




csv,conf,v6

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?

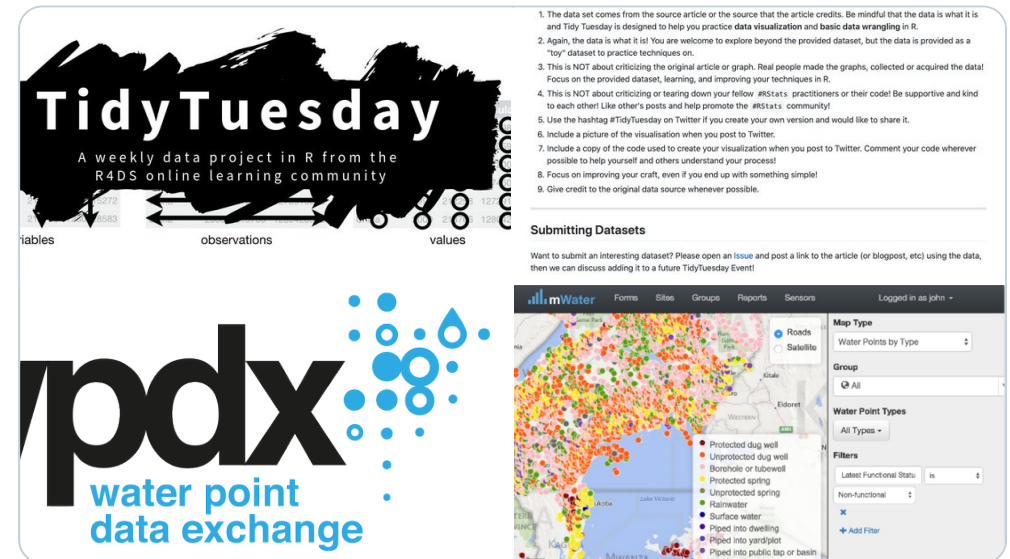
- Social project providing a new tidy dataset every week
- Online data viz R learning community
- Opportunity to practice summarizing and visualizing data with modern tooling



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

bit.ly/tidyreadme
waterpointdata.org

#r4ds #tidyverse #rstats #dataviz



10:06 PM · May 3, 2021

42 Copy link to Tweet



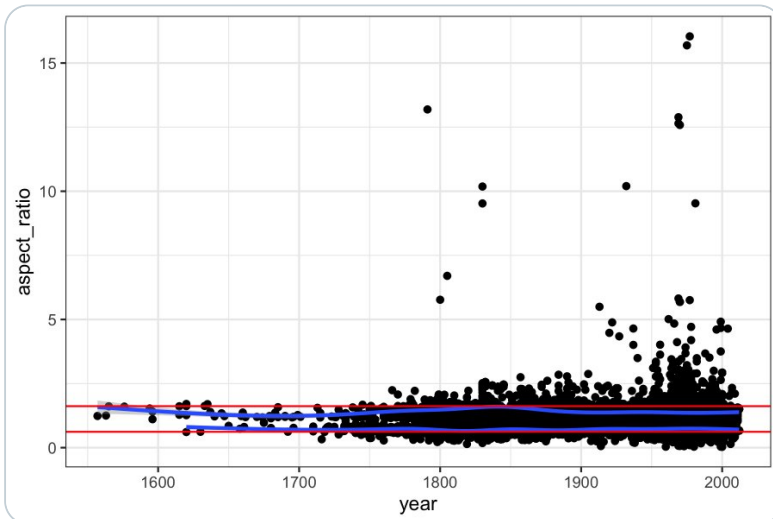
Hao Ye
@Hao_and_Y



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

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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?

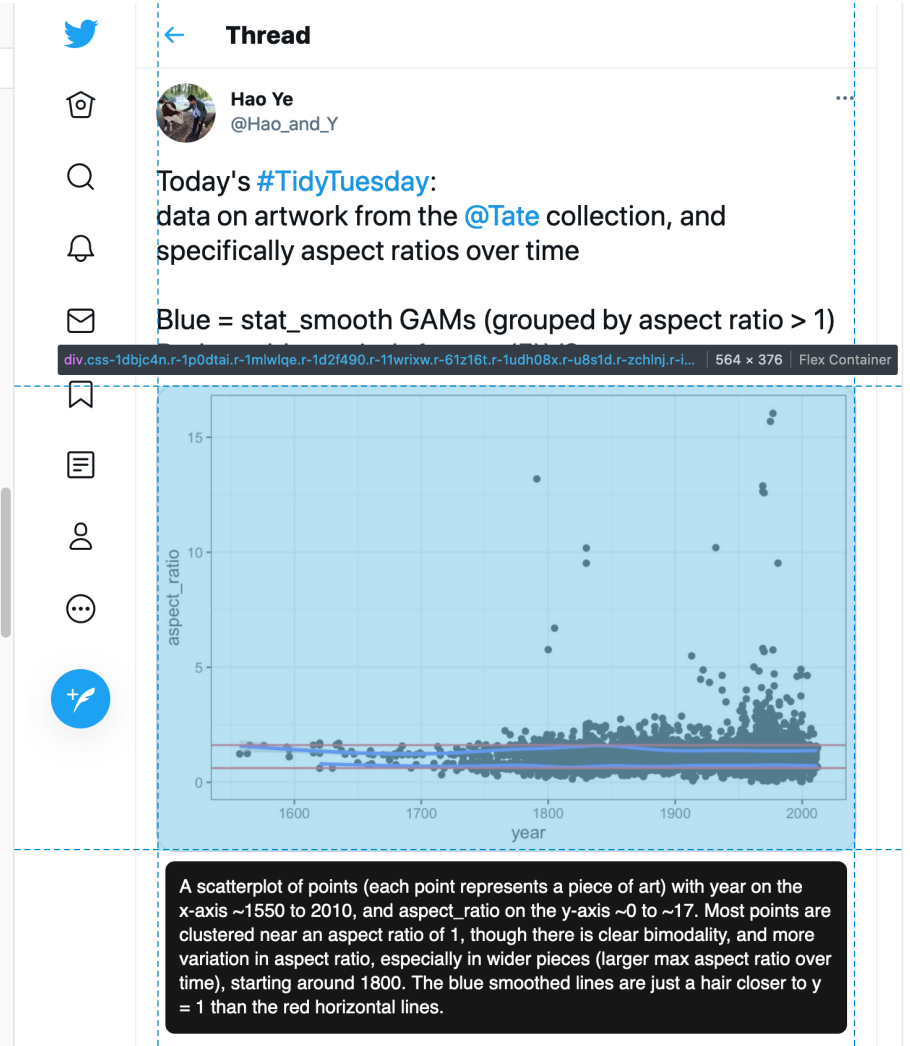
Tweets collected
& made available
by Tom Mock
using {rtweet}

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



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```
Inspector
Search HTML
<div class="css-1dbjc4n"> flex
  <a class="css-4rbku5 css-18t94o4 css-1dbjc4n r-1loqt21 r-1ny4l3l" href="/Hao_and_Y/status/1349055287169331200/photo/1" role="link"> event flex
    <div class="css-1dbjc4n r-1adg3ll r-1udh08x" style="">
      <div class="r-1adg3ll r-13qz1uu" style="padding-bottom: 66.6667%;"></div>
      <div class="r-1p0dtai r-1pi2tsx r-1d2f490 r-u8s1d r-ipm5af r-13qz1uu">
        <div class="css-1dbjc4n r-1p0dtai r-1mlwlqe r-1d2f490 r-11wrixw r-61z16t r-1udh08x r-u8s1d r-zchlnj r-ipm5af r-417010 tw-alt-chk" aria-label="A scatterplot of points (each point represents a piece of art...e just a hair closer to y = 1 than the red horizontal lines." style="margin-bottom: 0px; margin-top: 0px;" data-testid="tweetPhoto"> flex
          <div class="css-1dbjc4n r-1niwhzg r-vvn4in r-u6sd8q r-4gszlv r-1p0dtai r-1d2f490 r-u8s1d r-zchlnj r-ipm5af r-13qz1uu r-1wyakw" style="background-image: url('https://pbs.twimg.com/media/Erj0oDwXUAQKoDc?format=jpg&name=900x900');"></div> flex
          <img class="css-9pa8cd" alt="A scatterplot of points (each point represents a piece of art...e just a hair closer to y = 1 than the red horizontal lines."/>
```



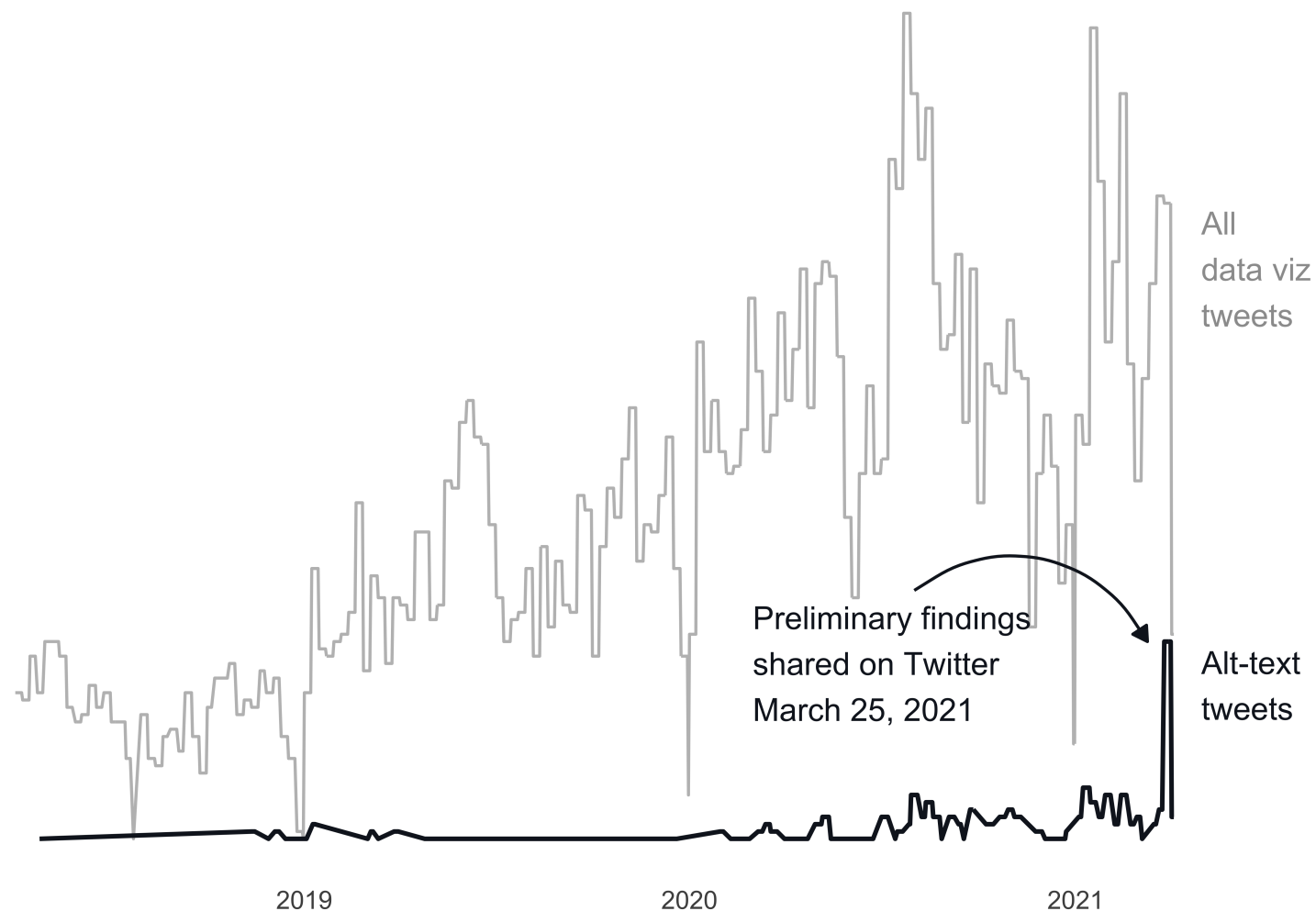
What did we find?

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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