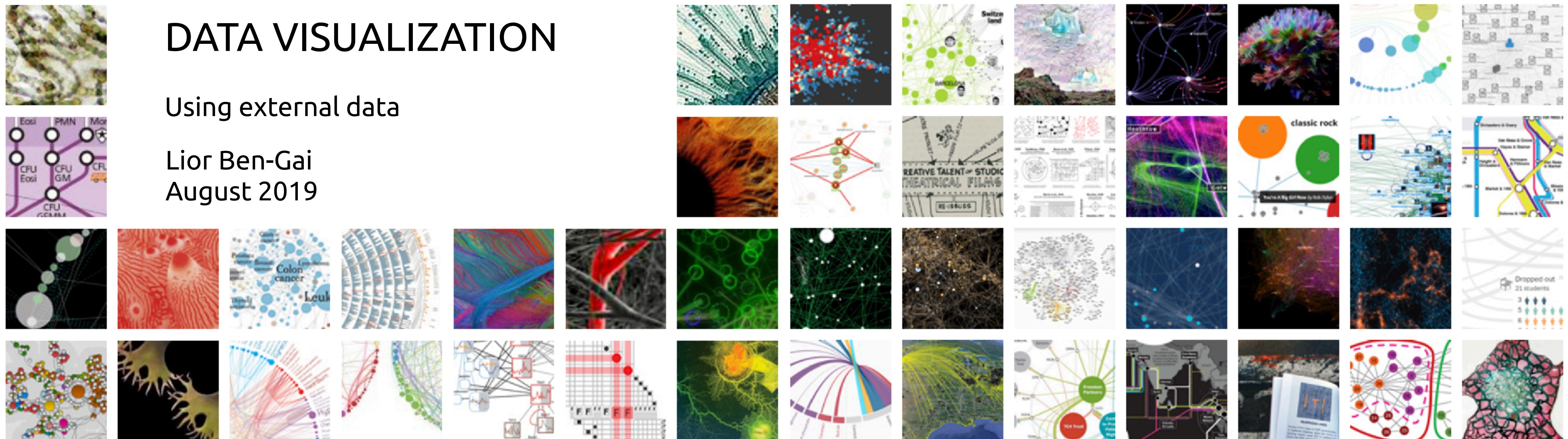


DATA VISUALIZATION

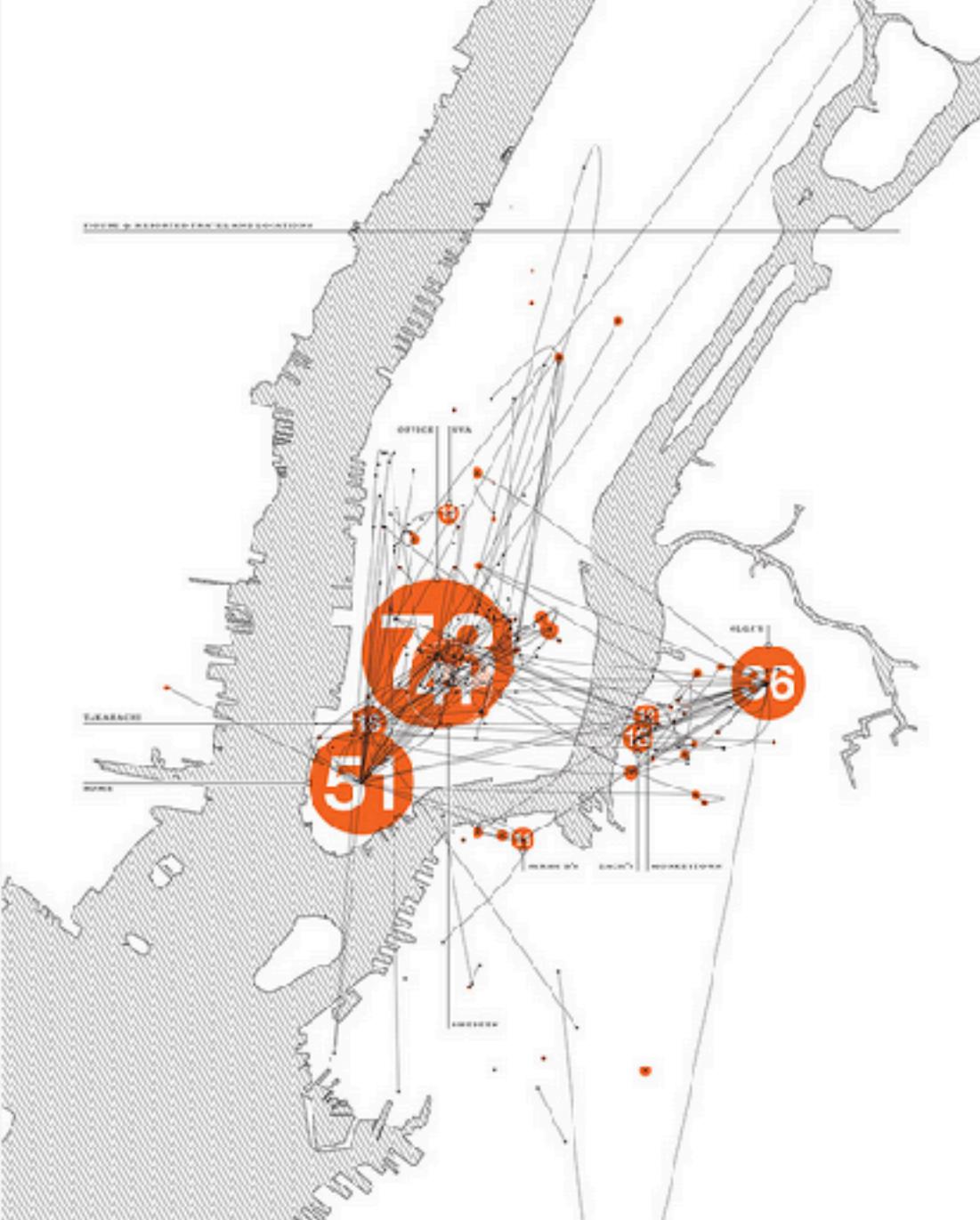
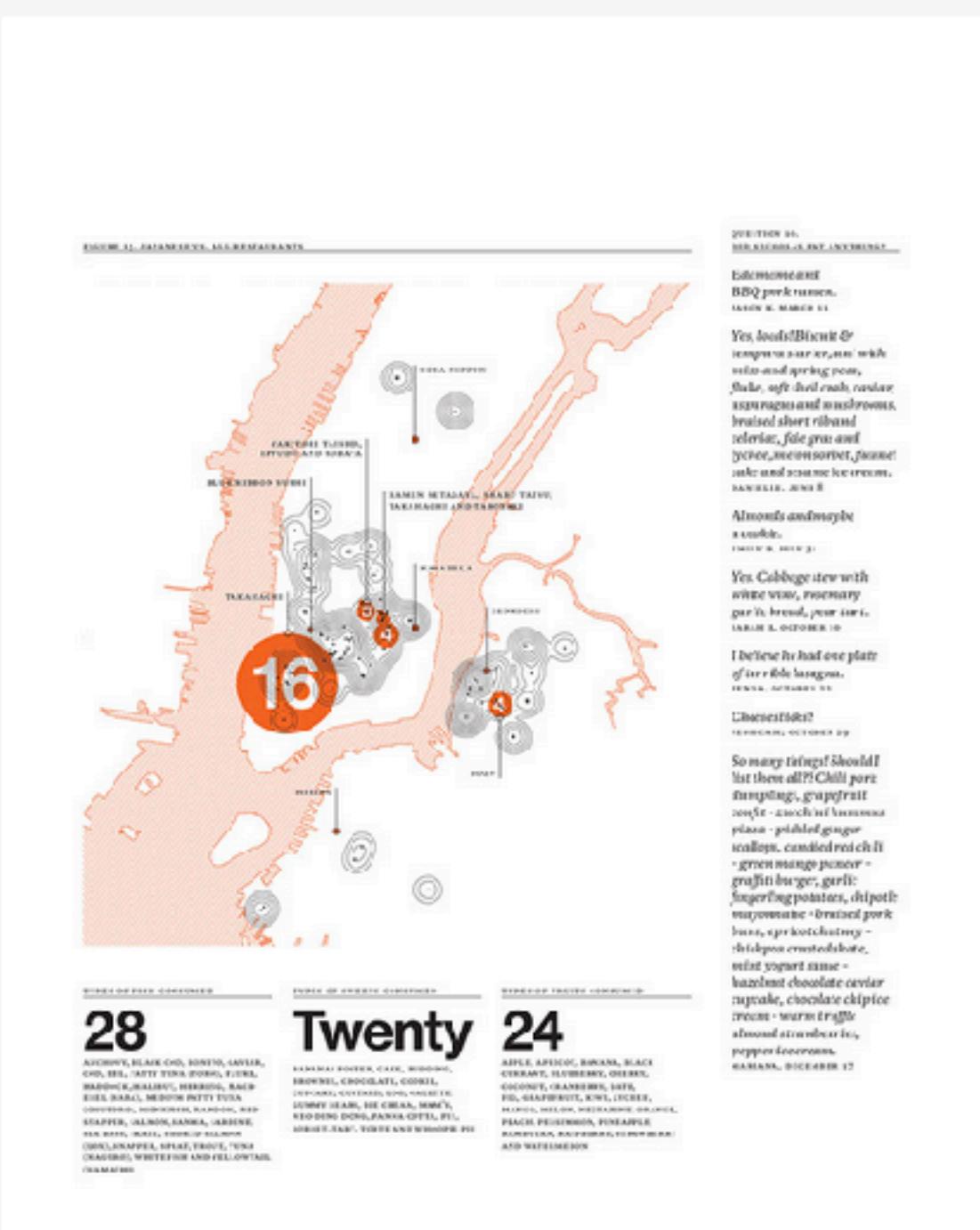
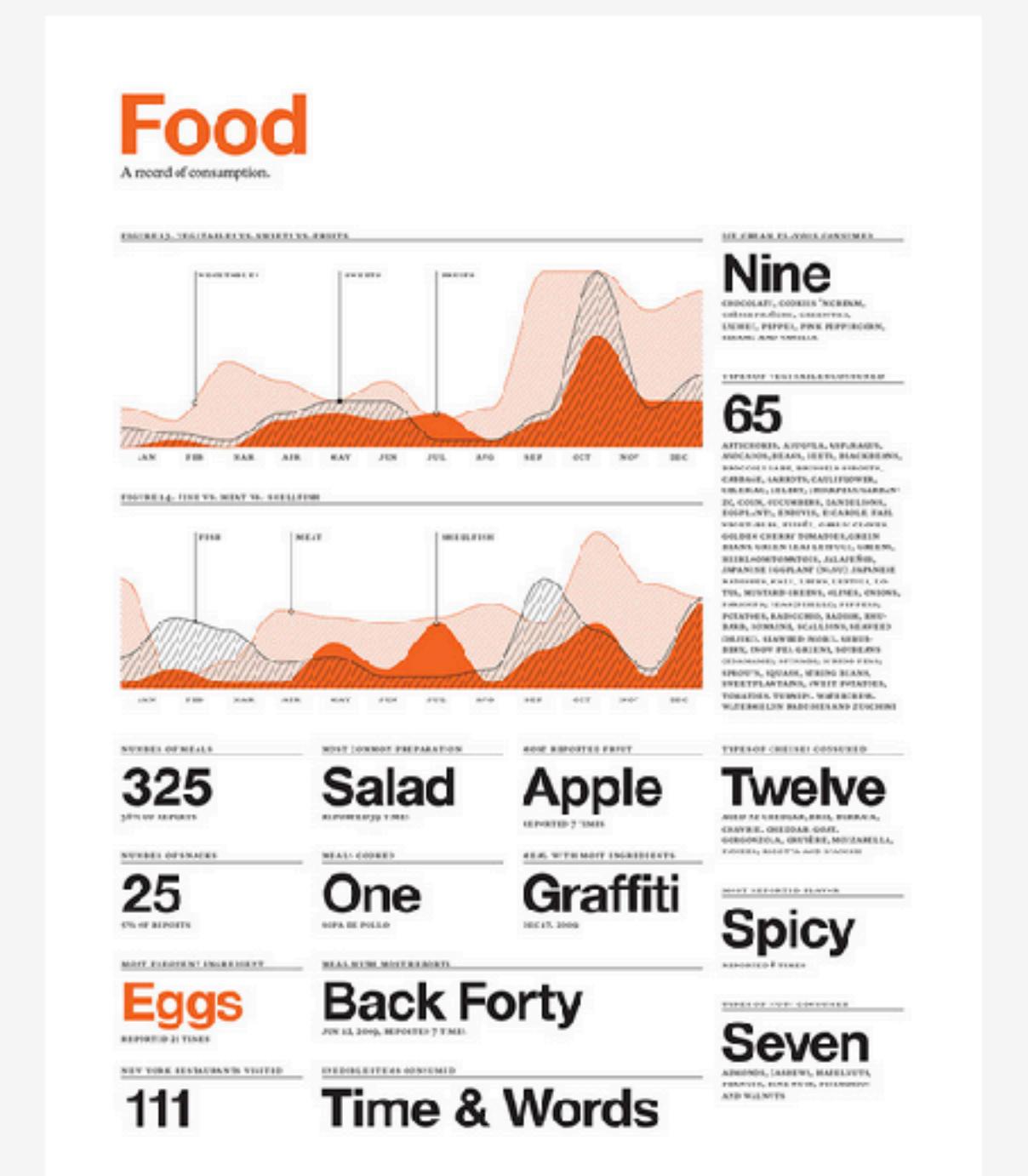
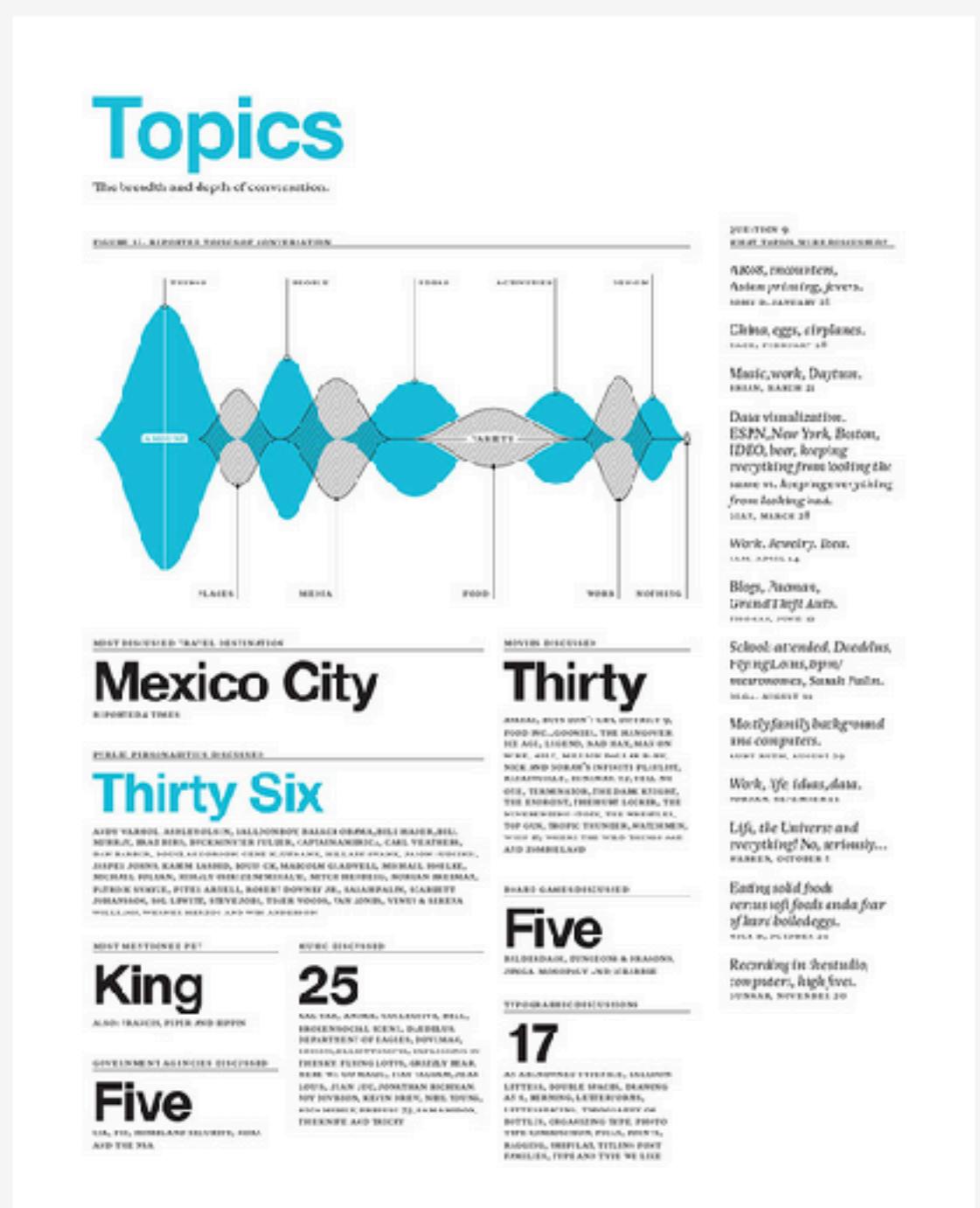
Using external data

Lior Ben-Gai
August 2019



FELTRON REPORTS

Nicholas Felton



visual complexity

Search the VC database:

GO

Indexing **1000** projects

Latest Projects:



Indexing **1000** projects

Filter by:

SUBJECT

Art (74)

Biology (60)

Business Networks (50)

Computer Systems (39)

Food Webs (16)

Internet (35)

Knowledge Networks (141)

Multi-Domain Representation (70)

Music (47)

Others (77)

Pattern Recognition (53)

Political Networks (34)

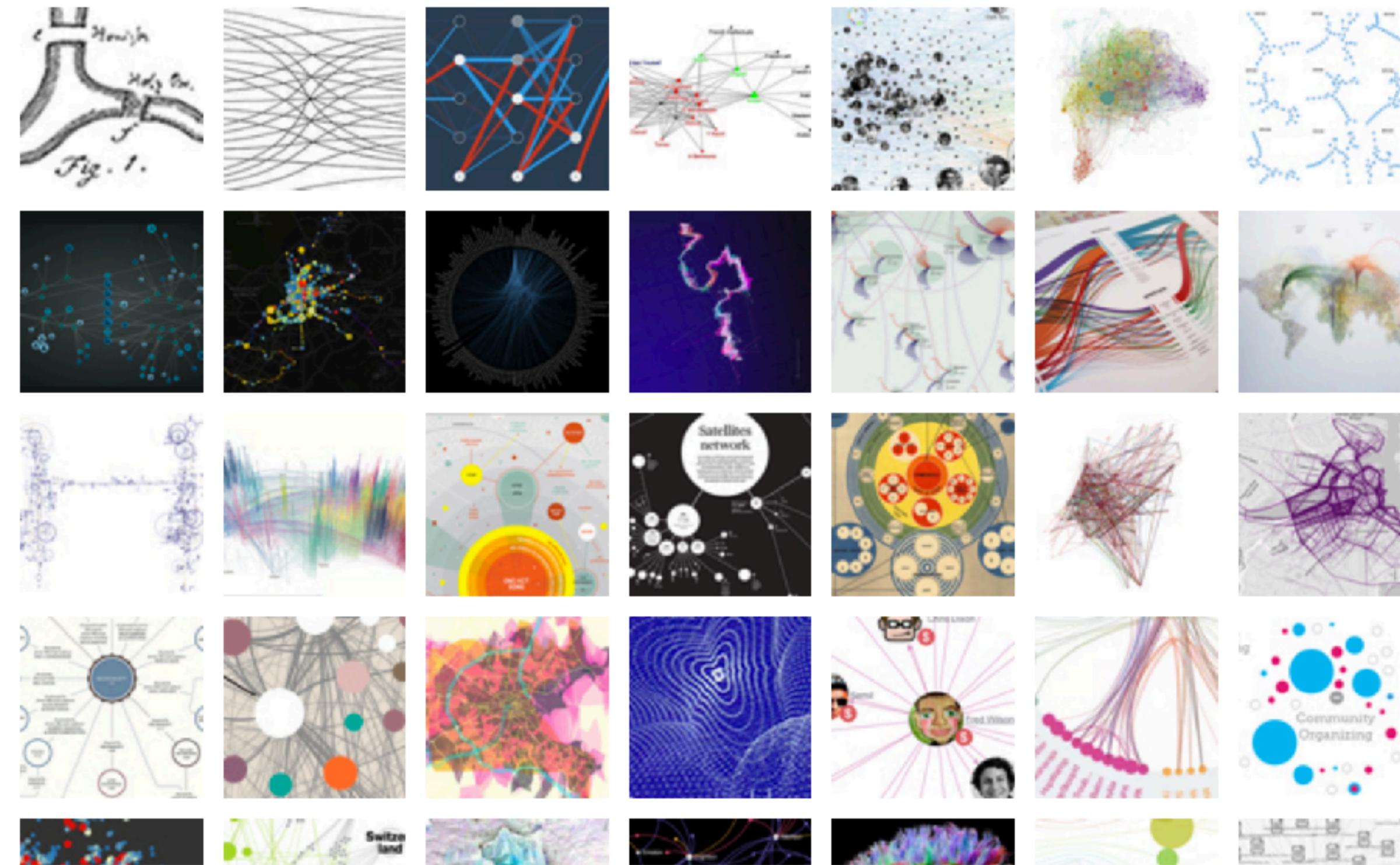
Semantic Networks (44)

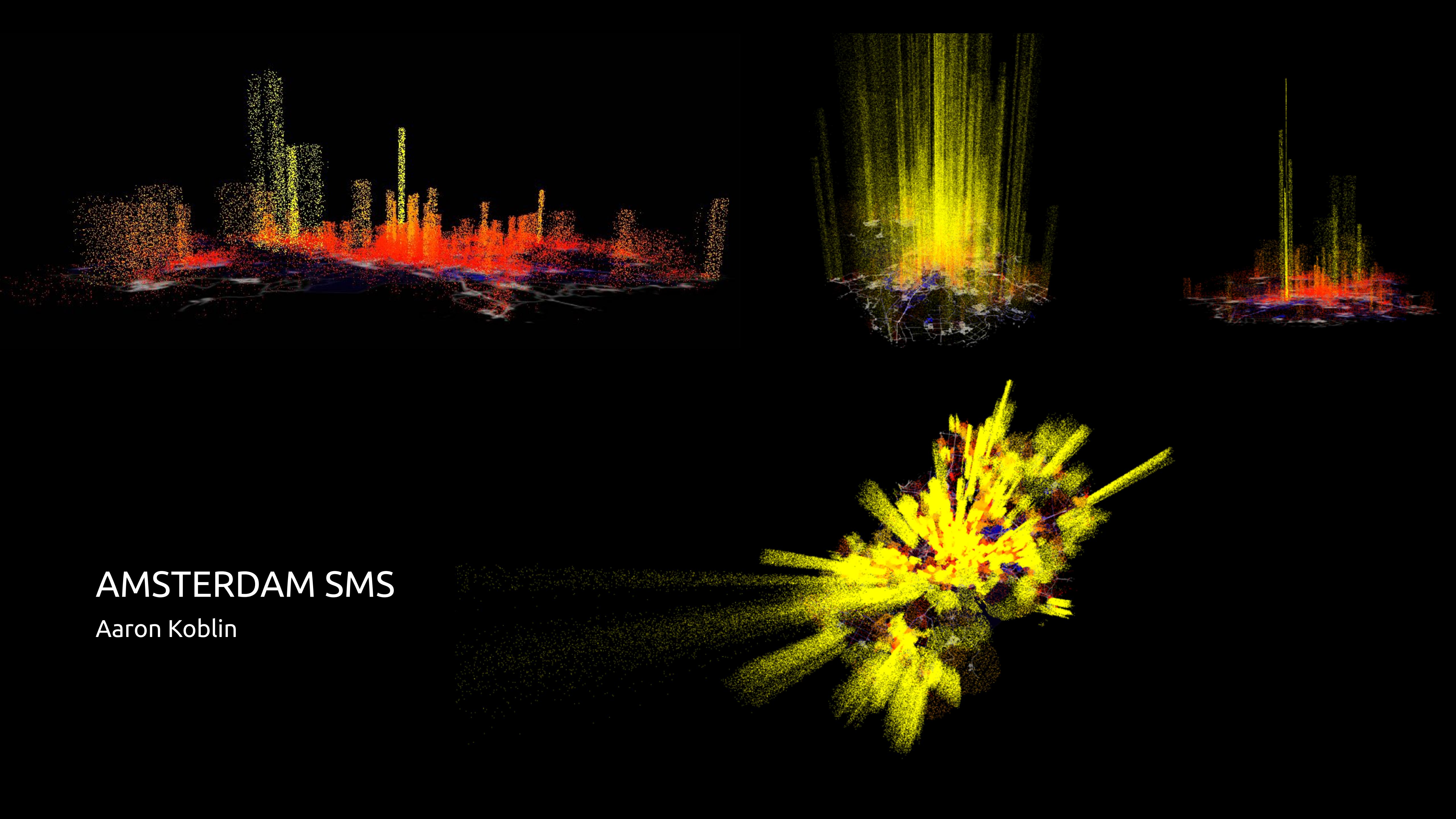
Social Networks (135)

Transportation Networks (70)

World Wide Web (55)

See All (1000)



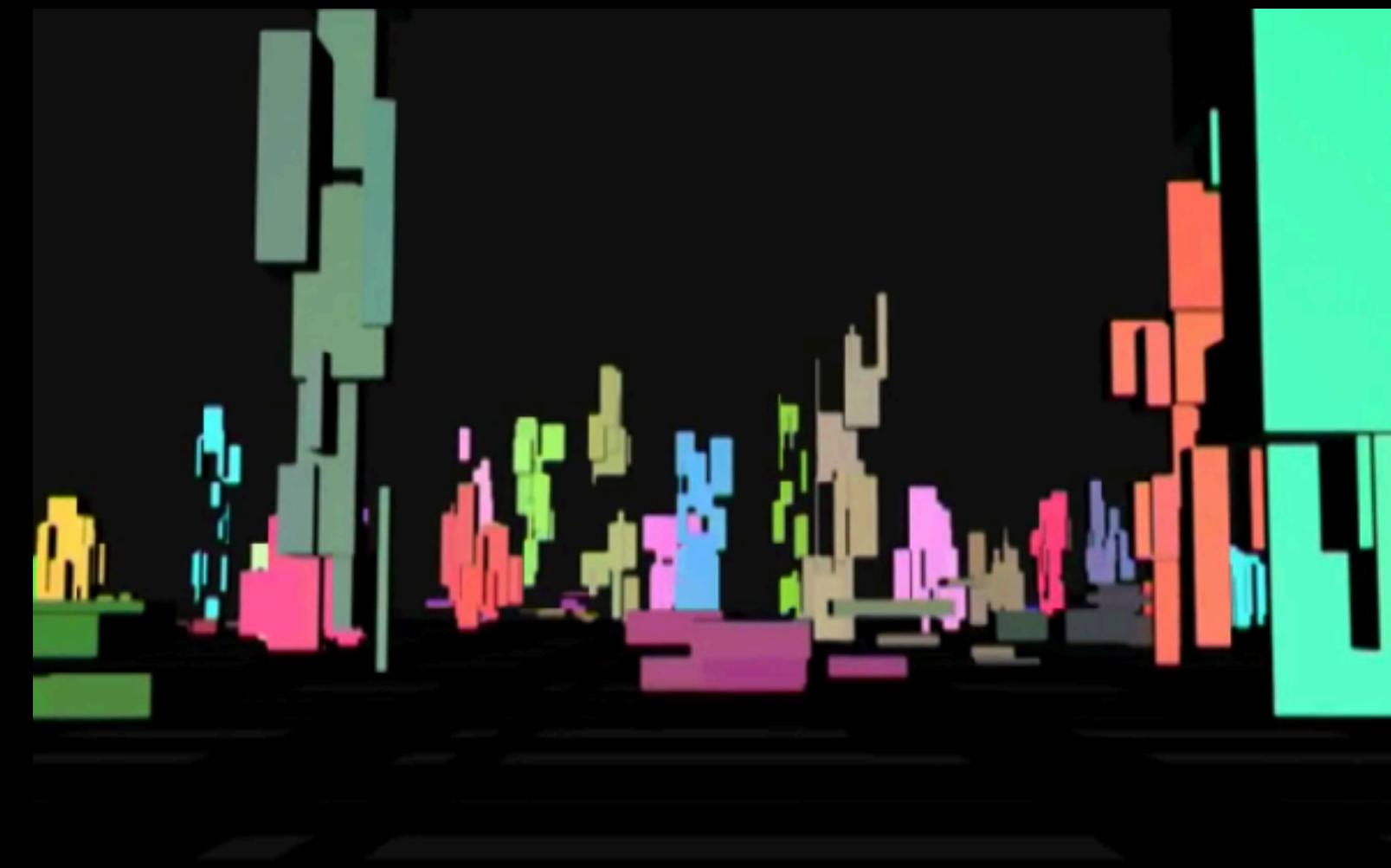


AMSTERDAM SMS

Aaron Koblin

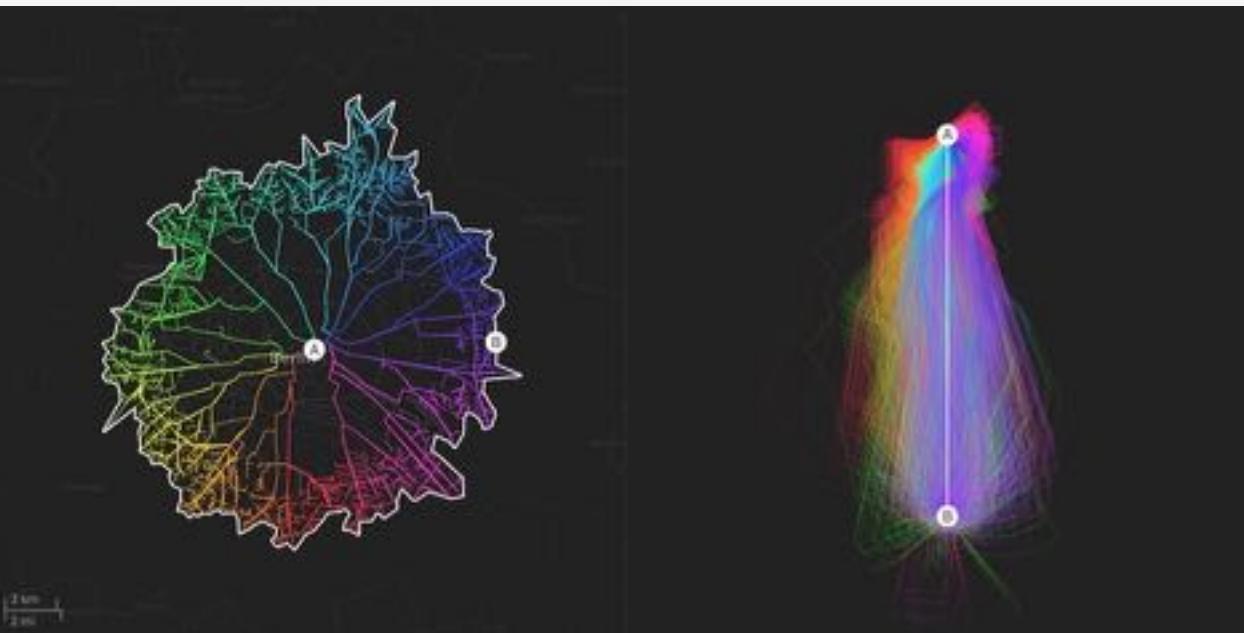
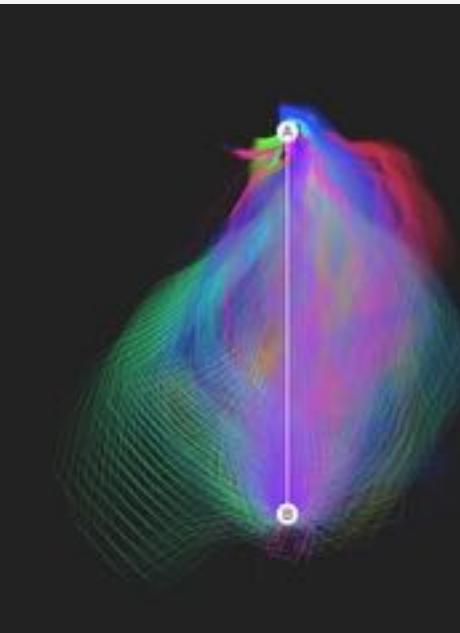
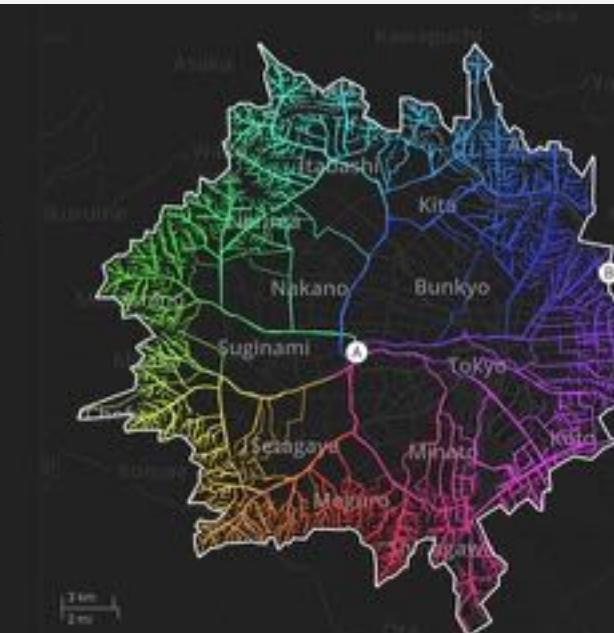
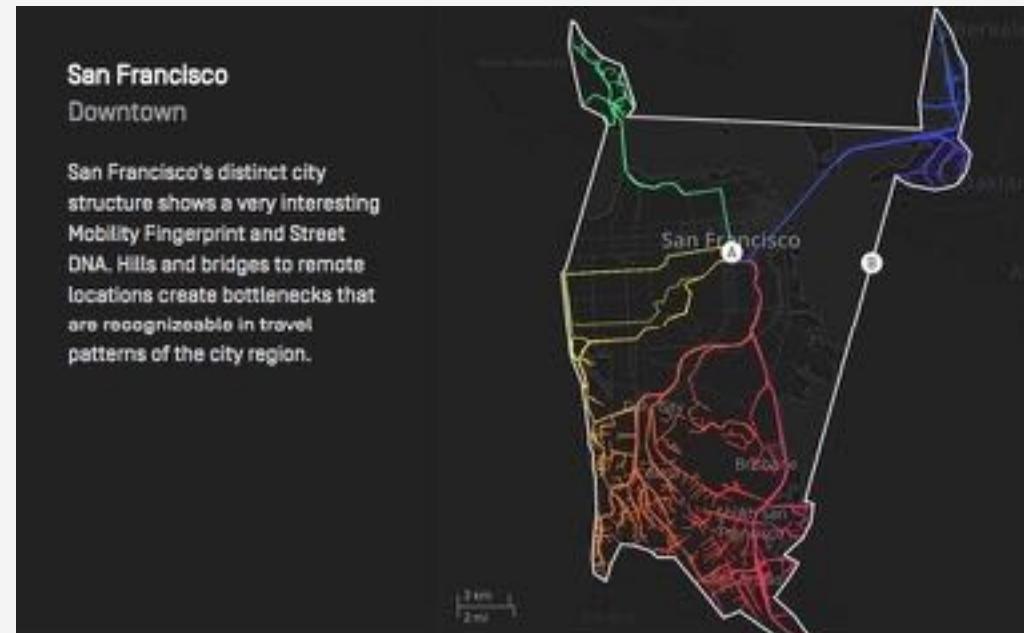
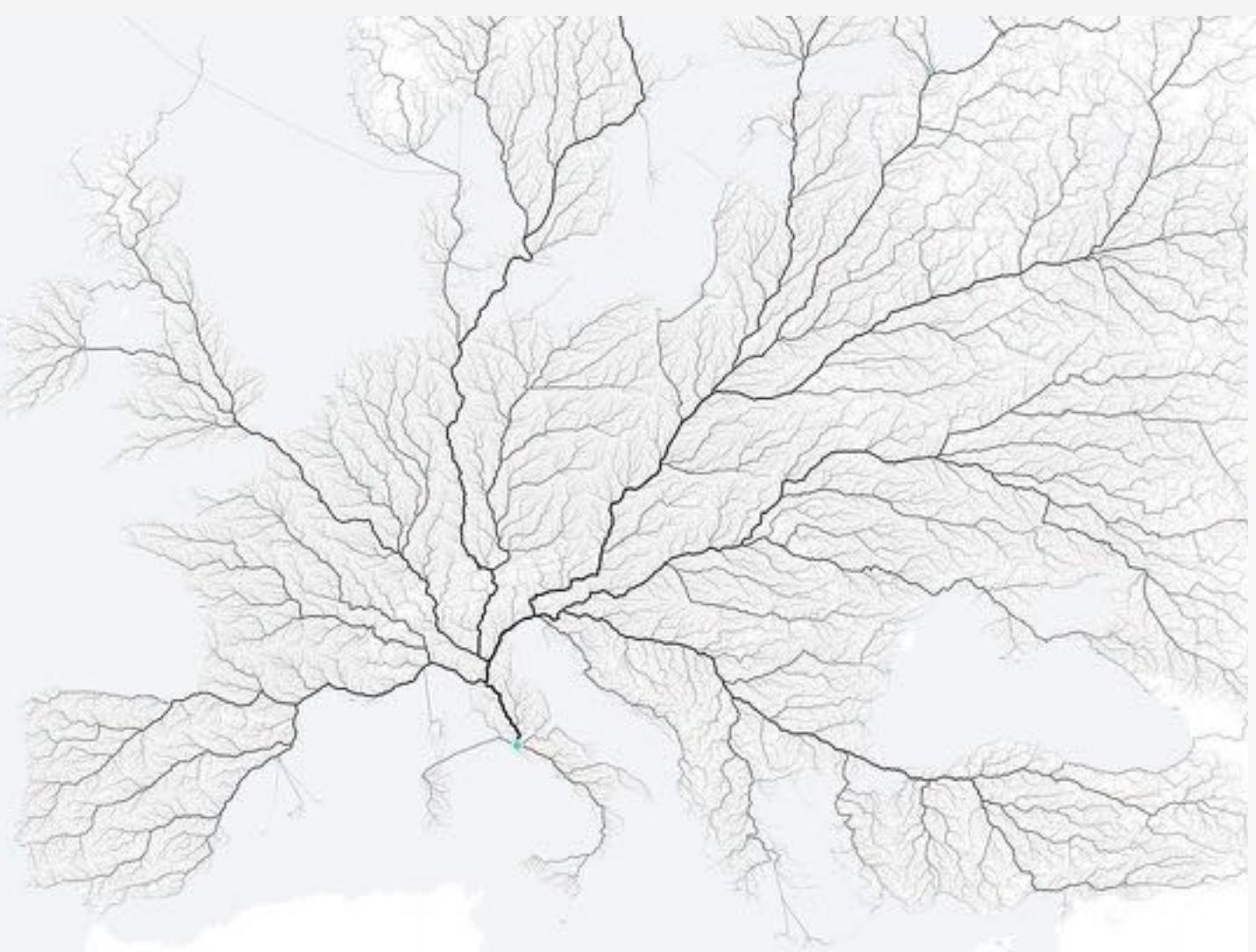
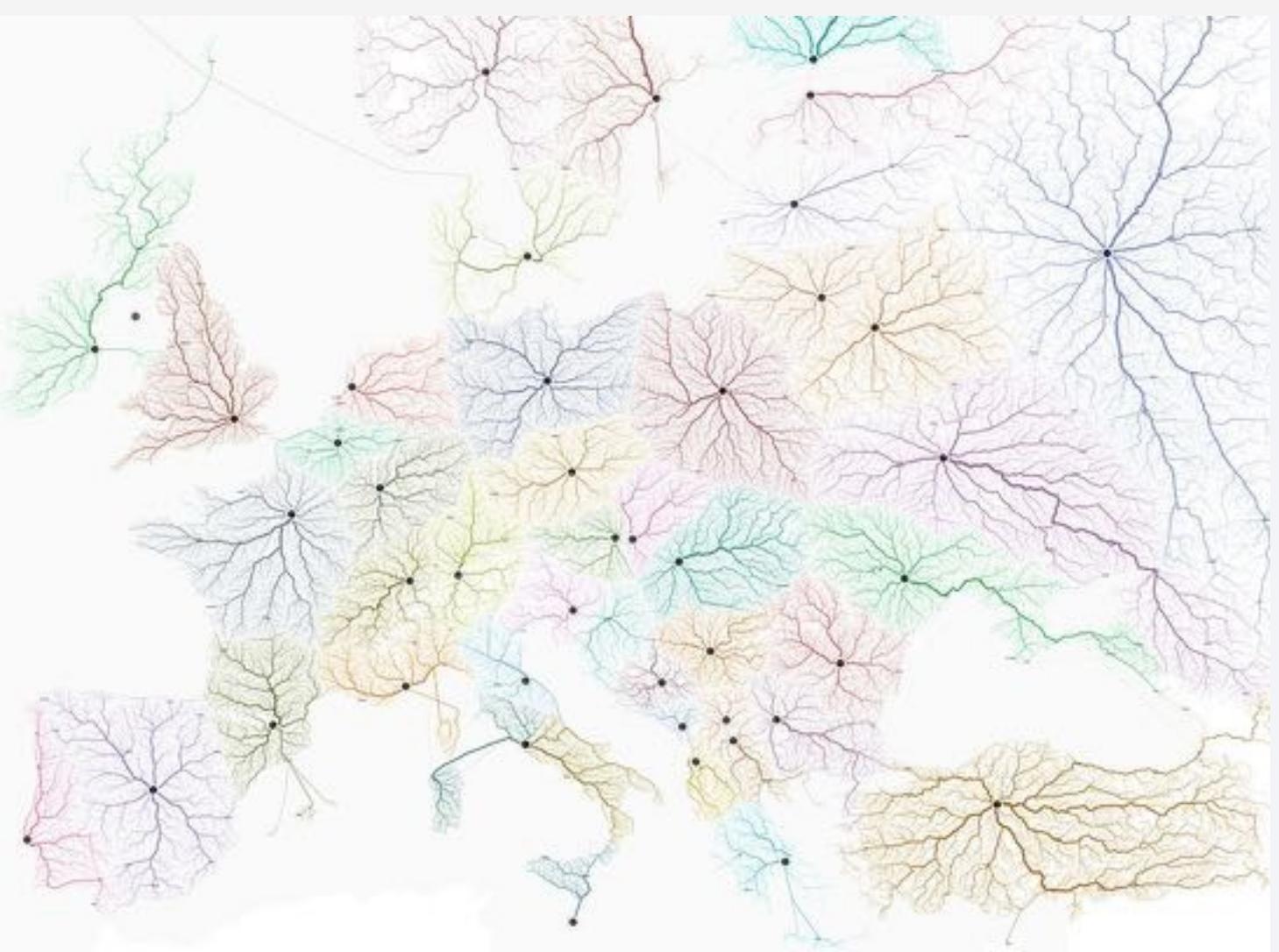


brilliant noise



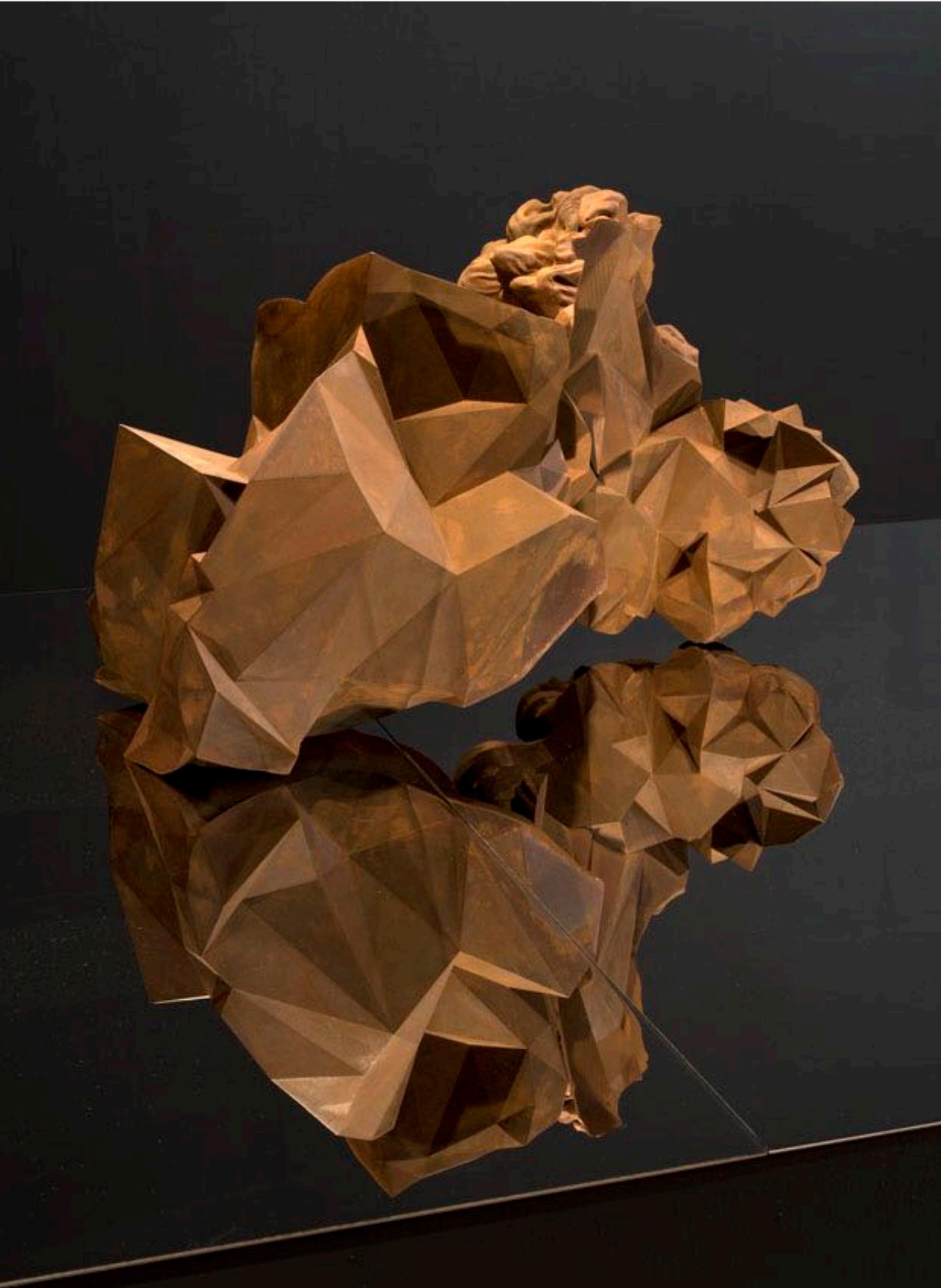
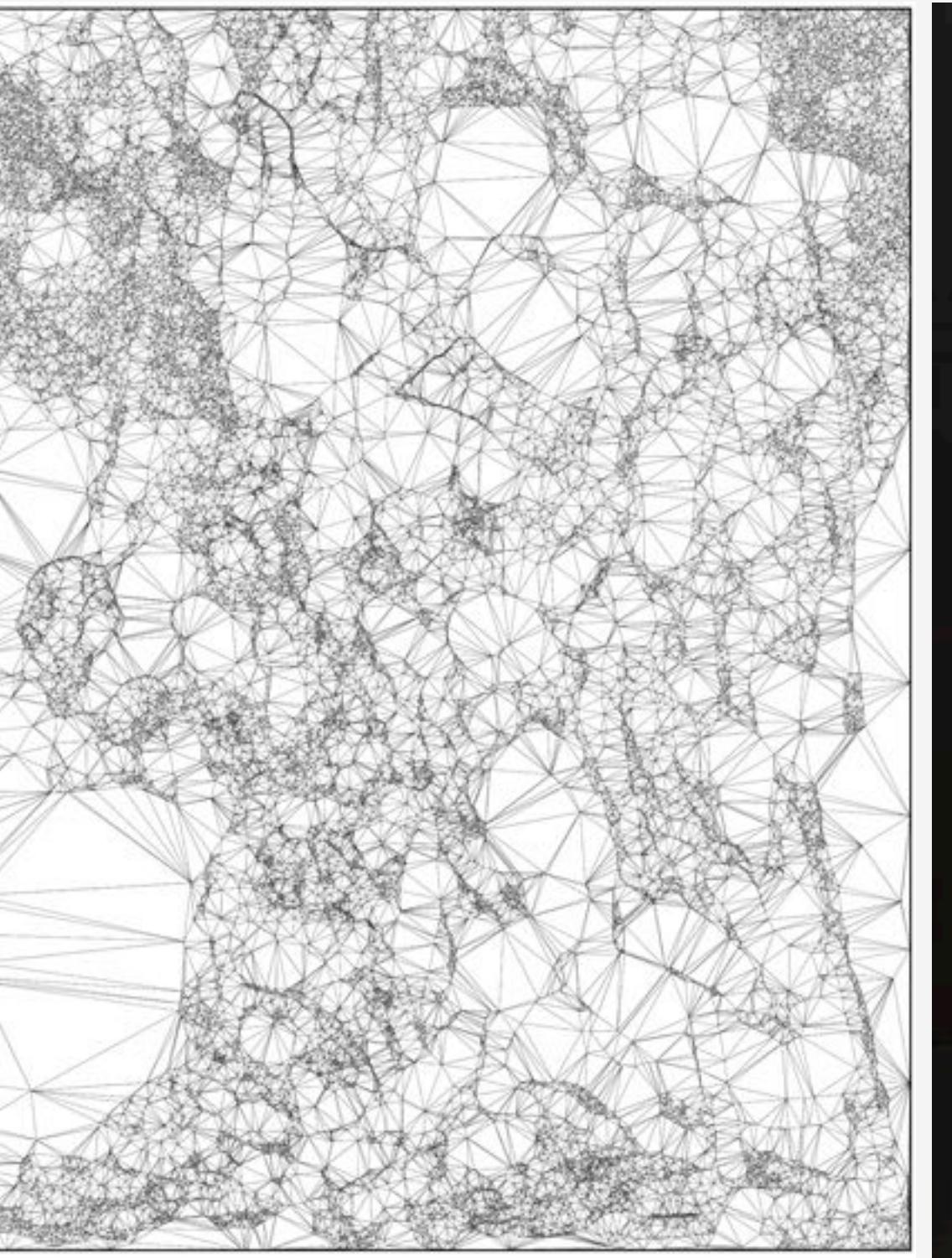
Inaudible cities

semiconductor films

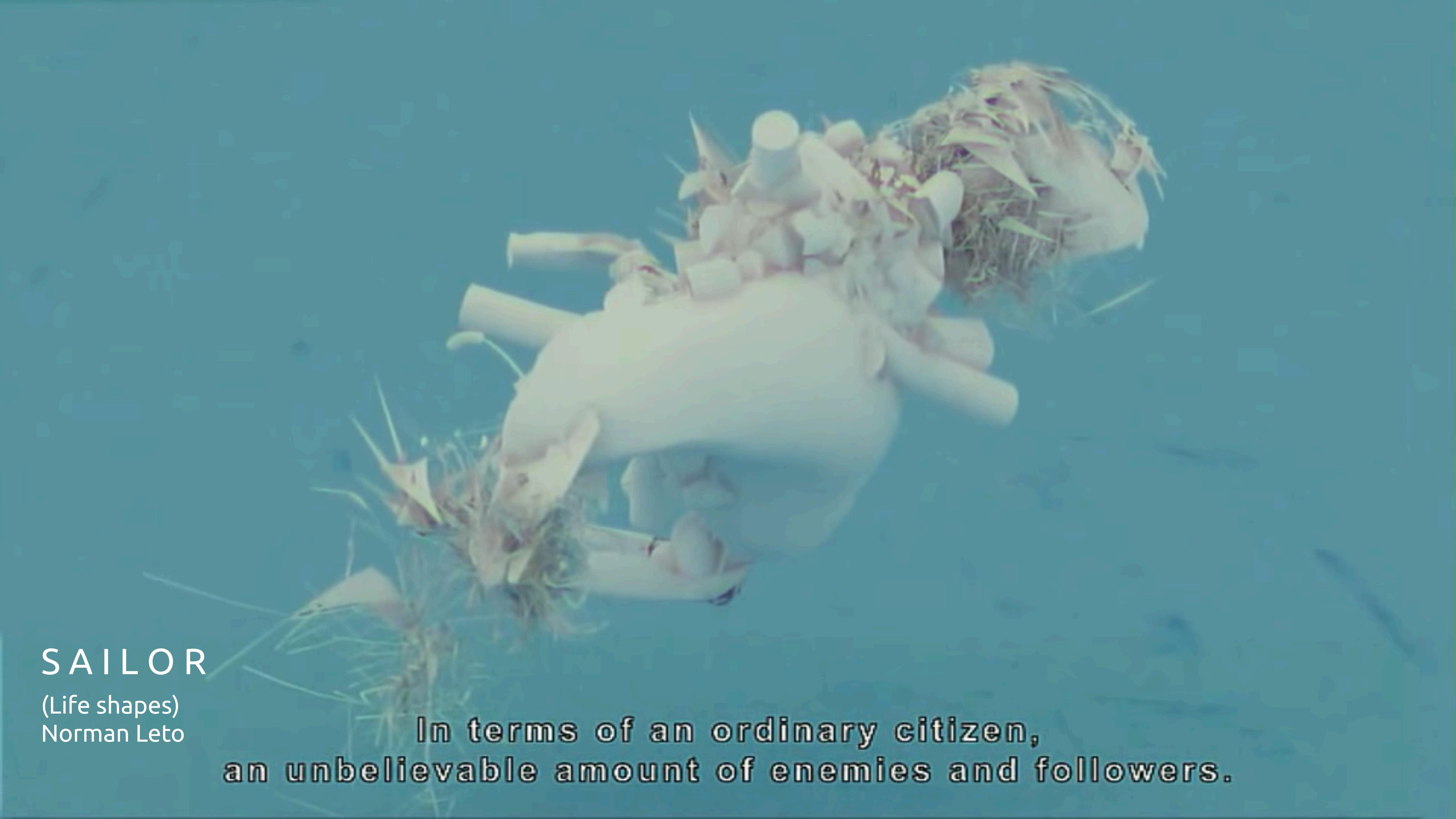


ROADS TO ROME

Benedikt Groß



QUAYOLA



SAILOR

(Life shapes)

Norman Leto

In terms of an ordinary citizen,
an unbelievable amount of enemies and followers.

Arrays

An Array is an ordered collection of variables.

Items in an array are indexed from [0] to [**number of items - 1**]

https://www.w3schools.com/js/js_array_methods.asp

<https://codepen.io/soogbet/pen/NQNBgp?editors=0010>

<https://codepen.io/soogbet/pen/eqZjab?editors=0010>

```
// declare an empty array
var fibonacci = [];

// declare an array literal
var fibonacci = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144];

// insert an item at the end
fibonacci.push(233);

// remove the last item
fibonacci.pop();

// retrieve the first item
print( fibonacci[0] );

// retrieve the last item
print( fibonacci[items.length -1] );
```

Objects

A Javascript object is a collection of **key-value pairs**.

Items are named instead of indexed.

https://www.w3schools.com/js/js_object_methods.asp

<https://codepen.io/soogbet/pen/eqZjab?editors=0010>

```
// declare an empty object
var parameters = {};  
  
// declare an object literal
var parameters = {
  x: 100,
  y: 200,
  radius: 50,
  colorR: 255,
  colorG: 0,
  colorB: 0,
};  
  
// insert an item
parameters.name("redBall");  
  
// remove an item
delete parameters.name;  
  
// retrieve a property
print( parameters.x );  
  
// alternative notation
print( parameters["x"] );
```

Javascript arrays and objects can contain mixed types of values, such as:

Numbers

Strings

Booleans

functions

objects

arrays

JSON (JavaScript Object Notation)

A lightweight data-interchange format.

<https://codepen.io/soogbet/pen/WVwgjg?editors=0010>

<https://en.wikipedia.org/wiki/JSON>

```
{  
  "firstName": "John",  
  "lastName": "Smith",  
  "isAlive": true,  
  "age": 27,  
  "address": {  
    "streetAddress": "21 2nd Street",  
    "city": "New York",  
    "state": "NY",  
    "postalCode": "10021-3100"  
  },  
  "phoneNumbers": [  
    {  
      "type": "home",  
      "number": "212 555-1234"  
    },  
    {  
      "type": "office",  
      "number": "646 555-4567"  
    },  
    {  
      "type": "mobile",  
      "number": "123 456-7890"  
    }  
  "children": [],  
  "spouse": null  
}
```

CSV (Comma* Separated Values)

A common text based format for tabular data

* not necessarily Comma separated

<https://datahub.io/core/sea-level-rise#javascript>

<https://codepen.io/soogbet/pen/oKXMBx?editors=0010>

<https://p5js.org/reference/#/p5.Table>

```
1 Time,GMSL
2 1993-01-15,-1.6
3 1993-02-15,-3.4
4 1993-03-15,5.5
5 1993-04-15,0.1
6
```



Time	GMSL
1993-01-15	-1.6
1993-02-15	-3.4
1993-03-15	5.5
1993-04-15	0.1