

lecture 10: hand-drawn and artistic visualizations

October 18, 2017

Data art

Lillian Schwartz



LILLIAN
SCHWARTZ

Mark Hansen and Ben Rubin



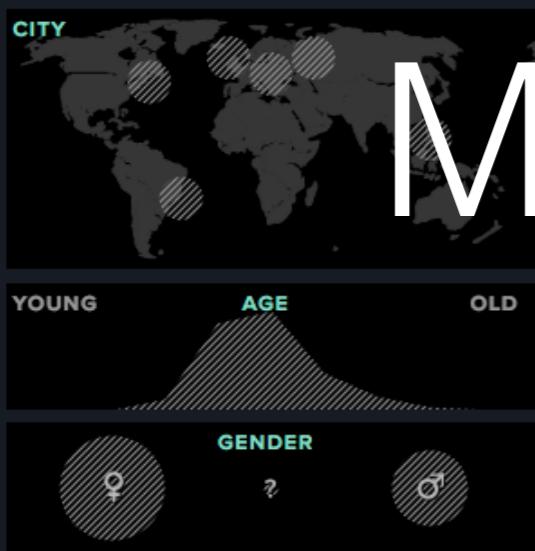
▶ ▶ 🔍 0:10 / 4:04

⚙️ ⏹ ⏷

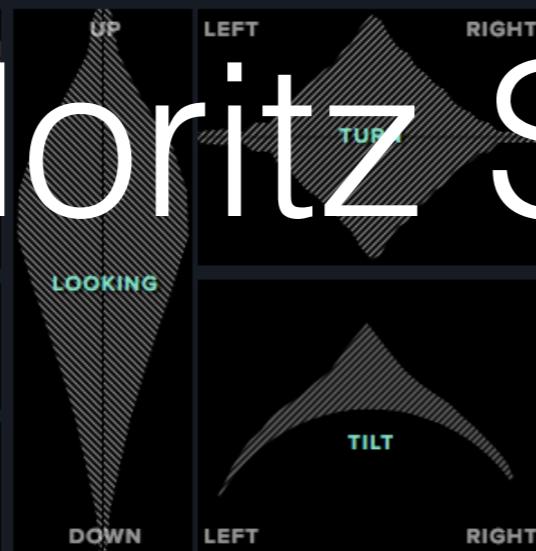
Mark Hansen and Ben Rubin



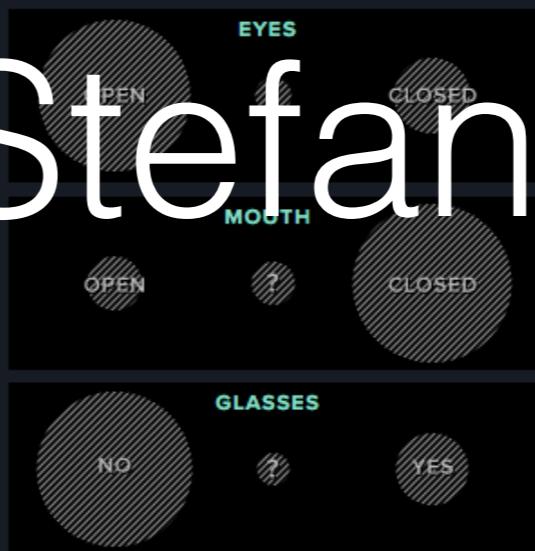
DEMOGRAPHICS



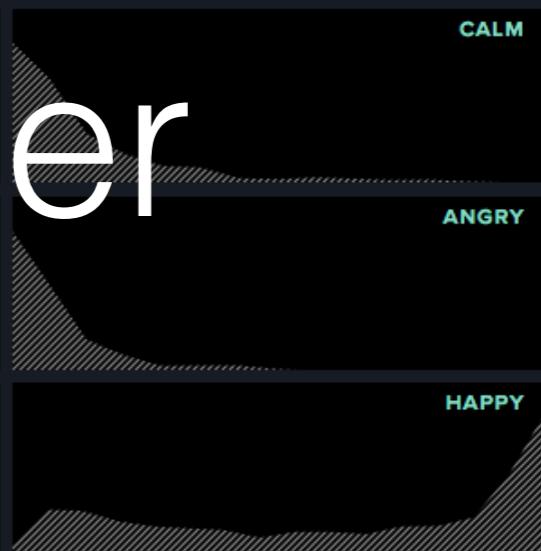
POSE



FEATURES

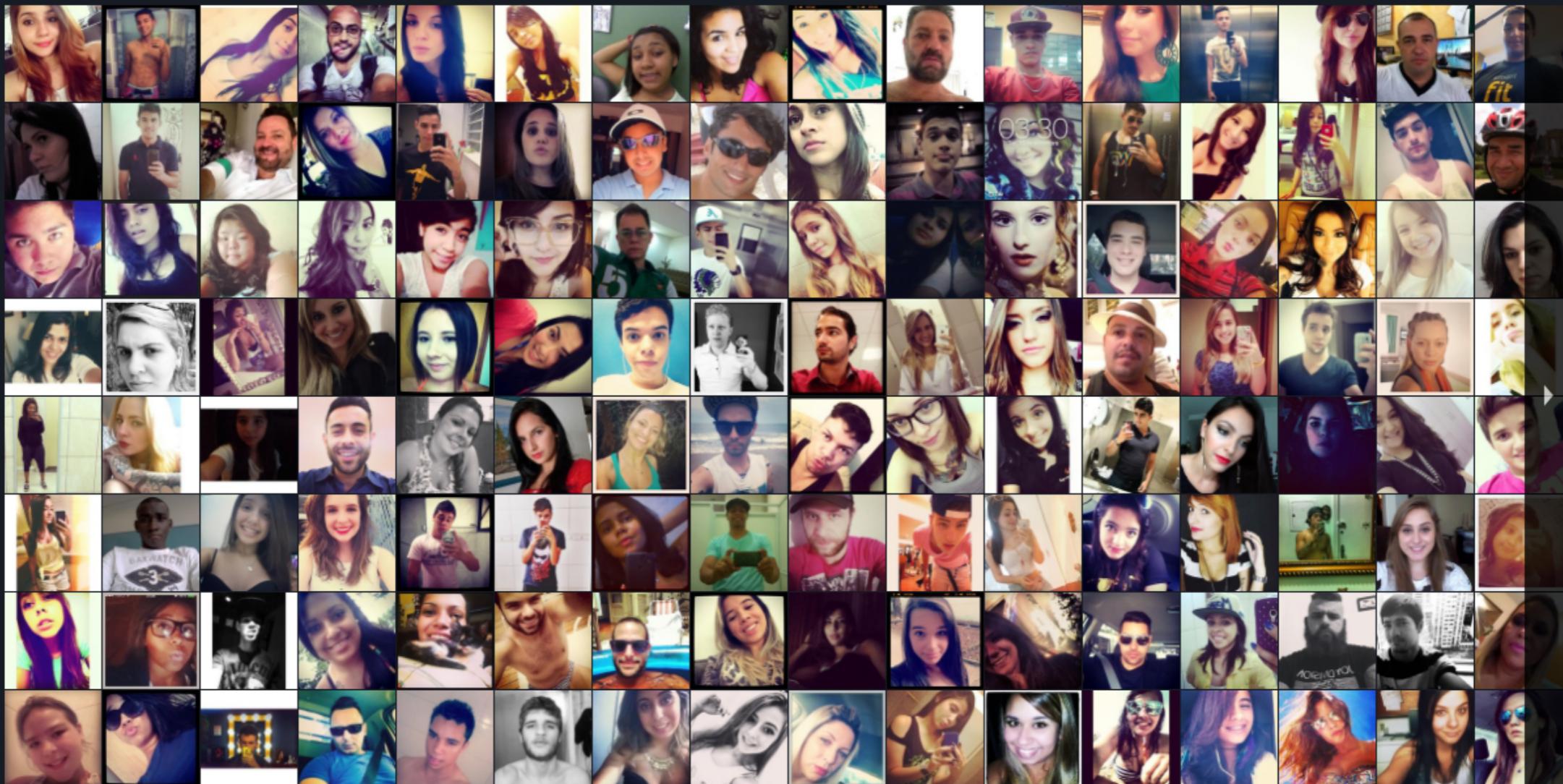


MOOD



Moritz Stefaner

3840 of 3840 selfies.



Self-tracking

Nicholas Felton

Relationships

Reporting on the reporters.

FIGURE 3. RELATIONSHIPS REPORTED



SHORTEST RELATIONSHIP

5 Mins
ERIC, MAY 15

LONGEST RELATIONSHIP

Forever
ELISE, JAN 7

AVERAGE RELATIONSHIP DURATION

About 3 Years
3 YEARS, 3 MONTHS AND 22 DAYS

MOST COMMON RELATIONSHIP

Friend
234 REPORTS

STUDENT TO TEACHER RATIO

3:1
6 STUDENTS, 1 TEACHER AND
1 BIRDING INSTRUCTOR

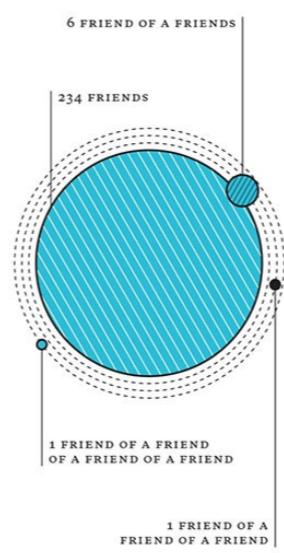
DISTINCT RELATIONSHIPS

179

NO RELATIONSHIP REPORTED

Eight

FIGURE 4. DEGREES OF FRIENDSHIP



QUESTION 1. WHAT IS YOUR RELATIONSHIP TO NICHOLAS?

Friend / esteemed colleague.
RYAN C, JANUARY 12

Internet buddy.
NOAH, FEBRUARY 18

Grill master.
WARREN, MAY 10

Drinking buddy.
HANA, JUNE 12

Double-digit sociability.
OLGA, SEPTEMBER 17

Ex-wife.
NICK B, OCTOBER 21

Statistic.
KEVIN L, DECEMBER 21

Dentist.
JOHN B, DECEMBER 23

QUESTION 2. HOW LONG HAVE YOU KNOWN NICHOLAS?

A year, come February 22.
ELISE, JANUARY 26

Since Summer 2004.
MARGARET, FEBRUARY 9

17 days at the time of recording.
IAN A, MARCH 14

About three hours
ACE JET 170, APRIL 2

5 years, my whole life.
JULIAN, APRIL 12

Sixty four days.
JESSICA B, APRIL 19

Since birth.
CAROL, MAY 15

*Since I was a teenager?
Could that be?*
MARIANA, SEPTEMBER 1

Years... I'm bad with time.
MELISSA, NOVEMBER 20

Nicholas Felton

An encounter with Nicholas Felton
has entitled you to participate
in the Feltron 2009 Annual Report.

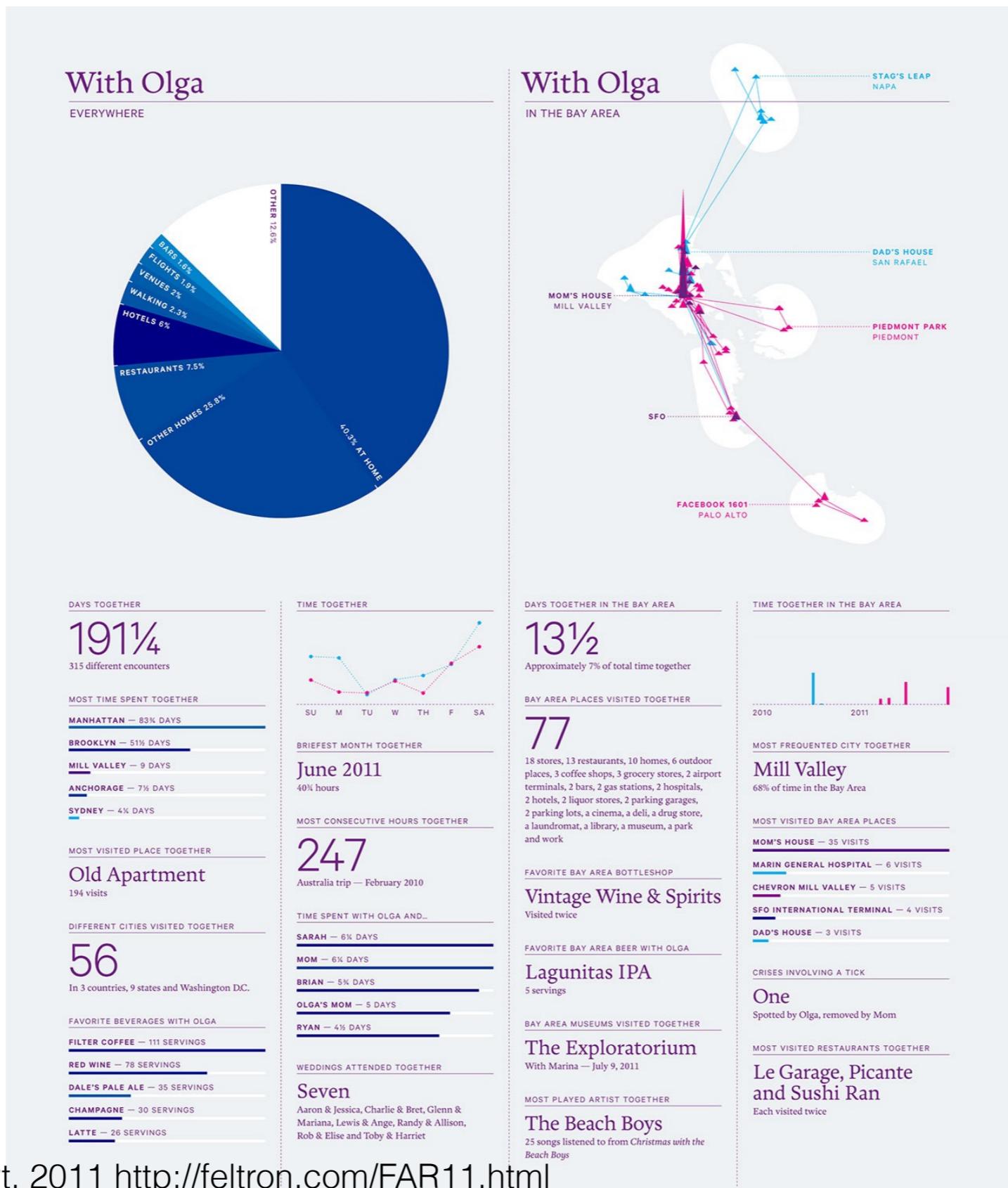
.....

KINDLY RECORD YOUR OBSERVATIONS
BY VISITING THE URL ON THE REVERSE.

09 ANNUAL REPORT CARD

PHOTO: NICK SHER

Nicholas Felton



Nicholas Felton



Amelia McNamara

@AmeliaMN



"I silenced all the other nonsense on my phone" to focus on data collection. @feltron
#eyeo2013 #eyeo

2:08 PM - 7 Jun 2013



Nicholas Felton

Feltron

Shop

Info

The top row shows three screens of a brain-like network diagram against a grey background, followed by three screens of a line graph against an orange background, then three screens of a clock and various data against a teal background, and finally three screens of a list of items against a pink background.

The bottom row shows four photographs of a person's hand holding an iPhone displaying the app's interface against different backgrounds: a grey wall, a red brick wall, a dark background, and a red brick wall again.

Reporter

Reporter is a self-tracking application for iPhone based on the idea that less is more. A system of infrequent measurements at random intervals allows the app to reveal insights with minimal effort. In 2012, a prototype of Reporter was extremely effective in collecting data for the [2012 Annual Report](#). This robustness of this approach inspired a public release of Reporter that is customizable and able to visualize responses, illuminating aspects of a user's life that might otherwise be unmeasurable.

Released

February 6, 2014

Description

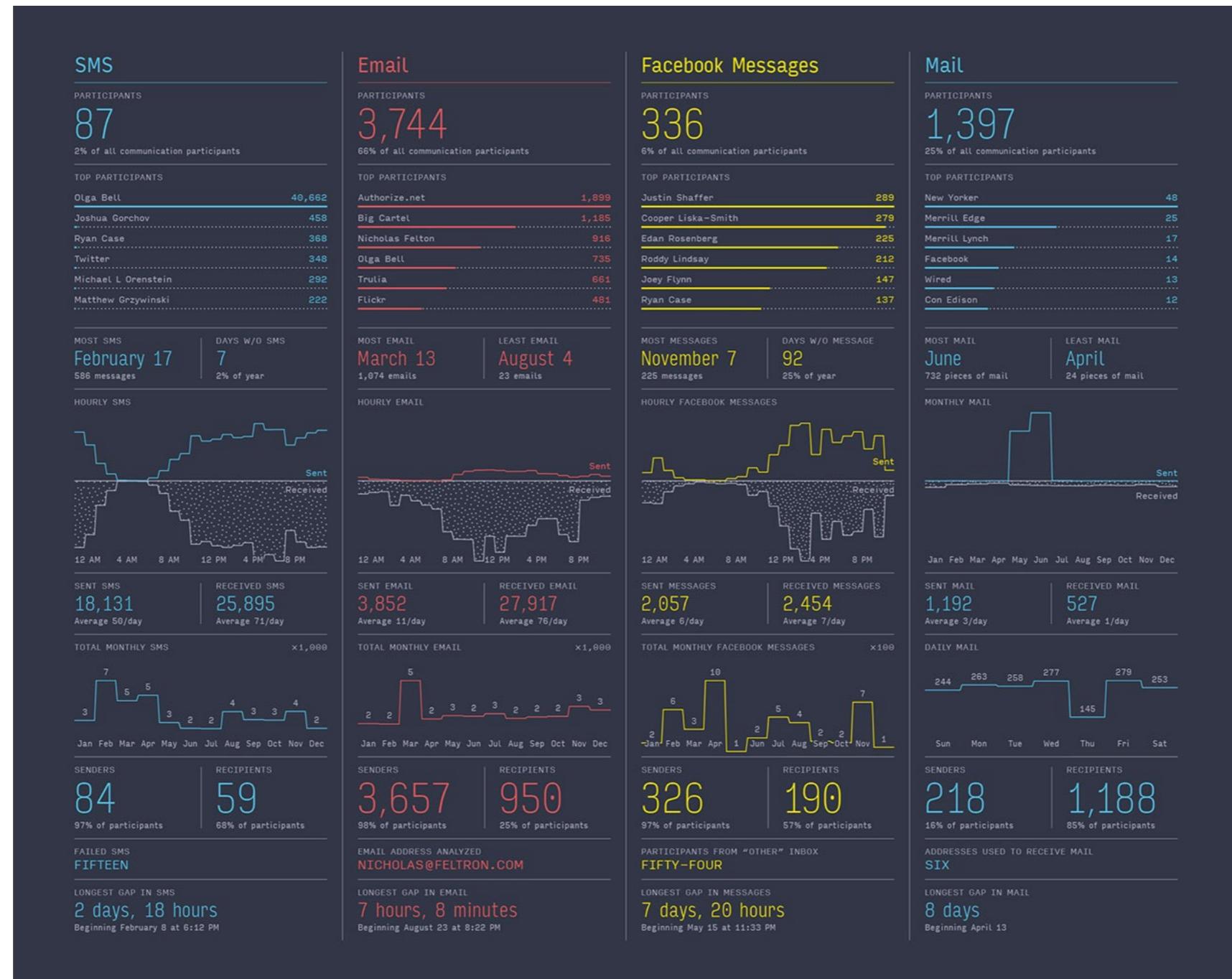
Developed with Drew Breunig and Friends of the Web

Awards

2014 Fast Company, Innovation by Design: Best App

Exhibitions

Nicholas Felton



Nicholas Felton



Nicholas Felton



Amelia McNamara
@AmeliaMN

If you held the door for me at the end of the day, and I didn't want to record it, I might not have said thank you. -Felton #eyeo2014

1:16 PM - 11 Jun 2014

1 Like



2



1



Tim Clark

ATLAS OF THE HABITUAL

Project Statement

Commuting	August
Eating	September
Drinking	October
5:27pm	November
Exploring	December
Photography	January
Skiing	February
XC skiing	March
Hiking	Weekends
Bike riding	Weekdays
"The Suburbs"	TGIF
On lunch	US holidays
In the news	New moon
Running errands	Full moon
Winter boots	First 50 days
Rain	Last 50 days
Snow	Kate
Weak Signal	Sarah
Blue hoodie	Zannah
Dirty underwear	Sam
Forgetting something	Austin
Unpleasantries	Carrie
I thought this was Vermont	Cora
Tour guide	Chris
Walking the dog	Dale
Reliving the breakup	Parents
Dating	College friends
Escaping to the city	Meeting new people
Major roads	60+ maps and counting...

The times I was the most miserable. Includes the time I got pulled over and received a speeding ticket, saw a dead deer fall off the back of a pickup truck, got frustrated for driving past a hiking trailhead several times, running my car into a snowbank, driving 40 miles on a tire donut because I hit an eight-foot ladder in Albany NY, and having to walk my bike because it either broke in some way. Total distance on map: 22.99 miles



Hand drawn viz

“Few would deny the most powerful statistical tool is graph paper.”
- Watson

Smooth Regression Analysis, 1964

basic ideas of plotting

With box-and-whisker plots we are beginning our plotting education. The first thing we need to do is separate, in our mind, what it takes to make plotting easy from what it takes to make plotting effective. The lines ruled on graph paper help to make plotting easy, but they do not make plotting effective for seeing what is going on--instead they get in the way of seeing what we ought to see. (If we are using a graph as a substitute for a table--as a way to look up values of a function--things are likely to be different. This, however, is something we almost never need to do in exploratory data analysis.)

tracing paper

If we want to see what our plots ought to tell us, there is no substitute for the use of tracing paper (or acetate). If we slip a well-printed sheet of graph paper just below the top sheet of a pad of tracing paper, we can plot on that top sheet of tracing paper almost as easily as if it were itself ruled. Then, when we have the points plotted, some boundary or reference lines drawn, and a few scale points ticked, we can take away the graph sheet and look at the points undisturbed by a grid. We often gain noticeably in insight by doing this. (And we have had to pay for a sheet of tracing paper rather than for a sheet of graph paper.) Alternatively, we can plot on a sheet of graph paper and then trace the result.

In doing either of these we gain very much by having:

- ◊ well-printed graph paper, which means (a) good quality lines, (b) every 10th line heavy, (c) every 5th line medium heavy. ("Five and dime" graph paper or quadrille-ruled paper will make our work much harder. For more detailed discussion, see section 5A, below.)
- ◊ tracing paper that erases cleanly and easily (quality equal to that of the Clearprint Paper Co. of San Francisco is worth the difference).
- ◊ a transparent plastic rule or triangle.

An alternative that:

- ◊ can be even more effective,
- ◊ is no more expensive,
- ◊ takes a little more trouble to prepare for,

replaces the tracing paper by the thin sheets of transparent plastic (acetate) made for use in overhead projectors. Two cautions are important:

1. You can only use markers specially made for the purpose. (A number of manufacturers make satisfactory products, but it may not be easy to find any of them. The writer prefers the temporary--wash-off--styles to those that cannot be erased.)
2. It is important to keep one's fingers off the plastic until the picture is completed. (A piece of thin graph paper, placed upside down, works very well as a hand shield.)

scale values

We ought to put as many scale values on the graph paper preliminary as will help us make the plot easily. On the tracing paper final, however, we ought not show more than three or four numbers along a scale. More clutters up the picture and distracts the eye from what it ought to see. (Scales for dates are sometimes an exception. It can matter whether an appearance came in 1929 or 1928, in 1776 or 1775.)

People are used to scales on the left and below. So be it--for the picture, perhaps. When one is plotting the points, however, it is much more convenient to put the horizontal scale ABOVE the plot, where you do not have to move your hand to see it. (It would be rational to plot from detailed scales above and left, and to produce a final picture with a few scale points shown below and right; but such rationality is usually not worth the possibility of occasional confusion.)

plotting without graph paper

We almost always want to look at numbers. We do not always have graph paper at hand. **There is no excuse for failing to plot and look.**

We usually have ruled paper at hand. For emergency graph paper, take out one sheet of ruled paper, turn it on its side, and place it beneath another sheet of ruled paper. If these two sheets have a light-colored backing--often provided by the rest of the pad or notebook--the vertical lines on the lower sheet are almost certain to show through well enough, combining with the horizontal lines on the top sheet to form a grid on which plotting is reasonably easy. (The first step in this sort of plotting is to mark--by ticks or unobtrusive dots--enough information on the top sheet to make it easy to get the lower sheet back to its original position after it slips.)

With this technique, one can make useful, if not decorative, plots almost anywhere.

review questions

What is a box-and-whisker plot? What do its parts show forth? What rules does it obey about showing values individually? About identifying values? What must we separate in our minds about plotting? What are the essentials of convenient, effective plotting? How can we, in an emergency, plot without graph paper?

2D. Fences, and outside values

Hinges are for our convenience. They can--and will--serve various purposes for us. Their role in 5-number summaries is only the beginning.

When we look at some batches of values, we see certain values as apparently straying out far beyond the others. In other batches straying is not so obvious, but our suspicions are alerted. It is convenient to have a rule of

Mona Chalabi



▼ YESTERDAY

✉ How much pee is a lot of pee?

Mona Chalabi



monachalabi

Follow

monachalabi If this data surprises you, there's an explanation on @guardian_us today.

Source: Nielsen US consumption 2015, #datasketch #🍫#easter

self_righteous_me I.must.consume.

piperblack @lisaliusa

olivierstephen I would have expected more for Halloween! Q

olivierstephen Will read the article tomorrow

lucian_adamoli Fascinating feed



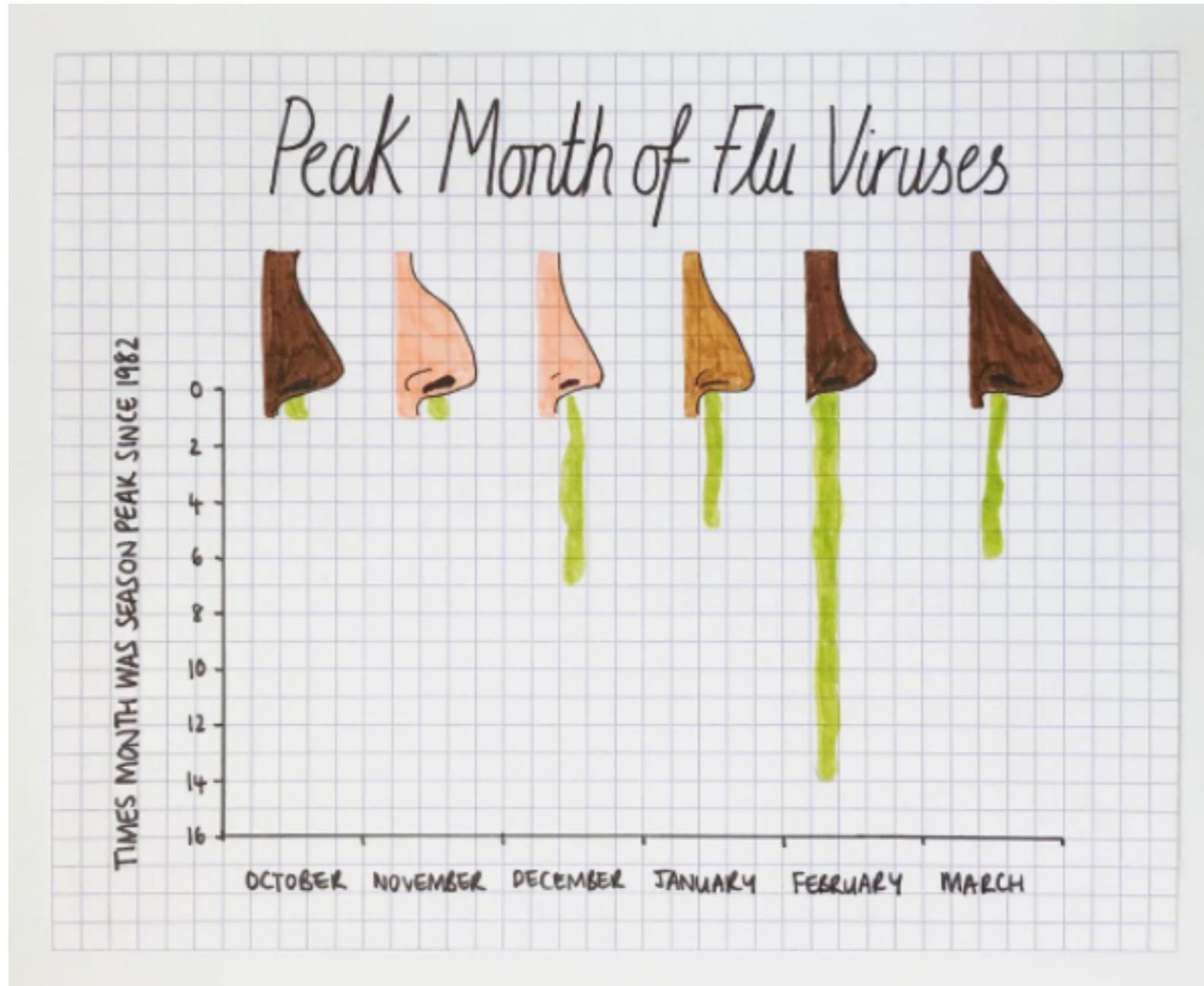
116 likes

MARCH 26, 2016

Add a comment...

...

Mona Chalabi



monachalabi

Follow

monachalabi I've been sick in bed all week and wondered whether October is the worst month for it. It's not. This wasn't comforting.

Source: 35 years' worth of flu data from the Centers for Disease Control and Prevention, 2016 #datasketch

dominicrushe 😞 hope you feel better soon.

monachalabi @dominicrushe thanks Dom! Feeling loads better, I'm actually going to venture into the outside world today.

michaelcarlson117 I feel like this could



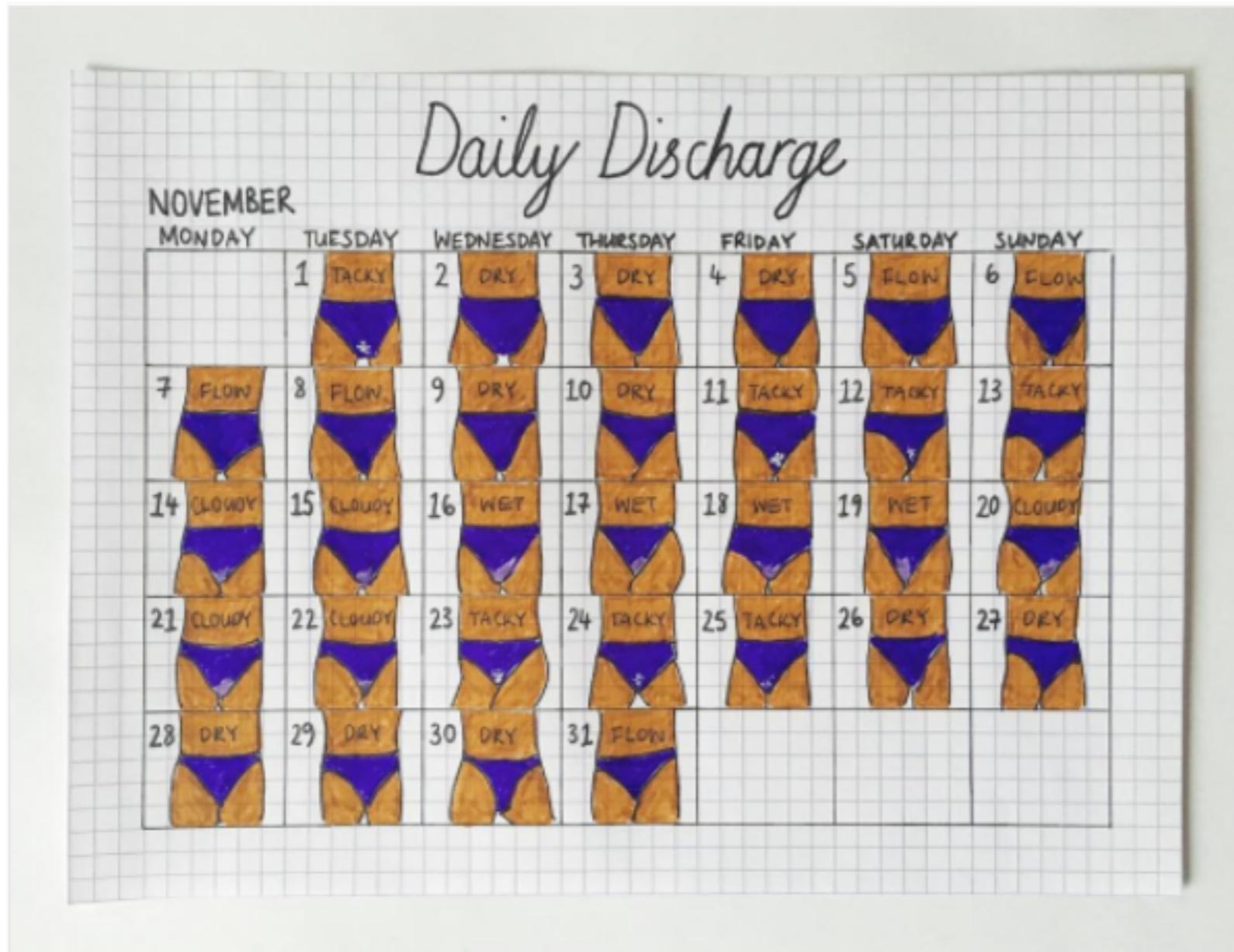
389 likes

OCTOBER 8, 2016

Add a comment...

...

Mona Chalabi



monachalabi

Follow

monachalabi Tomorrow, we're releasing episode 4 of #vaginadispatches and, as ever, me and @maeryan will talk about topics that can make us a bit uncomfortable. Like discharge, or as my mum so classily calls it, "cervical mucus". This is how it varies over a typical month. Keeping track of discharge can be used to help prevent pregnancy - women are least fertile from days 20 to 30.

Source: Planned Parenthood, 2016
#datasketch



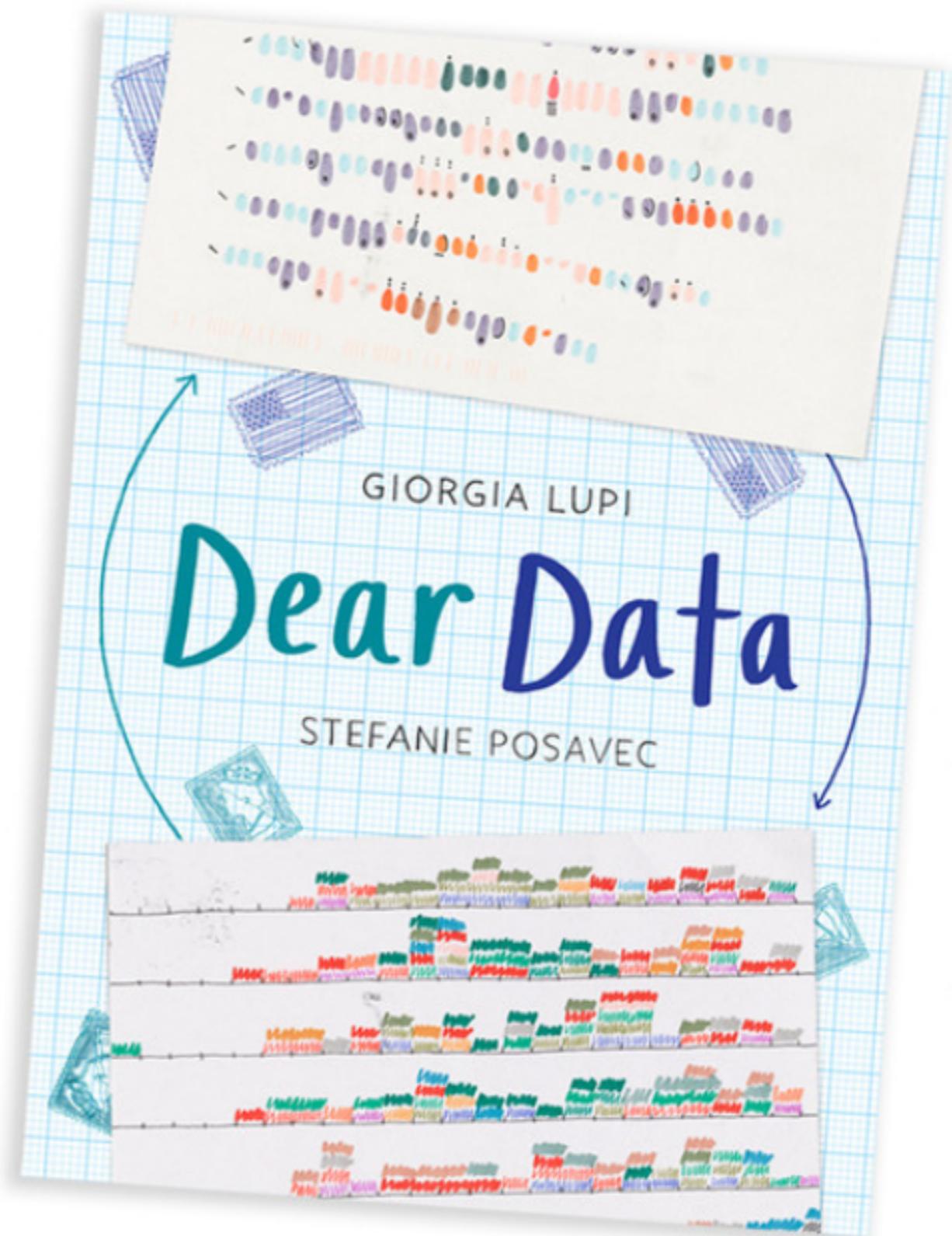
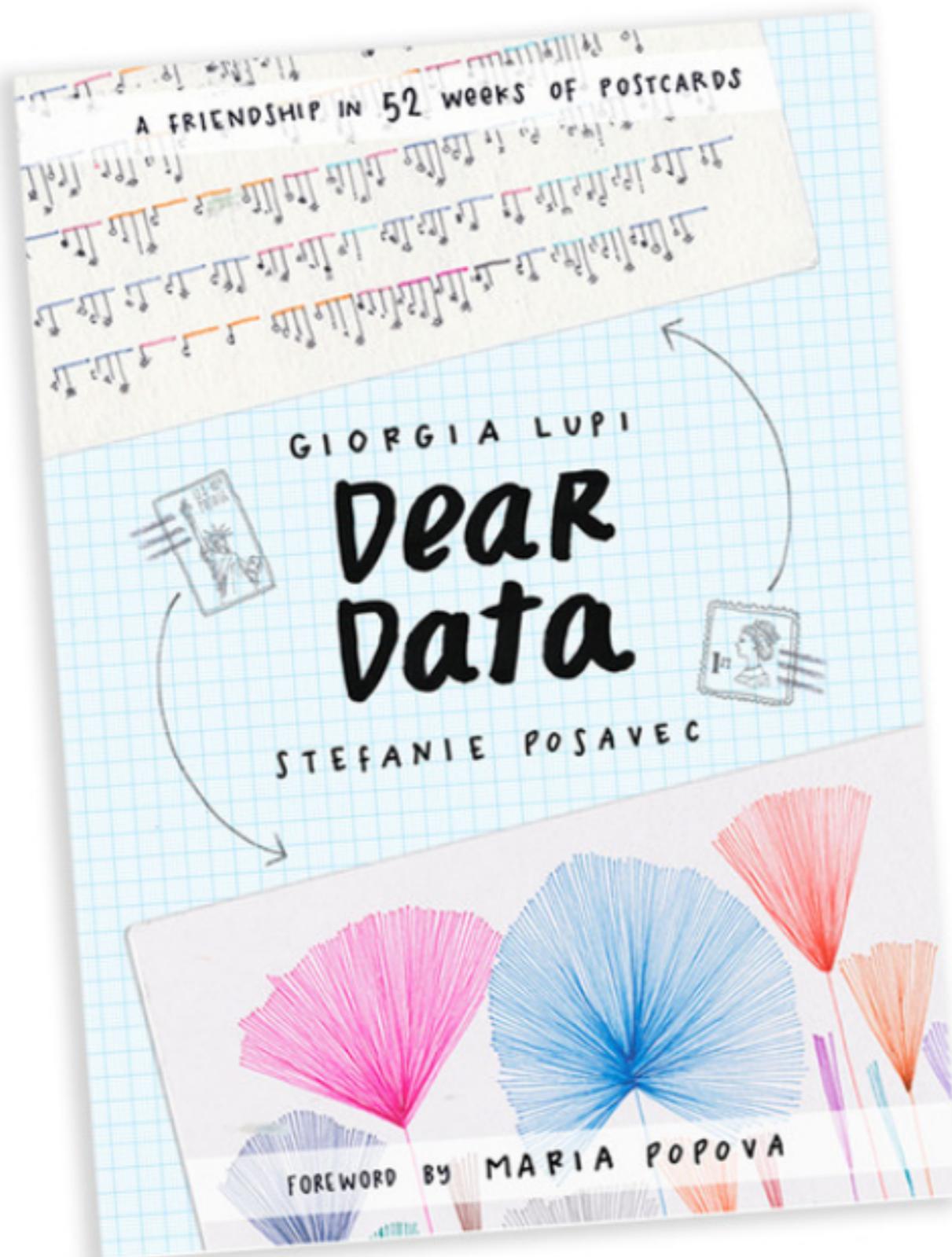
320 likes

NOVEMBER 17, 2016

Add a comment...

...

Giorgia Lupi and Stefanie Posavec



Giorgia Lupi and Stefanie Posavec

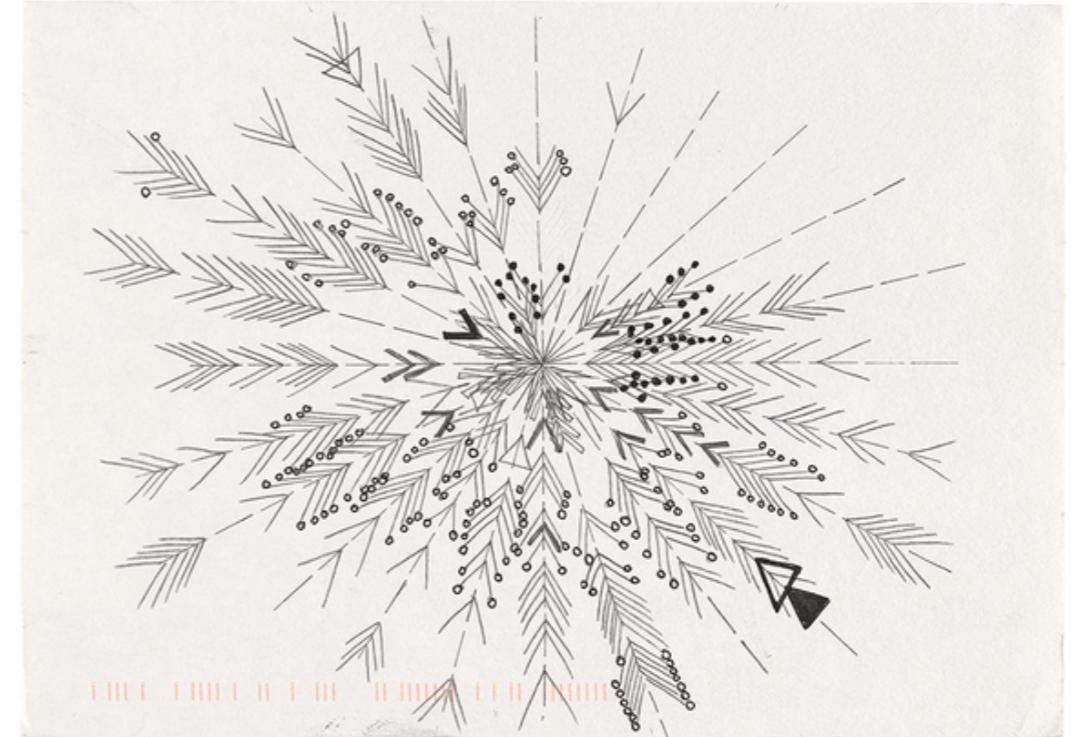
GIORGIA



week one

a week of clocks

Stefanie



DEAR DATA
WEEK 01: WHAT'S THE TIME?

HOW TO READ IT:

- each symbol represents every moment I glanced at the clock, grouped by hours of the day.
- Different symbols and attributes represent WHY and HOW I checked the time.

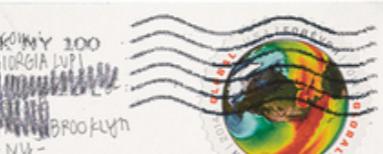
SYMBOLS

- o on purpose: wanted to know what the time was.
- * just glanced: on a phone, mac or else
- * Because I thought of this project.
- x I thought "don't look" But I did.
- ! Because I was bored
- !! Because I was Hungry
- A Heard somebody saying the time aloud.

ATTRIBUTES

- f*ck! I'm late!
- oh, ok. I'm fine.
- analog support (i.e. wrist watch)
- alarm clock rang.
- glanced at the clock while testing or emailing with Stefanie. ☺

SECOND ATTEMPT
NEW YORK CITY 100
GIORGIA LUPI
07 OCT 2014



NY

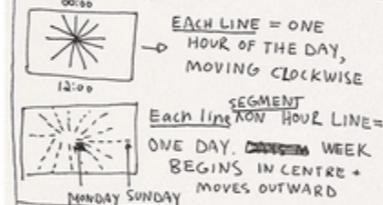
SEND TO:
STEFANIE POSAVEC
LONDON
[UK]
ENGLAND

DEAR DATA : WEEK 01:

A WEEK OF CLOCKS

Hi Giorgia! Still getting used to drawing again, hope I get better! Lots of the car radio clocks at 4 am are because I had to leave early to fly back from holiday.

LEGEND



AN INSTANCE OF CLOCK-WATCHING IS INDICATED BY A SYMBOL:

PHONE	TOTAL INSTANCES	CAR	TOTAL INSTANCES
LAPTOP	151	MICROWAVE	20
TABLET	84	FRIEND'S OVEN	1
HUSBAND'S PHONE	10	CHURCH CLOCK	1
WATCH	3		
	11		

1124985282

FROM:
S. POSAVEC
LONDON
UK

Royal Mail
Jubilee
World Cup
Scotland 2014
15-09-2014
54007997



GIORGIA LUPI

BROOKLYN, NY
USA

BY AIR MAIL
par avion

Royal Mail

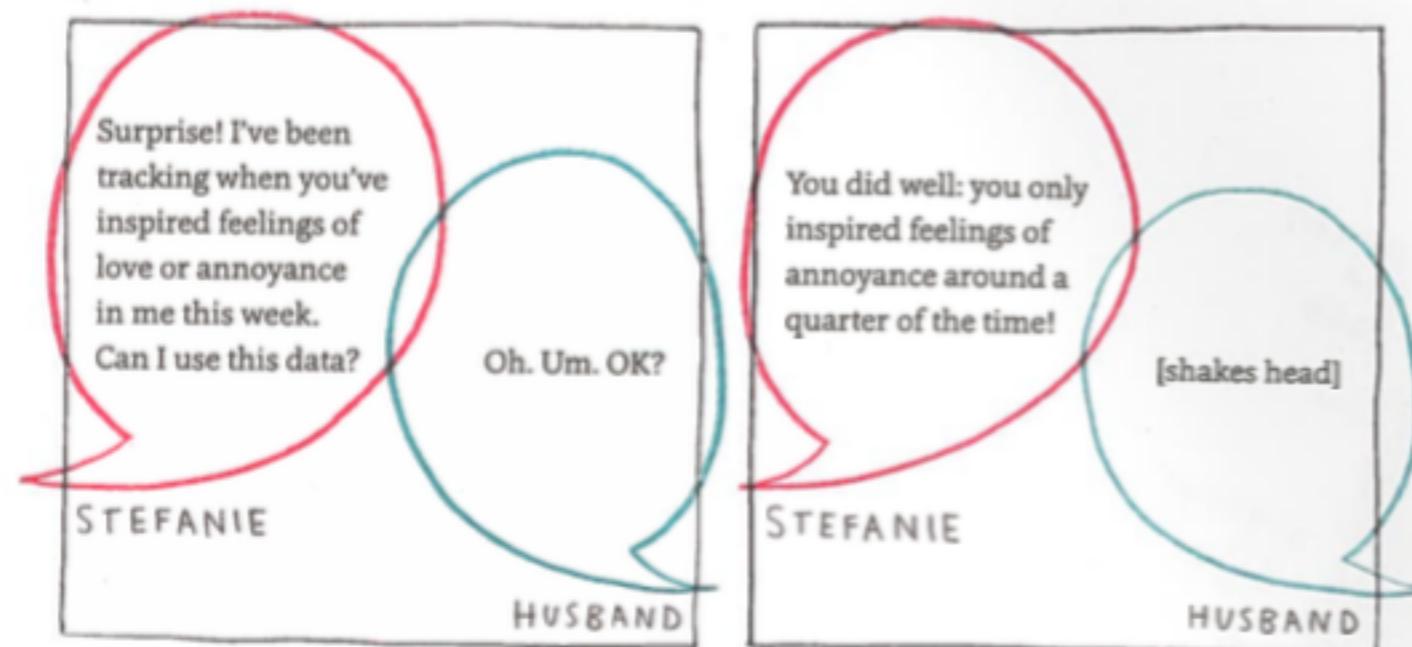
This week Giorgia and Stefanie tried gathering data in small notebooks (tedious), but soon switched to making notes on their phones (much easier). Stefanie's favourite clock to capture: a bell tolling the time in a town in Devon.

Drawing her first postcard, Giorgia had an idea for her whole collection: from now on every time she tracks something related to Stefanie, or to Dear Data, she uses a special pen to represent it!

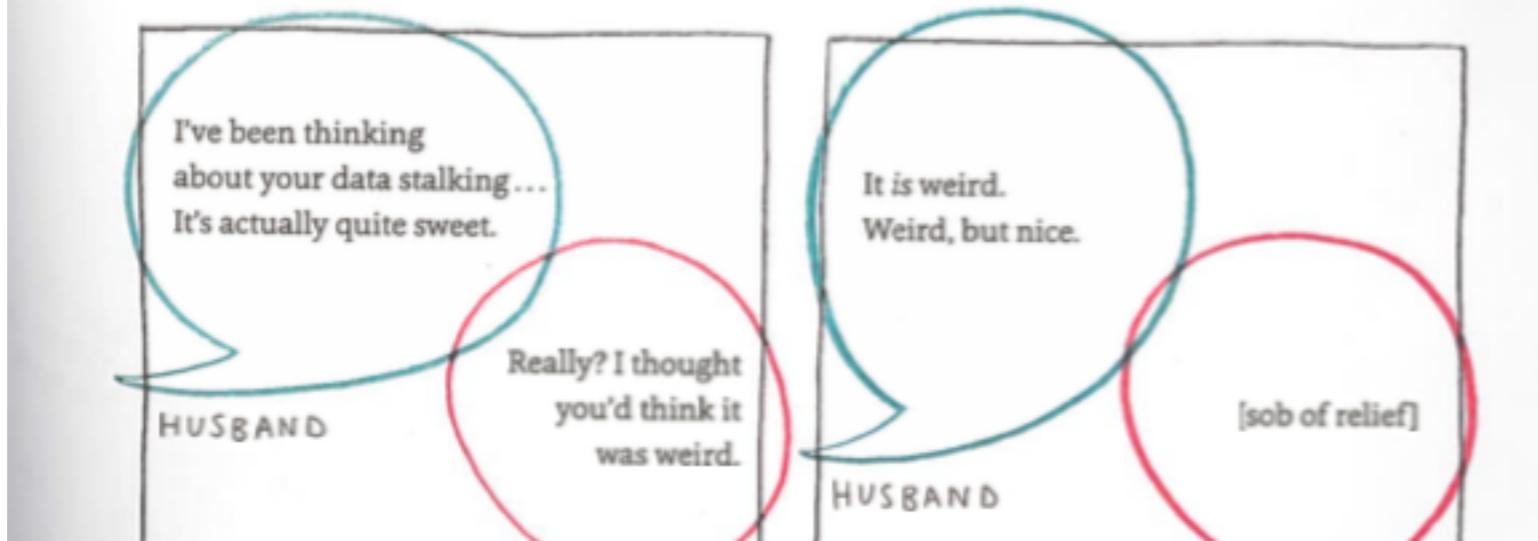
* pink ink pen!

Giorgia Lupi and Stefanie Posavec

SUNDAY EVENING, BEFORE BED



MONDAY, MAKING DINNER



Jose Duarte



Jose Duarte



Jose Duarte

 **Amelia McNamara**
@AmeliaMN

Physical dataviz of the World Happiness Index. From @joseduarteq's #easydataviz workshop at #dlc2017



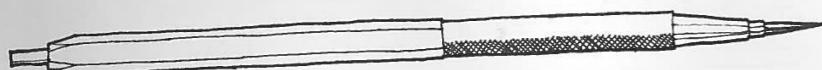
THE HAPPINESS LADDER

Step	Country	Score
0	CENTRAL AFRICAN REPUBLIC	2.47
1	SURINAM	2.67
2	PAKISTAN	2.73
3	INDIA	2.87
4	PHILIPPINES	3.02
5	NETHERLANDS	7.21
6	FRANCE	6.46
7	AUSTRIA	5.75
8	SWEDEN	5.65
9	NETHERLANDS	5.56
10	FINLAND	8.25

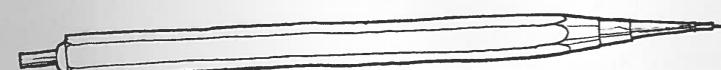
8:06 AM - 23 Sep 2017

Lab: Hand-drawn viz

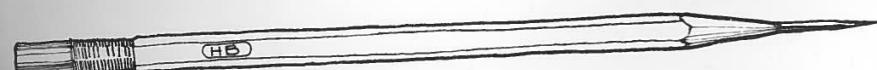
DRAWING PENCILS



This is the traditional leadholder. Due to its relatively thick lead it is capable of a variety of sharp line weights. The beginner should practice sharpening the point until he develops the ability to rotate the pencil sufficiently while drawing (see page 10).



This mechanical pencil utilizes a .5 mm lead, which does not require sharpening. It is capable of consistently sharp, fine lines if you rotate it sufficiently while drawing. For relatively thick, bold lines you have to use a series of lines.



The common wood/lead pencil can also be used for drafting. The wood must be shaved back to expose $\frac{3}{4}$ " of the lead shaft so that it can be sharpened like the leadholder.

All three types of pencils are capable of producing quality drawings. Your preference is a matter of choice and your particular skills.

general info

① sketch-grade

- lightweight tissue
- inexpensive
- for sketching, doodling, quick overlays
- Dietzgen 161 Y
- Charette 903

② medium-grade

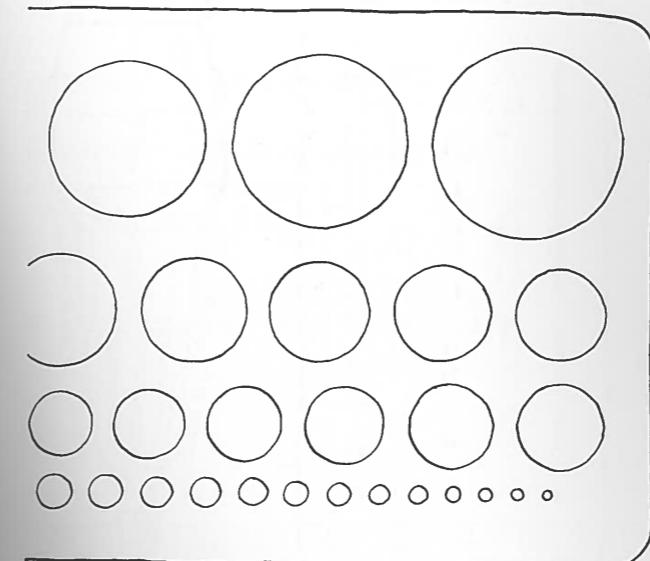
- medium-weight/16-lb.
- fine or medium tooth
- for general layouts, preliminaries
- Winston
- Charette Bond
- Boston Bond

③ quality grade

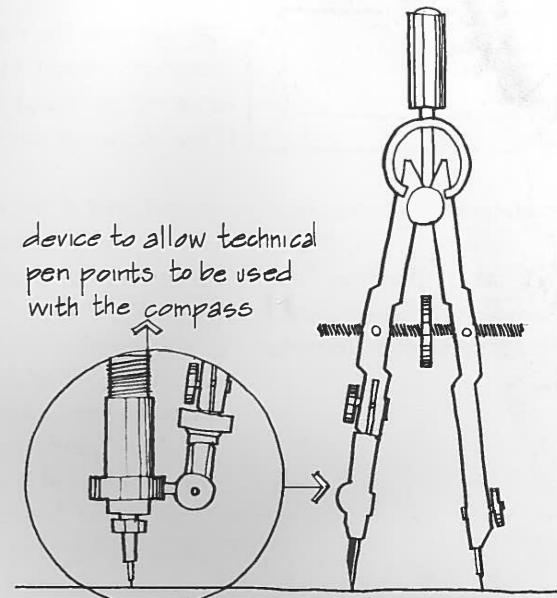
- vellum/16- or 20-lb.
- 100 percent rag
- for finished drawings
- Bruning 500
- Clearprint 1000 H
- Charprint 920 H

④ film

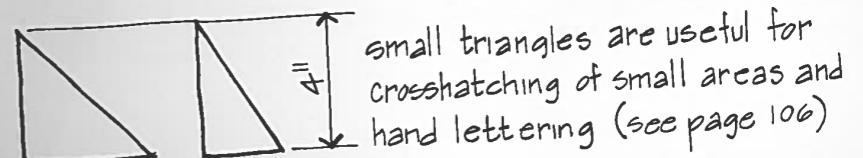
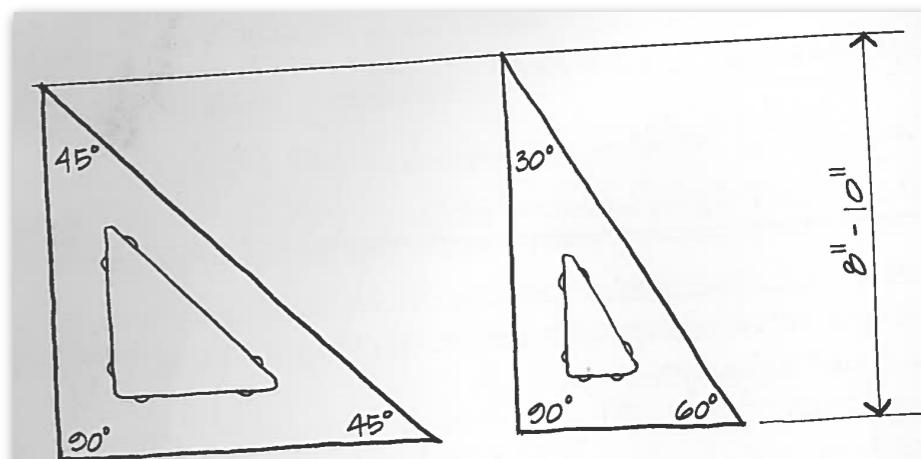
- .004" clear polyester film for clearest reproductions, permanence, and overlays
- Dupont Mylar
- Arkwright
- Herculene



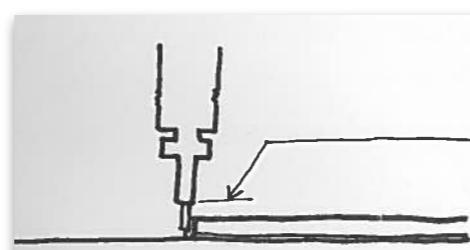
the circle template is a time-saving device useful for small circles of even radii



the compass is useful for circles of indeterminate radii, large circles, and most ink work

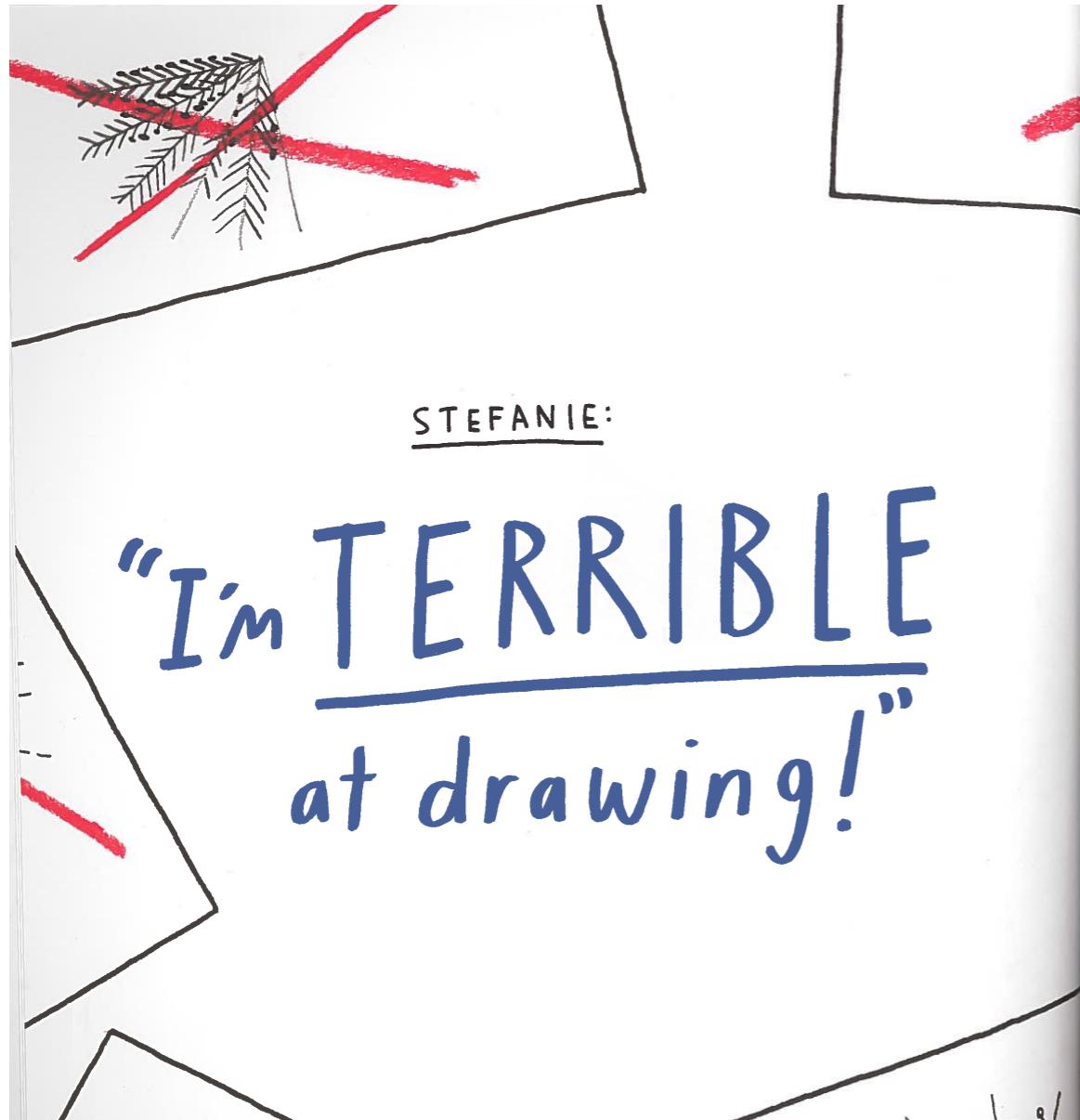


small triangles are useful for crosshatching of small areas and hand lettering (see page 106)



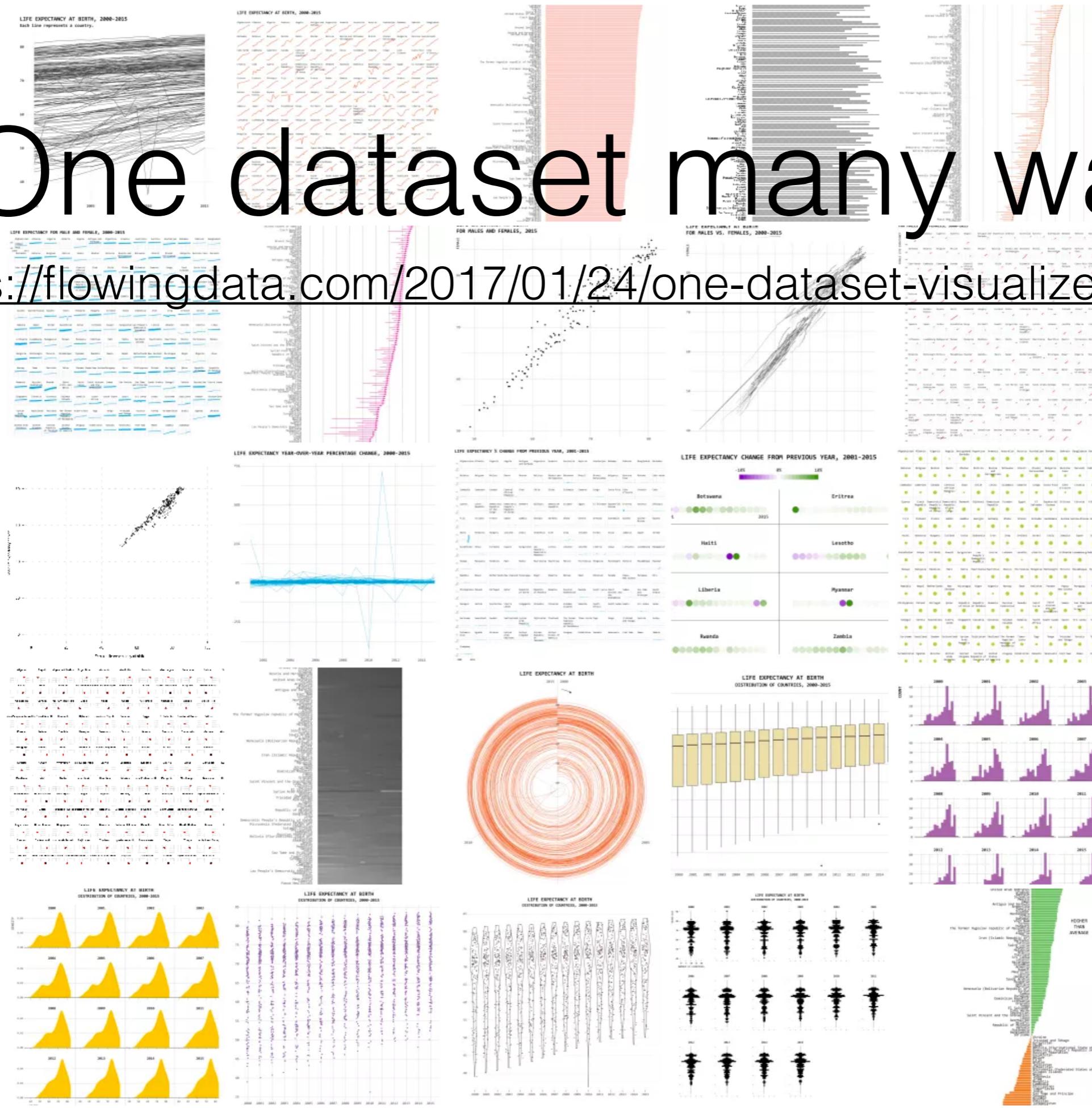
* Make sure that the pen you use has a point tube that is long enough to clear the thickness of your triangles and straight edge.

Iterate and practice



One dataset many ways

<https://flowingdata.com/2017/01/24/one-dataset-visualized-25-ways/>



- Make at least three sketches
- Settle on a final product
- Consider your design decisions
- Upload a photo/scan/screenshot to #lab4