Dynamic Language Policy Evaluation

Torsten Templin

Humbodlt Universität zu Berlin
Research Group Economics and Language (REAL)

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Task 5.1

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"Non-dynamic" language policy analysis I

- **Aim:** Compare advantages and drawbacks of a policy or different policy options
- Standard policy evaluation methods
  - Cost-Benefit Analysis (CBA)
    - Benefits (Advantages) and Costs (Drawbacks) are monetized
    - Consider **benefit minus costs**
  - Cost-Effectiveness Analysis (CEA)
    - Benefits are quantified but not monetized
    - Effectiveness measure
    - Consider **effectiveness over costs**

"Non-dynamic" language policy analysis II

- Account for present benefits and costs
- Accounting for future benefits and costs:
  - discounting $\longrightarrow$ NPV
- Problem
  - benefits and/or costs often depend on the number of beneficiaries
  - numbers change over time (due to general trends or the policy itself) but taken as constant by the "non-dynamic" methods
- Possible solution: combine "non-dynamic" policy evaluation methods with models for these changes

Language competition models (LCMs) I

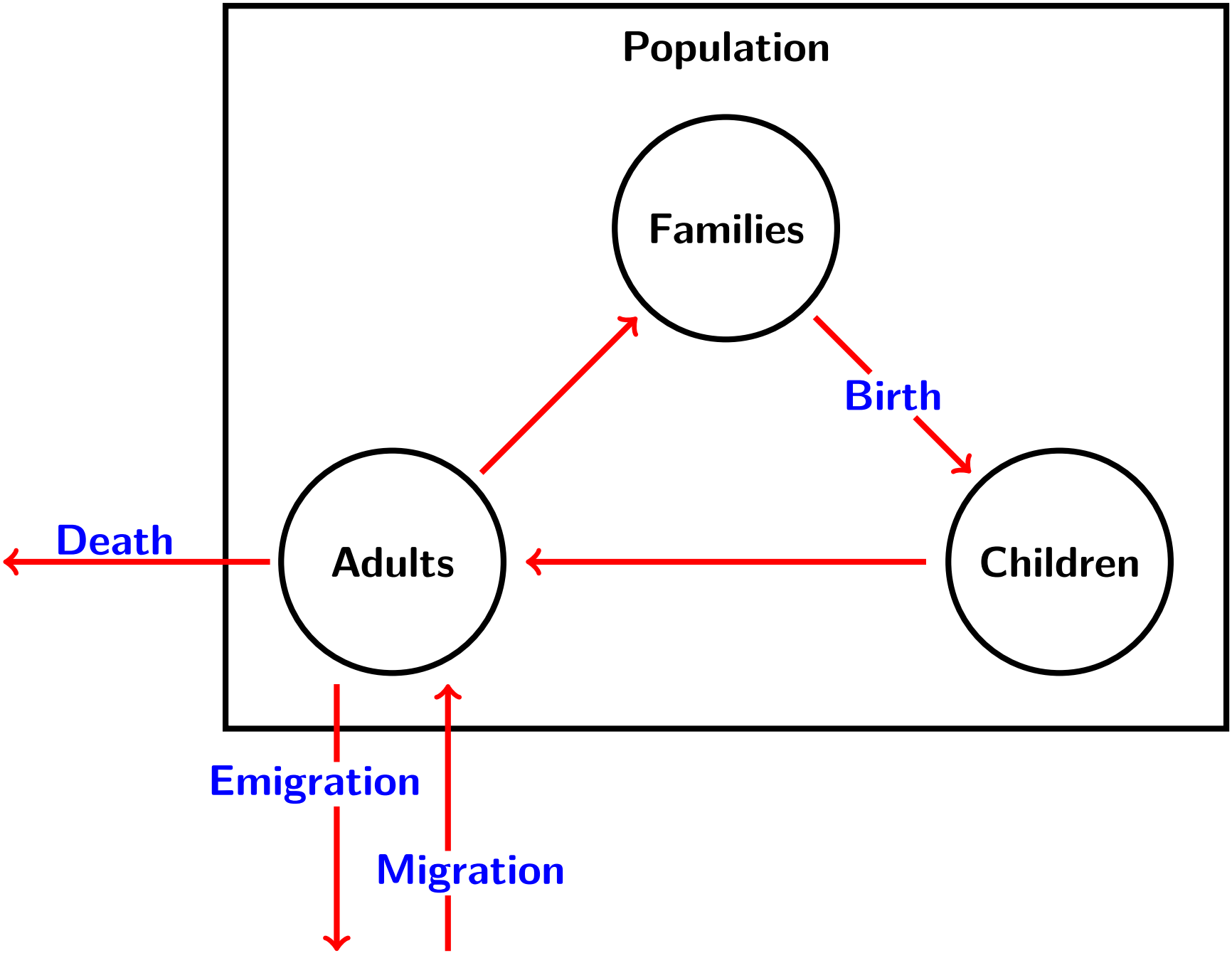
- Consider territory, region or polity with languages **H** and **L**
- Roughly three language "groups" (i.e. types of individuals) can be distinguished:
  - Monolinguals in **H**
  - Monolinguals in **L**
  - Bilinguals (denoted by **B**)
    - Bilingualism is here defined as the ability to function confidently in two languages
    - In practice, we call someone bilingual if she reports to speak a language "very well" (in quantitative surveys)
- LCMs are formal (mathematical) models that describe how the sizes of the three groups change over time
- LCMs are inspired by models from physics, biology and economics

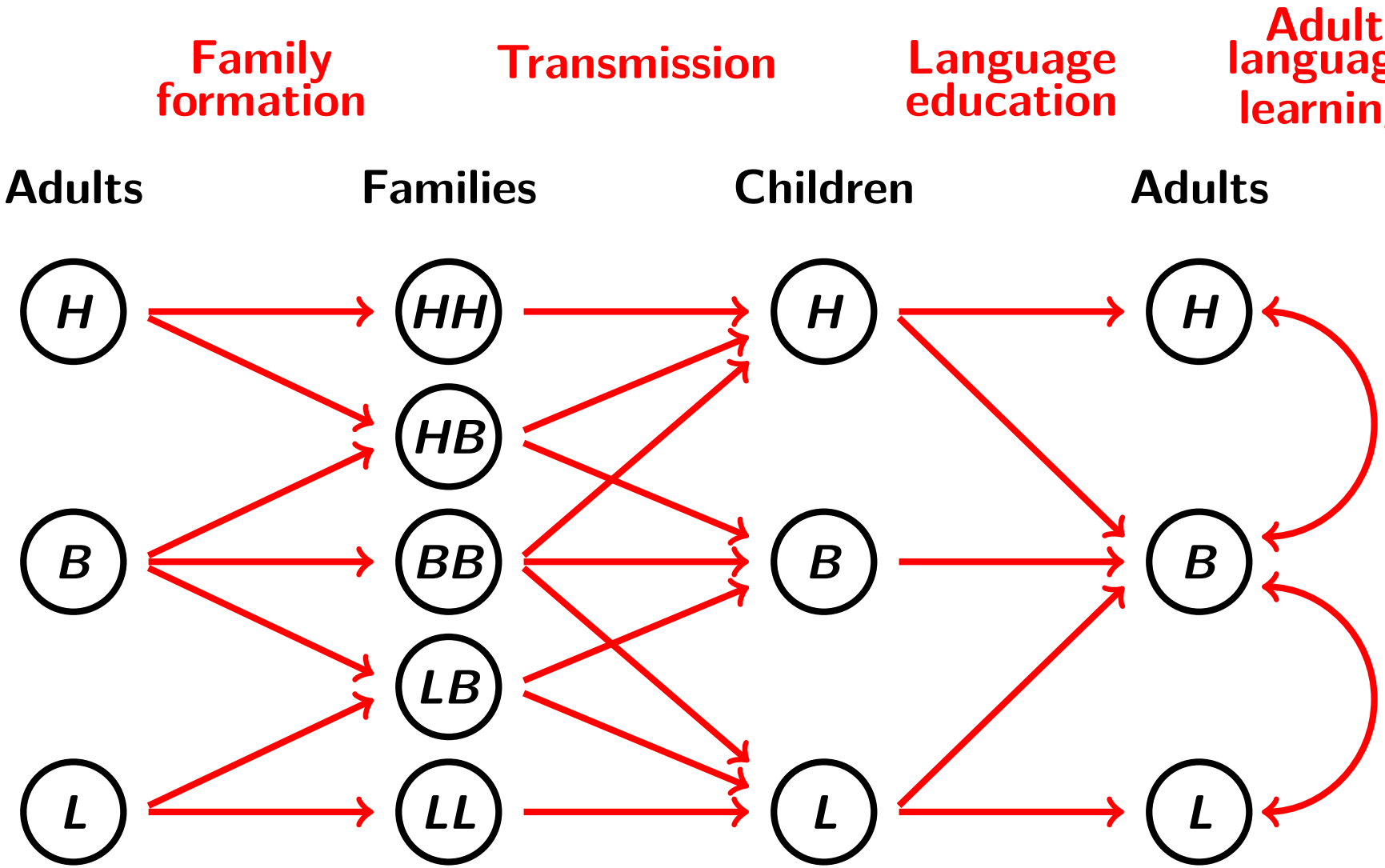
Language competition models (LCMs) II

- Common weaknesses of available LCM's
  - Inspired by models from physics/biology
    $\rightarrow$ parameters lack socio-linguistic meaning/equivalent
  - Neglect important socio-linguistic factors and processes, e.g. education
  - Remain at an abstract level
    $\rightarrow$ allow only very general statements/results
- For the analysis of concrete policies in a specific context more realistic models with parameters obtainable from empirical data are needed

New LCM - general model

- General model setting
  - language competition between majority language H and minority language L
  - L could be a traditional minority language or a migrant one
  - external mobility possible:
    - Spanish monolinguals moving to Catalonia
    - Spanish monolinguals migrating to the US
- Factors and processes the general model takes into account
  - family formation / endogamy
  - linguistic concentration
  - intergenerational language transmission
  - language in compulsory education
  - language learning by adults
  - external mobility


Population
Families
Birth
Children
Adults
Death
Emigration
Migration

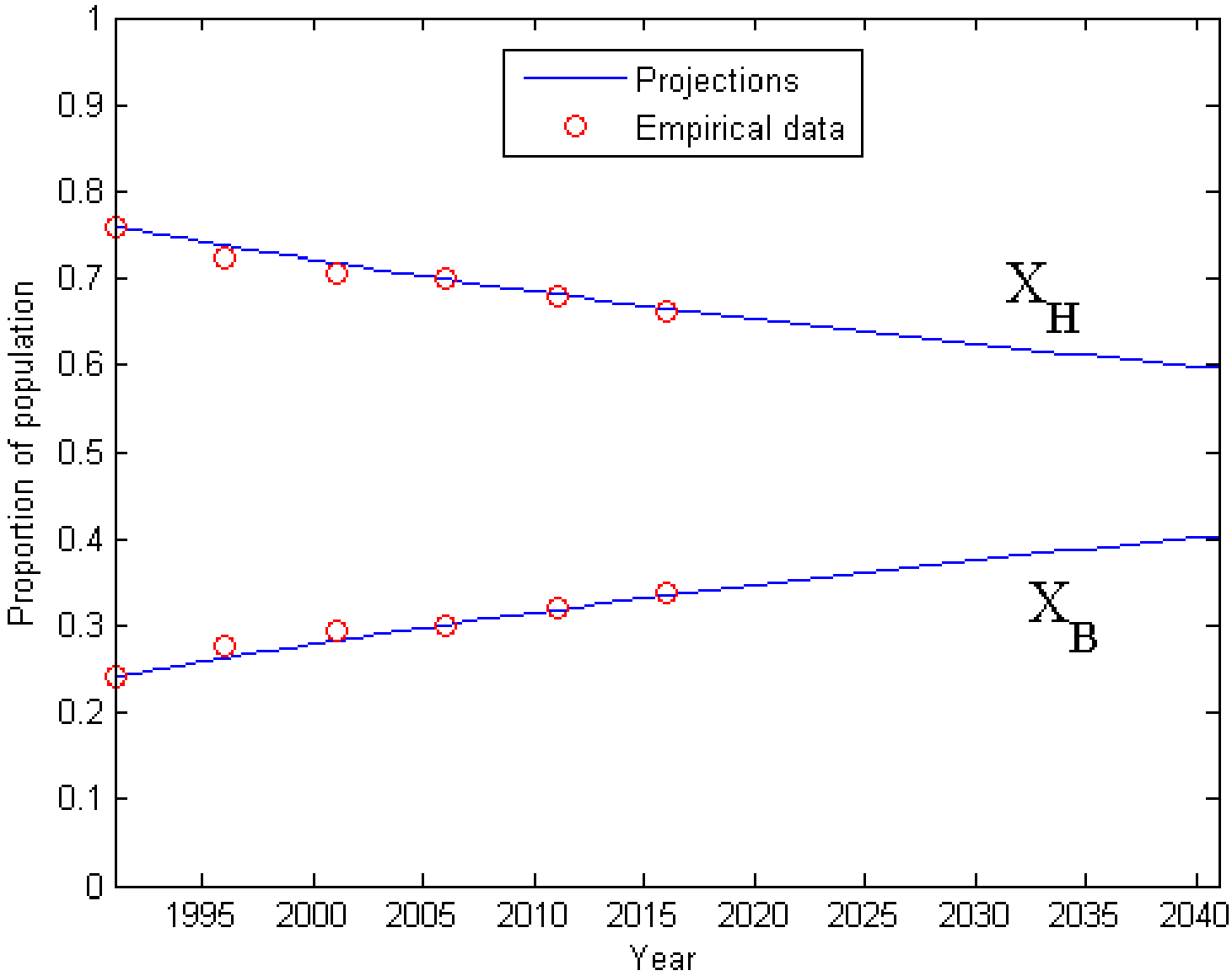

Family formation
Transmission
Language education
Adult language learning
Adults
Families
Children
Adults
H
B
L
HH
HB
BB
LB
LL
H
B
L
H
B
L

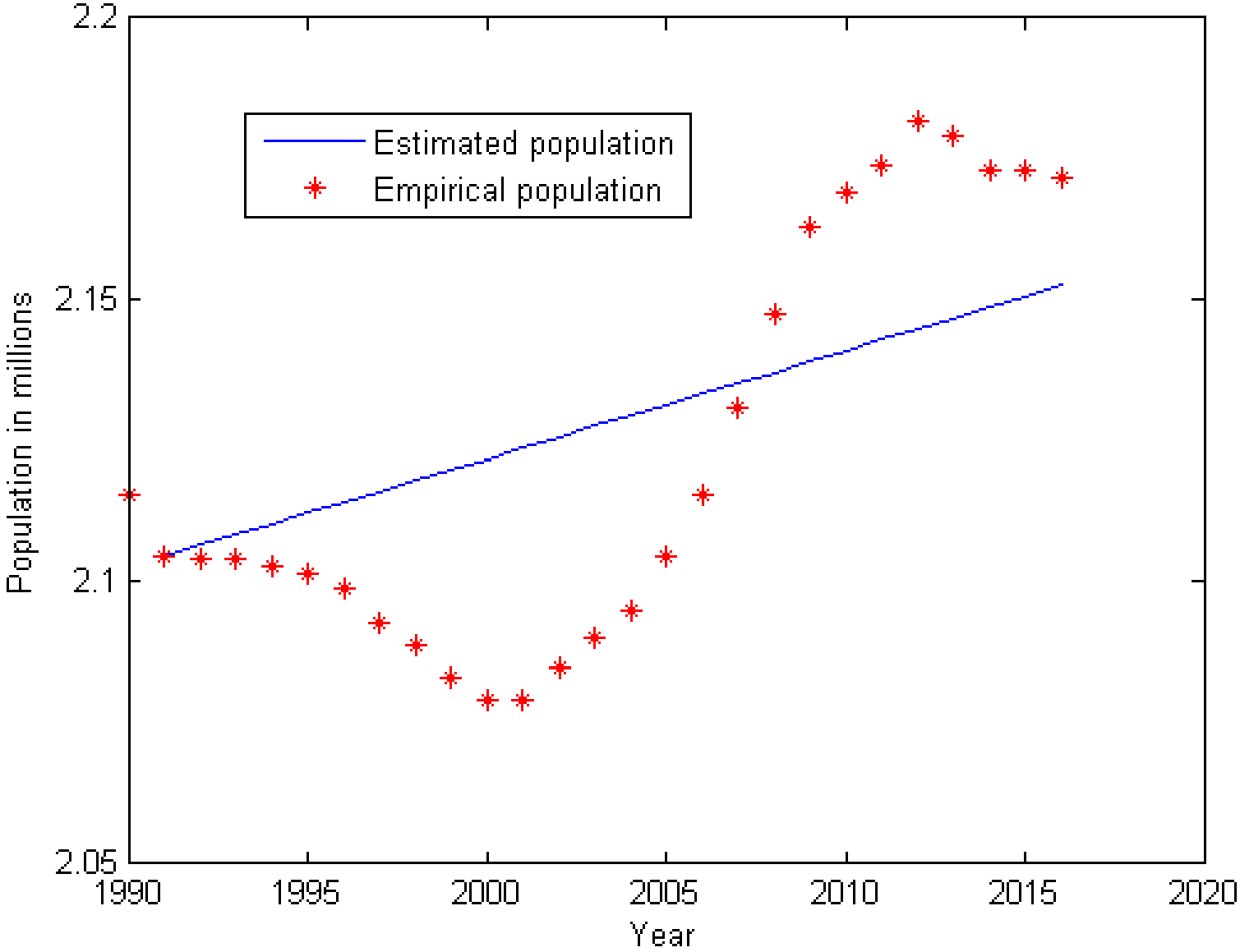
New LCM - illustration I

- Applying the general model to a real case scenario requires quantitative data on
  - language skills throughout the population $\rightarrow N_H, N_L, N_B$
  - mobility/migration and language skills
  - spatial distribution of speakers $\rightarrow$ linguistic concentration
  - linguistic composition of families $\rightarrow$ endogamy
  - language transmission in families or language skills of parents and their children
  - language in education
  - adult language learning
- In many cases not all these data are available

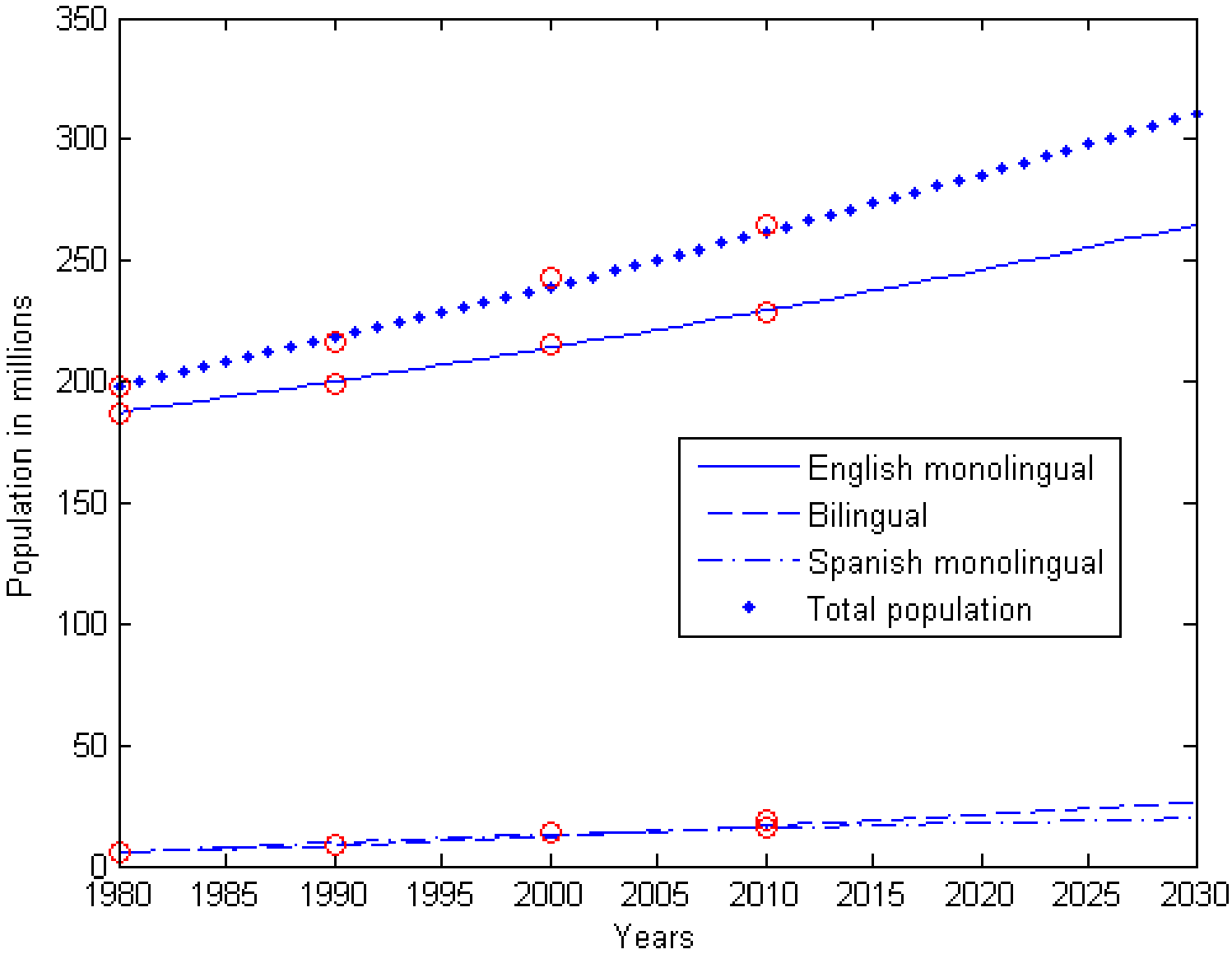
New LCM - illustration II

- Basque and Spanish in the Basque Autonomous Communities
  - Majority monolingual in Spanish, minority bilingual
  - Relatively successful revitalization of Basque in past decades
  - Hight data availability
- Data outline
  - Population size: $\approx$ 2,1 million
  - Fraction of bilinguals: 24% (in 1991) - 34% (in 2016)
  - certain concentration of bilinguals in some areas
  - Three school types (Spanish, Basque, bilingual)
  - High availability of Basque language courses for adults (euskaltegi)
  - Mobility/migration of Spanish-speakers


Projections
Empirical data
X_H
X_B
Proportion of population
Year
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1995
2000
2005
2010
2015
2020
2025
2030
2035
2040


Estimated population
Empirical population
Population in millions
Year
2.2
2.15
2.1
2.05
1990
1995
2000
2005
2010
2015
2020

New LCM - illustration III: English and Spanish in the US



Dynamic Cost-Benefit analysis

- Three steps:
  - **Step 1**: Estimate model parameters from quantitative data
  - **Step 2**: Use the LCM to derive projections $N(p, t)$, for $t = 0, ..., T$ and policies p
  - **Step 3**: Perform cost-benefit analysis with projections instead of the constant population
- We analyzed examples for which standard and dynamic language policy evaluation yield different policy implications
- Dynamic analysis yields strong arguments for collecting more language related data (e.g. in Census)

Thank you for your attention