

Consequences of (Selective) Residential Mobility on the Relation between Ethnic Diversity and Inter-Ethnic Trust

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1. Does ethnic diversity erode social cohesion?
 - Theoretical claims
 - Empirical results
2. Ethnic diversity and residential mobility
 - Theoretical claims
 - Empirical results
3. RQ: To what extent does (selective) residential mobility affect the observed relationship between ethnic diversity and (inter-ethnic) social cohesion?
4. Agent-based models to simulate residential mobility
5. Results
6. Conclusions



Does ethnic diversity erode social cohesion?

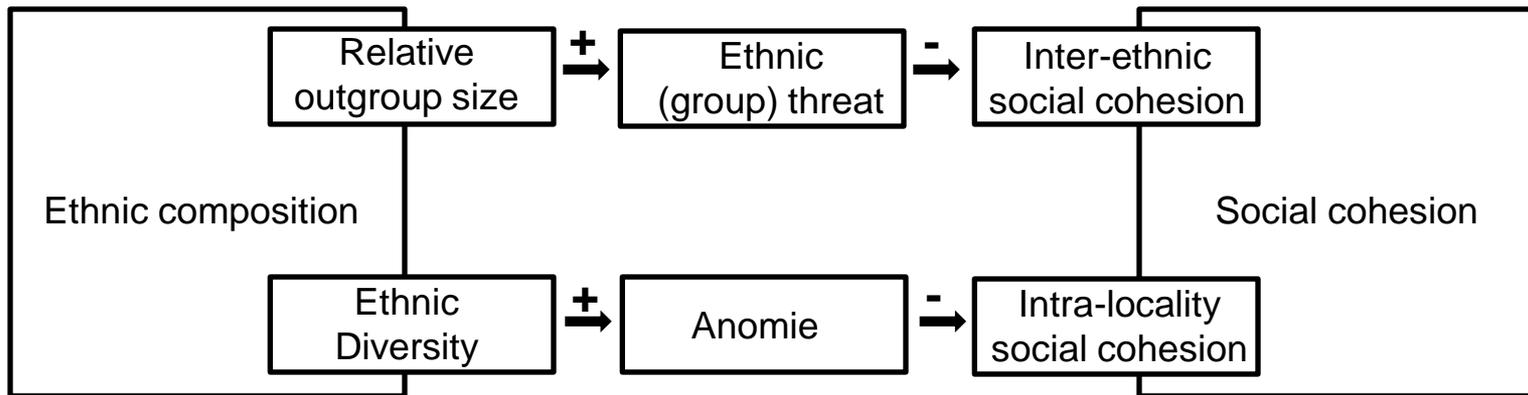
Theoretical claims

- Living in an ethnically heterogeneous environment would be harmful to social cohesion (i.e. levels of general social trust, social and civic participation).
- Ethnic diversity would not only harm social cohesion *between* ethnic groups, but also *within* one's own ethnic group.



Does ethnic diversity erode social cohesion?

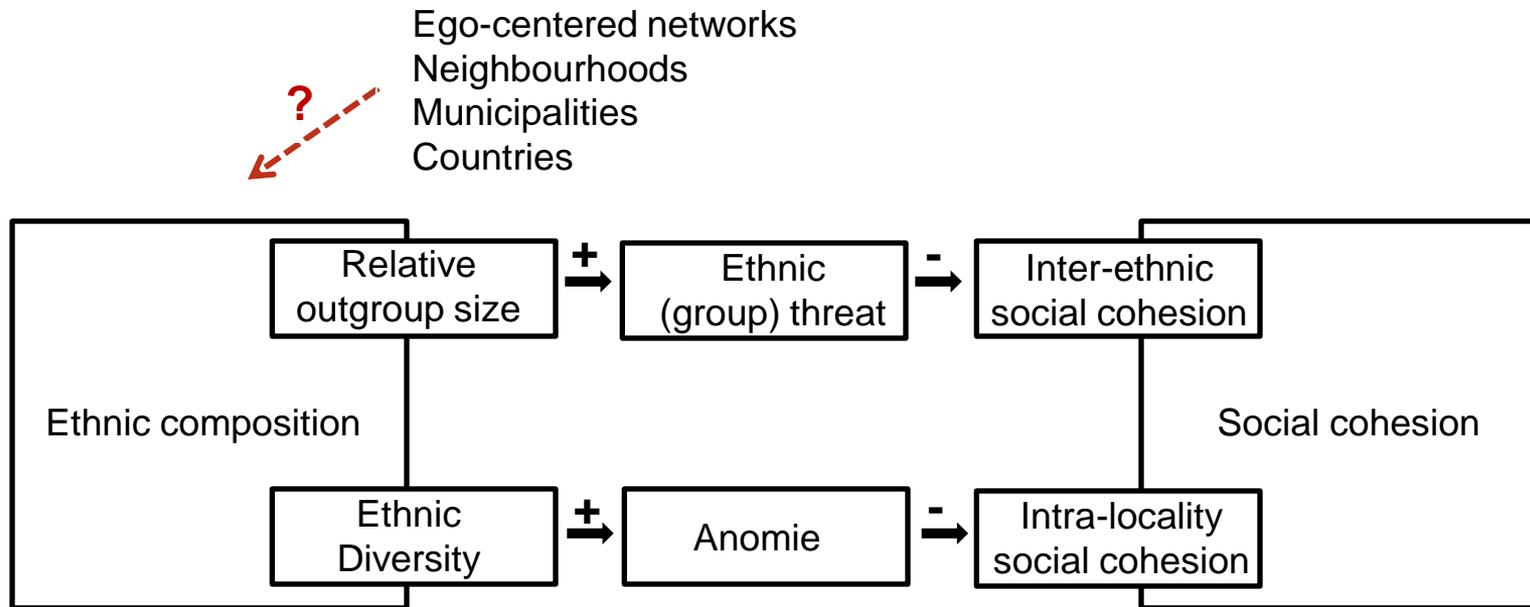
Theoretical claims





Does ethnic diversity erode social cohesion?

Theoretical claims

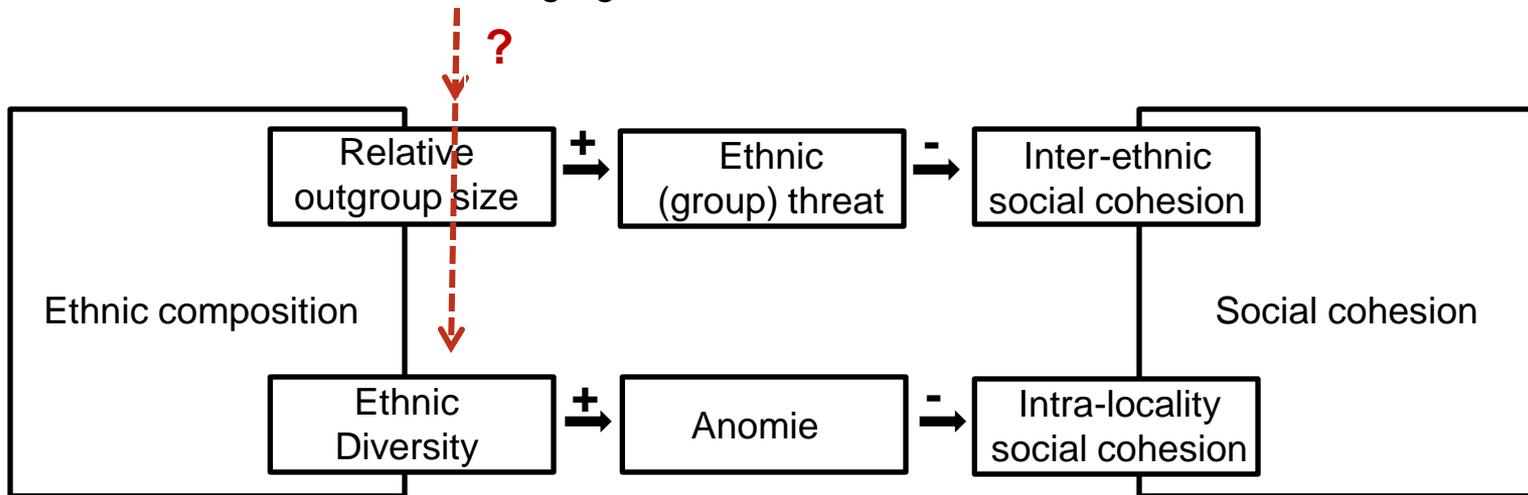




Does ethnic diversity erode social cohesion?

Theoretical claims

What about ethnic segregation?

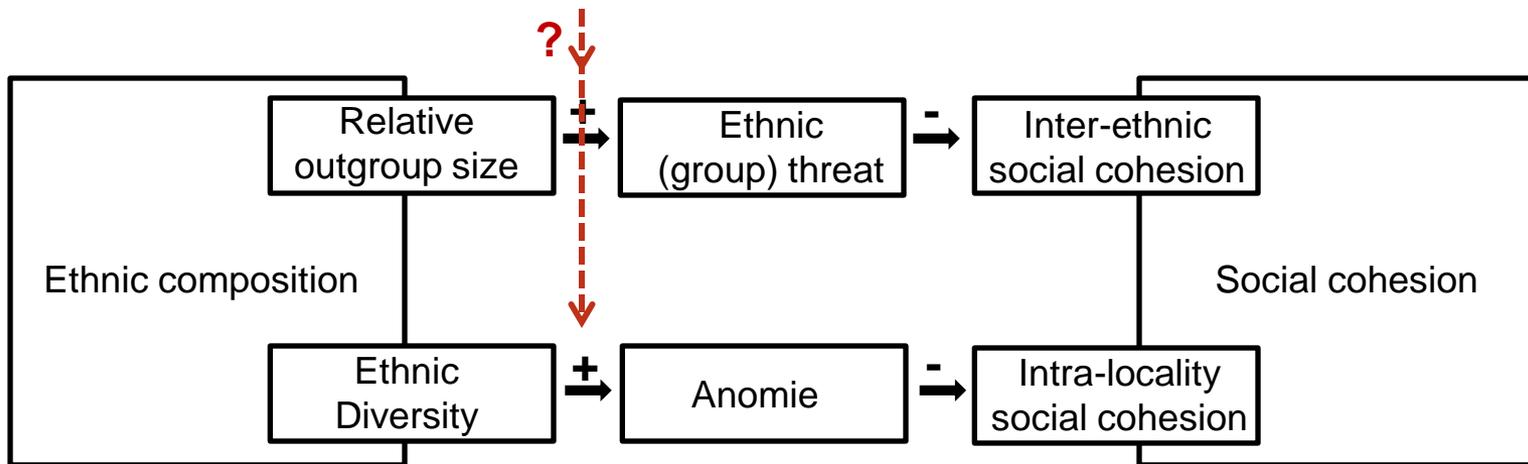




Does ethnic diversity erode social cohesion?

Theoretical claims

What about positive inter-ethnic contact experiences?

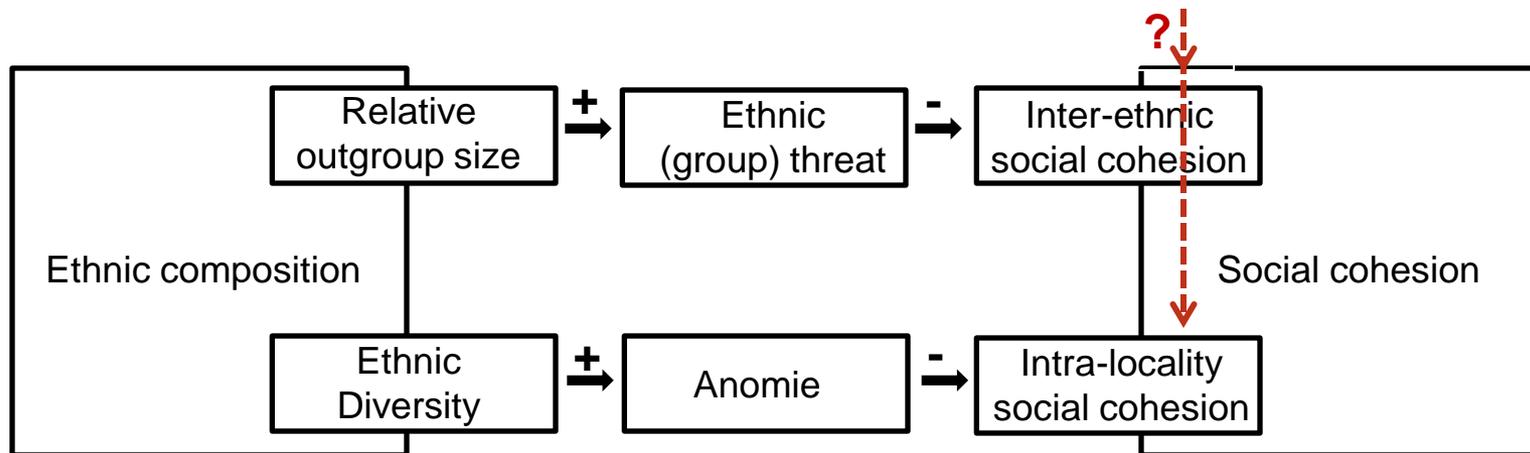




Does ethnic diversity erode social cohesion?

Theoretical claims

Why would the erosion of specific indicators of social cohesion affect other indicators of social cohesion?





Does ethnic diversity erode social cohesion?

Theoretical claims

- My focus:
 - Neighbourhoods
 - relative outgroup size
 - inter-ethnic cohesion



Does ethnic diversity erode social cohesion?

Theoretical claims

- Relative outgroup size is negatively related to (inter-ethnic) cohesion.
- Relative outgroup size is positively related to ethnic hostility.



Does ethnic diversity erode social cohesion?

Empirical results

- From the conflict research tradition
 - some support for hypothesis that inter-ethnic distrust (or ethnic hostility) is more pronounced in countries with larger shares of ethnic outgroups
 - larger shares of ethnic outgroups are not (consistently) related to higher levels of ethnic hostility in smaller geographical units (such as neighbourhoods). Outgroups size is not related to ethnic threat.
- From the contact research tradition
 - In areas with larger outgroup size, residents have more positive inter-ethnic contact experiences



Does ethnic diversity erode social cohesion?

Empirical results

- From the social cohesion research tradition

UK

- Becares et al. (2011): more respect for ethnic differences when minority group size increases
- Laurence 2009: increasing diversity improves inter-ethnic relations (tolerance to diversity)

NL

- Lancee & Dronkers 2010: for natives, ethnic diversity is positively related to inter-ethnic trust
- Tolsma et al. 2009: larger outgroup size, more tolerance to neighbours from a different race



Does ethnic diversity erode social cohesion?

Empirical results

- Ethnic diversity / relative outgroup size (in NB) is not negatively related to inter-ethnic social cohesion
- Ethnic diversity / relative outgroup size (in NB) is not positively related to ethnic hostility



Theoretical claims

- Why is the presumed positive relationship between outgroup size and ethnic hostility not observed?
 - outgroups size (in NB) does not affect perceived threat (Ethnic diversity does not erode (inter-ethnic) social cohesion!!)
 - the contact mechanism dominates the threat mechanism
 - those with ethnic hostile attitudes, left ethnically diverse NB
 - a combination of the above



Theoretical claims

- Those with ethnic hostile attitudes, left ethnically diverse NB: white flight
- Mechanism:
 - Increasing diversity leads to ethnic hostility
 - Ethnic hostility leads to selective residential mobility
 - Decreasing diversity due to a move to a new (more homogeneous) NB does not decrease ethnic hostility



Theoretical claims

- Those with ethnic hostile attitudes, left ethnically diverse NB: white flight
- Mechanism:
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(This assumes that the impact of ethnic diversity on (the erosion of) inter-ethnic social cohesion is uni-directional)



Theoretical claims

- Those with ethnic hostile attitudes, left ethnically diverse NB: white flight

→ Those high in ethnic hostility (remain or) end up in neighbourhoods with large proportions of co-ethnics.

→ We would expect no or a negative relationship in (cross-sectional) data between ethnic diversity/relative outgroup size and ethnic hostility.



Empirical results

- How did previous research take residential mobility into account?

Less fruitful directions:

- Longitudinal studies
- Controlling for mobility rates at the macro-level
- Controlling for length of stay at the individual level

More fruitful directions:

- Study the impact of ethnic diversity in settings where selection is not likely
- Allowing for heterogeneity in the impact of ethnic diversity
(across income categories, educational levels, length of stay)



Empirical results

- The impact of residential mobility on the relationship between ethnic diversity / relative outgroup size and (inter-ethnic) social cohesion has remained unclear.



Ethnic diversity and residential mobility

- Previous studies using survey data investigating the consequences of ethnic diversity did not adequately control for selective residential mobility.
- Previous studies using agent based modelling to simulate the consequences of preferences for co-ethnics on levels of segregation did not:
 - look at the diversity-cohesion or outgroup size-ethnic hostility relation as outcome
 - (and this was not possible because previous authors in this research tradition did not allow for heterogeneity in preferences, i.e. heterogeneity in ethnic hostility/distrust)
- Why not use ABM to assess the possible/plausible impact of residential mobility on the relationship between the ethnic composition of a locality and inter-ethnic attitudes?



Research questions

Original research question: To what extent does (selective) residential mobility affect the observed relationship between ethnic diversity of geographical units and (inter-ethnic) social cohesion?

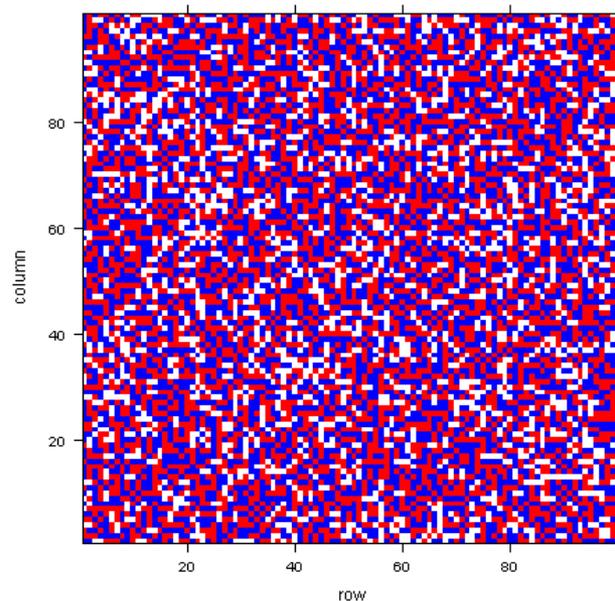


Research questions

Rephrased for ABM: To what extent and under which circumstances does selective residential mobility affect the correlation between outgroup size in ego-centered Moore neighbourhoods and the preference for coethnics?



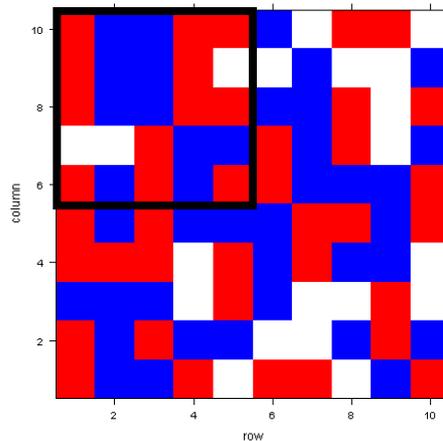
1. Highest geographical unit: square: $100 \times 100 = 10,000$
2. Start situation:
 1. Housing: 15 % vacancies;
 2. Residents: 50% red; 50 % blue;





3. Tracts to calculate segregation: trasize=5

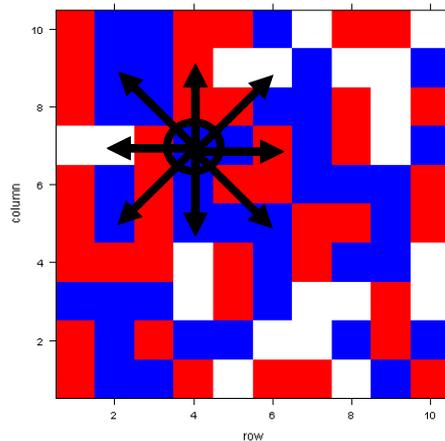
Index of dissimilarity (D): $\frac{1}{2} \sum_{i=1}^N \left| \frac{r_i}{R} - \frac{b_i}{B} \right|$





4. Neighbourhoods to calculate percentages of non-coethics

Range of Moore neighbourhood = 2





5. Linear preference function: $\beta * x_{jt}$
 x_{jt} is proportion coethnics in location j at time t



6. Allow preference to vary: $\beta \sim N(55, \sigma^2)$

(I also used a truncated normal distribution in which I do not allow negative β s)



7. Moving rules:

- Pick an agent
- Determine preference for each vacancy
- Probability of moving to location j at $t + 1$ for agent i is:

$$p_{ijt+1} = \frac{e^{\beta x_{jt}}}{\sum_k e^{\beta x_{kt}}}$$



6. Allow preference to vary: $\beta \sim N(55, \sigma^2)$
 1. I did this by varying the Beta parameter in McFadden's choice function.
 2. With higher beta residents are more likely to end up in more desired neighbourhood, differences in neighbourhoods more important.
 3. Two extreme interpretations:
 - People with larger beta better in picking their preferred neighbourhood with regard to ethnic composition.
 - For people with larger beta, differences in preferences for different neighbourhood are larger, that is, ethnic composition plays a more important role: **higher beta, more ethnic hostility**



7. Moving rules:

- Pick an agent
- Determine preference for each vacancy
- Probability of moving to location j at $t + 1$ for agent i is:

proportion co-ethnics	beta1	P _{ij} t+1
0	1	0.052
0.1	1	0.058
0.2	1	0.064
0.3	1	0.071
0.4	1	0.078
0.5	1	0.087
0.6	1	0.096
0.7	1	0.106
0.8	1	0.117
0.9	1	0.129
1	1	0.143

proportion co-ethnics	beta5	P _{i'} j't+1
0	5	0.00
0.1	5	0.00
0.2	5	0.01
0.3	5	0.01
0.4	5	0.02
0.5	5	0.03
0.6	5	0.05
0.7	5	0.09
0.8	5	0.15
0.9	5	0.24
1	5	0.40



7. Moving:

- Moving mobility in real life: 66 moves within community per 1000 per year. Thus, with 10.000 agents 660 moves constitute a year



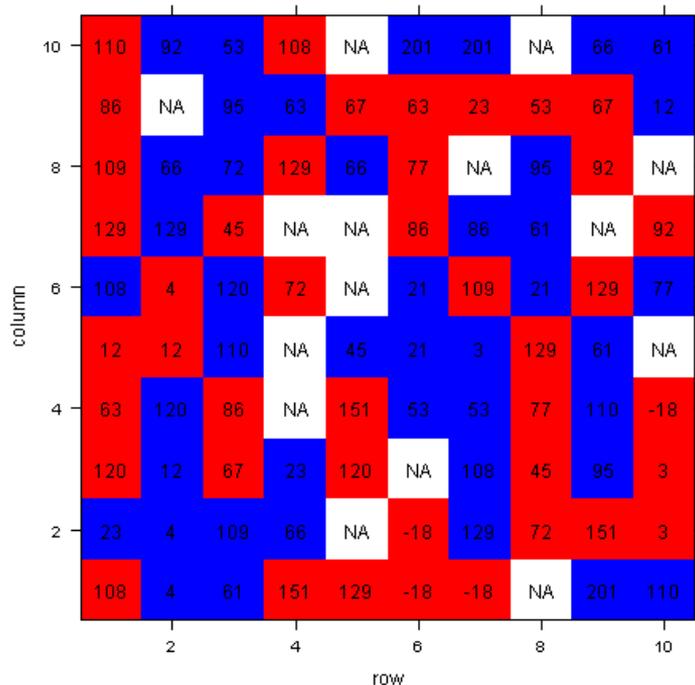
8. Outcomes:

- Index of dissimilarity
- Correlation between proportion non-coethnics in Moore neighbourhood and beta
 - Positive correlation: persons who dislike non-coethnics (high in beta) in NBs with more non-coethnics

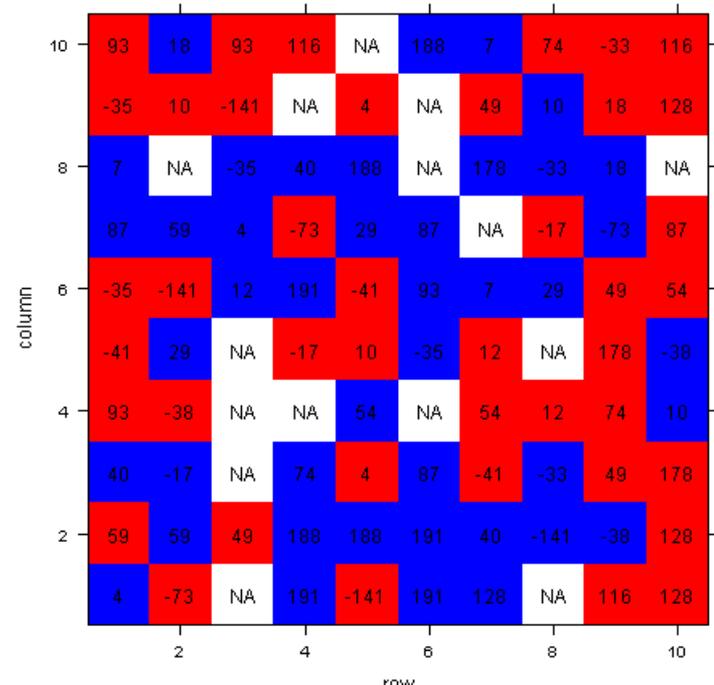


8. Outcomes:

- ID:= Index of dissimilarity
- r:= Cor(Propout, beta)



ID=0 / r=0.8



ID=0 / r=-0.8



My agent-based models

Illustration

www.jtolsma.nl/movie.wmv



Initial situation:

No segregation

A positive correlation between outgroup size and beta.

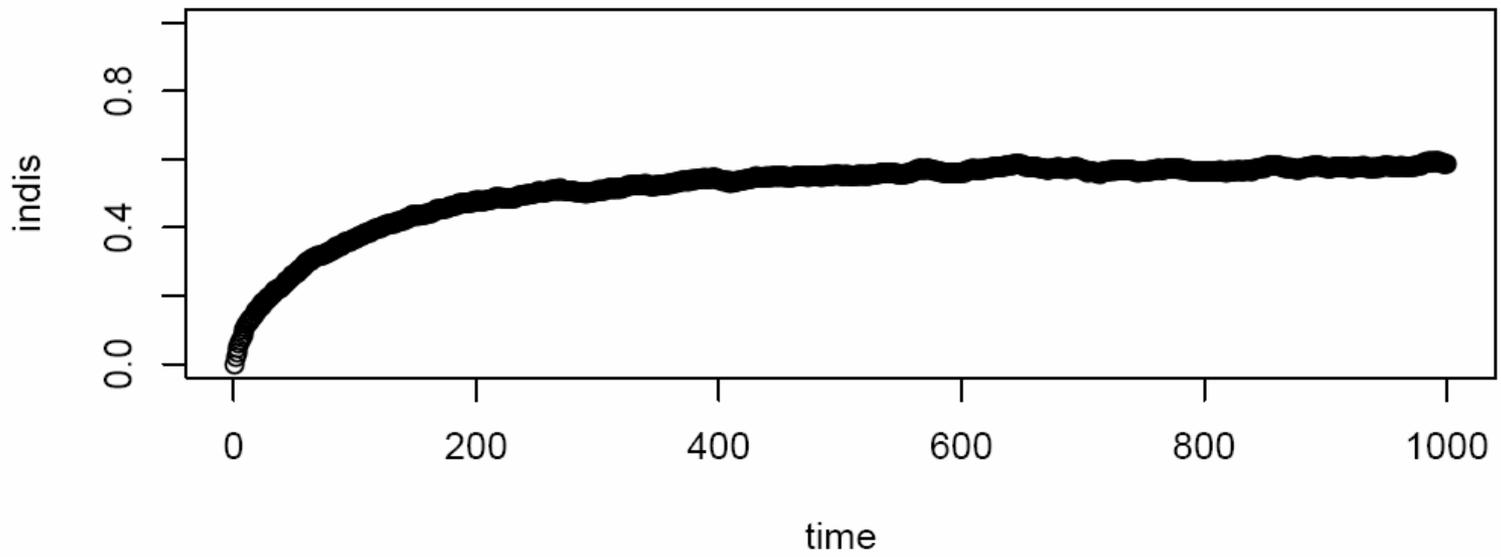
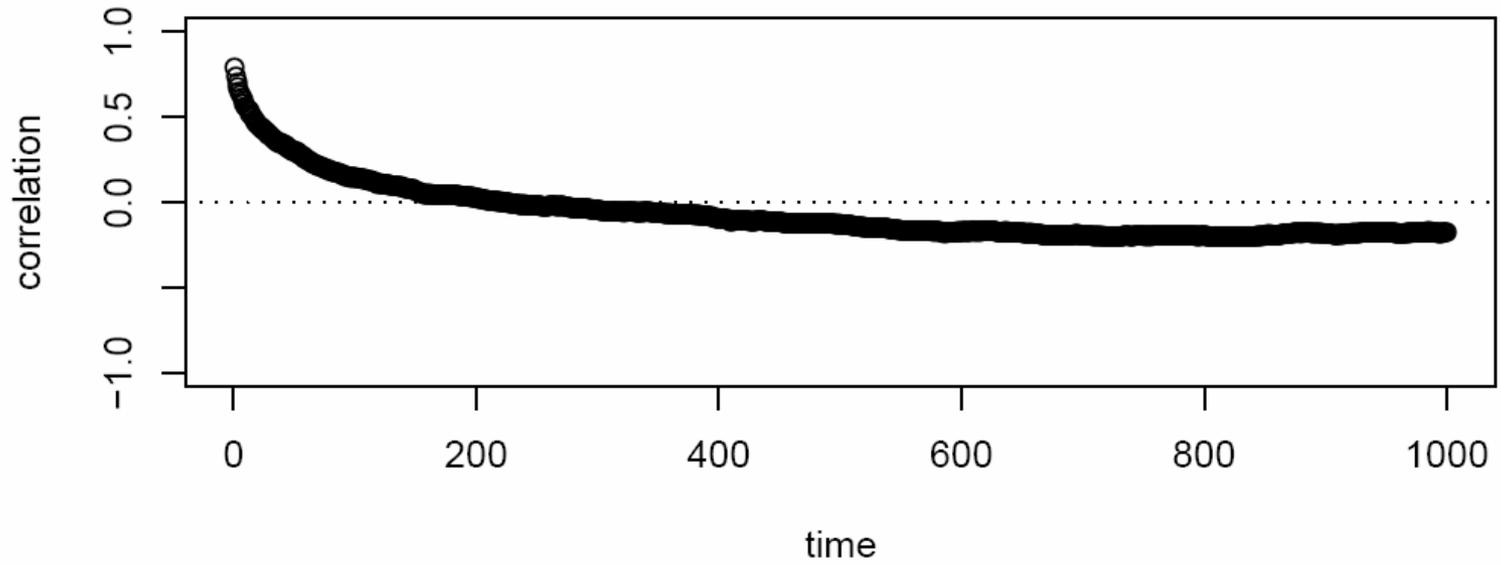
Thus, we start as if outgroup size has increased ethnic hostility, and residential mobility did not yet occur.

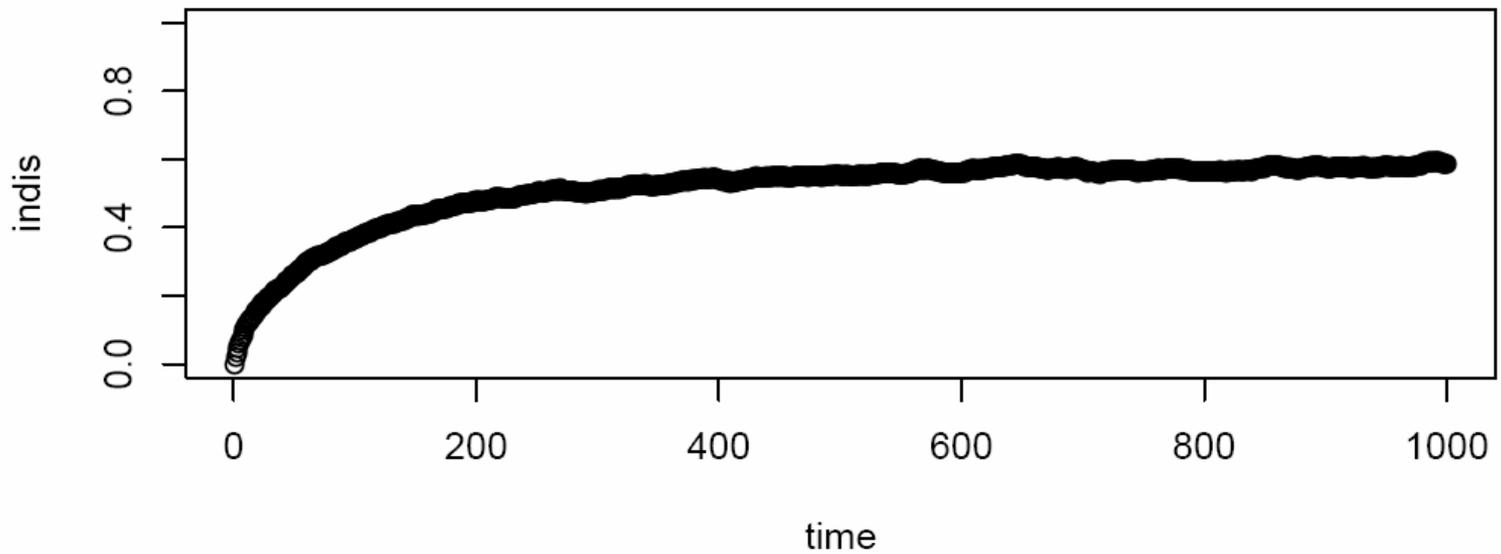
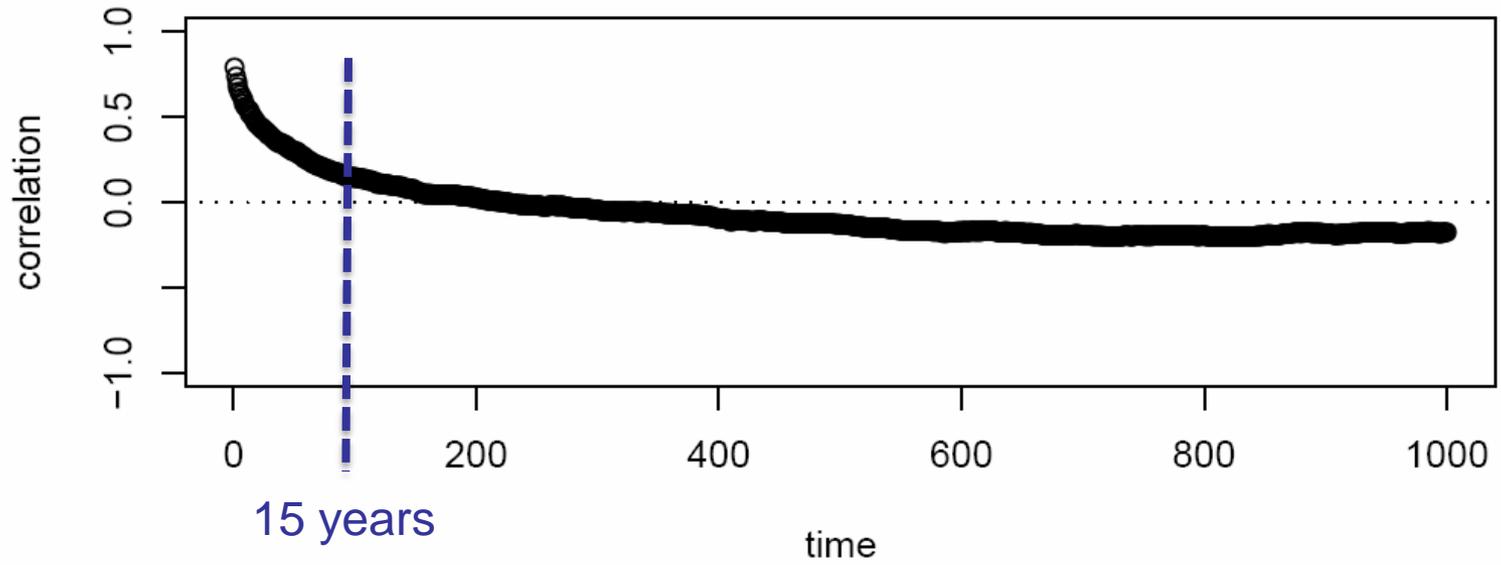
The question is, does the positive correlation between outgroup size and hostility (outgroup size and beta) remain positive if we allow residential mobility.

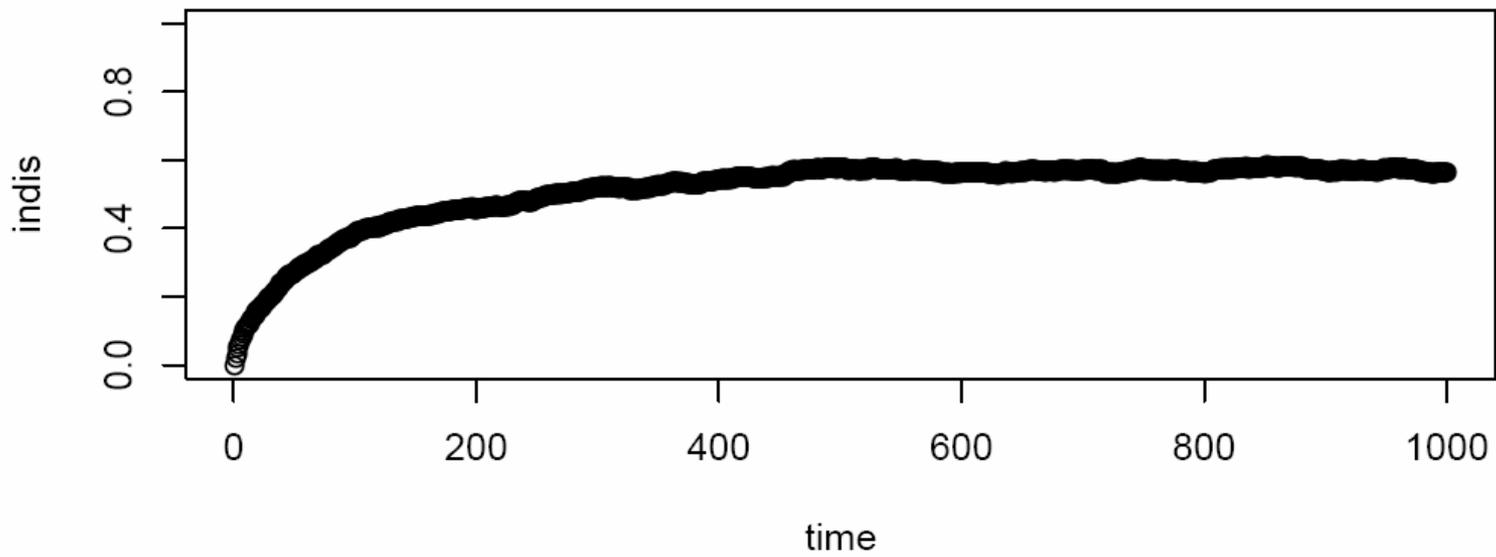
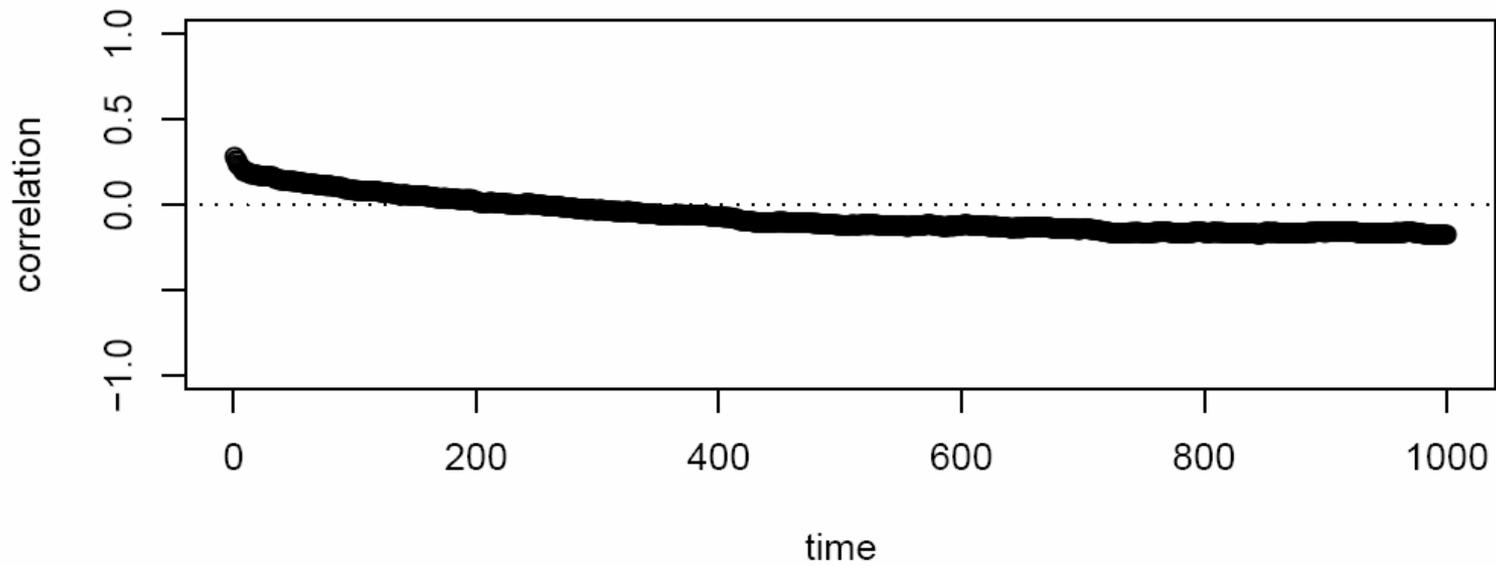


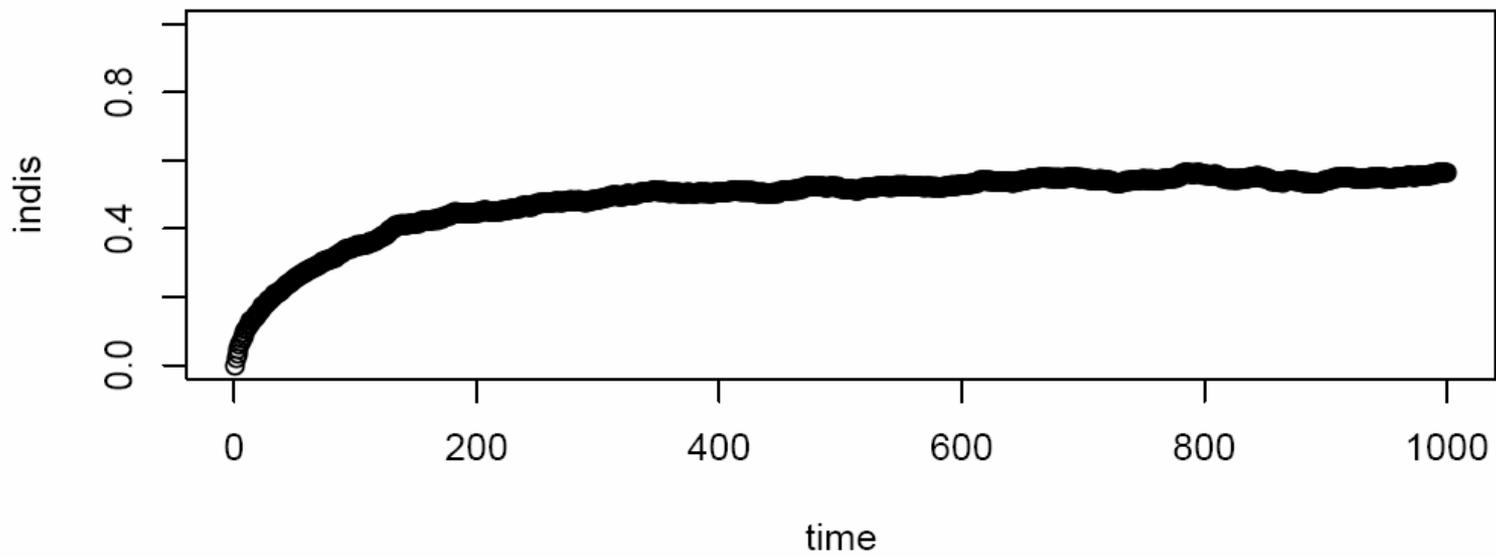
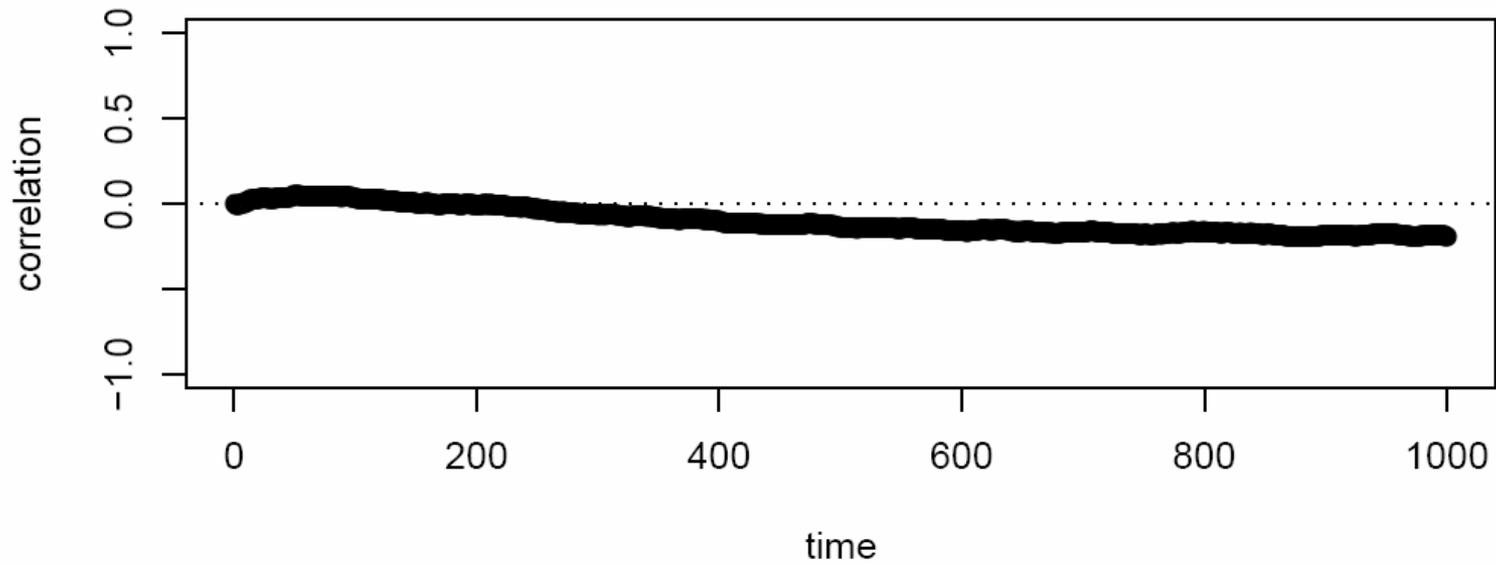
Allow variance in preference for co-ethnics

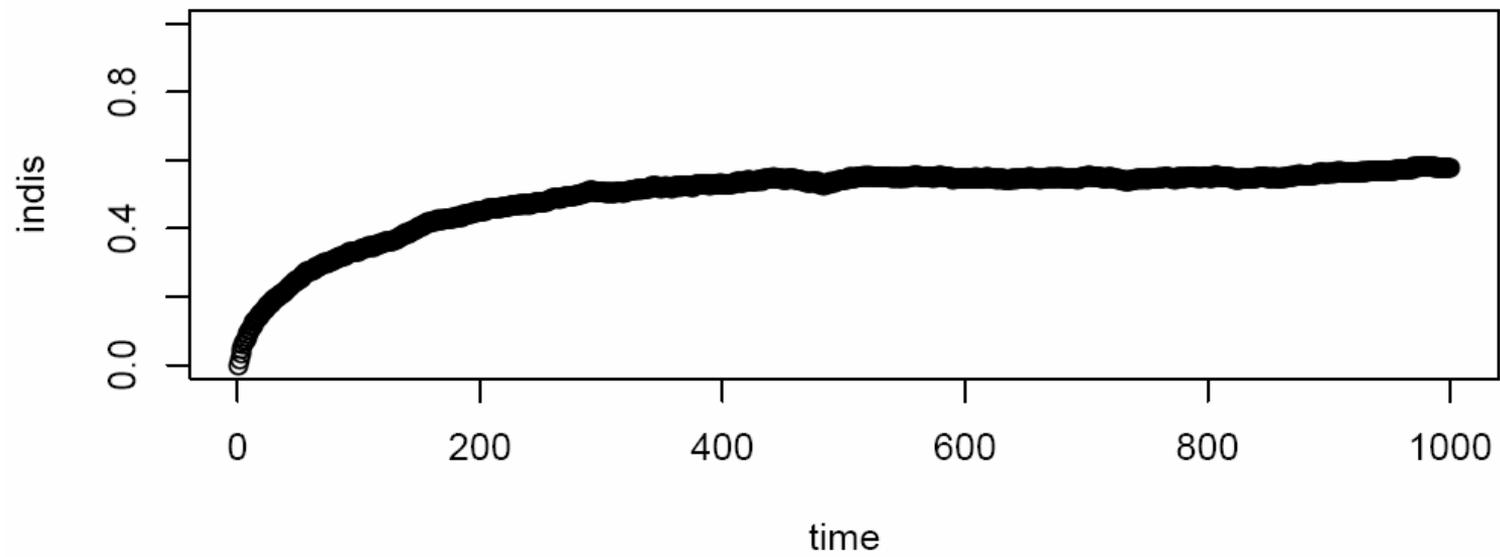
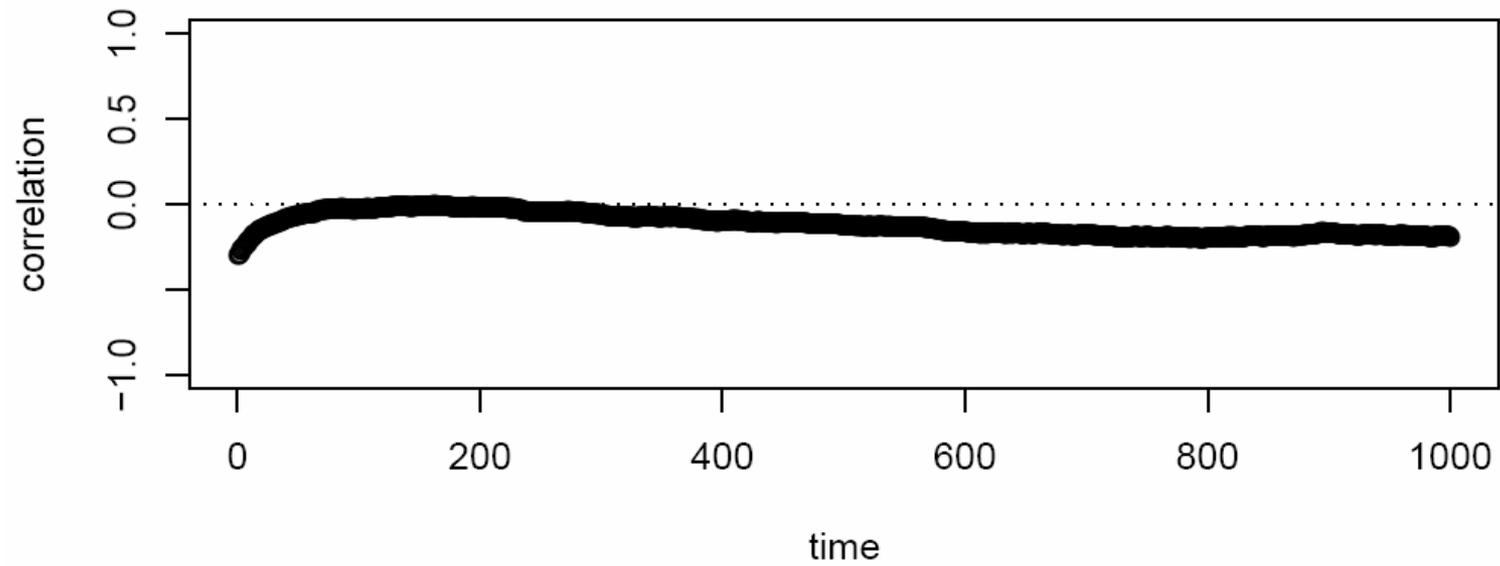
- Randomly pick an agent
- $\beta \sim N(55, \sigma^2), \sigma^2=55$
- Initial Cor(propout, beta): +0.8; +0.3; 0; -0.3; -0.8

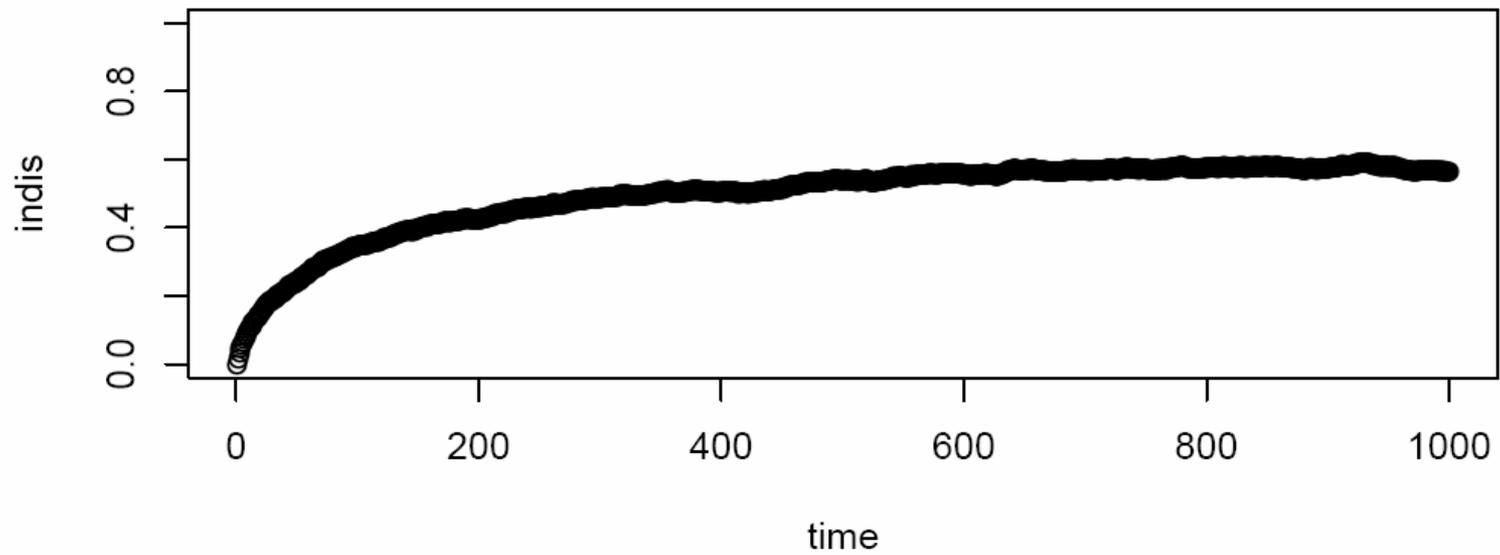
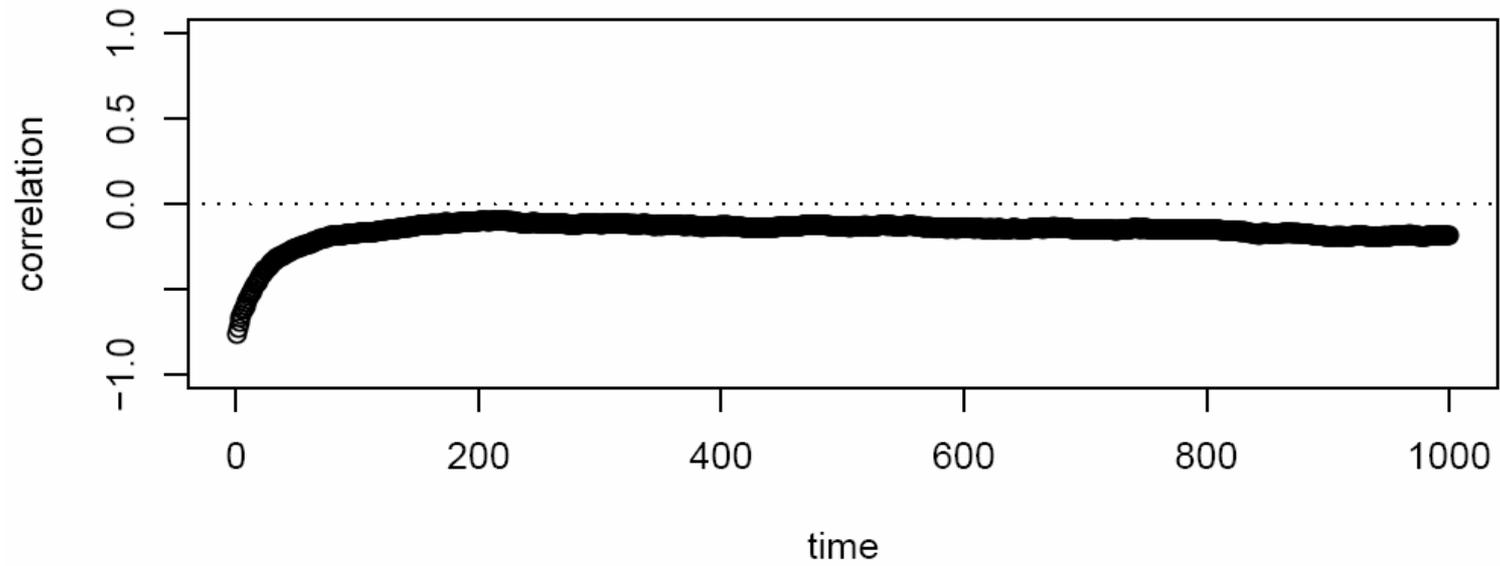














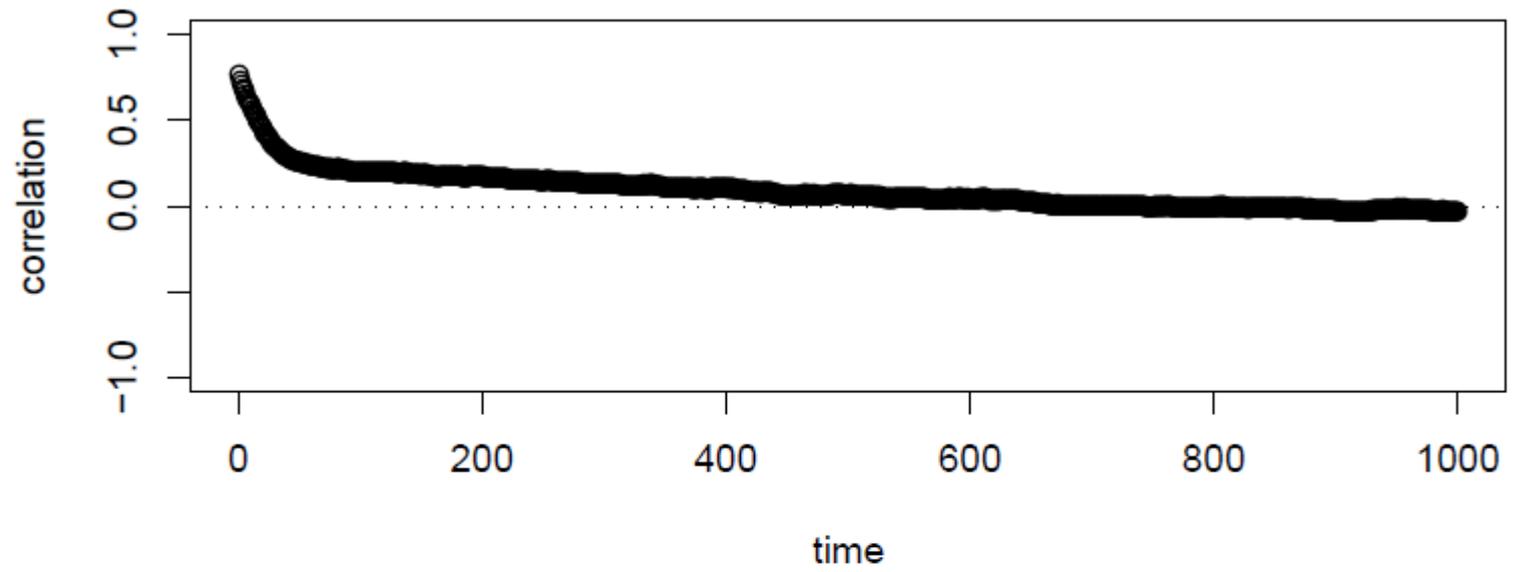
Results I

- Residential mobility causes the initial positive correlation between outgroup size and ethnic hostility to drop to zero and to become slightly negative (at $t=200$ or 30 years).
- When segregation reaches a dynamic equilibrium, $\text{cor}(\text{propout}, \text{beta})=-0.15$.

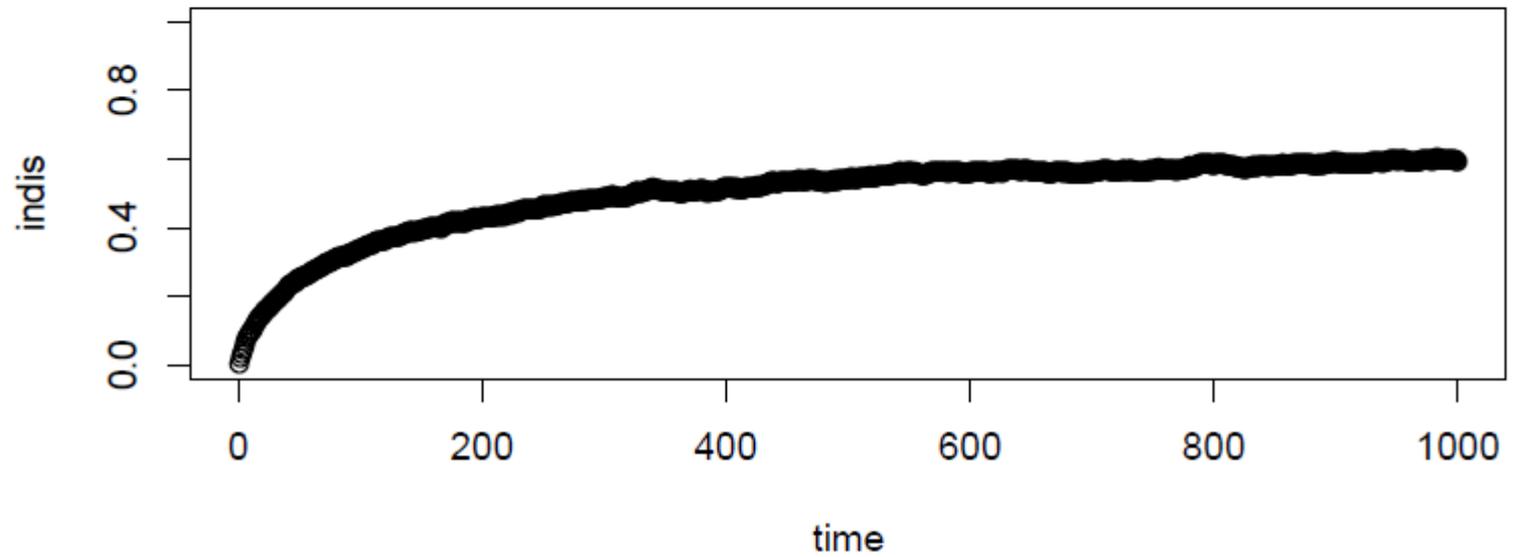


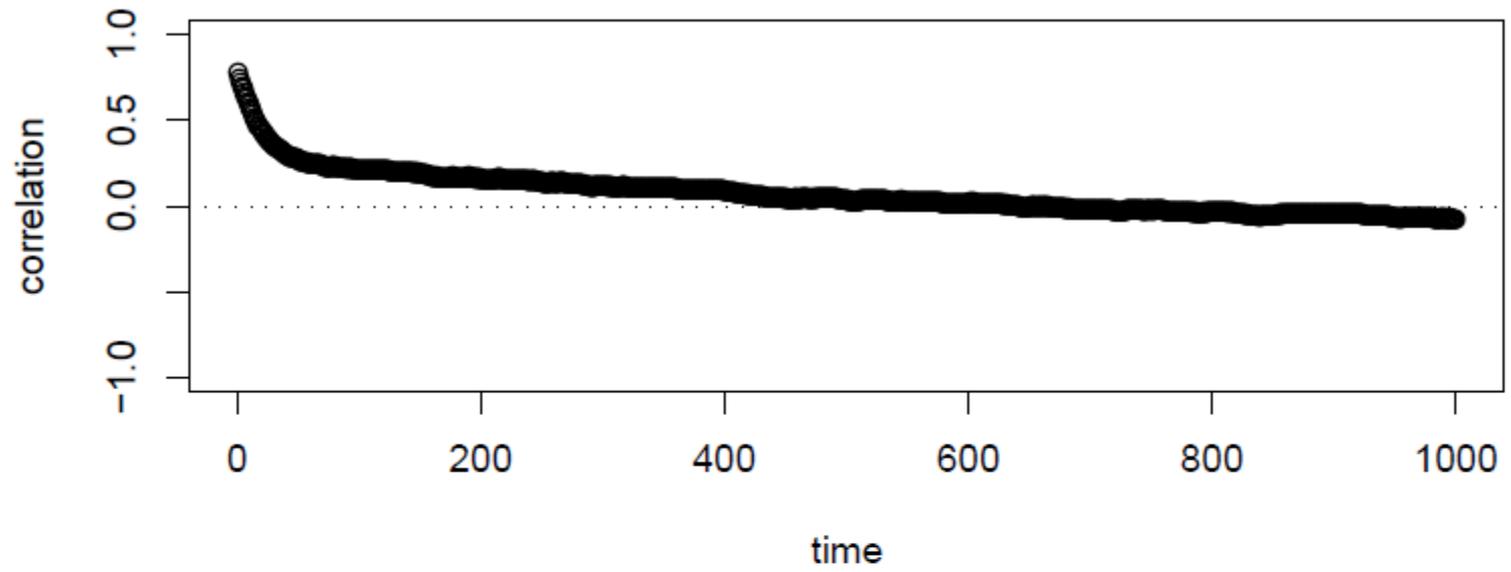
Allow selective residential mobility

- Selectively pick an agent
P10%least happy/P10most happy=0.005; 0.01; 0.5; 1; 2;
100; 200
(it does not matter if we select agents based on current preference
or on beta)
- $\beta \sim N(55, \sigma^2)$, $\sigma^2=55$
- Start correlation: 0.8

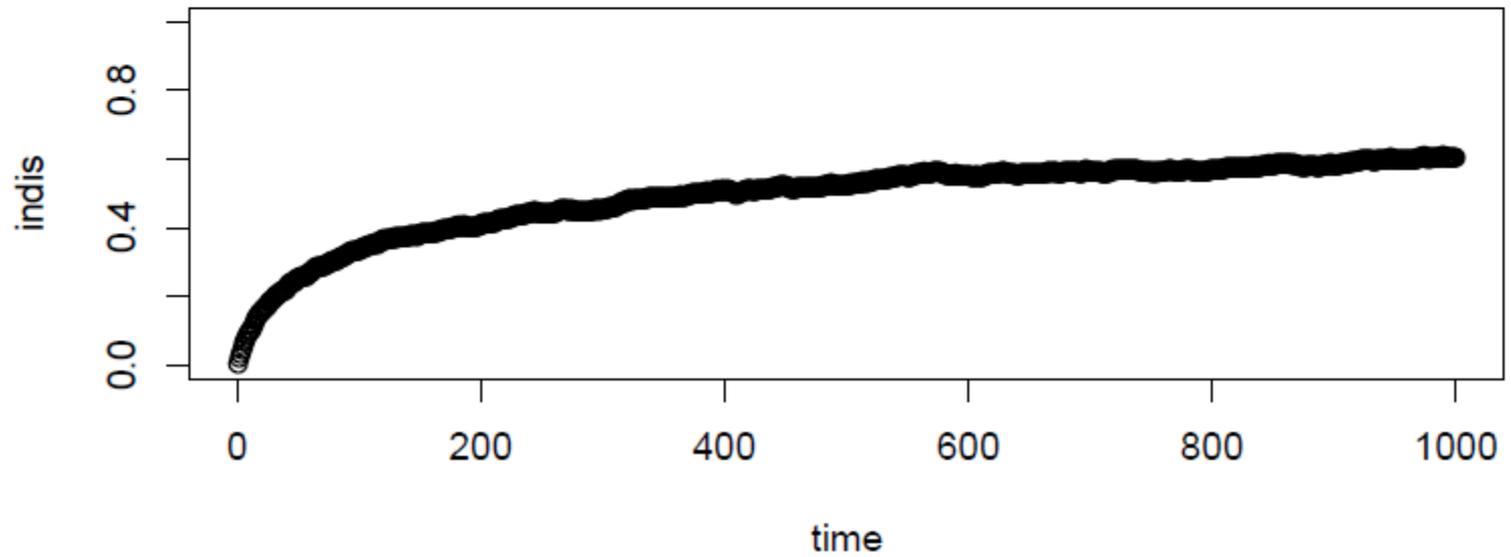


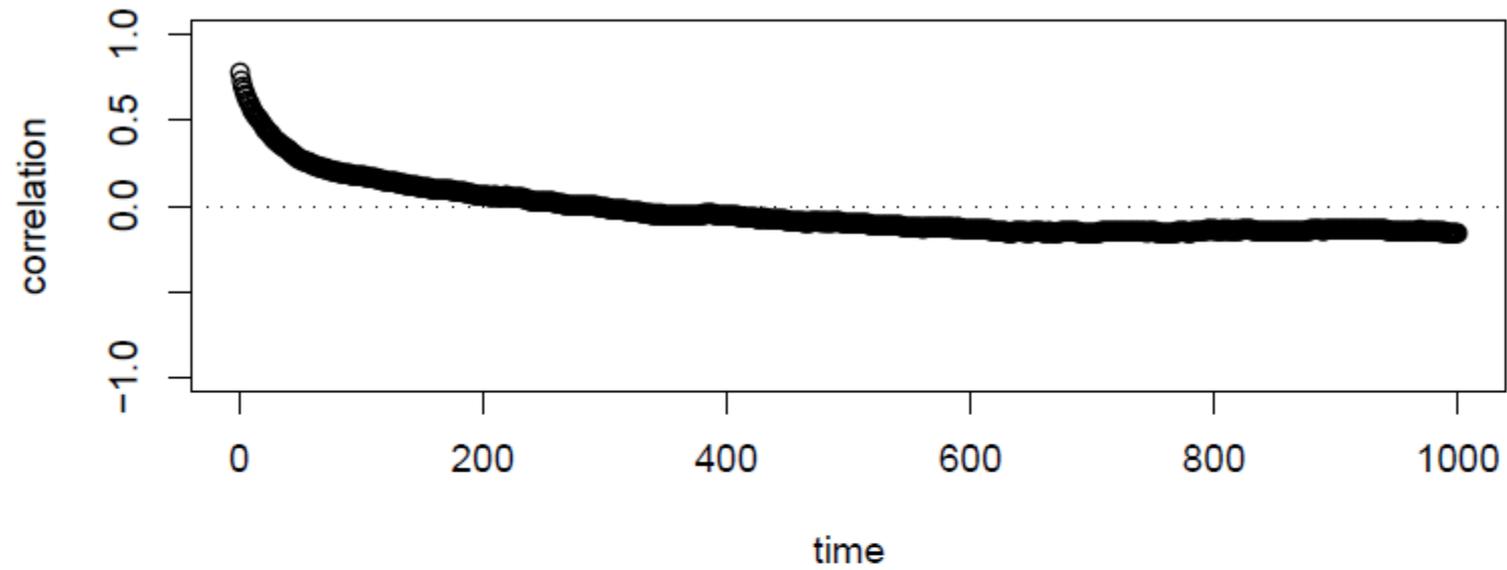
P10lh/p10mh=0.005



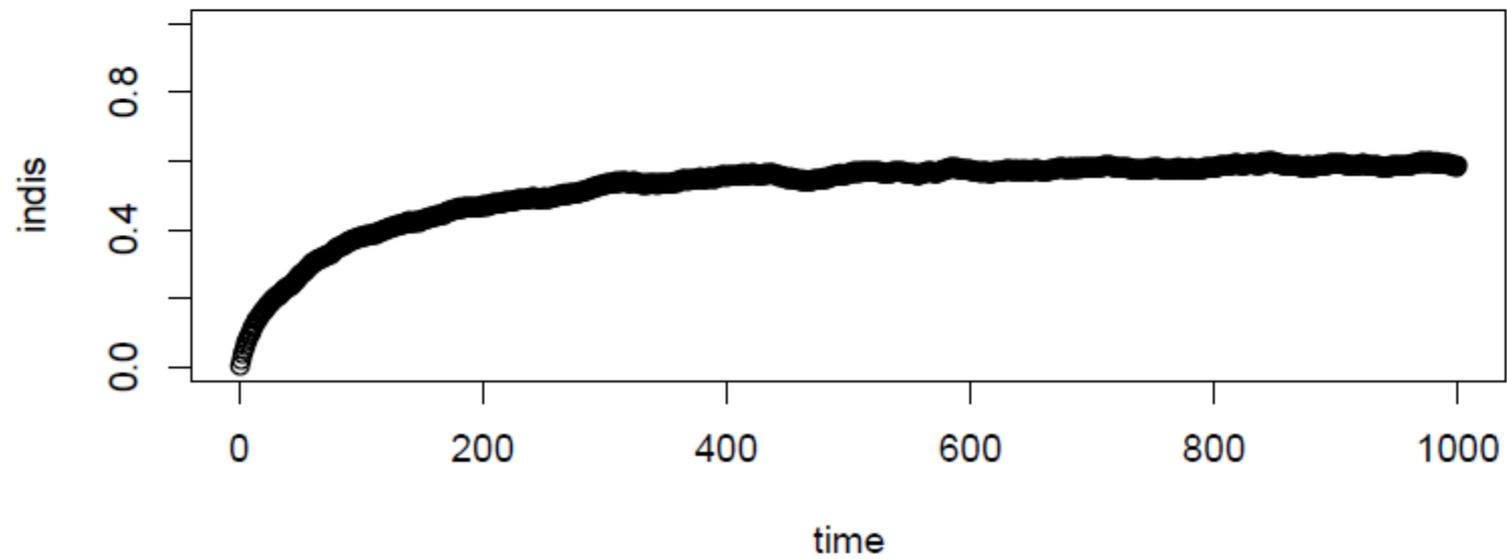


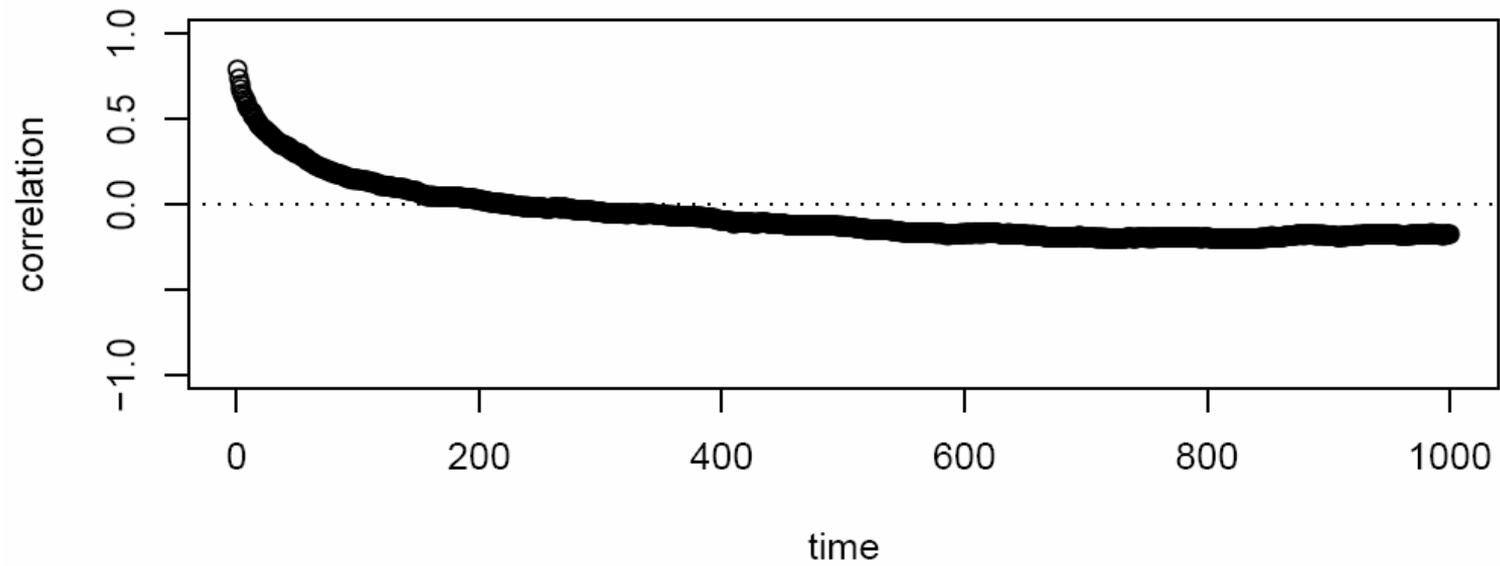
P10h/p10mh=0.010



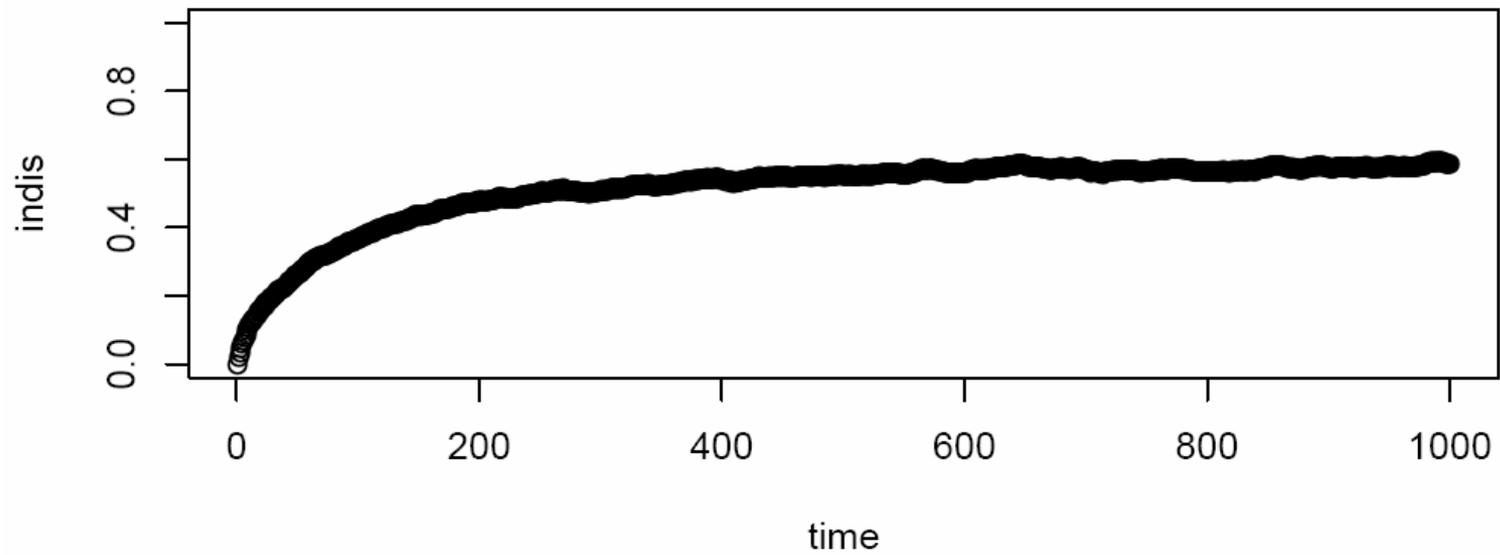


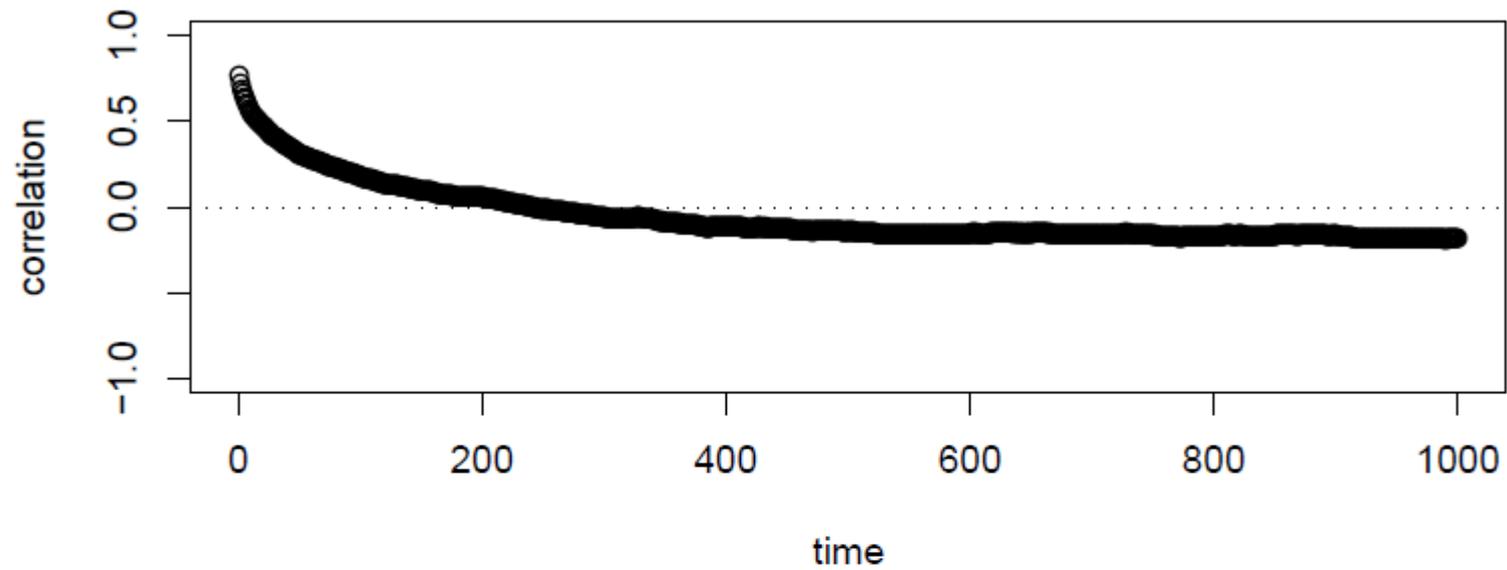
P10lh/p10mh=0.5



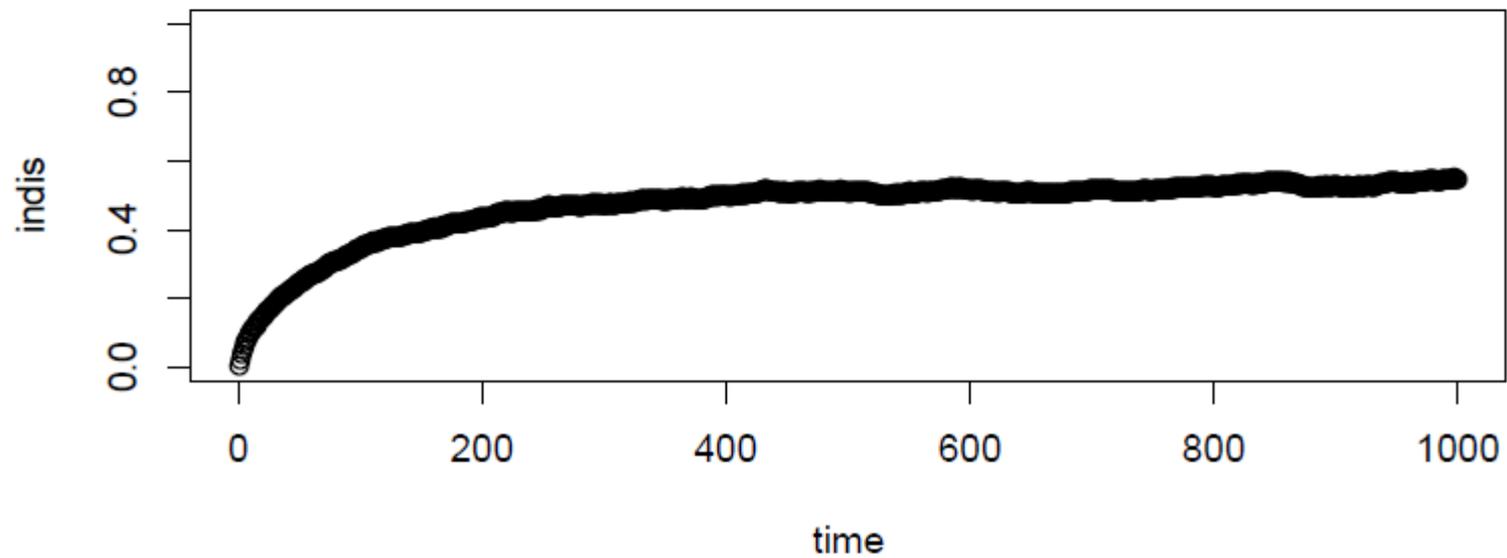


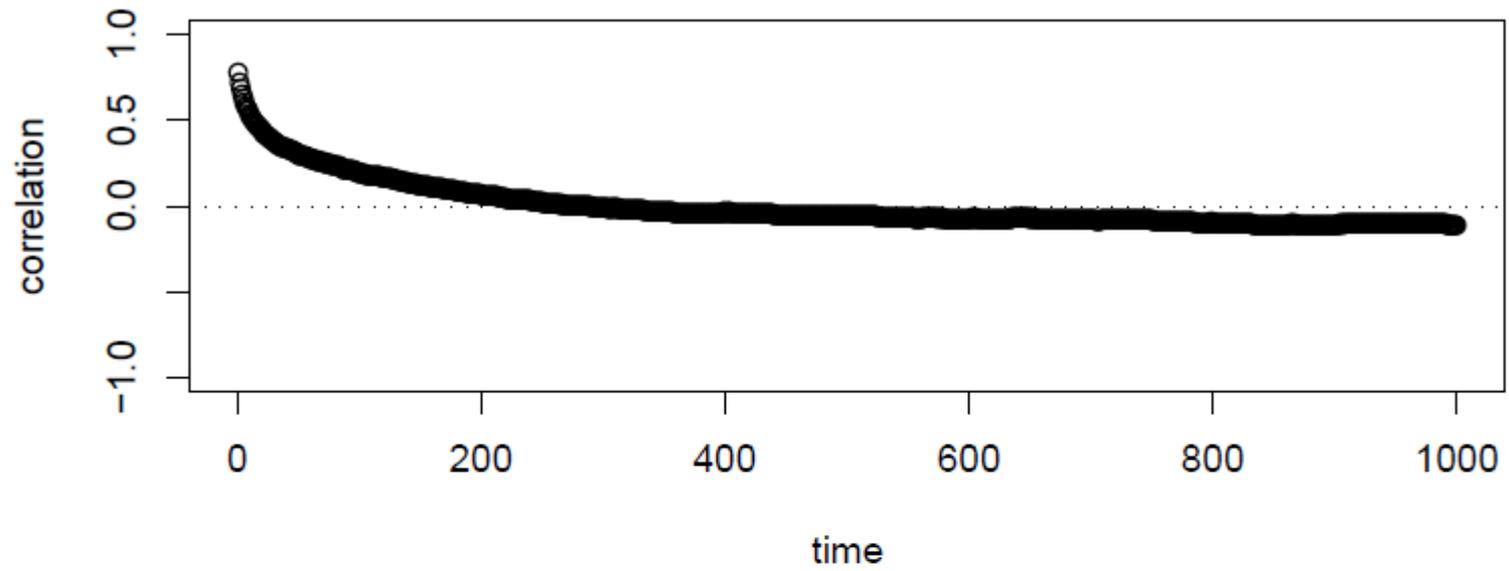
P10lh/p10mh=1



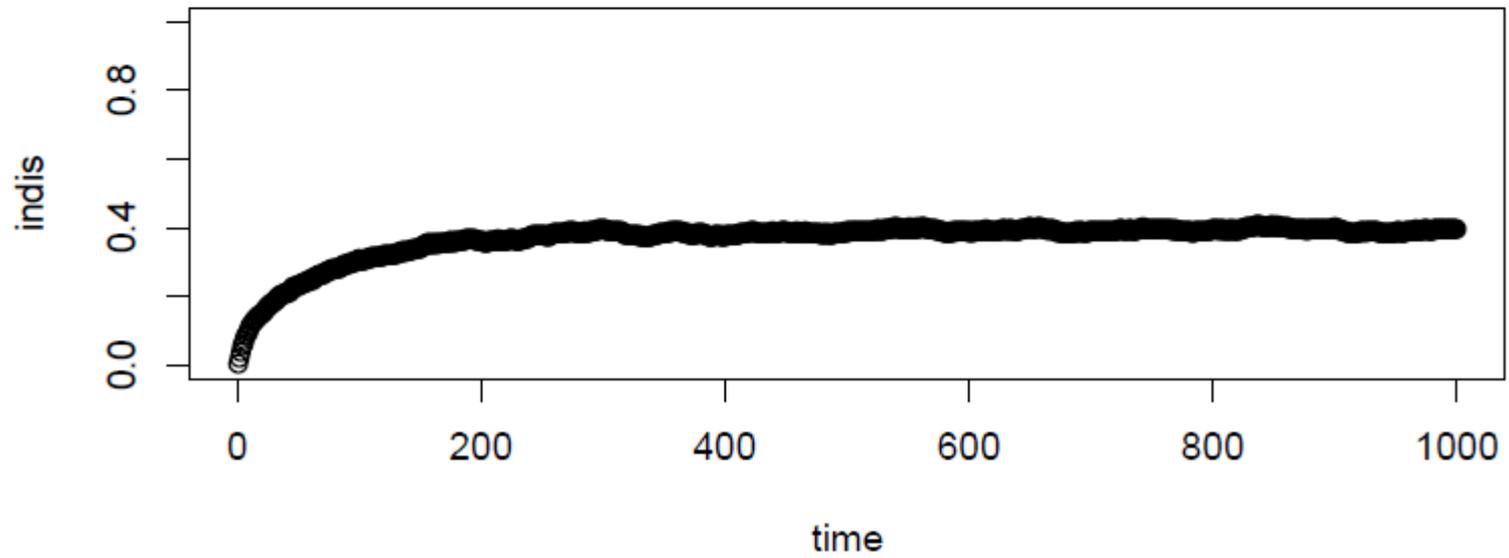


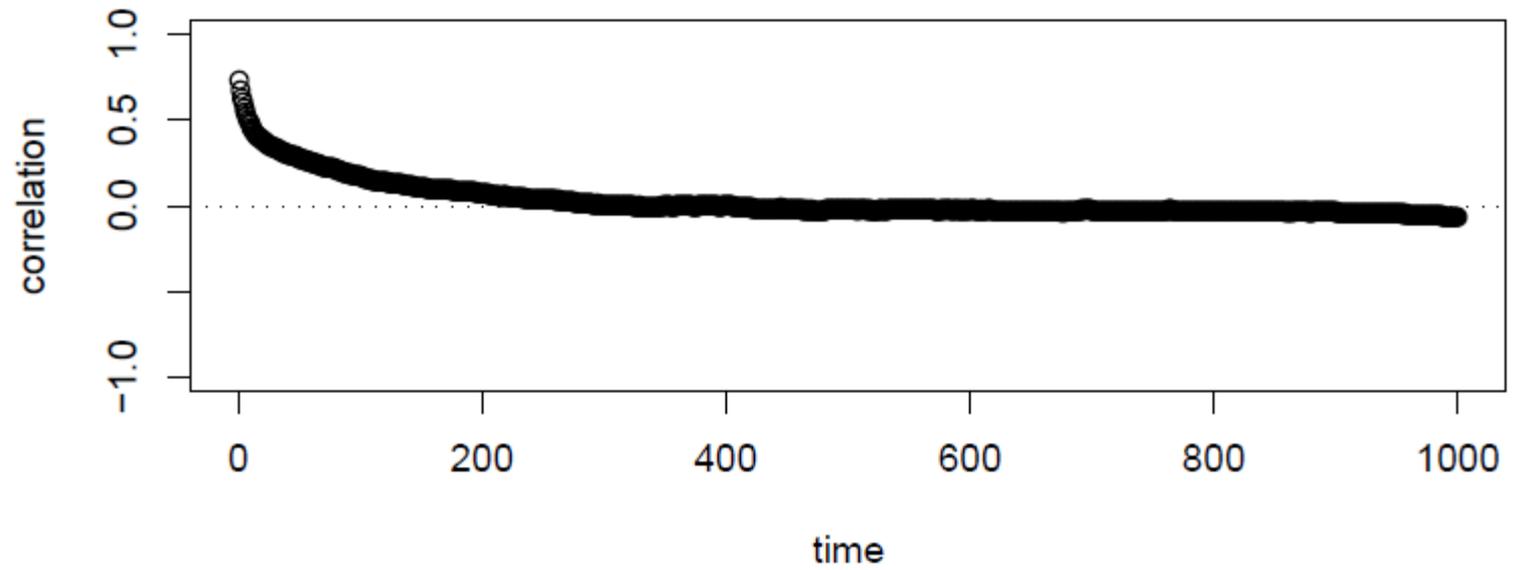
P10lh/p10mh=2



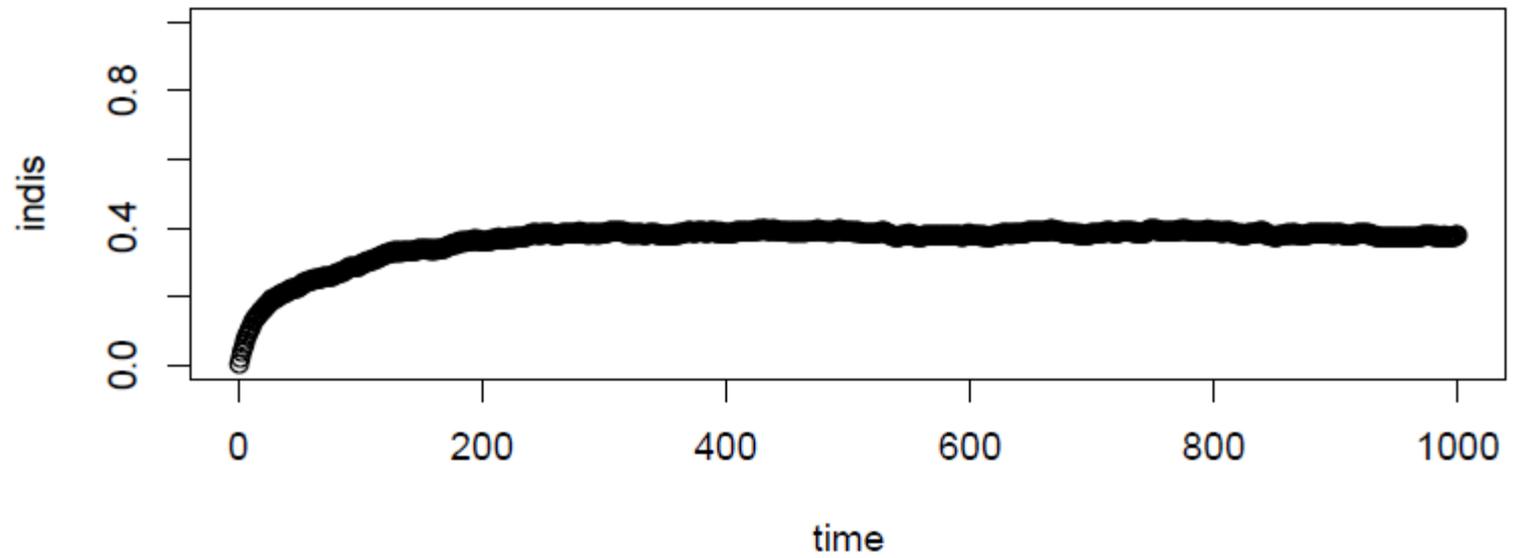


P10lh/p10mh=100





P10lh/p10mh=200





Results II

- Residential mobility causes the initial positive correlation between outgroup size and ethnic hostility to drop to zero.
- When the least happy are less likely to move out:
 - Correlation drops to zero more slowly
 - Correlation does not become negative
 - When segregation reaches a dynamic equilibrium, $\text{cor}(\text{propout}, \text{beta})=0$.
- When the most happy are less likely to move out:
 - Correlation drops to zero at same rate without selection
 - With extreme selection, correlation no longer turns negative



What would happen if...

- there are less vacancies: similar results but takes longer.
- the Moore neighbourhood becomes larger: correlation drops but may remain positive!
- the neighbourhood was defined on the basis of a tract:
- we start with a random distribution of blues and reds instead of with an integrated area: takes longer
- preference functions are not only heterogeneous within ethnic groups but also between ethnic groups:
- Preference functions change as a result of outgroup size:



1. To what extent does (selective) residential mobility affect the observed relationship between outgroup size in the neighbourhood and dislike for non-coethnics?
 - Due to residential mobility the correlation between outgroup size and dislike for non-coethnics drops to zero or becomes slightly negative... even without the contact mechanism at play.



2. To what extent and under which circumstances does selective residential mobility affect the observed relationship between outgroup size in the neighbourhood and dislike for non-coethnics?
 - Circumstances:
 - Initial correlation between: outgroup size and ethnic preferences no substantive effect.
 - Push and pull factors: may slow down or speed up the process
 - the predicted (positive) correlation between dislike for non-coethnics and outgroup size in NB remains intact only in extreme(?) situations:
 - Initial situation: no segregation / large positive correlation
 - Few vacancies
 - Large Moore NB



Take home message

- Previous studies on the relationship between ethnic diversity (outgroup size) in geographical localities and inter-ethnic attitudes are not informative, because residential mobility will cause the observed correlation to be close to zero or slightly negative.
- Too strong?

Previous studies on the relationship between ethnic diversity (outgroup size) and inter-ethnic attitudes are not (very) informative.

- In a context where residential mobility is high
- where segregation has occurred
- where push and pull factors are unknown