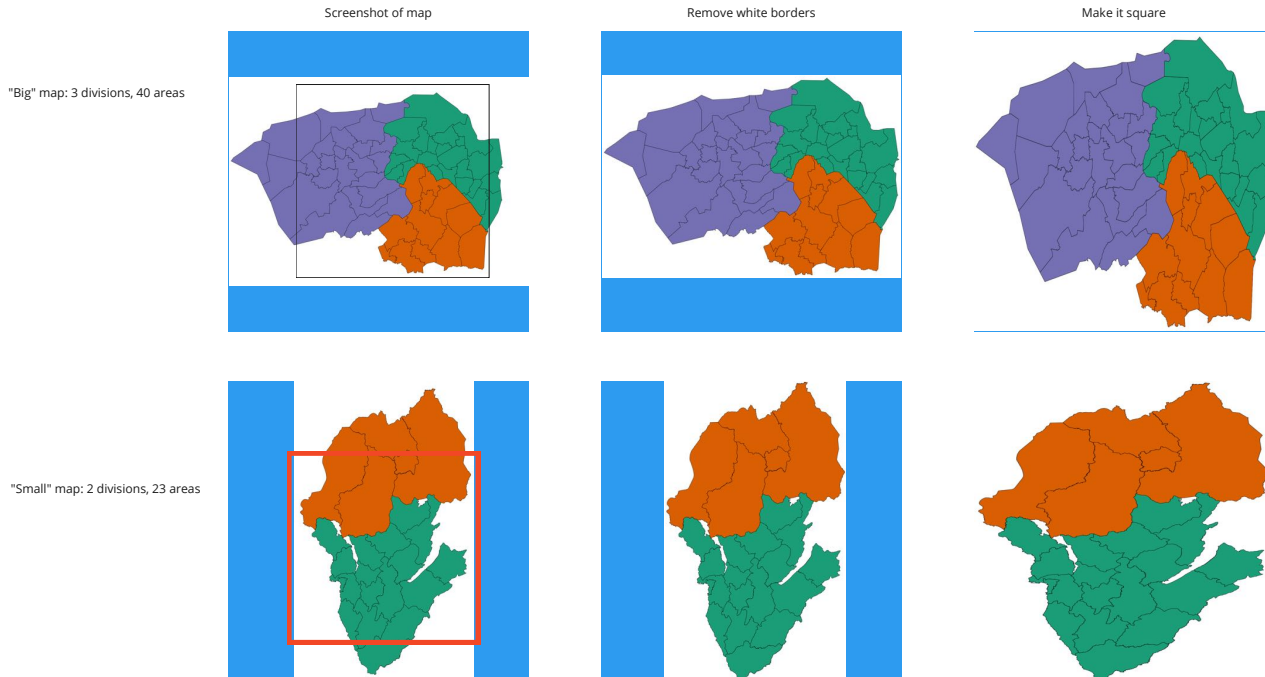


Preparing the maps

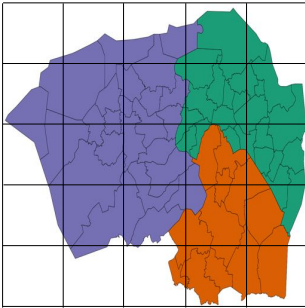


Keep the original form in stead. So not to distort area of regions.

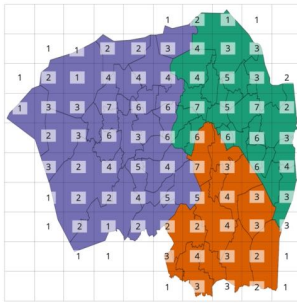
Trying different grid sizes

We need a consistent rule for when to count an area as part of a grid square. → It happens often that only a tiny part of the area is in the square.

5x5



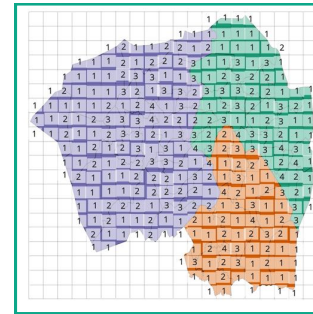
10x10



15x15



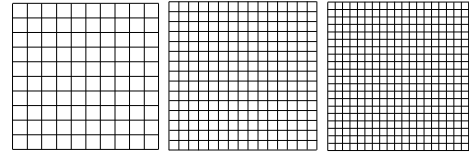
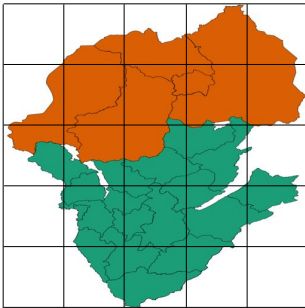
20x20



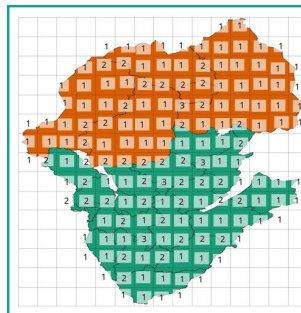
This has max 4 areas per square.

Some value 1s in the middle of the map too

This would be better with the same area-threshold rule as below



Slightly different rule: areas that occupy less than $\frac{1}{3}$ of the square don't count. → so there's two areas and one of them takes up 2/3rds of the square, only that area counts.



This is good because a square is linked to max 3 areas

And there's squares with value 1 all across the map, not just at the edges

- General 'requirements':
- At least one relationship linked to multiple locations
 - At least one location is linked to multiple relationships
 - Both persons A and B should have events (either by themselves or with other third parties) without the other.

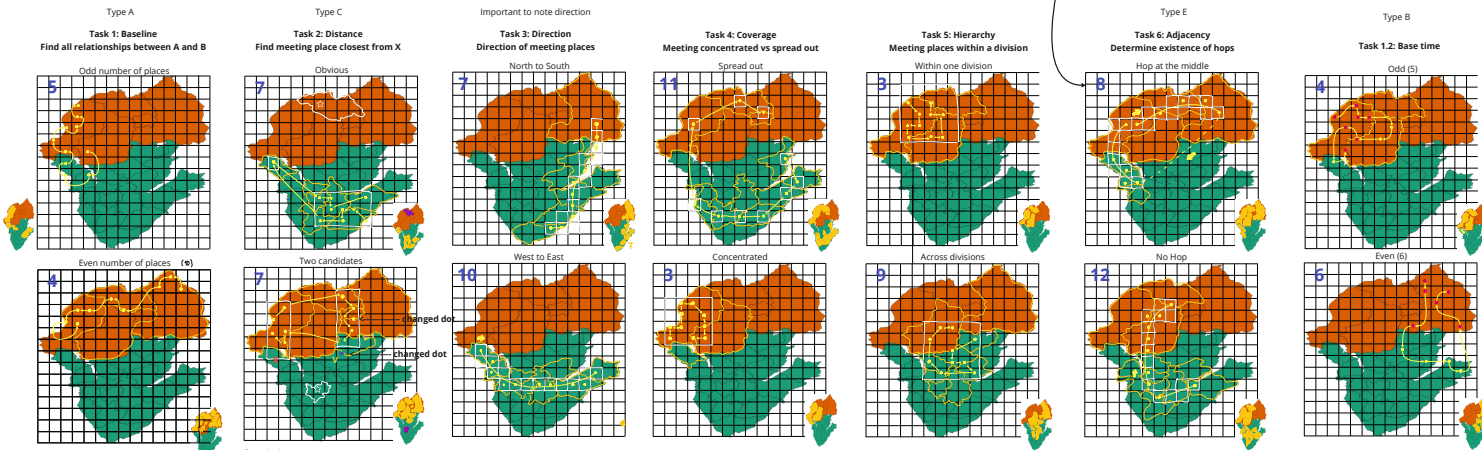
General rule for the trajectories connecting random location dots:

- Pick a starting dot
- Always connect to the closest dot

Drawing trajectories



This is the number of locations linked to the spatial pattern



Description:

- Spatial pattern doesn't matter here
- Randomly pick/generate the locations, but all in different squares.
- Purple dot was moved to the left

Description:

- For the obvious case:
 - Pick a location at one extreme of the map
 - Pick on square close to the target location
 - Pick a 5x3 square area, and randomly pick locations there
- For the comparison case:
 - Pick a location at one extreme of the map
 - Place two 5x3 square areas at about equal distance from target location (with a small offset)
 - The target location shouldn't share a border with any of the locations related to A and B!

Description:

- The trajectory is not just a straight line
- Check the undistorted map to check the pattern is recognizable.

Description:

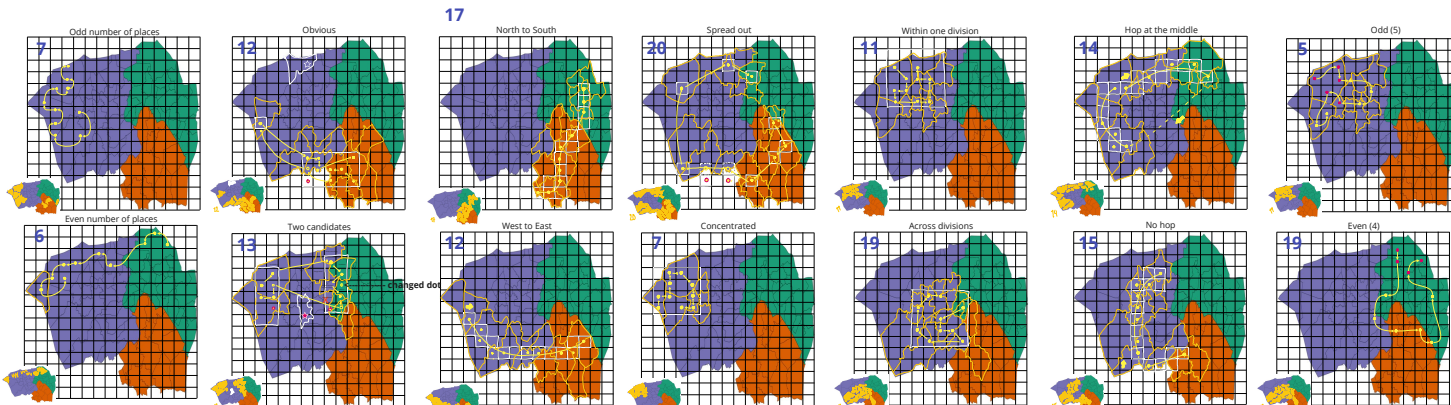
- For spread out case:
 - Randomly pick locations in the "outer border" (4 outermost squares)
- For the concentrated case: pick an area of 4x4 squares, place dots in it

Description:

- Pick an area of 5x5 squares, place dots in it
- Place the area towards an extreme of the map in the 'one division' case
- Place the area more in the middle of the map for multiple divisions

Description:

- Divide the trajectory into two parts with a gap in between
- Place the end of the second part near the start of the first part, so that all the locations are connected.



Changes made:

- Moved one location up-right one square because the existing square didn't touch any area.

Changes made:

- Obvious:
 - Moved two dots because they didn't intersect with locations
- Two candidates:
 - Moved the target location up so the difference was clearer, but not obvious
 - Moved two dots so none of the related locations shared borders with the target location

Changes made:

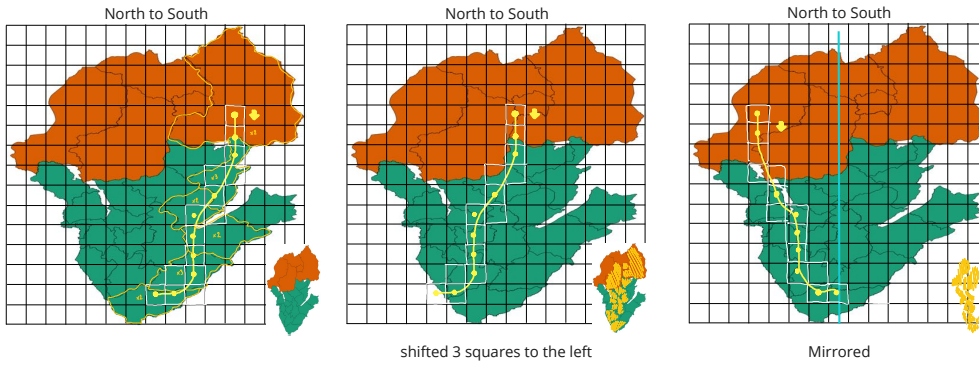
- Moved two dots because it didn't intersect with locations

Changes made:

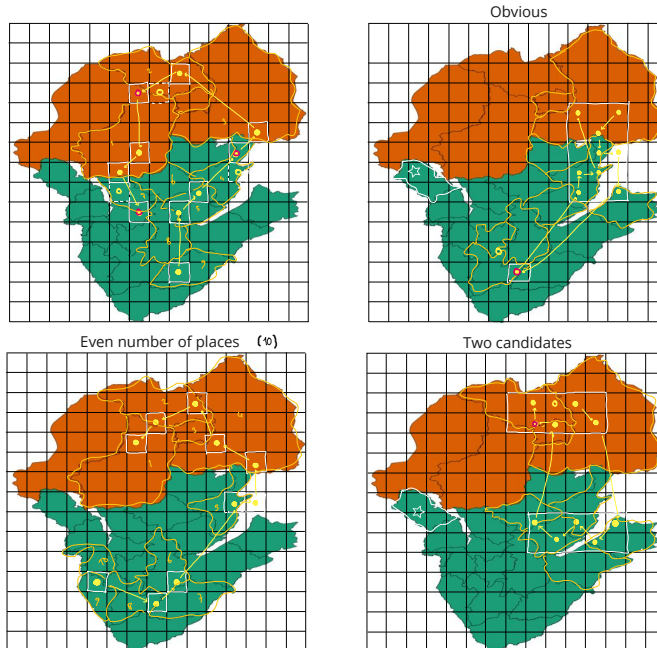
- Shifted the whole pattern up two squares because too many dots didn't intersect with locations

Shifting the patterns

For shifting the number of locations involved in the relationships matters! So that we don't make one visualization way "easier" than another
Could tweak to make numbers more comparable.



Rotate by 45 degrees to the left



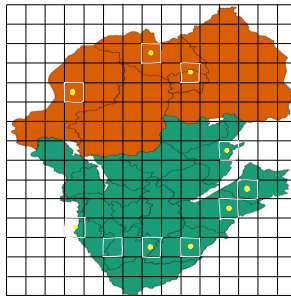
Original Map



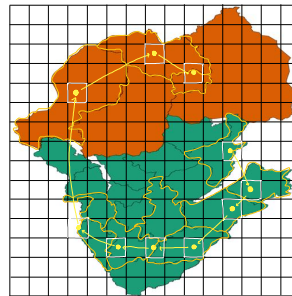
Distorted Map



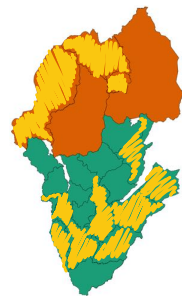
Cell selection



Location selection



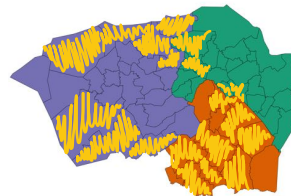
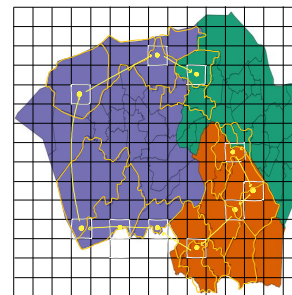
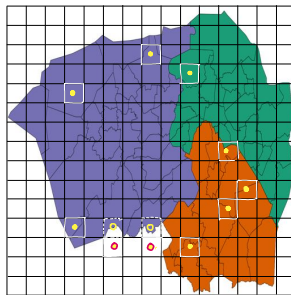
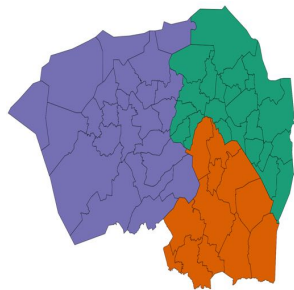
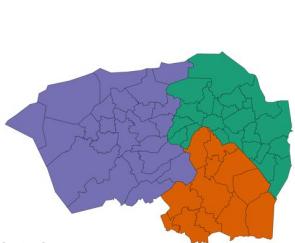
Result



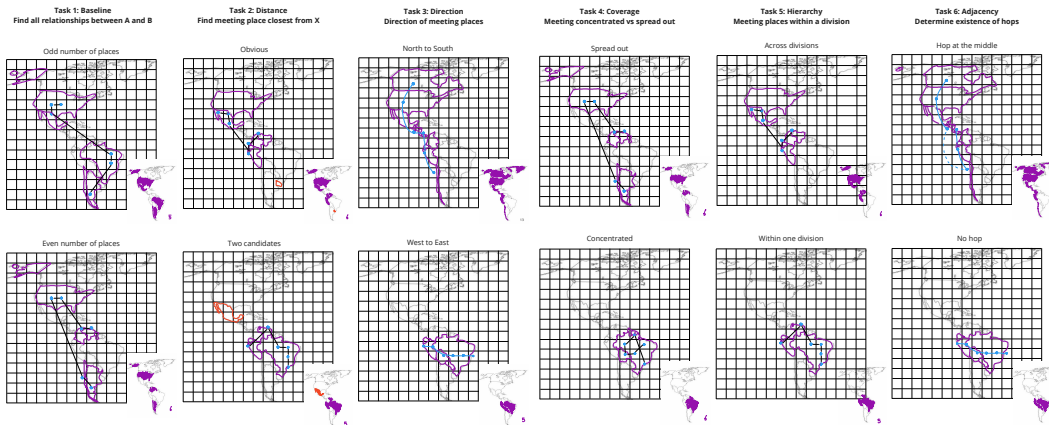
Small Scale

Large Scale

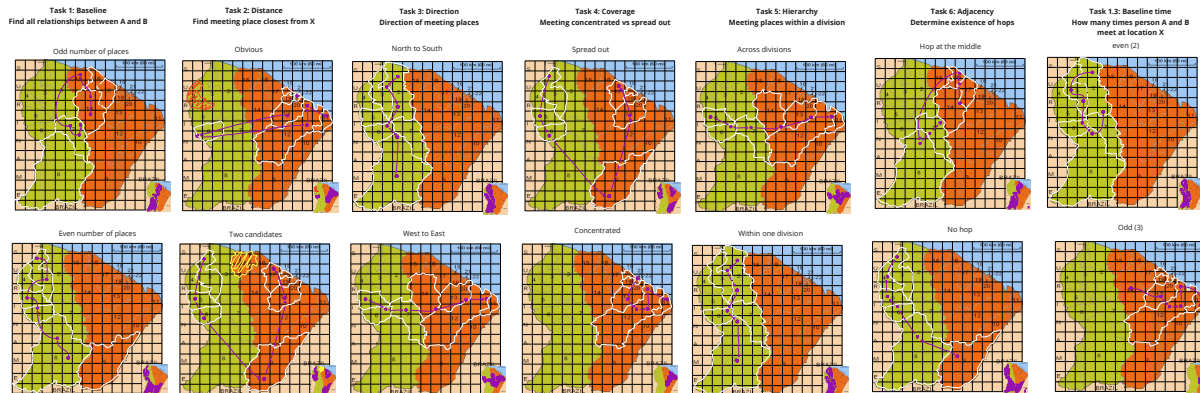
G.Hulstein



Training data



Training data



- 1. Baseline
- 2. Distance
- 3. Direction
- 4. Coverage
- 5. Hierarchy
- 6. Adjacency
- 7. Concentrated
- 8. Spread out
- 9. Within one division
- 10. No hop
- 11. Even number of places
- 12. Odd number of places
- 13. Two candidates
- 14. West to East
- 15. Concentrated
- 16. Spread out
- 17. Within one division
- 18. No hop
- 19. Even number of places
- 20. Odd number of places

- 1. Baseline
- 2. Distance
- 3. Direction
- 4. Coverage
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