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Dynamic Identity and Dynamic Ethnosizing

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1 Introduction

2 Data

3 Estimation and Results

4 The Model

5 Conclusion

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Identity

- Identity: **how individuals define themselves** (Baumeister, 1986; Baumeister and Muraven, 1996).

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→ Identity can shape behaviour beyond material incentives.

→ It may affect choices, interactions, and long-run trajectories.

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→ Key question: **when are identity choices revised?**

Immigrant Identity

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  $\Rightarrow$ 4 identity states.

The Two-Dimensional Measure of Acculturation

⋆ ASSIMILATED - abandon origin and adopt host culture $(0, 1)$.

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- ⋆ Separated – maintain origin culture only $(1, 0)$.

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- ⋆ Assimilated - abandon origin and adopt host culture $(0, 1)$.
- ⋆ Integrated – embrace both cultures $(1, 1)$.
- ⋆ Separated – maintain origin culture only $(1, 0)$.
- ⋆ Marginalized – weak ties to both cultures $(0, 0)$.

Measuring Identity

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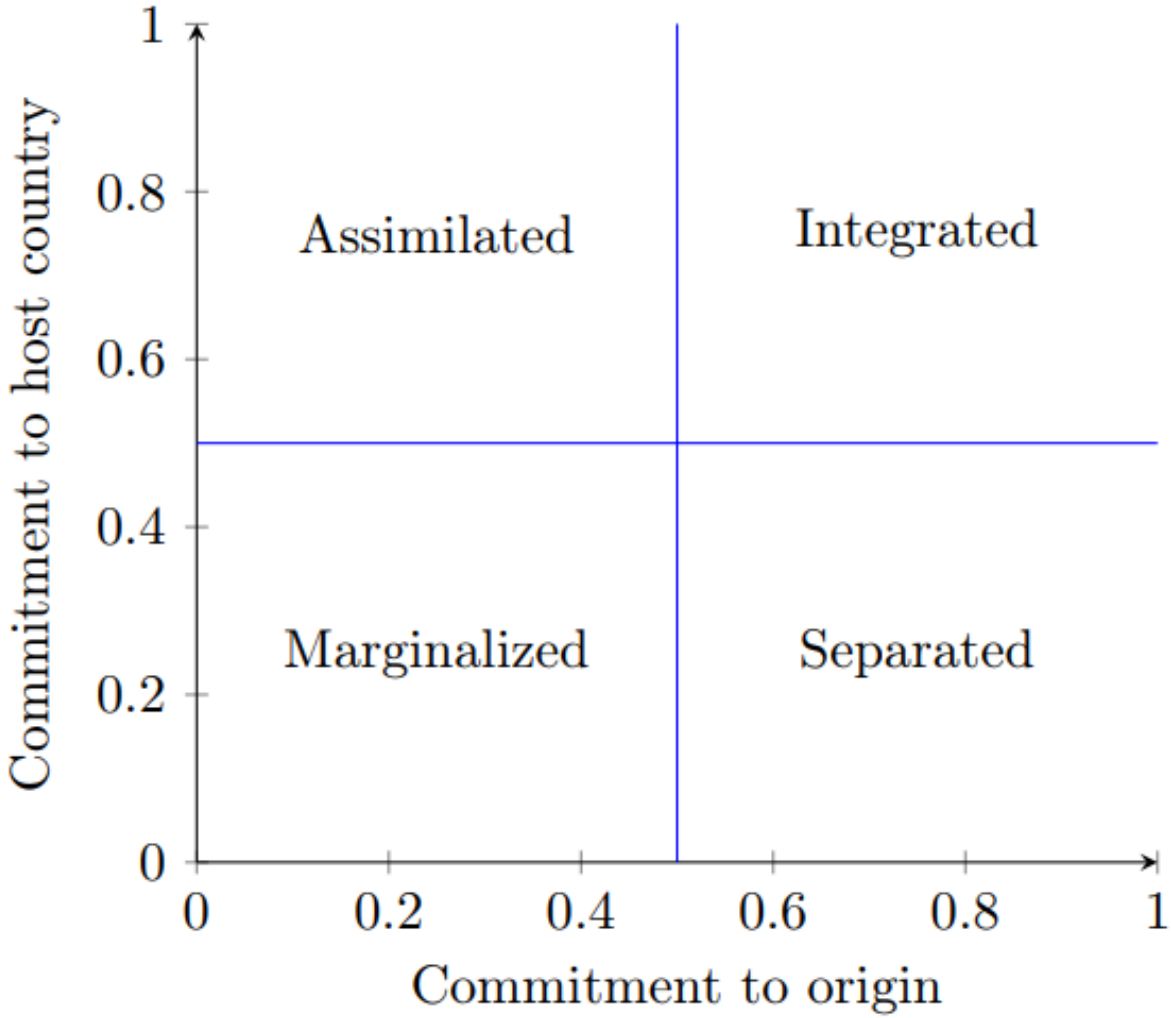

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  - Socialize with Germans/Socialize with other nationals

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  - language, self-identification, media use, social interaction.
- Each dimension is classified into one Berry state:
  - Integration, Assimilation, Separation, or Marginalization.
- The same individual may be in different states across dimensions.

Measuring Identity: the Ethnosizer Score

- For each state s, the Ethnosizer score counts how many dimensions are assigned to that state:

$$\text{Score}_s = \sum_{d \in \mathcal{D}} \mathbf{1}\{\text{state}_d = s\},$$

where

$$\mathcal{D} = \{\text{language}, \text{self-identification}, \text{media}, \text{social interaction}\}.$$

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  - Example: $\text{Score}_{\text{Integration}} = 3$ means integration in 3 of 4 dimensions.

Based on Constant et al. (2009).

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  - transition probabilities across identity states.

$\Rightarrow$ Identity is **path-dependent**, but not necessarily irreversible.

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Data

Data Source

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- More than 35 annual waves covering the period 1984 – 2023
- Over 30,000 individuals from approximately 15,000 households

Sample

Our Sample

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⋆ Around 900 individuals

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→ SOEP waves 2010–2019 (avoid Covid shock)

→ Missing values were extrapolated.

Descriptive Statistics

	Obs.	Mean Age	Std. Dev.	Min–Max
Male	455	40.3	15.0	17–91
Female	444	38.5	13.8	18–83

Descriptive Statistics

Age on Arrival

	Obs.	Mean Age	Std. Dev.	Min–Max
Male	397	18.4	12.9	0–68
Female	404	20.3	13.3	0–72

Identity States

Individuals are classified for each dimension

National self-identification, Media use, Social interaction -

Outcome	**Origin**	**Germany**
Marginalized	0	0
Assimilated	0	1
Separated	1	0
Integrated	1	1

Ethnosizer Scores: Descriptive Statistics

Outcome	Mean	SD	Range
Marginalisation	0.780	0.754	0-4
Assimilation	0.637	0.875	0-4
Separation	0.292	0.603	0-4
Integration	2.291	1.033	0-4

SOEP Variables

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Research Question No.1

→ Is identity static or dynamic?

GMM (Arellano & Bover, 1995; Blundell & Bond, 1998)

Each state is estimated separately as a dynamic panel equation:

$$y_{it}^{k} = \alpha_k \, y_{i,t-1}^{k} \; + \sum_{j \neq k} \beta_{kj} \, y_{i,t-1}^{j} \; + \; \mu_i \; + \; \varepsilon_{it}$$

$\rightarrow$ y_{it}^{k}: score for state k ($k \in \{\text{A, I, S, M}\}$)

$\rightarrow$ $y_{i,t-1}^{j}$: lagged scores of all four states ($j \neq k$)

$\rightarrow$ μ_i: individual fixed effects

$\rightarrow$ ε_{it}: idiosyncratic error term

System GMM Estimates

	Assimilated	Integrated	Separated	Marginalized
L.assimilated	0.807***	0.095***	0.032	0.130***
	(0.072)	(0.024)	(0.054)	(0.014)
L.integrated	-0.026	0.995***	0.047	0.086***
	(0.030)	(0.037)	(0.047)	(0.011)
L.separated	-0.067*	0.162***	0.987***	0.119***
	(0.038)	(0.031)	(0.211)	(0.017)
L.marginalized	0.098***	0.156***	0.059***	0.706***
	(0.025)	(0.020)	(0.021)	(0.051)
Observations	2513	2513	2513	2513
Groups	507	507	507	507

Standard errors in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Dynamic GMM evidence: main takeaways

- **Strong persistence:** identity states are highly path-dependent.

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- **Strong persistence:** identity states are highly path-dependent.
- Persistence is especially pronounced for **assimilation** and **separation**.
- **Limited but meaningful mobility:** significant cross-lag coefficients suggest movement across identity states.

$\Rightarrow$ Identity is persistent, but not fixed.

Research Question No.2

Given that the identity is dynamic, how does it change over time?

→ What are the transition probabilities from one state to the other?

Simultaneous Dynamic Binary-Response Model

Remember this table?

Outcome	**Origin**	**Germany**
Marginalized	0	0
Assimilated	0	1
Separated	1	0
Integrated	1	1

Simultaneous Dynamic Binary-Response Model

Let's pair the states!

Outcome	**Origin**	**German**	**State**
Marginalized	0	0	(0,0)
Assimilated	0	1	(0,1)
Separated	1	0	(1,0)
Integrated	1	1	(1,1)

Simultaneous Dynamic Binary-Response Model

We model the two binary dimensions of attachment jointly:

$y_{1it} = 1$ origin-country engagement,
$y_{2it} = 1$ destination-country engagement.

$$
\begin{aligned}
(0,0) &\rightarrow \text{Marginalisation},\\
(0,1) &\rightarrow \text{Assimilation},\\
(1,0) &\rightarrow \text{Separation},\\
(1,1) &\rightarrow \text{Integration}.
\end{aligned}
$$

Simultaneous Dynamic Binary-Response Model

The dynamic binary system (Honoré et al, 2023) is

$$\eta_{1it} = \alpha_i + \frac{\kappa}{2} + \gamma_{11} y_{1,i,t-1} + \gamma_{12} y_{2,i,t-1},$$
$$\eta_{2it} = \alpha_i - \frac{\kappa}{2} + \gamma_{21} y_{1,i,t-1} + \gamma_{22} y_{2,i,t-1}.$$

$\rightarrow$ α_i: individual heterogeneity.

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$\rightarrow$ γ_{12}, γ_{21}: cross-dimensions associations.

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→ α_i: individual heterogeneity.

→ γ_{11}, γ_{22}: persistence within each dimension.

→ γ_{12}, γ_{21}: cross-dimensions associations.

→ κ: relative propensity toward origin-country rather than destination-country engagement.

Simultaneous Dynamic Binary-Response Model

The individual effect is modelled as a correlated random effect:

$$\alpha_i = \delta_0 + \delta_1 y_{1i0} + \delta_2 y_{2i0} + \delta_3 (y_{1i0} y_{2i0}) + a_i, \qquad a_i \sim N(0, \sigma^2).$$

$\rightarrow$ $\delta_1, \delta_2, \delta_3$: correction for initial conditions.

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$\rightarrow$ $\delta_1, \delta_2, \delta_3$: correction for initial conditions.

$\rightarrow$ a_i: unobserved time-invariant heterogeneity.

$\rightarrow$ σ: dispersion of unobserved heterogeneity.

Simultaneous Dynamic Binary-Response Model

$$\Pr(y_{1it}, y_{2it} \mid \alpha_i, y_{1,i,t-1}, y_{2,i,t-1}; \psi) =$$

$$= \frac{\exp(y_{1it}\eta_{1it} + y_{2it}\eta_{2it} + \rho\, y_{1it}y_{2it})}{\sum_{\tilde{y}_1=0}^{1}\sum_{\tilde{y}_2=0}^{1}\exp(\tilde{y}_1\eta_{1it} + \tilde{y}_2\eta_{2it} + \rho\,\tilde{y}_1\tilde{y}_2)}.$$

$\rightarrow$ ψ collects the model parameters:

$$\psi = (\gamma_{11}, \gamma_{12}, \gamma_{21}, \gamma_{22}, \kappa, \rho, \delta_0, \delta_1, \delta_2, \delta_3, \ln\sigma).$$

$\rightarrow$ ρ captures residual contemporaneous association between the two binary outcomes.

Explanation

Simultaneous Dynamic Binary-Response Model

Conditional on a_i, the likelihood contribution of individual i is the product of the probabilities of their observed transitions:

$$L_i(a_i;\psi) = \prod_t \Pr(y_{1it}, y_{2it} \mid \alpha_i, y_{1,i,t-1}, y_{2,i,t-1}; \psi).$$

Because a_i is unobserved, we integrate it out:

$$L_i(\psi) = \int L_i(a_i;\psi)\phi\left(\frac{a_i}{\sigma}\right)\frac{da_i}{\sigma}.$$

The log-likelihood is then: $\ell(\psi) = \sum_i \log L_i(\psi)$.

The parameters are estimated by maximum likelihood:

$$\widehat{\psi} = \arg\max_{\psi} \sum_i \log L_i(\psi).$$

Simultaneous Dynamic Binary-Response Model

For each starting state s, we compute the model-implied destination probabilities:

$$T_{sd} = \Pr(s_{it} = d \mid s_{i,t-1} = s).$$

$$\widehat{T}_{sd} = \frac{\sum_i N_i(s) \int \Pr(d \mid s, \alpha_i(y_{i0}, u_i); \widehat{\psi}) \phi\left(\frac{a_i}{\widehat{\sigma}}\right) \frac{da_i}{\widehat{\sigma}}}{\sum_i N_i(s)}.$$

$\rightarrow$ $N_i(s)$: no. of transitions of individual i starting from state s.

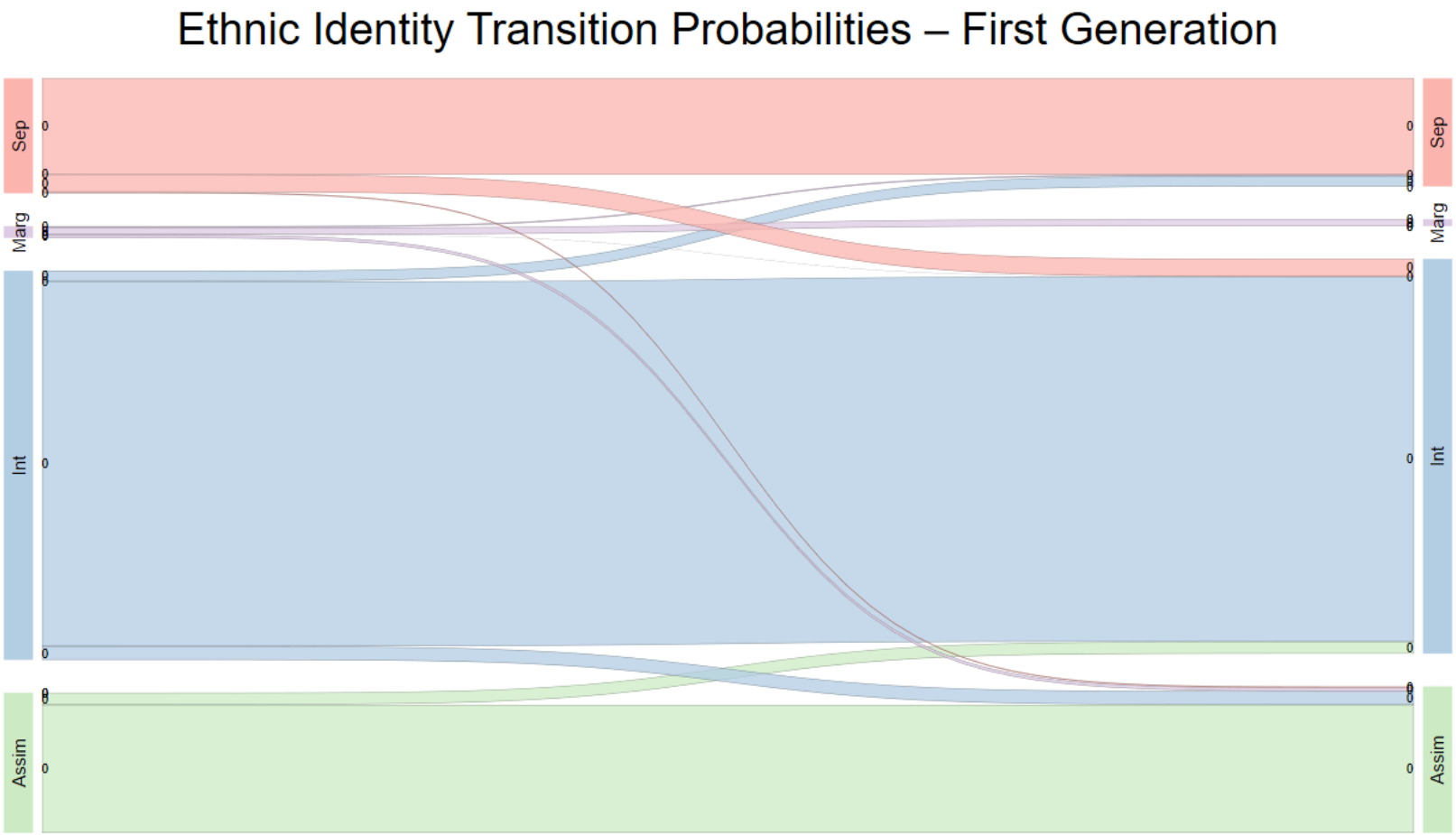
Simultaneous Dynamic Binary-Response Model

The result is a transition matrix across the four identity states:

$$\widehat{T} = \begin{pmatrix} \Pr(M \to M) & \Pr(M \to A) & \Pr(M \to S) & \Pr(M \to I) \\ \Pr(A \to M) & \Pr(A \to A) & \Pr(A \to S) & \Pr(A \to I) \\ \Pr(S \to M) & \Pr(S \to A) & \Pr(S \to S) & \Pr(S \to I) \\ \Pr(I \to M) & \Pr(I \to A) & \Pr(I \to S) & \Pr(I \to I) \end{pmatrix}.$$

- Rows: identity state in period $t-1$.
- Columns: identity state in period t.
- Each row sums to one.

Simultaneous Dynamic Binary-Response Model Results



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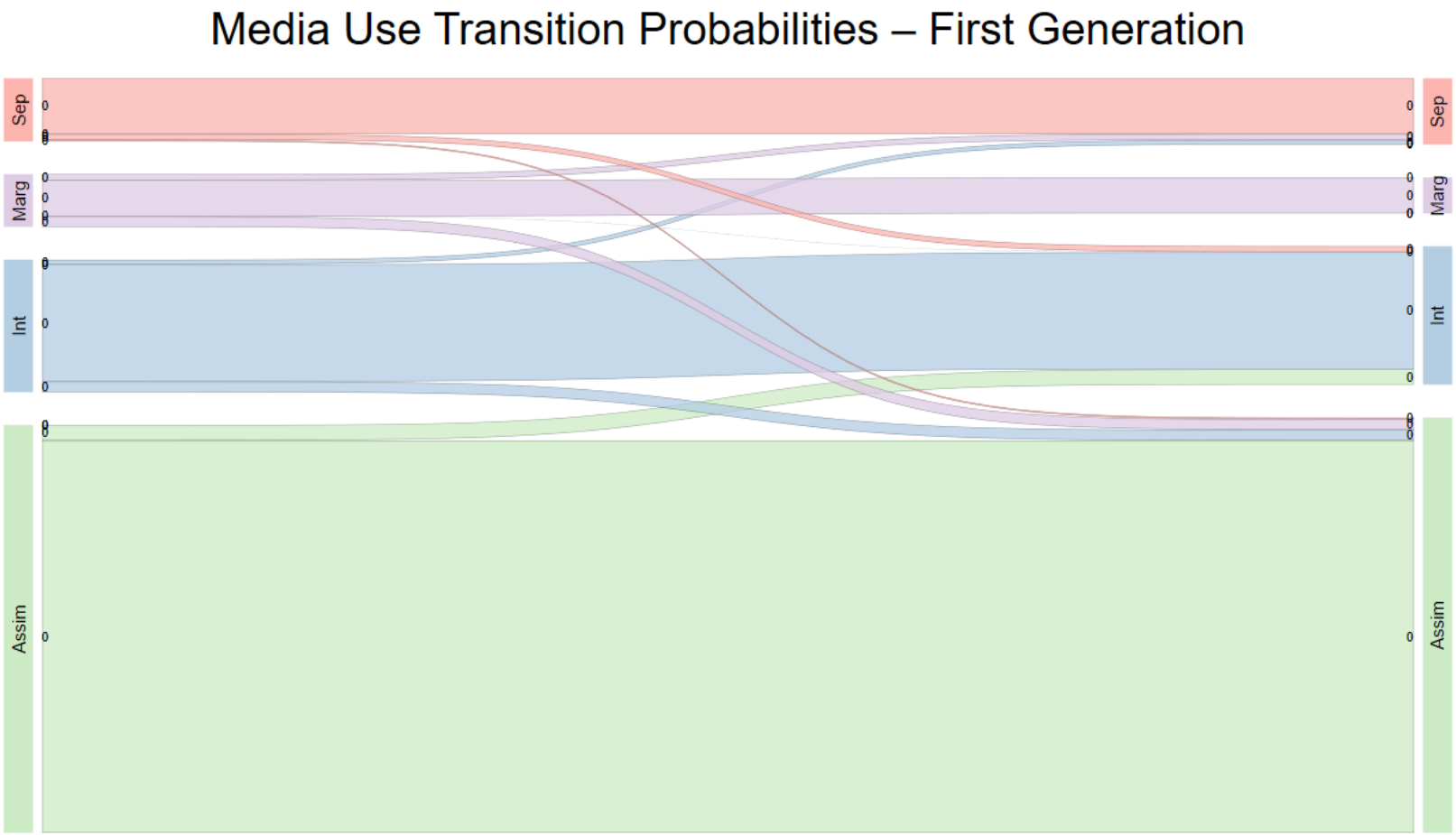

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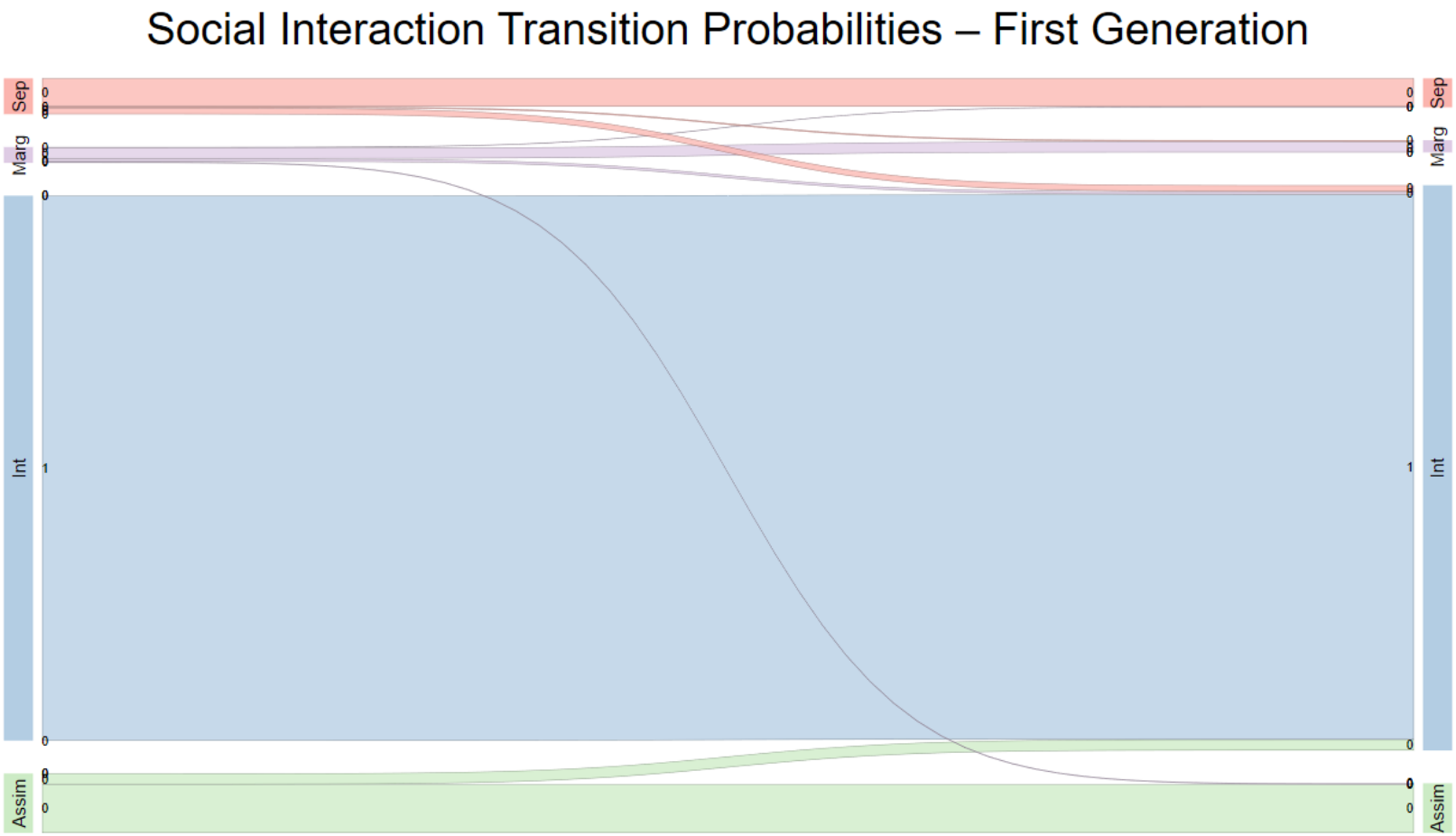

Transition Probabilities: Ethnic Identity

Table: Estimated transition probabilities of identity states.

State at $t-1$	State at t (0,0)	(0,1)	(1,0)	(1,1)
(0,0)	0.580	0.283	0.121	0.016
(0,1)	0.000	0.904	0.000	0.085
(1,0)	0.000	0.011	0.828	0.151
(1,1)	0.000	0.035	0.027	0.937

Note: Only transition probabilities statistically significant at the 5% level are reported. Statistically insignificant entries are set to zero.

Transition Probabilities: Media Use

Table: Estimated transition probabilities of identity states.

State at $t-1$	State at t (0,0)	(0,1)	(1,0)	(1,1)
(0,0)	0.684	0.199	0.114	0.003
(0,1)	0.000	0.939	0.000	0.037
(1,0)	0.000	0.027	0.861	0.089
(1,1)	0.000	0.081	0.035	0.884

Note: Only transition probabilities statistically significant at the 5% level are reported. Statistically insignificant entries are set to zero.

Transition Probabilities Interpretation

- Expected result: off-diagonal terms can be significant...
- Estimates in blue indicate moves towards increased acculturation
- Estimates in red indicate moves towards decreased acculturation
- We label this moves Integration reversal

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A Two-Period Theory of Identity Reversal

- Identity is represented by beliefs over two dimensions:

$$p_{i1} = \Pr(A), \qquad q_{i1} = \Pr(B).$$

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- Identity is a joint probability distribution on identity-state space

$$\{\alpha, A\} \times \{\beta, B\}.$$

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- In period 2, outcomes are realized and beliefs may be revised:

$$(p_{i1}, q_{i1}) \longrightarrow (p_{i2}, q_{i2}).$$

The Investment Cutoff

Assume:

$$u_i(1, \theta_H) > u_i(0, \theta_H), \qquad u_i(0, \theta_L) > u_i(1, \theta_L).$$

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The investment occurs if:

$$a_i^1 = 1 \iff \mathbb{E}_{\mu_{i1}}[u_i(1, \theta)] \geq \mathbb{E}_{\mu_{i1}}[u_i(0, \theta)].$$

$$\Rightarrow \mu_{i1} u_i(1, \theta_H) + (1 - \mu_{i1}) u_i(1, \theta_L) \geq \mu_{i1} u_i(0, \theta_H) + (1 - \mu_{i1}) u_i(0, \theta_L).$$

The Investment Cutoff

Define

$$m = -\frac{u_i(0, \theta_L) - u_i(1, \theta_L)}{u_i(0, \theta_H) - u_i(1, \theta_H)} > 0.$$

Then

$$\frac{\mu_{i1}}{1 - \mu_{i1}} \geq m, \qquad \text{or equivalently} \qquad \mu_{i1} \geq \frac{m}{1 + m}.$$

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Retrospective Identity Revision

After outcomes are realized, the immigrant compares what happened with what could have happened.

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Therefore, regret can generate identity reversal.

How Regret Moves Identity

Experience	**Revision**	**Interpretation**
Investment is validated	$q_{i2} \geq q_{i1}$	stronger attachment to D
Investment is regretted	$q_{i2} \leq q_{i1}$	weaker attachment to D
Origin counterfactual looks better	$p_{i2} \geq p_{i1}$	stronger attachment to O
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Integration reverses when regret weakens attachment to D or strengthens attachment to O.

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4 The Model

5 Conclusion

6 Appendix

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- We propose a dynamic framework for studying immigrant identity as a process of belief revision.
- The estimated transition matrices provide a conservative way to document both persistence and mobility.
- Identity is persistent, but not fixed: most movements are toward greater integration.
- Yet integration is reversible: some individuals move from more integrated to less integrated states.
- We interpret these movements as integration reversals and propose regret-based identity revision as one possible mechanism.

Looking Forward

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→ Extend the analysis to other countries, other measures of acculturation, and other mechanisms of identity revision.

The End

Thank You!

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Il 20 dicembre del 1955 Roma e Bonn firmarono l'accordo sui lavoratori migranti. Da quel giorno ne partirono 4 milioni

Settant'anni da Gastarbeiter così gli italiani in Germania anticiparono l'Europa unita

LA STORIA

dalla nostra corrispondente
TONIA MASTROBUONI
BERLINO

Questa è la storia di Toni Schiavo»: cominciava così una celebre canzone di Josef Degenhardt che condensava verità e luoghi comuni sugli immigrati italiani. Racconta di Toni Schiavo, otto figli e tanta miseria, che scappa in Germania, «da qualche parte intorno a Herne», e si accampa con dodici compagni meridionali in una soffitta. Un giorno accoltella il suo padrone che continua a chiamarlo «Fiuber-Sitz», maiale terrone. Era il 1963 e lo chansonnier, che voleva dedicare al Gastarbeiter una canzone impegnata, finì per confermare il pregiudizio sugli italiani dal coltello facile.

Settant'anni fa, il 20 dicembre del 1955, l'Italia e la Germania firmarono il primo accordo sui cosiddetti "Gastarbeiter", i "lavoratori-ospiti". Quattro milioni di italiani finirono nei decenni successivi nelle campagne, nelle fabbriche, nelle acciaierie, nelle miniere della Ruhr, della Svevia o della Piana di Lueneburgo - e quel termine "ospite" ancora li offende. Era un'Italia povera, devastata dalla guerra, da ricostruire. Quegli italiani venivano soprattutto dal Mezzogiorno e divennero un pezzo importante del miracolo economico tedesco. Quella miseria rimase però scolpita nell'immaginario collettivo, tanto che l'ex cancelliere Helmut Schmidt - un socialdemocratico - usò ancora negli anni '90 un'espressione scioccante per definire le regioni dell'ex Ddr in bancarotta che si stavano integrando nella Germania unificata. Le chiamò «Mezzogiorno senza mafia».

Quel contratto tra Roma e Berlino divenne il modello per altri accordi, ad esempio con la Turchia, la Yugoslavia o la Grecia. La Germania non voleva immigrati, voleva lavoratori a tempo. l'Italia - che propose già nel 1953 un'intesa - voleva risolvere il problema della disoccupazione e liberare le campagne del sud di tanta manodopera sfruttata e sempre più arrabbiata e sindacalizzata. Ma tanti vennero in Germania per restare, il 10% non tornò più in patria. Come ci ha raccontato una delle massime esperte di immigrazione italiana, la sociologa dell'Università di Potsdam, Edith Pichler, il fatto che venissero soprattutto dal sud aveva anche ragioni storiche, non solo economiche: «Tanti italiani del sud non avevano vissuto le atrocità dell'occupazione nazista, avevano meno paura e rancore verso i tedeschi rispetto ai toscani, agli italiani degli Appennini e dei luoghi del nord che erano stati teatro dei più mostruosi eccidi della Wehrmacht e delle Ss».

Quella dei Gastarbeiter è una storia di successo e di integrazione, ma anche di lacrime, odi e pregiudizi. Gli uomini partivano soli, avevano problemi a trovare una casa - tanti tedeschi esponevano cartelli "non si affitta a italiani" - e finivano spesso nelle "baracche", come le chiamavano in Germania. Lavoravano tanto e venivano pagati molto meglio che in Italia. Vedevano le loro mogli, le loro famiglie, a Natale, a Pasqua, durante le feste. «Io guadagno tanti soldi e vivo bene e spedisco i soldi alla famiglia in Italia», diceva fiero un operaio italiano alla trasmissione "Wochenschau" del 1963. E un servizio Rai di quegli anni raccontava dei «mariti» di Wolfsburg, la città della Volkswagen, «che non gradiscono molto gli italiani: le donne tedesche infatti li trovavano molto simpatici». Qualche giorno fa, alle celebrazioni per i 70 anni, l'ambasciatore Fabrizio Bucci ha ricordato proprio a Wolfsburg che quella generazione di italiani «ha di fatto anticipato il processo di integrazione europea, inteso come spazio comune di libertà, sicurezza e sviluppo».

Ma in quegli anni, anche in Germania era ancora radicato un pregiudizio storico contro gli italiani: «Tanti li chiamavano "traditori", "badoglianì", per l'armistizio del '43: non si fidavano di loro», spiega ancora Pichler. E le stazioni dei treni divennero luoghi di ritrovo, dove gli italiani aspettavano i "paisà" che dovevano raccontare le ultime dai loro villaggi e i loro paesi. Era il loro telegiornale. L'Italia era lontana, un pezzo di anima sepolto sotto i lunghi e piovosi inverni di fatica.

I primi spaghetti in scatola prodotti in Germania, i "Miracoli", vennero pubblicizzati con un italiano baffuto che strillava su uno sfondo di arie d'opera. Ma quei "mangiatori di spaghetti", "pizzaioli", "Italker", come venivano definiti con disprezzo nei primi anni, finirono per diventare un pezzo della cultura tedesca. Anche se liberarsi dei pregiudizi, e convincere i tedeschi a non trattarli da macchiette, è stata, e resta, complicato.

In alto, migranti italiani alla stazione di Francoforte Accanto uno dei treni che riportavano i lavoratori a casa a Natale. Sopra la distribuzione degli spaghetti alla Volkswagen di Wolsburg

Quell'intesa inaugurò una storia di povertà e fatica, intrisa di pregiudizi
Ma anche di integrazione

Annese dopo le nozze con Frida

L'INTERVISTA

"Ero pastore in Puglia alla Volkswagen diventai sindacalista"

Nel 1961 è stato il primo italiano assunto in Volkswagen, e poco dopo il primo straniero eletto in un consiglio di fabbrica tedesco. Siamo andati a prenderlo alla stazione, è venuto da Wolfsburg con una vecchia valigia della IG Metall zeppa di ricordi. E in un'osteria berlinese Lorenzo Annese, classe 1937, ci ha raccontato la sua storia.

Lei fu uno dei primi Gastarbeiter in Germania. Da dove veniva?

«Da Alberobello. Avevo cominciato a lavorare a 7 anni, facevo il pastorello. Il mio padrone non mi pagava: potevo dormire sul fieno e la sera mi metteva un piatto fuori. Non mi fece mai entrare in casa. E questa fu una prima grande differenza con la Germania. Anche lì il mio primo lavoro fu nei campi, ma la sera mangiavamo tutti insieme, padroni e braccianti».

A proposito di braccianti, lei viene dalle terre di Di Vittorio.

«Sì ed erano tempi atroci. Dopo aver lavorato da pastore, a nove anni accettai un lavoro da 50 centesimi

Lorenzo Annese, è stato il primo straniero eletto in un consiglio di fabbrica tedesco

al giorno per trasportare pietre e terra. Poi ho fatto il bracciante. Odiavo la zappa, ero sfruttato, maltrattato, pagato una miseria. Quando mio fratello Pietro mi disse di raggiungerlo in Germania, non ci pensai due volte. Avevo 21 anni».

Come andò il suo viaggio?

«Prima di partire, il mio fratellino trovò cinquemila lire in un canale. Non li toccai, ce li ho ancora. Ci misi tre giorni e due notti, passai i primi esami medici a Bari, quelli a Verona furono atroci. Quando arrivai a Monaco, al binario mi aspettavano due suore. Mi diedero dei panini e mi dissero dove andare per prendere il treno successivo. Quando aprii quei panini vidi che c'era del formaggio con la muffa, li buttai dalla finestra. Non avevo mai visto il gorgonzola in vita mia».

A Wolfsburg lavorò prima da bracciante. Poi entrò in Volkswagen, primo italiano

«Sì, avevo fatto domanda inutilmente tante volte. Alla fine andai lì, mi intrufolai in un gruppo di visitatori e andai a parlare col capo del personale. Mi chiese chi fossi. Quando glielo dissi esclamò "mica stupido ete". Fui assunto».

Ha incontrato difficoltà?

«Ci sono stati episodi sgradevoli, certo. Quando mi sposai con Frida, ci arrivò una cartolina in cui la chiamavano "puttana" e scrissero "non hai un orgoglio tedesco?". Ma ho avuto una vita bella e piena, in Germania». – **T. MAS.**

Ethnosizer Variables Used

Back

Dimension	SOEP variables
Identity	plj0078 – Feels German plj0080_v1 – Feels attached to origin country
Language skills (speaking, writing and reading)	plj0071, plj0072, plj0073 – German plj0074, plj0075, plj0076 – Mothertongue
Media use	plj0070,plj0226_h – Primary language of media
Social interaction	plj0060, plj0062 – Visits with/by Germans plj0061, plj0063 – Visits with/by foreigners

Coding Rules for Ethnosizer Dimensions - part 1

Item	Scale	Germany	Origin
Identity			
German	1–5 Likert	$\leq 3 \rightarrow \mathbf{1}$	–
Origin	1–5 Likert	–	$\leq 3 \rightarrow \mathbf{1}$
Language Skills			
German	1–5 Likert	Mean $\leq 3 \rightarrow \mathbf{1}$	–
Origin	1–5 Likert	–	Mean $\leq 3 \rightarrow \mathbf{1}$

Coding Rules for Ethnosizer Dimensions - part 2

Item	Scale	Germany	Origin
Media Use	Categorical	$\geq 3 \rightarrow \mathbf{1}$	$\leq 3 \rightarrow \mathbf{1}$
Social Interaction			
Germans	1–2 scale	Mean $< 2 \rightarrow \mathbf{1}$	–
Foreigners	1–2 scale	–	Mean $< 2 \rightarrow \mathbf{1}$

Observed and Possible Outcomes

- Since both outcomes are binary, the possible pairs are known:

$$(y_{1it}, y_{2it}) \in \{(0,0),(1,0),(0,1),(1,1)\}.$$

- These four pairs correspond to the four identity states:

$$(0,0) = M, \quad (1,0) = A, \quad (0,1) = S, \quad (1,1) = I.$$

- The model assigns a probability to each pair, conditional on past identity and individual heterogeneity.
- The denominator sums over all four possible pairs, so the four probabilities add up to one.