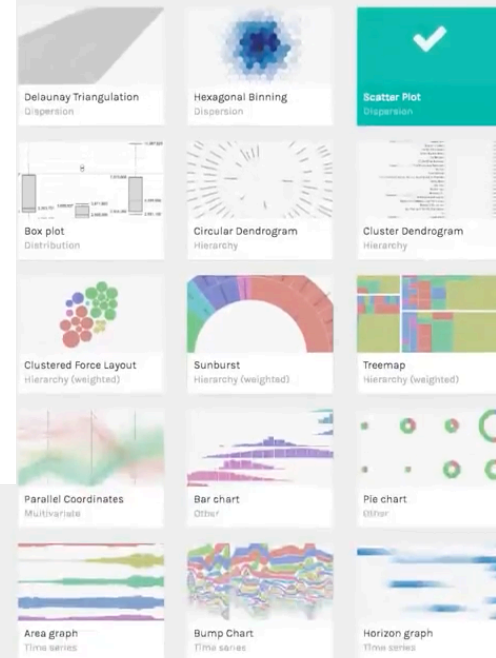


Carlo de Gaetano

12-07-2019

VISUALISATION WITH RAW GRAPHS



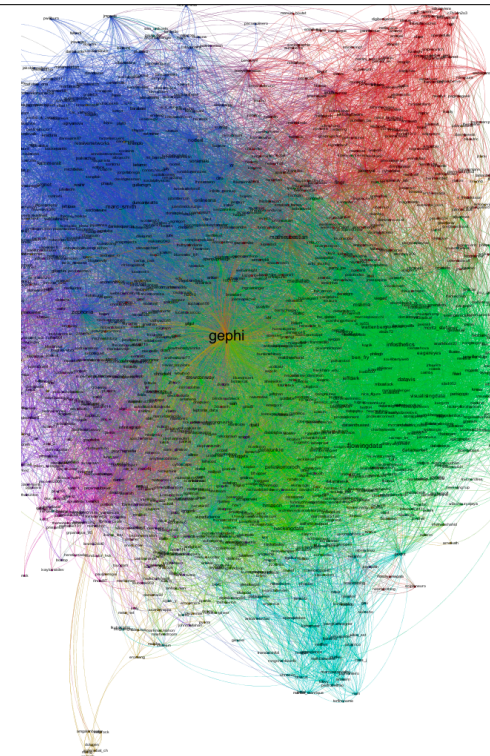
**BIT.LY/
DSSRAWGRAPH**

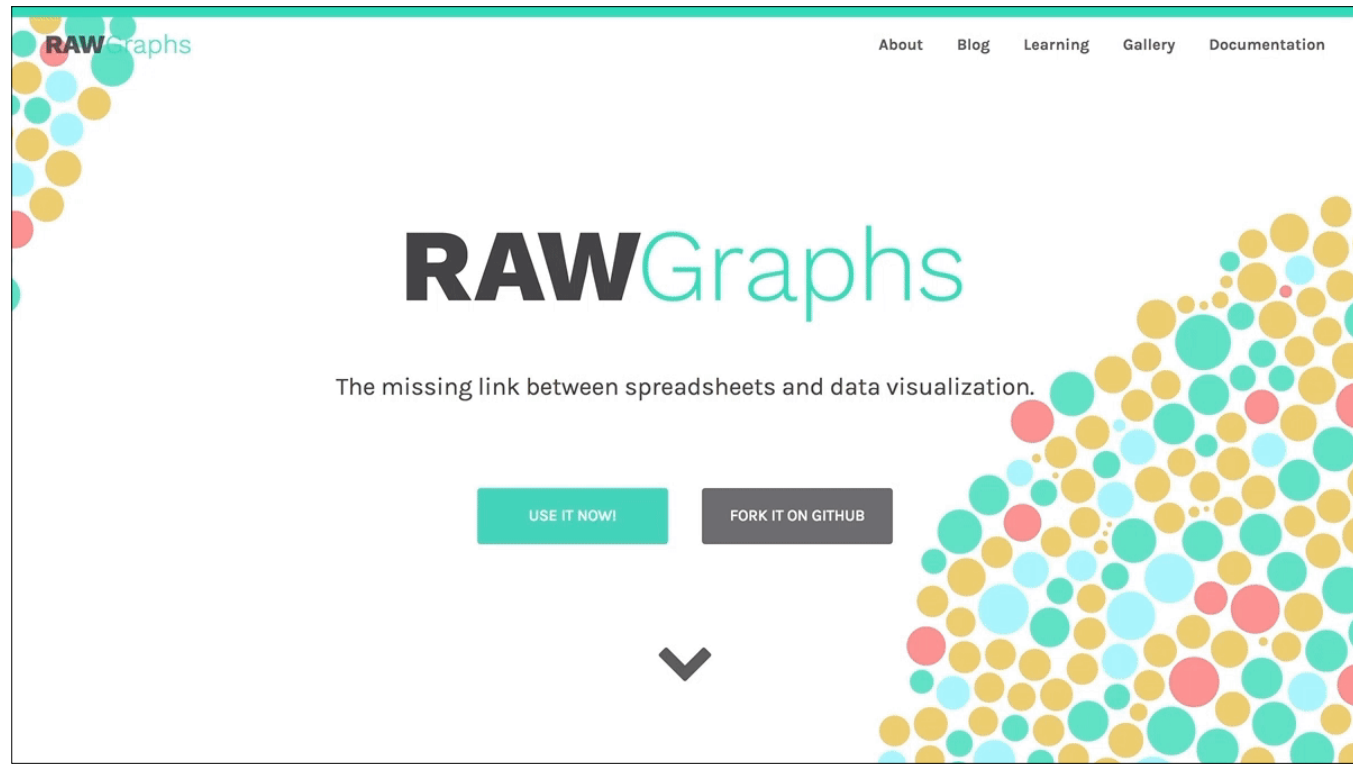


WHAT IS RAW GRAPHS?

RAW Graphs is an open source data visualization framework built with the goal of making the visual representation of complex data easy for everyone.

rawgraphs.io





WHAT IS RAW GRAPHS?

Data curation

- Excel
- Google Spreadsheets
- OpenRefine
- DataWrangler

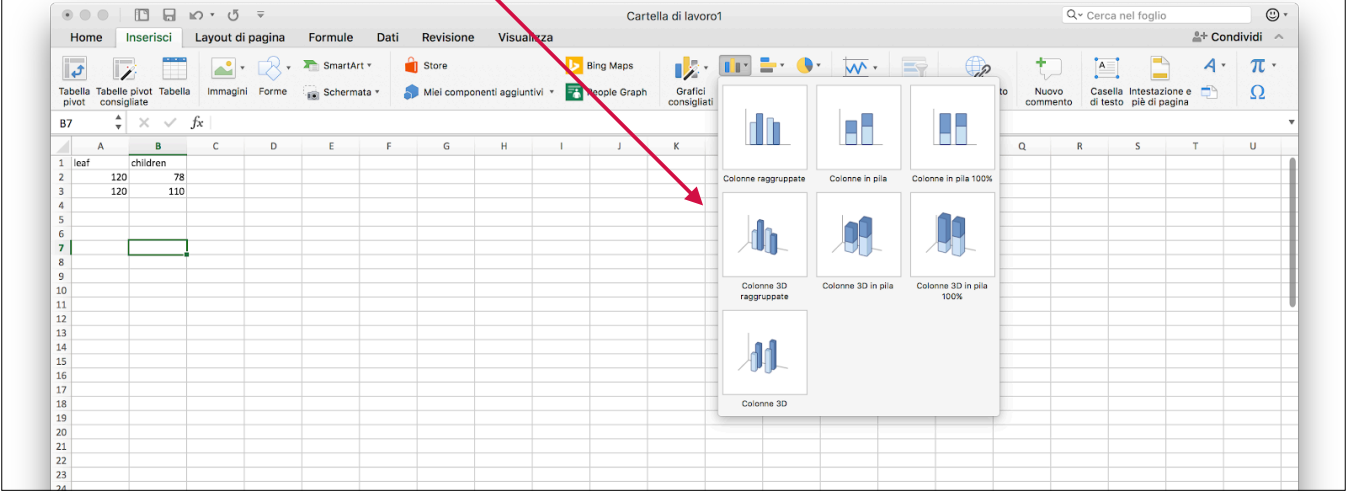
Data visualisation

- Maps (mapbox, Qgis)
- Networks (Gephi, Cytoscape)
- Other graphs (Excel, Illustrator, Tableau*)



WHEN IS IT USEFUL?

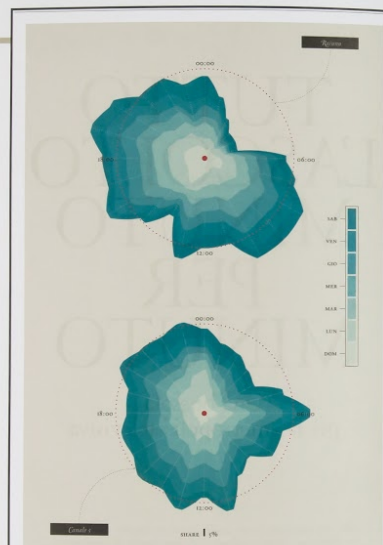
WHEN THIS ISN'T ENOUGH.



WHEN IS IT USEFUL?

When it's necessary to intervene on the visualisation.

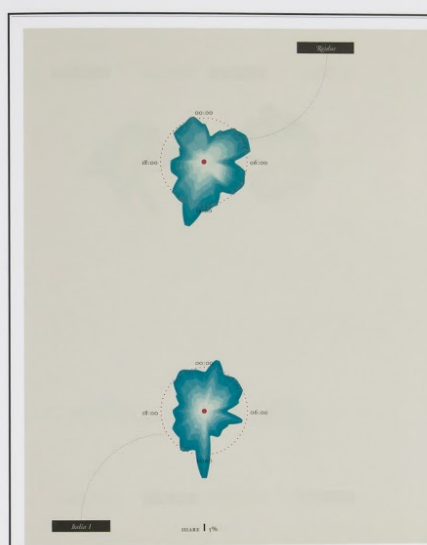




SETTE GIORNI IN TV

Che forma assumono gli ascolti delle reti? Proviamo a vedere la collocazione degli spettatori, ora dopo una giornata dopo giorno. Qui sopra, le animazioni: Raiuno entra al fianco Canale 5 più regolare, con una punta per le news della mattina.

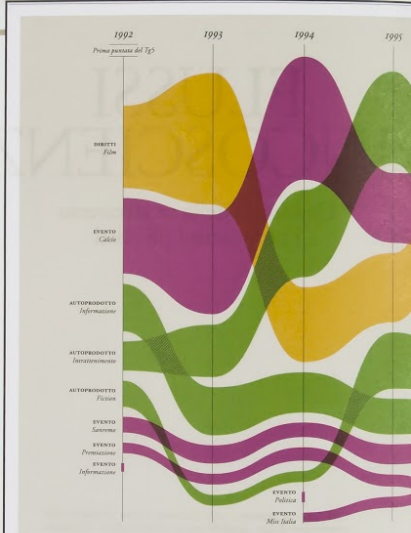
114



Fonte: dati Auditel, area indicata con oggetti nella cartina sopra il 1°-12° febbraio 2010

Continuano le grandi reti: RaiDue e Italia 1, anche se più piccole, aggiungono elementi alla nostra tassonomia. La prima è forte al mattino, mentre la seconda si riprende a mezzogiorno e continua a crescere nelle ore pomeridiane. Il giovane, si sa, amato dormire fino a tardi...

115



1992 - 1995

La composizione dei flussi dei tre programmi più visti ogni anno attraverso il tipo di produzione e i generi mette in risalto come, nei primi anni Novanta, i film siano il genere di maggiore successo: il cinema e lo sport in televisione sono investimenti sicuri.



1996 - 2000

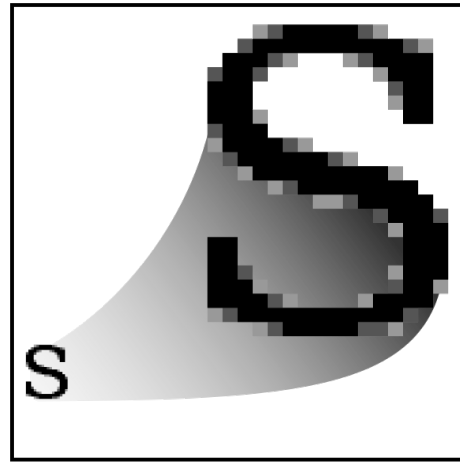
Inizia a fare capolino Servizi da notizie, presenza ormai costante. Mentre i film devono varare alle stagioni primaverile e autunnale, da *Schindler's List* a *Rambo* e *Forrest Gump*. Complice l'arrivo del Globetex, persino la Santa Messa diventa una vera e propria hit.

RASTER

VS.

VECTORS

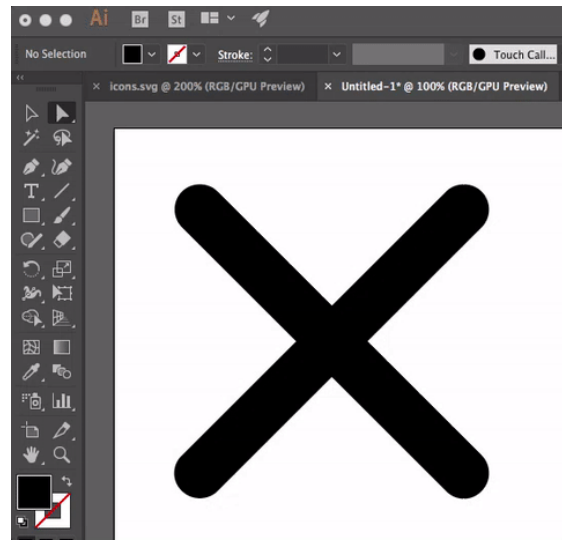


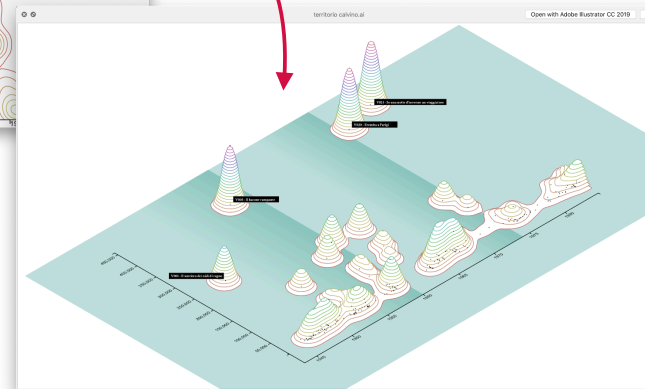


Raster
(.jpeg, .gif, .png)

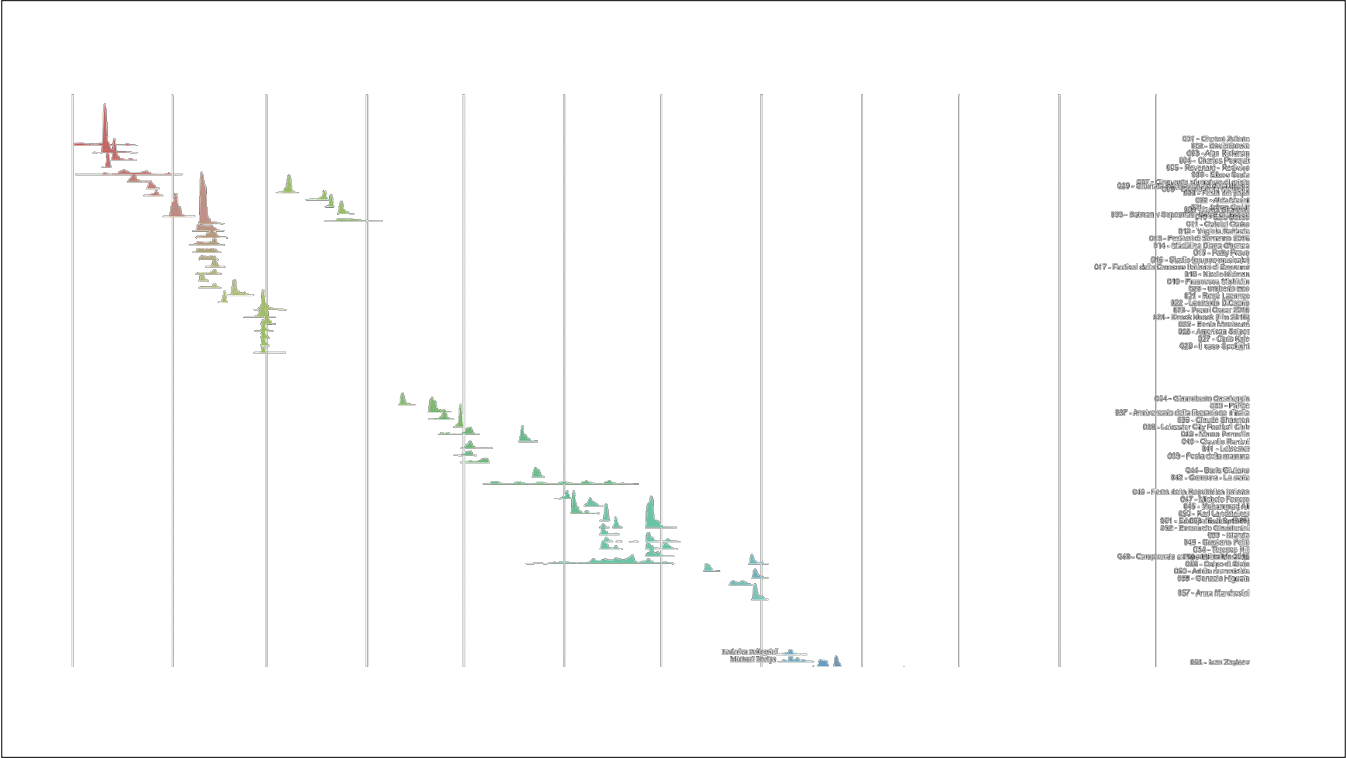


Vector
(.svg)



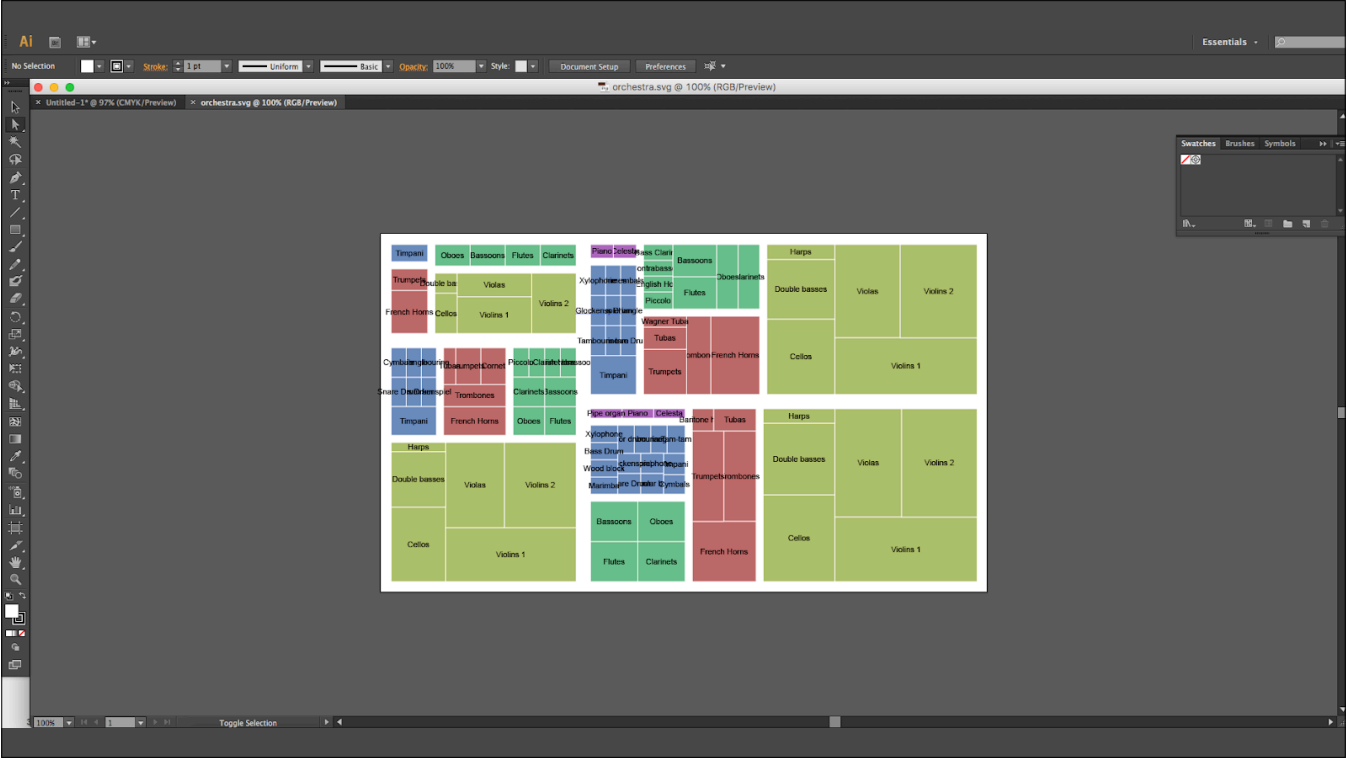


THE NEED OF NEW SPECIFIC TOOLS



THE NEED OF NEW SPECIFIC AND INTUITIVE TOOLS





FEELING COMFORTABLE

- Select a dataset
- Copy and paste it in RAWGraphs
- Select a visual model
- Map data on the available visual variables
- Export the result in an open format
- Modify it with a vector graphics software



HOW TO CHOOSE A VISUAL MODEL?

Choose a Chart

Scatter Plot

Dispersion

A scatter plot, scatterplot, or scattergraph is a type of mathematical diagram using Cartesian coordinates to display values for two variables for a set of data. The data is displayed as a collection of points, each having the value of one variable determining the position on the horizontal axis and the value of the other variable determining the position on the vertical axis. This kind of plot is also called a scatter chart, scattergram, scatter diagram, or scatter graph.



Convex Hull
Dispersion



Voronoi Tessellation
Dispersion



Circle Packing
Hierarchy (weighted)



Alluvial Diagram
Multi categorical



Gantt Chart
Time chunks



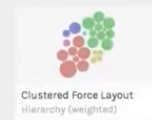
Area graph
Time series



Delaunay Triangulation
Dispersion



Box plot
Distribution



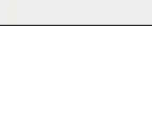
Clustered Force Layout
Hierarchy (weighted)



Parallel Coordinates
Multivariate



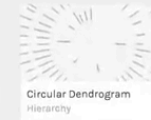
Area graph
Time series



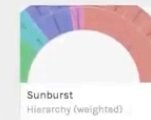
Bump Chart
Time series



Hexagonal Binning
Dispersion



Circular Dendrogram
Hierarchy



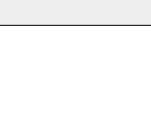
Sunburst
Hierarchy (weighted)



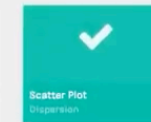
Bar chart
Other



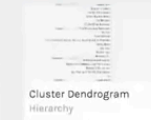
Bump Chart
Time series



Horizon graph
Time series



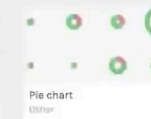
Scatter Plot
Dispersion



Cluster Dendrogram
Hierarchy



Treemap
Hierarchy (weighted)



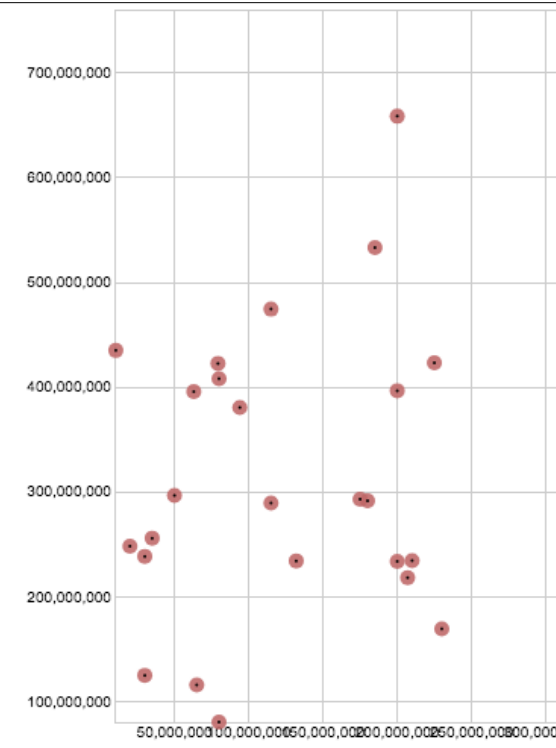
Pie chart
Other



Horizon graph
Time series

DISPERSIONS

- **Scatterplot**
- **Hexagonal Binning**
- **Voronoi Tessellation**
- **Delaunay Triangulation**
- **Convex Hull**



HIERARCHIES

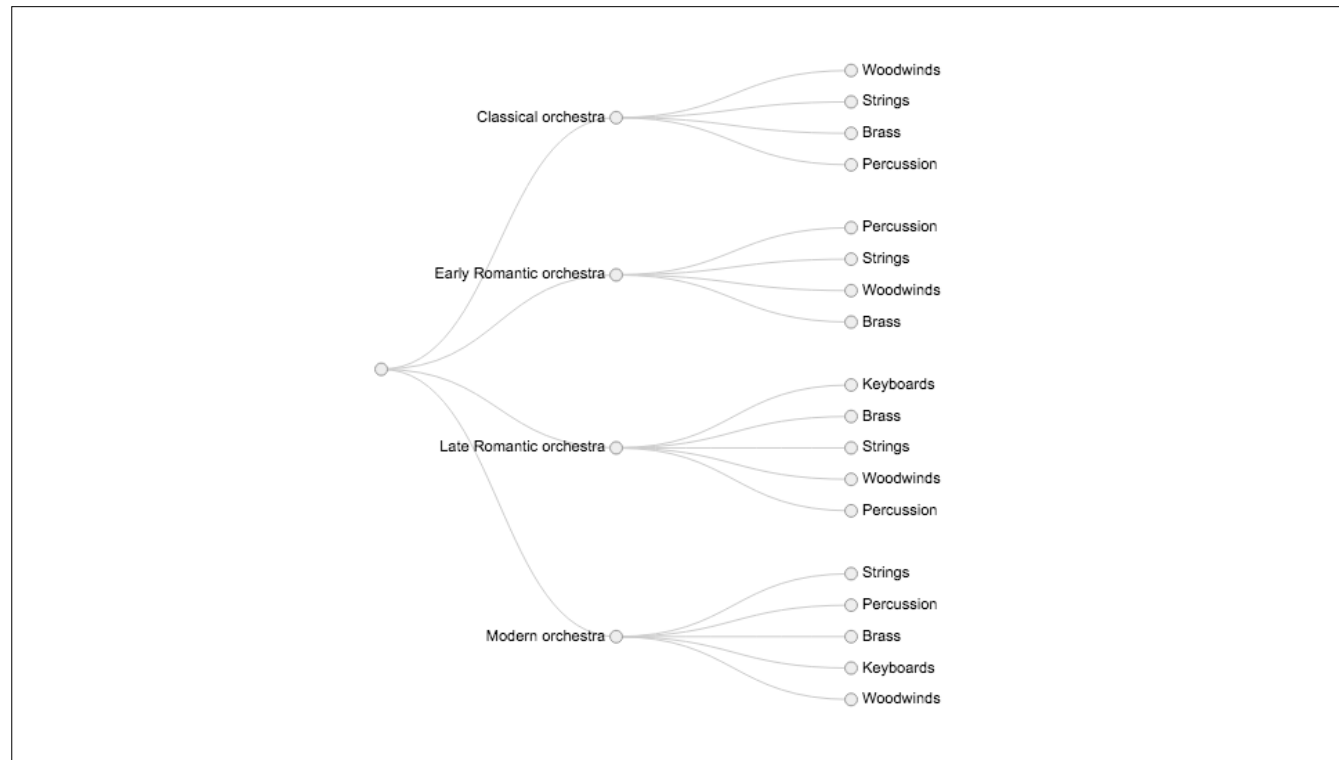
Not weighted

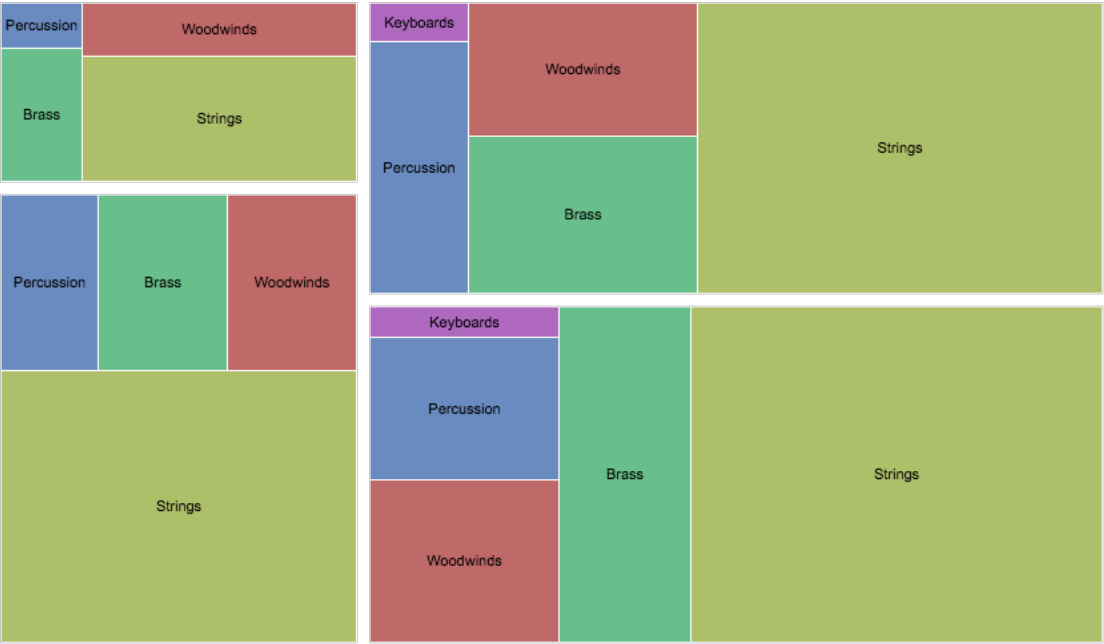
- Circular Dendrogram
- Cluster Dendrogram

Weighted

- Treemap
- Circle packing
- Clustered Force Layout
- Sunburst







TIME

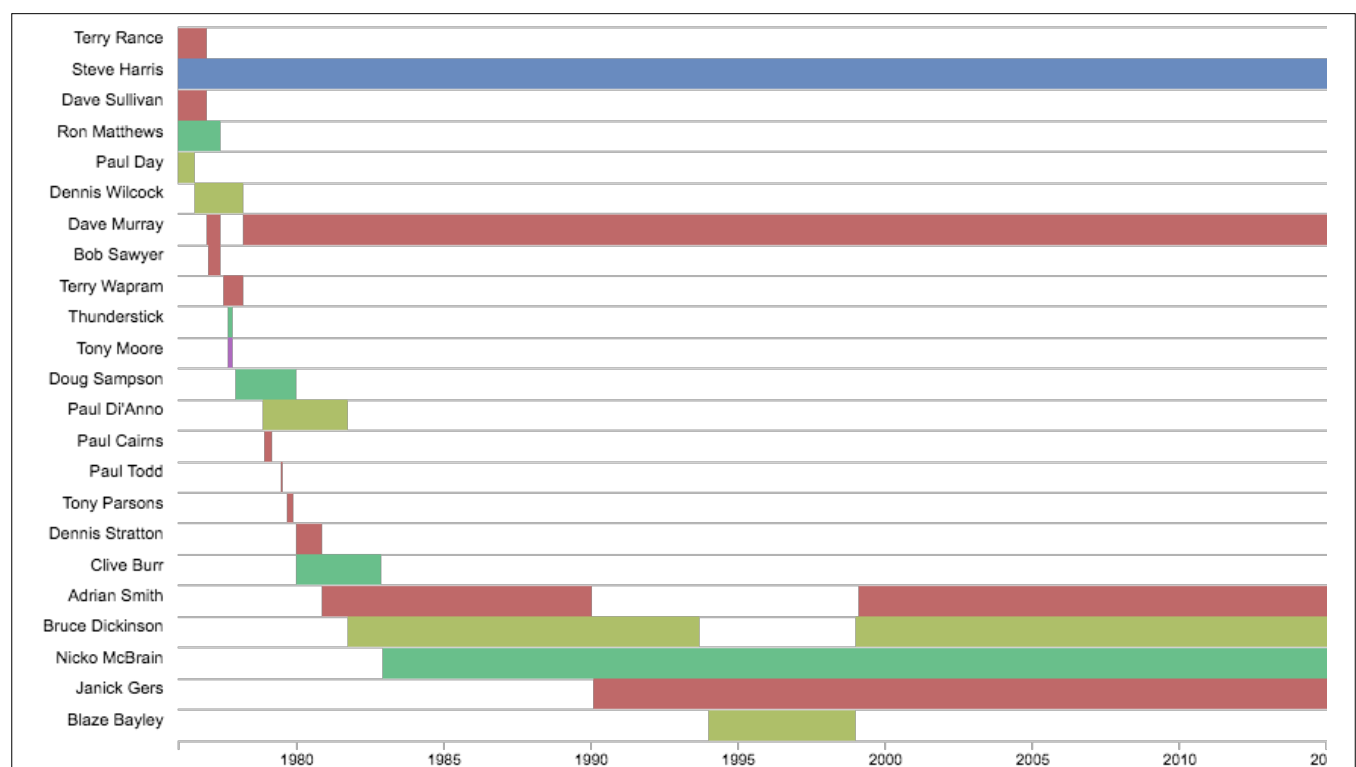
Time chunks

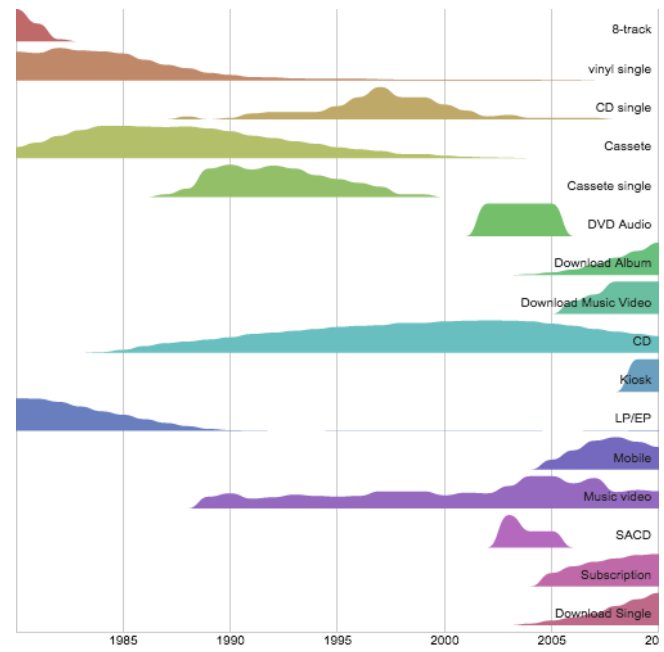
- Gantt chart

Time series

- Area graph
- Horizon graph
- Steamgraph
- Bump chart







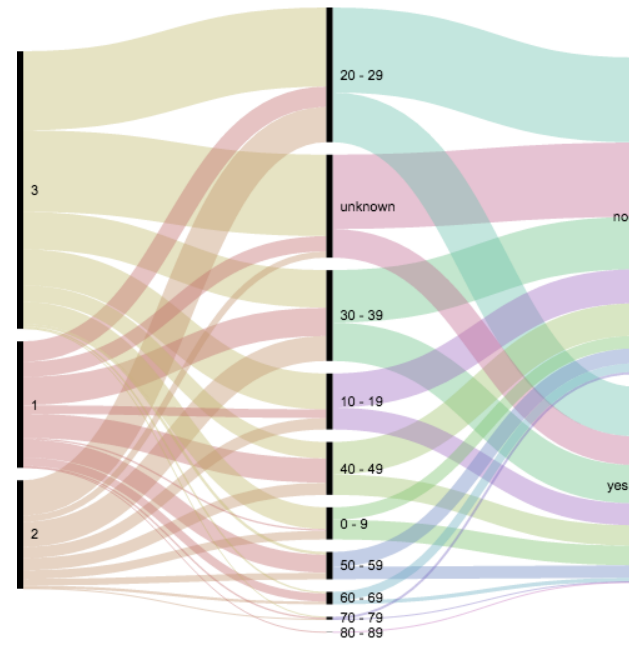
MULTICATEGORICAL & MULTIVARIATE

Multicategorical

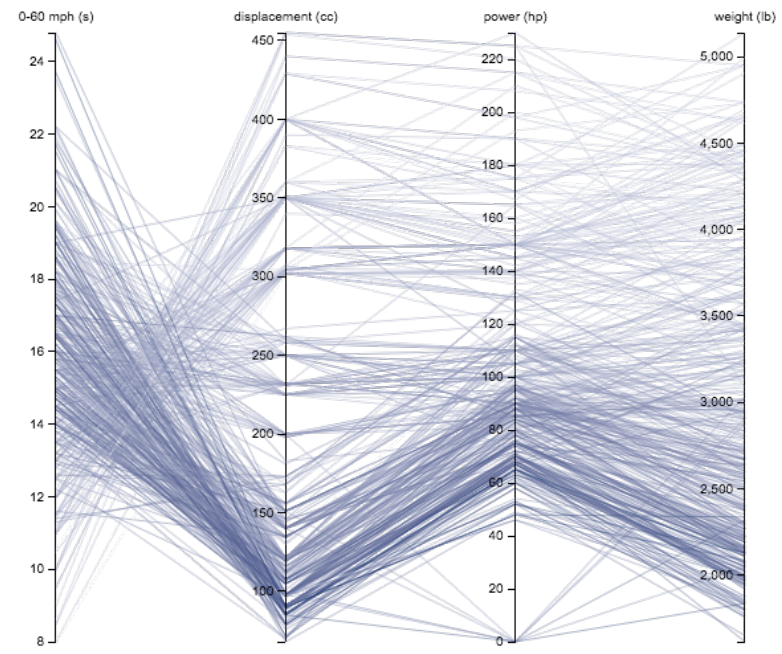
- Alluvial Diagram (Fineo)

Multivariate

- Parallel Coordinates



Ordinal Scales



Linear Scales

OTHERS

Distribution

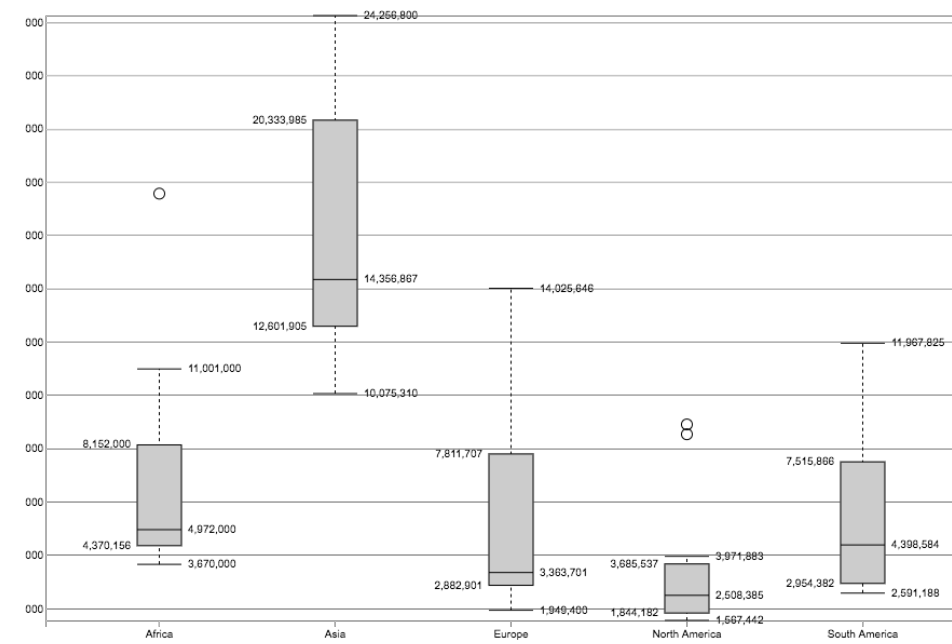
- Box plot

Others

- Bar chart
- Pie chart







WHICH DATA?

MATRIX

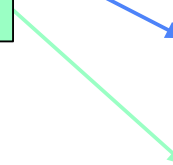
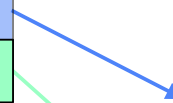
("Wide" or "Unstacked")

Person	Age	Weight
Bob	32	128
Alice	24	86
Steve	64	95

LISTS

("Narrow" or "Stacked")

Person	Variable	Value
Bob	Age	32
Bob	Weight	128
Alice	Age	24
Alice	Weight	86
Steve	Age	64
Steve	Weight	95



RESOURCES

Github

- <https://github.com/densitydesign/raw/wiki>

Tutorial

- <http://rawgraphs.io/learning/>

Friendly Tips

- Use points to describe decimals.
- Don't use points to describe thousands.
- Use the American date format (yyyy.mm.dd)



STEP BY STEP EXAMPLE

LOAD YOUR DATA

Open your data set

- For example:

https://docs.google.com/spreadsheets/d/1g3mYU-0ada18HjCtIm_t6il_VPo-rTvnsVZV4w-Q6P8/edit#gid=0

Copy & Paste in RAWGraphs

Load your data



-  Paste
-  Upload a file
-  From URL
-  Try our samples

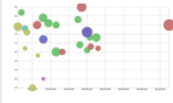
```
1 orchestra_type group instrument number
2 Modern orchestra - Brass Baritone horn -1
3 Early Romantic orchestra - Woodwinds Bass Clarinet -1
4 Late Romantic orchestra Woodwinds Bass Clarinet -1
5 Early Romantic orchestra - Percussion Bass Drum -1
6 Late Romantic orchestra Percussion Bass Drum -1
7 Modern orchestra - Percussion Bass Drum -1
8 Classical orchestra Woodwinds Bassoons -2
9 Early Romantic orchestra - Woodwinds Bassoons -2
10 Late Romantic orchestra Woodwinds Bassoons -3
11 Modern orchestra - Woodwinds Bassoons -4
12 Late Romantic orchestra Keyboards Celesta 1
13 Modern orchestra Keyboards Celesta 1
14 Classical orchestra Strings Cellos -2
15 Early Romantic orchestra - Strings Cellos -8
```

101 records in your data have been successfully parsed!

Your data seems ready to go. But if you want to stack it anyway, click here

Choose a Chart

Scatter Plot
Dispersion



A scatter plot, scatterplot, or scattergraph is a type of mathematical diagram using Cartesian coordinates to display values for two variables for a set of data. The data is displayed as a collection of points, each having the value of one variable determining the

Convex Hull
Dispersion



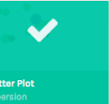
Delaunay Triangulation
Dispersion



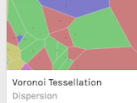
Hexagonal Binning
Dispersion



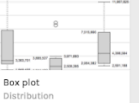
Scatter Plot
Dispersion



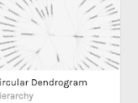
Voronoi Tessellation
Dispersion



Box plot
Distribution



Circular Dendrogram
Hierarchy



Cluster Dendrogram
Hierarchy



SELECT YOUR VISUAL MODEL

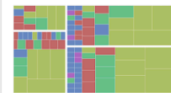
**Click on the visual model you
want to use, for example:**

Treemap

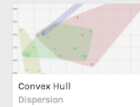


Choose a Chart

Treemap
Hierarchy (weighted)



A space filling visualization of data hierarchies and proportion between elements. The different hierarchical levels create visual clusters through the subdivision into rectangles proportionally to each element's value. Treemaps are useful to represent the different proportion of nested hierarchical data structures. Based on <http://blocks.org/mbostock/4063582>



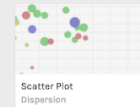
Convex Hull
Dispersion



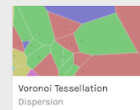
Delaunay Triangulation
Dispersion



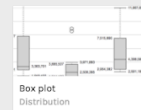
Hexagonal Binning
Dispersion



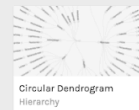
Scatter Plot
Dispersion



Voronoi Tessellation
Dispersion



Box plot
Distribution



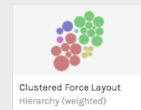
Circular Dendrogram
Hierarchy



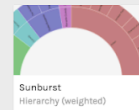
Cluster Dendrogram
Hierarchy



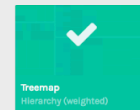
Circle Packing
Hierarchy (weighted)



Clustered Force Layout
Hierarchy (weighted)



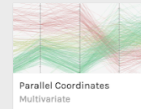
Sunburst
Hierarchy (weighted)



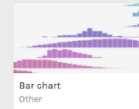
Treemap
Hierarchy (weighted)



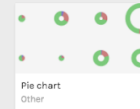
Alluvial Diagram
Multi categorical



Parallel Coordinates
Multivariate



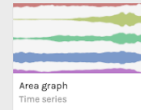
Bar chart
Other



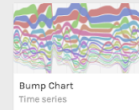
Pie chart
Other



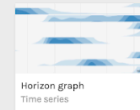
Gantt Chart
Time chunks



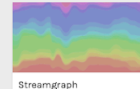
Area graph
Time series



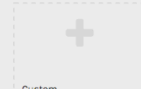
Bump Chart
Time series



Horizon graph
Time series



Streamgraph



Custom

MAP DIMENSIONS

On the left, you have the list of dimensions in your dataset.

On the right, you have the available visual variables.



HACK IT

On the bottom left corner, you can find the 'download' section.

Open the drop-down menu and select: "SVG".

Type the file name you want and click download.

Open it in Illustrator / other vector editors.

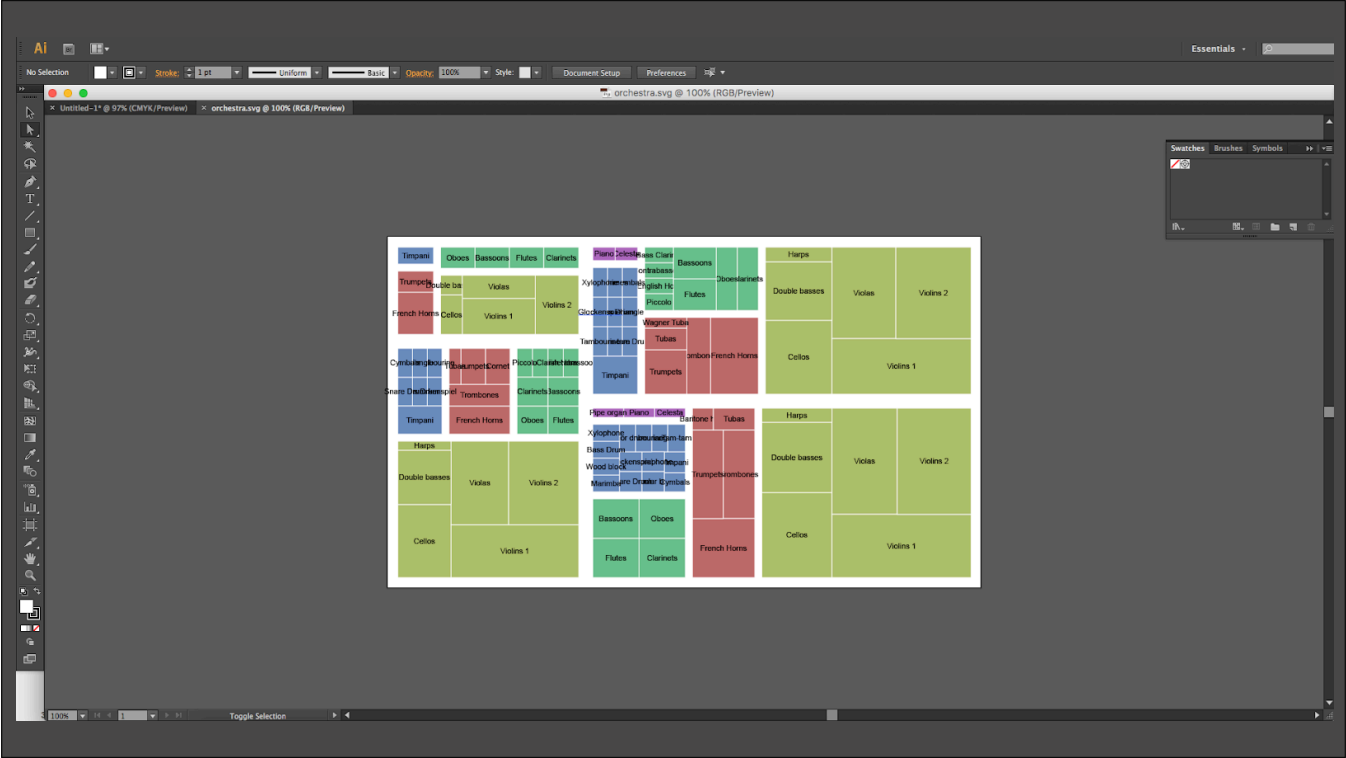
 Download

Choose type ▼

Vector graphics (svg)

Image (png)

Data model (json)



TRY IT OUT!

YOU TRANSFORM SOCIETY BY DESIGN





DIGITAL SOCIETY SCHOOL

WHERE CHANGE TAKES SHAPE

