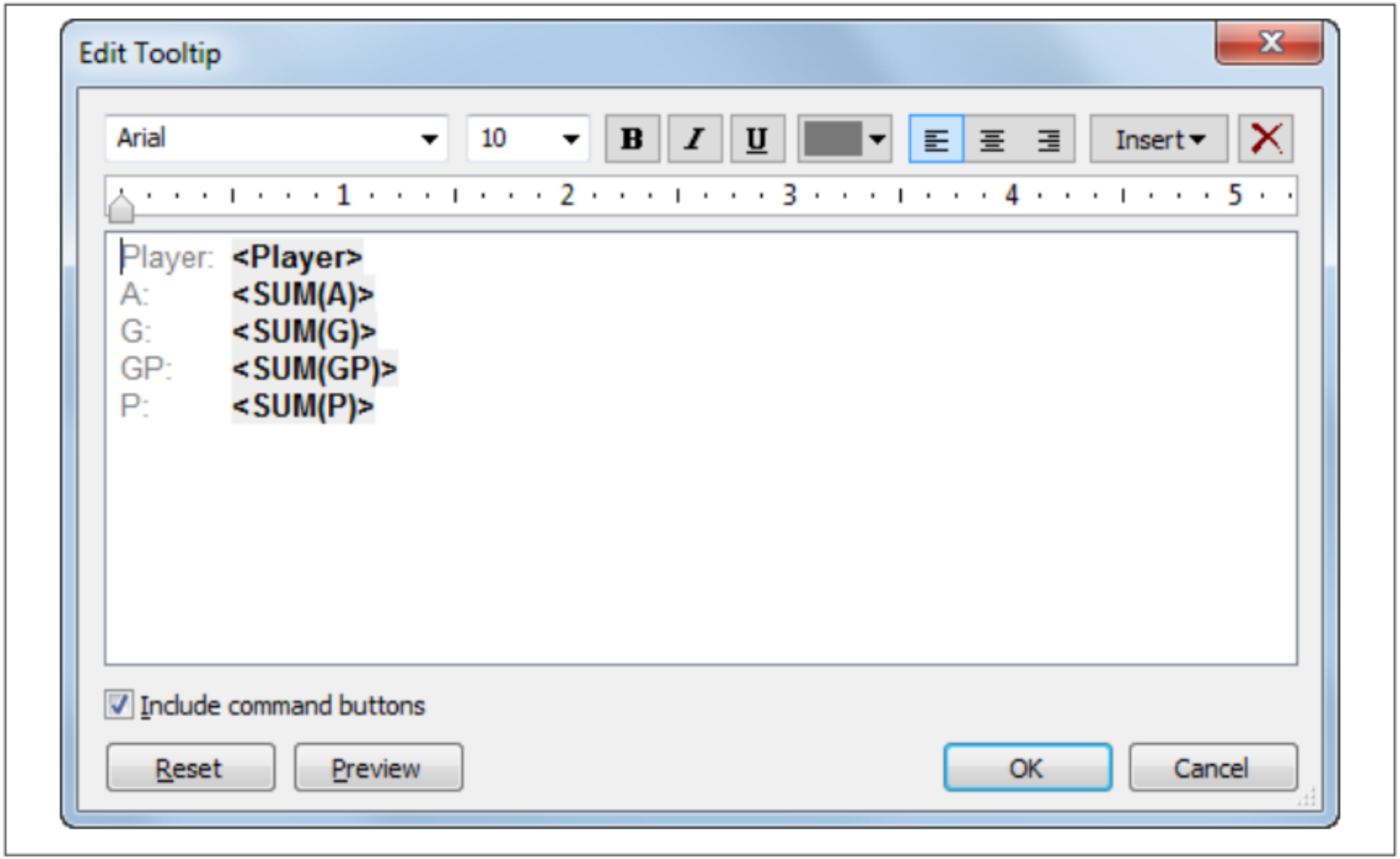

Figure 8-7. Editing tooltips

Scatterplots

Who Is Who?

- There are three ways to communicate who is who: labels, tooltips, and annotations.
- Let's consider them one at a time

Annotations:

- Remove Player Labels
- Annotate Specific Data Points
- Repeat for Mario Lemieux:

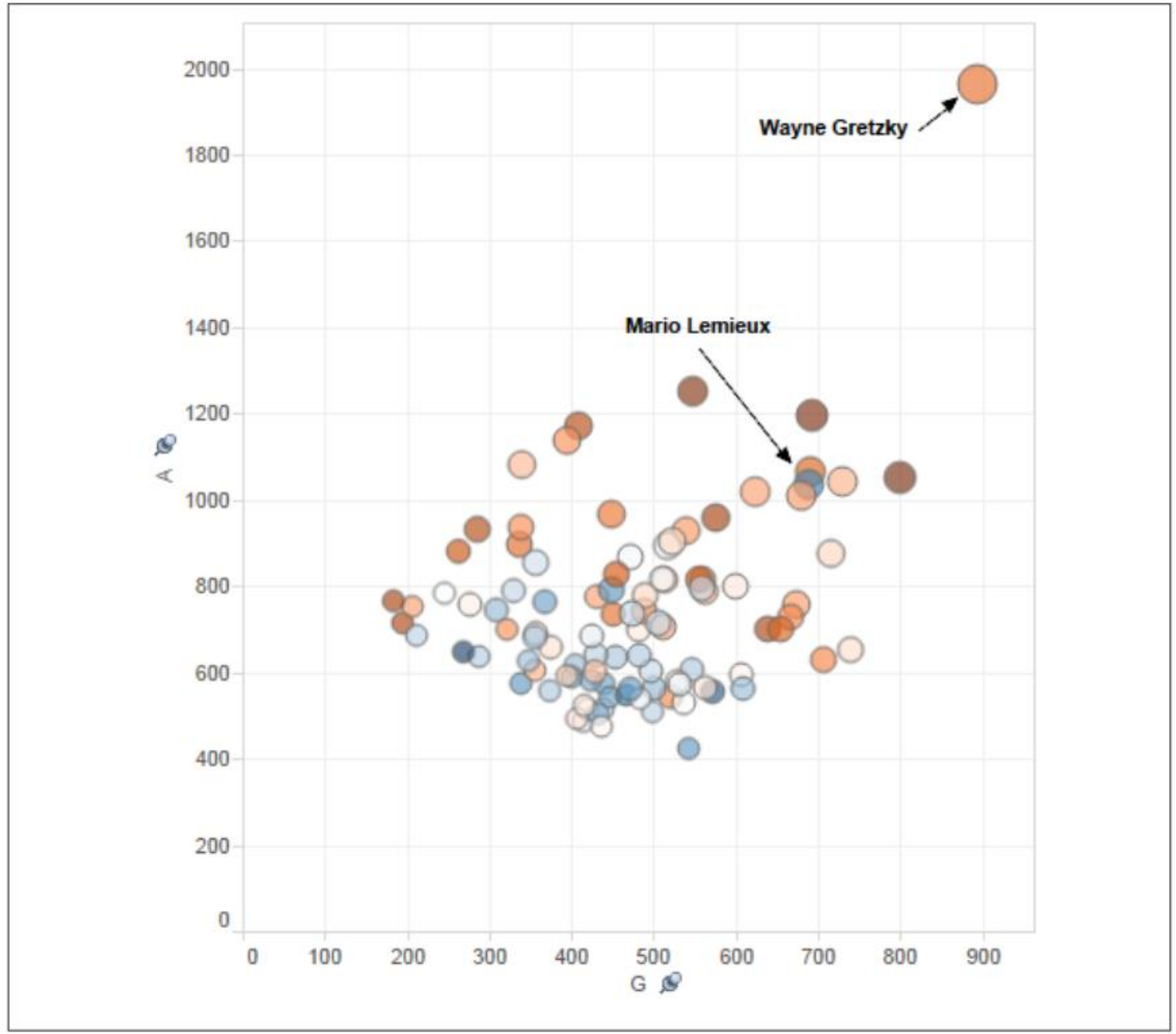

Figure 8-8. Adding annotations to scatterplots

Scatterplots

Making it Exploratory

- To add the three Quick Filters to the view, right-click on the three fields (Pos, +/−, and PIM) one at a time, and select Show Quick Filter for each one.

- Tableau adds a Multiple Values (combo box) list for Pos and Range of Values sliders for +/− and PIM, as shown in Figure 8-9.

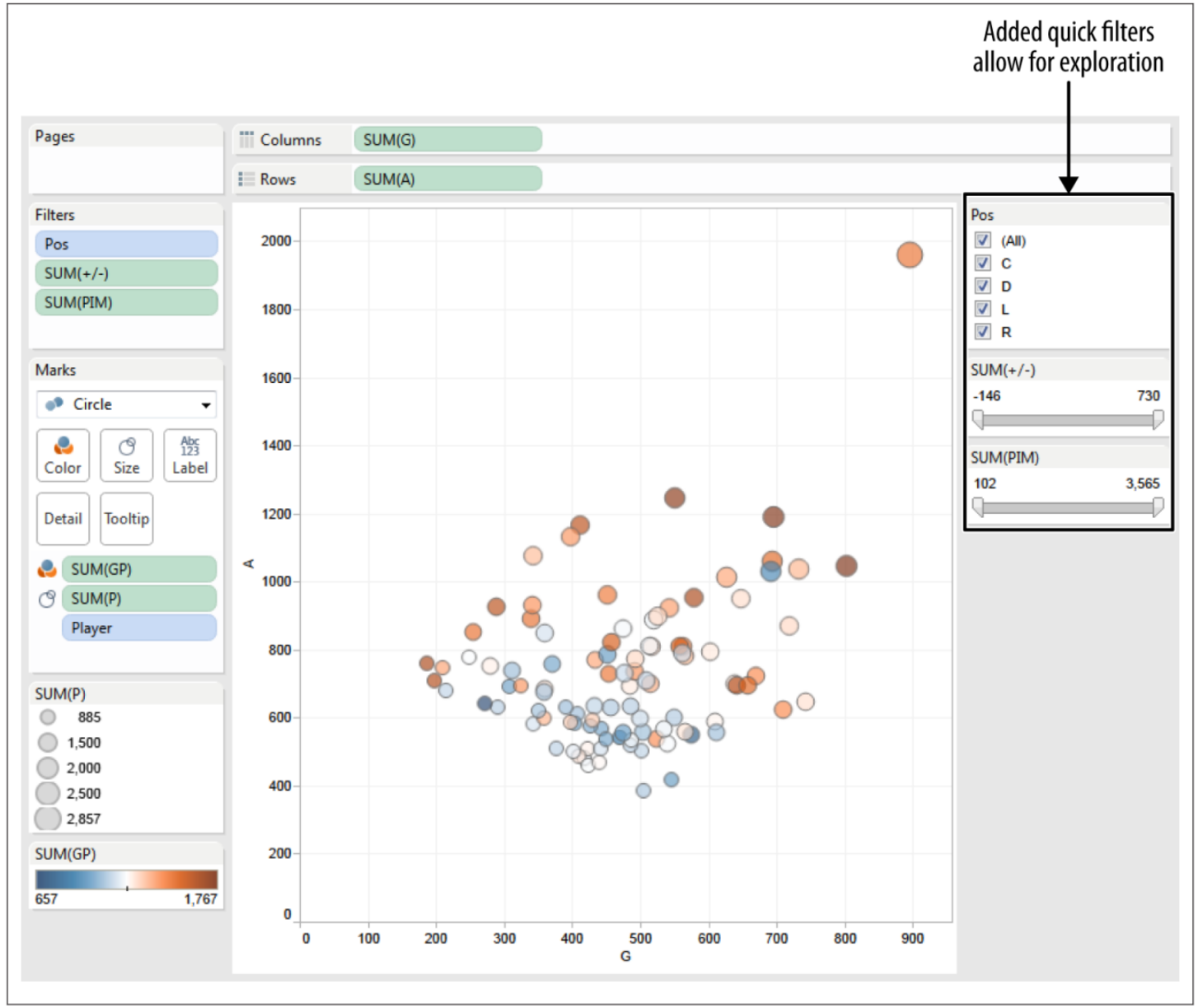

Figure 8-9. Quick Filters turn a scatterplot into an exploratory interactive

Scatterplots

Adding Background Images

- To add the three Quick Filters to the view, right-click on the three fields (Pos, +/−, and PIM) one at a time, and select Show Quick Filter for each one.

- Tableau adds a Multiple Values (combo box) list for Pos and Range of Values sliders for +/− and PIM, as shown in Figure 8-9.

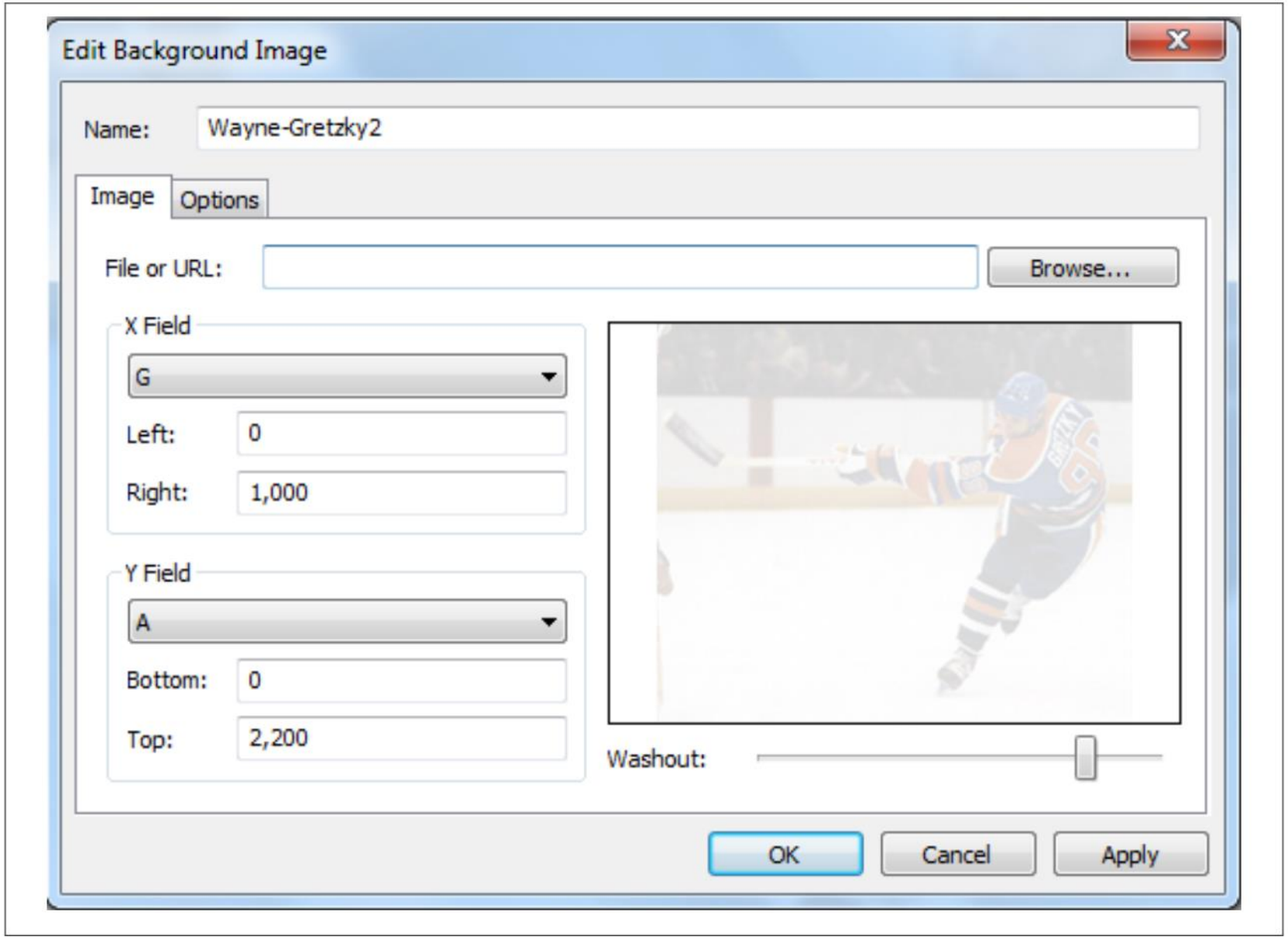

Figure 8-11. Adding a background image (photo by B. Bennett/Getty Images)

Proportions and Percentages

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Stacked Bars

- Scatterplots aren't the only way to show multiple quantities in the same view. Another visualization type we can use is the stacked bar chart.

- Let's create a stacked bar chart as we explore a different angle of the data: per game rates

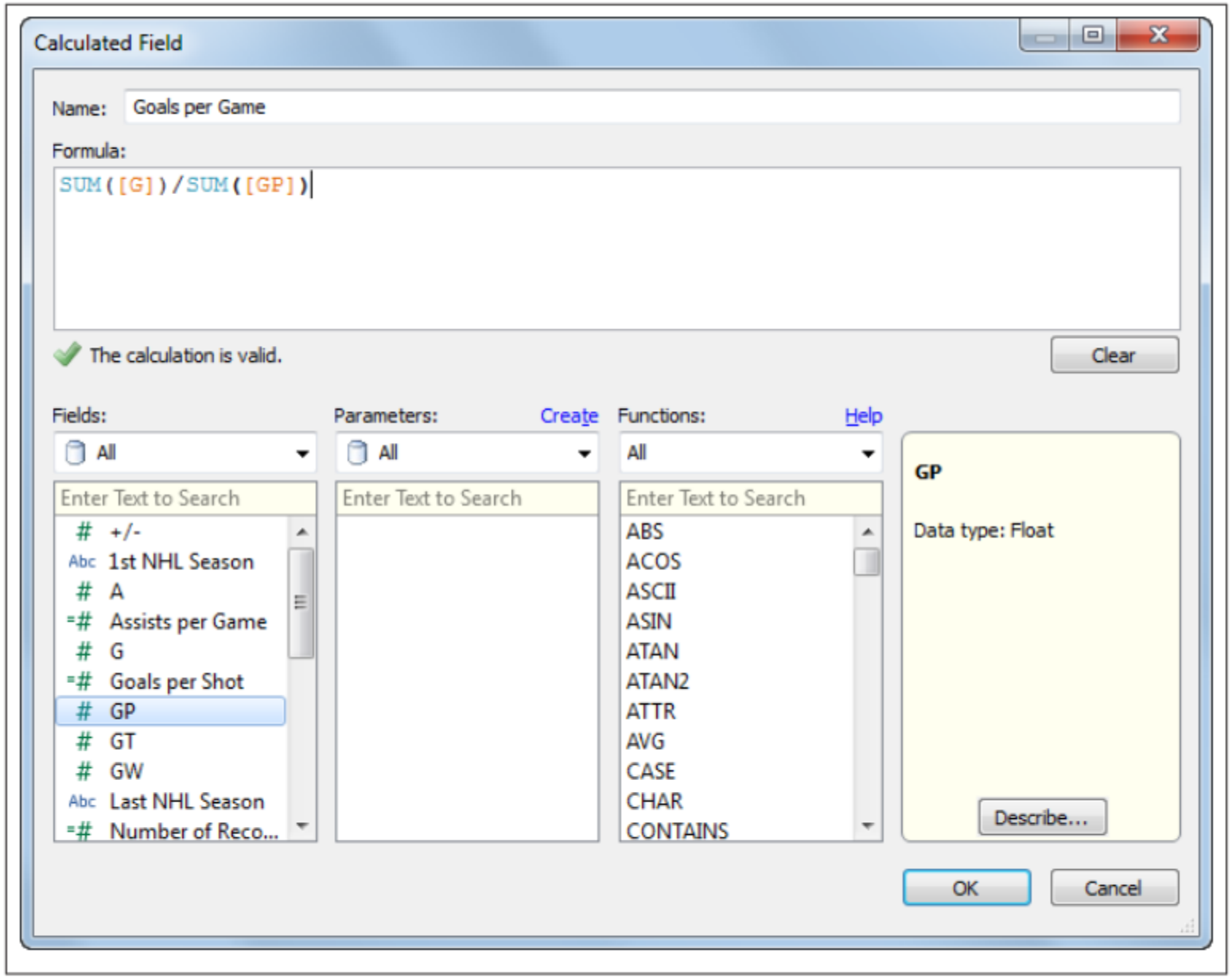

Figure 8-12. Creating per game rates with Calculated Fields

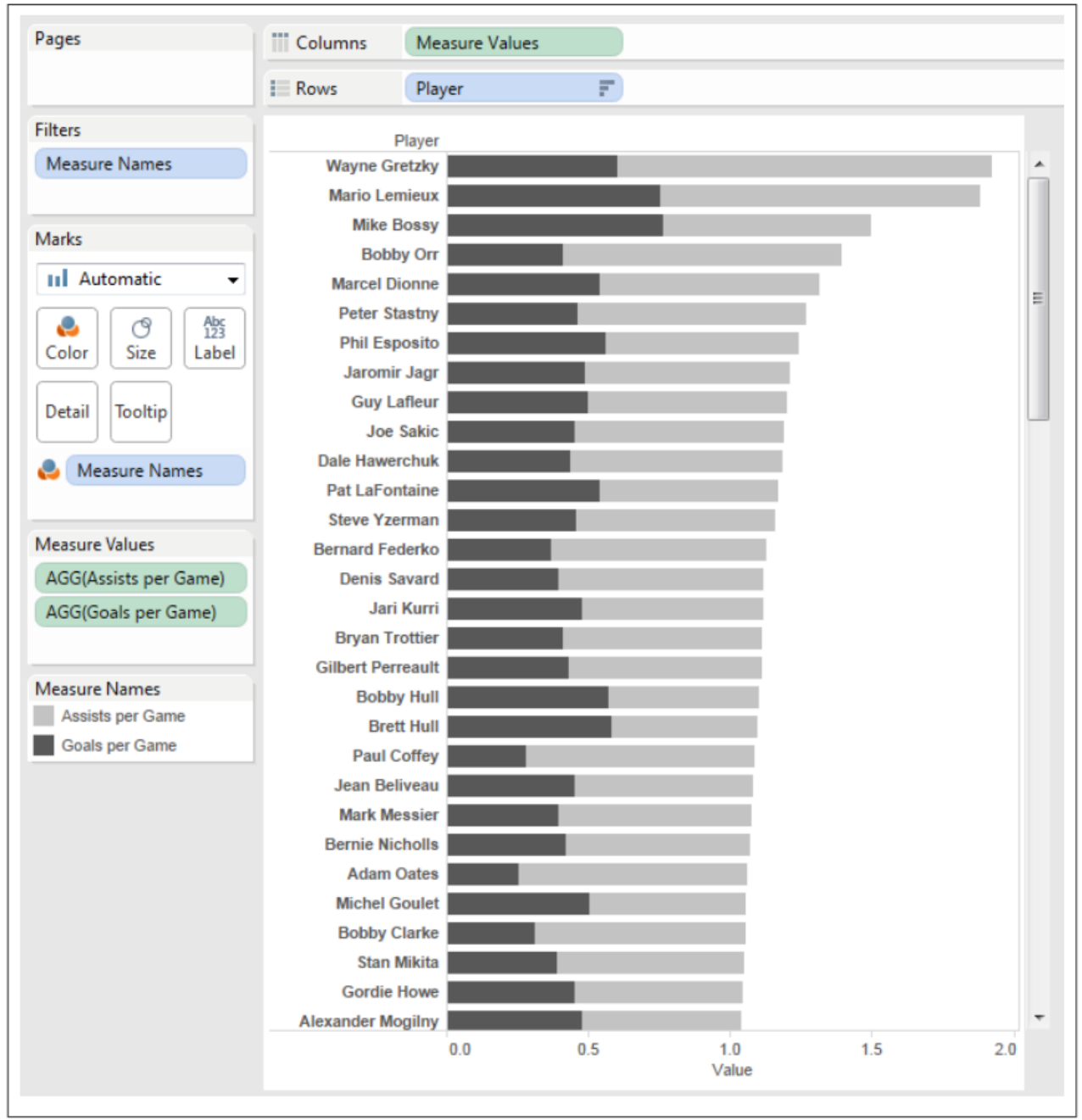

Figure 8-13. Creating a stacked bar from multiple Measures

Proportions and Percentages

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Regression and Trend Lines

- Regression analysis can be visualized by adding a trend line to a scatterplot, and the indication of how well the points fit the trend line is known as the coefficient of determination.

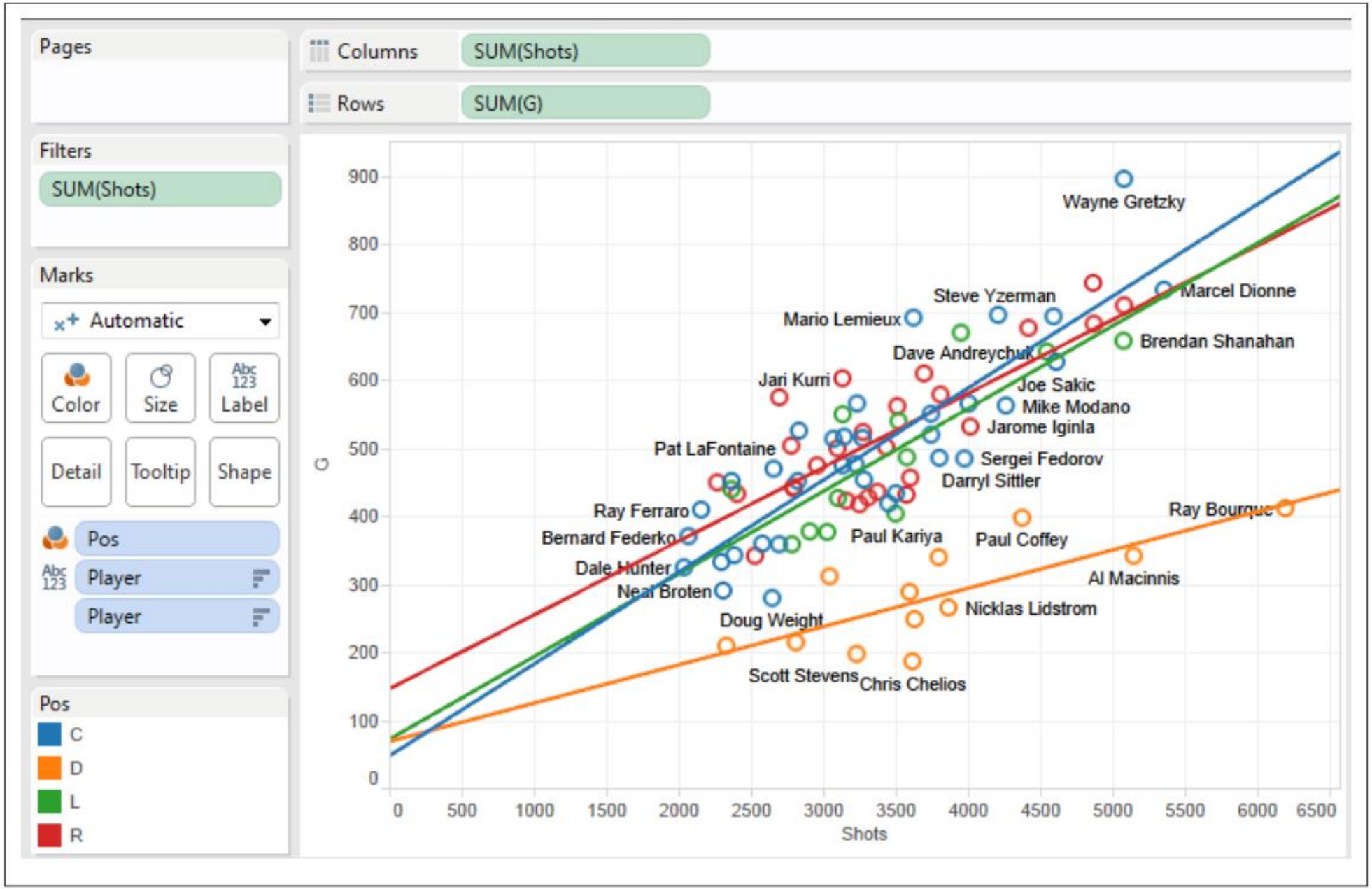

Figure 8-16. Scatterplot with multiple trend lines

Figure 8-17. Scatterplot with a single trend line

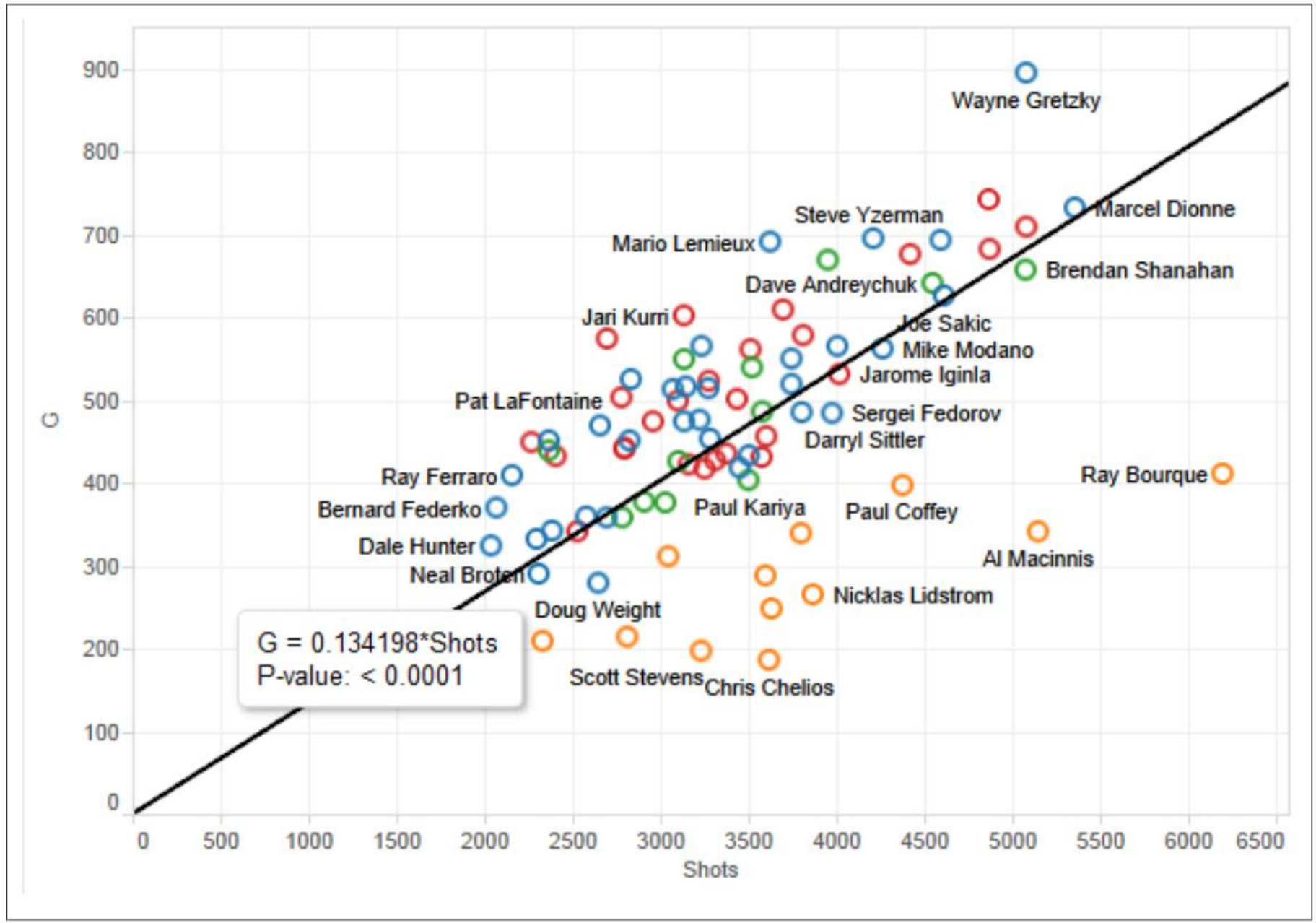

Figure 8-18. Equation and p-value of trend line

Proportions and Percentages

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The Quadrant Chart

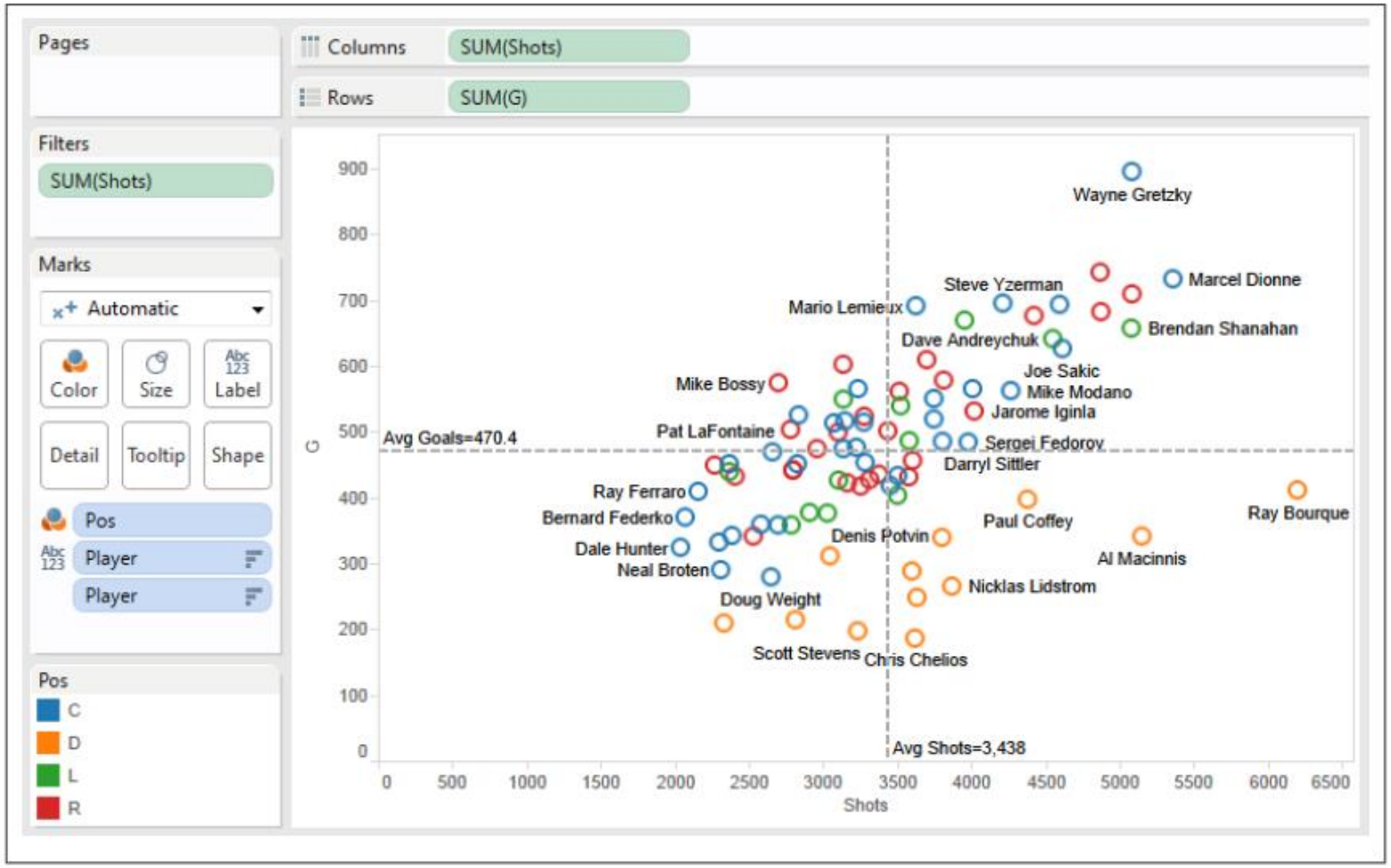

Figure 8-21. The four quadrant scatterplot

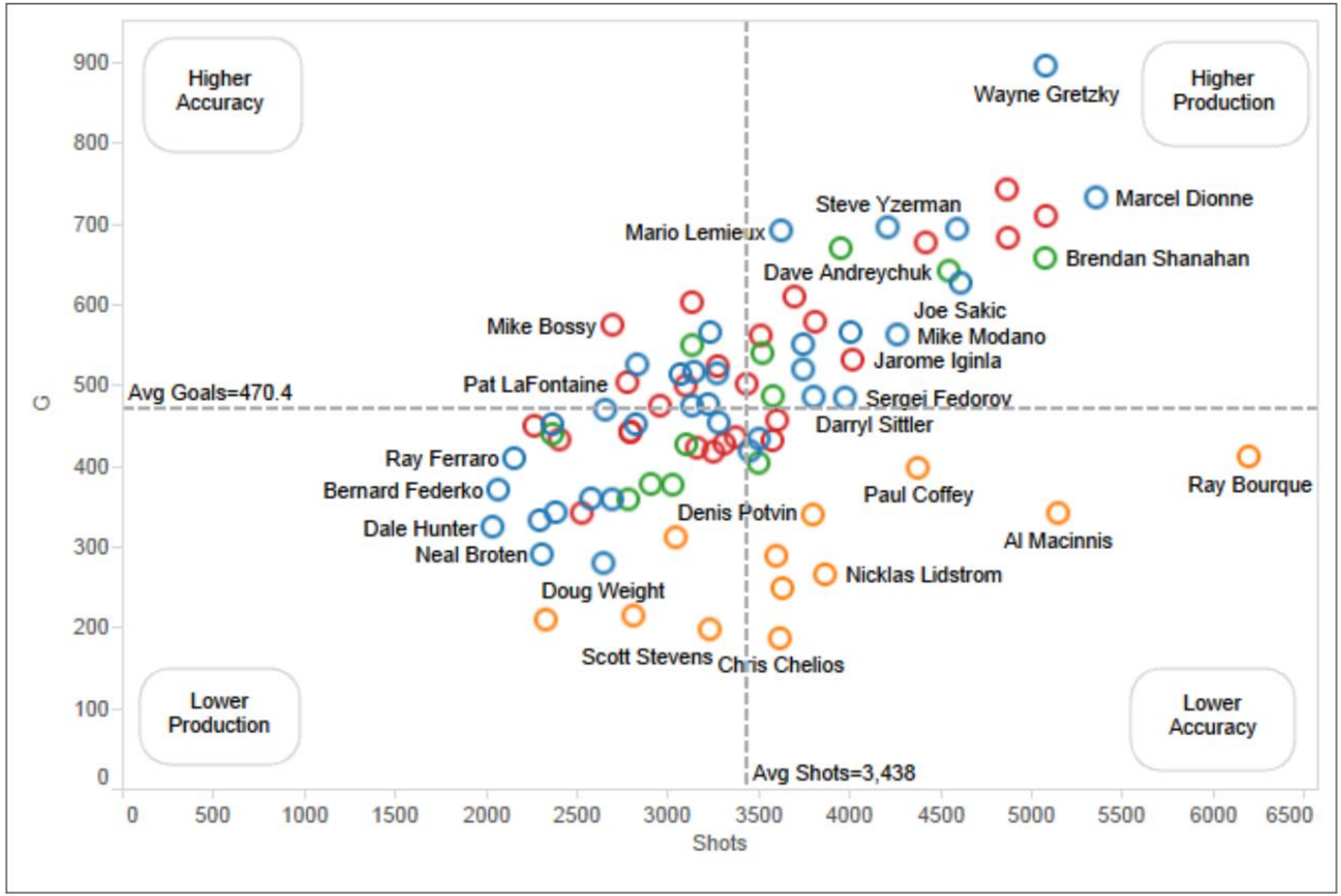

Figure 8-22. The completed quadrant scatterplot

Proportions and Percentages

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