



In a Data-filled World, Stories That Rely Solely on Numbers Don't Add Up

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Storytelling sometimes seems to be a lost art. Every day we are inundated with articles that exalt big data, analytics, predictive modeling, data science, and statistics as the most compelling means of persuasion and communication. Somewhere in the fascination with all things data, we are led to conclude that data in and of itself is the end, the goal, the Shangri-La of enlightenment and understanding. That's not the case. The numbers should provide the color to our story, not the conclusion.

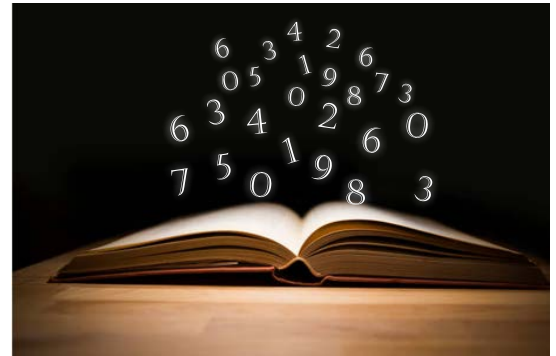
We need to think of data in a different manner. What if I asked you to use data not as a noun but as an adjective in the story you are building? No longer is data the hero/heroine/villain; instead it describes how good/evil/big/small the subject of your story is. We must use data to help us recapture concept of building insightful thought and emotion-evoking communication.

Perhaps you're skeptical of regarding data as a *mere* adjective. You just finished putting together some great tables after analyzing millions of data points. The tables are self explanatory, aren't they? Well they are—to you! It's easy to forget you constructed an entire story in your head as you started with a question, dove into the data, and found trends and nuances. That inner dialogue helped craft an exhibit that perfectly supported the findings and conclusions you developed. The real story is the inner dialogue and the table is part of the supporting cast.

Let's illustrate this idea. I'm thinking of a number. Go ahead and pick a number between one and ten. I was thinking seven. Did you guess it? If so, that's great. Now please describe what that seven represented to me when I was thinking of it. This exercise just got a whole lot harder, didn't it? That's part of my point. A number cannot stand alone without being put in context or without specifying the noun that the number *describes*. Now if I asked you to think of a car — a noun — we might each conjure up different makes, models, and years but each of us would envision the same construct: four wheels, body, windshield, steering wheel, seats, engine, etc. But ask 20 people what the number seven from my earlier example represents and we are likely to have 20 very different answers.

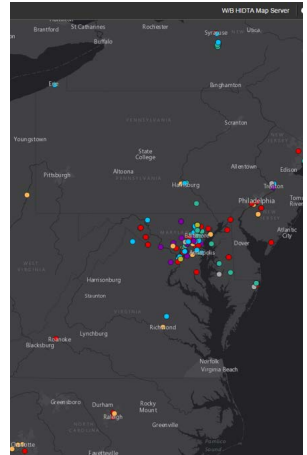
Why does this matter? Data analysis, done right, is storytelling. Understanding what data represents helps apply the proper tools to a given question as we quest for what the data is trying to tell us. The tools and techniques one might use in analyzing survey data are not the same techniques one might employ while interrogating financial data. Even within those two categories there are nuances around precision and data types (nominal, ordinal, scale) that alter both the techniques and the strength of the numeric adjectives used in building your story.

How then do all the discussions around advanced mathematics and predictive modeling and artificial intelligence work if we are just talking about adjectives? Much focus is understandably on the staggering scale of the numbers. There are billions of data points created and collected every hour, perhaps every minute and the pace of creation is only getting quicker. It's axiomatic that throughout our history humans have churned out a lot of data. Yet now consider that 90 percent of all data has been created in just the past two years, [according to](#) the data analytics company Domo. The pace of growth is just as difficult to fathom. The information technology research company International Data Corp. [forecast](#) this year that the amount of data the world creates in a year will surge tenfold from about 16.3 zettabytes in 2016 to 163 zettabytes in 2025. (A zettabyte is a trillion gigabytes.) So how much is 163 zettabytes? To arrive at that much data you'd have to binge all of the content on Netflix—489 million times.



But back to the math: Mathematics is one tool to find colors and sound relevant to you and your audience's interest amid the overwhelming noise of the data. It is easy to get lost, misdirected, and generally overwhelmed by too much input. So we use the tools available along with our ability to question, discern, and evaluate to find meaning from that which is meaningless in and of itself. Like early seafarers, we need tools to take the available data (stars, wind, currents, waves, crew and ship) to plot a course and guide ourselves toward a reasonable conclusion. In some ways, our tools and techniques must become more sophisticated or we'd drown in the swells of data that come at us relentlessly. In the end, the numbers we use are there to help us find and build a story that enlightens and informs us and our audience in some way. The numbers themselves aren't the main characters, just like the wind and locations of the stars aren't in the story of the early seafarers. Rather, it's the fortitude and intelligence people exhibited in using the available data to chart, plan, revise, and continue their journey through the tumultuous seas.

Sometimes numbers are used to render actual pictures that then help us tell new stories or predict where familiar ones might be headed. Take the example of an effort in and around the nation's capital that uses real-time data to populate a map of drug overdoses. First responders and public health officials contribute overdose reports to a web app called the ODMap and then use the resulting dots on a map to understand where overdoses are occurring and perhaps spiking. This is an important story that couldn't be told without the data. But it would be an incomplete story if officials simply reported the numbers without trying to understand why spikes were taking place. ODMap, which is overseen by the Washington/Baltimore High Intensity Drug Trafficking Area, helps officials better direct resources to hotspots. It can even act like an early-warning system for a tsunami by giving a heads-up to officials that a spike has occurred elsewhere and is rippling outward. The data from the map helped public health experts tease out unconfirmed or unknown linkages between activity in one area and subsequent jumps in overdoses elsewhere. The [early success](#) of the program has first responders and health officials from around the country beginning to contribute data to ODMap.



Approximate locations of reported overdoses using the ODMap app. ¹

You already know data is important and that properly deploying data can help bolster a story. But it's easy to get lost amid all the numbers and forget there is an art to telling effective stories. Thinking of numbers as adjectives can help us all communicate with greater impact. Those of us in the analytic fields need to start thinking of ourselves as modern-day bards. Get out your lyre and pen (statistical methods and tools) and use the full depth of your data to communicate descriptive and compelling stories over the campfire (conference room table). Good stories are the ones where you can see and feel the environment through use of rich and lush descriptors. So use numbers well and don't forget that the real story you are trying to tell is something beyond facts and figures.

1. <http://www.hidta.org/wp-content/uploads/2017/03/map.png>