



Revealing Room for Improvement in Accessibility within a Social Media Data Visualization Learning Community

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Who are we?



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Takeaways

- Growth in online learning communities for data science
- TidyTuesday: Weekly social project for data visualization in R
- 3% of the data visualizations shared on Twitter had alternative text
- 84% were described by default as "Image"

Can blind people participate in data viz learning communities?

- Why do blind people need data visualization?
 - Scientific communication
 - [Election maps](#)
 - [COVID-19 incidence maps & dashboards](#)
 - [Quorum](#) or [SAS](#) can produce readable charts, but [R/RStudio](#) cannot
- Screen readers provide voice or braille access to computer text, **not images**
- AI image descriptions **cannot adequately describe data viz**
- Can blind people participate in #TidyTuesday?

What is TidyTuesday?

- Social project providing a new tidy dataset every week
- Online data viz R learning community
- Opportunity to practice summarizing and visualizing data with modern tooling



Tom Mock
@thomas_mock



The [@R4DScommunity](#) welcomes you to week 19 of [#TidyTuesday](#)! We're exploring water access points!

bit.ly/tidyreadme
 waterpointdata.org

#r4ds #tidyverse #rstats #dataviz

1. The data set comes from the source article or the source that the article credits. Be mindful that the data is what it is and Tidy Tuesday is designed to help you practice data visualization and basic data wrangling in R.
2. Again, the data is what it is! You are welcome to explore beyond the provided dataset, but the data is provided as a "toy" dataset to practice techniques.
3. This is NOT about criticizing the original article or graph. Real people made the graphs, collected or acquired the data.
4. This is NOT about criticizing or tearing down your fellow #Stats practitioners or their code! Be supportive and kind to each other! Like other's posts and help promote the #Stats community!
5. Use the hashtag #tidytuesday on Twitter if you create your own version and would like to share it.
6. Include a picture of the visualization when you post to Twitter.
7. Include a copy of the code used to create your visualization when you post to Twitter. Comment your code wherever possible to help yourself and others understand your process!
8. Focus on improving your craft, even if you end up with something simple!
9. Give credit to the original data source whenever possible.

Submitting Datasets
Want to submit an interesting dataset? Please open an issue and post a link to the article (or blogpost, etc) using the data, then we can discuss adding it to a future TidyTuesday Event!

pdx water point data exchange

mWater Forms, Sites, Groups, Reports, Sensors Logged in as john

Map Type: Water Points by Type Water Points by Type

Group: All All

Water Point Types: All Types All Types

Filters: Latest Functional Status is Non-functional Non-functional Add Filter

10:06 PM · May 3, 2021



42



Copy link to Tweet



Hao Ye
@Hao_and_Y

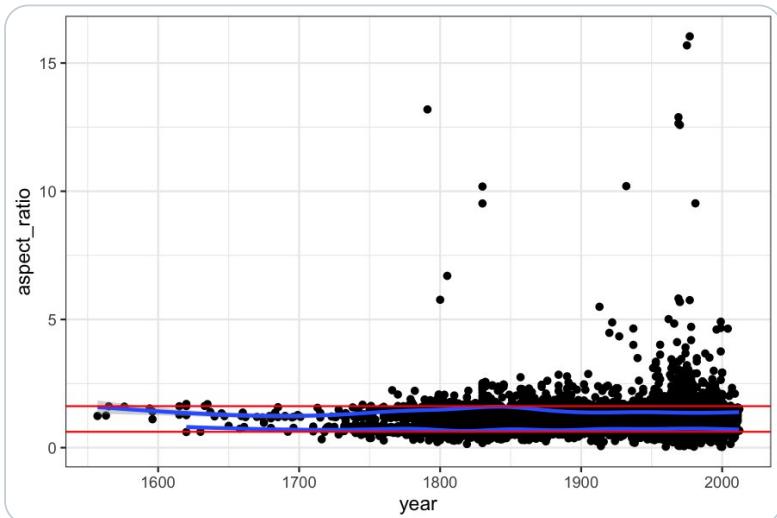


Today's #TidyTuesday:

data on artwork from the @Tate collection,
and specifically aspect ratios over time

Blue = stat_smooth GAMs (grouped by
aspect ratio > 1)

Red = golden ratio $(\pm 1 + \sqrt{5})/2$



1:06 PM · Jan 12, 2021



19



2



Copy link to Tweet

bit.ly/TidyTuesday • Silvia Canelón & Liz Hare • csv,conf,v6

What do #TidyTuesday visualization tweets include?

- Verbal description
 - author's interest
 - learning process
 - interpretation of the data
- Link to the author's source code
- Data visualization attached as an image
- Alt-text for the image (rarely)

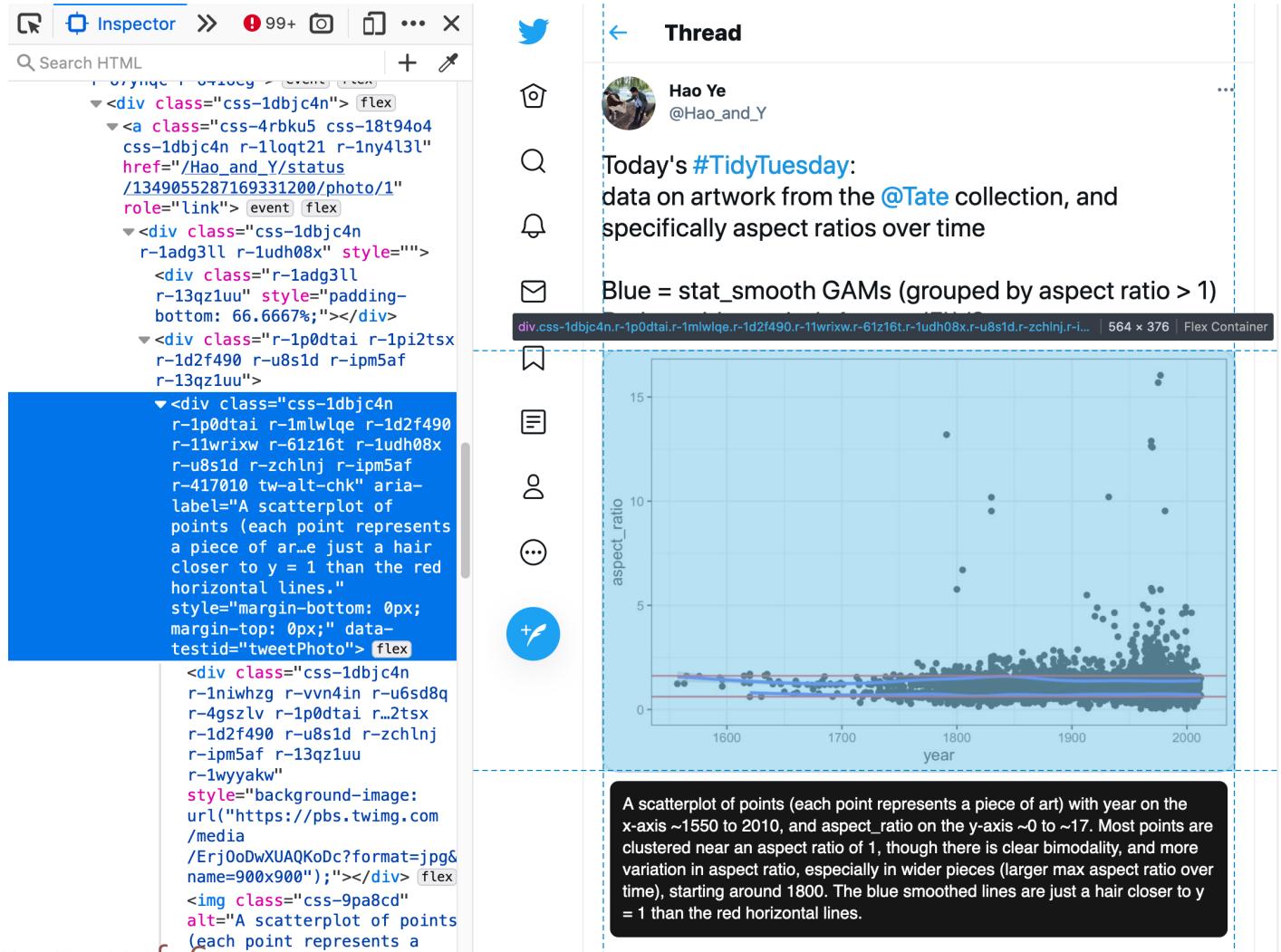
How were the data collected?

Tweets collected
& made available
by Tom Mock
using {rtweet}

Alt text scraped
by Silvia Canelón
using {RSelenium}
& available in the
TidyTuesdayAltText



bit.ly/TidyTuesday • Silvia Canelón & Liz Hare • csv,conf,v6



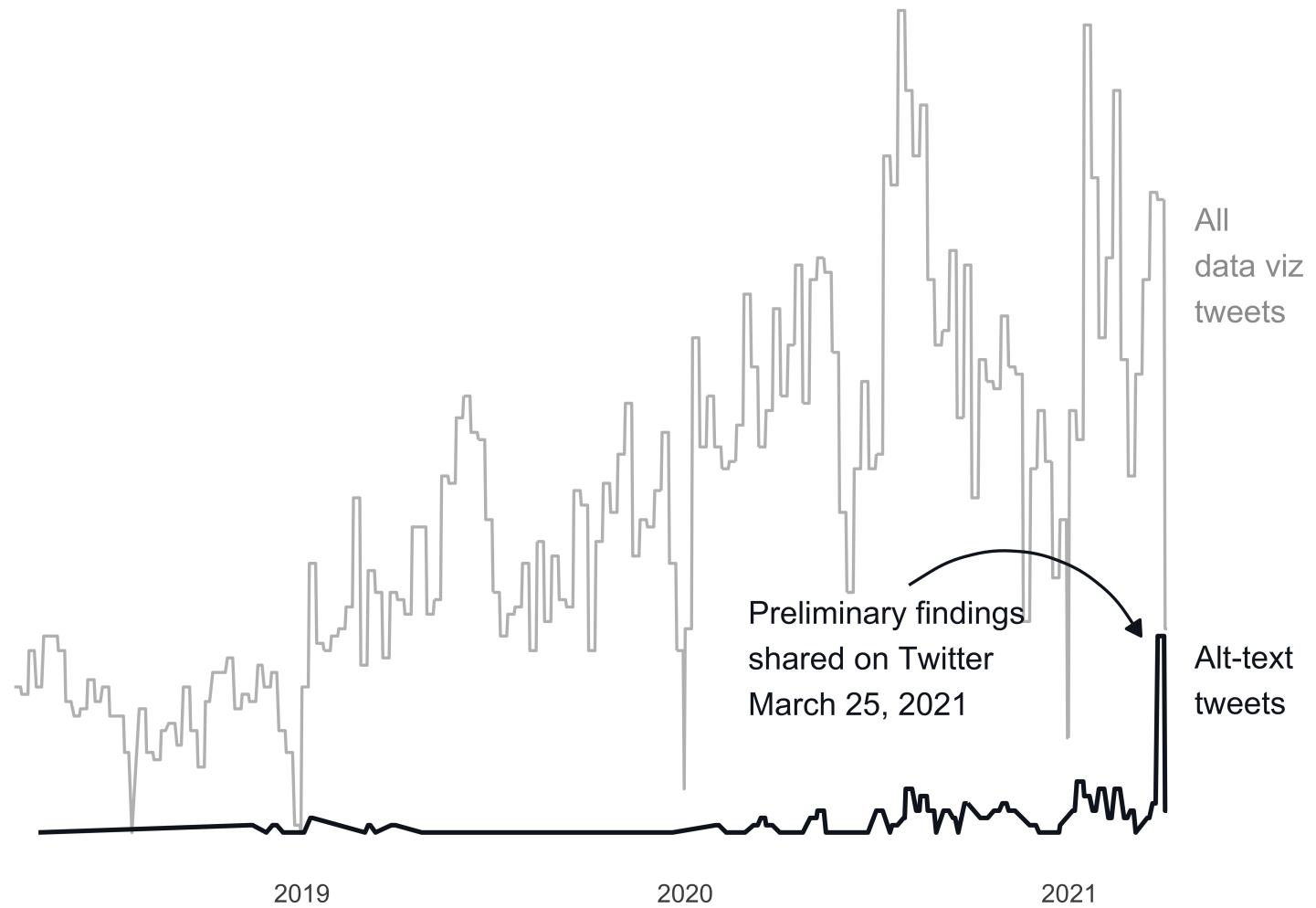
What did we find?

Over the 3 years of TidyTuesday, there were 7,136 data viz tweets and **only 215 (3%) of them had alt-text**

[Summary of these findings](#)

Participation in TidyTuesday has increased over time but **use of alt-text is recent and remains low**

The conversation on Twitter



Where else is alt-text missing?

- R books made available freely online
 - R books made available digitally to people with print disabilities by [Bookshare](#)
 - R package documentation
 - R blogs
-

This shows up at the individual-level and at the corporate-level (e.g. RStudio R Markdown documentation)

What makes good alt-text?

There were 196 data visualization tweets with alt-text

Alt-text Feature

- 1 Description conveys meaning in the data 34%
 - 2 Variables included on the axes 28%
 - 3 Scale described within the description 12%
 - 4 Type of plot is described 56%
-

Has the tide started shifting?

- Conversations are happening
 - Within R: [useR!2021](#), [MiR](#), [TidyTuesday](#)
 - More broadly: [Data Visualization Society](#), [a11y](#) conferences/meetups
- Tooling is slowly receiving updates
 - [New alt text code chunk option](#) for R Markdown
- Changes are just starting and slow

What can you do?

- **Make your data visualizations accessible everywhere you can**
- **Add alt-text** to websites, journalism, scientific publishing, social media
- **Find ways to describe your visualizations** in words when alt-text isn't available in your documents or platforms

Data visualization alt-text resources

- [Writing alt-text for data visualization](#)
- [Chartability Data Viz Audit Workbook](#)
- [a11y Data Viz Accessibility Resources](#)

Tools for Twitter

- [How to make images accessible for people](#)
- Show alt-text for tweets: [Firefox](#)
- Twitter reminder to add alt-text: [Firefox](#)

Thanks!

[Analysis repo](#) &
resources 

This presentation was made using
the [xaringan](#), and [xaringanExtra](#) R packages.



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