



DFG Priority Programme 1646

Education as a Lifelong Process

SPP 1646 Summer School 2017

on

Longitudinal Analyses in Educational Research

at

**Leibniz Institute for Educational Trajectories
Bamberg, Germany**

July, 31 – August, 4, 2017

Organized by:

Sabine Weinert

Hans-Peter Blossfeld

Coordinated by:

Lena Nusser



In cooperation with



ORGANIZATIONAL INFORMATION

The SPP 1646 Summer School seeks to promote young researchers connected to the DFG Priority Programme 1646 “Education as a Lifelong Process – Analyzing Data of the National Educational Panel Study” by strengthening their theoretical and methodological skills in educational research.

This second Summer School of the second phase offers a five-day program with various teaching and learning formats. Topics are offered in lectures or workshops focusing on different issues of educational research held by leading researchers from different disciplines (sociology, educational research, psychology, and statistics). This year’s focus of the SPP 1646 Summer School is longitudinal analyses and methodological approaches. The recommended literature and workshop materials will be available for download (password protected) on the SPP website (<https://spp1646.neps-data.de/>).

Additionally, there are discussion sessions organized by (inter)national experts focusing on PhD theses and papers submitted by Summer School participants. Participants are invited to submit a paper, thesis, exposé, presentation they would like to discuss with (inter)national experts in the field of educational research. All participants of the SPP 1646 Summer School are welcome to join these discussion sessions and are expected to actively engage in the discussion of the papers. Research papers will be available for download (password protected) on the SPP website (<https://spp1646.neps-data.de/>).

Moreover, a scientific writing course is offered to learn how to write more clearly and concisely. Due to its interactive format a limited number of participants is allowed. Thus, the workshop will take place twice. Please indicate in your registration form on which date you prefer to participate (the coordinator will allocated the participants to the workshops depending on all registrations).

Furthermore, the LifBI-RDC offers an open hour for any questions by the participants regarding the data of the NEPS, new releases etc. The experts at the RDC are happy to support the participants with any queries or open questions.

The Summer School Program is supplemented by two social events. On Monday, the LifBi e.V sponsors a local beer reception for all participants of the SPP1646 Summer School. On Wednesday, participants are invited to a joint conference dinner. These events will give all participants the opportunity to get in touch with each other and also with the invited experts.

On Tuesday and Thursday, there will be the opportunity to get together with other participants at joint diners. Locations will be announced at the Summer School.

PROGRAM OVERVIEW

	Monday (07/31)	Tuesday (08/01)	Wednesday (08/02)	Thursday (08/03)	Friday (08/04)
Morning	Registration & Welcome	Discussion of PhD-Papers	Workshop on Growth Curve Modeling by Juho Härkönen	Open Hour at the RDC-LifBi	Discussion of PhD-Papers
	Lecture by Magnus Nermo	Discussion of PhD-Papers		Workshop on R-Package 'LaRA' by Christian Aßmann	Workshop on Scientific Writing by Rob Kail
Afternoon	Lecture by Bernhard Nauck				
	Lecture by Sandra Buchholz				
Evening	Local Beer Reception		Joint Conference Diner at Salino		

DETAILED PROGRAM

Monday, July 31, 2017	
Welcome (Room 104)	
11.00 – 12:00	Registration Snacks, Coffee, ...
12.00 – 12.15	Sabine Weinert & Hans-Peter Blossfeld <i>Welcome</i>
Lectures (Room 104)	
12.15 – 13.45	Magnus Nermo Gender inequality in the labour market
13.45 – 15.00	Lunch Break
15.00 – 16.30	Bernhard Nauck Working with post-hoc harmonized international large-scale data sets: The case of home leaving and co-residence in the United States, Germany, Taiwan and China
16.30 – 17.00	Coffee Break
17.00 – 18.00	Sandra Buchholz Who profits from alternative paths to higher secondary education? It's all a matter of the perspective!
18.00	Local Beer Reception sponsored by LIfBi e.V.

Tuesday, August 1, 2017		
	Discussion of PhD (Room 104)	Workshop by Robert Kail (Room 109A)
09.30 – 11.00	Discussion of PhD Papers I (Bernhard Nauck) Papers by Max Herke	Scientific Writing Part I
11.00 – 11.15	Coffee Break	
11.15 – 12.45	Discussion of PhD Papers II (Magnus Nermo) Papers by (1) Anna-Erika Hägglund and (2) Pia Blossfeld	
12.45 – 14.15	Lunch Break	
14.15 – 17.30		Scientific Writing Part II

Wednesday, August 2, 2017	
Workshop by Juho Härkönen (Room 109A)	
09.30 – 11.00	Growth curve analysis with multilevel models Part I
11.00 – 11.15	Coffee Break
11.15 – 12.45	Growth curve analysis with multilevel models Part II
12.45 – 14.15	Lunch Break
14.15 – 15.45	Growth curve analysis with multilevel models Part III
15.45 – 16.00	Coffee Break
16.00 – 17.30	Growth curve analysis with multilevel models Part IV
19.00	Joint Conference Diner at Salino

Thursday, August 3, 2017	
Workshops & Lecture	
10.00 – 11.30	Open Hour FDZ (Room 109A)
11.30 – 11.45	Coffee Break
11.45 – 13.15	Christian Aßmann Bayesian estimation and handling of missing values in background variables in latent regression analysis (LaRA) - Theoretical background of the R package LaRA (Room 104)
13.15 – 14.30	Lunch Break
14.30 – 16.00	Christian Aßmann R package LaRA - Package handling and hands on practice with NEPS data (Room 109A)
16.00 – 16.30	Coffee Break
16.30 – 18.00	James Law Non-linear approaches to language development and their implications for intervention: the examples of logistic and quantile regression (Room 104)

Friday, August 4, 2017		
Discussion of PhD (Room 104)		Workshop by Robert Kail (Room 109A)
09.30 – 11.00	Discussion of PhD Papers III (James Law) Papers by (1) Daniel Schulze and (2) Theresa Rohm	Scientific Writing Part I
11.00 – 11.15	Coffee Break	
11.15 – 12.45		
12.45 – 14.15	Lunch Break	
14.15 – 17.30		Scientific Writing Part II

LECTURES & WORKSHOPS

Bernhard Nauck

Chemnitz University of Technology, bernhard.nauck@soziologie.tu-chemnitz.de

Working with post-hoc harmonized international large-scale data sets: The case of home leaving and co-residence in the United States, Germany, Taiwan and China

The presentation will cover three consecutive steps, with an emphasis on application:

In the first step, the formulation of bridge hypotheses is discussed, which may explain the connection between societal characteristics, such as “national culture”, kinship systems and welfare regimes, on the one hand, and individual action, such as leaving the parental home or patterns of cohabitation with various types of household members in the transition to adulthood, on the other hand.

In the second step, some selected problems of post-hoc data harmonization are discussed. Four panel studies (NLSY97 for the USA; PAIRFAM for Germany; CFPS for China; TYP for Taiwan) will be described, which were harmonized for similar cohorts, with an age span of 15 to 30 years.

In the third step, selected results are presented with graphs and tabulations, both for descriptive and theory testing purposes. Age specific tabulations and graphs demonstrate differences between countries with regard to age-specific transitions to adulthood (school-to-work-trajectory, home leaving, coresidence, marriage, parenthood). Separate discrete-time event history models were used to test partially components of the bridge hypotheses.

The empirical results point to significant cultural differences between home-leaving in collectivistic, patrilineal societies (China, Taiwan) and individualistic, bilinear societies (USA, Germany). Whereas neolocal housing signifies an important step in the transition to adulthood in the latter societies, continuous intergenerational housing, or even an early return to it, is normatively supported in collectivistic cultures. Differences between the United States and Germany on the one hand, and China and Taiwan on the other, point to variation in welfare regimes and differences in urbanization.

Readings

Nauck, Bernhard, Nicolai Groepler, & Chin C. Yi. (2017). How Kinship Systems and Welfare Regimes Shape Leaving Home: A Comparative Study of the United States, Germany, Taiwan, and China. *Demographic Research*, 36 (38), 1109-1148.

James Law

University of Newcastle, James.Law@newcastle.ac.uk

What are the long term consequences of early language difficulties? - A question for both policy and practice

In this presentation I will review the literature from a series of studies which have sought to find out how children identified with early language difficulties fare over time. Underlying the argument is the assumption that if the risks of early language difficulties are sustained across time this makes such difficulties more significant from a societal perspective and thus whether we should be looking at language difficulties from a public health perspective perhaps more akin to obesity. The presentation will focus on analyses of birth cohort studies which include language data and relevant outcomes at different time points but as we will see interpretation is affected by the measures used, the spacing of assessments, the relationship between intercept and slope and, of course, the nature of the questions asked. The session will end with an outline of a recent programme grant from the EU's Norface programme (led by myself but in close collaboration with colleagues using NEPS data and those involved with Generation R in the Netherlands), entitled 'Social InEquality and its Effects on Child Development: A study of birth cohorts in the UK, Germany and the Netherlands' which will start in 2018.

Magnus Nermo

Stockholm University, magnus.nermo@sociology.su.se

Gender inequality in the labour market

Over the past century women have made major advances in the labor market such as increased working hours, and the inflow of women into qualified occupations. However, gender differences in especially wage seem remarkably persistent. Recent research suggests that there is a trade-off between family friendly jobs and occupations and welfare states on the one hand, and women's relative wages on the other. In particular, the family policies in Scandinavia are thought to harm especially highly educated women by affecting occupational segregation and workplace skill development.

The lecture focuses on gender inequality in Sweden in a comparative perspective, and the overall purpose is to provide an overview of sociological and economic theories and evidence on gender inequality in the labour market and how it relates to the family. Thus, the lecture cover areas such as the persistent gender gap in e.g. wages, supervisory positions and elite positions, but also the role of skill investment, occupational segregation, time-consuming Job characteristics and family responsibilities for understanding gender differences in developed societies.

Preliminary readings

Bihagen, E., M. Neramo and C. Stern (2014) "The gender gap in the business elite: Stability and change in characteristics of Swedish top wage earners in large private companies, 1993–2007", *Acta Sociologica*, 57(2); 119–133

Blau F.D. and L. M. Kahn (2016) "The Gender Wage Gap: Extent, Trends, and Explanations", IZA DP No. 9656

Grönlund, A. and C. Magnusson (2016) Family-friendly policies and women's wages – is there a trade-off? Skill investments, occupational segregation and the gender pay gap in Germany, Sweden and the UK, *European Societies*, 18(1): 91-113

Mandel H and Semyonov M (2006) A welfare state paradox: State interventions and women's employment opportunities in 22 countries. *American Journal of Sociology* 111(6): 1910–1949.

Olivetti, C. and B. Petrongolo (2016) "The evolution of gender gaps in industrialized countries", NBER WORKING PAPER SERIES No 21887, National Bureau of Economic Research

Magnusson C. and M. Neramo (2017) Gender, Parenthood and Wage Differences: The Importance of Time-Consuming Job Characteristics, *Social Indic Research*, 131(2): 797-816.

Juho Härkönen

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Growth curve analysis with multilevel models

This one-day workshop serves as an introduction to growth curve analysis (GCA). GCA has become an increasingly popular method in analysis of longitudinal data in sociology, psychology, and related fields. It can be used to analyze the development of continuously measured outcomes (such as earnings, occupational prestige, grades, or psychological well-being) and how these trajectories vary between individuals. During this workshop, we outline the idea behind GCA and its relation to other common methods for analyzing longitudinal data, as well as the relationship between the multilevel and structural equations approaches to GCA, and practice GCA using multilevel analysis in Stata. Successful completion of the workshop requires a good command of regression analysis and an understanding of longitudinal data. Familiarity with Stata and multilevel analysis are additional assets.

Core reading:

Rabe-Hesketh, S. & Skrondal, A. 2012. Multilevel and Longitudinal Modeling in Using Stata. Volume I: Continuous Responses. Stata Press. Esp. Ch 7.

Further Literature Recommendations:

Andreß, H.-J., Golsch, K., & Schmidt, A.W. 2013. Applied Panel Data Analysis for Economic and Social Surveys. Heidelberg: Springer.

Curran, P.J., Obeidat, K., & Lisardo, D. 2010. Twelve frequently asked questions about growth curve modeling. *Journal of Cognition and Development*, 11(2):121-136.

Härkönen, J. & Bihagen, E. 2011. Occupational attainment and career progression in Sweden. *European Societies* 13(3):451-79.

Preacher, C.W., Wichman, A.L., MacCallum, R.C., & Briggs, N.E. 2008. Latent Growth Curve Modeling. Sage

Steele, F. 2008. Multilevel models for longitudinal data. *Journal of the Royal Statistical Society – Series A* 171(1): 5-19.

Robert. V. Kail

Purdue University, rkail@purdue.edu

Scientific Writing

This workshop will consist of several lessons designed to help participants learn to write clearly, concisely, and gracefully. The workshop will be highly interactive: each lesson is organized around a single theme (e.g., how to convey emphasis) in which heuristics are presented and participants practice those heuristics in an anonymous chat room.

Literature Recommendation:

Kail, R. V. (2015). *Scientific writing for psychology: Lessons in clarity and style*. Thousand Oaks CA: SAGE.

PAPERS BY PHD-STUDENTS

Theresa Rohm

LifBi, Germany, E-Mail: theresa.rohm@lifbi.de

“Bayesian IRT multilevel (mixture) estimation for NEPS competence measurement”

Abstract: Multilevel IRT models for reading competence data of grade 5 students, considering the stratified structure of the German school system, will be investigated. Due to the hierarchical structure of students nested within classes and schools, and schools within different types of secondary schools which furthermore differ across federal states, the estimation of latent ability requires multilevel modeling. Predictors on the first level are the item-responses of students and given information on background variables (e.g., gender, parent SES, migration background). Second level units are determined through the school- and classroom-setting. Information about the observed school type is indicated on the third level. Being interested in the distribution of latent ability across classroom-settings and school-types, a multilevel structure is explored and a latent model structure on the highest level is applied to identify the effect of the stratified German school system on latent reading ability in the German National Educational Panel Study (NEPS).

Daniel Schulze, Eric Stets, & Steffi Pohl

Freie Universität Berlin, E-Mail: daniel.schulze@fu-berlin.de

„Advances in DIF analysis: Evaluating the cluster approach of differential item pair functioning

The phenomenon of differential item functioning (DIF, e.g., between two groups) is regularly of interest in the context of item response models. Proving the mere existence of DIF in an item set is easy but identifying specific items displaying DIF poses a challenge. This challenge arises from the identification issue of any measurement model. Commonly, this issue is solved by making assumptions, such as balancedness of DIF (equal-mean difficulty approach) or that the majority of items is DIF-free (all-other-iterative forward algorithm, Kopf, Zeileis, & Strobl; 2015).

Bechger & Maris (2015) introduced a new conception in DIF analysis, namely relative DIF of item pairs. Their method allows the identification of item clusters which are invariant in item difficulty compared to the other items within the same cluster. This assumption-free approach comes at the cost of multiple possible solutions (i.e., clusters) for specifying a model in DIF analysis. It reflects the fact that we cannot know which items are DIF free or whether there are DIF free items at all.

We have extended the cluster based approach to make it applicable to empirical data and evaluated its performance in a simulation study under a wide range of conditions (cluster size, (un-)balancing of DIF, sample size, missing values) and compare the

results to those of other approaches. Although the issue of standardization cannot be circumvented by statistical means, our study explicates the assumptions made in the different approaches and shows under which conditions the different approaches result in unbiased results.

LOCATION

The meeting will be held at the LIfBi e.V. Wilhelmsplatz 3, 96047 Bamberg.

REGISTRATION

Registration will open on July, 31, at 11.00 and will be open throughout the whole duration of the Summer School. The registration desk can be found in the hallway on the first floor.

LECTURES

The lectures and workshops will be held by distinguished international scholars in the fields of educational research and statistical methods. Participants are expected to prepare for the lectures by reading literature suggested by the lecturers and to actively participate in the discussion of the research ideas of the other Summer School participants.

DISCUSSION SESSIONS

In the discussion sessions PhD and post PhD students will be given the opportunity to present and discuss their PhD projects and papers with the invited experts.

The participant is expected to give a very short presentation on his/her thesis idea or of a certain research paper at the Summer School before the assigned expert discusses the theme of the paper and gives feedback on theoretical and methodological aspects. Afterwards there will be the opportunity to discuss further questions in the plenum.

INTERNET ACCESS

The University of Bamberg participates in the Eduroam Project. For further information please visit: <https://www.uni-bamberg.de/rz/dienstleistungen/netz/wlan/wlan-verbinding-an-der-uni-bamberg-einrichten/eduroam/>

ACCOMMODATIONS AND TRAVEL COSTS

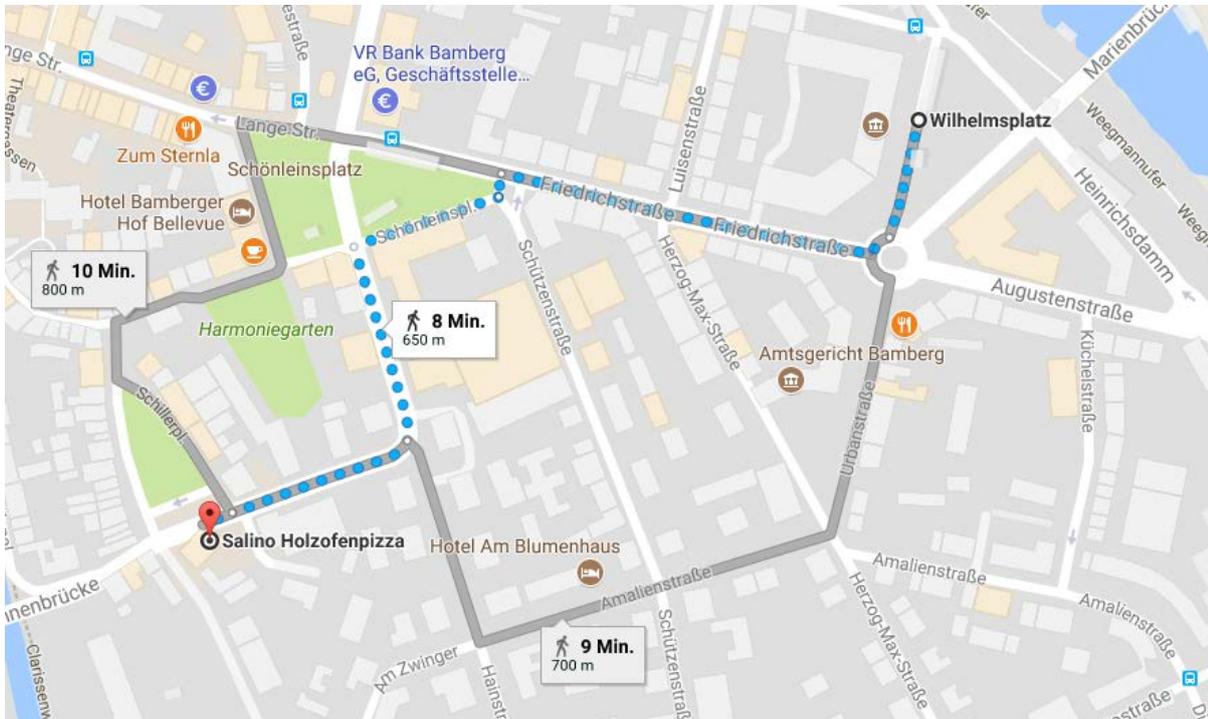
Travel costs, expenses for overnight accommodation, breakfast, joint conference dinner will be met by the SPP coordination project for SPP members. Lunch is not covered, but recommendations will be given.

Travel expenses (by train: ticket for 2nd class; by car: 0.35 € per kilometer with justified reason or 0.25€ per kilometer with unjustified reasons¹) will be reimbursed after the meeting. Please make sure to save your original travel tickets until after the conference.

¹ Regulations of the Bavarian Travel Expense Law (BayRKG): As justified reasons classify business-related or personal reasons (e.g. business place is not reachable by public transportation on time; necessary, heavy baggage of at least 10kg or large, bulky luggage; at least one other business traveler will accompany you for at least half of the distance; the traveler has severe walking impairments).

JOINT CONFERENCE DINER

A meeting dinner will be held on the evening of Wednesday, August 2 at the Salinos (Italian restaurant), Schillerplatz 11, 96047 Bamberg. The dinner is free for SPP members and invited experts.



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