

Introducing NordInt.net: Network Dynamics of Ethnic Integration

Combining network science and register data in the study of ethnic integration in Denmark, Finland and Sweden (project introduction)

Carl Nordlund

carl.nordlund@liu.se

www.carlnordlund.net

A short introduction to the
Network Dynamics of Ethnic Integration (NordInt.net)
research project

- Nordic research project involving partners in Sweden, Denmark, Finland
- Funded by NordForsk program on Interdisciplinary Research
- Period: 2021-2024 (though awarded in December 2020 so somewhat delayed, also due to pandemic)
- Core themes of project:
 - Ethnic relations and integration
 - Network analysis
 - Nordic register data (Sweden, Denmark, Finland)
 - Interdisciplinary (methodological: computational network science from physics/CS)

Project consortium



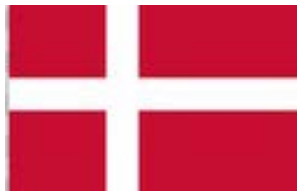
Institute for Analytical Sociology, Linköping university

Carl Nordlund (PI, team lead), Jesper Lindmarker (PhD student), Peter Hedström (mgmt support)

Soc-sci

Also Visualization center: Katerina Vrotsou, 1 incoming vis engineer (visual analytics, data dissemination in last year)

Comp-sci



Dept of Sociology and Social Work, Aalborg university

Anja Jorgensen (team lead), Rolf Lyneborg Lund (postdoc), 1 incoming PhD student

Soc-sci



Dept of Computer Science, Aalto university

Kimmo Kaski (team lead), Kunal Bhattacharya (postdoc), Roy Chandreyee (postdoc)

Comp-sci/
Physics

Family Federation of Finland (Väestöliitto)

Anna Rotkirch (team lead), Venla Berg (postdoc), 1 incoming postdoc

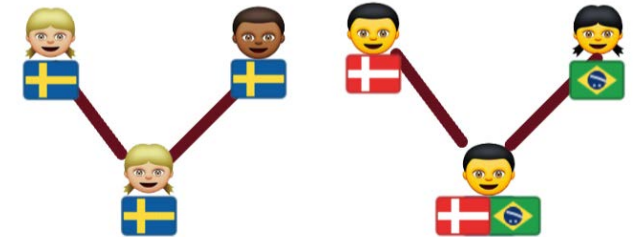
Soc-sci/
Policy

Inter-ethnic relations and integration

- The historical ethnic homogeneity of Nordic countries: indeed historical
 - ~25% of population of Sweden has foreign background (born abroad or parent(s) born abroad)
 - Denmark (~13%), Finland (~7%)
- Importance of understanding issues on integration and ethnic relations
- A lot of research concerned with integration in various social domains, such as
 - Residential
 - Labor markets
 - Social networks
 - Family formation etc
- This area of research has benefited greatly from register data



Using parental country of birth as proxy for ethnicity as self-defined group

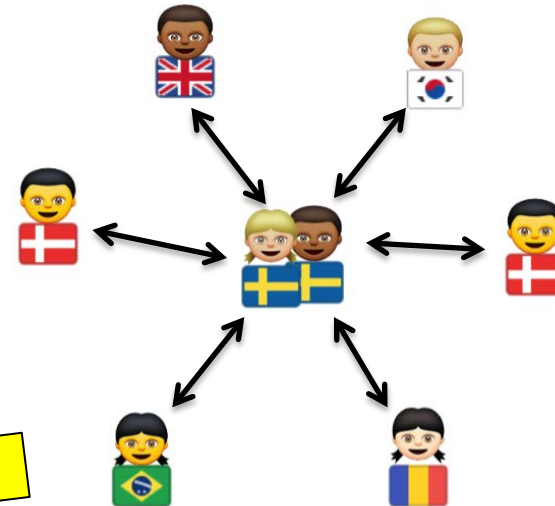


Inter-ethnic relations and integration

- Overall drawback with existing research on integration and ethnic relations:
 - Native-centric!
- Integration often perceived, measured and gauged in terms of relations and interactions between “natives” vis-à-vis one or more groups of non-native origins....

...which is a rather restrictive view of integration!

Let's dive into an example!



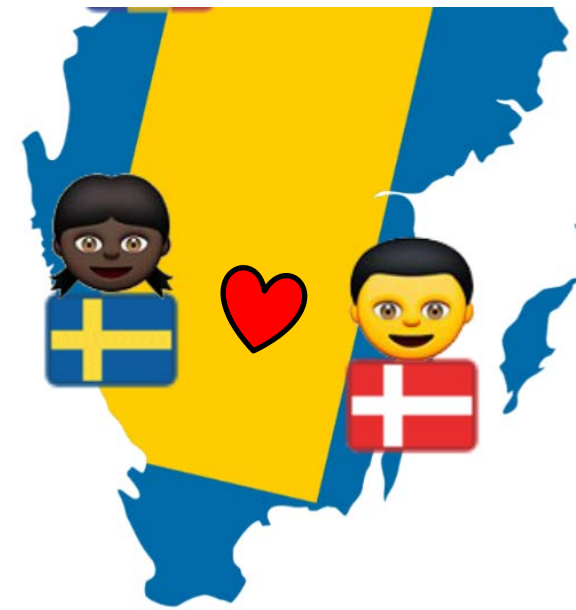
Example: Inter-group family formation and integration

The sociological importance of mating, marriage, reproduction:
Strengthening social bonds, mean for upholding cultural distinctiveness

Intermarriage (and similar long-term romantic unions): a
lithmus test for integration (*Song 2009; Alba & Nee 2003; Kalmijn
1998; Merton 1941; Blau 1977 etc*)

Extensively studied: findings (US, UK, Europe) of increased rates
of inter-ethnic family formation (*e.g. Joyner and Kao 2005; Liang
and Ito 1999; Quan 2005 etc*)

Often linking findings to similarities in socioeconomic status,
educational attainment

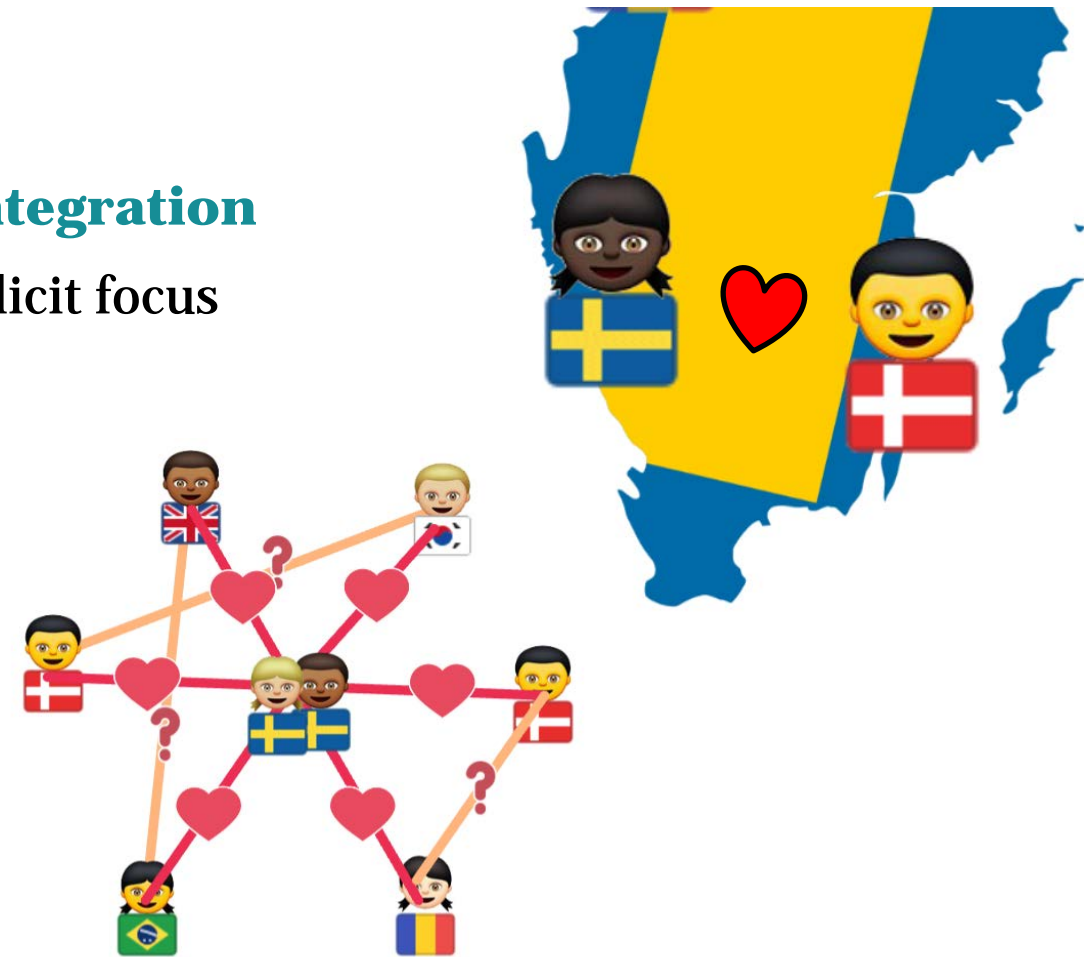


Hergovich & Ortega (2017)

Example: Inter-group family formation and integration

Many studies on intermarriage and integration: explicit focus on native vis-à-vis non-native groups

Less is known about family formation patterns between different non-native groups *(though see Dribe & Lundh 2008: 7 immigrant groups, regressions where these are coded as native-immigrant, within-immigrant, between-immigrant)*

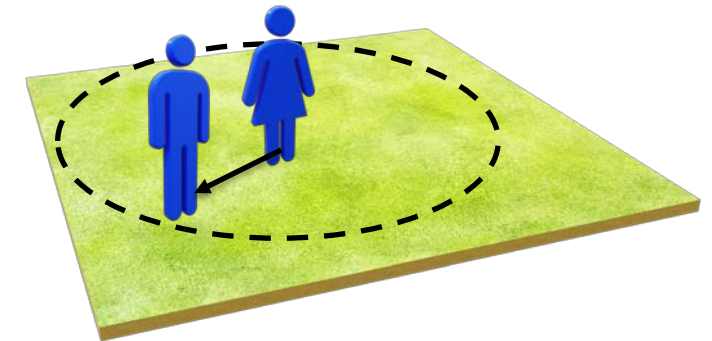
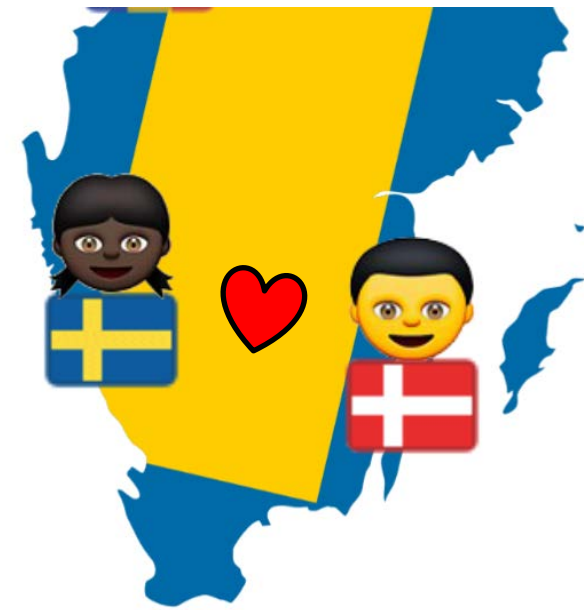


A blind spot in our understanding of ethnic relations and integration – and a rather constrained and excluding view of ‘integration’ per se!

Inter-ethnic family formation and integration

WP1: Networks of inter-ethnic family formation (Leads: FPRI-IAS)

- Map the complete network of inter-ethnic family formation dyad
- Controlling for:
 - Socioeconomic status
 - Educational attainment
 - Social exposure
- Compare observations with suitable family formation null model
- Relational (inter-group) data: valued, directional (gender)
 - Network methods

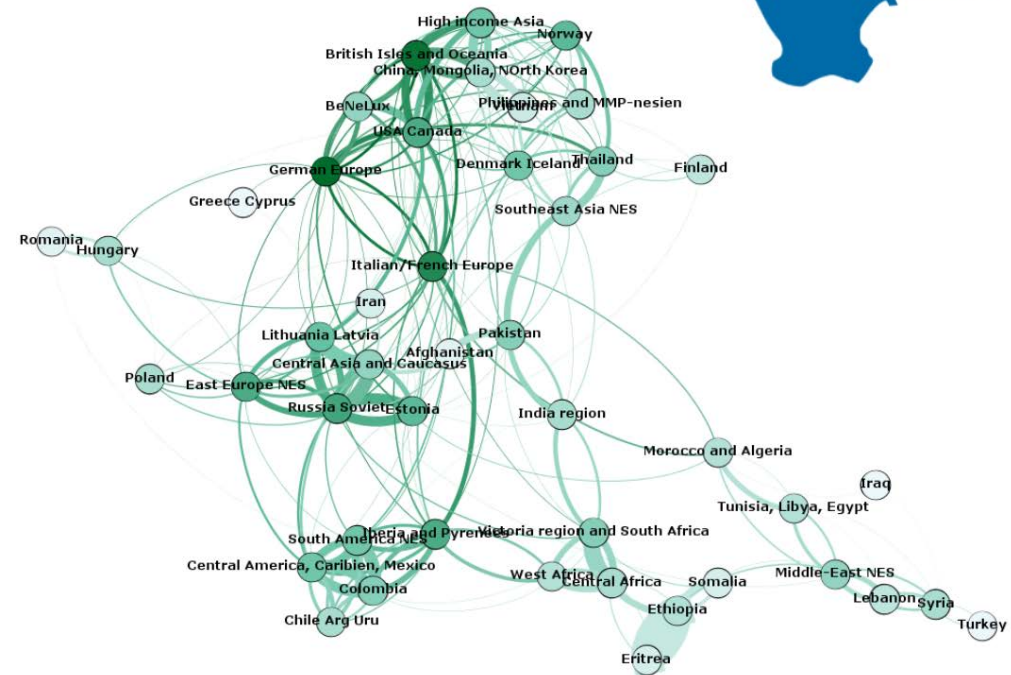
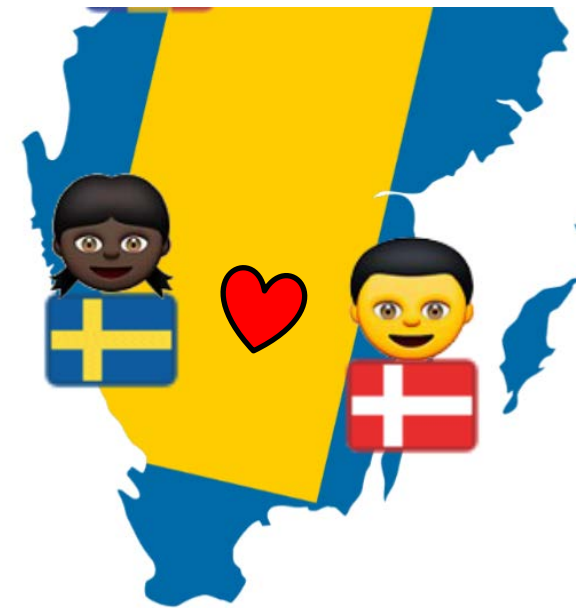


Inter-ethnic family formation and integration

WP1: Networks of inter-ethnic family formation (Leads: FPRI-IAS)

Pilot study (1973-2007; aggregate; “pinhead” Sweden; marriages or 1st-child; only inter-ethnic, excluding “native” group; null model)

- A microcosm of our global geography
- Geographical/cultural proximity
- Notable (expected) dyads:
 - Hungary-Romania (maghiarii din România)
 - Eritrea-Ethiopia
- Thailand and East Asian women prominent as family partners for Scandinavian men



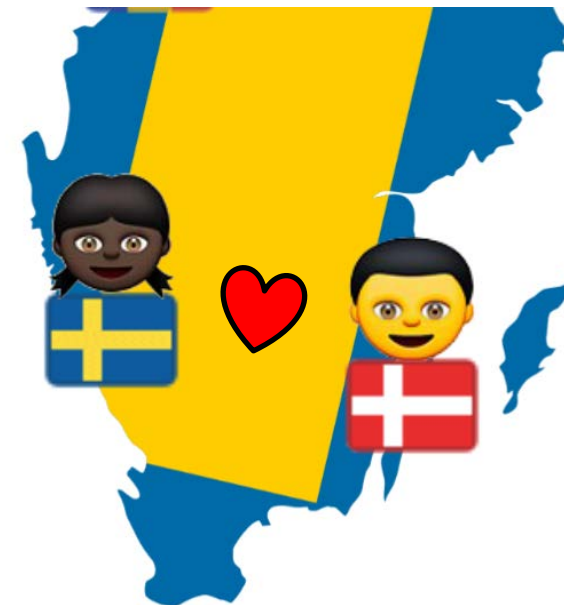
Ties: positive deviations from expected; clockwise edges=men-to-women; ccw edges=women-to-men

Inter-ethnic family formation and integration

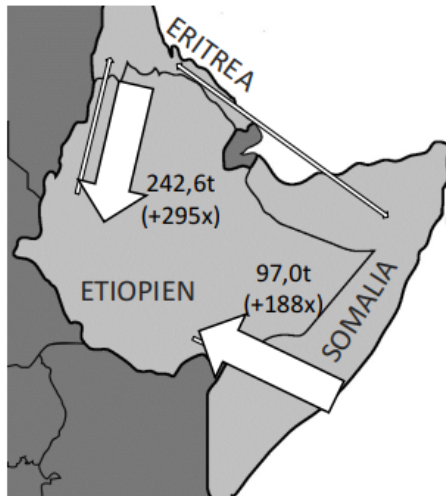
WP1: Networks of inter-ethnic family formation (Leads: FPRI-IAS)

Comparing this microcosmic international network with corresponding networks at the world-system level (QAP correlations)

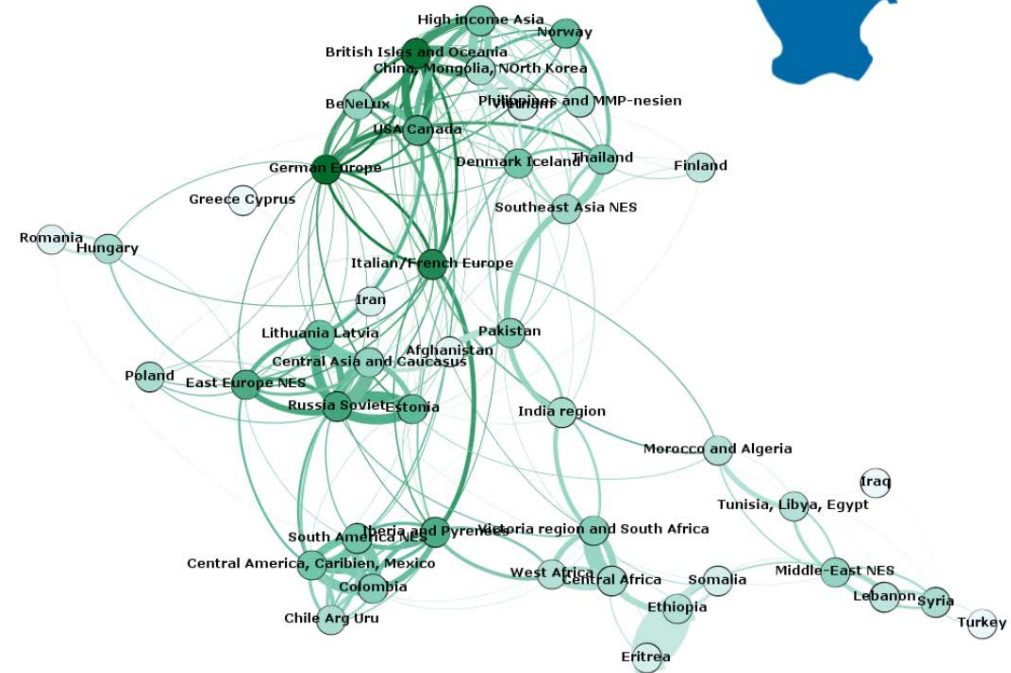
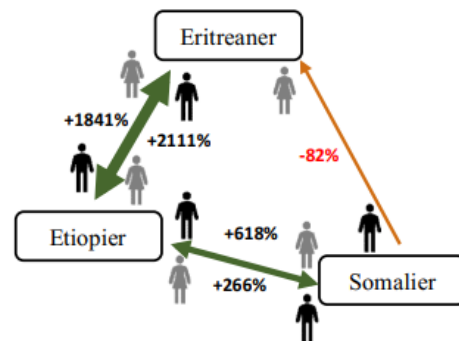
Migration flows (1990-1999 data): $R^2=0.27$ ($p=0.000$)



Migrationströmmarna i Östafrika



Familjebildningspreferenser i Sverige



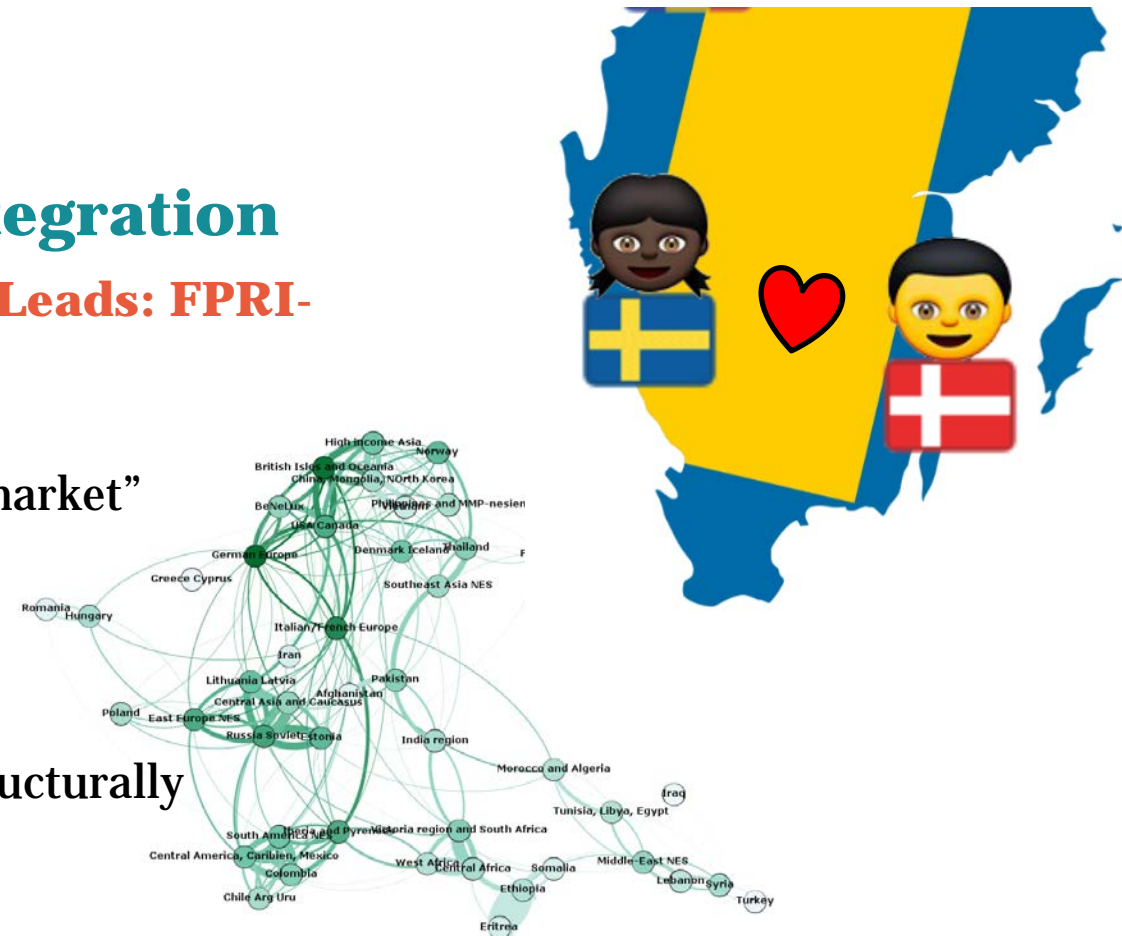
Ties: positive deviations from expected; clockwise edges=men-to-women; ccw edges=women-to-men

Inter-ethnic family formation and integration

WP1: Networks of inter-ethnic family formation (Leads: FPRI- IAS)

From pilot to proper:

- Social exposure: null model based on local “marriage market”
 - Individual regions/DeSO/SAMS
- Control for SES, educational attainment
- Potentially merging of groups (that are high-degree structurally equivalent)
- Plethora of extensions (bag-of-ideas mode right now)



Integration and ethnic relations: beyond the native-centric ego-networks!

Rather, integration should be gauged and understood on the basis of whole network of inter-ethnic relations

Two additional WP:s in project

WP2: Workplace discrimination, employment networks and labor market structures (Leads: IAS-Aalborg)

Employee rosters of workplaces (LISA):

- Certain skills, educational backgrounds, employment histories etc
- Commuting distances (capturing labor shed area)
- Parent-derived “ethnic” group belongings

Entry points:

- To what extent do specific employee rosters reflect composition of labor shed?
- Do certain ethnic compositions (including management) of companies relate to future hires?

Multiple extensions:

- Employer-employee relations as bipartite networks: mobility over time, between companies/sectors/job types
- Trojan horse mechanism



Two additional WP:s in project

WP3: Residential mobility, ethnic segregation, and cultural diversity (Leads: Aalborg-Aalto)

Residential mobility over time between (and within) spatial units:
valued directional networks

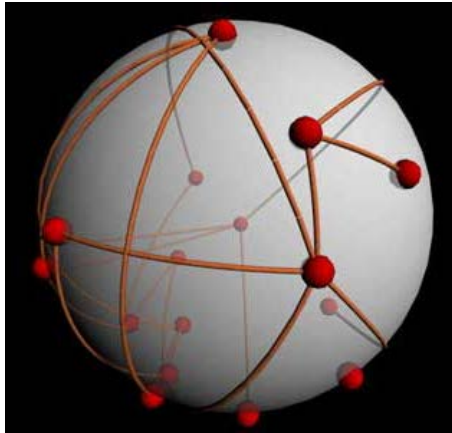
Mobility patterns per group (multiplexity): different mobility
patterns – reflects different perceptions of the city!

Comparing the mobility networks of various groups: identifying
groups with similar mobility patterns

(More in progress...)



Network science/analysis



When shifting focus on complete networks of inter-group relations, network-analytical approaches are needed

Social systems are complex, with lots of interdependence

Nordic register databases are filled with relevant network data, e.g.

- Kinship networks (family formation)
- Spatial mobility flows
- Employer-employee relations (2-mode)
- Student-school relations (2-mode)

More than just novel
methods and different data
Extends the core notion of
integration per se

Interdisciplinary aspect

- Partners from both social sciences and physics/computational sciences
- Core aspect: the process of building interdisciplinary space between partners
- Most have experience of working “with other side”, but here:
 - Explore scientific traditions and approaches
 - Explore our perceptions of each other
 - Data- and methods-driven vs. substantively driven approaches
 - A case study in interdisciplinary collaboration
- Specifically:
 - Network science á la physics vs. social-scientific network analysis
 - Latent differences, reflecting different scientific traditions (e.g. Hidalgo 2016)
 - Perhaps even data science vis-à-vis computational social science

Thank you!

Carl Nordlund
carl.nordlund@liu.se