

Otherwise engaged

Network analytics with Gephi

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Summary


1. Different models of belonging

2 cases from the **e-Diasporas Atlas** by Dana Diminescu
e-diasporas.fr

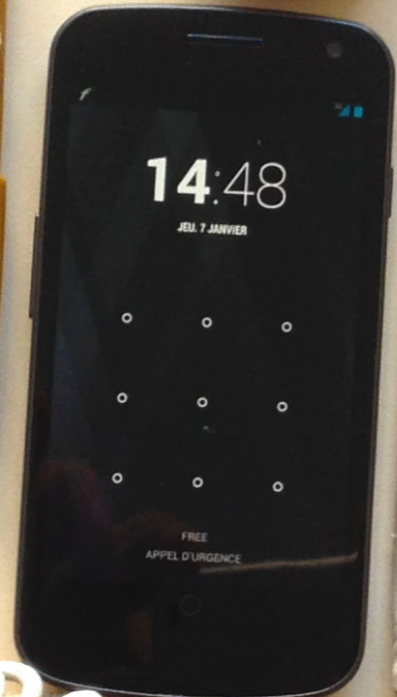
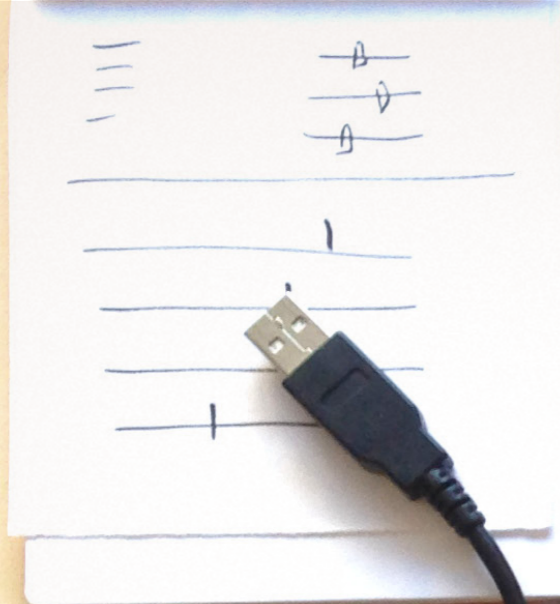
2. Exploring data through visualization

Framing the network analysis

Gephi recipes



*What is in
my bag?*



Our **habitèle**:
things we carry
that connect us.
D. Boullier

We are connected
beings.

We are inhabiting
other spaces,
other networks.



Otherwise inhabiting

« To account for the anthropological mutations in the mobility of our moorings, Dominique Boullier proposes the neologism *habitèle* to designate our way of appropriating (materially and symbolically) a network space. Many studies in migration literature focus on the organization of migrant **networks**, but few of these take into account the migrants' ability to **appropriate** the networks to which they **belong**. »

— Dana Diminescu, *Connected migrant manifesto*

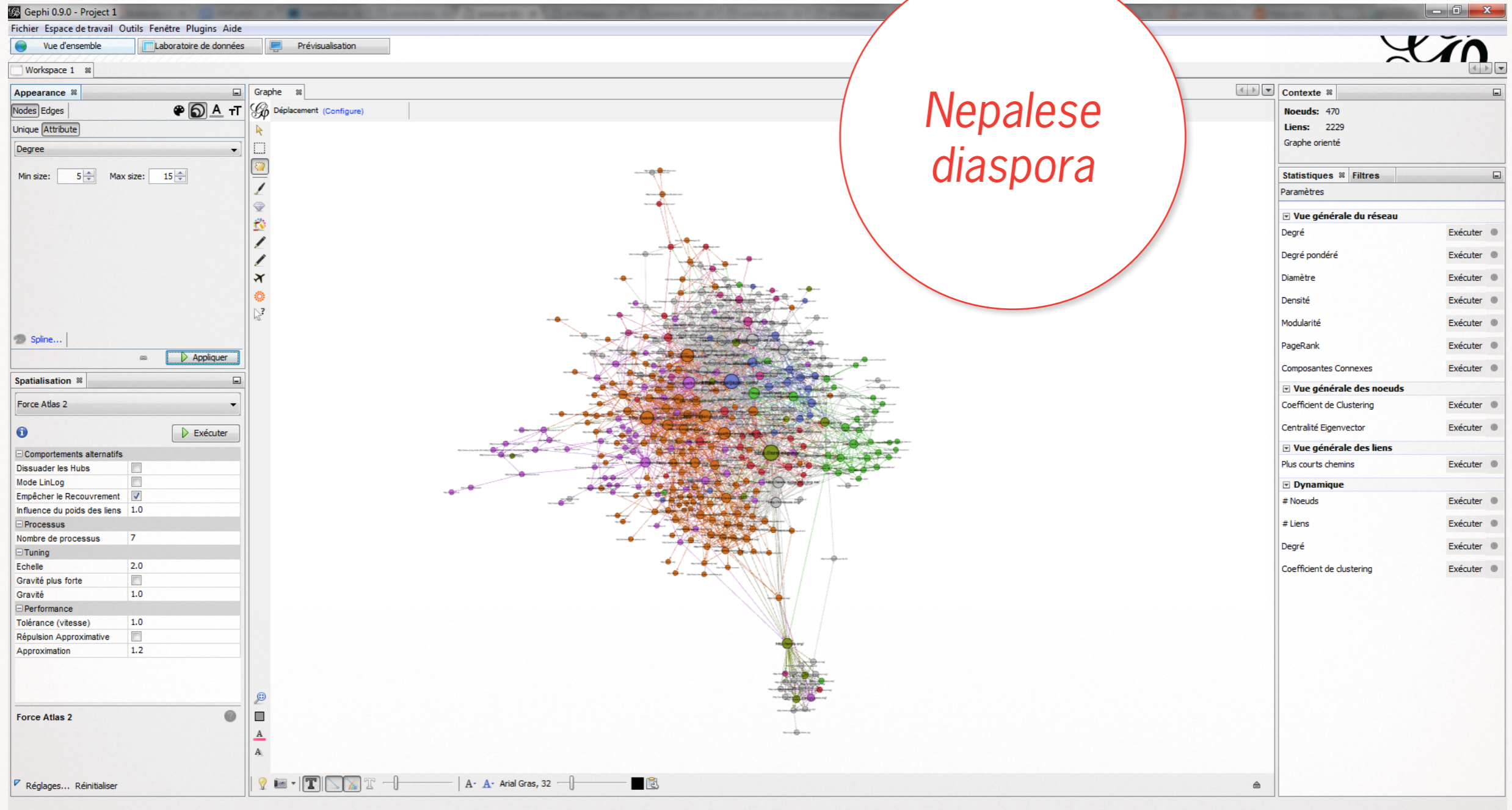
Sociological questions for a network analysis tool

What do the links **do** to the network?

Who took action to establish certain links?
...which strategies?

These strategies aim at which **objectives**?

Different models of belonging



Different models of belonging

The Nepalese diaspora by [Tristan Buslé](#):

« As far as links between websites are concerned, Nepal enjoys the highest inbound density (among all countries), thus showing a certain **polarization of websites** towards those situated in the country of origin. »

« The Nepalese diaspora is a project, a position launched by the elite above who deliver an official discourse that the people below are supposed to follow. **Diasporic websites are a tool for implementing this policy** of forming the group. They represent (...) a means to express allegiance to the country of origin or to the created social form. »

Different models of belonging

Hyperlinks as traces for analysis

Links expose the diaspora's belonging to the country of origin

Hyperlinks as tools for actors

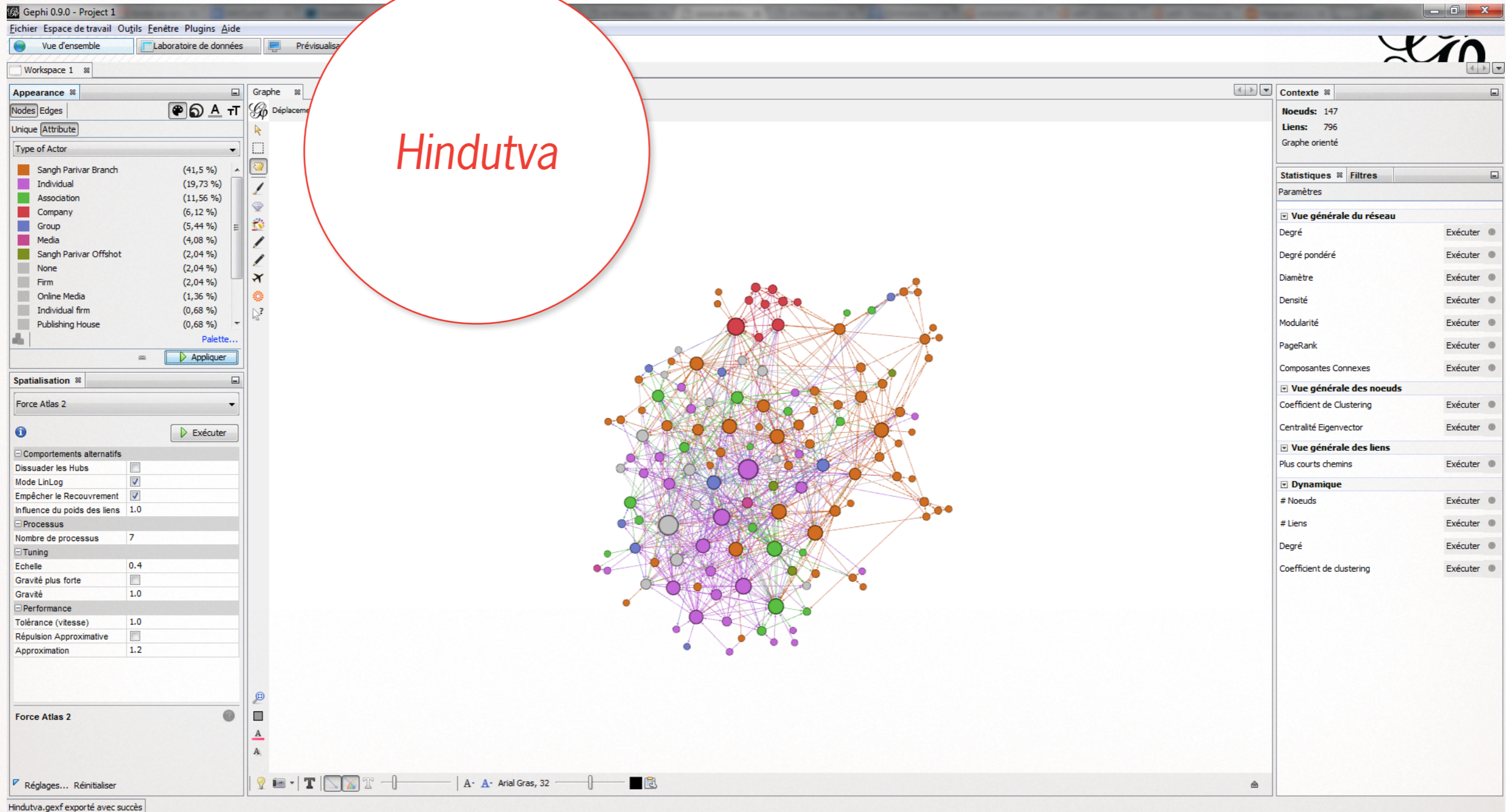
Nepal, through NRNA*, tries to influence the diaspora

*Non-Resident Nepali Association

Tristan retraced the history of connections through qualitative analysis of the corpus. He exposed **connections as a movement**, though this movement does not appear as a movement in Gephi.

Different models of belonging

Hindutva



Different models of belonging

Hindutva by [Ingrid Therwath](#) - some key terms:

« *Hindutva*, literally “Hinduness”, refers to the ideology of Hindu nationalists that equates “Indian identity” with “Hindu identity” and according to which blood attachments prevail over the right of the soil. (...) Today, the main champion of the *hindutva* ideology is the Rashtriya Swayamsevak Sangh (National Volunteer Association, [RSS](#)) (...) This organization functions through a dense network of about 50,000 local *shakhas*, or branches, where cadres provide physical and ideological training to over 2.5 million activists. (...) The entire structure is called the [Sangh Parivar](#) (literally, “the family of the Sangh”) »

Different models of belonging

Centrality of Sangh Parivar in online *hindutva*:

« This corpus corresponds to the very particular ideology of *hindutva*. It is very **dense** and consists of a multitude of closely interconnected websites (...). It is impossible to isolate clusters demarcating themselves from the entire group, which in itself signals the **homogeneity** of the *hindutva* world beyond the core institutional Sangh Parivar sites. These sites occupy, however, a **central position**. »

Different models of belonging

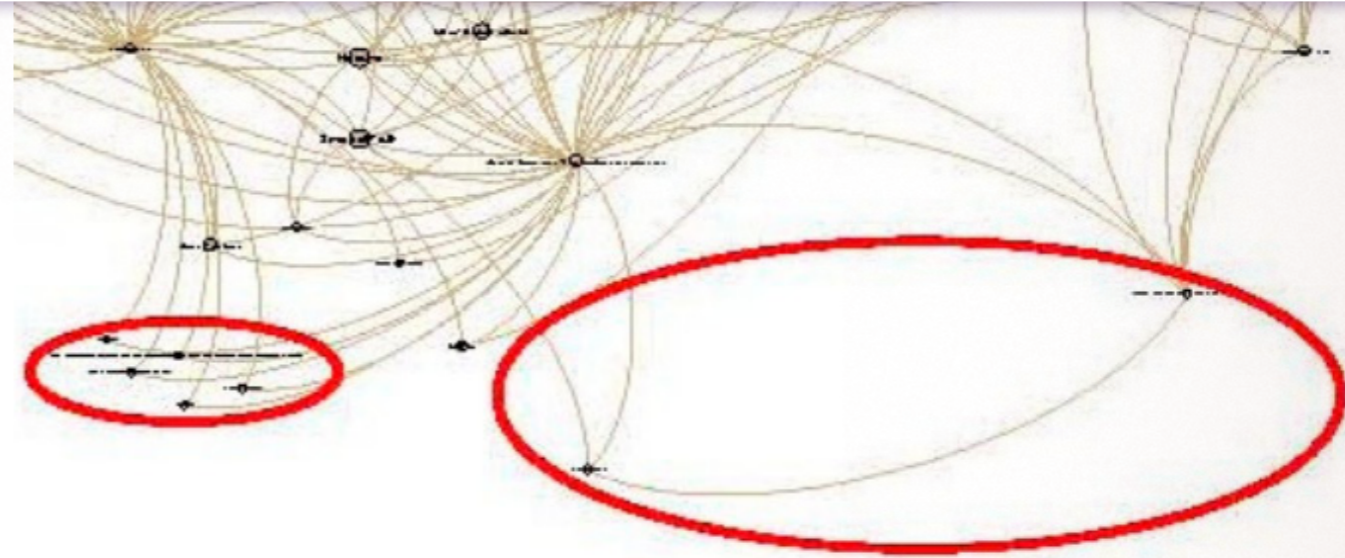
Delocalization in the US of Sangh Parivar's activities:

« one can distinguish, within a general, very homogenous and coherent graph, **two large overlapping blocs**: India / USA-the rest of the world. (...) The Sangh Parivar, born in Nagpur in 1925, thus largely operates online from abroad, namely from the United States, a territory which in turn connects India to the United Kingdom (located even further on the left of the graph). »

Different models of belonging

Alliance with Jewish groups that share the same Islamophobic views:

« **links** that are often mentioned but otherwise difficult to show, between extremist Jews and extremist Hindus in diaspora in the USA. »



Different models of belonging

Hiding connections as a defensive strategy:

« the six lobbies identified in the corpus **have no links** leading to each other, although they champion the same ideology and are (...) offshoots of the Sangh Parivar. The websites of the four think-tanks and the three self-designated research groups (...) **also have no links** leading to each other. »

« Analysis of the **blanks and absences** in the online Sangh Parivar network reveals the network's larger strategy of defensive communication (...) It simply minimized the possibility, for a nonspecialist and for non-Indians and non-Hindus notably, to reconstitute links that unify the Sangh Parivar»

Different models of belonging

Ingrid used **various elements** in her analysis:

- Centrality
- Clusters' size and position
- Qualitative analysis of the «frontier»
- Structural holes
- Comparisons (online vs. offline)

...these are methodological elements of **visual network analysis**.

Different models of belonging

« Many Indian social scientists, influenced by (...) the North-American domination of the architecture and contents of the Web, are now eager to foreground the minority and dissenting voices that also use this **channel of expression**. [These approaches insist] on the notion of **voice**. This study hopes to show that the notions of **gaze** and **traces** should also be brought into consideration when analysing the political usages and impact of the Web. »

From a **space of expression** to a **space of engagement**:
Actors leverage connections to involve, to appropriate, but also to dissuade. Their strategies aim at changing some belongings while hiding others.



Exploring data through visualization

Framing the network analysis

The network is never a map of what you want to observe.
It is not explanatory, it is **exploratory**.

« Student — Do you mean to say that once I have shown that my actors are related in the shape of a network, I have not yet done an ANT study?

Professor — That's exactly what I mean: ANT is more like the name of a pencil or a brush than the name of an object to be drawn or painted. »

— Bruno Latour

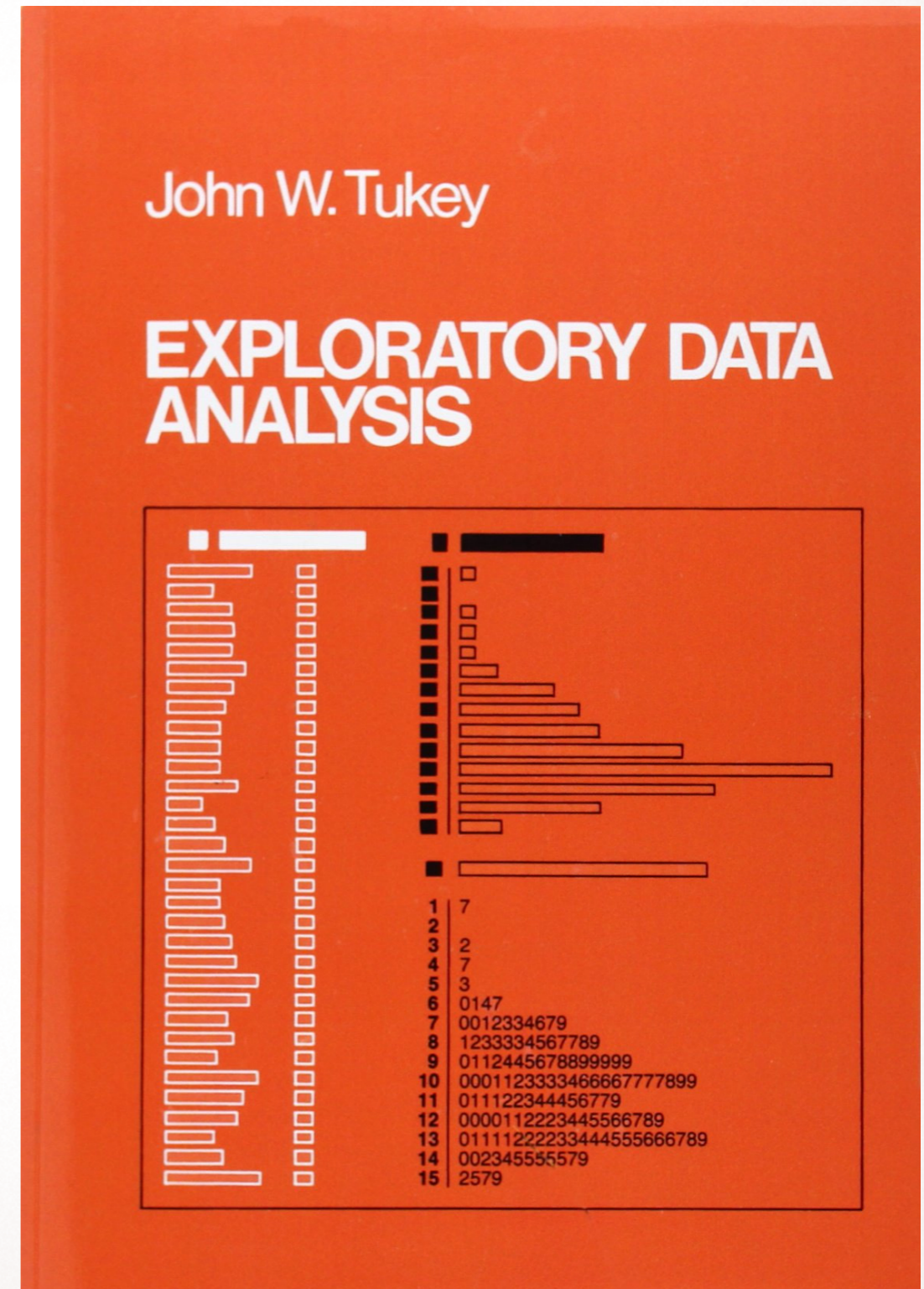
Framing the network analysis

« The greatest value of a picture is when it forces us to notice what we never expected to see. »

— John Tukey

« Far better an approximate answer to the right question, which is often vague, than an exact answer to the wrong question, which can always be made precise. »

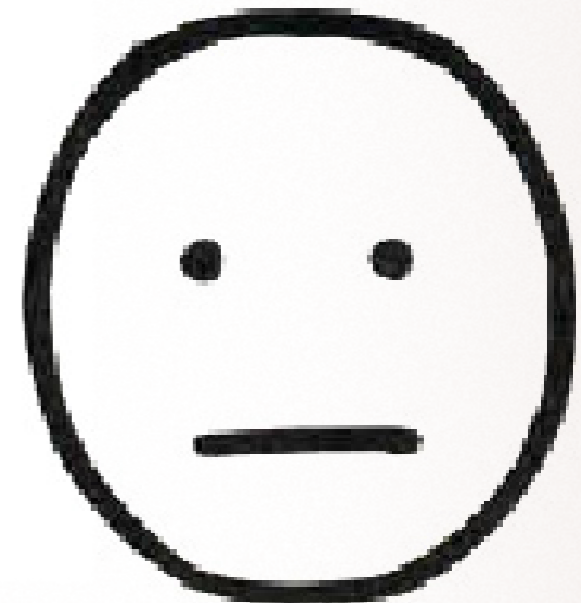
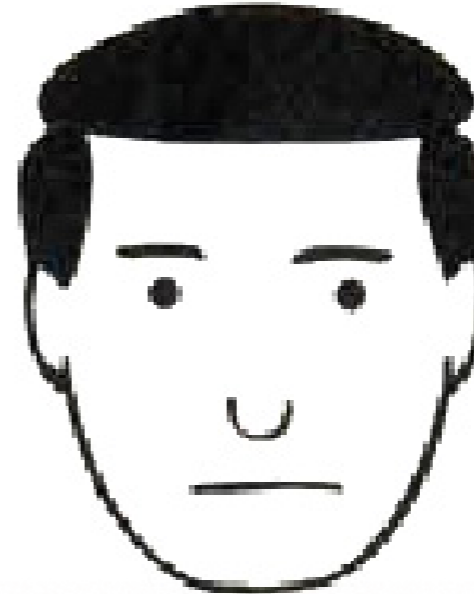
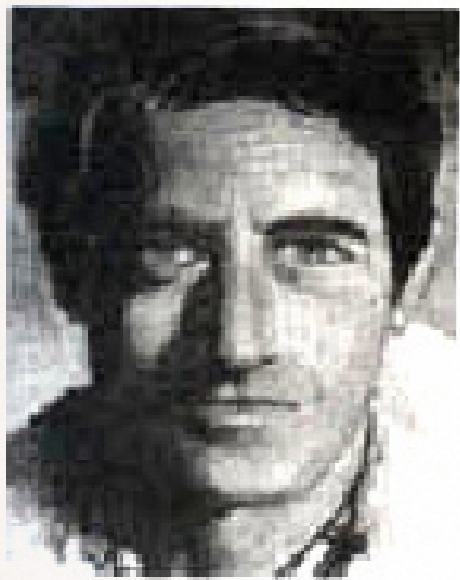
—John Tukey



Framing the network analysis

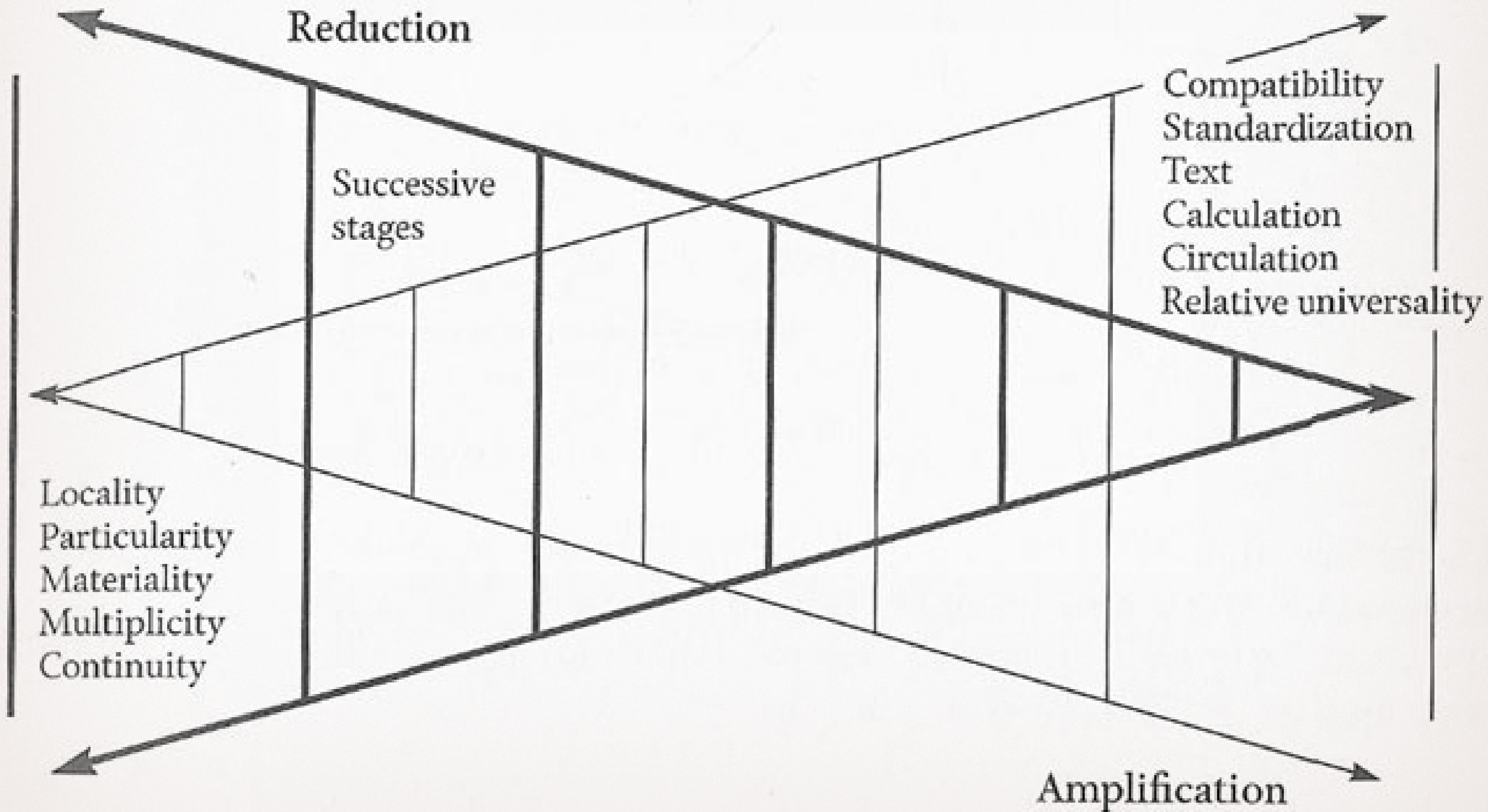
Understanding Comics
Scott McCloud (1993)

Details



Readability

Framing the network analysis



Gephi recipe:

Roadmap for visual analysis

Visualize node positions

1. Give a position to nodes (technical)
2. Interpret variations of **density**
3. Interpret the **size** and density of **clusters**
4. Detect **centers** and **bridges**

Visualize node sizes

1. Give a size to nodes (technical)
2. Read the **hierarchy** of connectivity

Visualizing node colors

1. Apply colors to nodes (technical)
2. Read the **distribution** of colored categories

Gephi recipe:

Metrics for different roles

Indegree (citations count) – Being cited is hard
Denotes **notoriety** / **authority**.
Alternatives: PageRank, HITS (authority score)

Outdegree – Citing is easy
Denotes a form of **engagement**.
Alternative: HITS (hub score)

Degree (indegree+outdegree)
Denotes **centrality**
Alternatives: position in graph, closeness centrality

Gephi recipe:

Metrics for different roles

Betweenness centrality

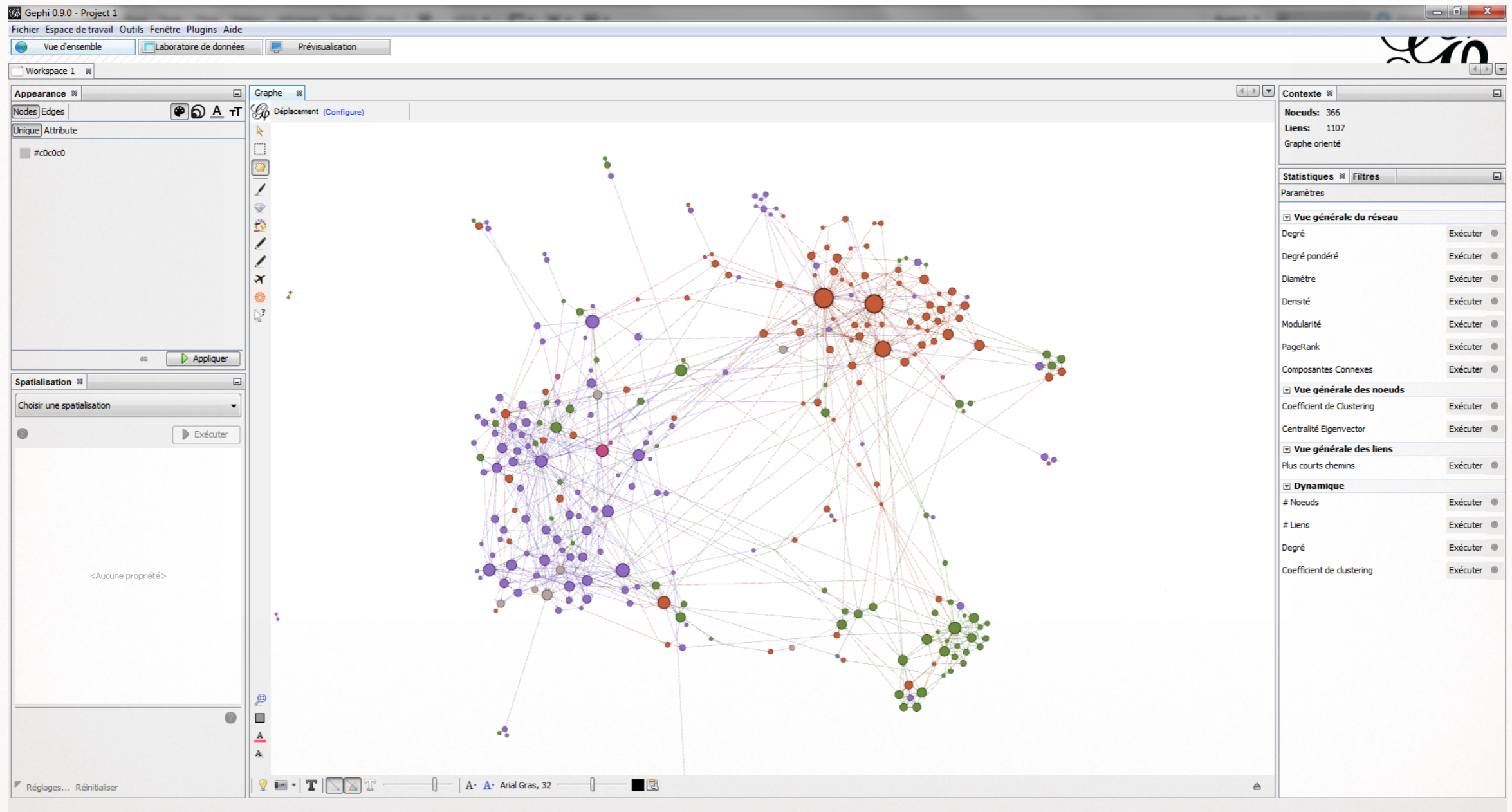
Identifies **bridges**: interdisciplinarity, innovation...
in Gephi's «statistics» panel, click on «**Diameter**»
> adds different attributes to nodes

Modularity clustering

Community detection

~same result as layout (ForceAtlas2, LinLog...)
in Gephi's «statistics» panel
> adds a «Modularity class» attribute to nodes

Detecting communities



Detecting communities

Modularity / visual clustering as community detection:
Otherwise together

1. A different way to **enter** the community
It is hard to remove or block new « members »
2. Different conditions for **success** (acknowledgement)
Activity rythm and volume, being cited / retweeted / liked...
3. Different consequences because it is **visible and measurable**
Building a public self, « actionable » metrics...

Thank you for your attention

SciencesPo
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<http://medialab.sciences-po.fr>

Different metrics for «influence»

observation

phenomenon

quality

utility

Many **views**

Audience

Popularity

Advertising

Many **likes**

Affinity

Reputation

Personal

Many **links**

Authority

Notoriety

Strategy