VISUALIZATION DESIGN PROCESS
SKETCHING

Petra Isenberg

informatics *mathematics*
Inria

SKETCHING

Introduction to

SKETCHES ARE…

- quick, freehand drawings
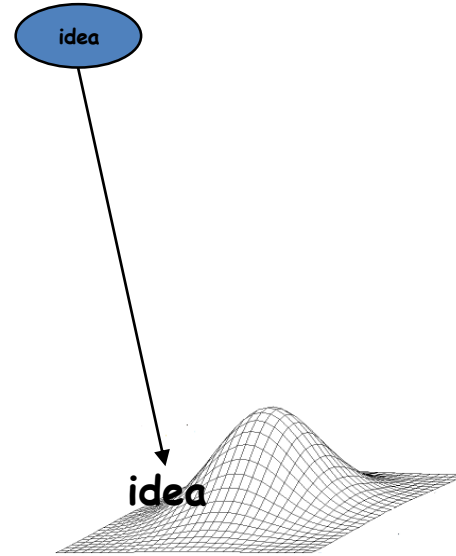- can include labels or captions
- don't need to be pretty

- goal:
  - for communication
  - for brainstorming

try to communicate ideas with as few lines (as little "ink") as possible!
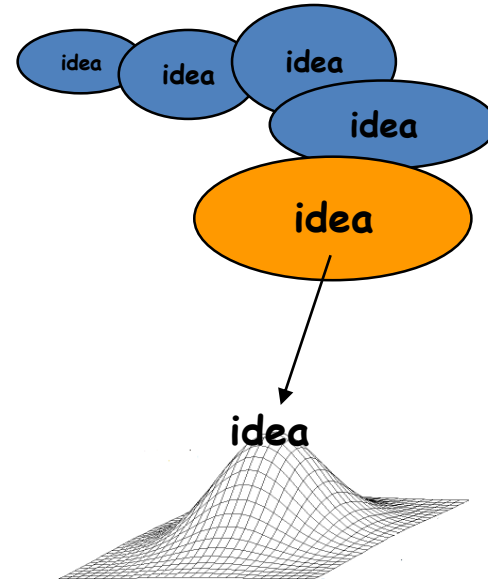
WHY SKETCH

getting the design right

– generate an idea

WHY SKETCH?

getting the design right

– generate an idea
– iterate and develop it
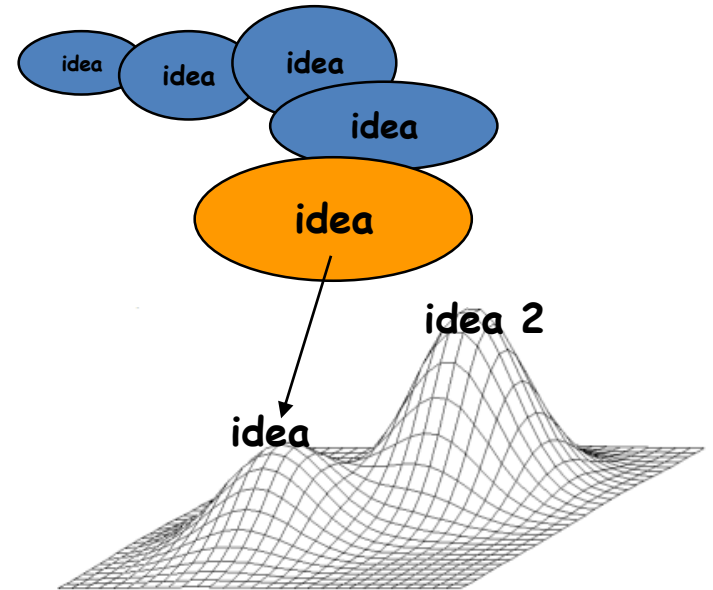

but is it the best idea?

WHY SKETCH?

getting the design right

- – generate an idea
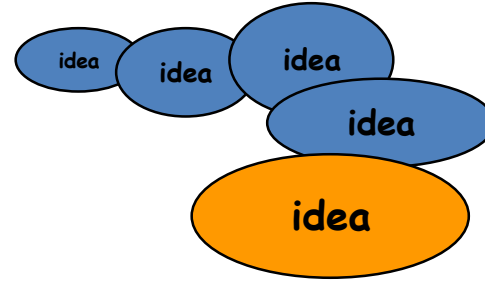- – iterate and develop it

The problem

- – other better solutions may be available in different ideas
- – local *vs.* global maxima (local hill climbing)
- – often results from fixating on a single idea
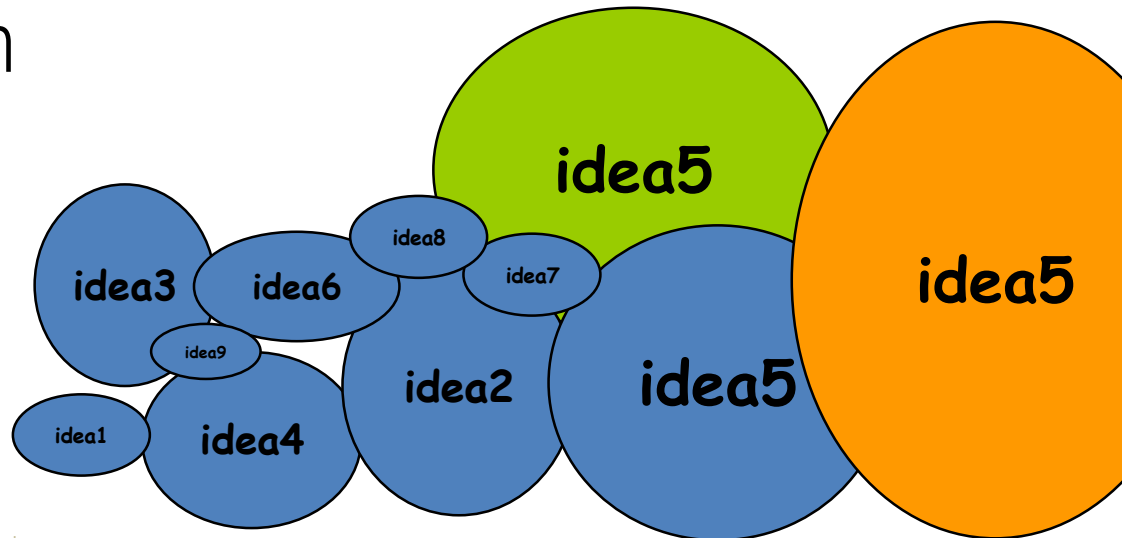
WHY SKETCHES?

getting the design right
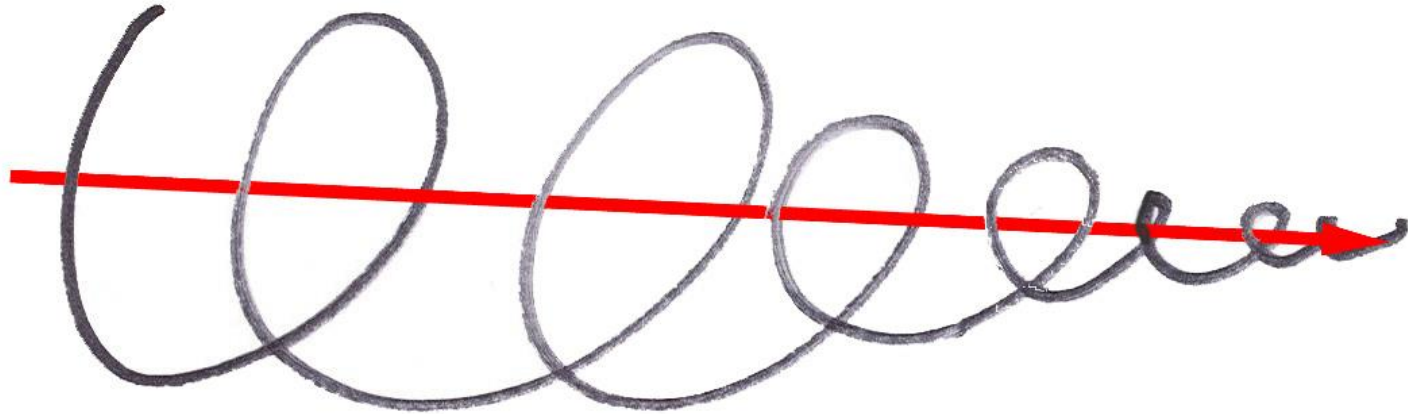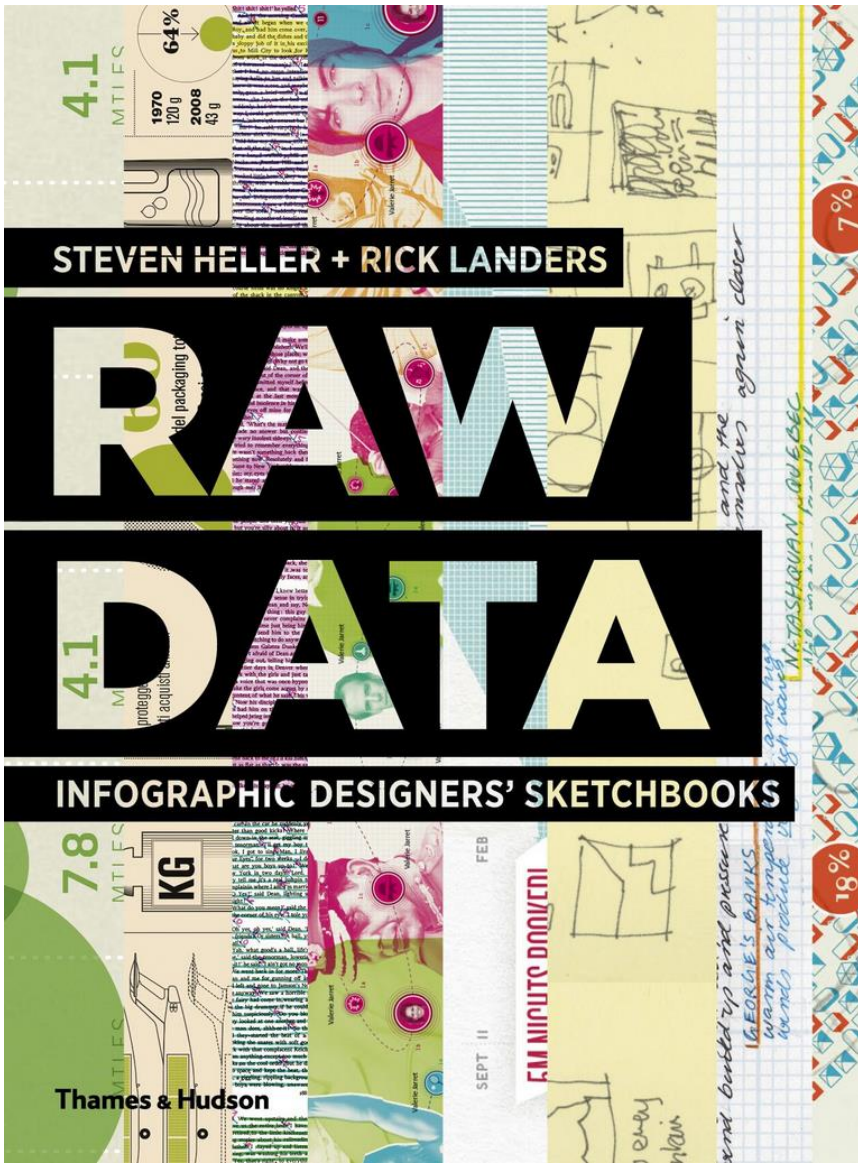
– generate an idea
– iterate and develop it

getting the right design

– generate many ideas and variations
– reflect and choose
– *then* iterate and develop your choice

EXPLORATION OF A SINGLE IDEA

STEVEN HELLER + RICK LANDERS

RAW DATA

INFOGRAPHIC DESIGNERS' SKETCHBOOKS

Thames & Hudson

Accurat | Giorgia Lupi

Exploring the phenomenon of geniuses and the brain drain

'Drawing plays an important role in the production and communication of knowledge, and in the genesis of new ideas,' says design director Giorgia Lupi, founder of Accurat, an information design agency with offices in Milan and New York. 'In addition, the act of drawing and the fact we choose to stop and draw focuses the attention. When I'm sketching, I always try to find a way to interpret both the single visual elements and the overall composition.'

Lupi draws on white paper with Muji black-ink pens. Drawing is her primary expression, a 'functional tool for capturing

and exploring thoughts and exploring ideas towards the production of the final piece'. Her team approaches problems in the way that journalists would, rather than as data analysts, understanding in which contexts they must interpret their data.

When describing Geniuses, Visualized, the company's project for *La Lettura*, a magazine supplement in the Italian newspaper *Corriere della Sera*, Lupi says: 'We aim to deliver rich visual narratives, able to maintain the complexity of the data but still making this complexity more accessible and understandable through the visualization.'

They also provide several layers of exploration on the data set being analysed. 'We call it "non-linear storytelling",' Lupi says, 'where people can get lost in singular elements, minor tales and "last-mile" textual elements within the greater visualization.'

Lupi and her team regularly push the boundaries on how to 'compose' data-visualizations that achieve aesthetic beauty and elegance through new visual metaphors, intentionally avoiding the more usual and already tested styles of representation.
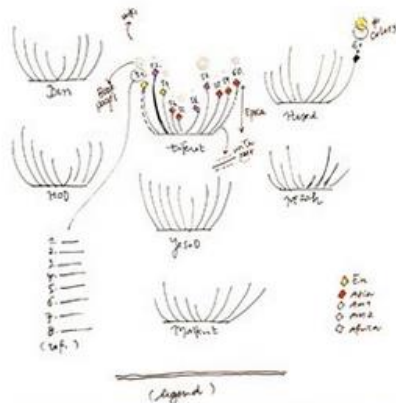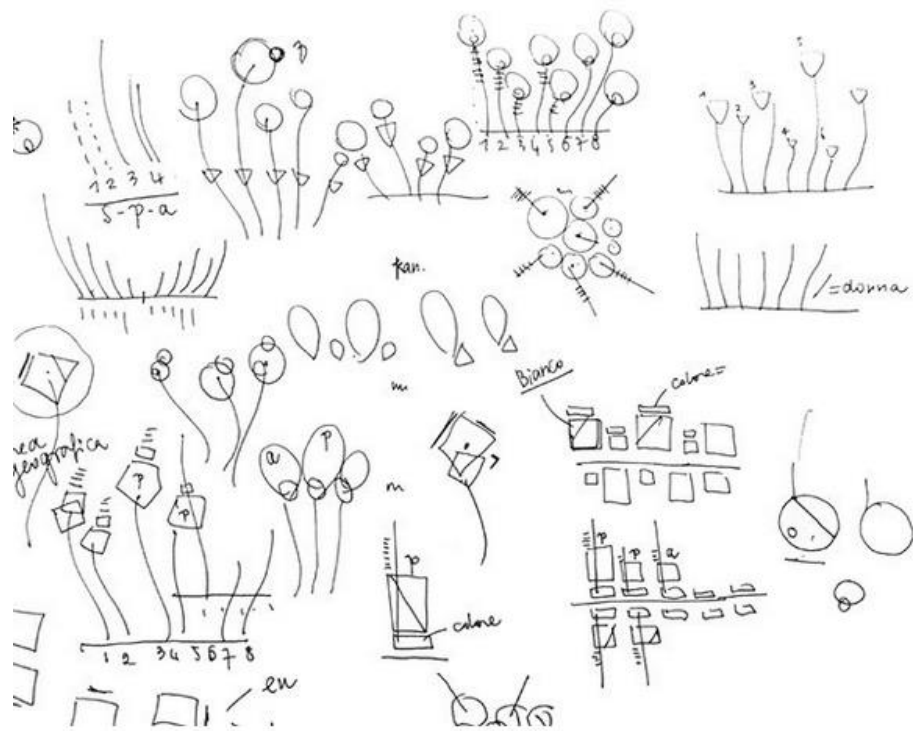
Geniuses, Visualized
La Lettura, 2012

This infographic looked at the 100 'exemplary creative minds' identified in literary critic Harold Bloom's book *Genius*. Playing off Bloom's use of the Sefirot, the ten emanations of the Kabbalah, to organize the taxonomy of his chosen 'geniuses' of language – from Shakespeare to Lewis Carroll – the visualization depicts the geographic origin, time period and field of each genius, correlated with number of Wikipedia hits and connection to related historical figures.
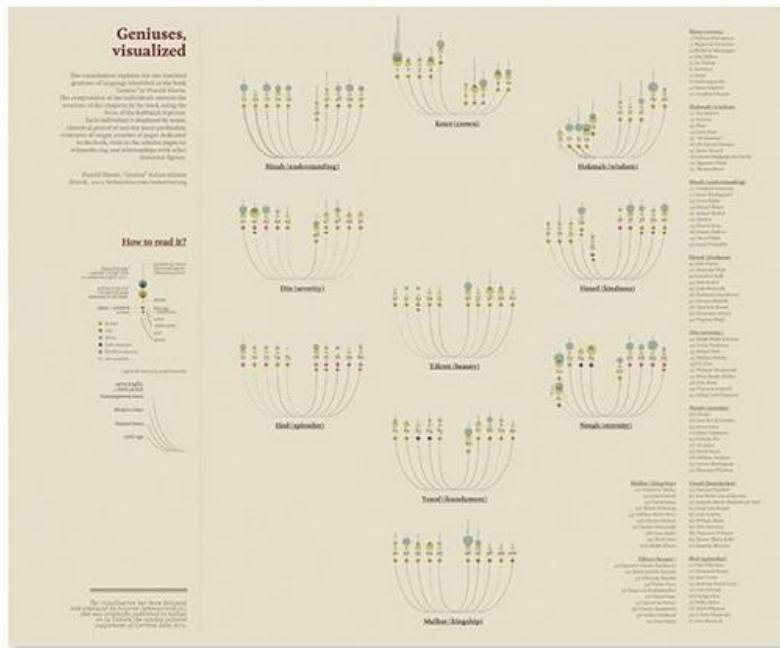
BIG TITLE

GUEST NIGHTS BOOKED

LISTINGS ON AIRBNB

THE AIRCORPS

3-4 HOST INCOME FACTOIDS GO HERE

HOSTS

AUGUST 2008 – FEBRUARY 2012

GUEST NIGHTS BOOKED

AIRBNB

2011

500%

5 MILLION NIGHTS BOOKED (goal!)

19,000+	192	UK 748% FRANCE 425%	ITALY 943% SPAIN 712%
NO. OF CITIES	NO. OF COUNTRIES	EUROPEAN GROWTH IN 2011	

JUST LAST YEAR... (JAN 2011)

REVIEWED LISTINGS

RIGHT NOW (JAN 2012)

REVIEWED LISTINGS

AIRBNB HAS GROWN LARGELY THROUGH —NETWORK EFFECTS— WORD OF MOUTH AT SCALE

AIRBNB TRAVELER NETWORK

2012

1
2
3

AND THE CYCLE BEGINS AGAIN

Longest consecutive reservation

91 nights

"Quote"

"Architecture is engaging, inspiring"

"Expert advice to help create better places"

"Architecture is probably instead"

"Buddy Online"

"Quote"

Properties Listed
Positive reviews left
Nights Stayed (x100)

THEN   2008   2009   2010   2011

45,000

Notable event
Lorem ipsum

Notable event
Lorem ipsum

Breakdown by color: entire apartments, private rooms, etc.

A SNAPSHOT from FEBRUARY 2012

AIRBNB
www.airbnb.com

GUEST NIGHTS BOOKED

The total number of nights of accommodation booked through www.airbnb.com

2011

5M NIGHTS BOOKED!

U.S. guest at U.S. accommodation

Non-U.S. guest at Non U.S. accommodation

Cross Border accommodation

U.S. Guest   Non U.S. Guest

LISTINGS ON AIRBNB

The total number of unique accommodation listed on

AIRBNB
BRINGING THE WORLD TOGETHER

(1)

NIGHTS BOOKED JUNE

10m
8m
6m
4m
2m

5M JUST 5 MONTHS AGO!

JUNE 08 JUNE 09 JUNE 10 JUNE 11 JUNE 12
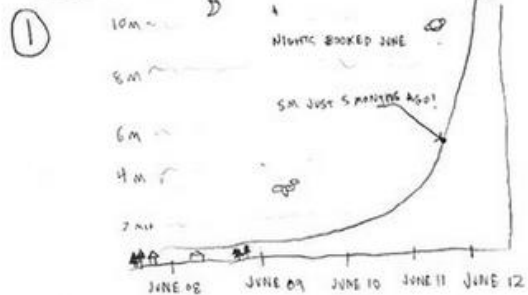
10 MILLION GUEST NIGHTS BOOKED

(2) A NIGHT ON AIRBNB IS BOOKED...

2008: EVERY DAY
2009: EVERY FIVE MINUTES
2010: EVERY MINUTE
2011: EVERY 10 SECONDS
2012: EVERY 2 SECONDS
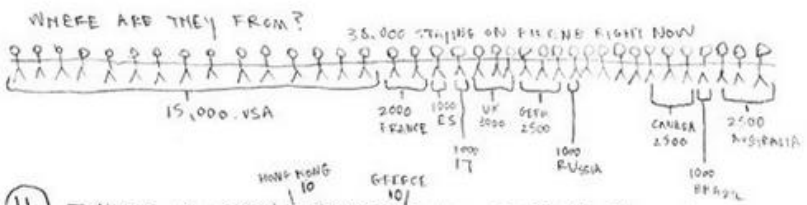
...TOOK YOU TO READ THIS, SOMEONE BOOKED A WEEK'S ... AIRBNB. IN FACT, IT WAS THIS GUY:

HE'S GOING TO (CITY BASED ON COUNTRY)
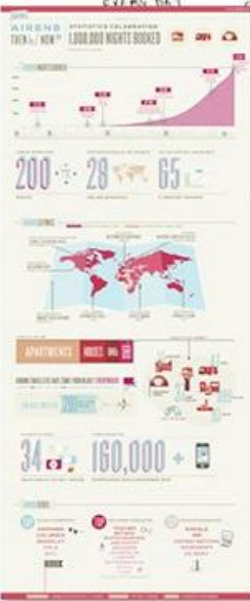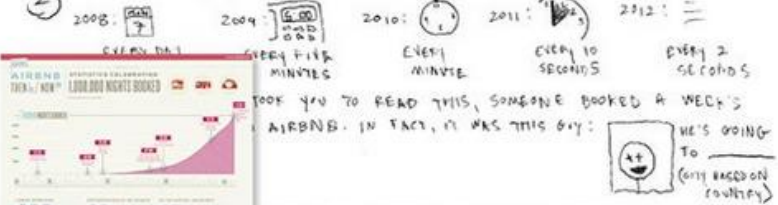
... READ THIS, 38,000 PEOPLE ARE STAYING ON AIRBNB. ...AYING?

WHERE ARE THEY FROM? 38,000 STAYING ON AIRBNB RIGHT NOW

15,000 USA
2000 FRANCE
1000 ES
17 UK
1000 GER
2500
1000 HONG KONG
10 GREECE
1000 RUSSIA
CANADA 2500
1000 BRAZIL
2500 AUSTRALIA
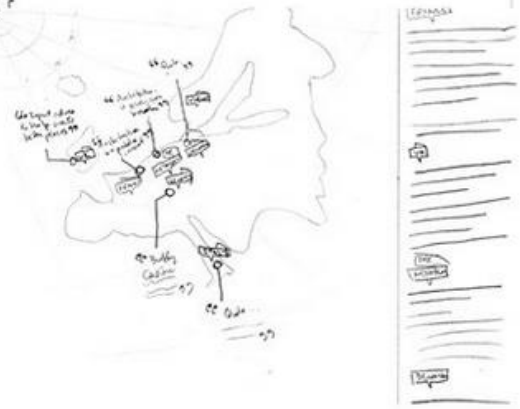
(4) TONIGHT, IN LONDON 1200 PEOPLE WILL BE STAYING ON AIRBNB. WHERE ARE THEY COMING FROM?

HONG KONG 10
GREECE 10

USA — 300
BRAZIL — 20
ITALY — 30
FRANCE — 120
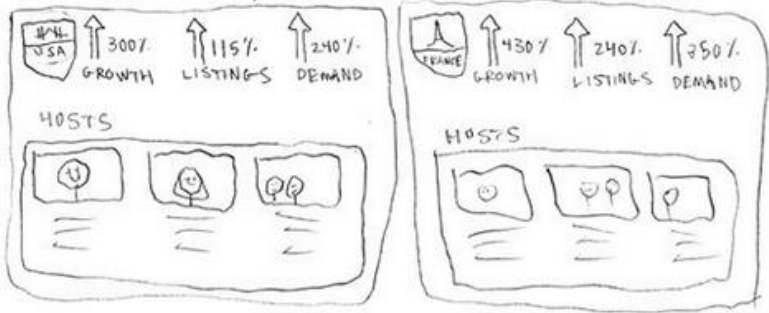SWITZERLAND — 30
ISRAEL — 5
SWEDEN — 10
SOUTH AFRICA — 5

LONDON MAP

SPAIN — 25
AUSTRALIA — 90
CANADA — 60
GERMANY — 80
DENMARK — 20
SINGAPORE — 35
NETHERLANDS — 15
RUSSIA — 20
AUSTRIA — 25
ICELAND — 10

POLAND 5
ARGENTINA 25
MEXICO 10
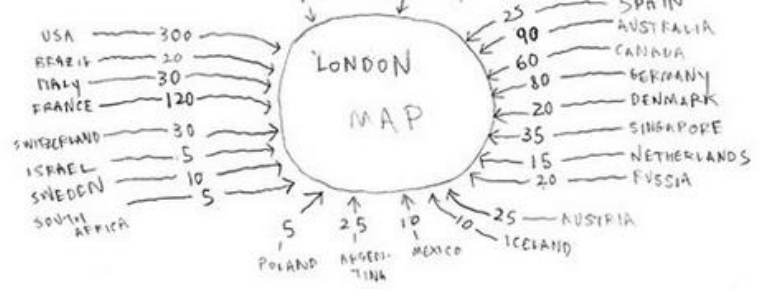
(5) INTERNATIONAL GROWTH –
IN THE LAST YEAR, THE AIRBNB COMMUNITY HAS GROWN...

#1 USA — 300% GROWTH   115% LISTINGS   240% DEMAND
HOSTS

FRANCE — 430% GROWTH   240% LISTINGS   750% DEMAND
HOSTS

OTHER COUNTRIES

Tim Hucklesby

Charting his own movie
viewing over a year

British-born Tim Hucklesby, now a designer
at Doyle Partners in New York, first began
designing infographics a few years ago, when
he wanted to round out his portfolio before
applying to the MFA Design programme at
the School of Visual Arts. 'I kept designing
them because I wasn't happy with the first
one, and discovered that they were, in fact,
pretty tough to make,' he admits. 'I always
want the core idea to be a quick read, as well
as encouraging the viewer to keep digging.
I tend to slip up on at least one of these
criteria, so will keep trying.'

Hucklesby always embarks on a project
by sketching in pen or pencil, whatever is to
hand. 'I want get the concept pinned down
before moving to the computer,' he says.
'I've found going straight to the machine
tends to pull me down certain avenues, using
techniques that I've used in the past. If I start
on paper, I worry far less about how I'm
going to make the finished piece and aim for
something a bit more ambitious as a result.'

Of the visualization of his Netflix
streaming consumption, A Questionable
History (these pages), Hucklesby says:
'In the process of sorting the data, I found
a great number of movie titles I didn't
recognize, which turned out to be what
my wife was watching while I was out. She
was catching up on TV and films I wouldn't
watch with her. In the end, the project was
a public shaming of both of us and our
viewing habits. It also served as a wake-up
call to get out more.'
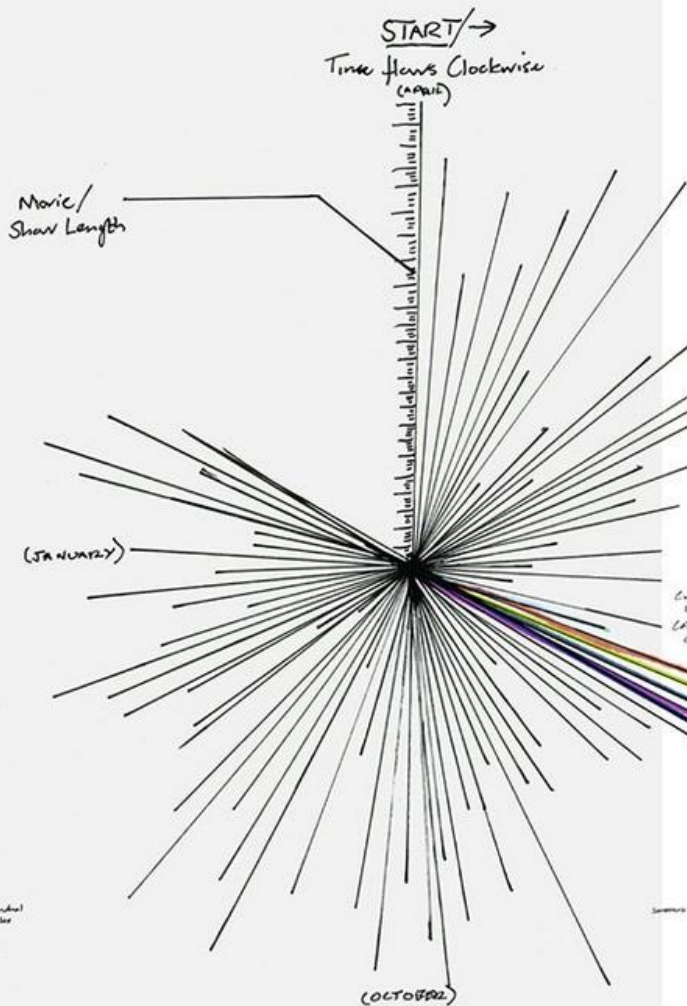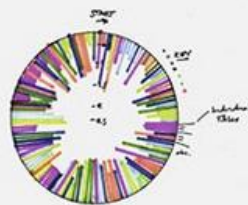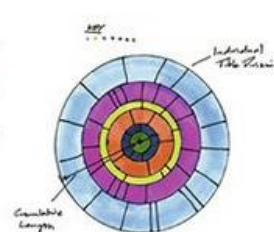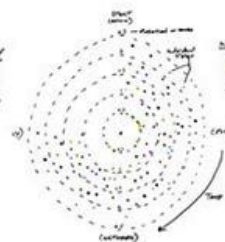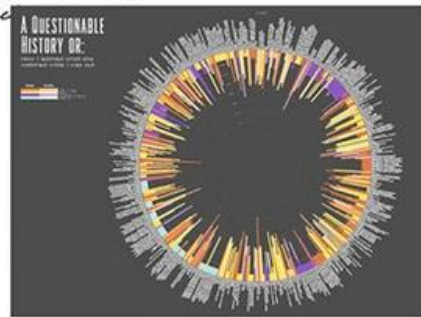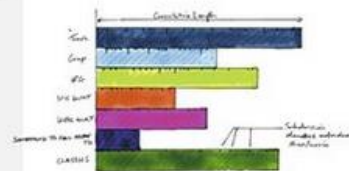
Watch this video at home

https://vimeo.com/28443920
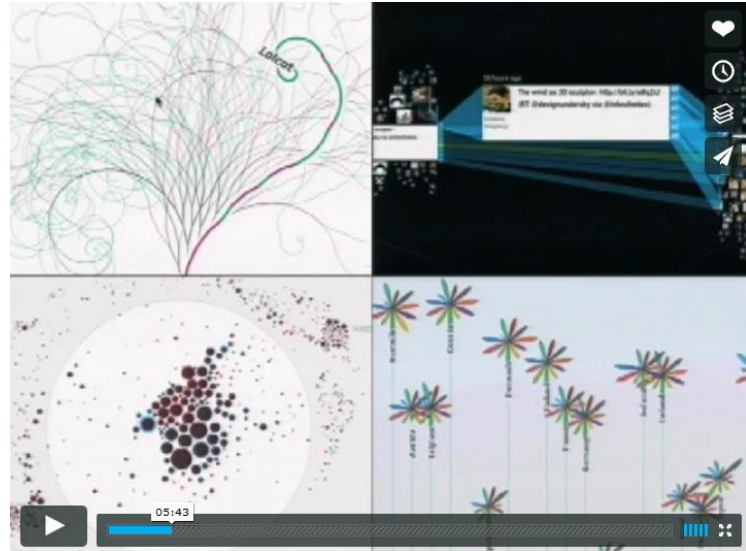
SOME PRINCIPLES FOR SKETCHING

- use as few lines as you can
- communicate the essence of the idea
- details only if they are important
- choose the detail you put in deliberately
- one piece of paper per sketch!!!!!

SKETCHING DATA

FIND A PARTNER

Form groups of 2

SKETCH THE RELATIONSHIP BETWEEN TWO NUMBERS
(10 MINUTES)

75   37

(there are at least 45 different ways)

GENERAL ADVICE

Get to know your data first

- what attributes are included? How do the attributes relate to each other?

- what are the types of attributes included?

- can I derive new attributes from the existing attributes?

- what questions does the data trigger in you? Write them down

SKETCHING TUTORIAL PART II

YOUR NEXT ASSIGNMENT

- brainstorming session (spend 1h together)
  - sketch ideas, each on single sheet of paper
  - we will start this in the lab with the 10+10 technique
- create an affinity diagram with the sketches
  - organize them into groups

YOUR NEXT ASSIGNMENT

- select and polish ideas
  - from the affinity diagram
  - select the three or four most promising sketches
    - they do not have to be from different students
    - discuss these sketches
    - re-sketch them on a piece of paper neatly, one per student (even if it was not your original sketch)
      - add annotations, provide descriptions where necessary, add date and name of re-sketching student

- Deliverable :
  - See website

SKETCHING FOR BRAINSTORMING

10 PLUS 10 TECHNIQUE

- the 10 plus 10 technique is a great way to generate ideas, PLUS refine those ideas

- we will actually use the 10 plus 10 technique today to explore/study one design problem

- This is a technique that you can use in generating ideas/refining them for the purpose of your project

10 PLUS 10 TECHNIQUE

- <u>Generate 10 sketches</u> individually that relate to the design problem (individually) (10 mins)
  - These sketches must be meaningfully different (i.e. avoid variations on the same idea)
  - Take risks: do not limit yourself to the realities of "today"
  - Avoid judging the quality of these ideas now; the point is to get <u>diversity</u>
- <u>Discuss within your group</u> each of the design ideas represented in the sketches, then select the most promising <u>3 design ideas</u> (10 mins)
- Using these promising design ideas, generate each an additional <u>10 sketches</u> that are <u>variations</u> of these 3 design ideas (20 mins)
- <u>Discuss within your group</u> each of these variations, and select the <u>2 best variations for each design idea</u> (5 mins)
- <u>Present these best ideas to the class</u> and discuss (5 mins for each presentation, plus 5 mins of discussion)

PHASE 1: MAKE 10 SKETCHES (30 MINS)

Generate 10 sketches individually that relate to the design problem (individually)

- These sketches must be meaningfully different (i.e. avoid variations on the same idea)
- _**Take risks: do not limit yourself to the things you know how to implement.**_
- Avoid judging the quality of these ideas now; the point is to get diversity

PHASE 2: INTERNAL DISCUSSION (5MINS)

- <u>Discuss within your group</u> each of the design ideas represented in the sketches
- Select the most promising <u>3 design ideas</u>

PHASE 3: "PLUS 10" (10 MINS)

- Using the 3 promising design ideas, generate an additional <u>10 sketches</u> that are <u>variations</u> of these 3 design ideas

- On a per-person basis, it might be best to stick to one of the design ideas

PHASE 4: INTERNAL DISCUSSION 5MINS

- <u>Discuss within your group</u> each of these variations

- Select the <u>2 best variations for each design idea</u>

PHASE 5: PRESENT (5 MINS/GROUP)

Present these best ideas to the class and discuss (5 mins for each presentation, plus 5 mins of discussion)

LESSONS FROM 10 PLUS 10

- 10+10 is a great technique for brainstorming
- This is a great way to "unstick" yourself if you feel stuck on a design problem.
- Note: there are phases where you discuss with others—in principle, you can do this <u>on your own</u>.
- But, one thing to remember is that it is always valuable to discuss the sketches with others—forces you to communicate something, and forces you to be concrete.

START ON YOUR PROJECT!

Remaining time (if there is any)

ACKNOWLEDGEMENTS

Slides in were inspired and adapted from slides by

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