Data visualisation is important

Visualisations aren’t just furniture for publications

@martinjhnhadley

http://www.tradingplacesproperty.com/content/post/what-is-fair-wear-and-tear

“Most scientific data is created in a form and organization that facilitates its generation rather than focusing on its eventual use.”

Table 2. Successes and failures for articles with non-zero metric scores, aggregated by journal, and only including journals for which there it is at least one success or failure.

Metric+	Mostly success	Mostly failure	Z	Equal	Journals
Tweets**	1097 (58%)	646 (34%)	10.8	148 (8%)	1891
**	1032 (59%)	586 (33%)	11.1	139 (8%)	1757
FbWalls**	414 (53%)	282 (36%)	5.0	86 (11%)	782
**	308 (55%)	188 (34%)	5.4	62 (11%)	558
RH	276 (51%)	221 (41%)	2.5	47 (9%)	544
	193 (51%)	157 (41%)	1.9	30 (8%)	380
Blogs**	190 (58%)	104 (32%)	5.0	32 (10%)	326
**	129 (57%)	70 (31%)	4.2	26 (12%)	225
Google+	61 (50%)	53 (44%)	0.7	7 (6%)	121
	25 (48%)	24 (46%)	0.1	3 (6%)	52
MSM	29 (56%)	17 (33%)	1.8	6 (12%)	52
	13 (52%)	9 (36%)	0.9	3 (12%)	25
Reddits	22 (51%)	17 (40%)	0.8	4 (9%)	43
	9 (47%)	7 (37%)	0.5	3 (16%)	19
Forums	5 (83%)	1 (17%)	1.6	0 (0%)	6
	3 (100%)	0 (0%)	1.7	0 (0%)	3
Q&A	4 (67%)	1 (17%)	1.3	1 (17%)	6
	2 (67%)	0 (0%)	1.4	1 (33%)	3
Pinners	2 (67%)	1 (33%)	0.6	0 (0%)	3
	0 (−%)	0 (−%)	-	0 (−%)	0
LinkedIn	0 (−%)	0 (−%)	-	0 (−%)	0
	0 (−%)	0 (−%)	-	0 (−%)	0

+ In each cell the upper figure is for all journals and the lower figure is for journals with at least 10 articles tested. * Ratio of successes to failures significantly different from 0.5 at $p = 0.05$, ** Significant at $p = 0.01$; both Bonferroni corrected for $n = 11$.
doi:10.1371/journal.pone.0064841.t002

Fox, P., & Hendler, J. (2011). Changing the Equation on Scientific Data Visualization. Science, 331(6018), 705–708. doi.org/10.1126/science.1197654

Thelwall, M., Haustein, S., Larivière, V., & Sugimoto, C. R. (2013). Do altmetrics work? Twitter and ten other social web services. PloS One, 8(5), e64841. doi.org/10.1371/journal.pone.0064841

“Most scientific data is created in a form and organization that facilitates its generation rather than focusing on its eventual use.”

“[... data management] *has mostly focused on the efficiency of query-based retrieval of the collected data, rather than on data exploration”*

Table 2. Successes and failures for articles with non-zero metric scores, aggregated by journal, and only including journals for which there it is at least one success or failure.

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Research data is too often born and buried in a table

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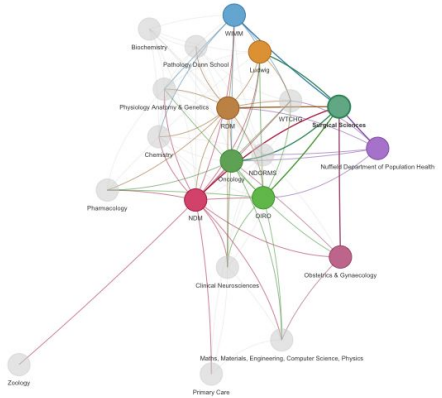
Why use visualisations?

- Visualisations are easier to parse than long, jargon-filled blocks of text
- Visualisations can be consumed by the general and expert easily
- Visualisations allow multiple questions to be asked simultaneously



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Designing visualisations to expose data

Putting form over function when communicating data visually

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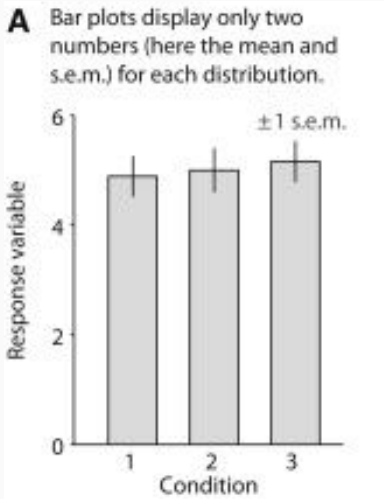
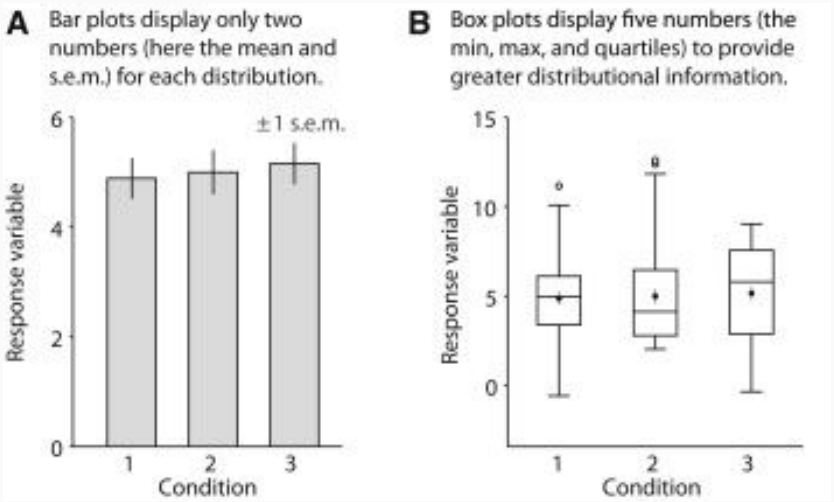
https://commons.wikimedia.org/wiki/File:Ngv_design,_eero_aarnio,_globe_chair_1963-65_01.JPG

Graphical Perception Theory



Allen, E. A., Erhardt, E. B., & Calhoun, V. D. (2012). Data Visualization in the Neurosciences: Overcoming the Curse of Dimensionality. Neuron, 74(4), 603–608. http://doi.org/10.1016/j.neuron.2012.05.001

Graphical Perception Theory



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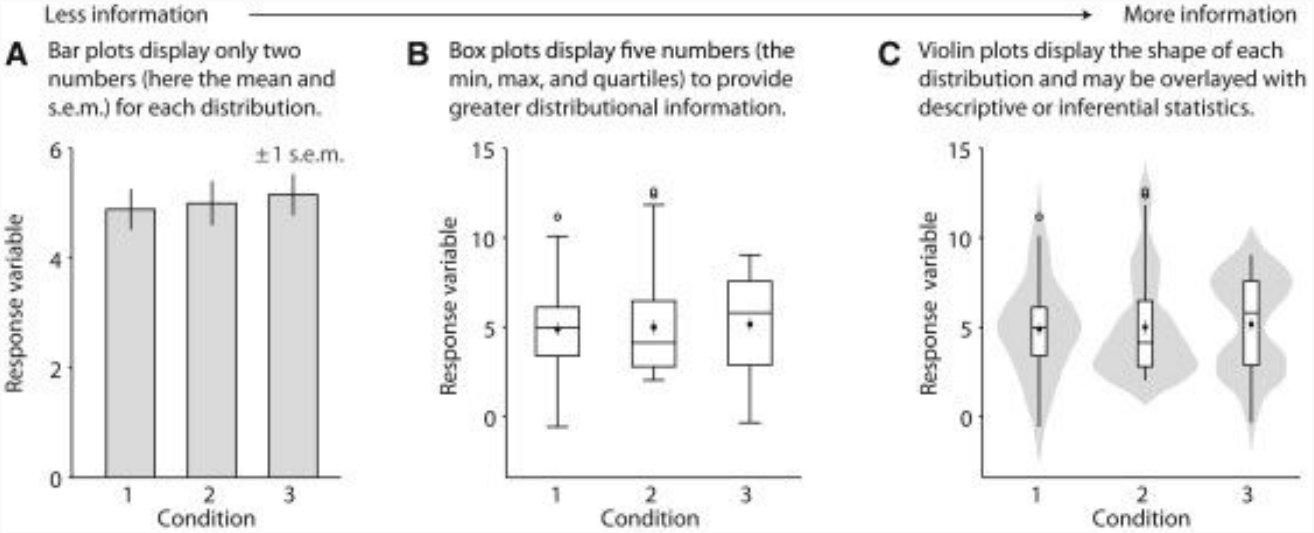

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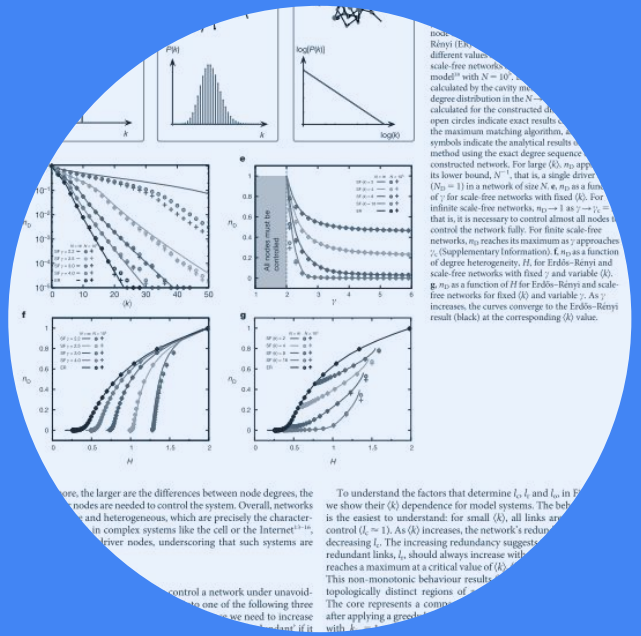
If you have visualisations, don’t you want people to use them?



Moving beyond dead trees

“... interactivity is the new colour chart…”

@martinjhnhadley

@photosteve101 (flickr.com/photos/42931449@N07/5263540555/in/album-72157625505293849/)

Where can interactive visualisations live?

- Alongside publications
- Research group websites
- Personal websites
- GitHub Pages, Google Sites...

<iframe>
http://my.viz
</iframe>

Reproducible Research & Visualisations

Integrating web-based visualisations into your workflows

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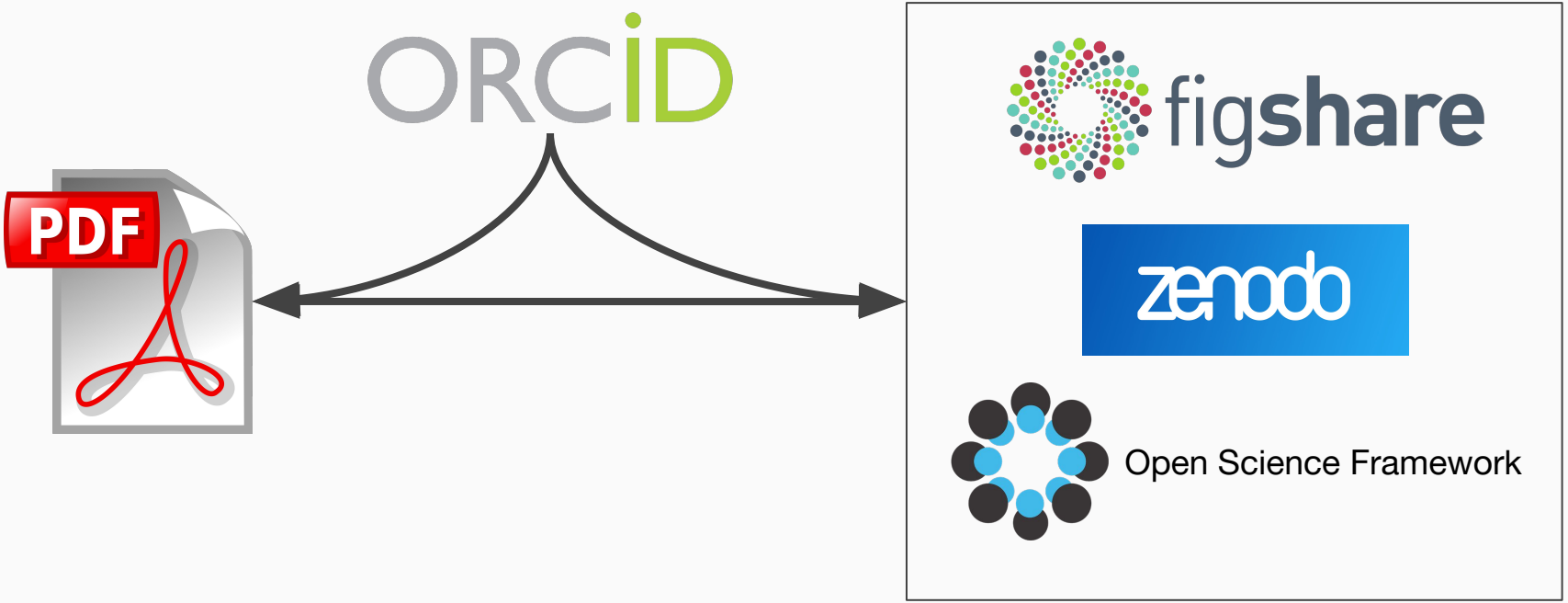
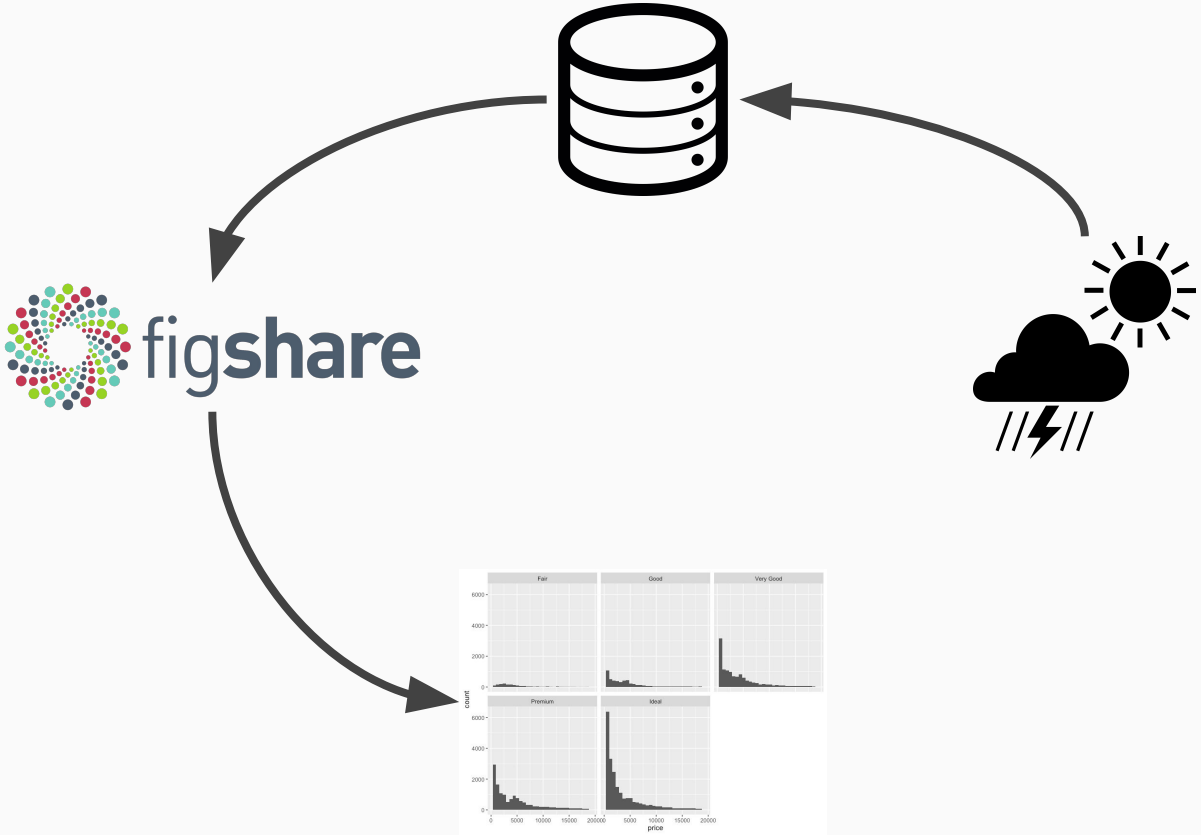
The citation pyramid



The citation pyramid

Living datasets



Research Support Services in IT Services

We provide advice on...

- Intellectual Property
- Research Data Management
- Digital Humanities
- Interactive Data Visualisation...

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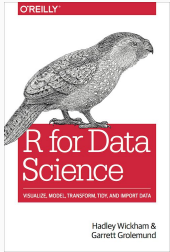
Visualisation Blogs and Resources

https://eagereyes.org/



http://r4ds.had.co.nz/

http://flowingdata.com/

htmlwidgets Tutorial

http://ox-it.github.io/OxfordIDN_htmlwidgets/

http://fivethirtyeight.com/

Radiant

https://radiant-rstats.github.io/docs/

http://www.visualisingdata.com/

Lynda.com FROM LINKEDIN

https://www.lynda.com/RStudio-tutorials/Creating-Interactive-Presentations-Shiny-R/452087-2.html*

*shameless self-promotion