

**IDENTIFICATION OF INTERNATIONAL MEDIA EVENTS
BY SPATIAL AND TEMPORAL AGGREGATION
OF NEWSPAPERS RSS FLOWS**

**Application to the case of the Syrian Civil War
between May 2011 and December 2012**

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GRASLAND C., UMR Géographie-cités

LAMARCHE-PERRIN R., LIG-MAGMA/MESCAL

DEMAZEAU Y., LIG-MAGMA

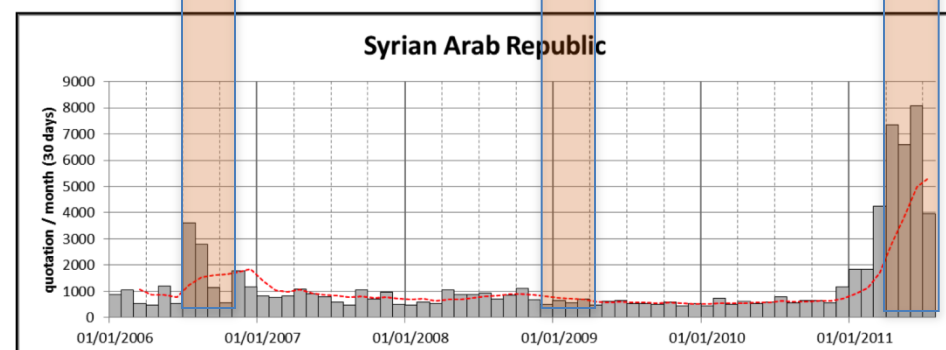
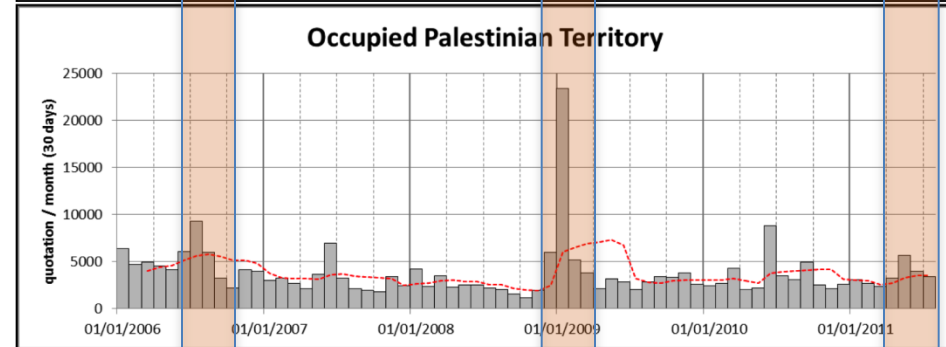
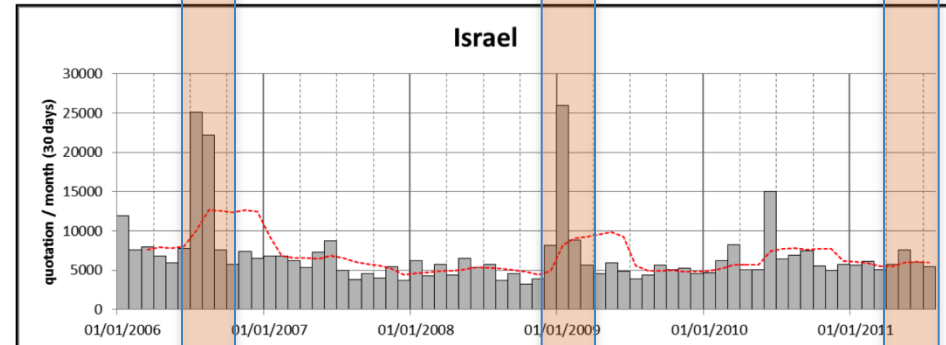
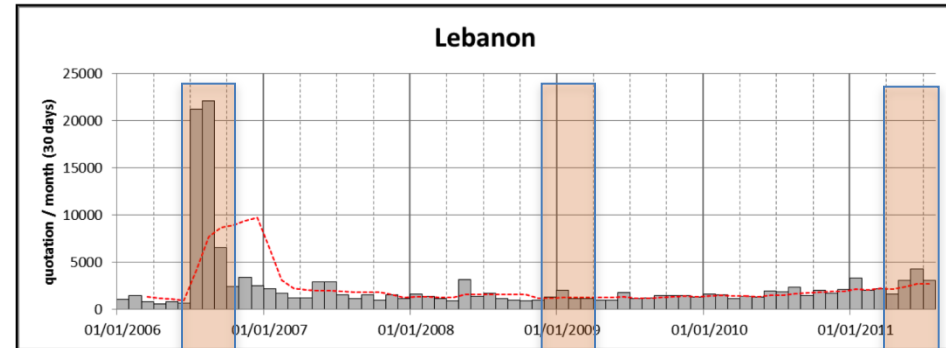
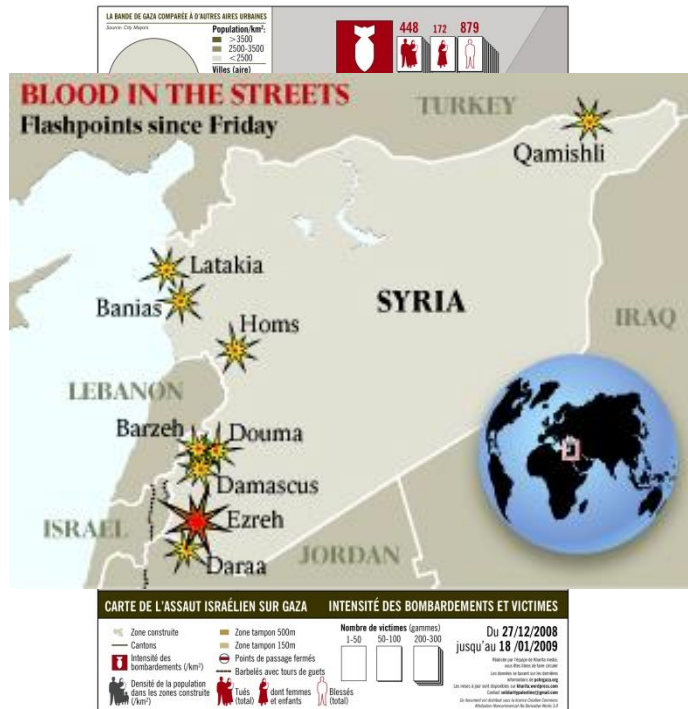
VINCENT J.-M., LIG-MESCAL

« European Colloquium of Theoretical and Quantitative Geography »
Dourdan, 5-9 Sept. 2013

INTRODUCTION

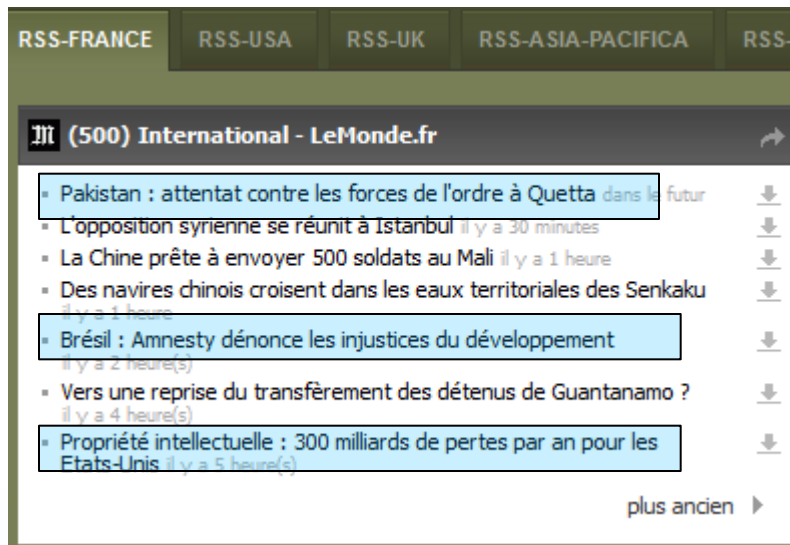


L'exemple du Proche-Orient 2006-2011



Media Flows & Geographical Links (1)

A newspaper located in country *i* sends information about a country *j*



RSS browser



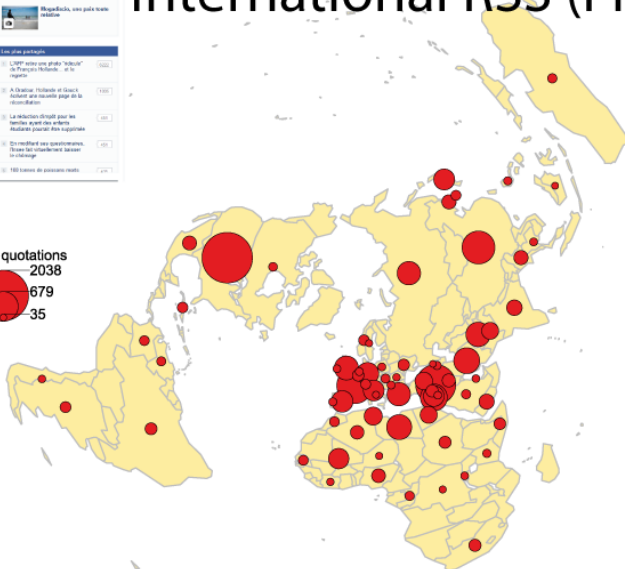
Direct geographical links



Le Monde International RSS (FR)

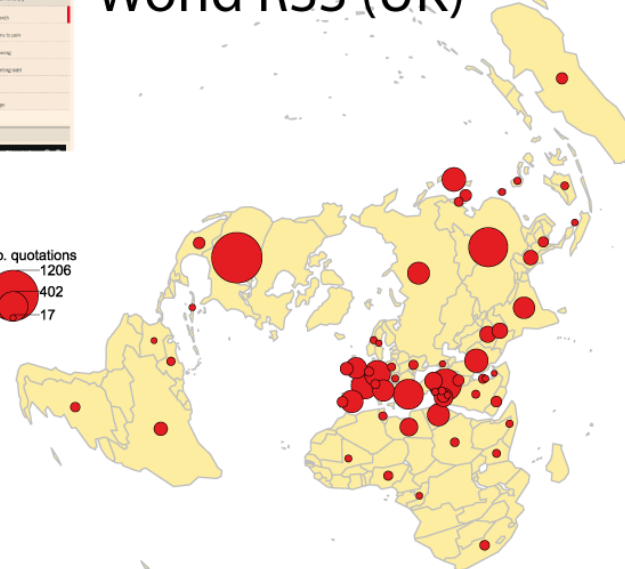
- TOP 5**
- 1 - USA 12.3%
 - 2 - Syria 7.7%
 - 3 - France 6.2%
 - 4 - China 5.0%
 - 5 - Israël 3.3%

nb. quotations
2038
679
35



- TOP 5**
- 1 - USA 15.1%
 - 2 - China 9.1%
 - 3 - Syria 5.8%
 - 4 - Greece 5.2%
 - 5 - France 3.0%

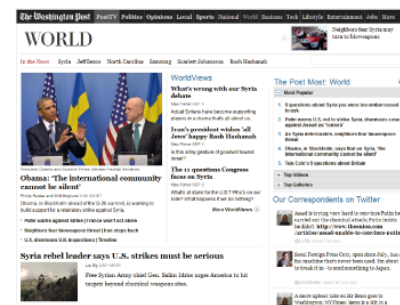
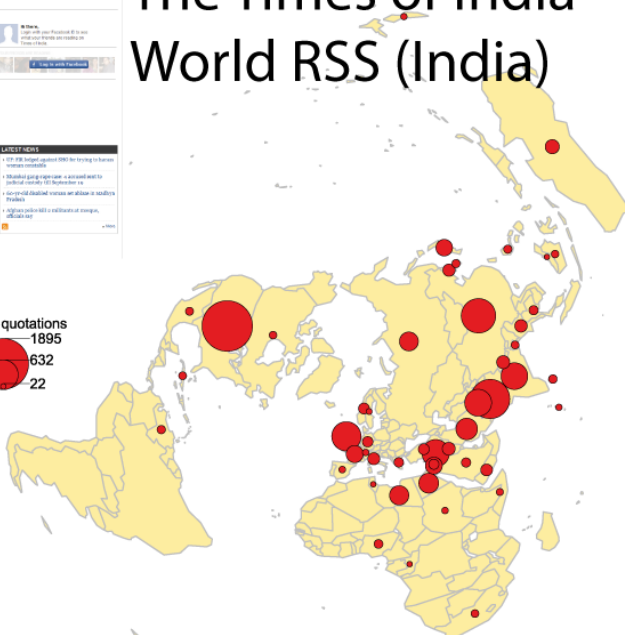
nb. quotations
1206
402
17



The Times of India World RSS (India)

- TOP 5**
- 1 - USA 17.9%
 - 2 - Pakistan 10.8%
 - 3 - China 8.0%
 - 4 - UK 5.8%%
 - 5 - Syria 5.0%

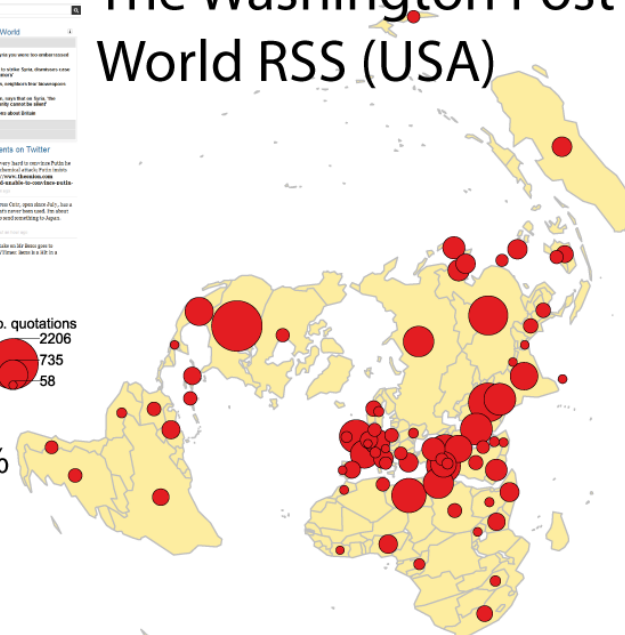
nb. quotations
1895
632
22



The Washington Post World RSS (USA)

- TOP 5**
- 1 - USA 7.7%
 - 2 - China 4.7%
 - 3 - Afghanistan 4.6%
 - 4 - Syria 4.1%%
 - 5 - Libya 3.4%

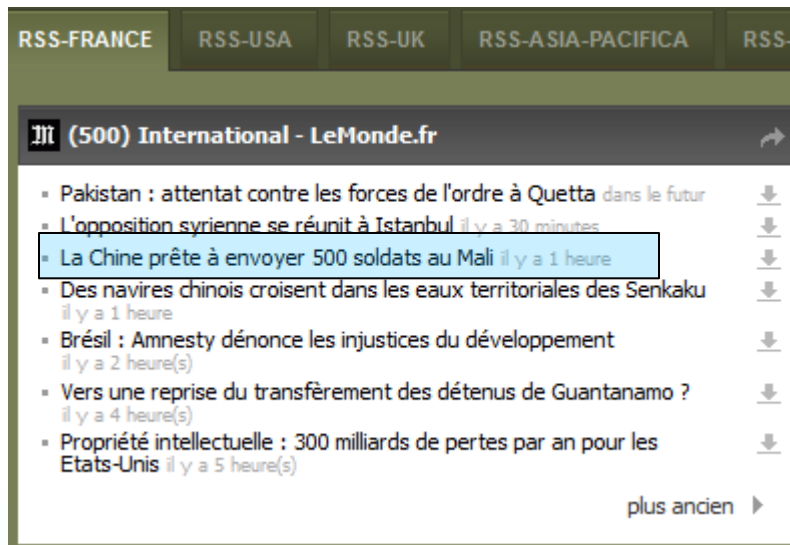
nb. quotations
2206
735
58



Source : ANR Geomedia, from June 2011 to December 2012

Media Flows & Geographical Links (2)

A newspaper located in country *i* sends information about countries *j* and *k*

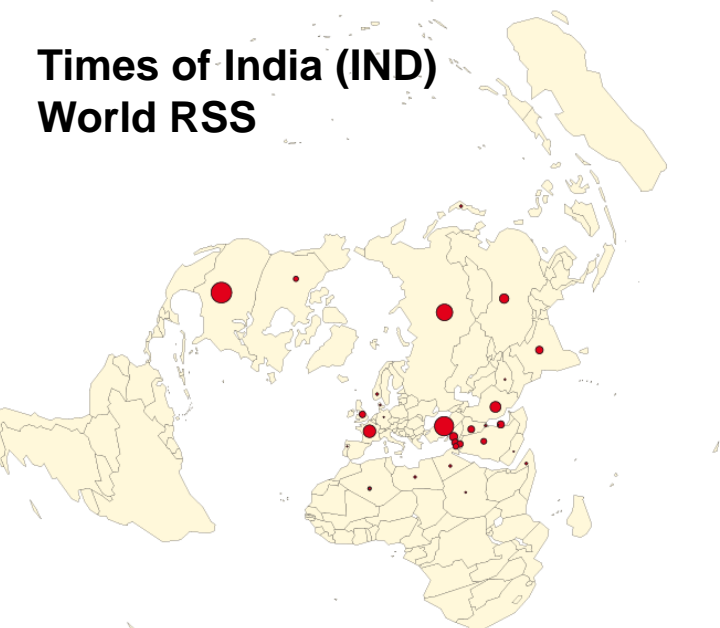
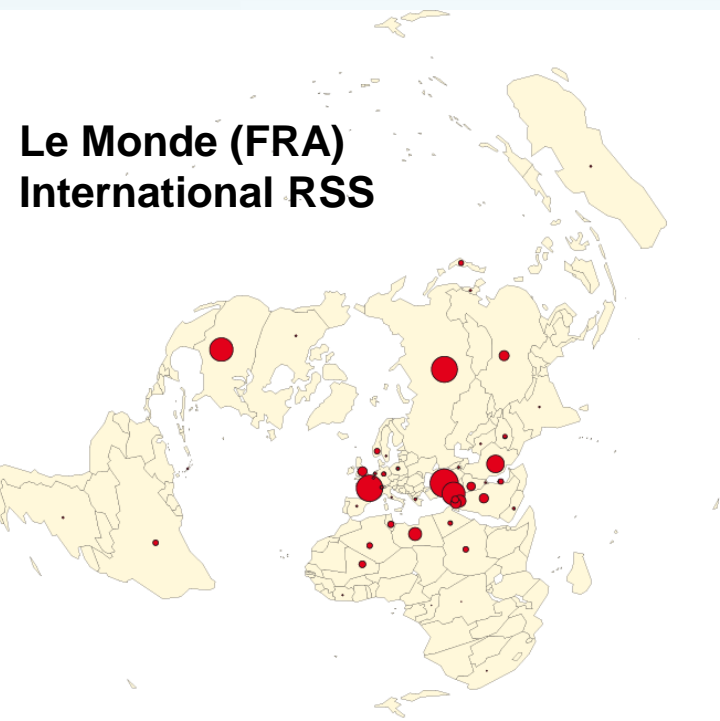


RSS browser

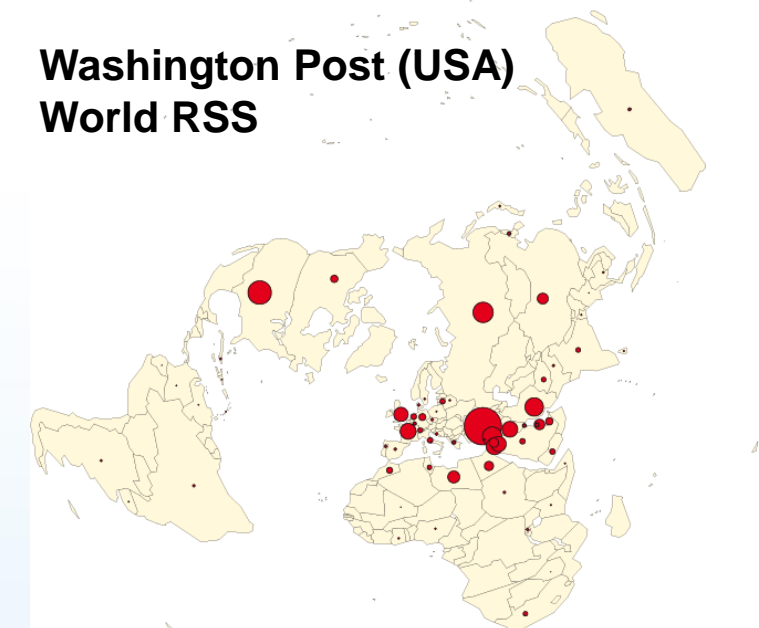


Indirect geographical links

COUNTRIES ASSOCIATED TO SYRIA IN RSS FLOWS FROM ...



Weighted number of
common quotations
with Syria

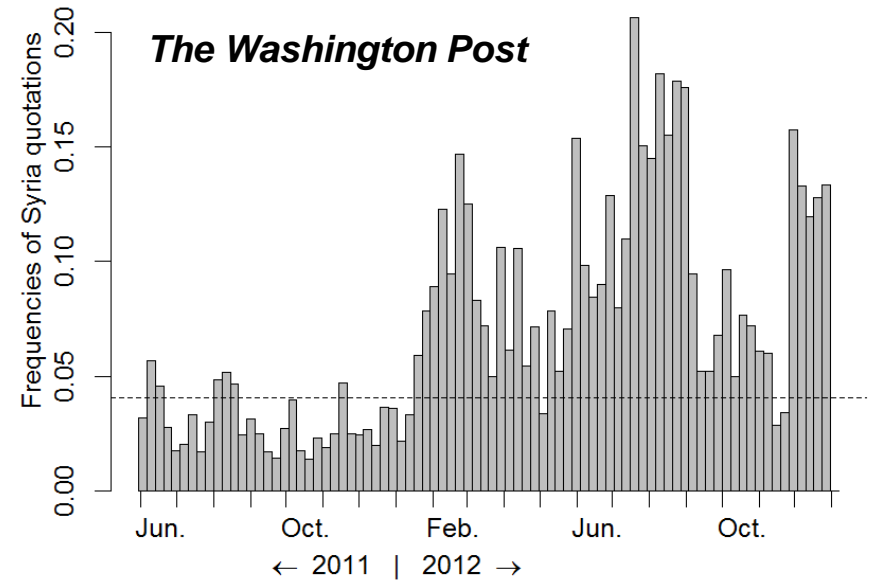
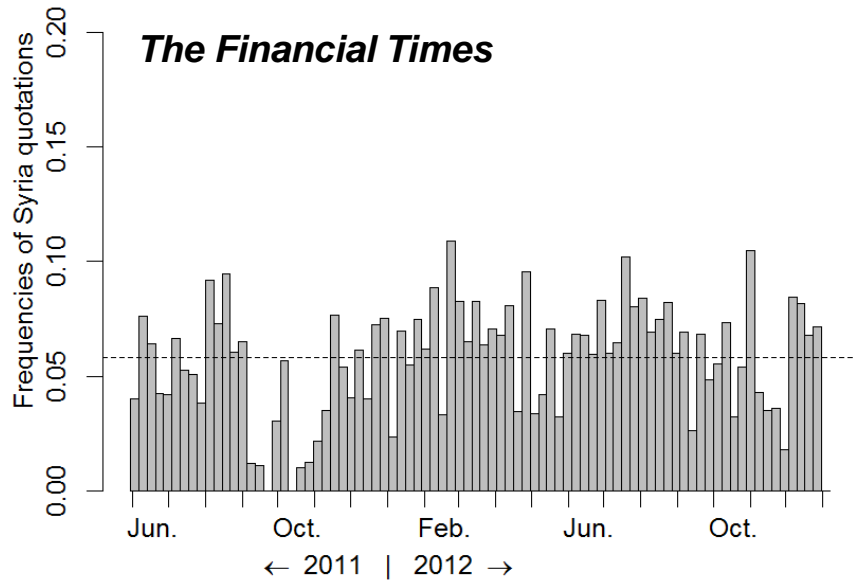
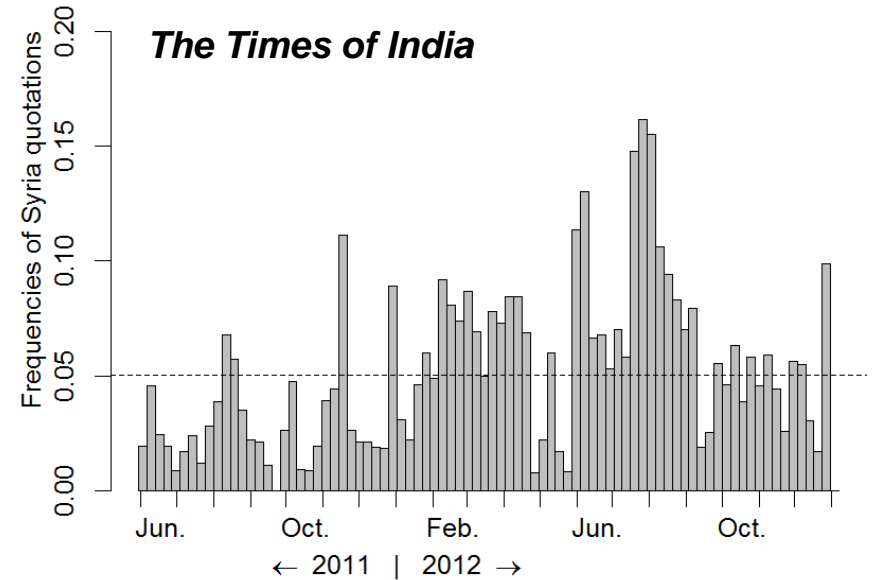
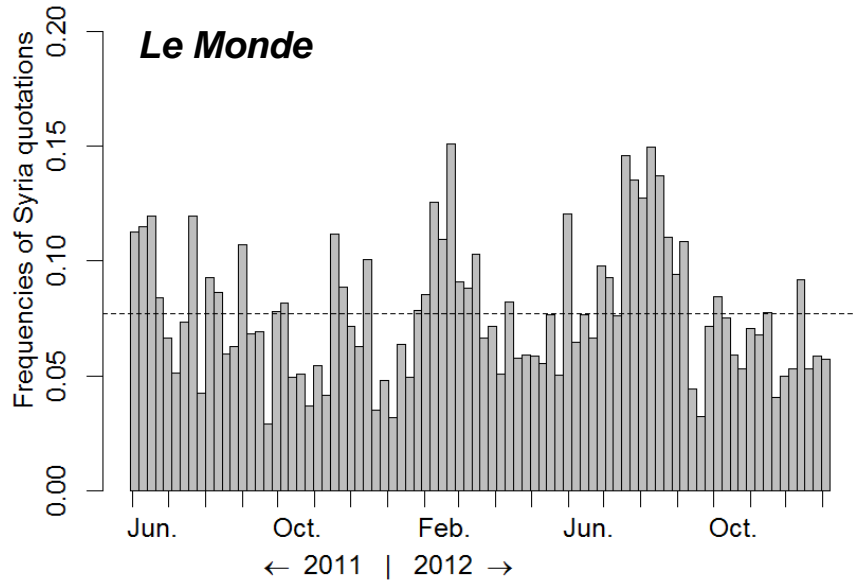


I

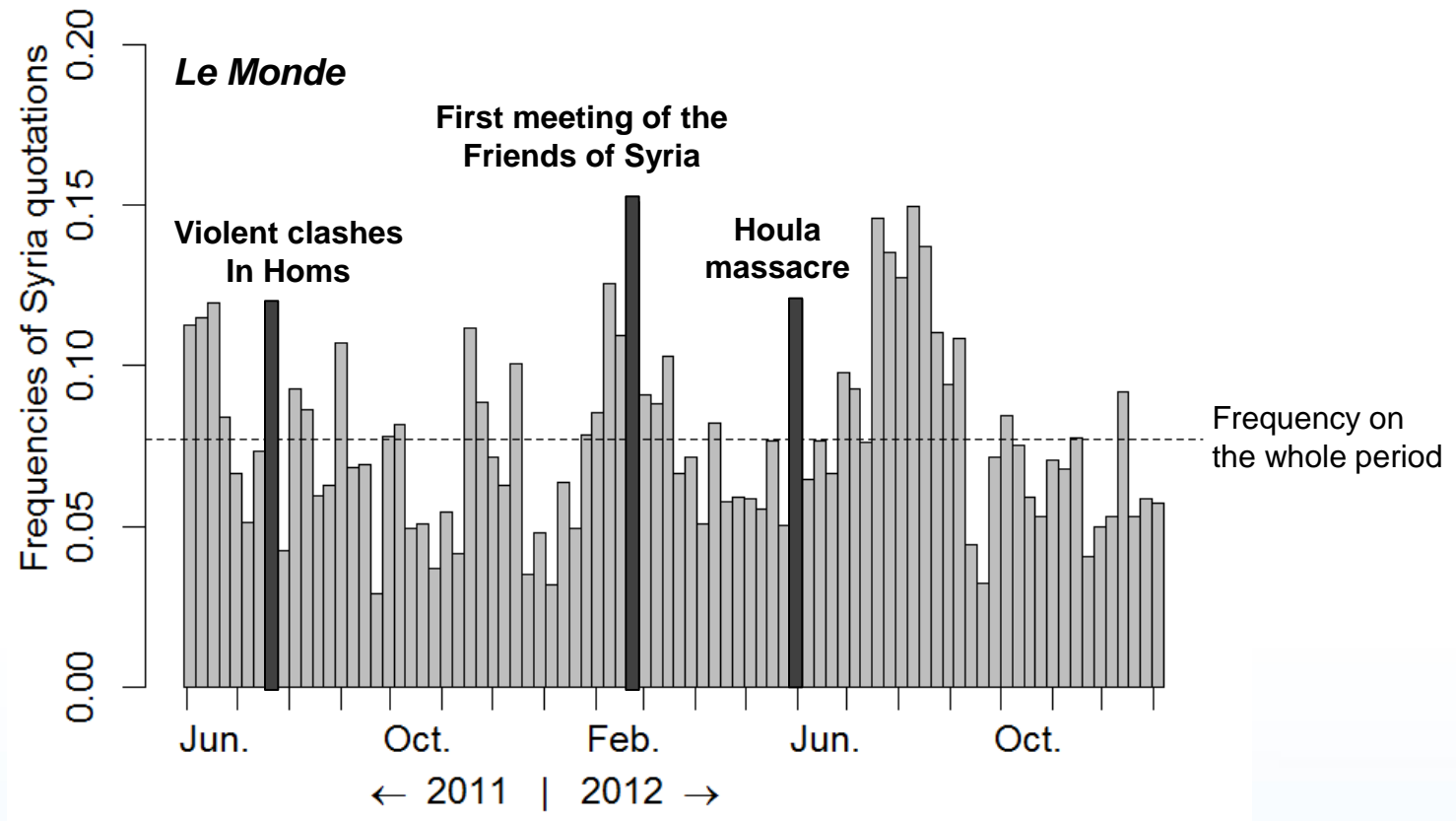
TIME ANALYSIS

Which period of time are more or less focused on Syria according to RSS Flows ?

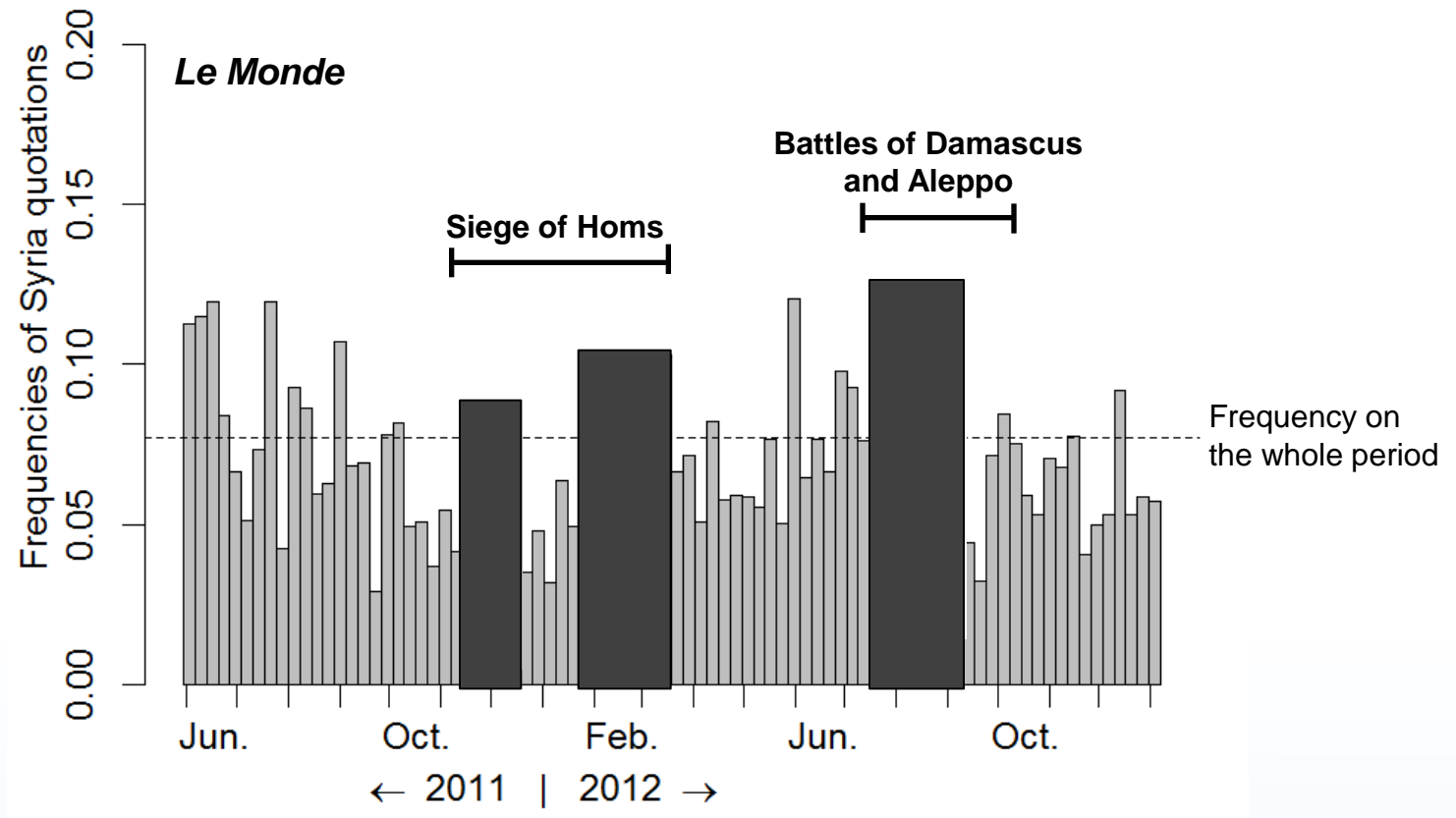
Syria Quotations over Time (week level)



Syria Quotations over Time (week level)



Syria Quotations over Time (week level)



How to detect *Macroscopic* Events out of *Weekly* Results?

1. Find homogeneous sub-periods in order to identify stable states
2. Minimize the number of periods in order to reveal significant transitions

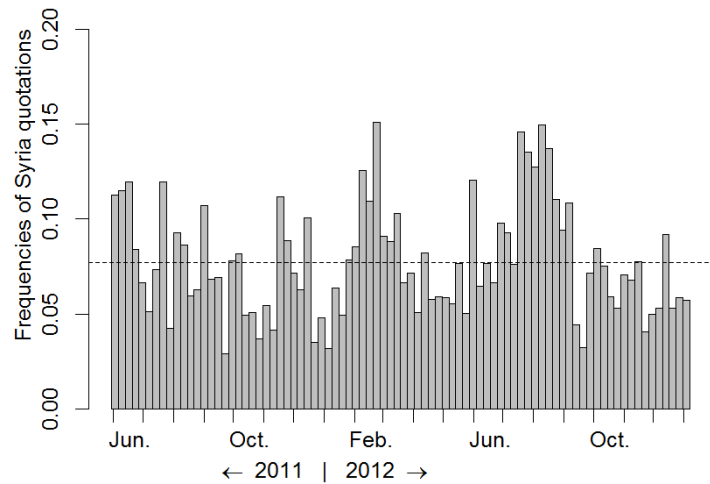
Two measures that should be jointly optimized:

1. Minimize the **information loss**
2. Maximize **complexity reduction**

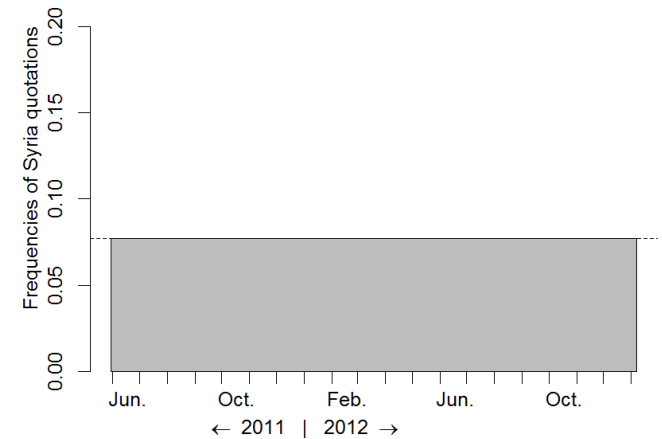
Lamarche-Perrin R., Demazeau Y. and Vincent J.-M., 2013, "The Best-partitions Problem: How to Build Meaningful Aggregations?" in *Proceeding of the 12th Conference on Intelligent Agent Technology, (IAT'13)*, Atlanta.

High Complexity

Low Complexity



Data Aggregation

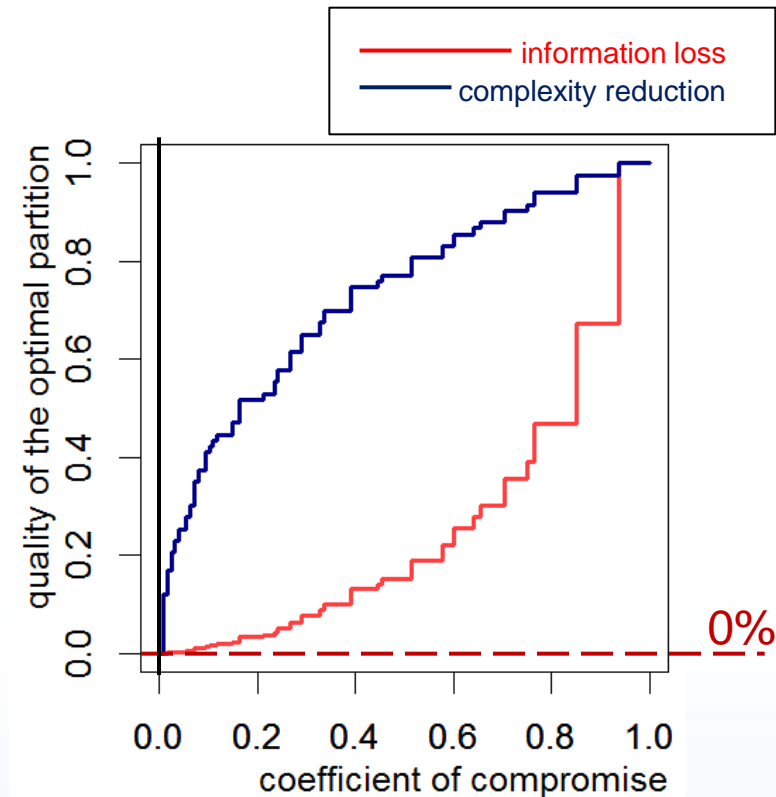
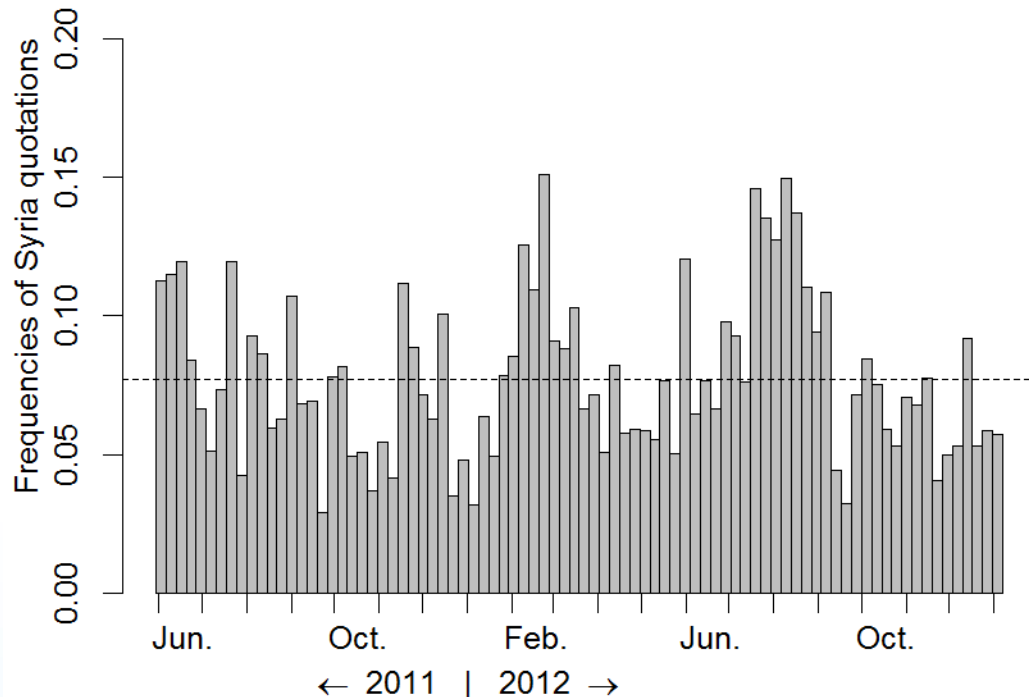


Low Information Loss

High Information Loss

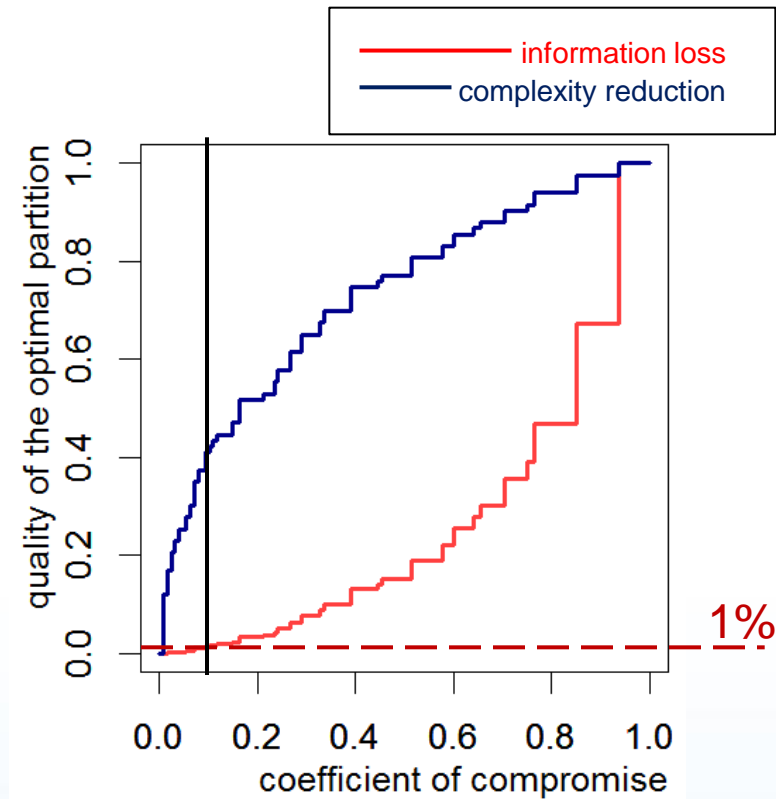
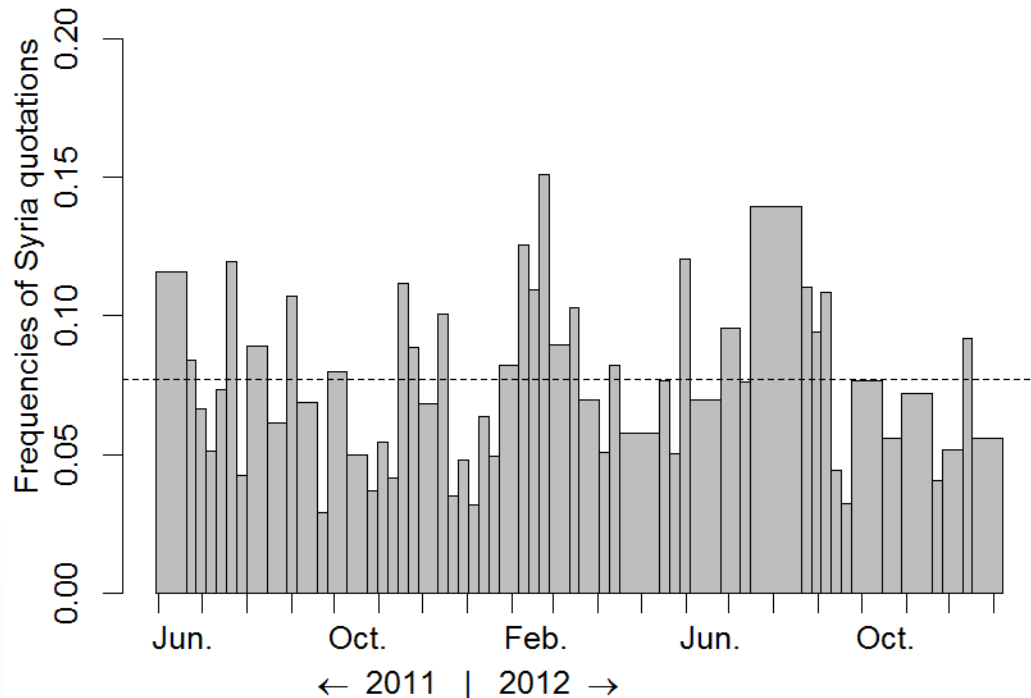
Temporal Aggregation of Quotation Frequencies

Frequency of Syria quotations
in articles from *Le Monde* (week level)



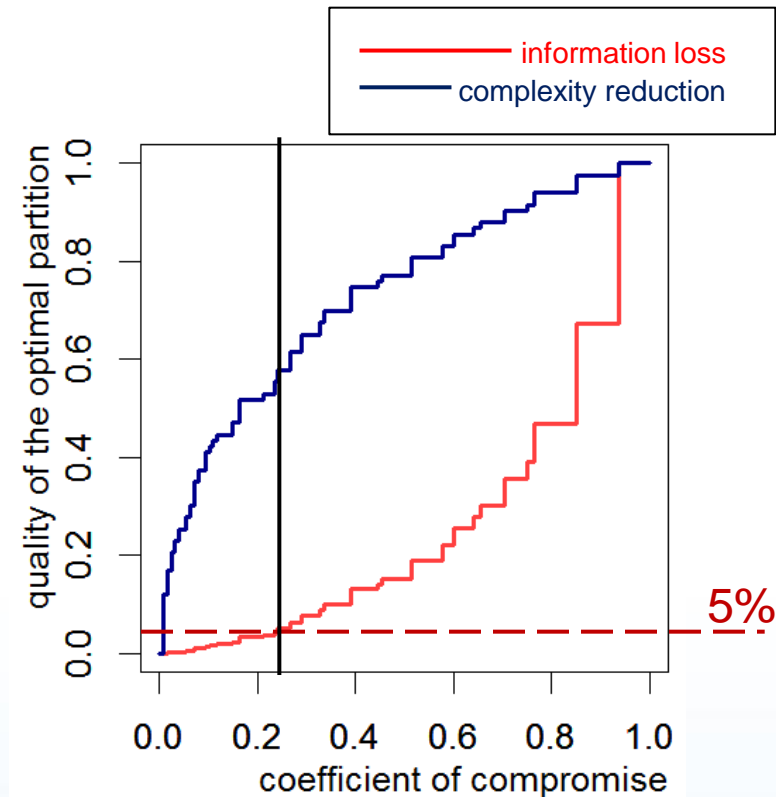
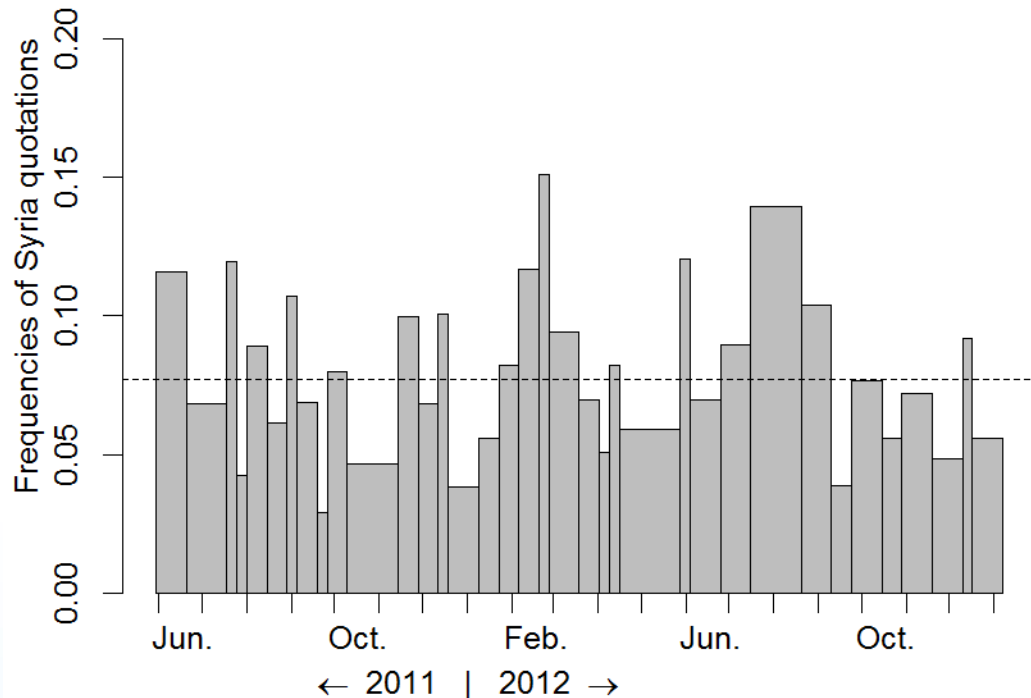
Temporal Aggregation of Quotation Frequencies

Frequency of Syria quotations
in articles from *Le Monde* (week level)



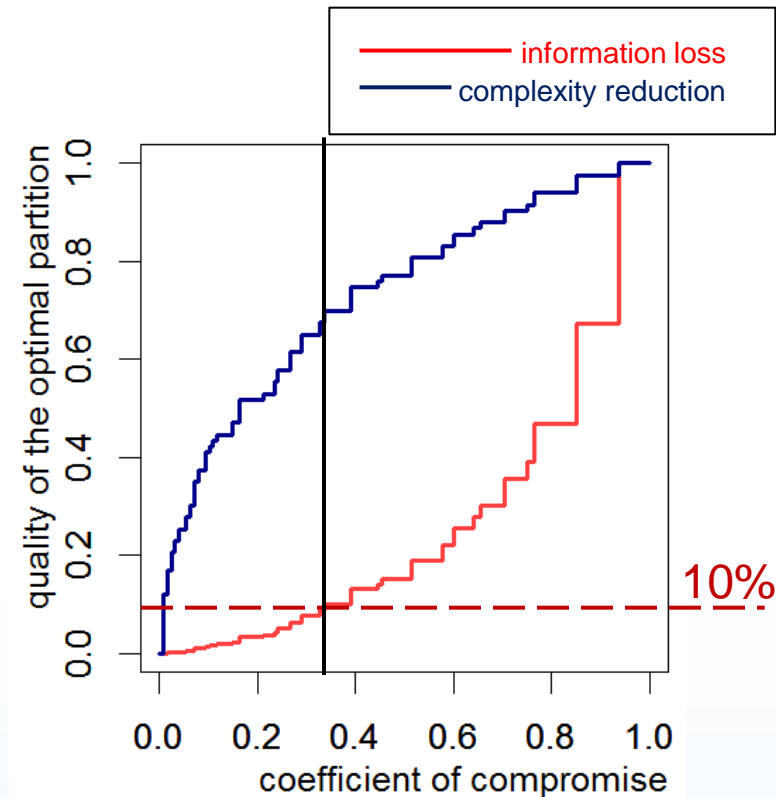
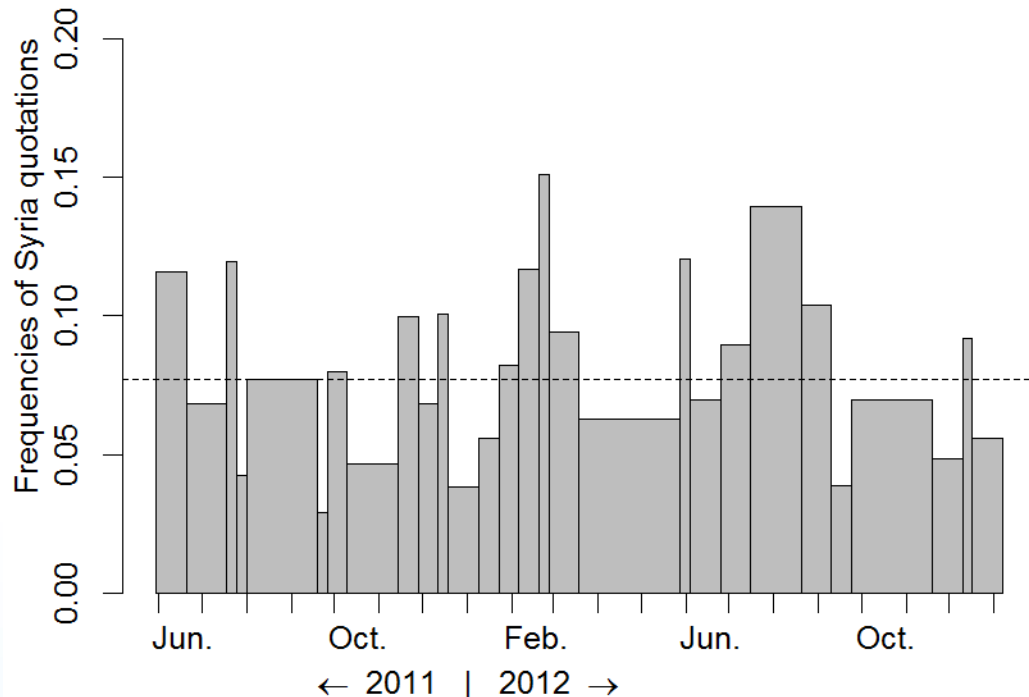
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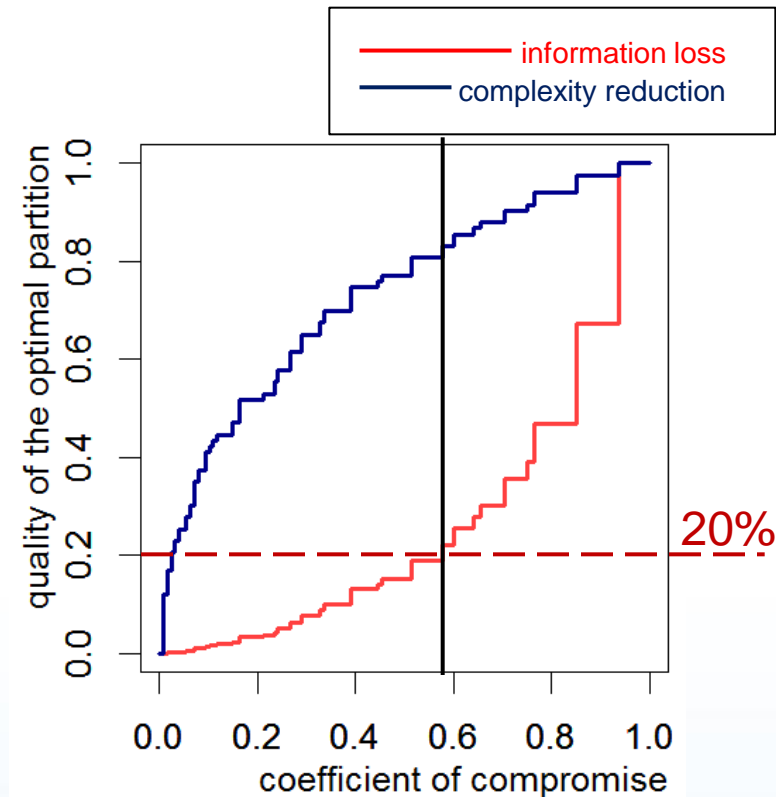
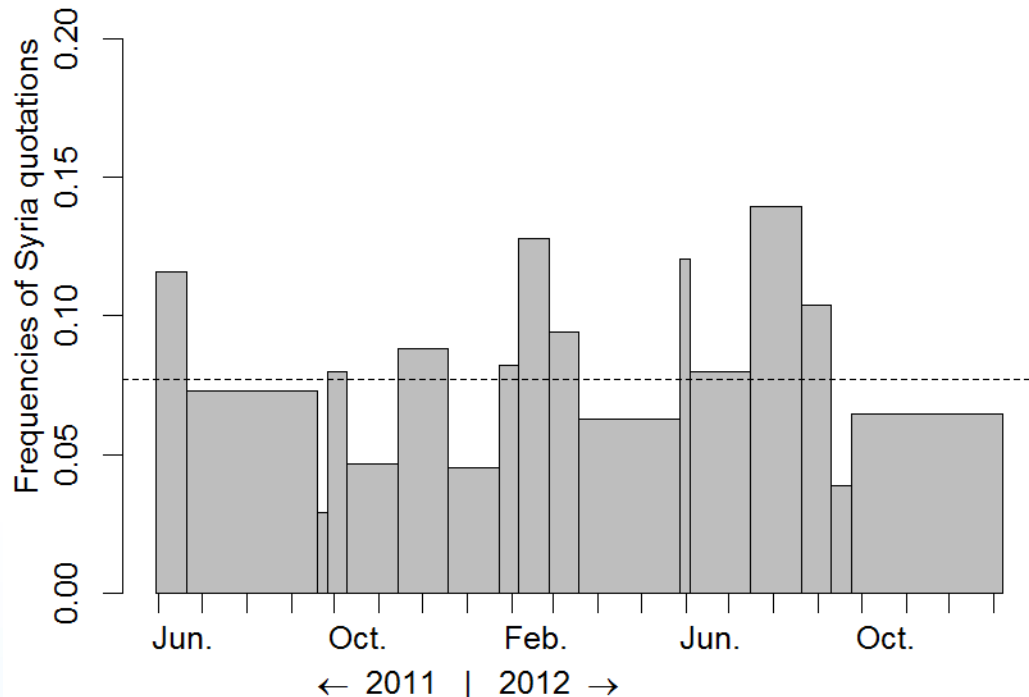
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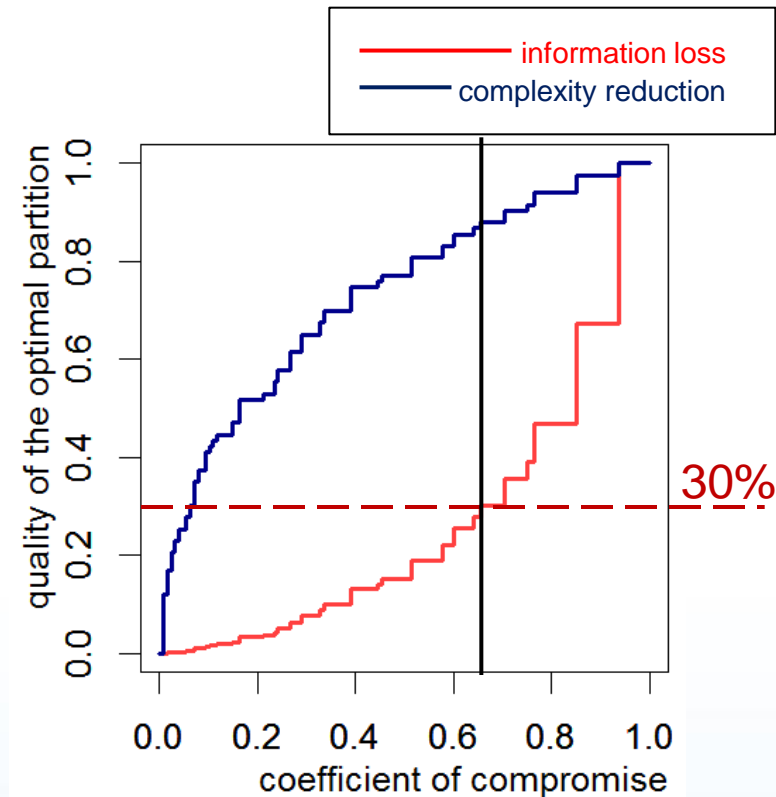
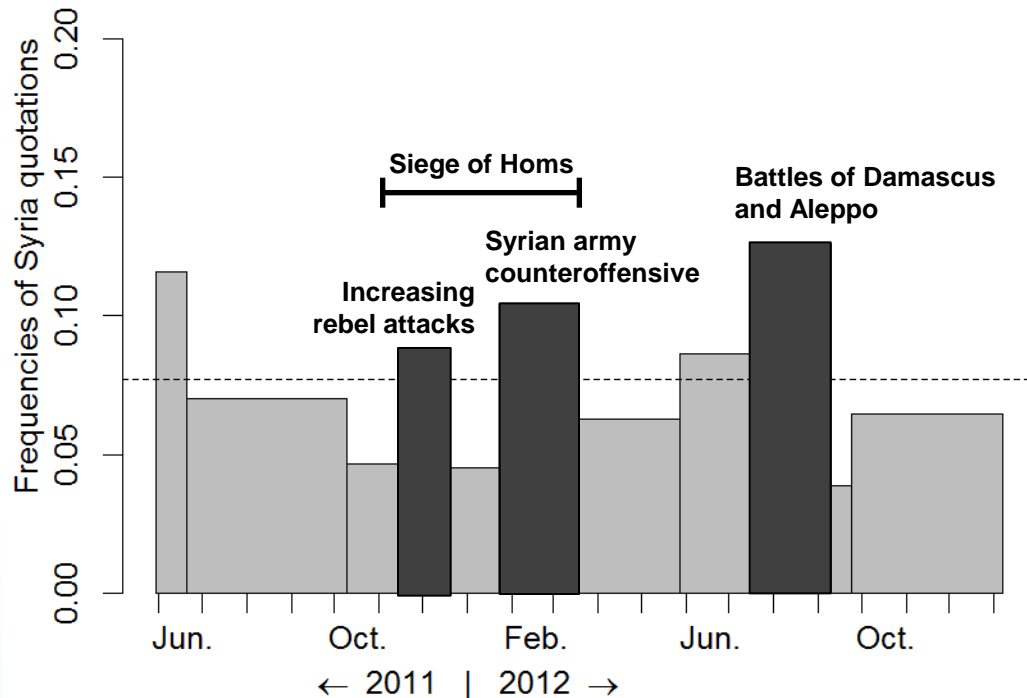
Temporal Aggregation of Quotation Frequencies

Frequency of Syria quotations
in articles from *Le Monde* (week level)



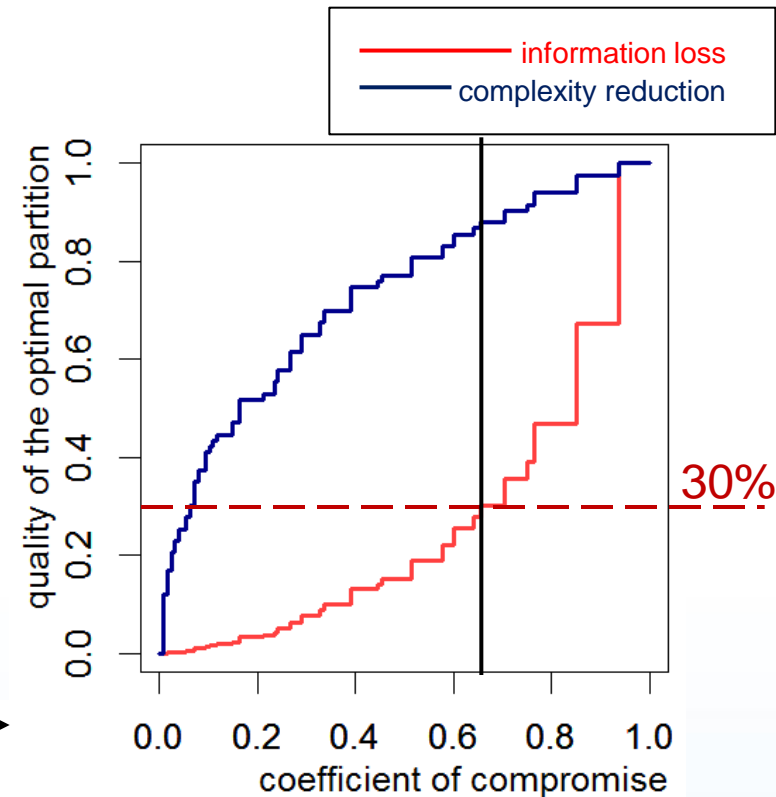
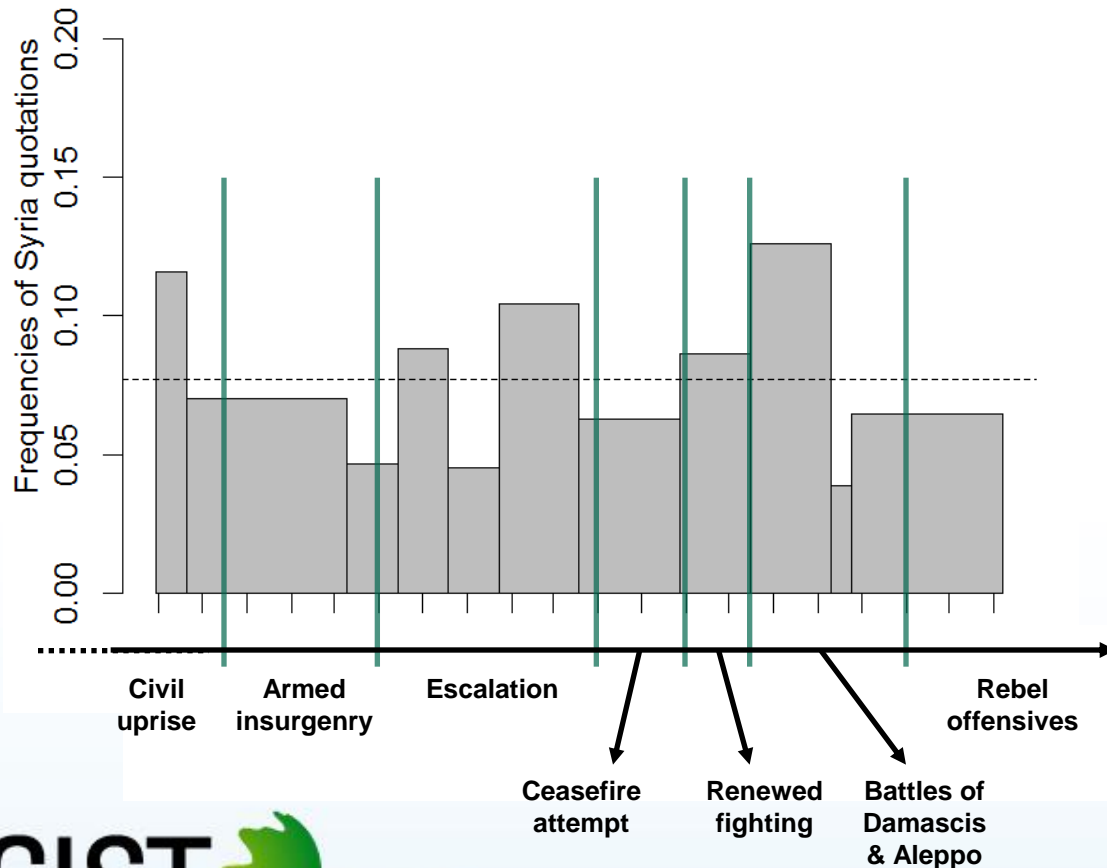
Temporal Aggregation of Quotation Frequencies

Frequency of Syria quotations in articles from *Le Monde* (week level)

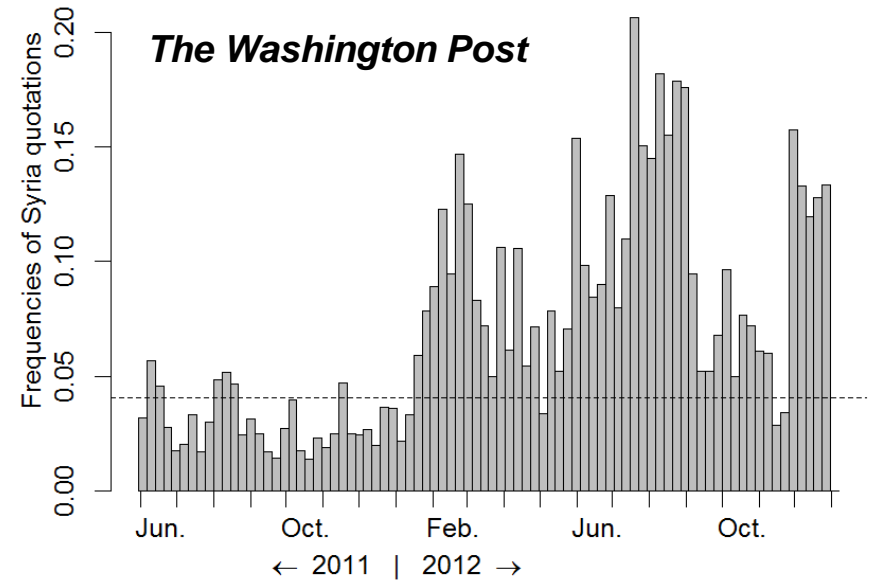
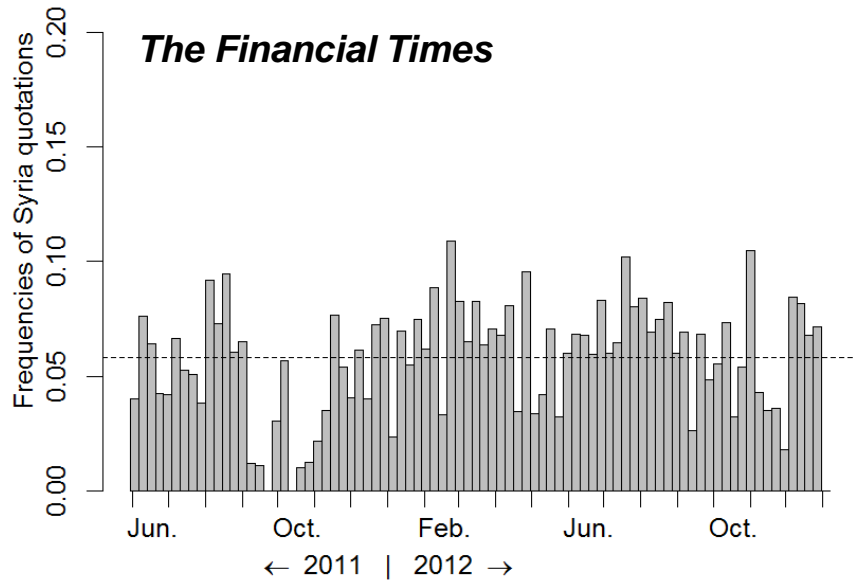
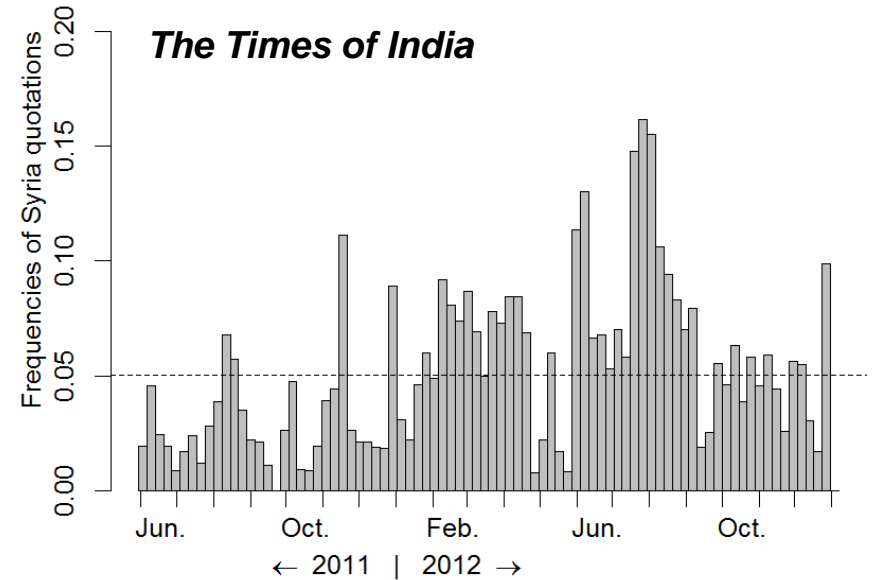
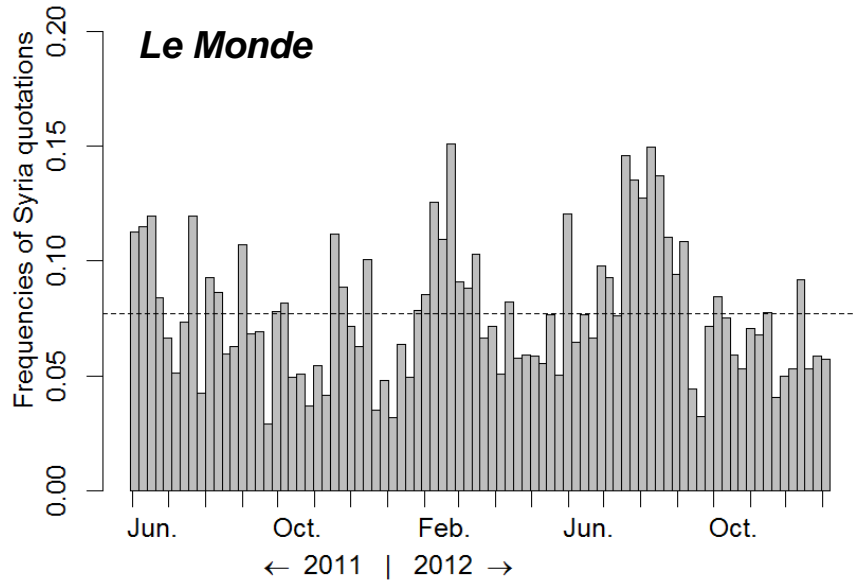


Temporal Aggregation of Quotation Frequencies

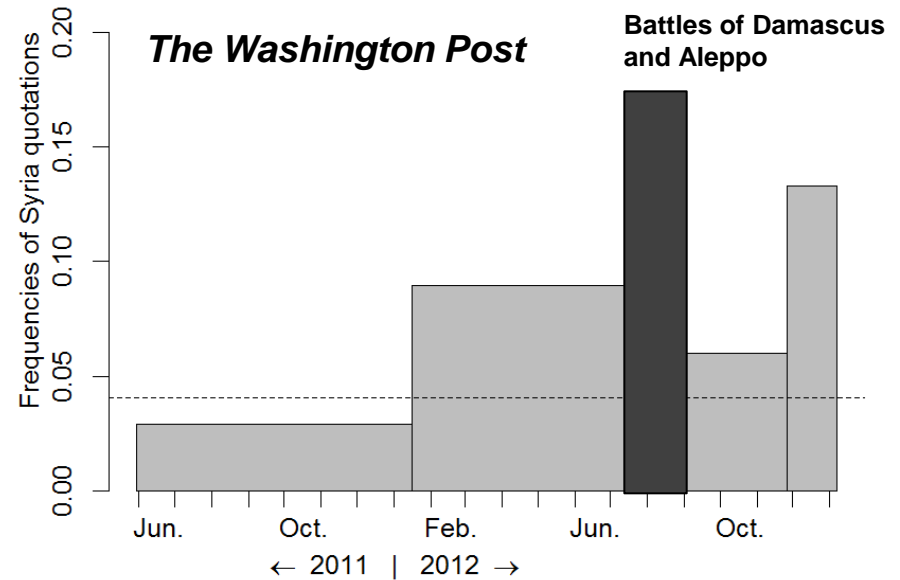
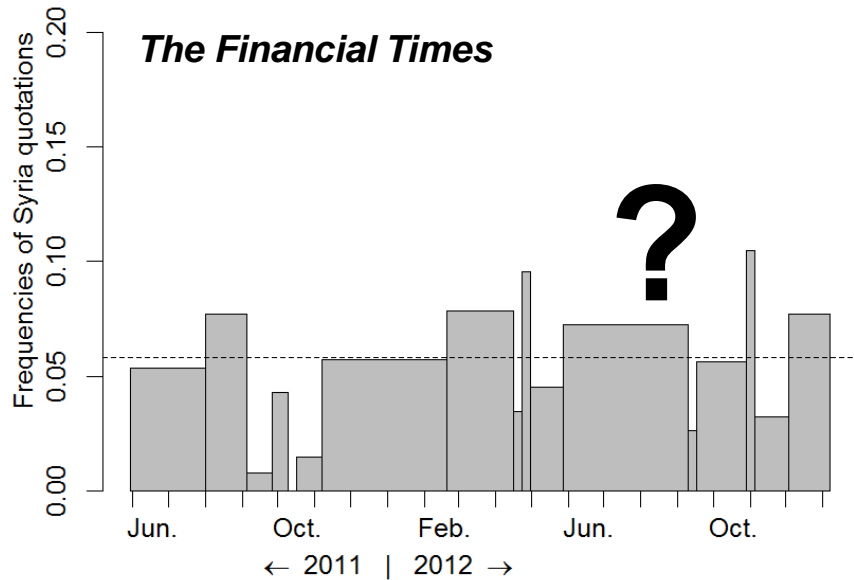
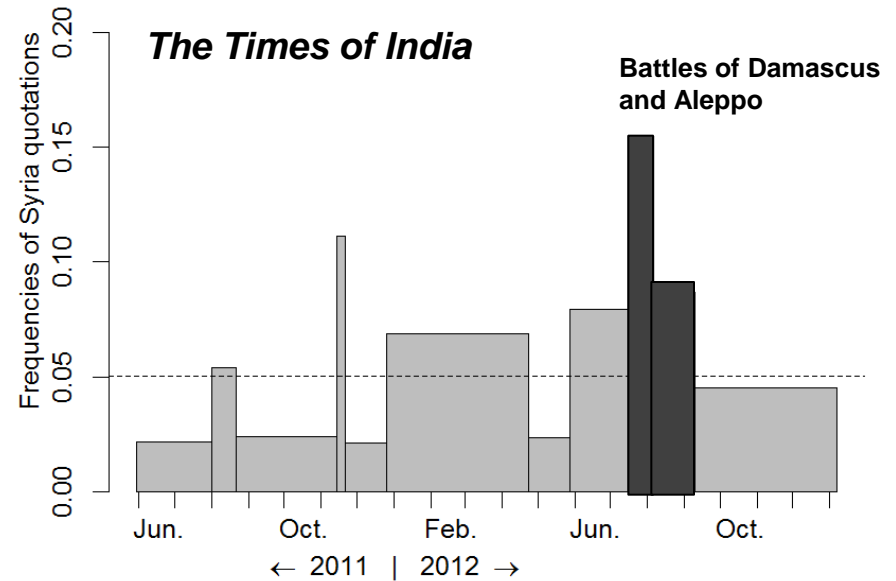
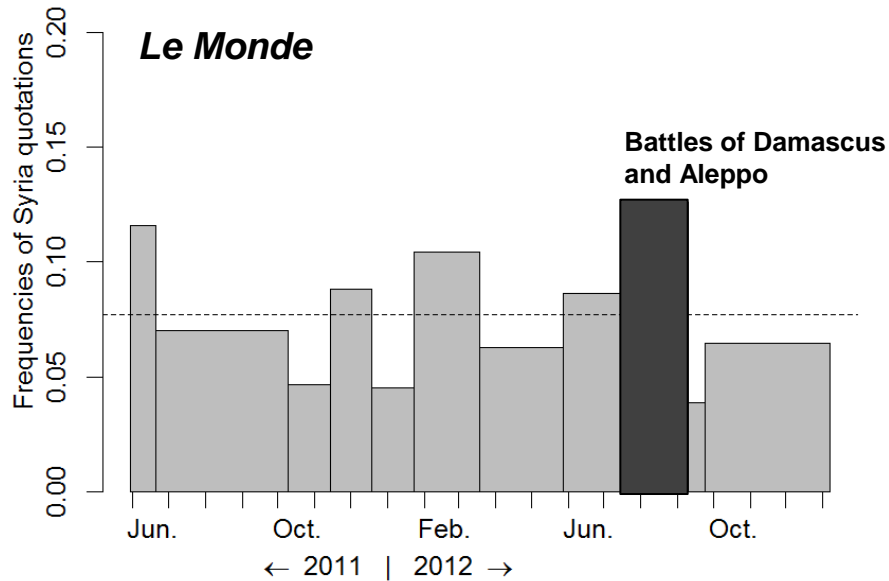
Frequency of Syria quotations
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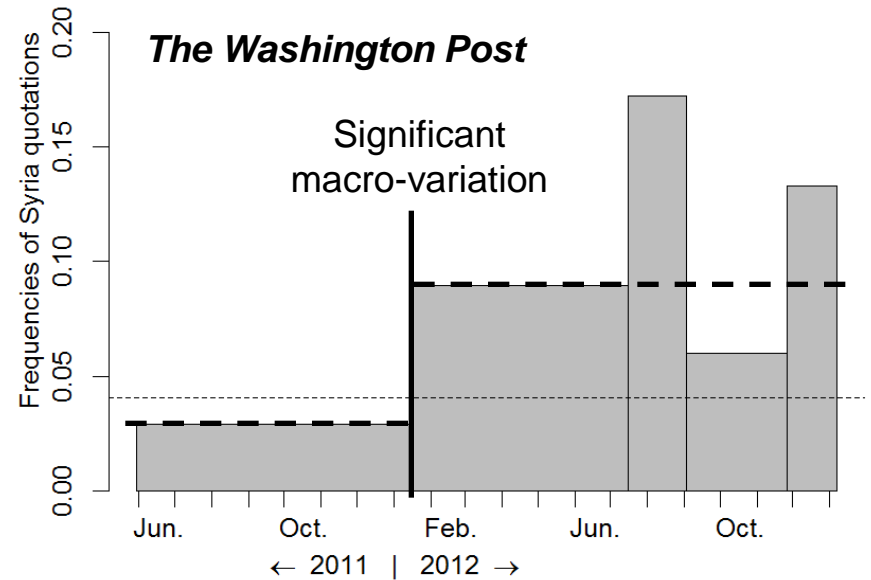
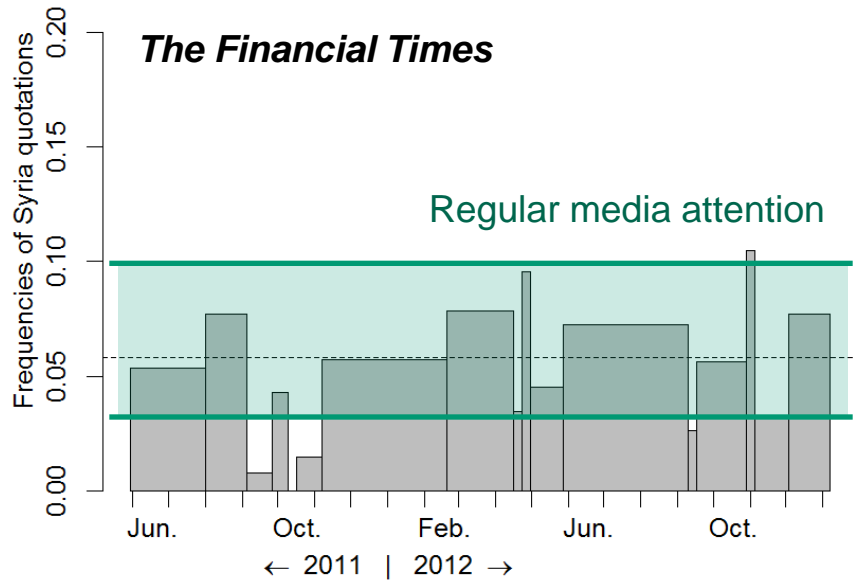
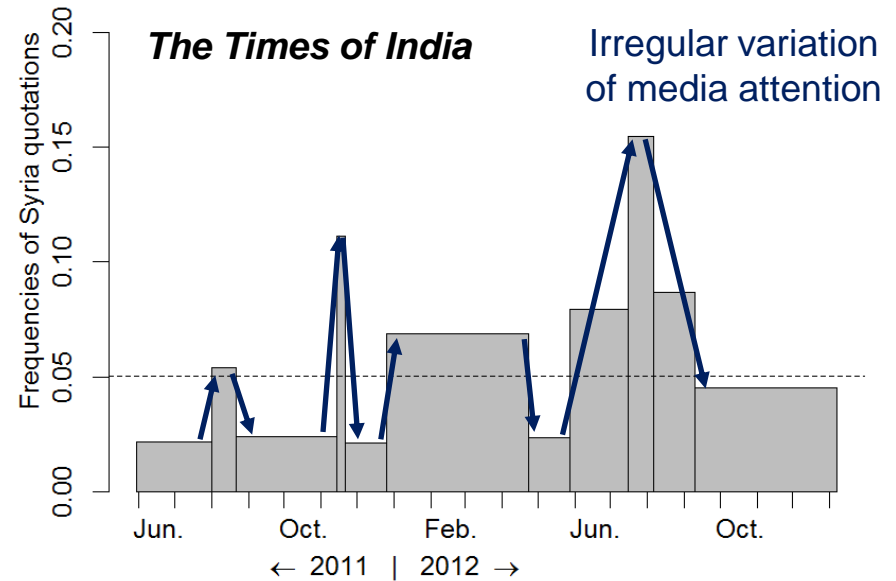
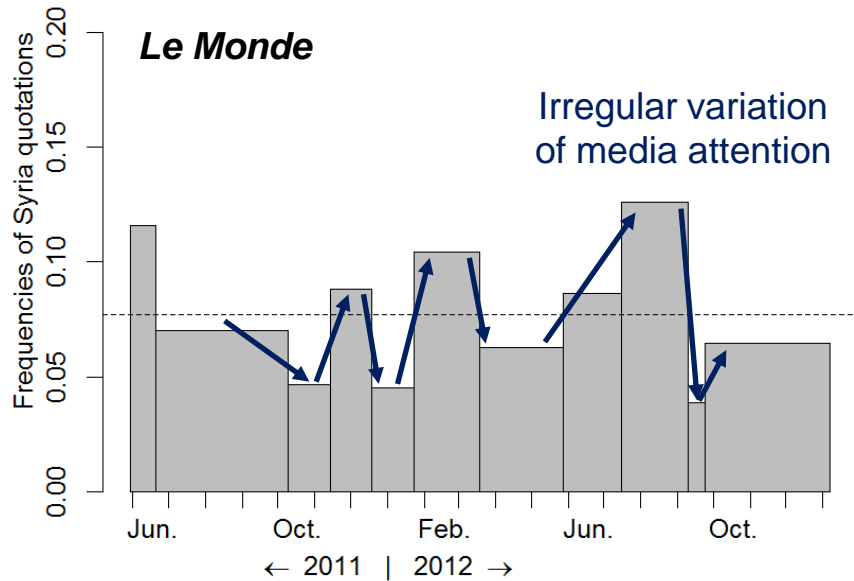
Information Loss = 0%



Information Loss = 30%



Information Loss = 30%



Outcome of time analysis

An **aggregation technique** that:

- 1.provides macro-representations of temporal variations
- 2.detects events at different scales (weeks, months, years)
- 3.gives global patterns to analyse newspapers behavior

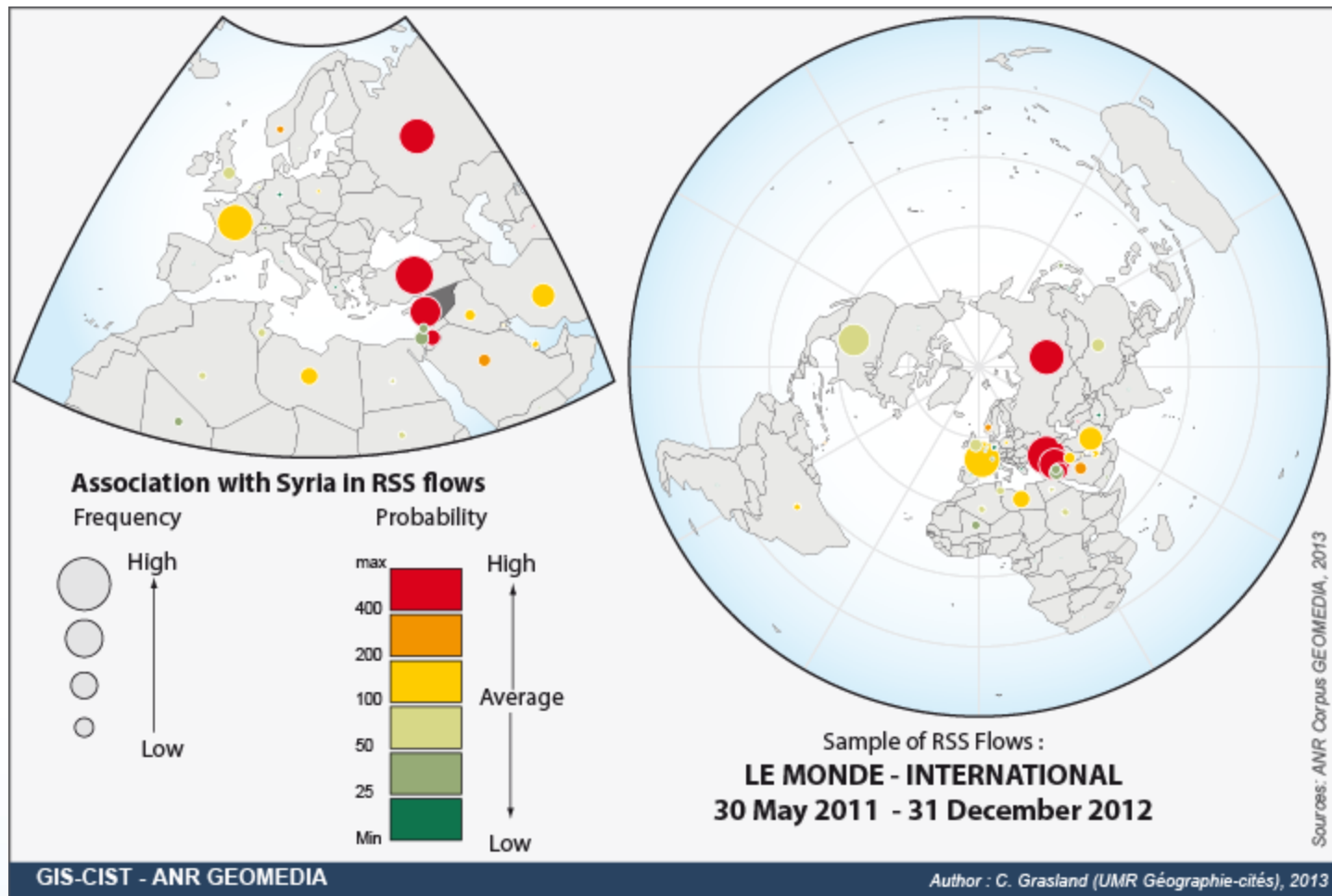
II

SPATIAL ANALYSIS

Which countries are the most frequently associated to Syria in RSS flows ?

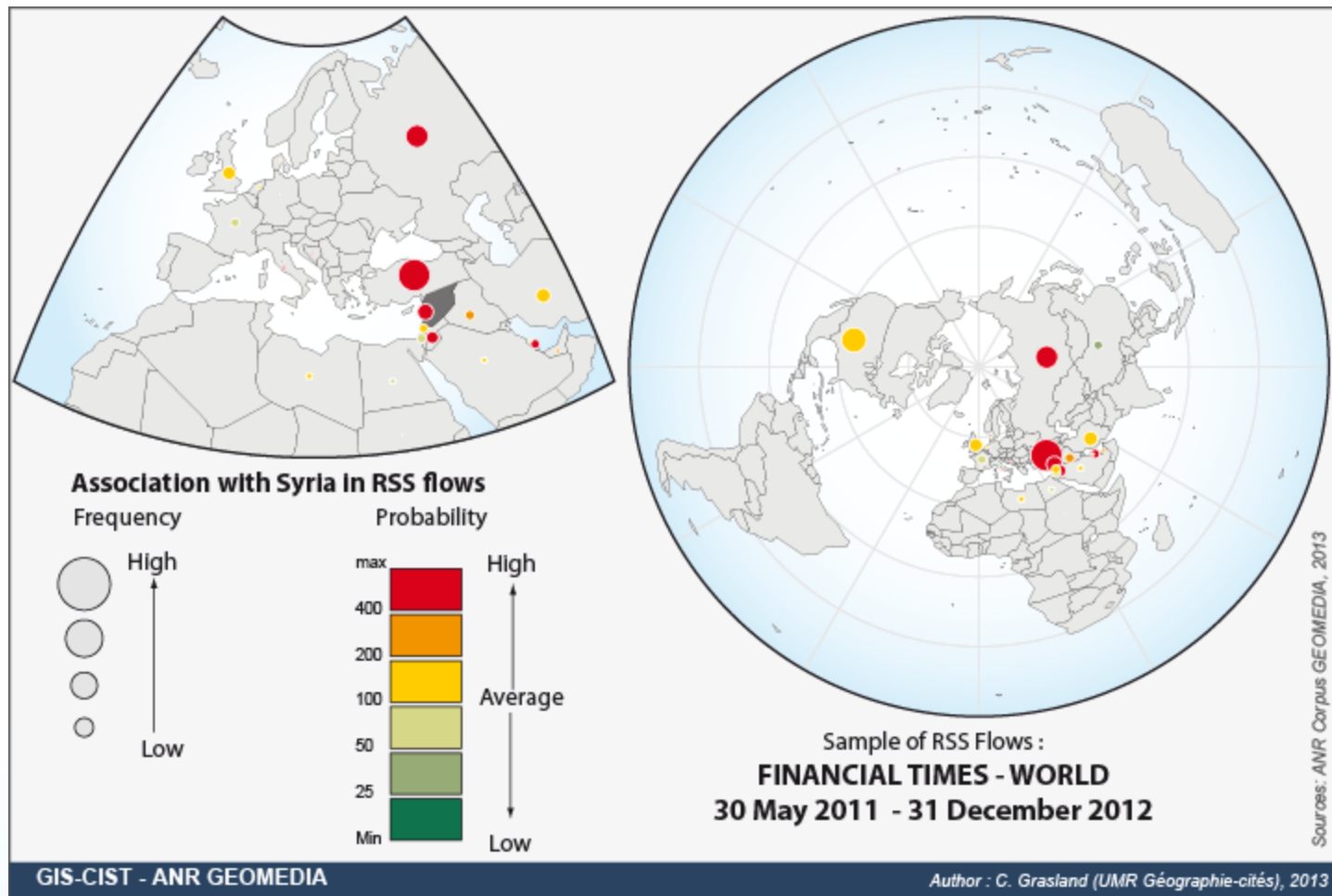
Countries associated to Syria in RSS flows

Le Monde - International



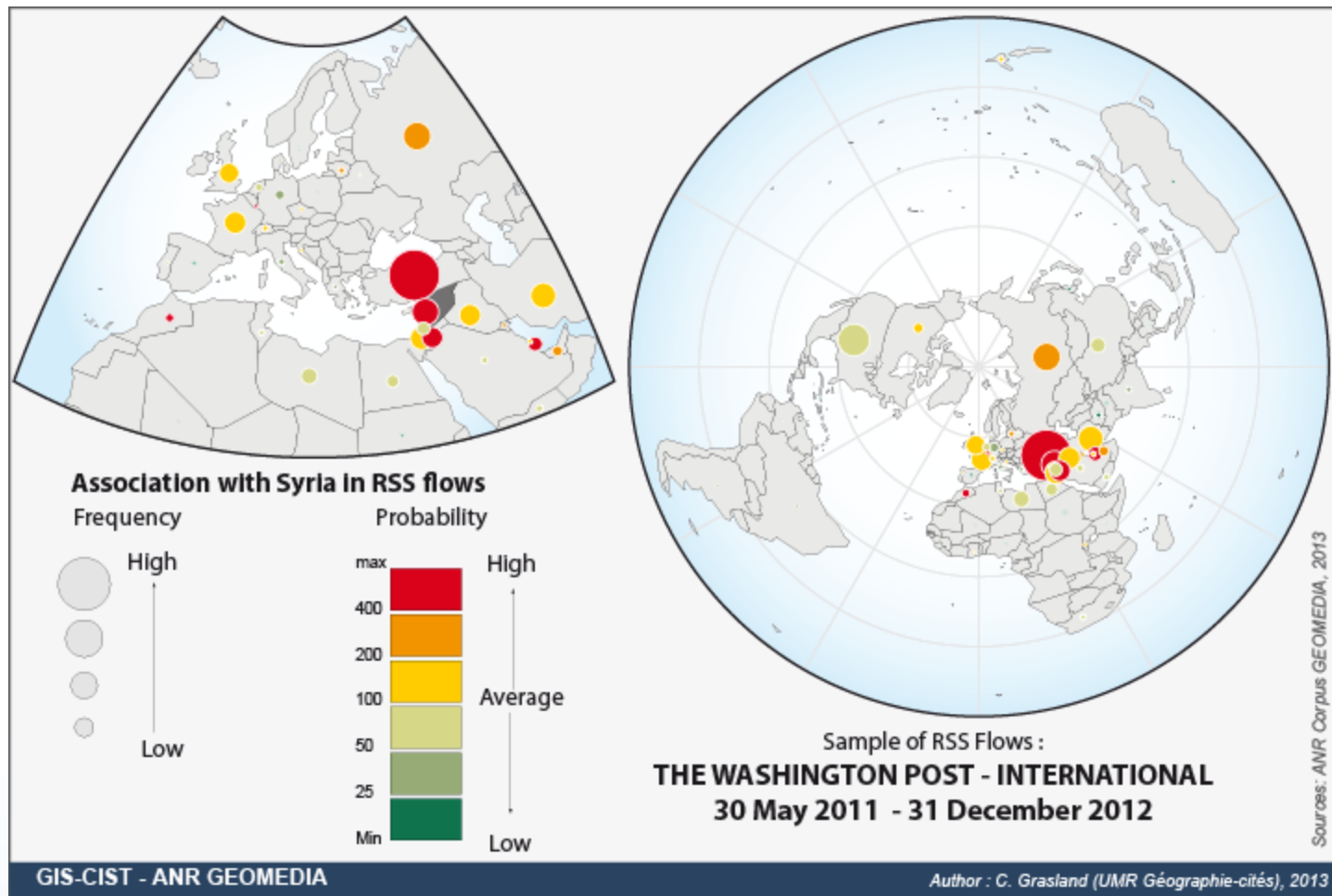
Countries associated to Syria in RSS flows

Financial Time - International



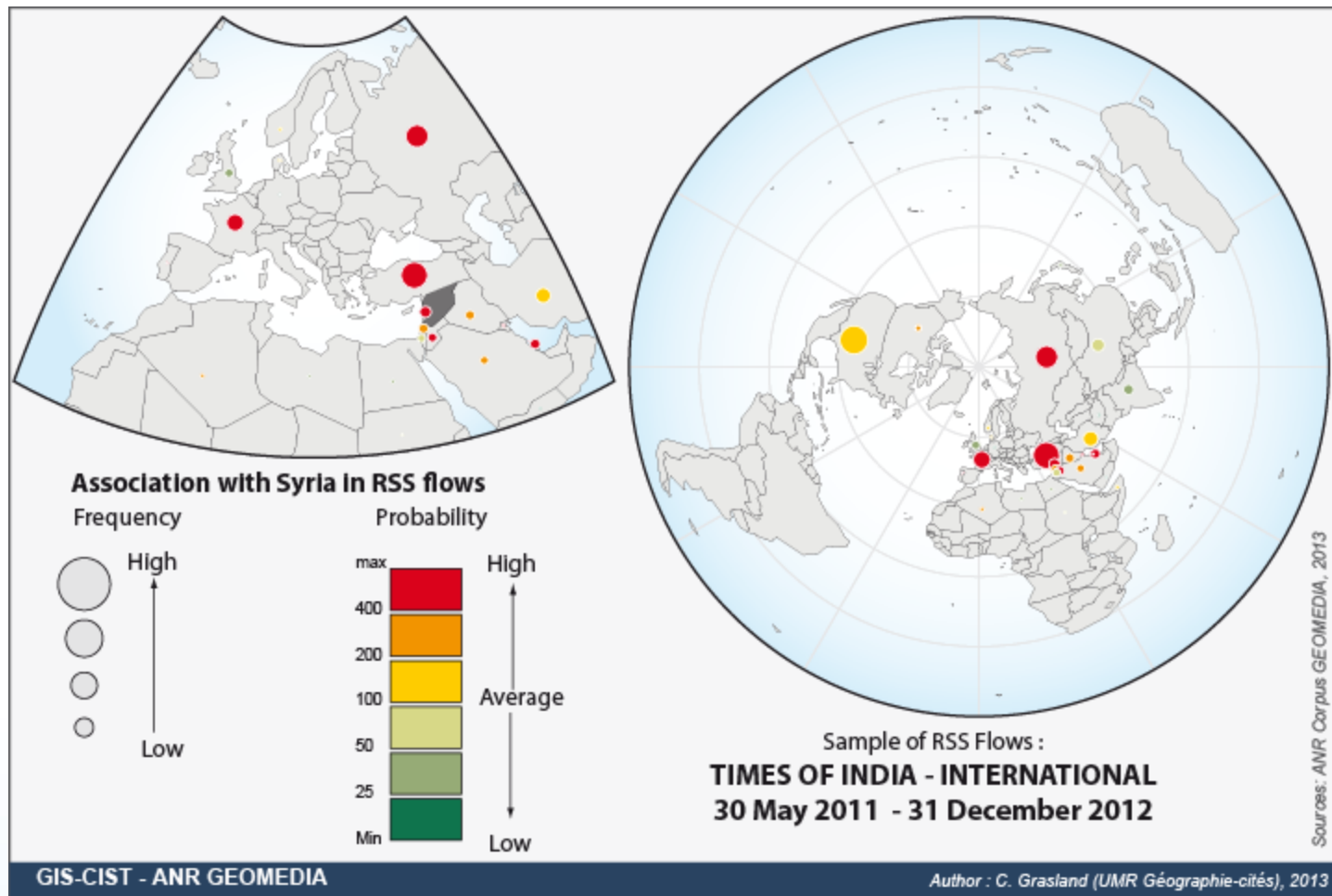
Countries associated to Syria in RSS flows

The Washington Post - International



Countries associated to Syria in RSS flows

The Times of India - International



Outcome of spatial analysis

An **inductive approach** that reveals :

1. Systematic association of Syria with **neighboring countries** involved in the conflict (Turkey, Lebanon, Jordan, ...)
2. Systematic association of **Russia** to Syrian conflict in all media (but not China ...).
3. Variable association of **USA, France, Gulf countries**, according to the different media.

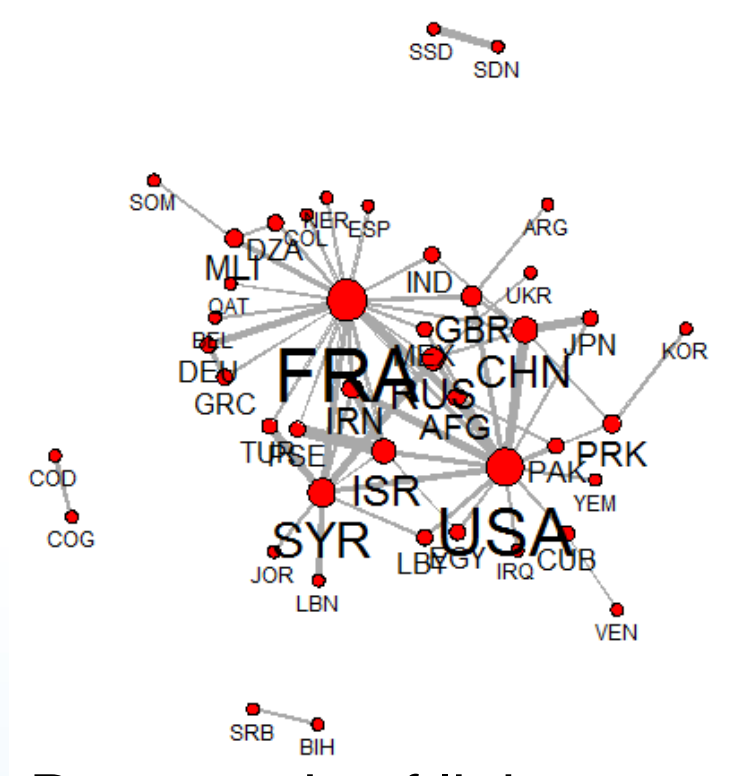
III

NETWORK ANALYSIS

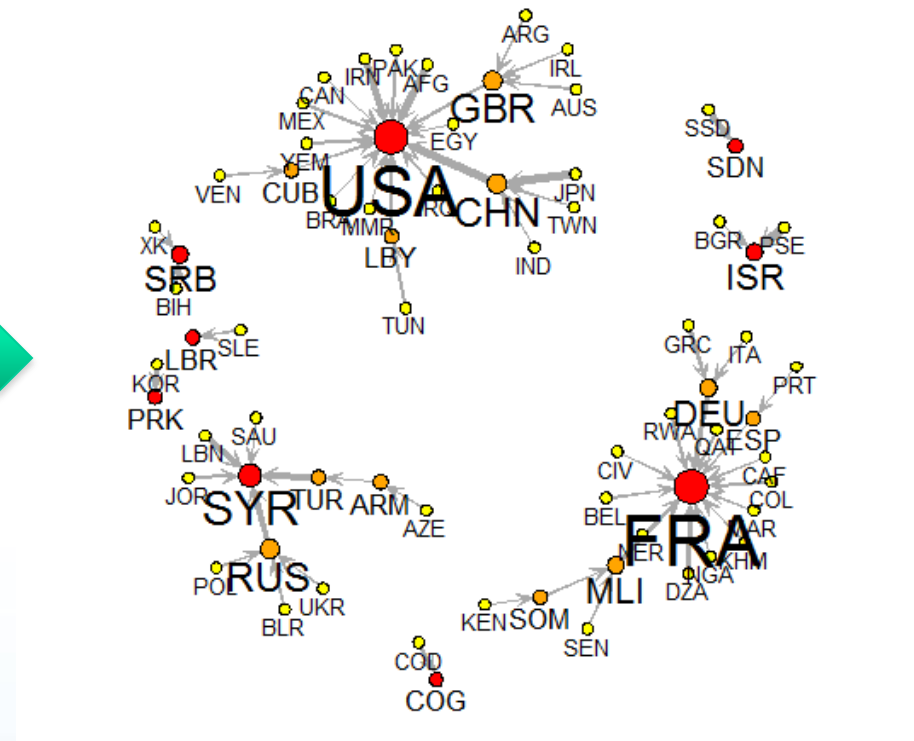
Can we identify a specific cluster of countries associated to Syrian Crisis ?

Transformation of raw matrix of links into matrix of dominant flows

Country i is « dominated » by country j if
 i is associated the most frequently to j & j is more mentioned than i



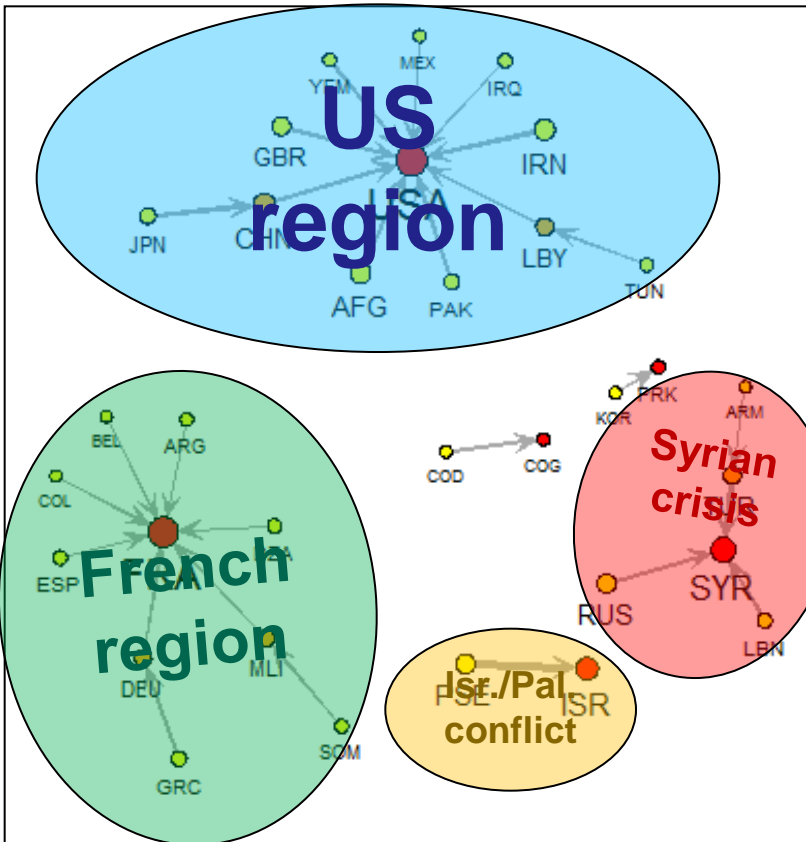
Raw matrix of links



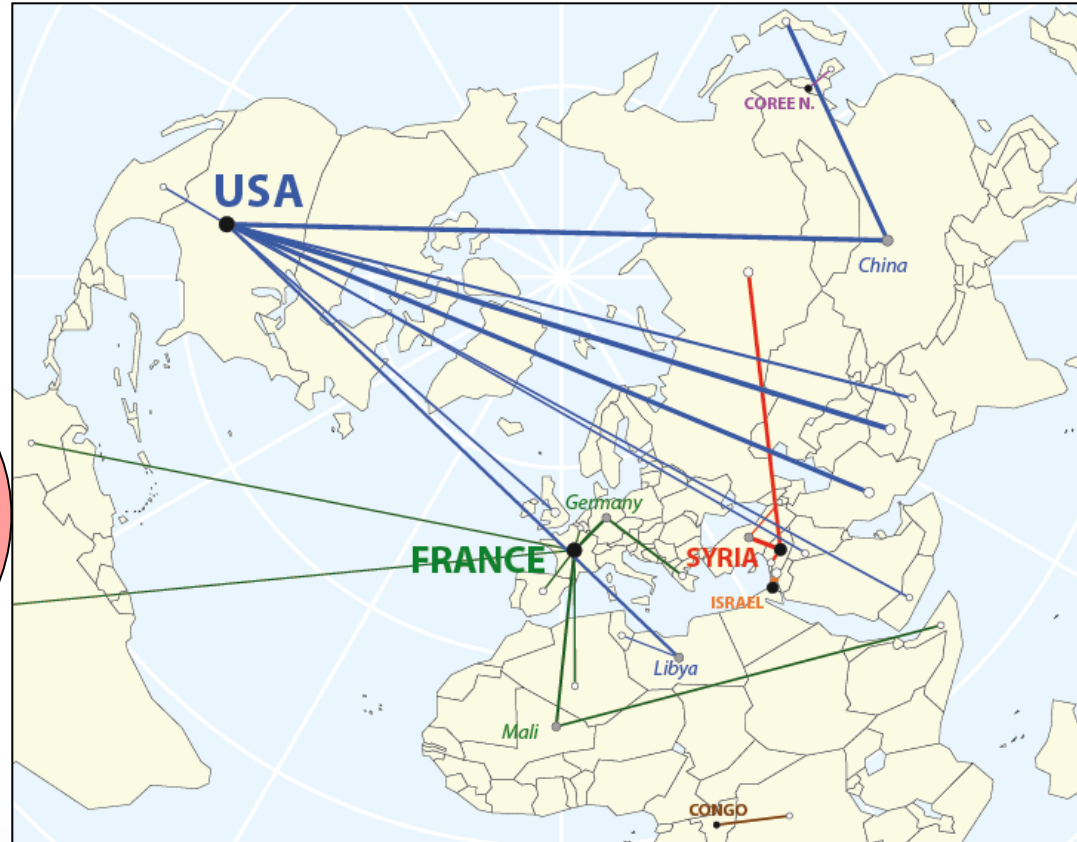
Dominant matrix of links

Dominant links of *Le Monde* (May 2013 – Dec. 2012)

Network



Map

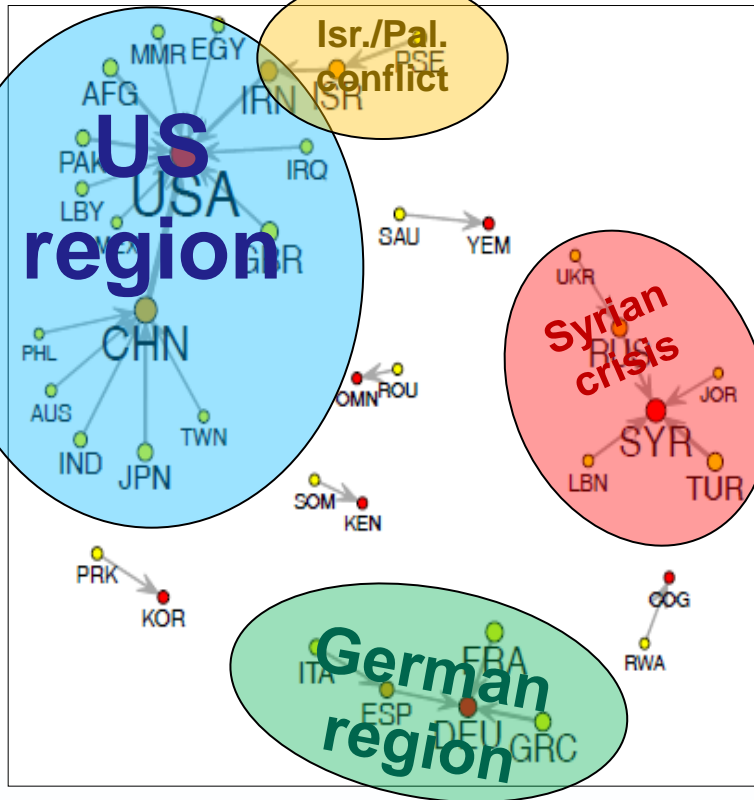


Comment

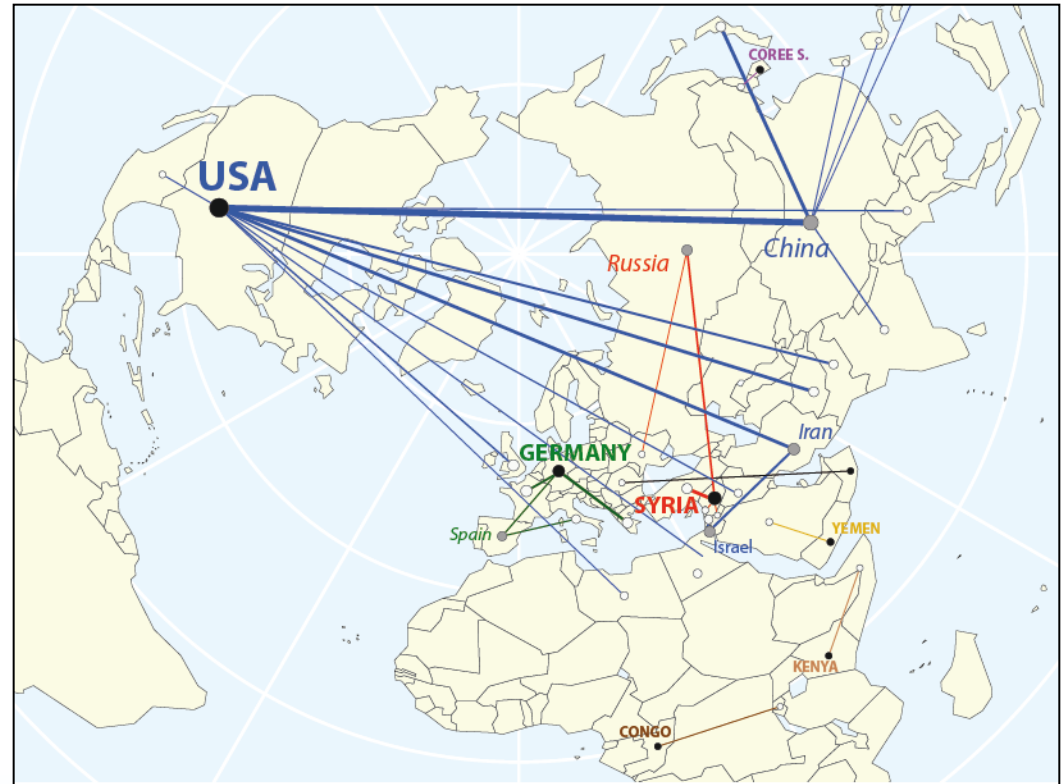
- Division of the World between major French & US regions
- Syrian conflict identified as specific region (with Russia)
- Israel-Palestinian conflict as autonomous region

Dominant links of *Financial Times* (May 2013 – Dec. 2012)

Network



Map

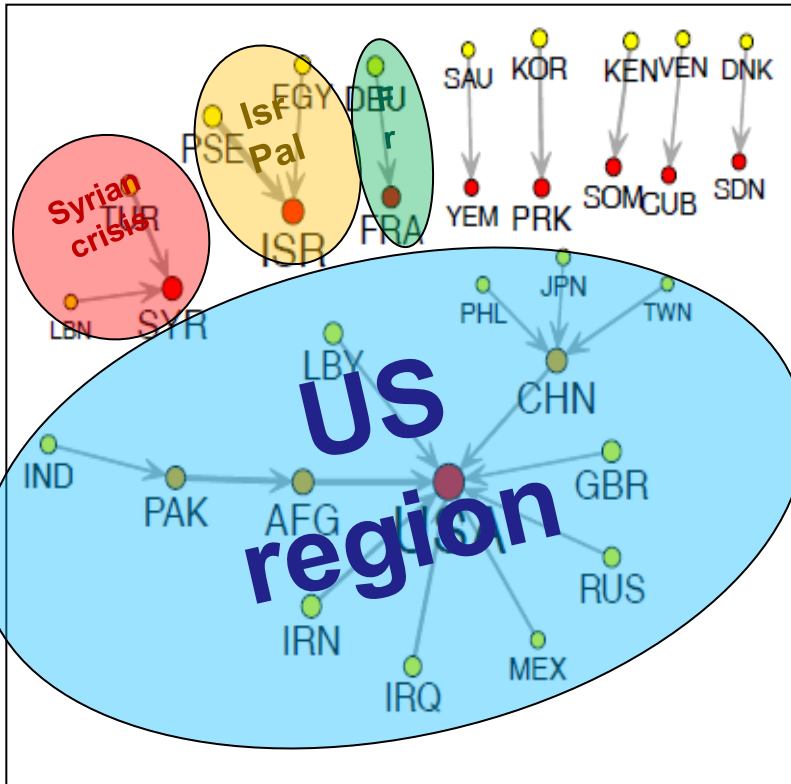


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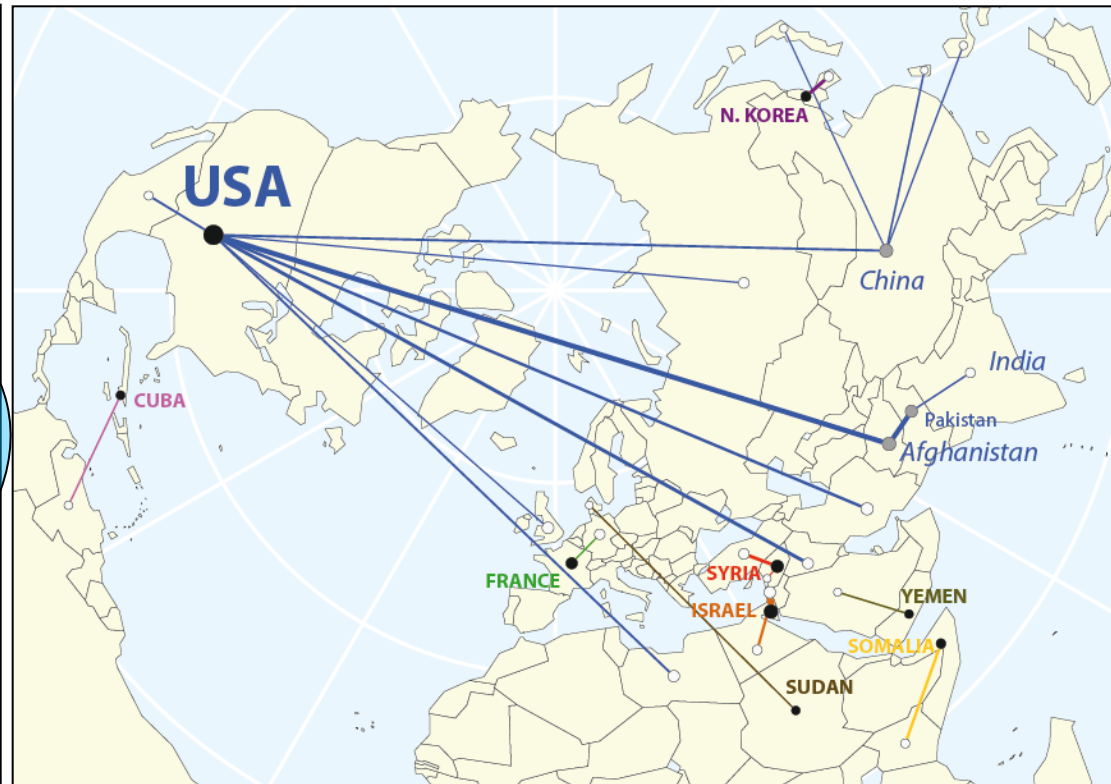
- US as dominant world region with Chinese subregion
- Syrian conflict identified as specific region (with Russia)
- EU region dominated by Germany

Dominant links of *The Washington Post* (May 2013 – Dec. 2012)

Network



Map

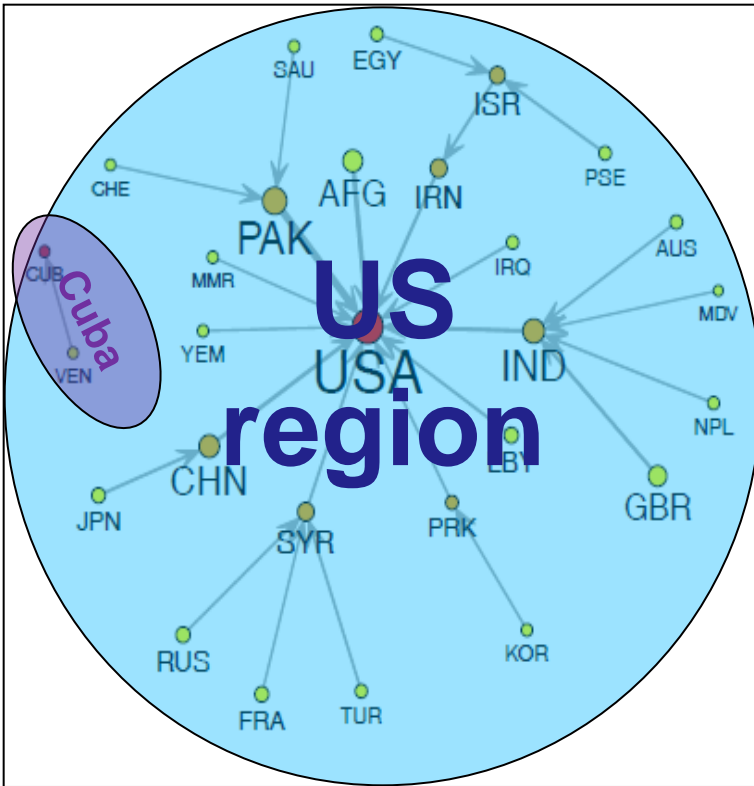


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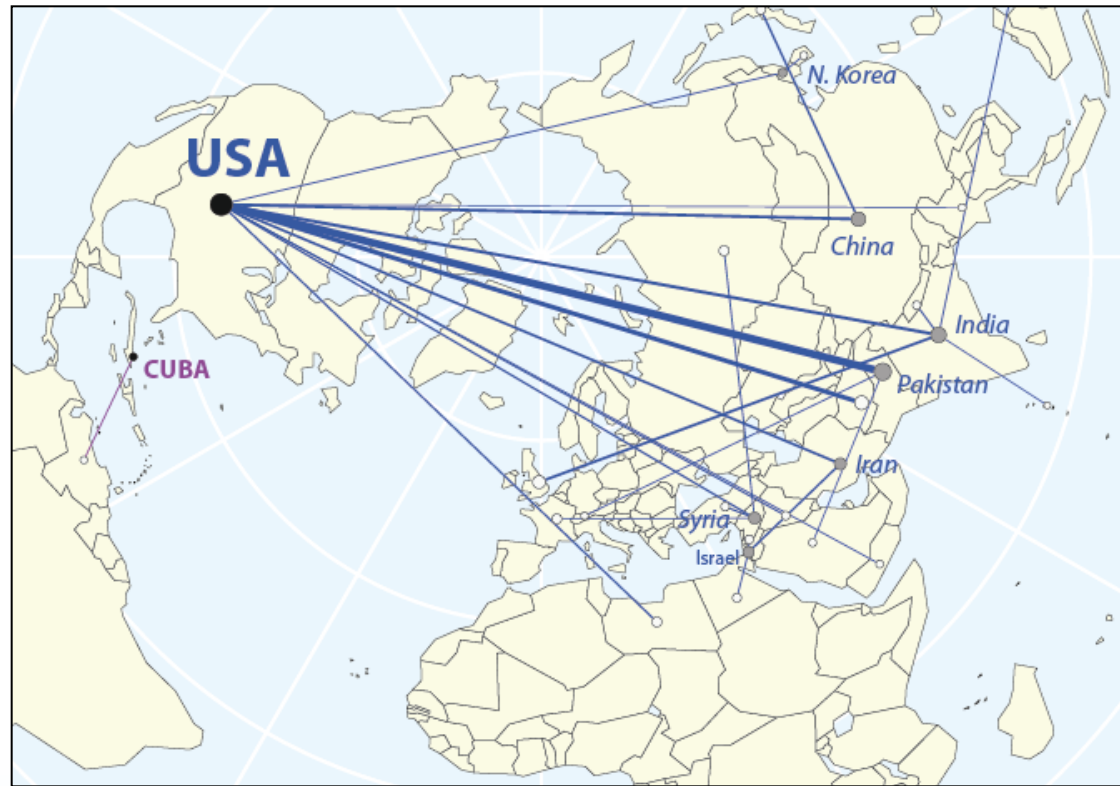
- Major organisation of the world around US (and China)
- Syrian conflict associated to neighbours (not Russia)
- Israel-Palestinian conflict as autonomous region

*Dominant links of **Times of India** (May 2013 – Dec. 2012)*

Network



Map



Comment

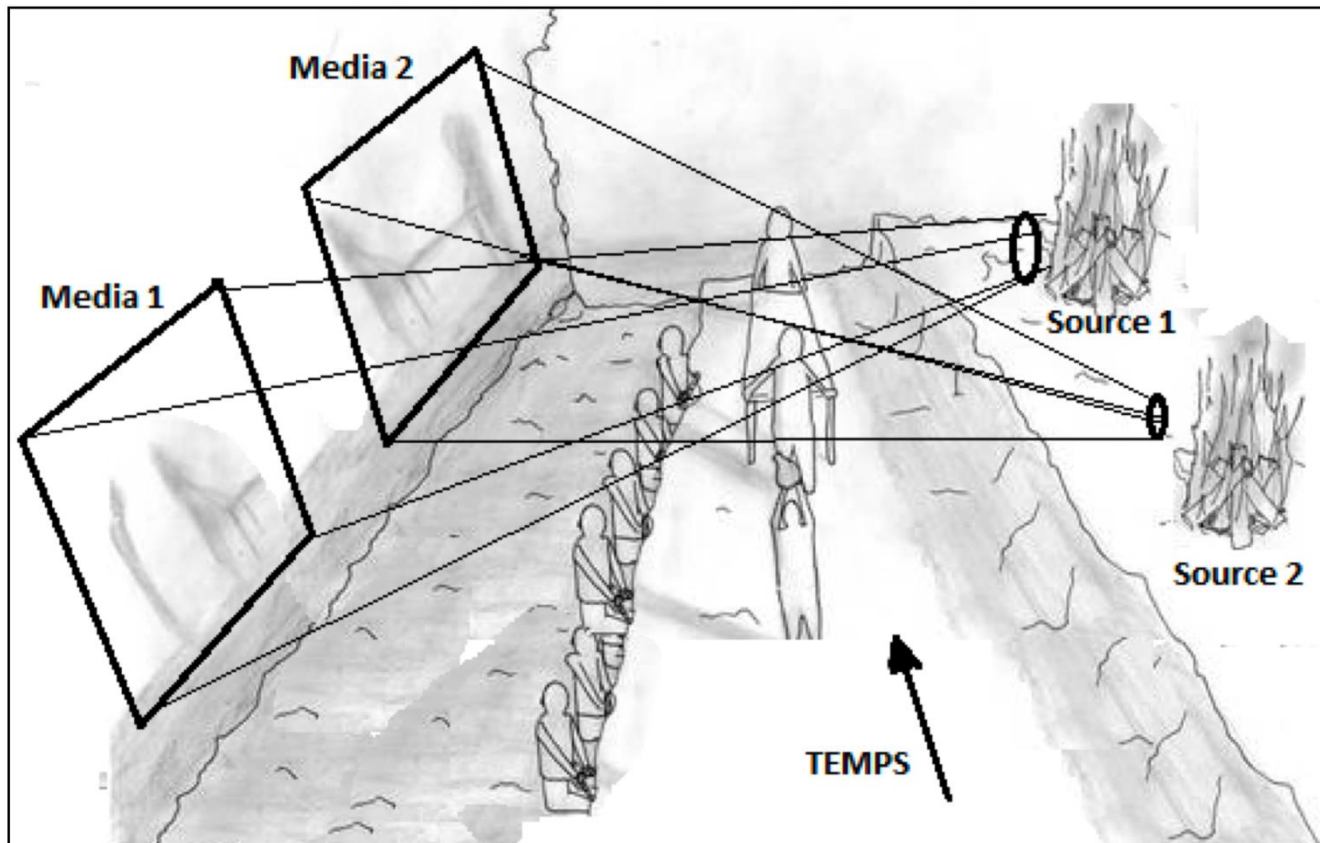
- Vision of the world fully dominated by the US
- Syrian conflict as sub region (Russia, Turkey, France)
- Only Cuba-Venezuela escape from full US domination ...

Outcome of network analysis

A hierarchical clustering technique that:

1. Provides macro-representations of international relations as reflected by associations in media news.
2. Reveals the dominant position of USA in the international news and the variable importance of EU.
3. Reveals the existence of local associations of countries related to geopolitical conflict or crisis (Syrian Crisis, but also Israel/Palestine, North/South Korea, ...).

CONCLUSION



Media as subjective projections of reality

Thank you for your attention

<http://geomediatic.net/>
<http://gis-cist.fr>