# Five Data Storytelling Tips to Improve Your Charts and Graphs

https://www.youtube.com/watch/4pymfPHQ6SA

when it comes to a specific image there are two things that our brains immediately notice contrast and patterns take a look at our very first image at first glance you can only decipher a tree landscape that's because there is absolutely no contrast in this all-black image but as you start to add in more contrast with purple and yellow you may notice that now there's a bear that was there that you couldn't see before but it's hard to have any more contrast than with black and white and this final image that bears popping off of the page this just goes to show that our brains are better at identifying color rather than shapes through what is called pre-attentive processing our brains are constantly gathering information from our environment because of this it's easier to detect the differences around us that is especially noticeable in patterns we just talked about contrast so in this very first pattern our brains immediately notice that darker rectangle in the lower left if you take away the contrast when you make one rectangle with just a little bit larger it still stands out immediately lastly you take that one rectangle that was a little bit larger and even flip it vertically it still stands out among the rest of its rectangle friends this is our brains working for us now that we've established how our brains see images let's dive into applying this knowledge with creating some effective data visualizations first different from reading text our eyes don't follow a specific order and reading a chart or a graph our eyes don't go from left to right or from up to down when reading a graph or a chart as you can see here our eyes kind of go really wherever the pace when looking at a graph our chart is also very different we may just glance at one part of the image while glaring at another this is why it's so difficult to create a graphic that takes us on a predefined visual journey when we look at a graph our eyes are immediately directed to what stands out it all goes back to the patterns that we had just discussed but there should just be one main focal point to your image in this graph our eyes are immediately directed to that steep climb and peak on the right side of the graph and after we see the title we immediately understand that the u.s. incarceration rate has jumped greatly beginning in the 1970s the best data storyteller will only have one clear message that is effortlessly understood this graph here did a great job of that when there are more than five variables present our eyes perceive all of them as one single hole this is another reason to simplify your charts and only highlight one single point this graph here is an example of what not to do you notice the word outage the gray background spikes and even at that Green Line going throughout the graph but what's the message a lot of unnecessary time and effort is spent in to deciphering what this chart is telling me after some time you can probably figure it out but it would be much more effective if you got rid of that gray background area and told us the calls received and simply focused on the ratings before and after the outage [Music] remember and I will continue to emphasize this our brains recognize patterns and in patterns we find connections here the brain assumes the connection between the color orange and top performers and also the orange data points this needs us to think that the orange data points are the top performers but that's not the case this is another poorly executed chart the top performers are actually all those data points in the top right which if you look at it seems to be mostly the blue data points if you're using more than one color you want to assign deliberately which didn't happen here from the time we're born we're influenced by cultural conventions what are these exactly well for example time is right on a line from left to right or with colors red means hot and blue means cold the same can even be said with images a scale and FERS balance or comparison between two different things if these conventions are ignored our visuals will become much more difficult to understand this chart is nearly identical to the one that we found back in tip 3 but time is placed on the y-axis says time is read on a line from left to right as we just said this is much more confusing and much less effective keep time on the x-axis trust me now this video isn't just about improving your chart the whole reason we're here is to help your chart tell a story so let's show you some before-and-after examples to help you create some fresh ideas on how to create that next effective storytelling chart if you want to look at the number of tickets received versus the number of tickets processed in a year this chart isn't too difficult to read but is it telling the story for the reason of decline no no it's not it comes the after chart where you can clearly see the decline in tickets processed there's also a lot more room for text which will help explain the story to employees quit that's your reason for decline so if I'm the boss this is a very very easy decision hire two more employees pronto in our next example we have a lot of room for text but pie charts aren't always the best solution especially for the data that we have here the use of one single bar chart makes the info a lot more clear more children were interested in science after the program or before they thought science was just okay once again we have an ineffective and confusing sharp it's not clarifying the change in average price per product over time the reader is forced to go back and forth from the legend to the bars the legend to the bars but in the second chart the lines are labeled properly so there is no back and forth you can see that the trend for each product is recognizable at the very first glance in any case that you want to show the changes over time a line graph is probably your best option I like to think of it as time line maybe that's just me but maybe it could also help you to last but not least our final before chart seems pretty easy to read however the conventions that we've learned and discussed earlier are not applied properly the level of interest isn't organized in the sending order we're here in the second chart the reader understands who's the most interested versus who's the least interested in that correct order through color and order via a scale the differences in values are more distinguishable