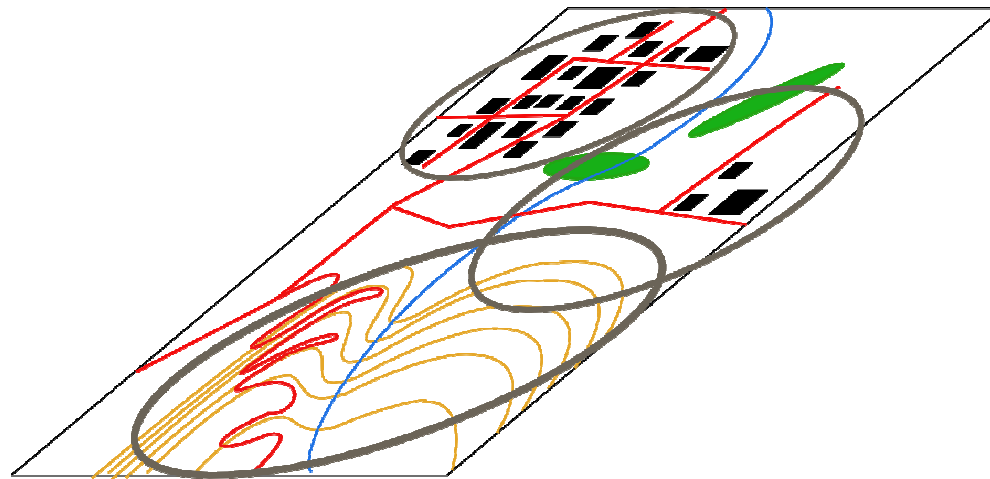

Relevant Space Partitioning for Collaborative Generalisation



Guillaume Touya

PhD supervisors: Anne Ruas, Cécile Duchêne

COGIT Lab

IGN France

ICA Workshop – 13/09/2010

-
- Collaborative Generalisation Framework
 - Defining Geographic Spaces
 - Geographic Spaces Neighbourhood
 - Finding the Best Outline?
 - Conclusion and Further Work

Many automatic cartographic generalisation processes
But...

Adapted to a specific *landscape*



AGENT [Ruas 99],
[Barrault et al 01]

Adapted to urban areas

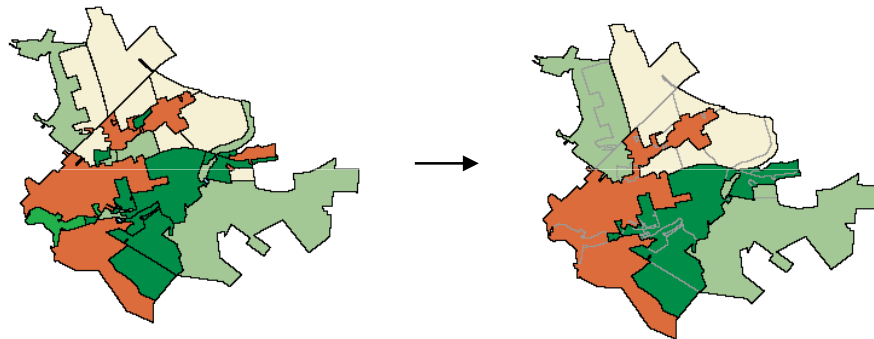


CartACom [Duchêne 04]

Adapted to rural areas

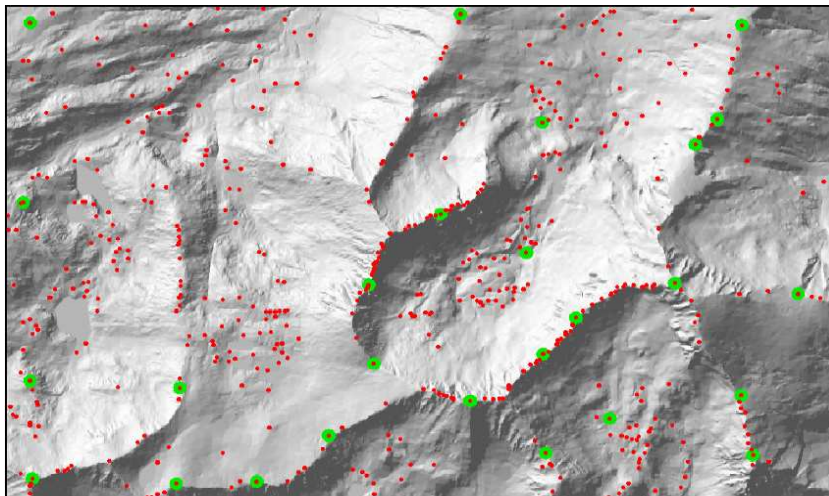
Many automatic cartographic generalisation processes
But...

Adapted to a specific *theme*



"MIP aggregation" [Haunert 08]

Adapted to Land Use

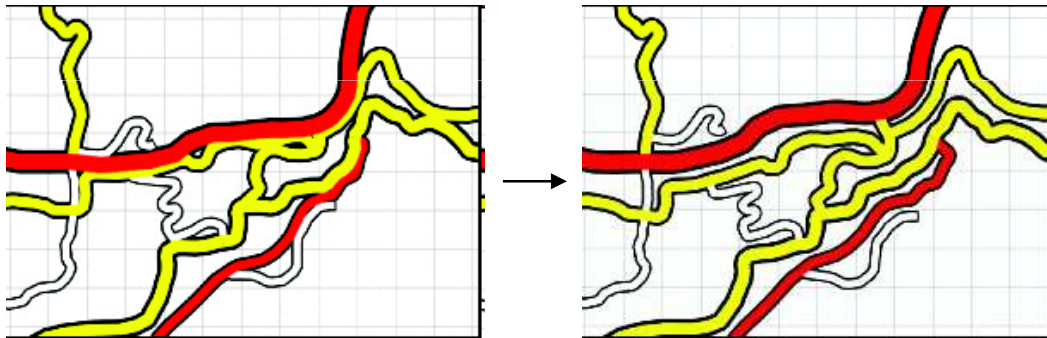


[Baella et al 07]

Adapted to Spot Heights

Many automatic cartographic generalisation processes
But...

Adapted to a specific ***conflict***

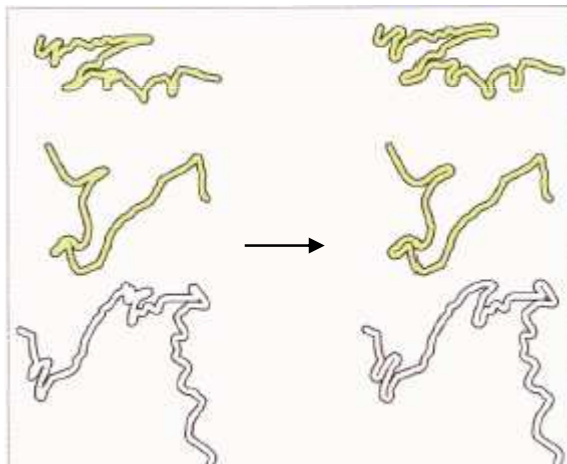


Elastic Beams [Bader 01]

Adapted to line symbol
overlapping conflicts

Many automatic cartographic generalisation processes
But...

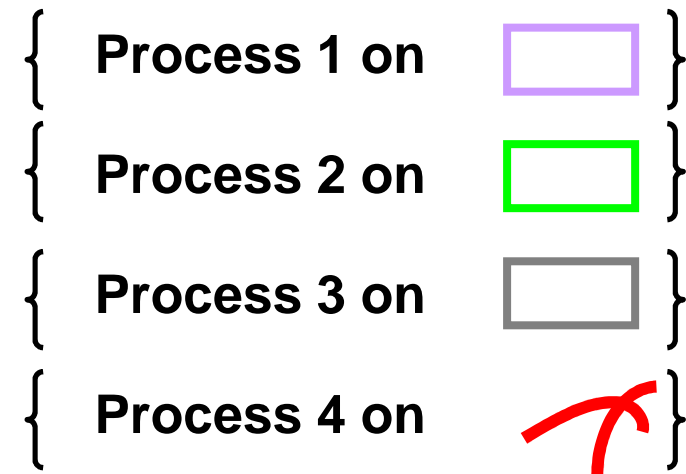
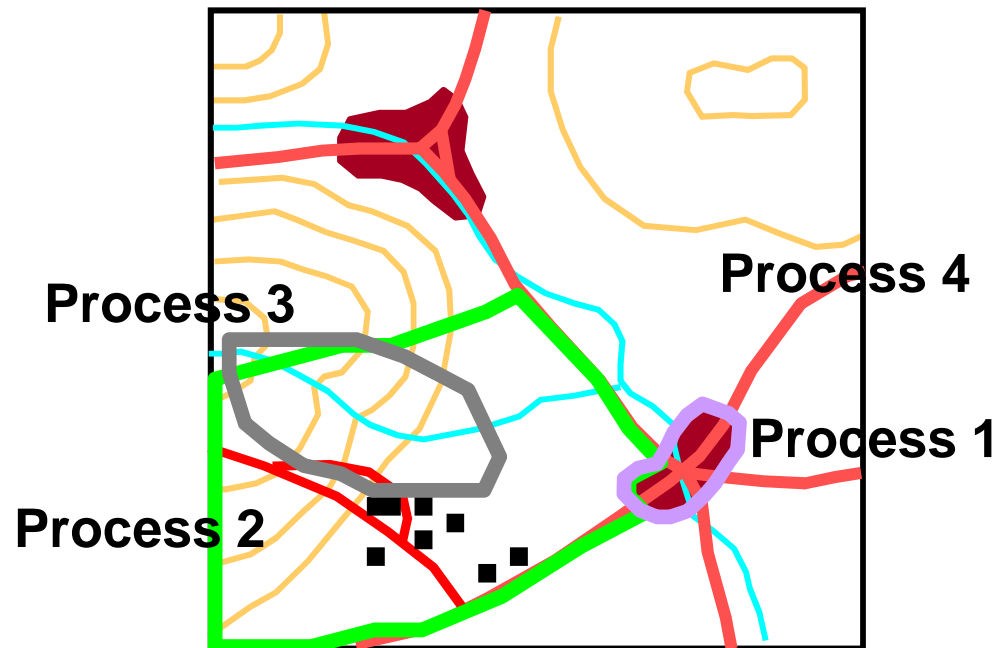
Adapted to a ***mix*** of landscape, theme and conflict



AGENT [Ruas 99], [Barrault et al 01]

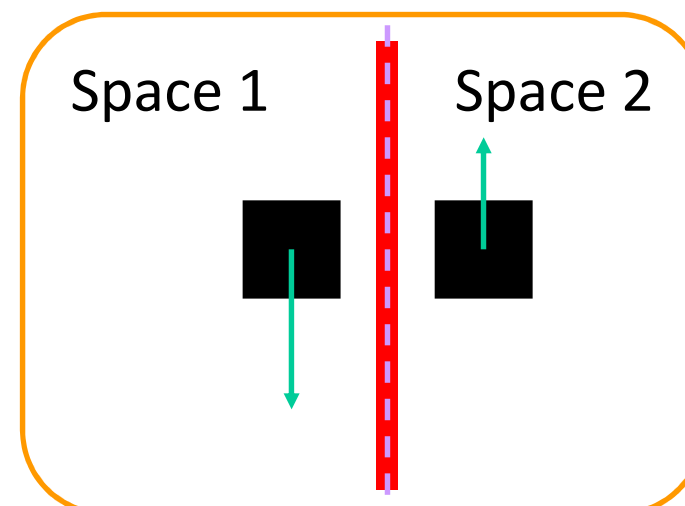
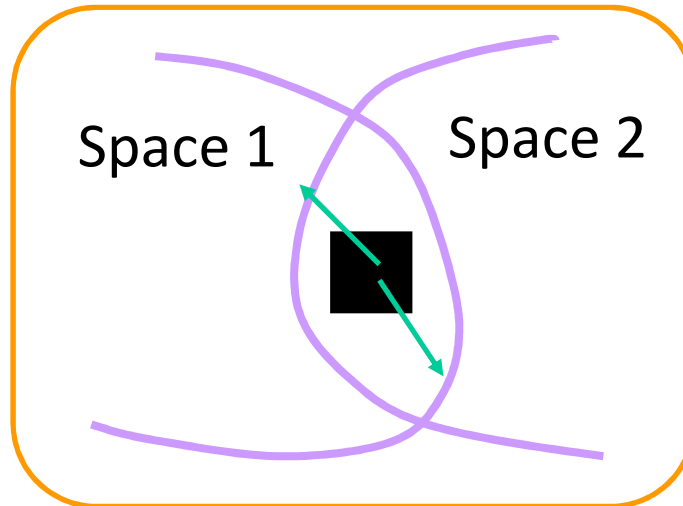
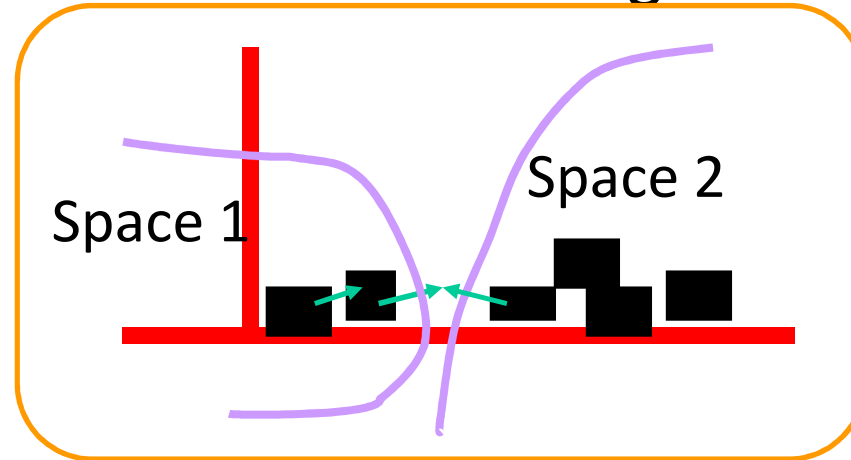
Adapted to mountain roads

- Make generalisation processes collaborate



Collaborative Generalisation

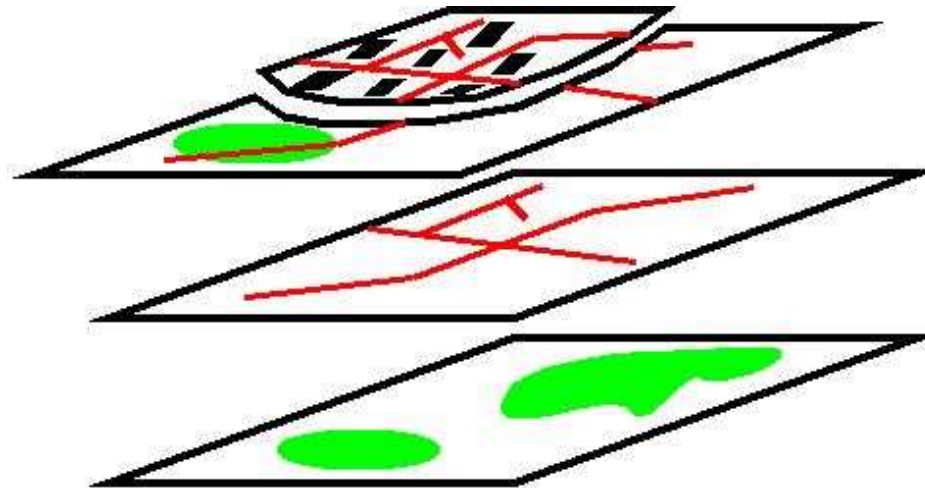
- Potential side effects at the edge of spaces



More on Collaborative Generalisation at GIScience Friday morning

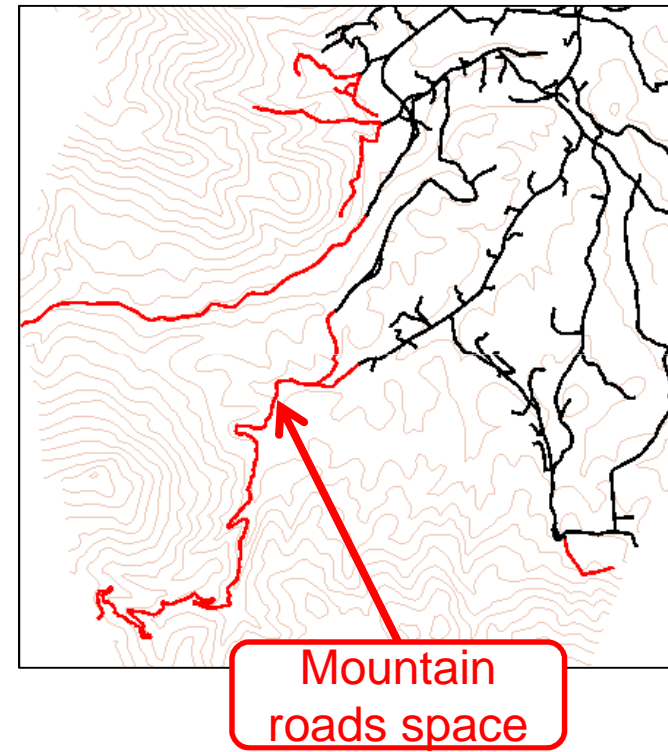
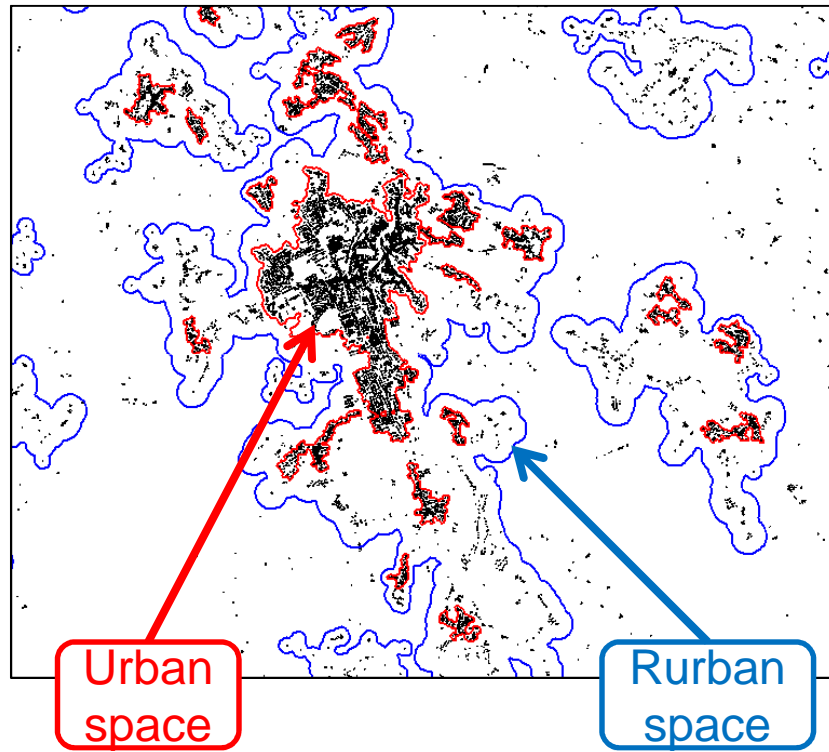
-
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a geographically meaningful extract of the data that can be a relevant input for a given generalisation process



- Areal (urban area, mountain area...)
- Thematic (road network, vegetation...)
 - Mixed (mountain roads...)

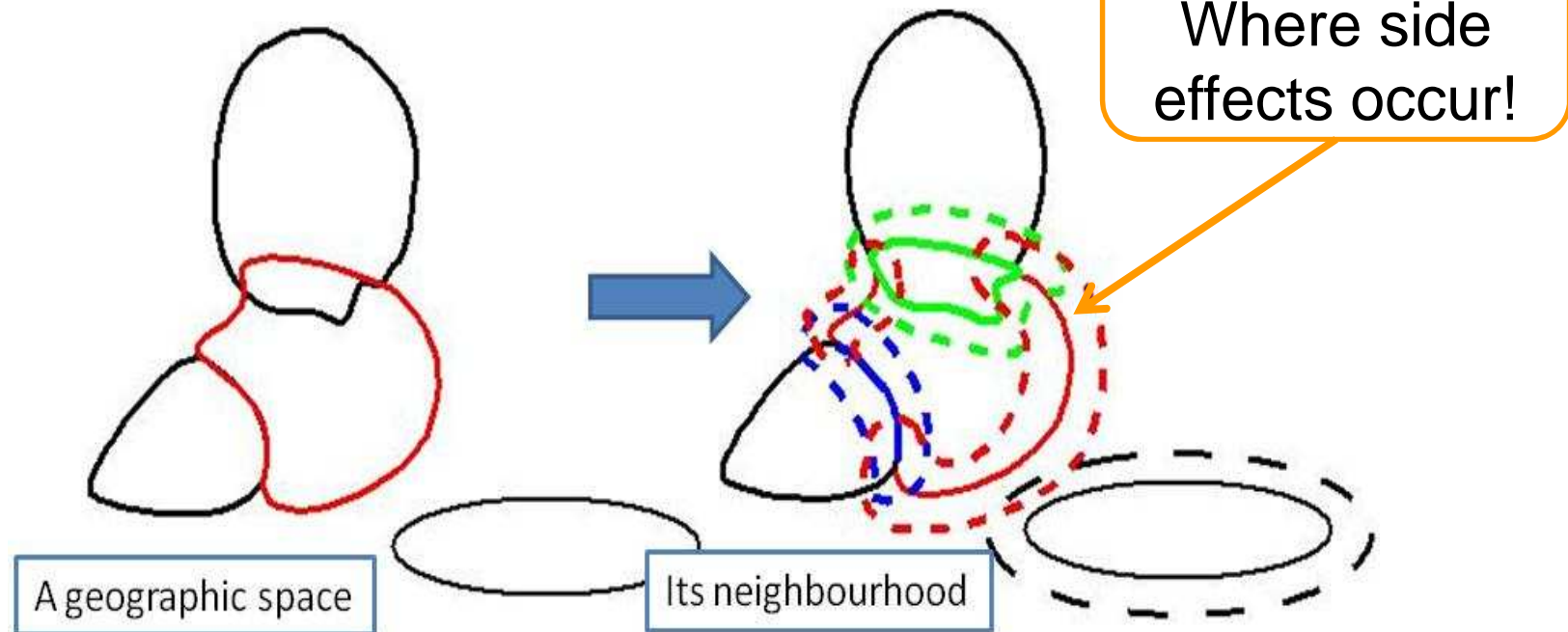
Examples of geographic spaces



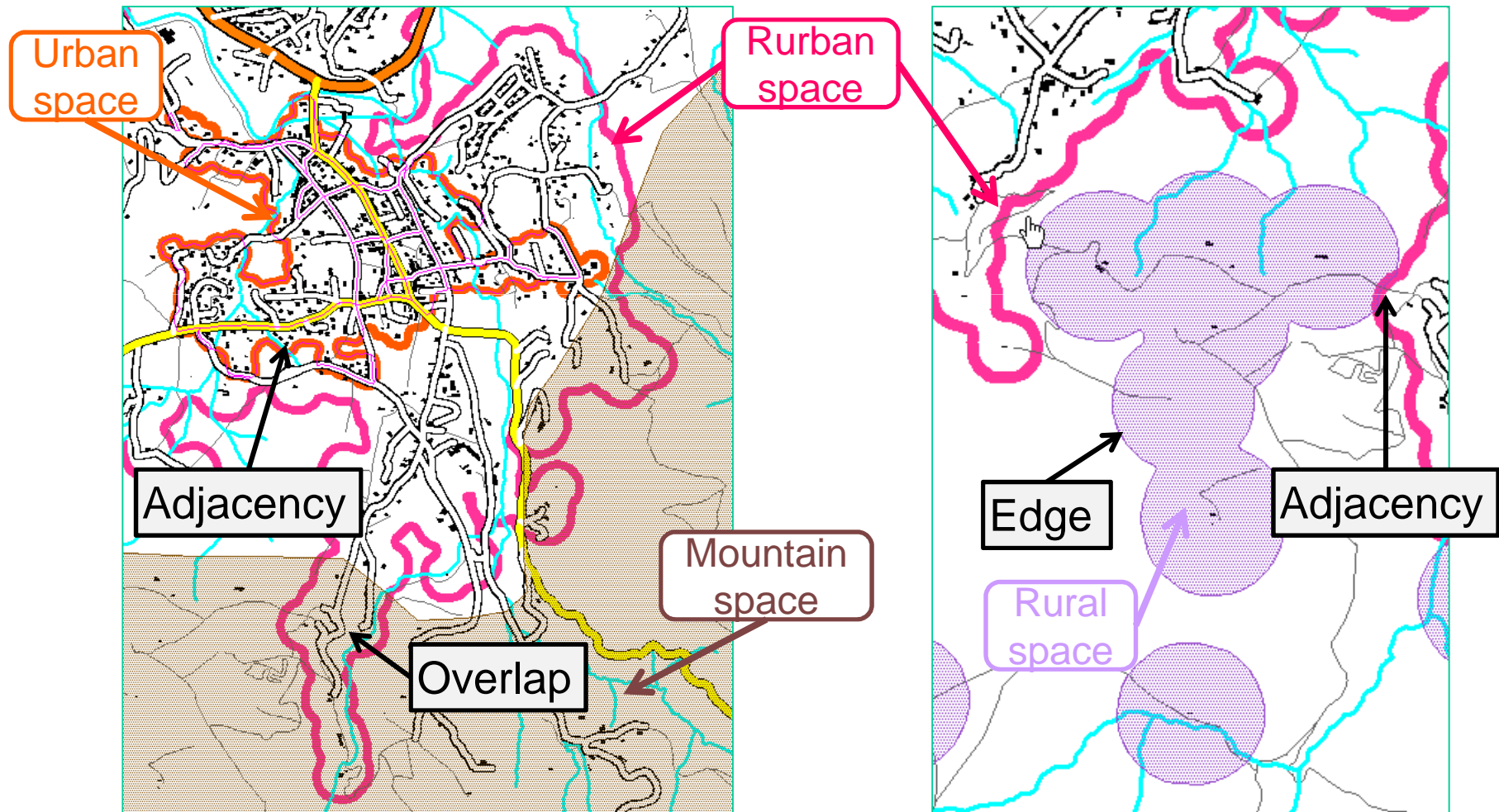
-
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3 Types of Neighbourhood:

- Simple edge
- Adjacency
- Overlap

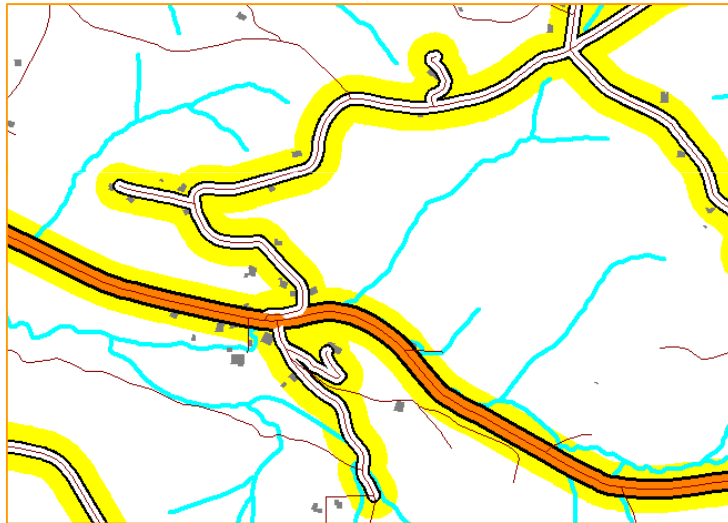


3 Types of Neighbourhood:



Neighbourhood for Thematic Spaces

What is the outline of a road network when the outside is the place that suffers side effects?



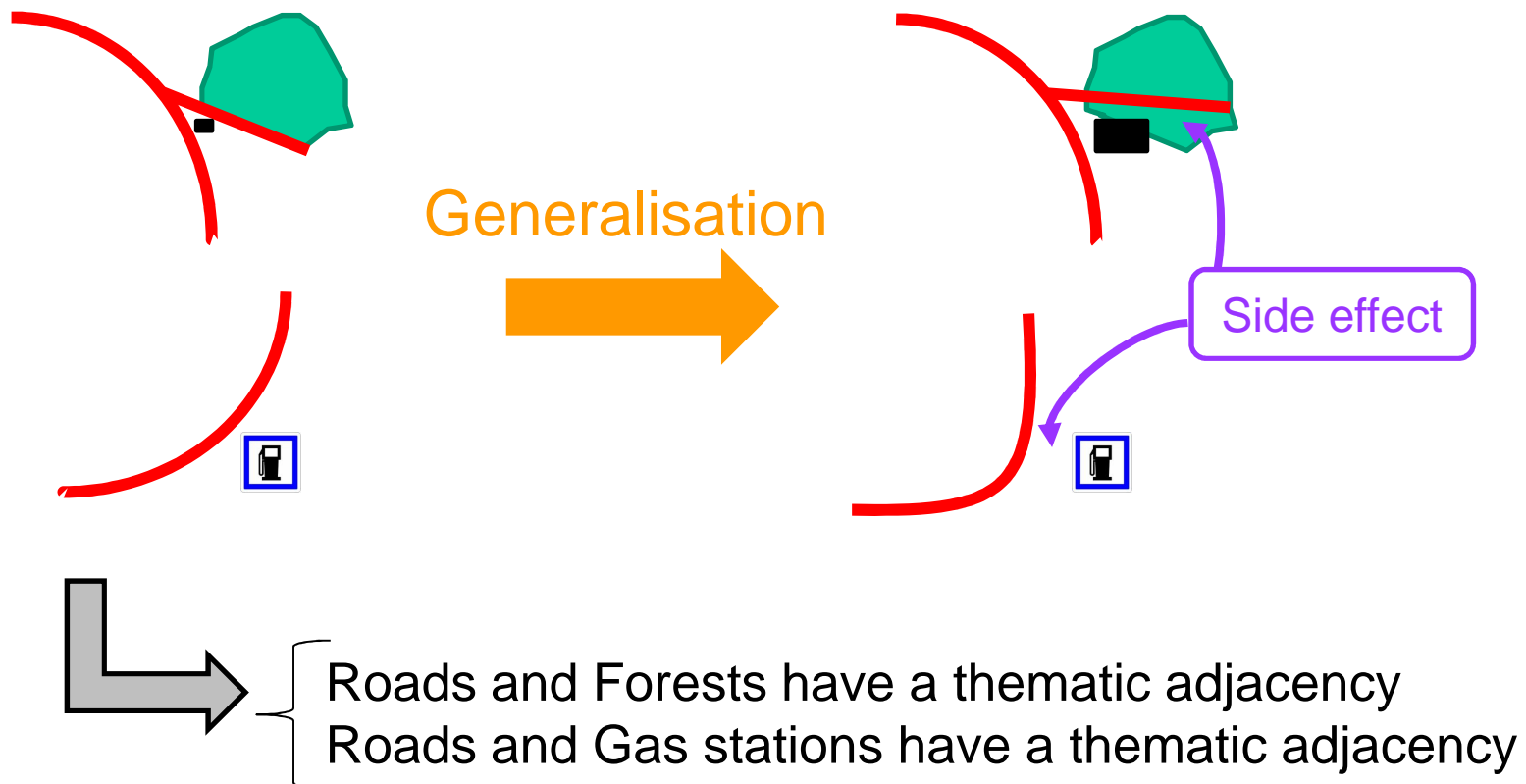
Road network



Smokestacks layer

Functional Thematic Neighbourhood between two themes:

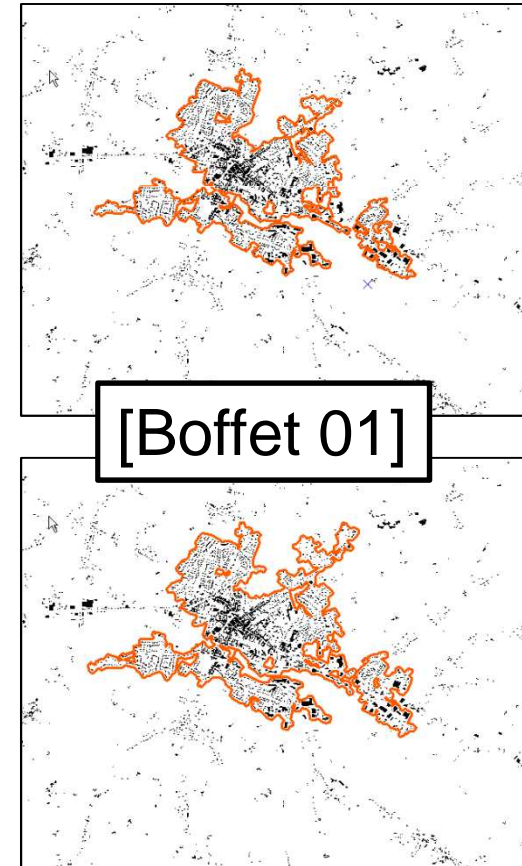
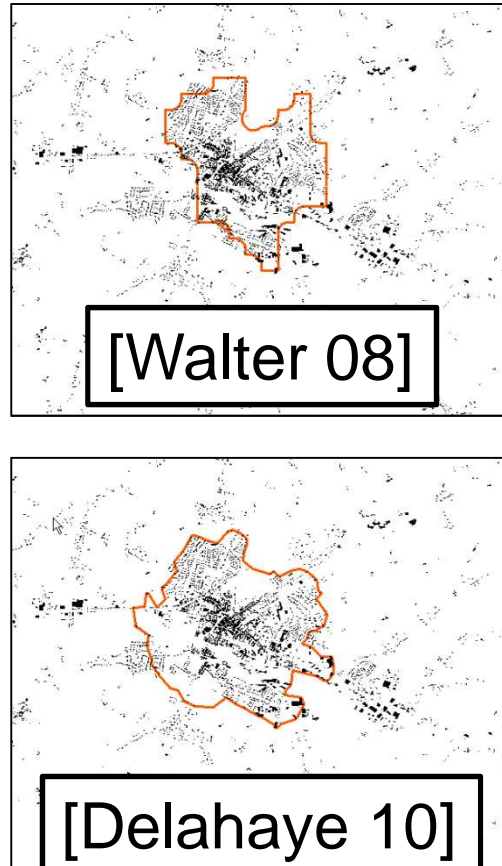
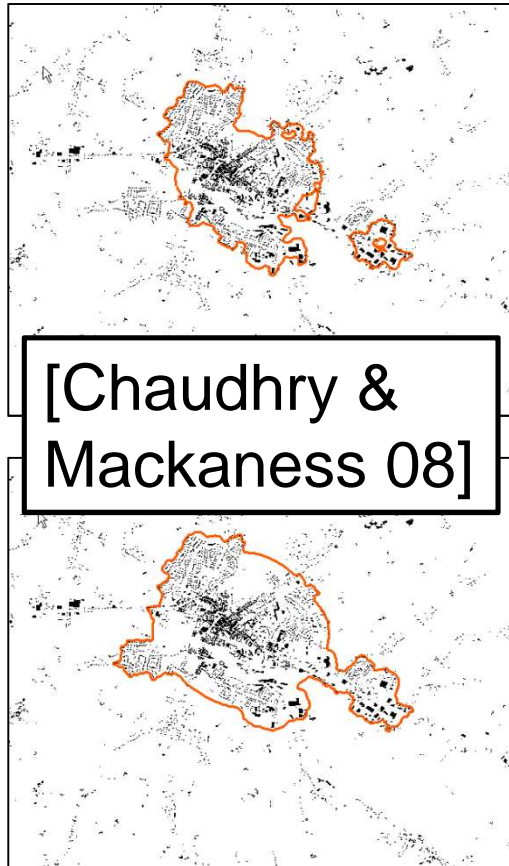
Moving one theme impacts the other



-
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Many outlines possible for vague spaces e.g. Urban spaces

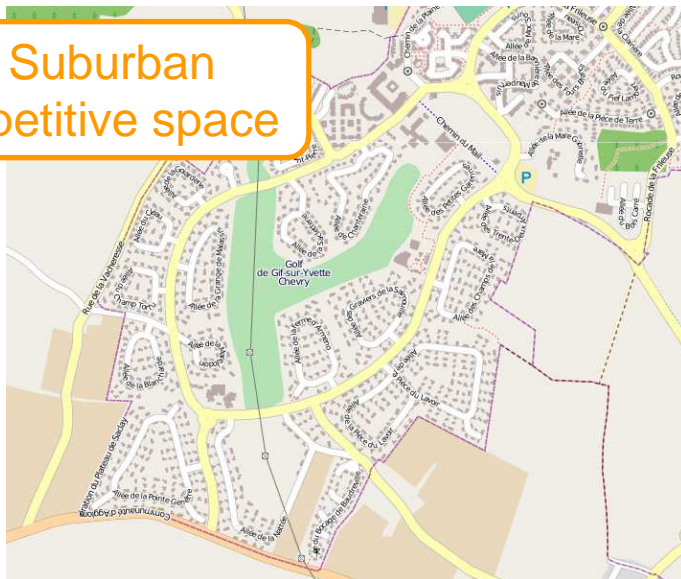
➔ Analyse Sensitivity to outline choice



-
- Collaborative Generalisation needs to partition data in relevant spaces
 - The spaces neighbourhood allows to manage side effects
 - Delineating thematic spaces is not an easy task!
 - The choice of the algorithm to delineate vague spaces is critical

- Analyse more into details the sensitivity to outlines
- Experiment side effects detection and correction
- Develop new algorithms for new spaces

Suburban repetitive space

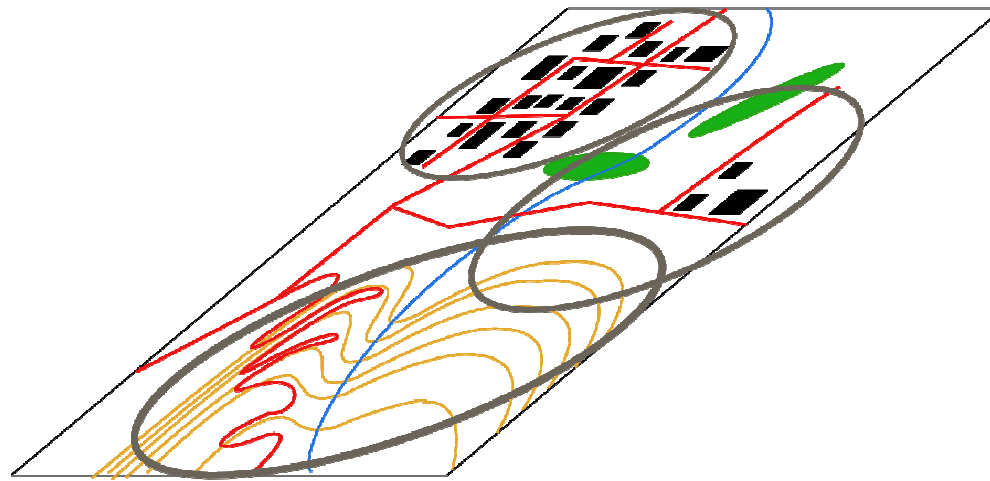


Industrial space



- Finalise the *CollaGen* prototype

Relevant Space Partitioning for Collaborative Generalisation



Thanks for your attention ! Questions ?

Guillaume Touya