

#datavisclub – W E L C O M E !

Edward Tufte: The Visual Display of Quantitative Information

On August 14th 2018, we met at 5pm UTC HERE to discuss the book here:

- Blog post that explains the concept: <https://blog.datawrapper.de/bookclub-tufte/>
- There's a Twitter account which will tweet exhaustively: <https://twitter.com/datavisclub>
- Hashtag for Twitter: #datavisclub (or tweet @datavisclub)

Welcome! You might wonder: What will happen at 5pm UTC?

(This is the agenda, please don't write in this part, but below. If you have questions, ask them in the chat. Thanks!)

We'll start the session with some intros & general impressions:

- A. Short Intros.** It would be great to know who made it. Please write down your name & Twitter handle, where you live & what you're doing. (All of these information are voluntary. You're welcome to participate completely anonymously.)
- B. How would you describe Tufte's book in a short sentence or three words?** Meaning, what was your general impression of the book; how did you like it? (5min)

Then we'll get to the three questions I asked you to prepare in the blog post.

* We'll take approximately 10-20min for each question, depending on the discussion.

* I will announce when we'll get to the next question in the chat to the right and will post it below the last question. Then we'll discuss it together. We'll write down or copy/paste our answers to the questions. Please write down your name behind your answer! And please don't paste answers to a question before we get to it.

* Then we'll discuss! If you want to react to an answer from someone, you can do so directly ebehind their answer. (Maybe we'll start formatting a bit; let's see.)

Here are the three questions:

- 1. What was the most surprising thing you've learned?** Choose a text passage, and explain how it challenged something you assumed. (Type up the text passage / phrase, and tell us on which page we can find it!)
- 2. Select one of your favorite data visualizations.** Is it working well because of a principle that Tufte explained? Or do you appreciate something about it although it goes against Tufte's principles? – give us a link to the data vis! If you need to upload something, but it on <https://imgur.com/> or Twitter.
- 3. Having read the book,** what will you do differently the next time you design a chart?

Afterwards, if you still have time, I'd love to have a short discussion which book we should read next, and maybe what worked well and what didn't. T6

Ground rules:

1. Be supportive. Be curious. Be nice. Consider that nobody knows you besides what you write. Meaning, be extra nice with your words.

1. If you have a question, ask. There are many data vis beginners in this room, so you're not alone with not knowing stuff...lots of others will be glad you ask.

1. Don't delete text from other people, just add.

1. Don't even copy and paste text from other people (since that will seem like you've wrote it).

Let's start! \o/

A. Short Intros: Who's here?

It would be great to know who made it. Please write down your name & Twitter handle, where you live & what you're doing. (All of these information are voluntary. You're welcome to participate completely anonymously.)

- **Lisa Charlotte Rost** (@lisacrost), Berlin, Germany. Designer and blogger at <https://www.datawrapper.de/>, organizer of this Data Vis Book Club and very excited to be here :)
- **Jorge Camoes** (@wisevis), Lisbon, Portugal. Consultant and blogger at <http://excelcharts.com>. >> Jorge wrote a whole Twitter thread on his reading experience: <https://twitter.com/wisevis/status/1024572329249128448>
- **Julian Hernández** (@coolbarnacle) Cali, Colombia. Designer at <https://datapico.com/>
- **Daniele Baker** (@AquaBaker) Boston, USA. Environmental Scientist, hoping to improve the quality of my plots and maybe eventually do some interactive plots :-D
- **Anneli Joplin** (@AnomalyJoplin), Houston, USA. Instructor of Visual Communication & Design at Rice, ex-chemist
- **Shane Cone** (@Microscone), Delaware, Environmental Scientist and aspiring data geek
- **Simon Jockers** (@sjockers), Berlin, Germany. Web developer / sometimes data journalist >> Simon, too, wrote a whole Twitter thread: <https://twitter.com/sjockers/status/1029388517003194368>
- **Martin Squires** (@martin_squires), Nottingham, UK. Head up a customer analytics/data science team
- **Trud Antzée** (@Antzee_) Oslo, Norway. I'm a musician who fell in love with coding! Recently started studying data vis.
- **Guillem Segura** (@guillem_segura_) London, UK. Data Visualisation & Software Engineer
- **Sara Wood** (@SaraSaysData) Topeka, KS.. State Govie managing a fire department incident database
- **Cameron Yick** (@hydrosquall) New York, USA. Data/Visualization Engineer, practicing adding interactive capabilities to historical graphics www.cameronyick.us
- **Noemi Reyes** (@JustNoemiReyes) Madison, WI. Research Analyst, visualizing criminal justice data for Dane County, WI

- **John Cronin** Delaware eclectic scientist
- **Ihar Yanouski** (@czaroot) Minsk, Belarus. Information designer with the focus on data visualization, <http://czrt.by/>
- **Anna Kisting** (@Anna_Kisting), Augusta GA, Data Viz Engineer
- **Martin Olsson** (@MartinpaVF), Karlstad, Sweden. I'm a reporter that's been trying to do some infographics.
- **Lisa Quartermaine** (@LisaQuartered) Ohio, USA Going back to college in Data Analytics/Visualization
- **Kate Hertweck** (@k8hert) Seattle, WA, USA bioinformatics training manager at Fred Hutch Cancer Research Center
- **Inga Silkworth** (@IngaSilkworth) New York, USA. Data scientist, ex-physicist, data vis enthusiast.
- **Evan Galloway** Chapel Hill, NC - Data analysis and visualization for health workforce research group
- **Felipe Ardila**, Santa Cruz, CA - Astronomy graduate student
- **Michal Mokwinski** (@michalmokwinski), Warsaw, Poland, Business Analyst
- Alexander Naylor, geog. grad student at UCLA
- **Paolo Moretti** (@muxevola), Dublin, Ireland, Software Engineer
- **Bram Zandbelt** (@bbzandbelt), Utrecht, the Netherlands - Researcher (neuroscience), aspiring data scientist, data visualization enthusiast
- **Victòria Oliveres** (@VictoriaVic), Barcelona. Data journalist.
- **Adam Taylor** (@adamjtaylor), Research scientist at National Physical Laboratory, UK. Working on mass spectrometry imaging.
- **Tracy Mallard** (@tracygmallard), Halifax, Virginia government consultant with a love for data vis
- **Sian Williams Page** (@swilliamspage) Cambridge, UK. Physicist turned data journo
- **Bea Hernández** @chucheria Madrid, Spain. AI Specialist, data viz enthusiast!
- **Clare Harvey** @ClareHarvey2 Total beginner in this field, South West England
- **Dylan Omran** @dylanomran, South East UK, data analyst with a keen interest in data visualisation
- **Cassandra Sherrill**, graphic artist, Winston-Salem Journal (North Carolina) (@Cassandra_WSJ)
- **@DocKevinElder** Professor of Analytics and everything BI from InfoCubes to BOBJ to DataViz to DataStoryTelling and Beyond. Georgia College, Milledgeville GA USA
- **Ada Kepinska** (@adapkepinska), neuroscientist and PhD student at King's College London in London. Data analysis is something I have a keen interest in (also need to learn more about it for the sake of research presentation!)
- **Tracee Tibbitts**, Assistant Art Director @ScienceNews; @traceetibbitts
- **Elissa Schloesser**, Independent graphic designer @MyVisualVoice, Minneapolis, MN
- **Hi - This is Gaston Wilson** in Charlotte NC @heygaston.... Independent CPA
- **Hi - Jill Wooster** Pittsburgh PA @JillyWoo123
- **Hello from Oakland CA.** I'm @tullyvelte an aspiring DataVizzer
- **Elijah Meeks** Data Viz at Netflix @elijah_meeks
- **Ben Jones** @dataremixed Seattle, WA USA, at Tableau, author of <https://amzn.to/2P9GboO> (joining late :)
- **Alli Torban** @allitorban D.C. Metro area, Data Viz Today Podcast
- **RJ Andrews** @infowetrust www.infowetrust.com, author of <http://a.co/gf337bX>
- **Tiago** (@tiagombp), Brasilia, Brazil.

- **Ivett Kovacs** @IvettAlexa, Data analyst, Hungary
- **Michelle Jospe** (@michellejospe), joining late since in New Zealand. Nutrition post doctoral researcher at the University of Otago. Former graphic designer.
- **Amanda Makulec** @abmakulec, Data Viz Lead @excellaco joining late thanks to work
- **Hilary Slover** @hilarys728 from Chicago, IL. An evaluator for the federal government with a special love of data, design, and visualization.
- IreneC, joining a day late, PhD student at University of Potsdam
- Quentin Rospars @Miionu, Grenoble, France, currently studying Data Science at Copenhagen. Love to communicate through data visualisations.

B. How would you describe Tufte's book in a short sentence or three words?

Meaning, what was your general impression of the book; how did you like it? (5min)

- Tufte excels at describing (and promoting) the craft in one of the most beautiful dataViz book artifacts, yet everyone still under its long dark shadow is plagued by what it bungled. (**RJ Andrews** @infowetrust)
- I like how the book demonstrates how to look carefully at what's useful and not when making a chart. (**Trud Antzée**)
- In his own words, it's got the substantive, the statistical and the artistic skills expressed in every page (@muxevola)
- I had some experience with Tufte ideas before, but haven't actually read his books. I thought he's living the past, being the hardcore statistician from the 80s talking only about boxplots and statistical accuracy. It turned out that the book is pretty universal and can be applied to today's tools (like Tableau, which is the tool I use most). It was also a very good read, well written and edited. I loved the charts being put inside the sentences (Tufte writes about it in the preface) and how it enabled seamless following of his ideas. Compared to other data viz books it's a very light lecture - this does not mean it's not full of valuable information. On the other hand, in my opinion, he gets too focused on the principle sometimes and loses sight of the fact that he makes the chart look weird and hard to understand - I'm talking about the excessive stripping of lines mostly, like in the case of box plots or age distribution histograms. (**Michal Mokwinski**)
 - Totally agree about the boxplots. Especially the Tukey plots! And especially the ones where the median is just a point with a huge blank space. which intuitively to me would indicate an absence of data not the location of the bulk of the data
 - Yes, I LOVE the idea, but in some cases you keep wondering is the break/offset of the axis a printing error or does it carry some message? I initially liked the boxplots, but then I felt like when I go crazy with my viz - it looks great and clean to me, but nobody will understand it as it's very different from what they are used to. Especially that boxplots are hard to read and understand by the general audience in their generic form.
- Tufte's book is a collection of his personal thoughts and observations about dataviz, and how to better display data; I just happen to agree with much of what he says

- I think about Tufte's book as a philosophical overview – a lot of deep thoughts and theoretical advice. I appreciated it a lot more now than I did when I first read it in search of practical guidelines. (**Anneli Joplin**)
- Simplicity, accuracy, clarity (Daniele)
- Austere design, rich data—almost more of a guide for restraint in some respects (still very useful, IMO, given how easy it is to make a bad graph or such). A bit like how we see classical sculpture without the original paint now—forms on display, and we concentrate on their shape and anatomy. It's the same with data (Alex).
 - "a guide for restraint", wow, I like this view on his book. It's true! "Take this away, and that, and add actually...not so much. But data. Do add that data." (@lisacrost)
- Best-practices for *revealing* data with graphics, illustrated with beautiful examples (**Bram Zandbelt**)
- Tufte's books have some great advice, data must always come first but his search for a clean visualization in which every non-data element is erased seems a bit extreme. Restraint is good but austerity is a whole other thing. In another data viz book, *The Truthful Art*, Cairo also discussed this view and although Tufte's brand of visualization are clearer when people try to remember then after a week has passed they have trouble but when you are dealing with charts with a little bit more users or readers tend to remember them more.
- I didn't expect Tufte to be so opinionated - even scathing at times.
 - Yes he's so scathing! Poor pie charts :(I know!
 - We Professors always come off as opinionated as our material & research is the best so our conclusions must be too. And he exaggerates to make his point. This comes from a lifetime of trying to make 18-22 year olds pay attention!
 - I hate pie charts (in most cases), but I have trouble explaining to other people why. His words will help during my next argument lol
 - There are instances where pie charts work well -- as long as the data is appropriate. They don't work with a bunch of pieces or pieces too similar. If it's one piece showing a part of a whole, I think that's something that people can understand fairly quickly. (it's true – recently I saw a study that showed pie charts were actually better for parts of a whole...) if you find it please can you post the link here? I'd be interested to see how they justify that! I agree, I'd love the link! For sure! Looking for the link now... Robert Kosara has done lots of study on pie charts
 - Yep I've read some of his stuff on waffle charts, which are similar and maybe currently more fashionable: <https://eagereyes.org/blog/2008/engaging-readers-with-square-pie-waffle-charts>
 - I agree with this, actually. But this is a very particular situation. But I rarely see this level of restraint in the use of pie charts
 - I think one of the most important things visual artists can do, besides not skewing the data, is picking the format that is most appropriate to use for a particular data set. It can take a lot of practice to tell. And sometimes you can't tell until you've done it and see, "Well, nope, that's rubbish! Need to do it some other way."
 - Yeah, I think you're right. I also think that's why his points about editing are so important! It seems like once people get the data onto the paper, they're done! There are way more steps after initial construction...
 - I think re-doing a graphic a few times is definitely a must-do. For the sake of proofreading and preserving your integrity it's better not to make a silly mistake and propagate 'fake facts'. And you may improve your design in the process.

- It is a skill, though sometimes editors/non-designers just think you can throw the data in a pie chart or bar chart and that's it. You need to look at what makes the data clear more than what is necessarily "pretty."
 - Just because you *can* add more features to a plot doesn't mean you *should.* Minimalism in data presentation as a way to maintain data integrity is a real skill! IT'S SO HARD. IT really is a skill!
 - For me this is sort the discussion between Pixel and Iphone, Apple is very minimalist in everything but it starting to lack meanwhile the new google products are trying to add color and other details like that, bringing expression into their product design. While I think minimalism is good, the graphs that Tufte presents are in many moments unfriendly. Here is a link about what I mean with the comparison between Apple and Google <https://medium.com/s/story/google-and-the-resurgence-of-italian-design-e9234cf3d073> i agree. I found the brutal erasing of almost everything a bit too much. Good link.
 - Ooh this looks cool. I just found out about Sottsass and Munari
-
- It was good to order the basic steps of why I do graphs like I do (or why I don't), thinks that I often take as granted. But I found that Tufte tries to make too many absolute theorems. (@VictoriaVic)
 - Found the book a bit dry when i first read it. But it taught me just how much you can take away from the standard charts and still convey the message. I found it fairly dry when I first read it, too, but the insight is valuable. Definitely! Two years on I think I appreciate it more
 - When I was recommended it in college I thought it was blah—I wanted pretty pictures and maps! But then I started having to do my own research and I was all, "Ohhhh, I get it." (Alex)
 - For me, who has not read alot about data vis, Tufte articulates a lot of the principles in a clear and distinct way. I appreciate that he's very principled, also when I don't agree. (Martin Olsson)
 - Can absolutely see why the book is influential e.g. the chart junk message comes through loud and clear. Bits of it did come across a bit dated though e.g. other Tufte books after this talk to colour theory but this is very black/white/gray and it predates lots of modern software. Oh and even though Tufte describes his view as a guideline rather than rules he clearly thinks if you don't follow them then you really ought to be doing. One other gripe, definitely didnt agree on the point about cramming data into small charts, my ageing eyesight hates having to squint to decode data!
 - It really is a data design for print book in a lot of ways, esp. space-constrained journals (even when I submitted my first paper I was told all the maps would have to be legible and black and white, in the early 2010s!)—although I think a lot of it still holds, there's a diff. between restraints in academic/tech publishing in the seventies and now. Think the ability to zoom hasn't necessarily been used in academia as much as it could (in paper supplements and such)
 - I also think the bits where he talks about colour is a bit dated, I don't know about his other books. But I think the small charts topic is still important when today we talk about responsive charts (@VictoriaVic)
 - He's trying to make a case that less is more. Always, always, always (and goes a bit too far quite often).
 - Informative, opiated, and revealing. I learn a lot, and mostly from little techniques I can apply to my charts (Bea).
 - It is all about the data. Complex data. Simple visualizations. (Nice way of putting it!) Thanks.
 - The book in a nutshell - say no to chart junk (Inga Silkworth).
 - Great historical examples. Good ideas. Silly ratios. Chartjunk sillier than expected. Oh, the first chapter (the historical one) was my favourite! I wish there was a whole book like this. Yes someone please make that book (*take my money*) I think there is a book released this year about Playfair's

work. Check <http://datavis.ca/> Thanks for sharing!! (The milestones project) I think I saw it, but it's great to refresh it!

- Tufte is all about simplicity. How to make your visuals so you don't need an explanation they just speak to you!
- Informative, but in some cases a one-sided view. Sometimes a bit uncomfortable from the author's fuseless feeder (Ihar Yanouski)
- He makes a lot of great points, but can be harsh at times! All about simplicity and focusing on the info and message. He really doesn't like graphic designers! If you've read the wall street journal guide to infographics, i feel that it's a moder-day version of Tufte. Above all else show the data! (@traceetibbitts) I think it comes down to the fact, that the book is from the 80s, and (as you see by most examples) does not utilize much color. Most charts are black & white.
- A best practice guide for how to create visualisations that let the data do the talking, with some beautiful examples (@swilliamspace)
- I really love the book itself - an exemplar of the Tufte way of expressing information. Really nicely designed. The focus on ink density can be a bit of a race to the bottom but is still something I think of every time I make a chart. (Evan) That was true, the examples I found sometimes annoying (that removal of legends....) but always extremely visually pleasing. (Ada)
- Definitely a classic that comes with great examples and touches a lot of very important topics, but is also a bit verbose and outdated in places. I had read parts of the book more than ten years ago when I was a student. It was very interesting to re-read years later. I would love to see an updated version! (@sjockers)
- To me I really appreciated that it was more about the essence of what makes a great visualization work. There were some particulars but it was a more philosophical and less technical writing. I found it inspiring, but perhaps a little dated.
- While there were some comments that I found to be a bit dated, I really appreciated his highlighting good and bad examples of charts (particularly because he pointed out why they were good/bad). With so many charts being used all around us, it can be easy to forget how easy it is to distort data with just a simple change of an axis or shape. It was nice to be reminded of that.
- The top chart at this link physically hurts me. (Well, most of them do, but the top one especially!) <https://excelcharts.com/change-bad-charts-in-the-wikipedia/> - woah! sharp intake of breath Ayyyyy, nooo...It's almost like somebody was trying to build the worst chart they possibly could, LOL! Wait, are you saying we could be chart vigilantes...out there fighting for better data vis? -@SaraSaysData
- Tufte has a lot of good points, I found myself nodding in agreement as I read through. I'm excited to apply his principles (not all, he went too far in some) to my work! After reading this and walking through the university halls, I keep on finding chartjunk :p

1. What was the most surprising thing you've learned?

Choose a text passage, and explain how it challenged something you assumed. (Type up the text passage / phrase, and tell us on which page we can find it!)

- Generally chapter 4 - **Data-Ink and Graphical Redesign**. Interesting to see how little is necessary to convey a message, for instance how much Tufte takes away from an already simple-looking chart on pages 100-102. (Trud Antzée)
 - Do you think his redesign worked actually better? I kept staring on it and couldn't make up my mind if I liked it more or less. (@lisacrost)
 - I think it worked better; the first one on p 100 is confusing because the vertical lines have the same thickness (if we compare on page 102) (Trud Antzée)
 - I think they do improve upon the originals, to a degree, but they need more editing. I see that bar graph simplification as the source material for lollipop charts, which are everywhere now!
 - I personally think most of his redesigns fail horribly, I even went around my work space asking people what they could see in some graphs (especially on the redesigned boxplot) and almost no one understood what was being conveyed
 - This is interesting! Do you think it's because people are so used to seeing certain types of chart (bar charts etc.)?
 - I think that's part of it—I got some negative-positive space confusion in points, but it's probably just due to convention. But if you subvert convention *too* much it can be hard for your audience
 - Oh interesting! Which charts did you try? Did you try the range plot (the scatterplot that shows the ranges in the axes)? Because I think that was less intuitive than I thought.
 - I think part of the reason was that people are more accustomed to some charts but at the same time, I think that by taking so many things away it cleans the page but it also makes context harder to understand. I also tried to with the ranges and the results where similar, the details are there if you know where to look at but most people didn't see it. (Full disclosure in my workplace there are 10 people, I'm the only one doing data viz so it's in no way a great sample)
 - It's a really interesting point on whether end users are better at decoding the data in a format they are used to vs a theoretically better format. Good point! (Trud Antzée) I've had this argument given to me to justify using 8 pie charts on one page/topic. I resorted to Tufte's statements regarding not assuming your audience is an idiot. But it might actually be true that the average reader (middle-high school reading level) may understand it more readily. I'm a bright guy but I hate it when computer games change their interface :), same line of thinking I guess. Doesn't excuse not changing genuinely bad formats but an average format that is understood may be more effective than a great one that's harder to learn? Context: I'm coming from a business context where I have to present data in meetings usually shorter than they should be to people who are bright but have short attention spans
 - I agree with this partly because even the first bar graph had to be explained to people, the same with the first line chart. I think there was a twitter thread about this topic, let me search for it
 - Some of his redesigns made the graphs worse I think. For example the box plot on page 124. It was both hard to read and visually unappealing (Inga Silkworth). Funny, I saw it again today and thought it had potential
 - Here it is!
 - https://twitter.com/Elijah_Meeks/status/994239125619294208 - thanks for the link
- "The time-series plot is the most frequently form of graphic design." (p28): I had assumed that the bar chart was the most frequently used graphic in the wild, even in the 4000 magazines that Tufte looked

at. But it makes sense, when thinking about aaaall the stock charts, that the line chart is far more common. (@lisacrost)

- when i re-read it I noticed "time isn't an explanatory variable". I hadn't considered that. I'll be working a bit harder on line charts!
- Yeah, I thought the same. I still keep thinking about this, and if I overrated simple line charts so far :)
- I think time-series here is about all cases represents any data through time. So barcharts sometimes could be included in this group.
- I'd venture to say that with the rise of smartphones, maps are by far the most widely used form of data visualization
 - I mean battery indicators are bar charts, so I don't know if that's true!

- That this material is still so accurate today as when it was written, how many of us could look back at our opinions from 2001 would still hold up today? Yes this is from 2001 the early days of the Web!
- From pg 121 "But **no information, no sense of discovery, no wonder, no substance** is generated by chartjunk." Sometimes when teaching I get stuck on the visual definitions of chartjunk (patterns, 3D effects, dark gridlines) but I think it is much more meaningful to tie the definition to whether or not that graphical element has substance. (Anneli Joplin) I feel like we all got those overhead overlays of different patterns in middle school! lol. @traceetibbitts
 - I agree! I was discussing chart junk with someone this week, and they thought it was a thing of the past simply because no one uses hashes in bar graphs anymore! Chart junk is so much more than early 2000's computer graphics.
 - Yes! It has just gotten much more subtle... (Anneli Joplin)
 - Many of the sort of quasi-representational chartjunk examples reminded me of the "I f'ing love data visualization!"-type stuff you'd see a ton of ca. 2011-13
 - It would be nice to look at the ISOTYPE material to see if we can distinguish between chartjunk and useful pictorial graphics.
 - That's a great thought – I feel like the right pictographs can really add to 'intuitive' understanding in a chart (Anneli Joplin)
- how much can be removed from the sorts of standard charts tools create
- Nothing stuck out to me as revolutionary. To me, it was more that he had more clearly and deeply thought about the topic, as well as actually analyzed some data on different charting types. I also like how succinctly he sums up his points during and at the end of a chapter. I like his principle summaries, too!
- *Another way to confuse data variation with design variation is to use areas to show one-dimensional data (see the first paragraph at page 69).* Well, I've learned it not this time but a little bit earlier, fortunately. Anyway I've made so many shrinking doctors in Illustrator before I've realised my fault. It totally changed my mind in my time and forced to learn theory (Ihar Yanouski)
- Graphics **reveal** data => Anscombe's quartet: four datasets describing the same linear model - pp. 14-15 (@muxevola)
- Data maps are old like egyptian charts, maybe not a technical fact but I never pay much attention to maps (Bea)
 - As an-ex physical chemist, I have a tendency to forgot about maps as well... but it's just a chart with defined meanings for X and Y position. Easy to forgot about when your data doesn't have a spatial dependence. (Anneli Joplin)

- I don't know if this counts as something learned, but appreciating the idea that sometimes tables are the best option for displaying data. that definitely counts. Jon Moon, author of How to Make an Impact, makes the same point. I appreciated that part too. So often forgotten. Sometimes, tables are best! Especially if you have a ton of data.
- Perhaps how small distinctions humans actually can see in small graphics and the chapter on density of data. (Martin Olsson)
- How close some of the very old examples are to what we do today (@sjocker)
- My favorite chapter was Ch. 2 Graphical Integrity, especially the line in the second paragraph of the chapter: "At the core of the preoccupation with deceptive graphics was the assumption that data graphics were mainly devices for **showing the obvious to the ignorant**. It is hard to imagine any doctrine more likely to stifle intellectual progress in a field." He repeats throughout the rest of the book that visualizations shouldn't be dumbed down and solely used for the purposes of catching a person who is otherwise too lazy to read the words; they should be used to add more data and/or to summarize or clarify complex ideas. The graphs/maps/plots/tables can and should be at the same level as the text they are accompanying. (@LisaQuartered)
 - Agreed! It is easy to make charts too simple in the quest for 'clarity', which really like Tufte says just functions as a way to show the obvious (Anneli Joplin)
- Tufte's advocacy of **supertables** surprised me (pg179). Especially his view that they are good at pulling a reader in. I can see how they are useful from an ease-of-looking-up-a-value point of view, but for an intriguing way of presenting a large dataset? Surely this is where well-designed visualisations can shine (@swilliamspage)
 - I've been wondering about that too – how often is it that the ACTUAL numerical value is the key takeaway? (Anneli Joplin)
 - I think it depends on the audience. For a technical audience maybe, but since Tufte was writing (the original version of) this in the late seventies I wonder if tables often were the source of the data, rather than having the original data downloadable on the side.
 - Agree. I wrote a note next to that table "I don't want to look at hundreds of numbers in a table". (Inga Silkworth)
 - When I saw the super tables, it came to my mind to add conditional color background to them. I think they would be more effective. People get lost just with numbers (@VictoriaVic)
 - That's how I do EDA all the time! I combine my table with datavis. Especially Sparlines (SEE BELOW)
- I'd like to hear what other folks think about **sparklines**. Why didn't they catch on? Not a good tool at all, or was it more logistical (difficult to implement)? I was also really amused to see how much of the content I'd learned in other data viz workshops is directly derived from his work (but isn't always attributed to him)
 - I use Excel's sparklines a lot. They can be pretty effective
 - I first thought that the missing technology might be the reason, but they are actually good Javascript libraries out there, I think. IMO, the main reason is that researching the data for a chart is hard. Once you've done that, you don't just want to put it in a tiny space, but in a proper big frame in your article. (@lisacrost)

- Also, charts can be really effective as illustrations for your articles/report. So IF you have data, you really want to show it big.
 - It made me think about how to actually use this and how effective would it be in a news story. Since now I've only tried out how ATF Spark font works, but I'm sure it would be useful: <https://onlinejournalismblog.com/2017/09/21/how-to-use-the-atf-spark-font-for-creating-charts-with-only-text/> (@VictoriaVic)
 - I have used them sometimes and clients say they don't see the data very well 🙄 They miss the point of the sparkline, I guess they are not for everyone!
 - The issue that Tufte points out is that there are ways we've all been trained to see data represented, and maybe we should train ourselves differently. That's compelling to me, but definitely difficult to implement (even if we could all agree on what a "better way" might be)
 - These tiny pieces could be really helpful for annotating and referencing to some important parts of a big picture
- As I just replied to somebody on Twitter, his use of formulas was fairly odd and unrealistic. **Is anybody actually going to work out a formula for how much of a "visual lie" is acceptable in a graphic?**
 - I don't know that I would take the time to do the actual calculation but it helps to consider those formulas.
 - Still, approaches trying to measure the amount of clutter or "insights" and quantify the visual complexity of the graphic would be interesting and maybe even lead to useful tools. Agree though that it's hard to go from a simple maxim to an effective algorithmic approach.
 - Interesting as a concept, but as a former boss used to say, "Don't follow a rule out the window." More of a learning experience than an everyday thing, perhaps.
 - We had to do this kind of analysis in Statistics GCSE! (@swilliamspage)
 - I found it a useful way to quantitatively show how wrong a chart is. But you're right, Tufte is just about the only person who would actually calculate it!
 - A lot of the book is about paring down, but the parts about the usefulness of repetition—repeating part of the globe to better show global circulation, showing the same surface plot from different angles to strengthen the viewer's understanding of multivariate relationships—really interested me
 - I was really stressed out to see the charts that are out of proportion (for example p 70-71). The area doesn't reflect the data! AHHHH!!! (@traceetibbitts)
 - You have to remember the tools they had when making these graphics, they aren't bad considering the tools available at the times they were done, you youngsters have no idea what we had to do back then! LoL
 - It was an eye opening thing, that he actually thinks about how many times you have to move the ruler to draw the chart. For someone like me, in their 20s, data viz was always a matter of using a computer (well, except of primary school).
 - I see your point, but the problems with these data viz is they didn't calculate surface area correctly (or at all) :P
 - Tufte's **love for unusual graphics** (like Minard's Napoleon March or the French train's timetable) was a surprise. I thought he was a bar chart/line chart type of guy, focusing on the proper labeling, removing clutter etc. Second thing: acceptance of tables. He pointed out few times that tables are

better for very small data sets. Another surprise - the chart on page 151 - chart made entirely of numbers. (Michal Mokwinski)

- Agreed! I so often think about Tufte as an advocate for simplicity, but I feel like he really makes the case for detailed graphics... which explains why he dislikes PowerPoint so much
 - I think one of the departments at UCLA (sociology?) has taken up his approach of having people read a paper and then come to the “talk” with questions and printouts
 - I appreciated the history of graphical practice and was surprised to learn that “the use of abstract, non-representational pictures to show numbers is a surprisingly recent invention” (Introduction, p.9). Especially given that geographic maps have been around for more than 5000 years (@bbzandbelt).
 - p. 87 “Graphical competence demands three quite different skills: the substantive, statistical and artistic. Yet now most graphical work, particularly at news publications, is under the direction of but a single expertise – the artistic.” Do you think this is still the way? I have a feeling this was more in print than now in online media with more programmers and journos involved, but maybe depends on the media. (@VictoriaVic)
 - Working in retail and financial services analytics there is very little time for artistic. I think the big change over the last ten years is where presentations used to be 100-200 powerpoint slides and one graph to a page the drive has been to get the data and insights across in less than 20 slides. Art maybe but art in the service of the data and statistics stuff.
 - I think you're probably correct there.
 - Me too. I found that part a bit outdated. I don't think the idea that statistics is boring and that graphics are for the unsophisticated reader is that predominant any more.
 - One takeaway for me was that we may need more basic research into how readily people understand graphics. He did some of his own analysis, but I was surprised how (relatively) little peer reviewed data I could find on people's comprehension of different data displays. AKA **Our data needs more data!**
 - This is definitely the case. Some folks are trying to do this research, but when I read their papers, I feel like there is almost nothing generalizable to everyday practice. It's a really hard thing to test experimentally, I think. (Evan)
 - Karen Schloss' work on colour really made me think about this! So much of data viz is about the psychology of the viewer. She was on the data stories podcast:
<http://datastori.es/category/episodes/> (@swilliamspage)
 - The book is rumored to have made Tufte the most successful independent publisher. *Ever*. Read about Tufte-economics at <http://www.washingtonindependentreviewofbooks.com/features/bad-example> (RJ Andrews @infowetrust) o_O
 - Not surprising in a negative way, but I was surprised that there is such a thing as “Data-ink ratio” and how that is something one should consider. I used to think as long as a figure looks good, it's fine.
-

2. Select one of your favorite data visualizations.

Is it working well because of a principle that Tufte explained? Or do you appreciate something about it although it goes against Tufte's principles? – give us a link to the data vis! If you need to upload something, but it on <https://imgur.com/> or Twitter.

- 2- Page 147 Philip E. Converse “**Religion and Politics: The 1960 Election**” The ability to build three dimensional surfaces, where statistical data can be viewed and understood in a three dimensional space is incredibly powerful. This may not be a stunning example of it, but it shows what this graphical type is capable of. However, this chart type can be problematic, and the visual distortion due to representing more than 2 dimensions *in* two dimensions (i.e. on a page) can detract from the story. I think using AR/VR could create a whole new world of ingesting data by showing 3 dimensions in a space that our mind actually interprets (more correctly) in 3 dimensions.
 - I loved those—using two views to strengthen our understanding of a multivariate relationship that can be understood as a single surface
 - I just want holograms, so I can walk around the surface, and really s
- One of my favorites is the visualization of the frequency-of-repair records for cars on p. 174. It works so well because several of Tufte's principles are applied: small multiples, high data density, high data-ink ratio. It also meets all criteria for graphical excellence (p.13). (@bbzandbelt)
 - That one was shockingly good. Extremely easy to get the takeaway at a glance, but also easy to read in depth if you want
 - In fact, maybe that is a guiding principle going forward: Make your chart available/consumable to any level of interest. I can, in 5 seconds, see which car breaks down the most. Or, in 2 minutes, see how one car compares to the average on every part. He doesn't seem to talk about this idea, though, **does he?**
 - I don't think he does in this book, may be in one of the others? I agree it's a very important principle that graphics should be easy to understand.
 - Well, he discusses easy to understand, I think. But being able to be equally well understood by casual observers and by intense scrutiny is something else entirely
 - Consumer Reports still uses those! Do they!? I will have to take a look. Thanks! They also have big tables in the back if you want to see the raw numbers for road tests and reliability, too. They're quite good and give a very fine-grained view of quality (so one can pick-and-choose what's most important).
- p. 59 :p.
 - Really, though, the world ocean circulation plot on p 99, partly for historical purposes (super-old geophysical modeling!)
 - Wait, no, the Yü Chi map on p. 21—that grid, the doubling of character names as markers and locations, the charting of rivers—very attractive, almost hard to believe how old it is.
- I love the life cycle of the Japanese beetle on p43. It's also available here: <https://webtic.eu/late-bytes/highlights/2008/05/de-4-basis-vormen-van-een-data-visualisatie/> It is

not very Tufte at all, but says more than text could. Tufte doesn't really say much about it, but I like that he was tempted to include it anyway. Agree! Thanks for the link!

- Not a favourite viz, but a technique. I really loved how the slices the axis to show distribution (min/max) in chapter 7. With proper labeling this provides much faster read out (pages 149-152)

(Michal Mokwinski)

- Oh, that is a good technique for that particular sort of data -- it's timeline plus illustration. It's something that is easy to "read" and understand.
 - I think it's easier to be done by hand than using software, that's why. Besides, it's a very minor thing so it tends to get overlooked often.
 - I really, really want to love this technique (I think it's genius), but I can see users getting really puzzled about these upper and lower limits. I think we actually had this option in the Datawrapper tool once, and readers got confused why the chart doesn't extend to the next "big" axis tick, and then we took this feature out again.
 - I had the same issues with my answer to the 1st question - the ideas are great and bring lots of value, but might confuse general public not accustomed to it. Especially, as Tufte writes, bivariate charts, like scatter plots, are already hard to grasp by most people (if they are not Japanese toddlers lol)
- I've been working in data viz for less than a year and the visualizations that got me started were several of the **Pudding** projects like the Hamilton visualization or the Curiosity Visualization. Most of the Pudding work has a great balance between data and design. They respect the data and show the results honestly but they also make sure it's easy and fun to read. The Curiosity visualization(<https://pudding.cool/2018/01/mars-weather/>) is an example or the Hamilton project (<https://pudding.cool/2017/03/hamilton/index.html>) even though the animation makes reading this viz a little confusing. I was wondering if Tufte would be happy with the way they presented the information in the Curiosity Visualization by using the postcard like frame and animation or if he would have objected, the same with Hamilton. Both are fun and projects that have lots of datapoints but they present the information in a whimsical way that I'm not sure if it would pass Tufte's examination. Nevertheless they are great!
 - I love Pudding! I was just thinking about the piece on the availability of make up for different skin tones this afternoon <https://pudding.cool/2018/06/makeup-shades/@swilliamspage>
 - I skimmed that article but I really liked the presentation. I have to dig into it a bit later
- I love the **historical ones like page 72 from 1888!!** The history of the Italian post office. Imagine how good it would be today in Tableau? Pure genius graphics designers back then!
 - <https://imgur.com/gallery/BzXhWgN> Here is a scan!
 - Totally agreed! This is what I was going to post as well. I think this graphic works well because of a principle that Tufte explained – The number of information-carrying (variable) dimensions depicted should not exceed the number of dimensions in the data. Here is one case where a lot is communicated in an intuitive way that looks beautiful. I find when teaching that I often discourage circular types of charts, but maybe unfairly. (Anneli Joplin)

- Yes, the book has great examples for teaching perspectives and they don't have to be perfect, in fact you learn a lot by analyzing the weaknesses, like MakeOver Monday does...

- xkcd's radiation chart: <https://xkcd.com/radiation/> -data heavy, uses multiples. Substance, statistics, design. Conveys differences in orders of magnitude well (@swilliamspage)

- Oh wow. I forgot about this one. Thanks for reminding me of it! (@lisacrost)
- XKCD is gold!
- I loved his climate change chart. So good. SO good. <https://xkcd.com/1732/>
- Ah yes, that chart is so good but so depre
- That is just brilliant! (@bbzandbelt)
- Ooh, yes. Really good use of scroll to build suspense.
- Wow, really nice and effective!
- Very nice one! The author is very clever

- New York City's Weather, page 30

- Napoleon in Russia pg 41. It even got my non data nerd husband excited.

- Also, on p73 'We certainly would not want to forgo the 4,340 pound chicken:' LOL

- Yes, that was a great comment.
- There are several really funny zingers in this book. I wrote a couple down while reading lol

- I think that On their way, **The Journey of Foreign fighters** that was awarded by Malofiej last year (<http://alessandrozotta.it/on-their-way/>) is a great infographic, and in many ways according of the principles of Tufte. It is great design, but first and foremost it's about the data. "Graphical elegance is often found in simplicity of design and complexity of data". And I get the feeling that the creators has been aware of Minard. (Martin Olsson)

- This is cool. Thanks for sharing this. This is rich in information. I think the bias toward immediacy in understanding can cloud how artful and rich the medium can be. It takes time to learn, and read, but is a great way of accessing and holding info. It's better than reading text, but it still takes some reading.

- <https://www.nytimes.com/interactive/2014/06/05/upshot/how-the-recession-reshaped-the-economy-in-255-charts.html?abt=0002&abg=1> **"How the Recession Reshaped the Economy, in 255 charts" by the NYT** is one of my favorite data vis projects out there. It's a scatterplot of line charts. I think it's a graphic that Tufte would like a lot: The data ink ratio is extremely high, the chart is labeled directly (although yes, the y-axis is labeled with vertical text, which Tufte doesn't like) and the integration between text and graphic work very well. It's also innovative in its form, not for "decoration" reasons, but for reasons to explain the chart better. And it shows *a lot* of data. And as Tufte says: "More information is better than less information" (p166).

- So much valuable information in that project. My only quibble with this one is the use of red and green. Even though that's the "standard" good and bad colors, I try not to use them because it loses the color effectiveness for color-blind people. At least for those who are red/green colorblind.
- I agree! I think Tufte doesn't mention colorblindness that much in this book, but there's at least one tiny hint that it's important to make colors readable for colorblind people.

- I thought the visualization on page 44 was delightful. A lot of information, and visually appealing. I found myself staring at it for 5 minutes (Inga Silkworth). Is this the extent, population & revenues chart Inga? Or maybe it's the beetle one in a different edition to the one I have? The populations and revenue one. Oh, that's interesting - I do wish it was a bit larger. Some of those numbers are quite tiny and difficult to read. I'm sure there was a better way to visualize this information, but I've never seen anything like this before, and it was interesting to look at each country and figure out if they had high taxes or not. The change of slope direction was the biggest takeaway in this chart for me (and I needed Tufte's description to know what the slope meant).
- I love small multiples. Many examples in his other books, especially Envisioning Information.
 - Yes! I feel like they are so useful for multidimensional data – it is such a simple solution, but keeping the axes constant allows the viewer to compare in a very effective way. I often recommend this to students looking for a way to show high data, but sometimes it doesn't seem as exciting as a bizarre new chart type! (Anneli Joplin)
 - To me it *is* a chart type. I call it profiling to include other similar techniques (trellis, Bertin's reorderable matrix, etc).
- I am super hooked to La Lettura

(<https://www.flickr.com/photos/accurat/sets/72157632185046466/>) and my favourite is the one of the paradoxes (<https://www.flickr.com/photos/accurat/14123698085/in/album-72157632185046466/>). I have taken my time more than once going through every paradox, and the fact that it is not interactive, I kind of love that (Bea)

 - Wow these projects are beautiful! thanks for the link!
 - Federica Fragapane is one of my favourite vis designers. Her work is astonishingly beautiful. La Lettura is great
 - I agree, I like the work of Accurat a lot. Although I tend to think that Tufte would despise these glyph data vis :) He keeps saying "In the best case you don't have a legend." And La Lettura graphics only work with legends (and make the experience of deciphering the chart really interesting)
 - Not only the legend but most of them have a guide on how to read!! He definitely wouldn't like that
 - La Lettura's legends are stand alone masterpieces in many cases :)
 - THAT's true :D
 - Paradoxes reminds me a lot of Jez Kemp's mythical creatures venn diagram. <http://jezkemp.co.uk/portfolio/> (@Sarasaysdata)
 - Not to mention Ghost Counties by Jan Willem Tulp - one of my favourites
- I like <http://www.project-ukko.net/map.html> by @moritz_stefaner. **Data-Based Grid** here helps to get whole picture at a glance. I impressed the way macro- and micro-levels are displayed. (Ihar Yanouski)
- I've recently been taken with Nadieh Bremer and Zan Armstrong's Baby Spike <https://blogs.scientificamerican.com/sa-visual/why-are-so-many-babies-born-around-8-00-a-m/>

The legend is really well thought out and makes this compact visualization approachable. Also, despite being static, it far surpasses most interactive viz in interest and explanation.

- I love that one too!
 - Really nice
 - I love this one too! There's also a cool blog about how it was made: <https://www.visualcinnamon.com/2017/10/creating-baby-births-visual> (@swilliamspage)
 - Oh, Nadieh is the best. This example really got me hooked on more creative vizzing and all these circular forms for showing seasonality. Nadieh Bremer is absolutely superb. Her work is amazing!
 - I was going to talk about this one to, in comparison to a couple of visualisations in Tufte's book that also display seasonal data (sun hours - p. 163 - and fishing by latitude - can't find the page now...-). I liked both of them because they show patterns with simple colour and shades, but if they would add the circular forms they would gain a lot more. (@VictoriaVic)
 - She does very beautiful visualizations, I almost put the last one, the one about the stars! Gorgeous!
- <http://www.sciencemag.org/news/2017/04/here-s-visual-proof-why-vaccines-do-more-good-harm> super clear and gets the message across quickly.
- Gotta love **sparklines**, p172-174
 - Yes Sparklines are great for in game sports data too!
 - Totally, I love how they can be placed right in line with text to give context to individual figures
 - They are effective
- I think this is a great example of when a table works (not trying to get political) <https://www.nytimes.com/interactive/2016/01/28/upshot/donald-trump-twitter-insults.html>
 - Yes! I think that works really well because the data is not numerical/quantitative – Tufte's book is about "The Visual Display of **quantitative** information", and I'm surprised how much he likes tables for numerical data. (@lisacrost)
 - Quantitative information, yet he praises the graphic with the beetle (just an observation) I suppose if you are trying to show how something looks different you may just have to draw it. Like in the Fear/Rage chart on p50 I LOVED that one. Thought it was hilarious. (@traceetibbits)
- You might say this isn't strictly quantitative either but it's one of my favourites <https://archive.nytimes.com/www.nytimes.com/interactive/2013/04/17/us/caught-in-the-blast-at-the-boston-marathon.html>
 - What do you like about it?
- The one I thought I would most like to copy was the sunlight chart.
- I loved chapter 7 - Multifunctioning Graphical Elements. It's very inspiring to see how it's possible to build such neat visualisations just from the data itself; like the example on page 141.

Also liked the data-based labels idea (the chart by Carol Moore on page 152 is also a favourite).
(Trud Antzée)

- I love <https://earth.nullschool.net>. It's rich with information on many scales, using different variables.

3. Having read the book, what will you do differently the next time you design a chart?

- I will. Also, I will more likely go through his list of principles and see if my visualizations stand up to Tufte's principles.
 - MakeoverMonday FTW :-)
 - Haha exactly.
- I will think more about gridlines, which role they play in my graphics (if they should be toned down or could be removed). (@lisacrost)
 - And the counter point – when are they actually valuable enough to include? For gridlines I was also inspired by the example on pg 127 – white gridlines across the bars is an interesting way to avoid adding non-data ink, but still maintain the positive agridlines
- I will think far more about the integration between text and graphics, e.g. in my blog posts. What Tufte wrote in his last chapter (p180-182) really resonated with me. E.g. the idea that "Data graphics are paragraphs about data" – so far, they often look like extra pieces of work in my articles, and I just write "around the graphics". I want to slowly change this. (@lisacrost)
 - Makes a lot of sense in presentations I give, thinking of doing away with the slide title and simply using the graphs with the text in the slide
 - I think titles are still important! These are the things that people remember about the slide.
 - Yes. So many titles are misleading or just wrong!
 - That's probably one of the best ideas in the book, and one that outlive all others :)
 - interesting - any ideas on how you're going to do that?
 - for example integrating the chart headline more into the overall chart. So far, I designed my charts as stand-alone-pieces, so that you get something out of them even if you don't read the article. You could just skim the text and just see the chart. And that can be important. But maybe I want to go more Tufte-style from time to time, not have a headline at all, or even having a chart in the middle of a sentence <3
- I will think about the question my chart is attempting to answer or clarify and make sure it jumps out at you, and I will try to not do too much with a single chart. I will also try to not give the reader a chance to get lost in chart junk!
 - the second part is something I've learned the hard way. I used to try to come u

- That first part is something I am going to try to do: a chart is answering a question, or sometimes telling a story. If it is just a cute way to show numbers, what's the purpose really?
- That's a hard one. I think it's easy to create great looking and engaging charts when the data is interesting. But when I create another report on the same subject it gets boring. There is no story. So I think, trying to find some story or interesting data points is the thing to focus on. And using the techniques from the book it's much easier to find such points, annotate/highlight them and start building some narration. (**Michal Mokwinski**)
 - Thanks for pointing out that the data is the most important piece of a chart :) I keep talking about char
- Since reading the book in 2014, I have implemented the following principles: above all else show the data, maximize the data-ink ratio, revise and edit. One principle I want to apply more is multifunctioning graphical elements (e.g. double-functioning labels such as the range frame) (@bbzandbelt).
- I'll be (even) more conscious about whether each element on my charts serves a purpose. (**Trud Antzée**) Same! Thinking about how every element should have a meaning, and simplifying everything. @traceetibbitts
- I'll try to increase my data-to-ink-ratio. I though I've been removing chart-junk, but I guess not nearly as much as I can (although I think maybe Tufte's is a bit drastic at times). And I'll try to increase my data density. As it happens, just this afternoon I also added a tiny datavis in a block of text, inspired by the sparklines. (Martin Olsson)
- I think to only sort of universal principle is: above else show the data. The other ones are a matter of who are you writing for and why. I definitely will always put the data first but if the data needs color, animation or some other decorations (that don't mess with the actual data) i dont have any issue.
- One thing that has stuck with me is what kind of annotations to add to graphics: questioning whether you want the reader to see your point/argument about the data (in which case to add labels highlighting key results) or whether you want the reader to have their own investigation and draw their own conclusion (adding text that explains how to explore the visualisation) (@swilliamspage)
 - Great point, I always teach my students to annotate and list what their assumptions are so that we all view it from the right perspective.
- Think more about angles used—and multiple angles—when displaying data expressed as surfaces (something I'm doing for a couple of projects right now)
- ask myself if it would appeal to "connoisseurs of the graphically preposterous." (p.118). Consider starting a club with that name. In seriousness, though, I'll continue to trust
- I'll try to enrich my graphics with some multifunctioning elements when the right occasion turns out. I like this idea and hope to implement the technique in the right way. (Ihar Yanouski)
 - Yes agreed! Same here. Was going to say: In the future I would like to explicitly consider how to incorporate multifunctioning elements. From page 139 "The same ink should often serve more than one graphical purpose. A graphical element may carry data information and also perform a design function usually left to non-data-ink. Or it might show several different pieces of data. Such multifunctioning graphic elements, if designed with care and subtlety, can effectively display complex, multivariate data." Sometimes Tufte seems to suggest that simple is best, but it's key to remember than what is more important is efficiency – if additional meaningful information can be communicated elegantly, it should be. (Anneli Joplin)
- Less clutter (which I'm guessing it is the difficult part ;)). Being part of my job and not my principal task I didn't pay the necessary attention, but to do a nice data-to-ink ratio I have to take the visualization as bigger process and give it more time!

- Going over these static visualizations again, I'm going to think harder about what interactive elements are really needed for my web based viz. Just because you can doesn't mean you should. (Related @mathisonian wrote recently 'interactivity, when used poorly, is just crowdsourced editing')
- Think about the distribution of "ink" in my graphic. How does "data ink" compare to "non-data ink" What parts of my graphic represents the data I am at showing, what parts are explanations or context (axes, map background, etc.), what can be removed or dimmed down (@sjockers).
- I will really think about the data-ink ratio and spend more time editing the figures. I think the principles can also be applied in making presentations (slideshow or poster).

Alright, what should we do for the future?

- fixing this super annoying error hick up :)
- Is this written chaotic notepad version a good idea in general? Or would you prefer a call / subreddit / forum etc?
 - I like this notepad. Everybody gets a chance to contribute. The hickups were a bit annoying, but not too much to worry about
 - I like it as the comments and ideas don't disappear and we'll be able come back to read them later.
 - Yes, that's great too!
 - I like it, too :D It seemed a bit stressful to see everyone typing, but also SO BEAUTIFUL. Maybe I'll give it more time the next time than just one hour...it's interesting how everyone types their own thoughts in first, and then starts reading what other people said. I want to encourage the latter one more.
- it was really an awesome sight... all those words coming from all over the world, with so many thoughts, reflections and wisdom! (@tiagombp)
 - I felt the time for each question was maybe too short, but I think it happened because A LOT of people turned up with individual ideas and also wanting to comment others.
 - I really liked this medium and felt like I was in the middle of a beautiful brain. -@SaraSaysData
 - I'm glad to hear that :)
- I liked it too, until locked out, give it one more try would be my vote.
- I thought about doing two book clubs in parallel, one for more advanced peeps (reading Tamara Munzner!) and one for data vis beginners. Would that be something you'd be interested in?
 - I'm reading Munzner, too now! Would be great to discuss that
 - Seconded! Looking at Munzner's book on my desk right now actually..
 - Yes to two levels! @abmakulec
 - Sweet! That will be a very small round (maybe five people will turn up in the end), but also more intense :)
 - I'd like to read it too, her book in my list
- **Would you prefer to read Munzner's book in parts?** It's a long book. We could meet after the first half or third or so.

- I think that makes sense, and it might increase the attendance
 - I like this idea, and I also suggest Storytelling With Data for the beginners club.
 - Beginner's club would be nice to attend, I'm in! (Trud Antzée)
- +1

- I bought Cairo's The Truthful Art together with Tufte's, so would like to read this one with you :)
 - The nice thing about reading a book by Cairo or Andy Kirk is that we could actually invite the author :D
- Visual Complexity: Mapping Patterns of Information by Manuel Lima. Going to read it next, want to upgrade my view on network diagrams
 - Uuuh. That would be a small group of people as well :D But why not?
 - Well, yes, my second attempt :D My English isn't so good enough for such a reading)
- I was going to suggest "The Functional Art", but, according to Cairo himself (<https://twitter.com/albertocairo/status/1029432833440473088>), "If it's about pure data visualization, I'd actually recommend "The Truthful Art" first, though" (@tiagombp)
 - Yeah, he keeps saying that his second book is better than the first book :) I think we should listen to him!
- Another question: Do you think that the four weeks were too long?
 - Depends on the book, the longer books you are considering would need to be cut into several sessions, shorter books like a Don Norman book could easily be done in four weeks.... ..
 - I think it's ok, at least for me, it took 2 weeks to get the book sent to my home and then two weeks to read it.
 - I think it's good to have some time to get the books (buy or from the library). And I also will want to take notes and re-read stuff. Trud A
- A neglected book is "How Maps Work". I would focus on a few chapters (more general ones, less map-specific). But it's not for begginers. I'd have to read it again, not that I mind. I think Enrico is a fan. Maybe he has those chapters already defines for his courses.
 - Oh that's a great idea. Have you read the whole book? I'd love to hear which chapters you'd recommend, and maybe we'll put it in our "advanced track", after Munzner.
 - I honestly needed the four weeks to get the book and then get it read. My brilliant idea was that I'd sit down and read it in a weekend. Did not occur. LOL -@SaraSaysData
- Any other ideas for the future or more feedback? What would you change?

Did you find it annoying to not know exactly who was who? Should I enforce more that people actually use their Twitter handles or so after each thing they write? I would have liked to see who said what! =) (Trud Antzée)

 - I think allowing anonymous might make some of the more experienced/famous practionners more comfortable... I would ask people if they don't mind to tag their comments but feel free to be anonymous if you so choose. Sounds like a plan!
 - Agree, should be allowed to be anonymous, but I think many of us just forgot to add our names?
 - Yeah, I think so. Etherpad works great if there are less than 10 people, because then one can actually distinguish the colors easily. But we were 60 at some point – then that's impossible. So for the smaller book clubs (Tamara Munzner!), it won't be necessary.

- Thanks for doing this, it is a wonderful idea!

One other point I would make is if you ever get the chance to attend a Tufte one day seminar do it.

After reading and using his books for years I finally attend a one day seminar in Atlanta. It was only like \$300+ dollars, and you got copies of his four most famous books in a nice carry box! Great value especially if you can get your employer to pay for it, you will get more value out of it then the cost! (unpaid endorsement!)

OLD STUFF

Who's reading the book?

(Even if you can't attend in the August meeting – if you want to read the book, write down your name!)

- Lisa Charlotte Rost @lisacrost
- Yuriy Czoli @YKCzoli
- Rocío Arias Puga @unatalr
- Stephan Max @xamnahpets
- Bill Shander @billshander
- Julian Hernández @TheCoolBarnacle
- Evan Galloway
- Adam Nieman @adamnieman
- Jill Hubley @jill hubley
- Sara Wood @SaraSaysData
- Jonathan Sharr @jonsharr
- Jacque Schrag @jnschrag
- Natasha Godwin @natashanago
- Tully Velte @tullyvelte
- Simon Jockers @sjockers
- Ari Winkleman @theduckmanz
- Raluca Nicola @nicolaraluk
- Sam McGrail @sammcgrail
- Christina Gorga @poulincoisci
- Michelle Jospe @MichelleJospe
- chris @daiytastic
- ruby @rubychilds
- Sam Petulla @spetulla
- Oscar Senar @Senaretal
- Jamie Heames @HeamesJamie
- Ivett Kovacs @IvettAlexa

- Hyemi Song @bohyemiansong
- Eric Barrett @brttwrks
- Angelo Zehr @angelozehr
- Ihar Yanouski @czaroot
- Raúl Rodríguez @errerod
- Rasagy Sharma @rasagy
- Alice Feng @fleecealeece
- Irene C
- James A
- Jill Wooster @jillywoo123
- Tracee Tibbitts @traceetibbitts
- Cameron Yick @hydrosquall
- Anna C
- Paolo Moretti @muxevola
- Abderrahmen @abderrahmen_g
- Sophie Sparkes @sophie_sparkes
- Tiago M @tiagombp
- Leandro C
- Dan B @danboog
- Victòria Oliveres @victriavic
- Carol Chiodo @digitaldante
- So Yeon Jeong @soyeonsoyjeong
- Carlos Muncharaz @cmuncharaz
- John Tibbutt
- @tibbuttj
- Anusha Sinha
- Lee Durbin @liddurbin
- Maoren@muzhaman
- Nathan Cunningham @nathcun
- Duyen Ho @duyenho
- Joseph Lewis @josephlewis1992
- Lara Vlietstra @laravlietst
- Damla Çay @damlacay
- Sian Williams Page @swilliamspage
- Lindsay Betzendahl @zendolldata
- Amanda Makulec @abmakulec
- Colin Megill @colinmegill
- Sammi Kaufman @tasty_sammich
- Ryan Schrader @RyanSchrader1
- Gianna-Carina Gruen @giannagruen
- Michał Mokwiński @michalmokwinski
- Jennifer Hunter @pghtug
- Alexander Ilin
- Kate Hertweck @k8hert
- Prerana Rout
- Jeff Hale @discdiver

- Takumi Ohyama @takumi_ohym
- arloparanhos@gmail.com
- @scauglog
- Federico @fedpep
- Florian Zeller
- Rospars Quentin @Miionu
- Shane Cone
- Anna Kisting @Anna_Kisting
- Martin Olsson @MartinpaVF
- Jaron Heard @jaronheard
- Shirley Wu @sxywu
- Trud Antzée @Antzee_
- Bea Hernández @chucheria
- Jacqui Moore @jaxx084
- Riley Brady @rileyxbrady
- Wll Roberts
- Gaston Wilson @heygaston (Charlotte, NC)
- Michael Pörsch @michaelpoersch
- Roshan Vid @roshanvid
- Ben Cooley @bendoesdata
- @AlliTorban
- Gaby @neogabs
- Mike Pletch @mikepleтч
- Nana Giglemiani @lheureduthe
- Catherine Yu
- Curtis Neiderer
- Jason A. Grafft <github.com/jagrafft>
- Nadia Fankhauser @nadiafank
- John Cronin
- Teresa Ting@mochabits
- Hassen Morad
- René Dudfield (Berlin) rene@f0o.com
- Jorge Camoes @wisevis
- Olivia Sayward Meyer @oliviasayward
- Adrian Blanco @AdrianBlancoR
- Tracy Mallard @tracygmallard
- Martin@martin_squires
- Annie @annielu_u
- Steve Mulford @atlas_moths
- Daniele Baker @AquaBaker
- Guillem Segura @guillem_segura_
- Anton Ninkov @TheNinkov
- Noemi Reyes @JustNoemiReyes
- Alan Wilson @alangwilson
- Lisa @LisaQuartered
- Bram Zandbelt @bbzandbelt

- Elissa Schloesser @MyVisualVoice
- @DocKevinElder
- Ada @adapkepinska
- @repneuable
- Andrew @andrew_larder
- Duncan @duncangeere
- Solomon @laz_inc

LOCAL MEETUPS

Berliners! Do we want to meet on the **15th of August (so one day after the digital book club meeting)** at the Datawrapper office to discuss the book in person? (Do you think that's a good idea?)

- I'd be in! – Simon

- me too! - IreneC – yihaa!

- I'd also love to join -- Gianna

I scheduled a meetup at the Datawrapper office at the 15th of August:

<https://www.meetup.com/Data-Visualization-Berlin/events/252972184>

The meetup is full, but feel free to organize a second one!

Any interest in a **DC** meetup anyone? I can host at our office in Courthouse if there's interest! - Amanda @abmakulec

- Thanks for the offer. I'd be down for that - Jeff

- Me too! - Alice

****DC update** - we didn't seem to have a critical mass for August, but for September I'll book space and share the event link two weeks in advance. Any preference for meeting the day before / day of / day after the group discussion here? Cheers!

-Another one for DC meetup! -Tracee

- if you want to venture into Northern VA, we're hosting one next week in Tysons:

<https://www.eventbrite.com/e/nova-data-viz-book-club-tickets-48595680990> -Alli Torban :)

Anyone else interested in a **Portland** meetup? We've already got 4 interested folks! Can host at CENTRL office eastside. - Jaron @jaronheard

Anyone interested in a **Hamburg** meetup?—Let me know @xamnahpets (Stephan)

Anyone interested in a **Paris** meetup?—Let me know @lheureduthe (Nana)

Anyone interested in a **NYC** meetup?—Let me know @AdrianBlancoR

Anyone interested in a **Tampa** meetup? - Let me know @repneuable (Kevin)

Feel free to use this space as you want to! Organize local gatherings, ask questions.

Just start writing. Don't delete, just add.

You can change your name and the color for the text highlight in the upper right.