



Deep Questions of Data Visualization

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Psych 6135

<http://euclid.psych.yorku.ca/www/psy6135/>

While you were enjoying a relaxing week without classes, I was working hard, pondering the:

Deep Questions of Data Visualization

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The Deep Question Research Institute,
NorthWest Point, Providenciales, Turks & Caicos

The Wall
(6000')



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Research team*
aboard the *MV Playfair*

Divers suit up



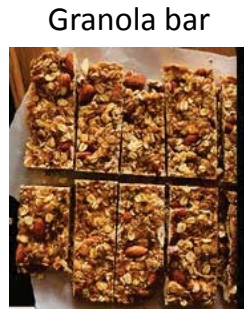
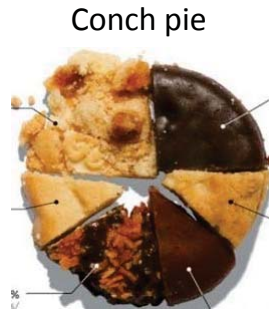
* Thanks for technical assistance from Provo Divers

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Shark experiment: Pies vs. Bars

Do sharks prefer **conch pie charts** or **granola bar charts**?

Design: Two-alternative forced-choice, $n=50$ trials



Sample stimulus items

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Shark experiment: Pies vs. Bars

Results: Sharks show an overwhelming preference for conch pie

Choice	n
Pie	45
Bar	4
Diver	1



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Turtle experiment

Results: Turtles show an overwhelming preference for granola bar charts

Choice	n
Pie	3
Bar	47
Diver	0



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Visualizing the results

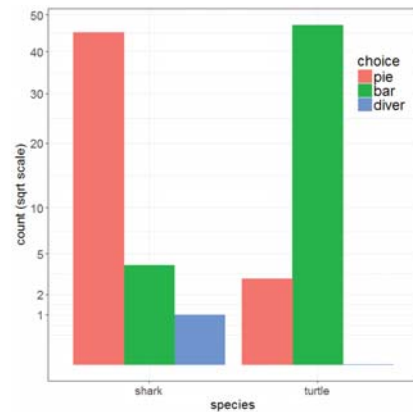
Successful visualizations require some time for reflection



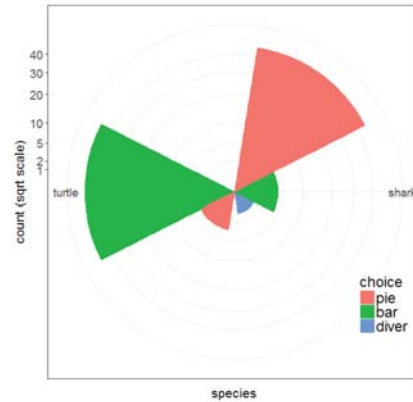
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Visualizing the results

Bar chart



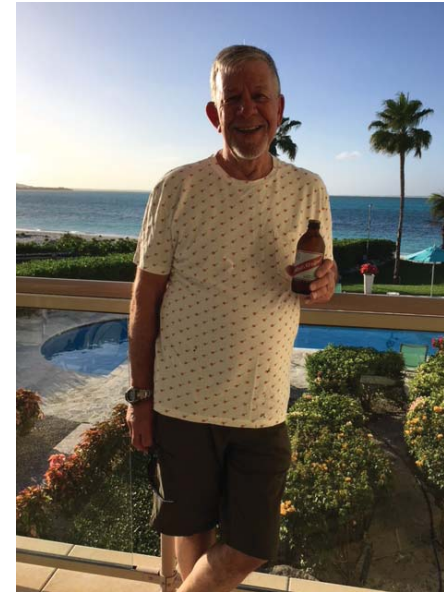
Windrose = bar chart + polar coords



Which do you prefer?

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The Red Stripe Award



The research reported* here was given the February 2018 *Red Stripe Award* by the **Deep Question Research Institute**

* This research was not supported by the National Sciences and Engineering Research Council of Canada

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Further research

- Include the obvious and necessary control conditions in a 2 x 2 factorial design:
 - conch bar charts
 - granola pie charts
- Extend this to another species: dolphins, known to be much smarter than sharks and turtles
- Investigate influence of **color** on graph preference
 - This can be also be studied as a function of depth, because colors become more muted at greater depth

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