WHEN ETHNICITY AND GENDER ALIGN
CLASSROOM COMPOSITION, FRIENDSHIP CLIQUES, AND COLLECTIVE IDENTITIES IN EUROPEAN SCHOOLS

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# CLASSROOM COMPOSITIONS AND SOCIAL CATEGORIES

- The social significance of classrooms: school experiences can have long-term consequences for identities and social cohesion.

- Quantitative research on the effects of classroom composition has dealt with social categories in largely separate literatures.
  - Ethnicity: Friendships and homophily (Goodreau, Kitts, and Morris 2009; Moody 2001; Smith et al. 2016)
  - Gender: Academic self-concepts and single-sex education (Belfi et al. 2012; Kessels and Hannover 2008; Lee and Bryk 1986; Lee and Lockheed 1990; Sullivan 2009)

- A wealth of qualitative research has documented how ethnicity, gender, and other social categories "intersect," producing distinctive individual experiences and affecting individual life chances (Warikoo and Carter 2009).

CROSS-CUTTING SOCIAL CIRCLES

- In modern societies, people simultaneously occupy multiple roles and categories. Doing so, they unintentionally cross-cut social circles and contribute to societal cohesion.

  (Simmel 1908; Wirth 1938; Blau 1977; Blau & Schwartz 1997; Massey 2005).

- Due to processes of contextual sorting, some of the cross-cutting "is dissipated before it reaches the narrowest social circles" (Blau 1990: 46).
  → Boundary alignment
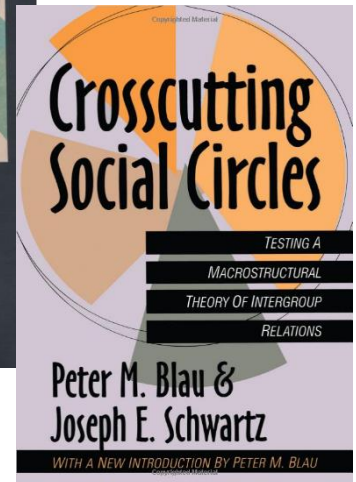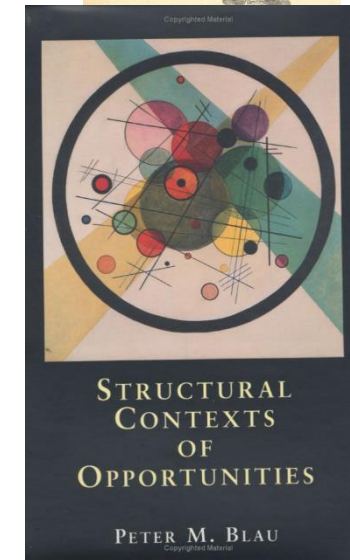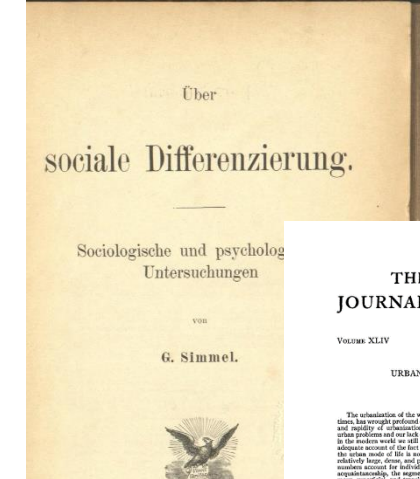
Boundary alignment

BOUNDARY ALIGNMENT AND ETHNIC BOUNDARY MAKING IN SCHOOLS

- Boundary alignment as a correlation of more or less salient boundaries in a context (Blau's "parameter consolidation")

- Our focus: Boundary alignment between ethnicity and <u>gender</u>
  - Gender: highly salient and socially relevant among adolescents
  - Quasi-random variation in this kind of boundary alignment across schools

- In schools where ethnicity and gender align…
  - …gender segregation in friendships automatically yields ethnic clustering.
  - …students perceive a marked (gender-related) difference between themselves and students from other ethnic categories ("norms, codes, and styles").
  - …opposing collective identities might be reinforced.

→ Boundary alignment reinforces ethnic boundaries.

BOUNDARY ALIGNMENT, THE STRUCTURE OF TIES AND THE DEVELOPMENT OF IDENTITIES IN SECONDARY SCHOOL:

Early adolescence

► Strong gender segregation of friendship network

Mid-adolescence

► Gender and ethnic identities take off

"the bulk of identity 'work' occurs late in adolescence" (Steinberg/Morris 2001:91)

CILS4EU
Children of Immigrants
Longitudinal Survey
in Four European
Countries

Age	10	11	12	13	14	15	16	17
Grade	5	6	7	8	9	10	11	12
					W1	W2		

H1: Boundary alignment between gender and ethnicity should be associated with stronger ethnic clustering in friendship networks at wave 1.

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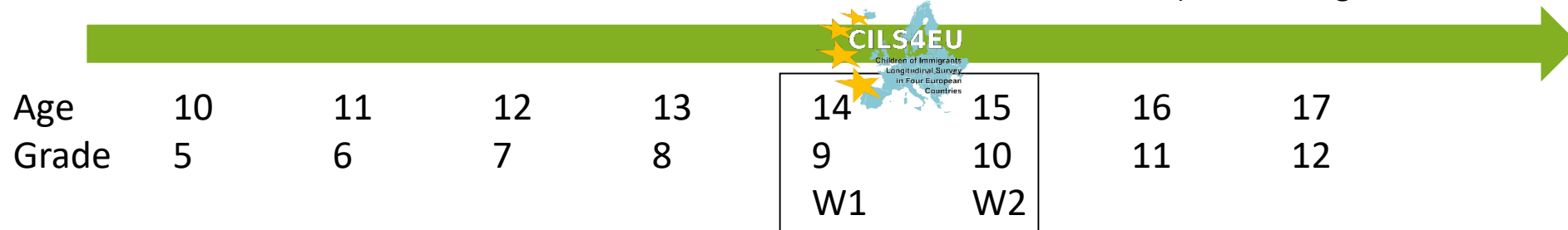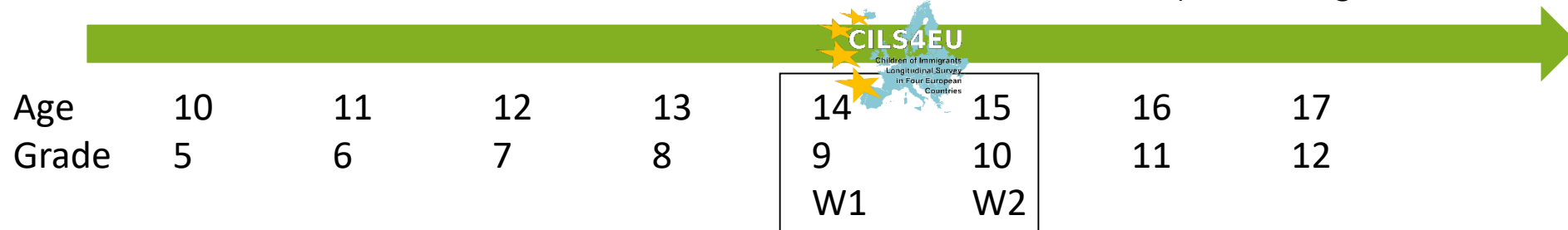
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H2:…leads minority students to develop a weaker identification as members of the nation.

H3: …leads students to develop more traditional gender role attitudes.

ANALYTIC APPROACH
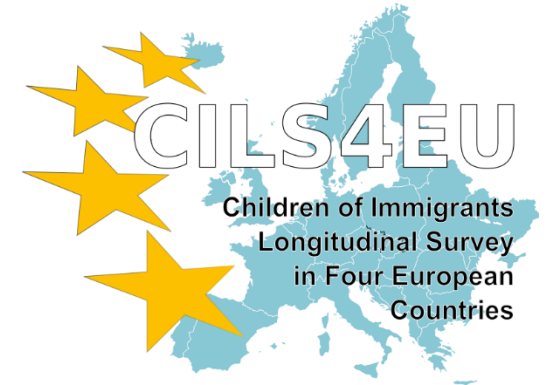
- **CILS4EU**: nationally representative school surveys England, Germany, the Netherlands, and Sweden
  - Wave 1 in 2010/11, yearly follow-ups
  - 18,716 students in 958 classrooms

- **Group-dyadic perspective**: we only include ethnic categories with at least three students in the classroom (Simmel 1908).

- **Measures:**
  - Who are your best friends in class?

    [up to five nominations]

  - How strongly do you feel English / German / Dutch / Swedish?

    [very strongly, fairly strongly, not very strongly, not at all strongly]

  - In a family, who should do the following? Taking care of children / cooking / earning money / cleaning the house.

    [mostly the man, mostly the woman, both about the same]

ANALYTIC APPROACH

H1: Ethnic clustering in networks

- Community detection algorithm
  (Girvan & Newman 2002)
- OLS models (group-dyadic level), regressing ethnic clustering on boundary alignment

FIG. 4: Community structure in the social network of bottlenose dolphins assembled by Lusseau *et al.* [36, 37], extracted using the algorithm of Girvan and Newman [1]. The squares and circles denote the primary split of the network into two groups and the circles are further subdivided into four smaller groups as shown. After Newman and Girvan [38].

Newman, 2004: 326

H2,3: Change in identities/attitudes

- Change score models regressing change in identification between waves 1 and 2 on boundary alignment in wave 1
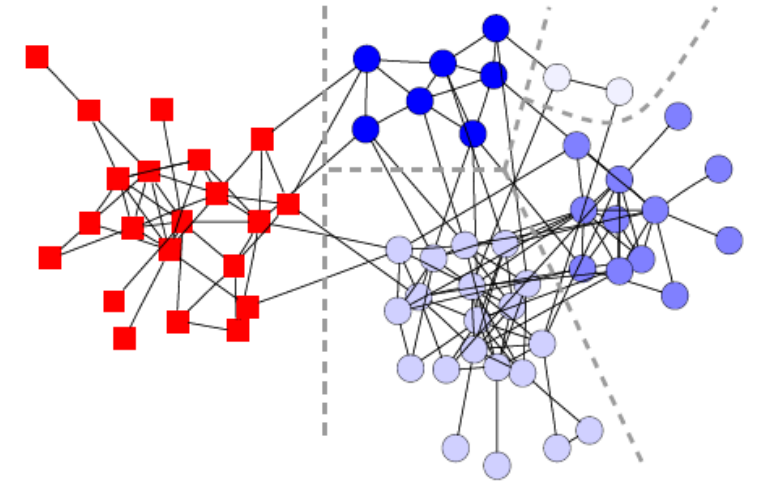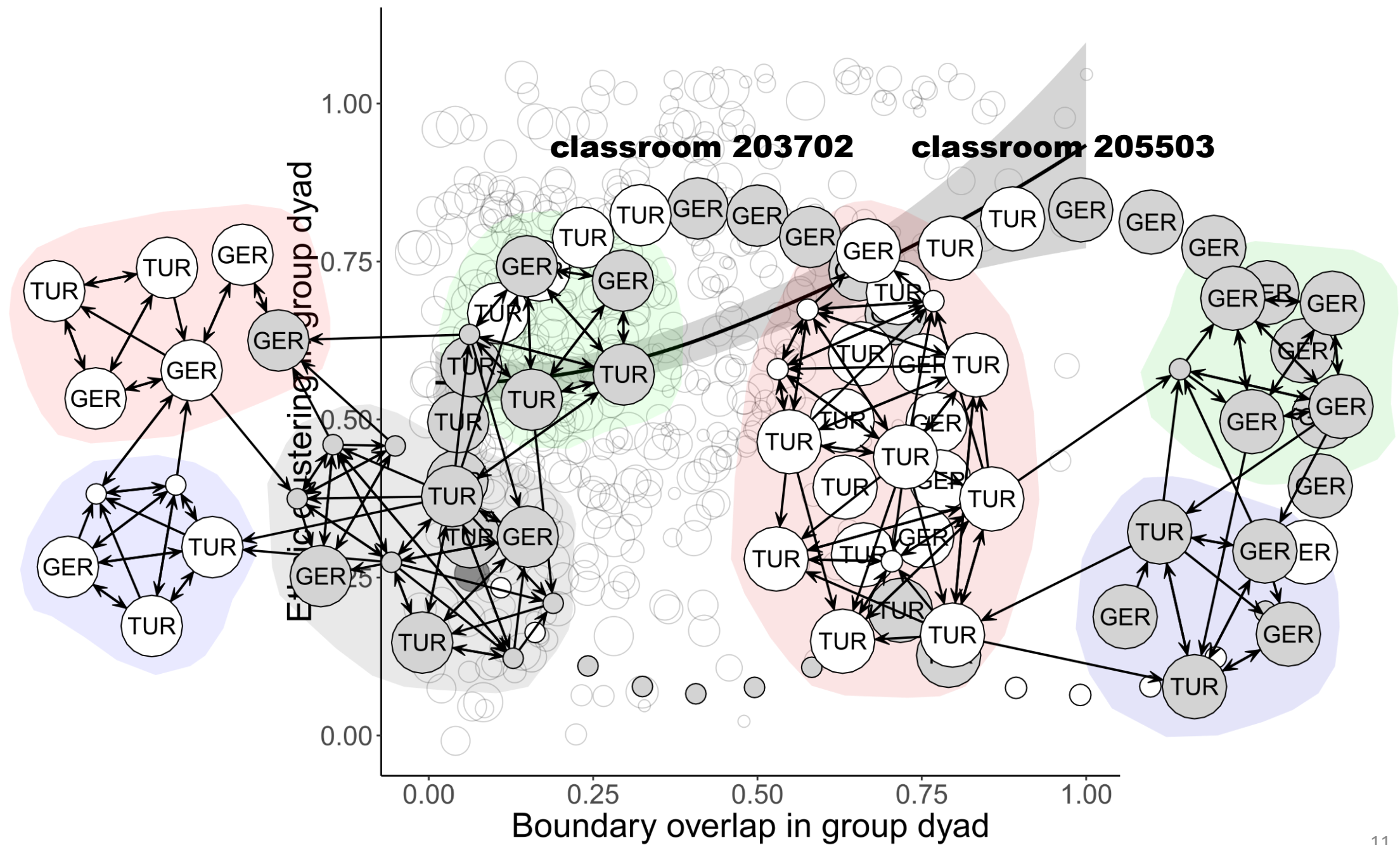
MAIN RESULTS

classroom 203702 classroom 205503

Ethnic clustering in group dyad

Boundary overlap in group dyad

CONTROLLING FOR POTENTIAL CONFOUNDERS (H1):

Table 2: Boundary alignment and ethnic clustering in group dyads (OLS regression, dep.var.: ethnic clustering)

	Coef.	(s.e.)	Coef.	(s.e.)	Coef.	(s.e.)
Boundary alignment	0.213 ***	0.050	0.307 ***	0.054	0.238 ***	0.058
Structural controls	no		yes		yes	
Ethnic group fixed effects (country-specific)	no		no		yes	
N(group dyads)[1]	561		561		561	

NOTE. * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests). [1]Undirected dyads. Results from 30 multiply-imputed, standardized datasets combined using Rubin's rules (Rubin 1987). Standard errors are cluster-corrected at the level of classrooms (N = 347). The unit of analysis are group dyads. All variables are z-standardized. For complete model results, see Appendix Table A1.

CHANGES IN IDENTITIES AND ATTITUDES (H2 & H3)

	Δ Ethno-national identification (min.-maj. dyads)		Δ Gender norm attitudes (all dyads)	
	M1		M2	
	Coef.	(s.e.)	Coef.	(s.e.)
Constant	-0.318	(0.544)	-0.273	(0.341)
Boundary alignment	-0.075 *	(0.038)	0.045 *	(0.023)
Class size	-0.071	(0.110)	0.069 *	(0.028)
Group dyad size	0.043	(0.158)	-0.048	(0.063)
N(student-group dyads)	1,053		3,592	

Additional predictors (not shown): Structural controls, sex, socio-economic status (ISEI), age, time between waves, immigrant generation, ethnic group fixed effects (country-specific)

NOTE. * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests). Results from 30 multiply-imputed datasets combined using Rubin's rules (Rubin 1987). Standard errors are cluster-corrected at the level of classrooms. All non-categorical variables are z-standardized.

CHANGES IN IDENTITIES AND ATTITUDES (H2 & H3)

	Δ Ethno-national identification (min.-maj. dyads) M1		Δ Gender norm attitudes (all dyads) M2		Placebo test 1: Δ Religiosity (all dyads) M3		Placebo test 2: Δ Educational aspirations (all dyads) M4	
	Coef.	(s.e.)	Coef.	(s.e.)	Coef.	(s.e.)	Coef.	(s.e.)
Constant	-0.318	(0.544)	-0.273	(0.341)	0.374	(0.469)	-0.052	(0.335)
Boundary alignment	-0.075 *	(0.038)	0.045 *	(0.023)	0.009	(0.030)	0.000	(0.027)
Class size	-0.071	(0.110)	0.069 *	(0.028)	0.049	(0.036)	-0.089 **	(0.029)
Group dyad size	0.043	(0.158)	-0.048	(0.063)	-0.026	(0.073)	0.075	(0.061)
N(student-group dyads)	1,053		3,592		3,592		3,592	

Additional predictors (not shown): Structural controls, sex, socio-economic status (ISEI), age, time between waves, immigrant generation, ethnic group fixed effects (country-specific)

NOTE. * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests). Results from 30 multiply-imputed datasets combined using Rubin's rules (Rubin 1987). Standard errors are cluster-corrected at the level of classrooms. All non-categorical variables are z-standardized.

ADDITIONAL RESULTS: MEDIATION ANALYSIS

IS THE IMPACT OF BOUNDARY ALIGNMENT ON IDENTITY DEVELOPMENT DUE TO NETWORK MECHANISMS?
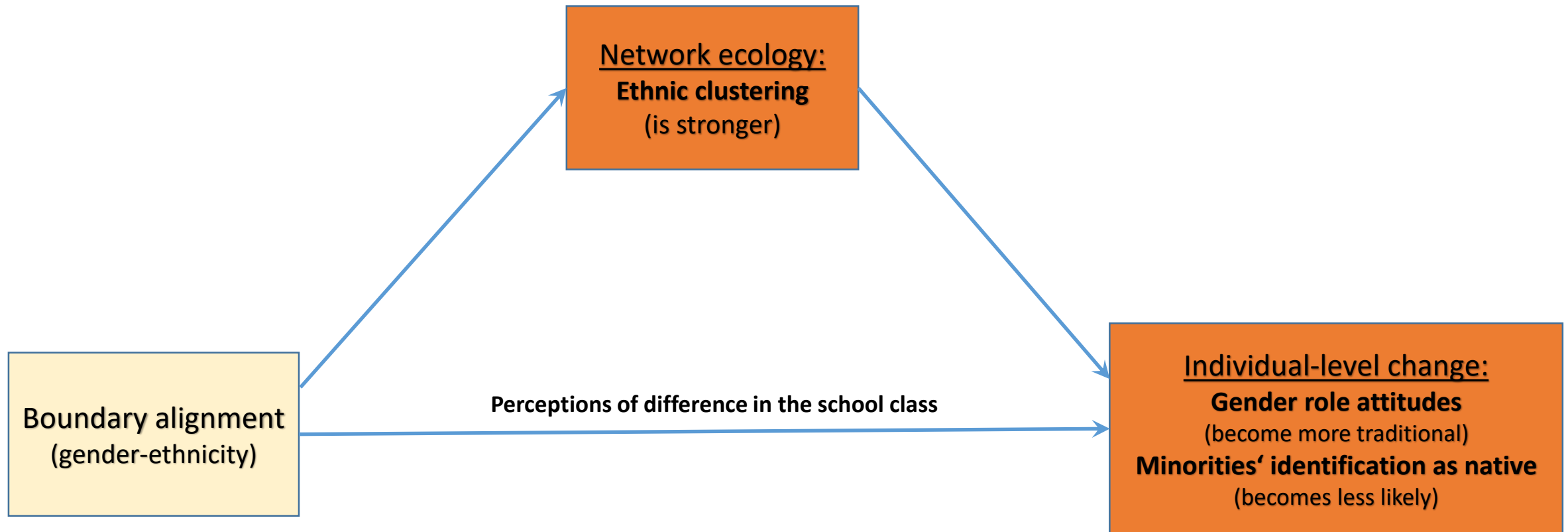
Causal mediation analyses (Imai et al. 2010)

Table 4: Boundary alignment and changes in ethno-national identification and gender role attitudes (causal mediation analyses)

		ACME		
	Estimate	95% CI Lower	95% CI Upper	Proportion mediated
Outcome: Change in ethno-national identification				
Ethnic clustering	-0.016	-0.046	0.006	0.219
Ethnic homophily	-0.011	-0.037	0.006	0.149
Share of native friends	0.000	-0.006	0.006	0.005
Mean ethno-national identification in cluster	0.000	-0.004	0.007	0.000
Outcome: Change in gender norm attitudes				
Gender clustering	0.000	-0.006	0.004	-0.003
Gender homophily	0.001	-0.004	0.008	0.011
Share of friends from other gender	0.001	-0.001	0.004	0.014
Mean gender role attitudes in cluster	0.000	-0.002	0.002	0.000

NOTE. Results from causal mediation analyses (Imai et al. 2010) assessing the average causal mediation effect of different covariates for the two outcome variables. Treatment variable: boundary alignment. Results from 30 multiply-imputed datasets combined using Rubin's rules (Rubin 1987). Standard errors are cluster-corrected at the level of classrooms. The unit of analysis are directed student-group dyads. All non-categorical variables are z-standardized.

CONCLUSIONS

- Cross-cutting of social circles (or a lack thereof) seems to affect social boundary making in the school context.

- Boundary alignment of ethnicity and gender leads students to develop more traditional gender role attitudes and reduces minority students' perception that they form part of the national community.

- Little indication that boundary alignment operates through students' friendship networks → greater leverage for policies

- Future research: e.g., extend to other boundaries and settings

THANK YOU

LONGITUDINAL PERSPECTIVE: STABLE CLASSROOMS ONLY

IDENTIFICATION AS MAJORITY MEMBERS: MINORITY STUDENTS ONLY

Table A1: Boundary alignment and ethnic clustering in group dyads, full model results (OLS regression, z-standardized, dep.var.: ethnic clustering in friendships)

	Coef.		(s.e.)	Coef.		(s.e.)	Coef.		(s.e.)
Constant	0.000		(0.052)	0.000		(0.048)	1.121	***	(0.207)
Boundary overlap	0.213	***	(0.050)	0.307	***	(0.054)	0.238	***	(0.058)
Ethnic homogeneity in the class				-0.138		(0.072)	-0.100		(0.085)
Ethnic homogeneity in the group dyad				-0.019		(0.055)	-0.070		(0.074)
Class size				0.066		(0.072)	-0.033		(0.085)
Group dyad size				0.052		(0.075)	0.129		(0.108)
Majority share in the class				0.041		(0.076)	-0.135		(0.121)
Majority share in the group dyad				0.004		(0.066)	0.322		(0.187)
Gender homogeneity in the class				0.199	*	(0.092)	0.022		(0.142)
Gender homogeneity in the group dyad				0.041		(0.089)	0.088		(0.129)
Share of boys in the class				0.027		(0.096)	-0.018		(0.111)
Share of boys in the group dyad				-0.099		(0.103)	0.007		(0.119)
Ethnic group fixed effects (country-specific)	no			no			yes		
N(group dyads)[1]	561			561			561		

NOTE. * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests). Results from 30 multiply-imputed combined using Rubin's rules (Rubin 1987). Standard errors are cluster-corrected at the level of classrooms. The unit of analysis are undirected group dyads. All non-categorical variables are z-standardized.
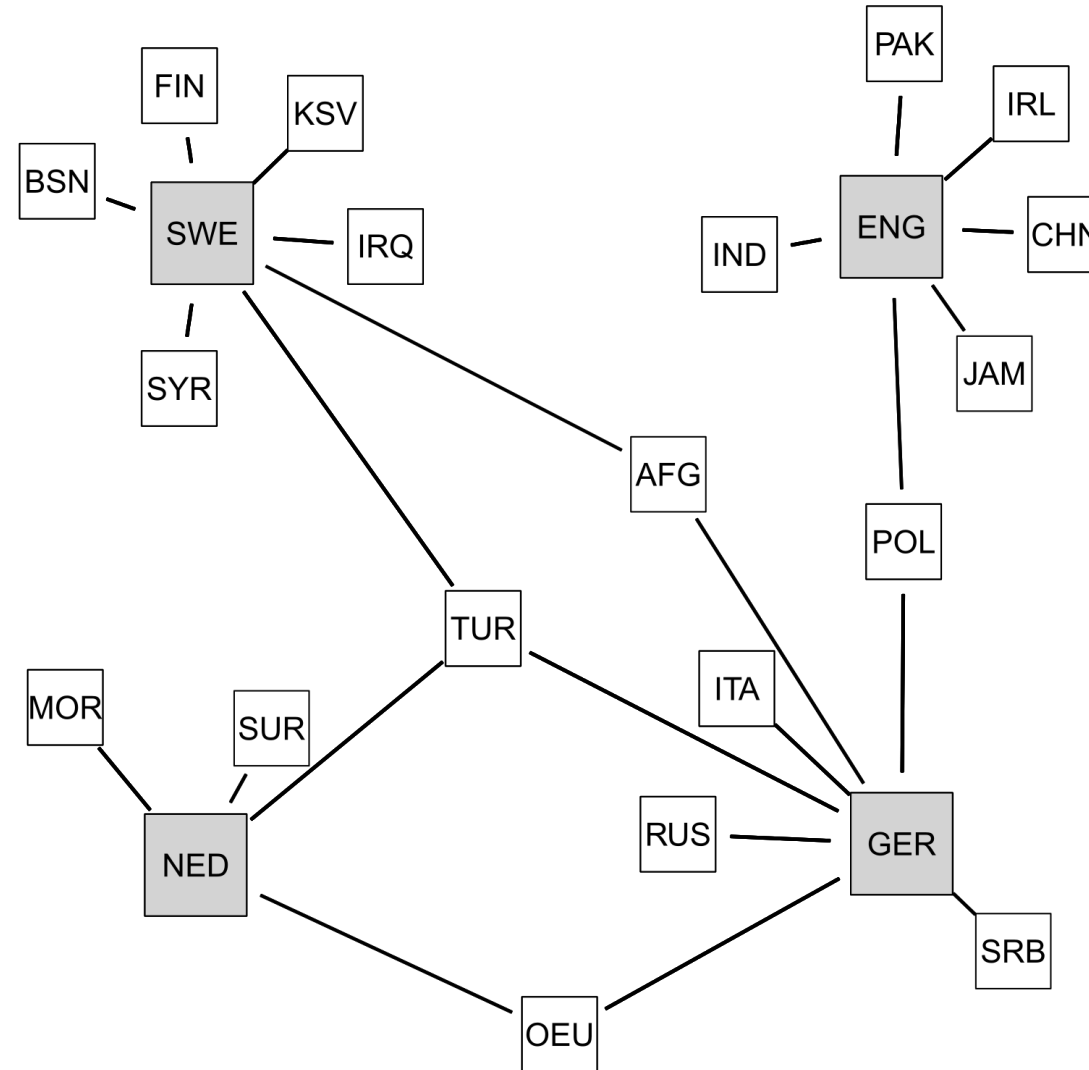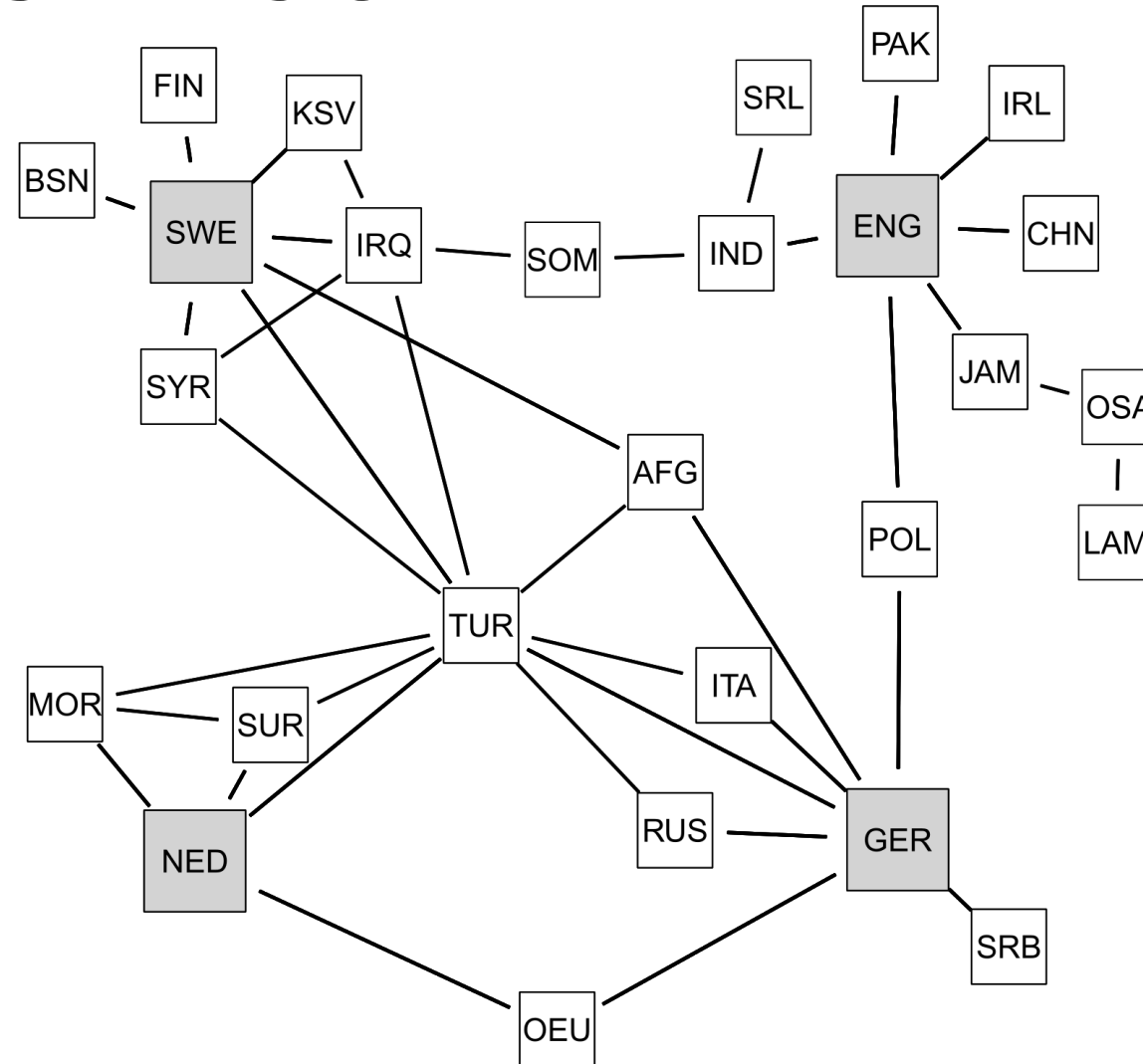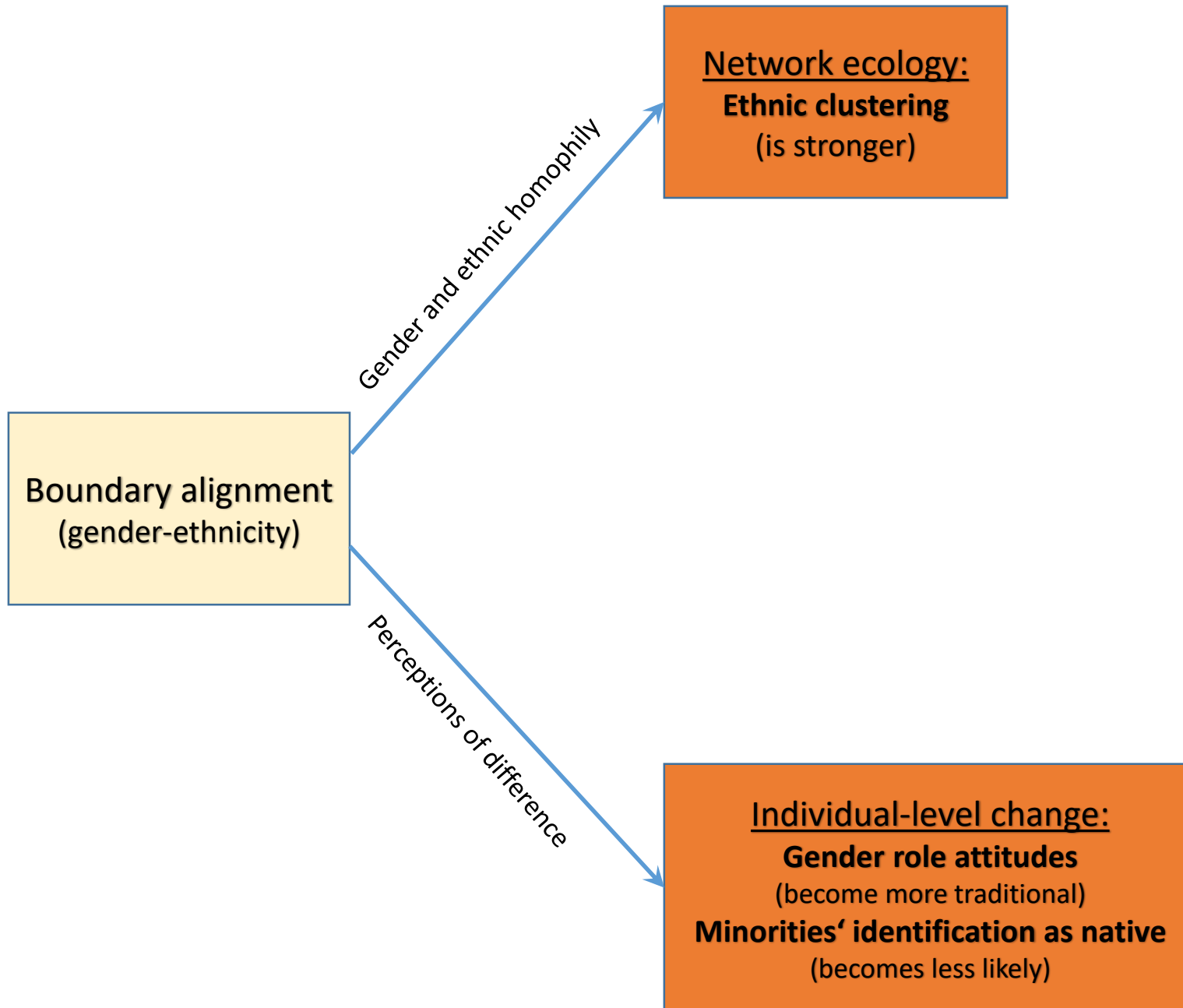
	Coef.	(s.e.)	Coef.	(s.e.)	Coef.	(s.e.)
Attribute overlap	0.280 **	(0.086)	0.245 **	(0.089)	0.239 *	(0.119)
Controls?	no		yes		yes	
Ethnicity fixed effects?	no		no		yes	
N(group-dyads)	128		128		128	

NOTE. * *p* < .05; ** *p* < .01; *** *p* < .001 (two-tailed tests). Results from 10 multiply-imputed, standardized datasets combined using Rubin's rules (Rubin 1987).

Boundary alignment
(gender-ethnicity)

Gender and ethnic homophily

Perceptions of difference

Network ecology:
Ethnic clustering
(is stronger)

Discussion:
A. Boundary alignment leads to more pronounced ethnic clustering (clique-detection algorithm).
B. Boundary alignment leads to gender role attitudes becoming more traditional and minority students becoming less likely to identify as a native group member.
However, ethnic clustering is not driving B. Neither are in-group friendship (if we enter direct and indirect ties to same-sex or same-ethnic classmates (dyadic/triadic level) as a predictor).
Our interpretation: The effects on identities seem to be due to „social cognition" mechanisms rather than „group processes" (e.g., social pressure, solidfied ingroups). Pupils experience themselves as different from classmates of another ethnic category IRRESPECTIVE of the structure of friendship cliques. In the small-scale contexts of European classrooms, pupils are exposed to and perceive all classmates of varying attributes. And they make sense of who they are based on these perceptions of difference.
- Friendship networks might still be important, but not for this basic mechanism.
- Policy implication: One can affect identity formation directly by implementing a particular classroom composition. Such policies are not sensitive to other influences on network ecology as their effects seem to operate independently of the latter.

Individual-level change:
Gender role attitudes
(become more traditional)
Minorities' identification as native
(becomes less likely)