I. Whats is it ?

II. Why do we visualize ?

III. Visualisation Functions

IV. Starting to explore with datavis

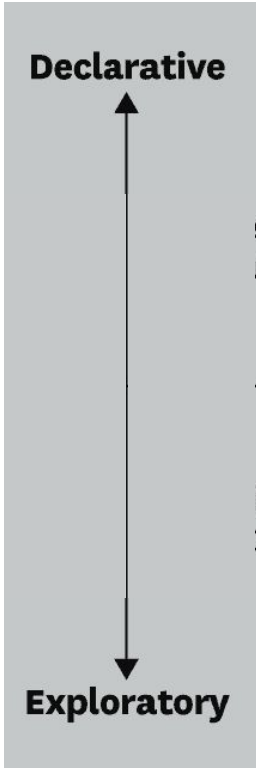
#1

HOW ?

I. Whats is it ?

II. Why do we visualize ?

III. Visualisation Functions



#1

visualisation functions

chart type

as visual statistical tests to see relationships between variables in data

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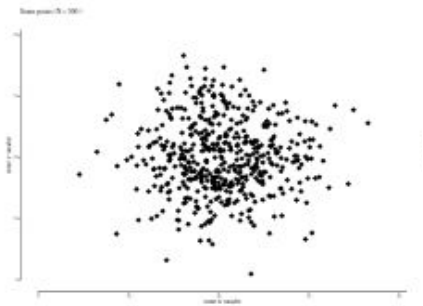

Source : Christophe Bontemps

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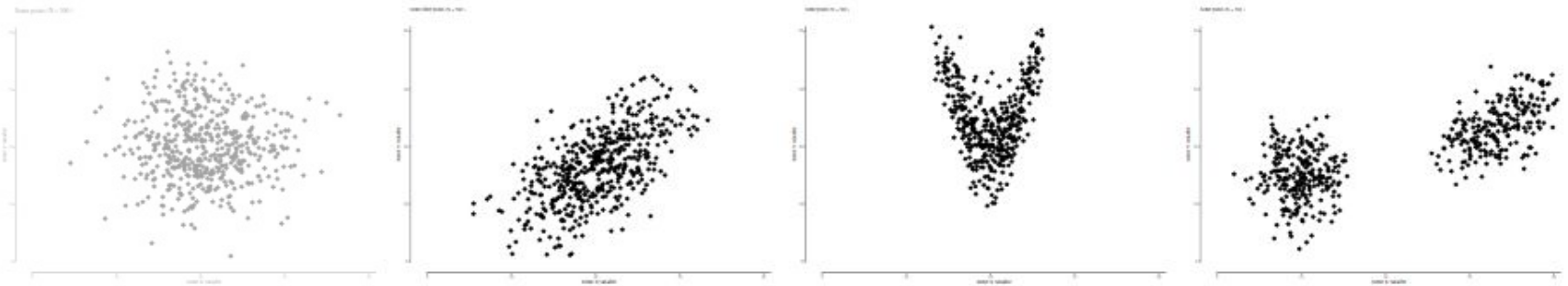

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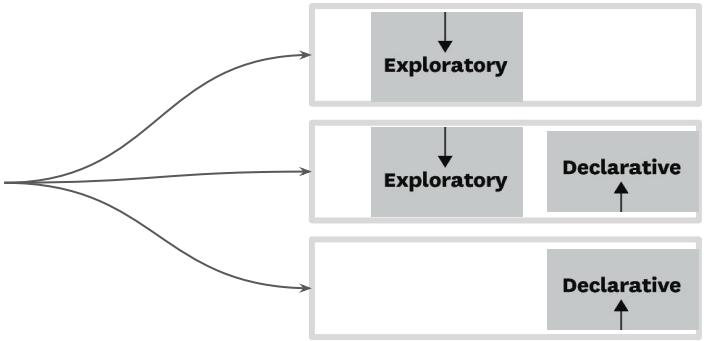
visualisation functions

chart type as visual statistical tests to see relationships between variables in data

data visualisation projects can be ...



#1

question — What are you trying to understand ?

data relationships — Are you looking for comparisons, relationships, distribution, composition ?

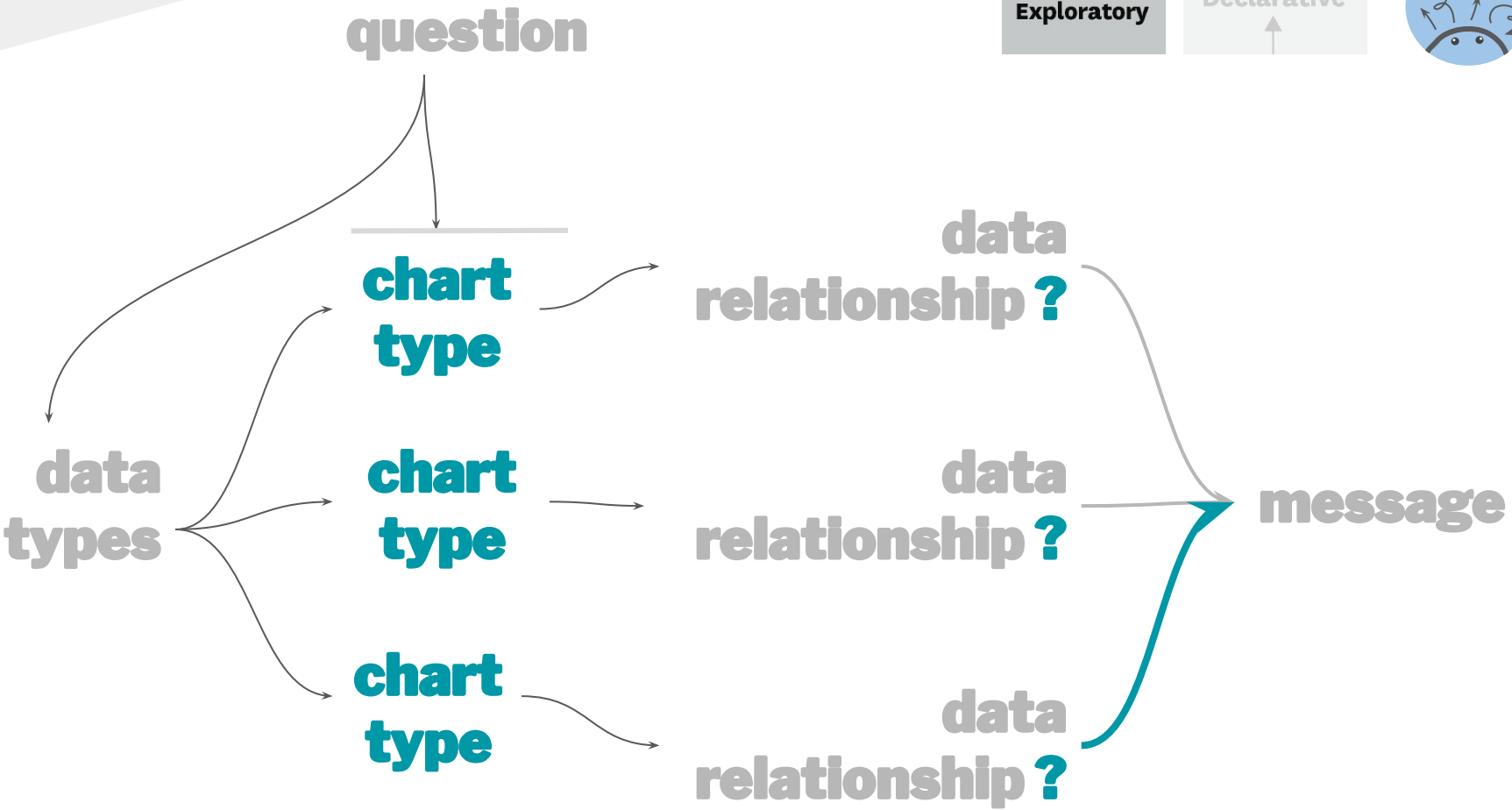
data types — Numerical, Categoric, Both, Maps, Network, Time Series

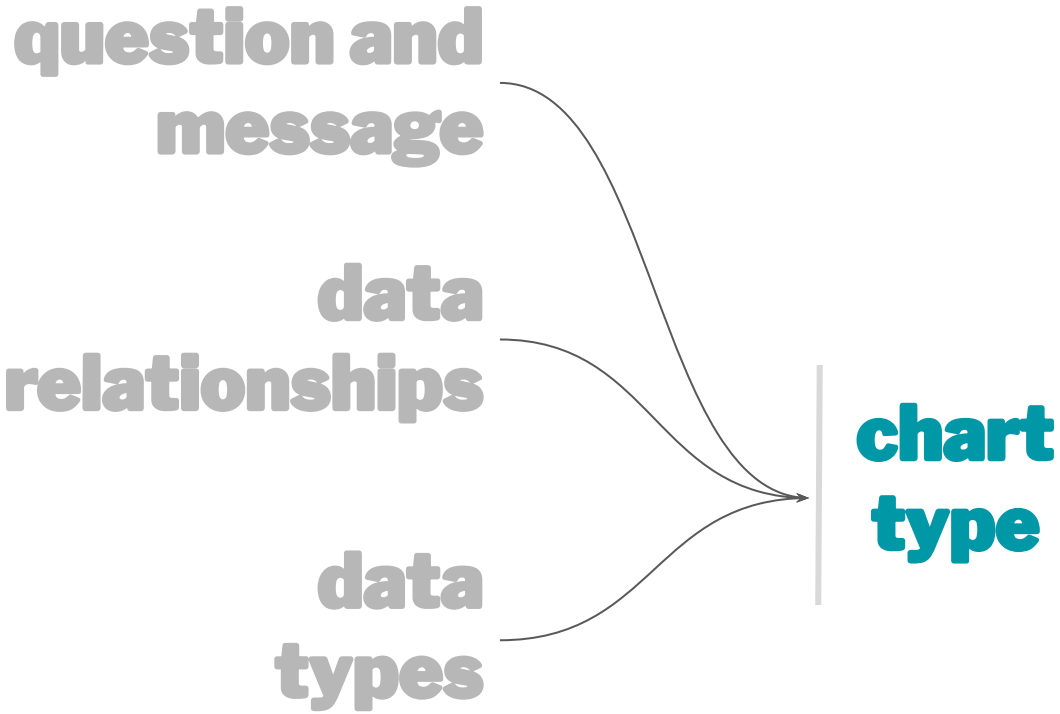
message — What do you want to show ?

#1

Exploratory

Declarative




question and message
data relationships
data types
chart type

Exploratory

Declarative

" There are no "good" nor "bad" graphics (...), there are graphics answering legitimate questions and graphics that do not answer question at all "

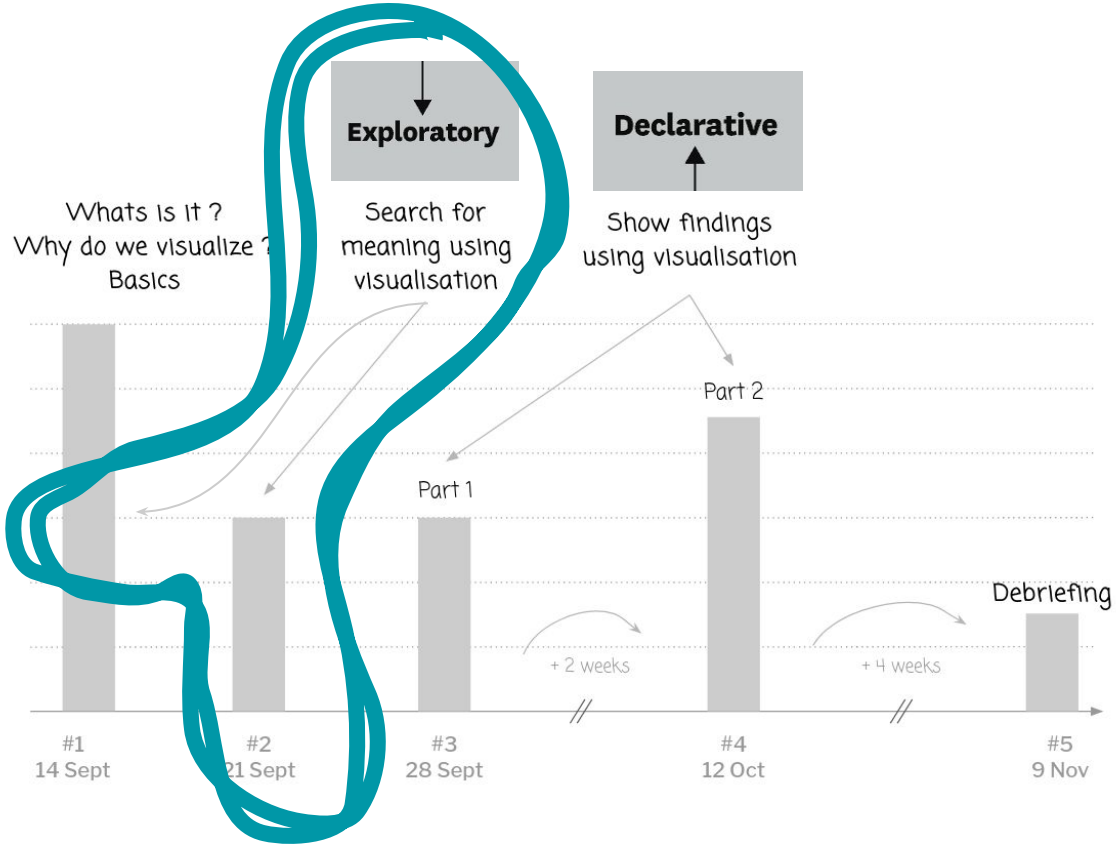
Bertin (1981)

question and message

data relationships

data types

chart type


Exploratory
Declarative
Whats is it ?
Why do we visualize ?
Basics
Search for
meaning using
visualisation
Show findings
using visualisation
Part 1
Part 2
Debriefing
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+ 4 weeks
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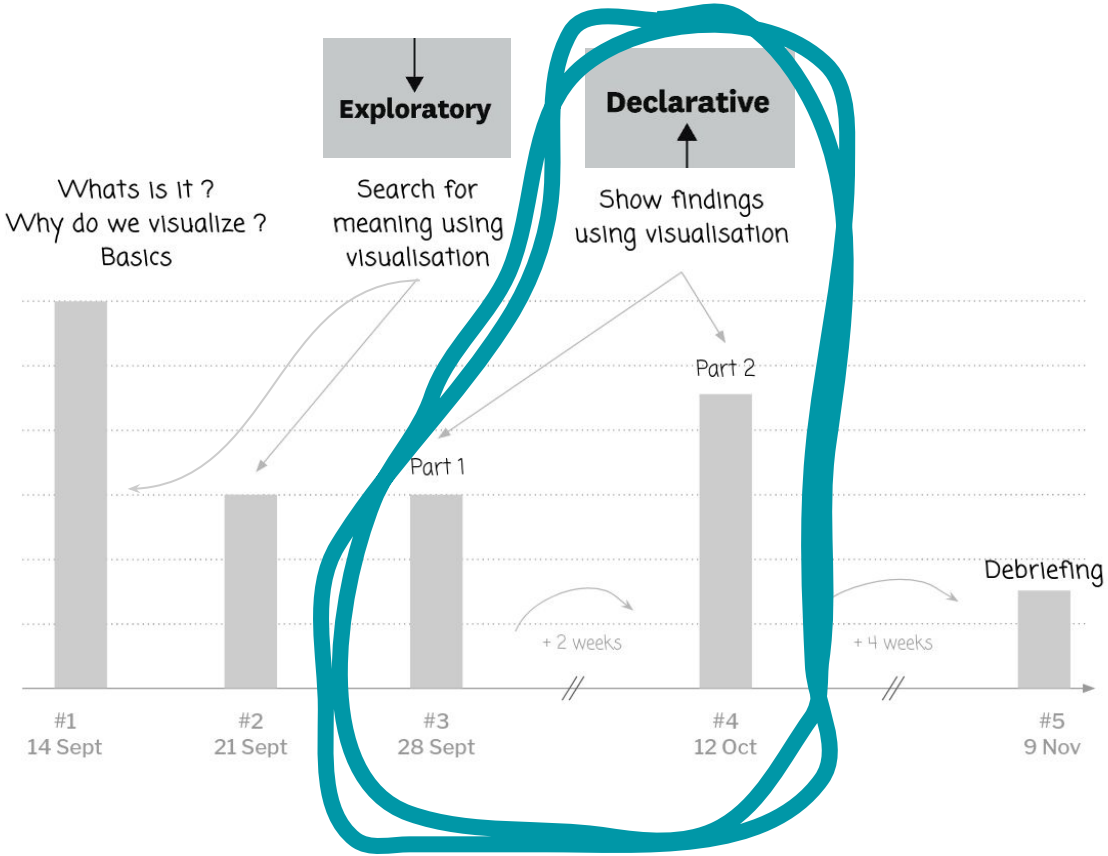
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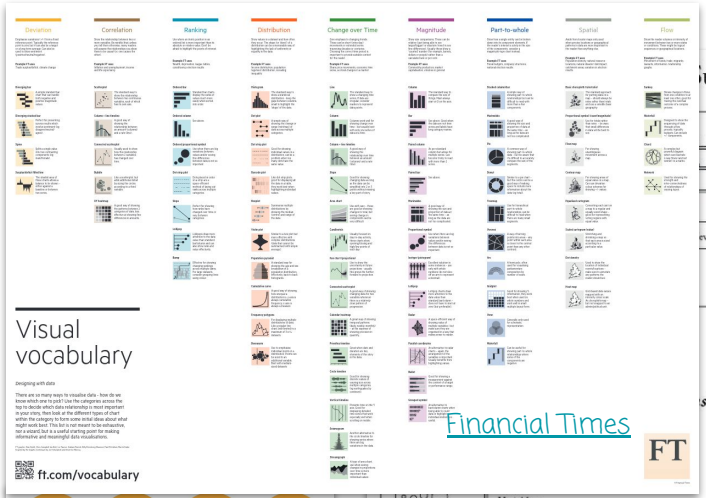
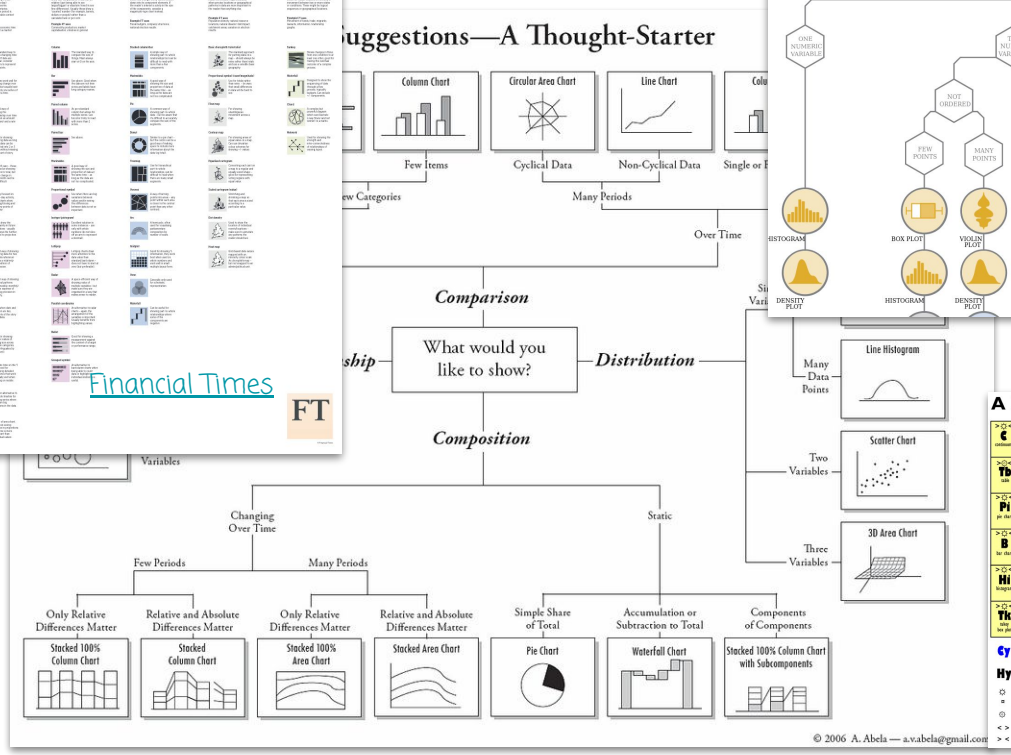
tools to choose chart types

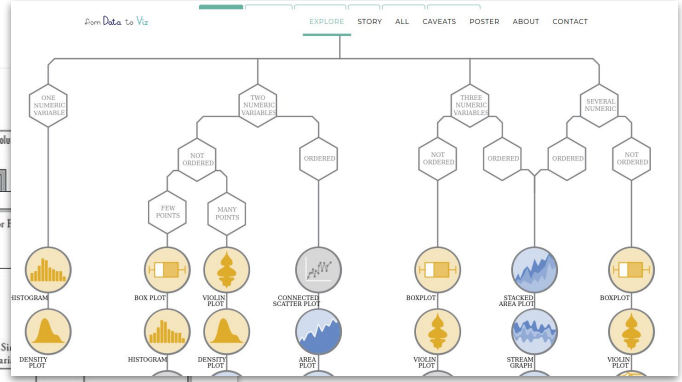


Financial Times

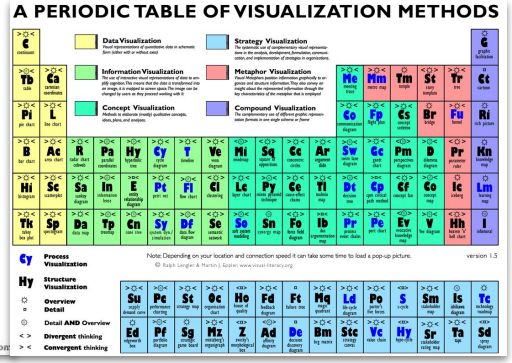
Datavis Catalogue



Andrew Abela



From data to viz - Yan Holtz



Periodic Table of Visualization Method

15 minutes

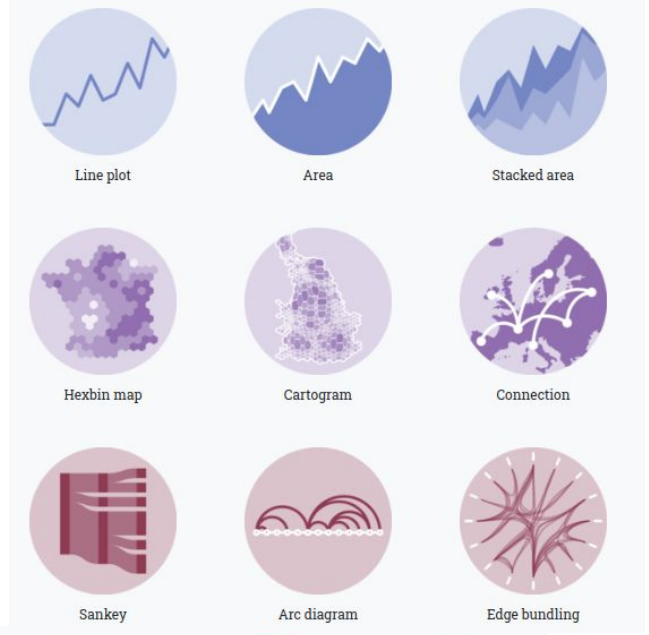
What charts do you know ?

- Know how to read
- Have already done

#1

Know how to read

Have already done



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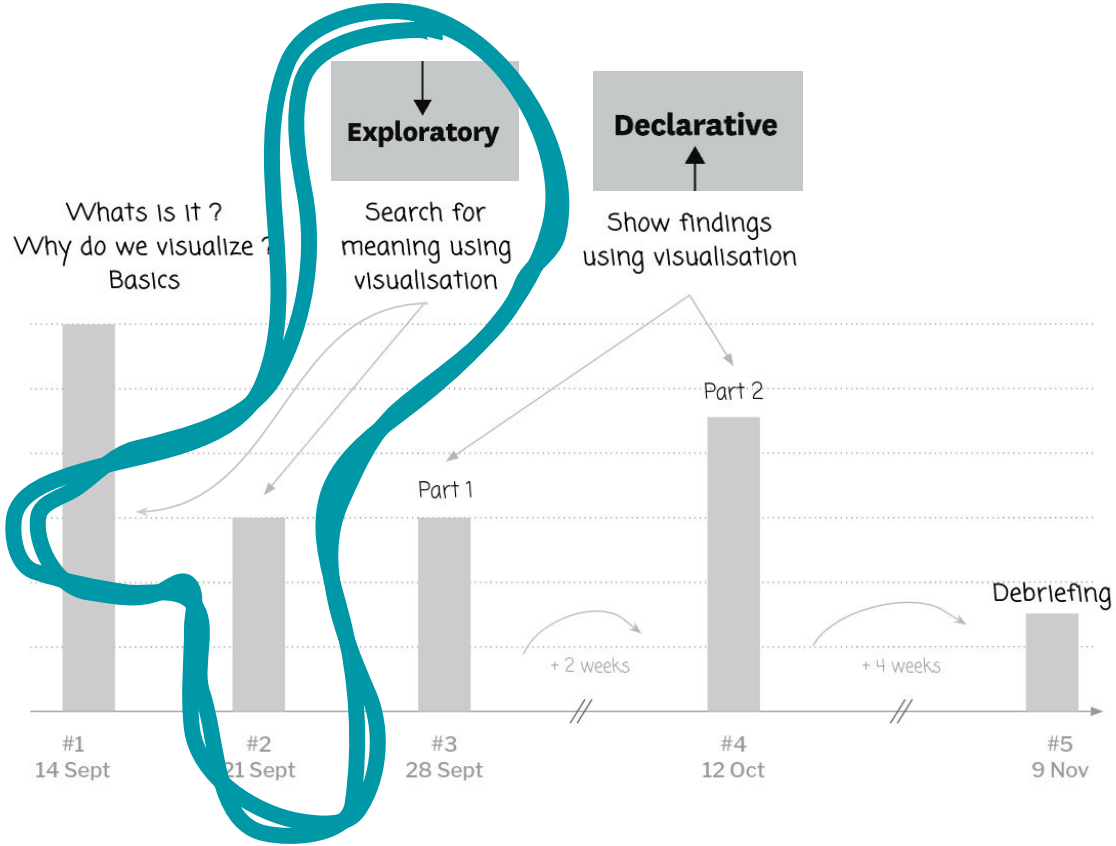
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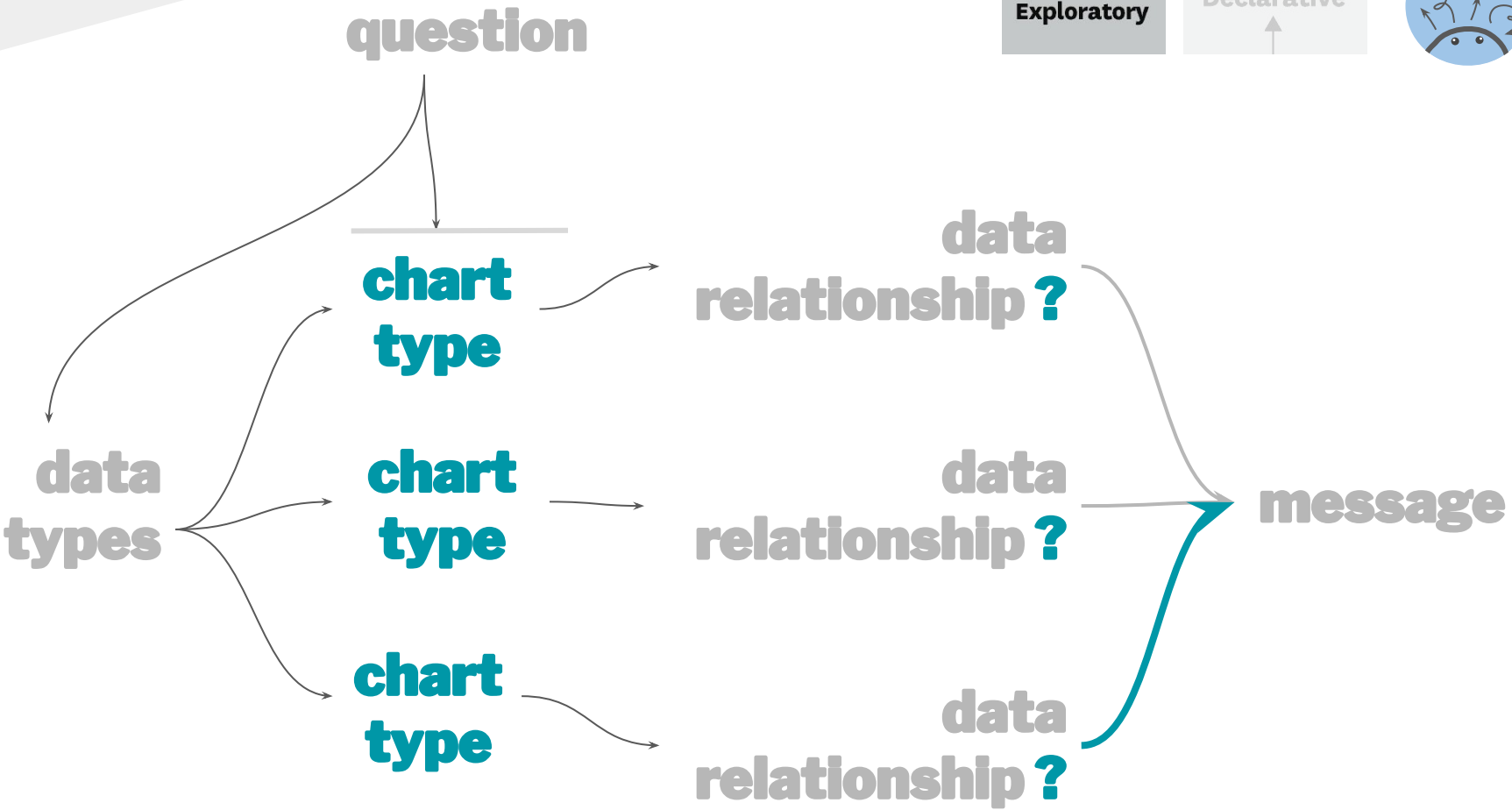
Declarative



WAIT BUT WHY VISUALIZE WHEN YOU HAVE STATS ?

```
X Mean:  54.26
Y Mean:  47.83
X SD   :  16.76
Y SD   :  26.93
Corr.  :  -0.06
```

Source : Same Stats, Different Graphs: Generating Datasets with Varied Appearance and Identical Statistics through Simulated Annealing

Exploratory

Declarative

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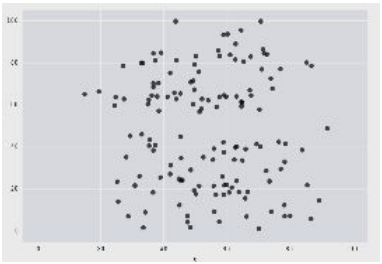

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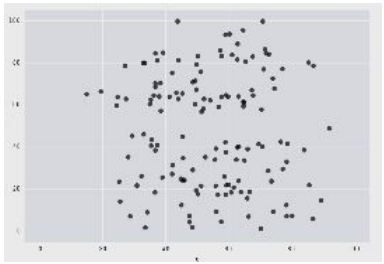

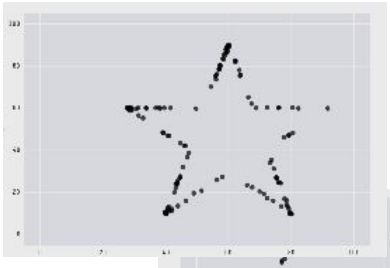

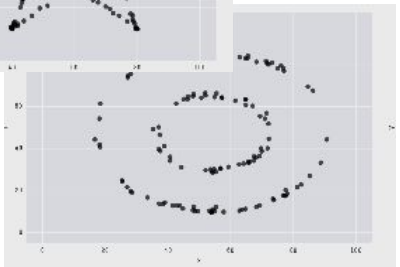

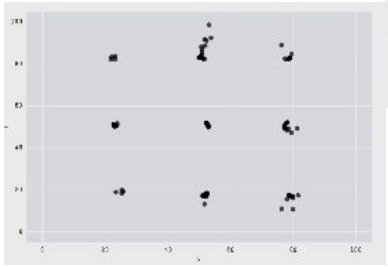

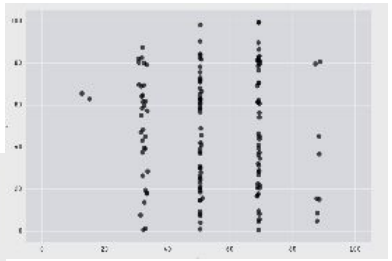

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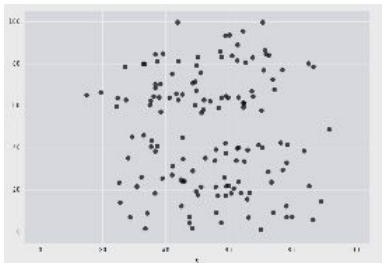
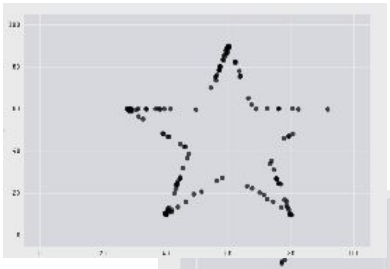
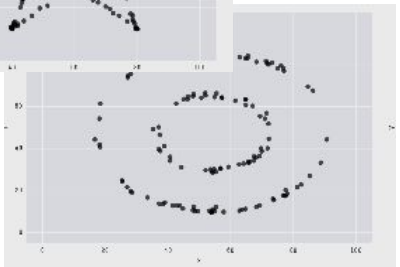
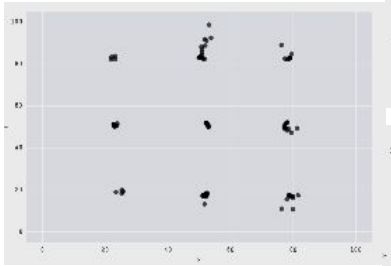
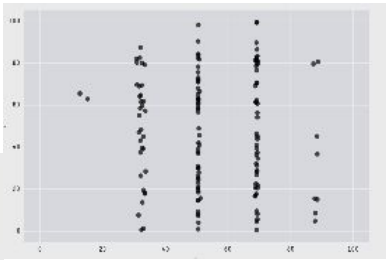
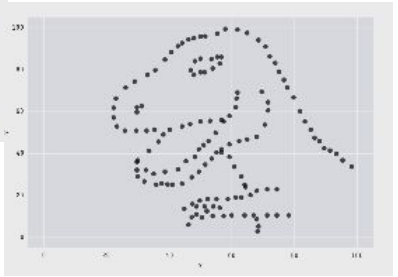












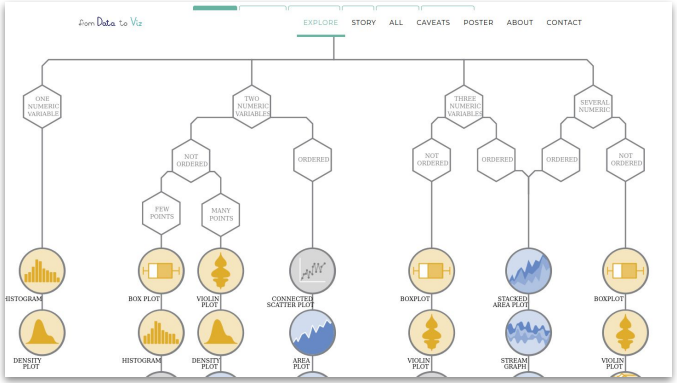
Source : Same Stats, Different Graphs: Generating Datasets with Varied Appearance and Identical Statistics through Simulated Annealing

1h 30

Let's do our first graphs and explore chart types and functions !

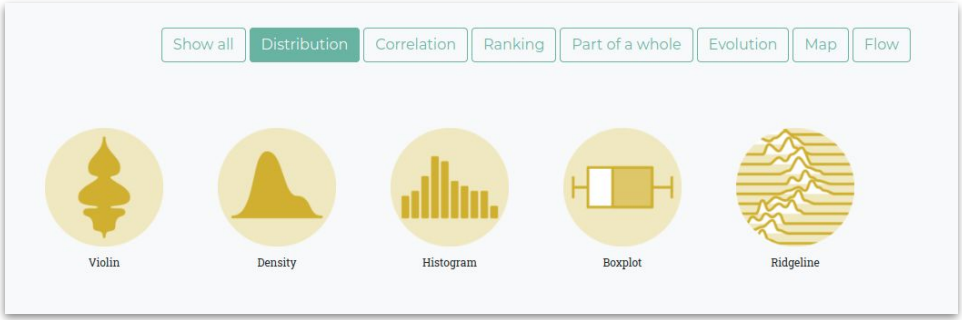
World Happiness Report up to 2020
Bliss scored agreeing to financial, social, etc.

data types



data relationship

chart type



Source : From data to viz - Yan Holtz, World Happiness Report and tutorials from Kaggle

Let's do our first graphs and explore chart types and functions !

Preliminary : tools info & environment setup

Step 1 : Context and data overview

Step 2 : Exploring each variable

Step 3 : Exploring variables relationships

1h 15

Step 4 : Finally, to be more critical

15 minutes

data types

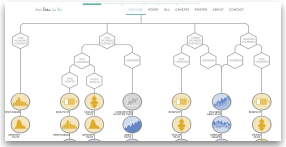


chart type

data relationship

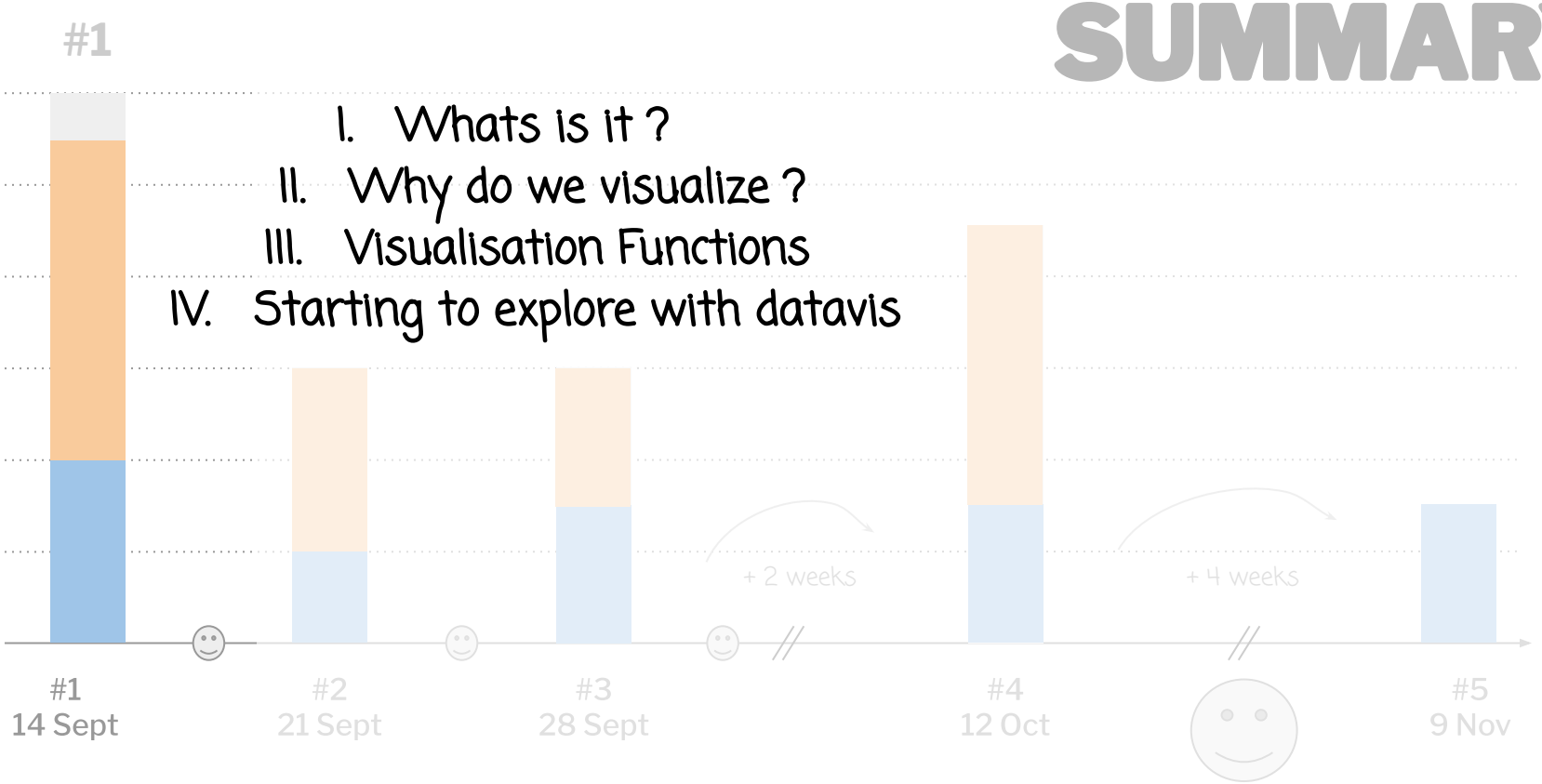
World Happiness Report up to 2020

Bliss scored agreeing to financial, social, etc.

jupyter seaborn

Source : From data to viz - Yan Holtz, World Happiness Report and tutorials from Kaggle

DAY SUMMARY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HOMEWORK

Overview

Skills : literacy, critical overview

Time : ~ 1 hour

Submission via Moodle

any kind of submission (text, drawing ..) and file (.doc, .pdf ...)

Practice

1 - Choose one visualisation you like or find interesting from the following source or from somewhere else

2 - How ? How do you think this chart/visualisation was made ?

Encoding

Chart choice

3 - Why ? What do you think are the goal(s) of this chart/visualisation ?

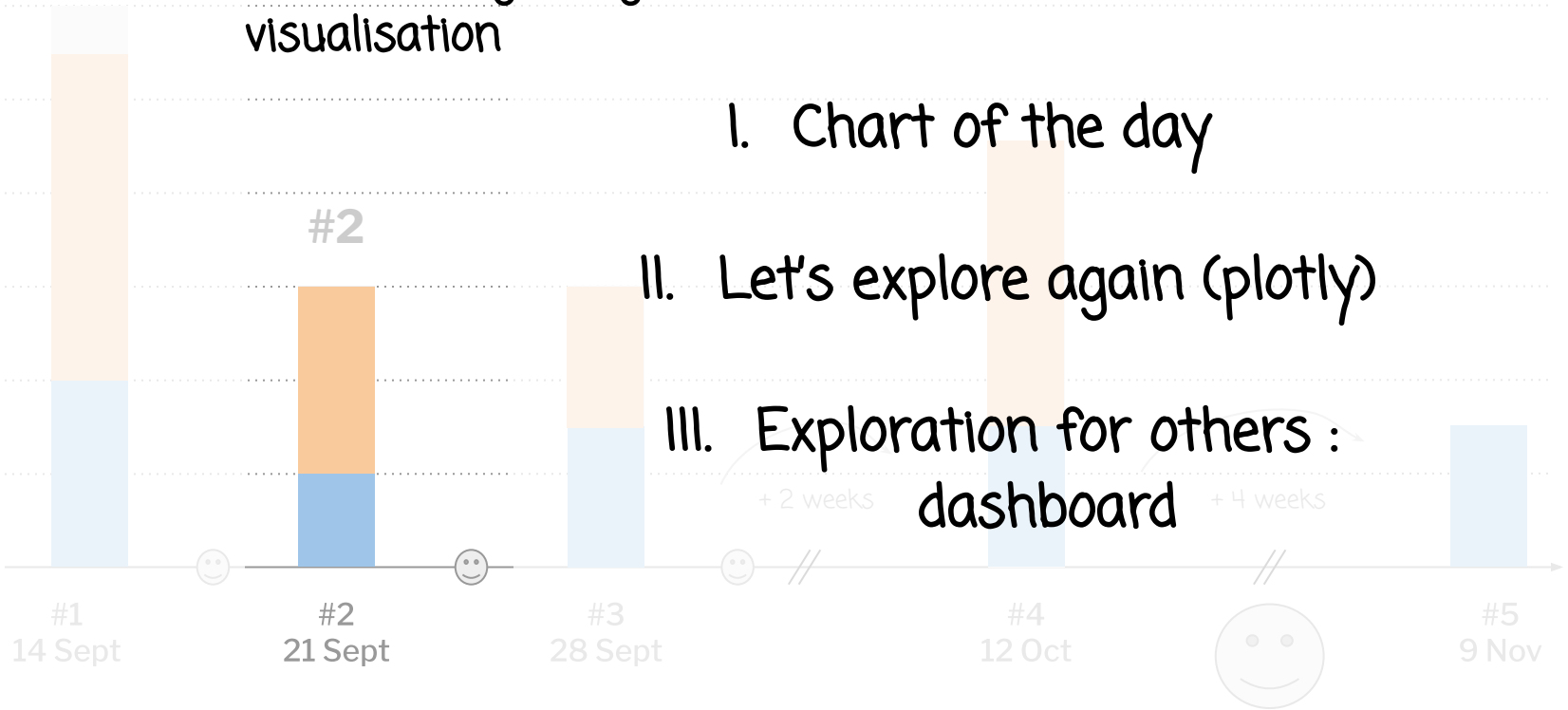
4 - Reflect

Thibault Nidelet

Chargé de recherche à l'INRA

WHAT'S NEXT

Search for meaning using visualisation



I. Chart of the day

II. Let's explore again (plotly)

III. Exploration for others : dashboard