Lives in Welfare States: Life Courses, Earnings Accumulation, and Relative Living Standards in Five European Countries[1]

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How do work and family life courses differ in welfare states with varying emphasis on the state, market, and family for welfare provision? The authors compare life courses until midlife in Denmark, Finland, the United Kingdom, former West Germany, and reunified Germany. Longitudinal life course analyses using administrative and survey data support three main conclusions. First, young adults who accumulate high earnings experience similar life courses in all countries. In contrast, typical life courses of low earners, particularly their family lives, differ widely between European welfare states. Second, constellations of decommodifying, familizing, and defamilizing policies shape cross-national differences in typical low-earning life courses, their primary sources of economic support, and relative living standards. Third, women are most likely to experience low-earning life courses in familizing welfare states (Germany, United Kingdom) compared to relative gender equality among low-earning life course types in welfare states that combine high defamilization and decommodification (Denmark, Finland).

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INTRODUCTION

Economic advantages and disadvantages can accumulate over the life course and depend on the timing and sequencing of work and family events. Work and family lives continually affect each other through causal, selection, and anticipation effects (Fasang and Aisenbrey 2022). Family lives affect employment and earnings, as seen in parenthood wage gaps. Earnings accumulation affects subsequent options for combining work and family, for example, through the possibility of outsourcing care. Young adults who accumulate high earnings can afford market alternatives if the public provision of social insurance and work-family reconciliation services is weak. In contrast, young adults who accumulate low earnings rely on state transfers or family support through a second earner for economic security. As a result, life courses of high-earning young adults might be very similar across countries. In contrast, low earners' work and family lives, and women's more so than men's, likely vary substantially with specific policy constellations in welfare states.

Life course norms on the timing and sequencing of work and family lives have weakened across Europe since the 1970s (Surkyn and Lesthaeghe 2004). Notwithstanding, when asked about their fertility intentions, Europeans in their early 20s continue to express strong preferences for having two children in stable partnerships. Many do not achieve this goal, often because they lack the financial resources perceived as a precondition for parenthood (Beaujouan and Berghammer 2019). Command over economic resources can be fundamental for realizing life goals in professional careers and family lives, particularly for women given norms that assign mothers primary caretaking responsibility and limit possibilities for combining motherhood with professional careers.

Research linking welfare states to life courses initially conceptualized broad welfare regime types (Titmuss 1974; Esping-Andersen 1990; Mayer 2005). Studies critiquing the weak link between social policies and life courses in regime approaches increasingly evaluated single policies, such as parental leave regulations, with regard to specific outcomes, for instance, the duration until reemployment after giving birth (Aisenbrey, Evertsson, and Grunow

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2009). Isolating single policies or policy areas can obscure how their impact varies with the presence or absence of other policies, structural labor market conditions, and prevailing gender and family norms (Zagel and Van Winkle 2022). Consequently, scholars recently called for examining policy constellations and their joint imprint on individual lives (Nelson, Nieuwenhuis, and Yerkes 2022).

We address four research questions and corresponding hypotheses. (1) *Life course similarity among high earners*: Do young adults who accumulate high earnings experience more similar life courses across countries than those who accumulate low earnings? (2) *Difference among low earners*: How do typical work and family life courses differ among low earners in countries with varying policy constellations? (3) *Sources of economic support*: To what extent do state transfers and family support through a second earner economically secure low-earning life courses in welfare states with different policy constellations? (4) *Gender inequality*: How high is men's and women's probability of experiencing either the highest or the lowest earning life course types in countries with different policy constellations?

We propose a new framework to conceptualize how policy constellations shape young adult life courses focusing on four policy dimensions: (1) the degree and (2) selectivity of decommodification policies that aim to reduce economic dependence on market income and (3) familizing policies that increase economic dependence on family members, as well as (4) defamilizing policies that aim to reduce economic dependence on family members (Esping-Andersen 1990; Leitner 2003; Scruggs and Allen 2008; Zagel and Lohmann 2021). Because familizing and defamilizing policies can coexist in a given country, we treat them as separate policy dimensions.

Drawing on high-quality policy data from the Social Policy Indicators (SPIN) databases (Nelson et al. 2020), we assess life course variation in five European countries. The liberal model in the United Kingdom emphasizes the market as the primary welfare provider and implicitly also the family through inadequate state benefits and limited market opportunities (Leitner 2003). Denmark and Finland represent the social-democratic welfare state with generous and universal decommodifying policies and strong defamilization that jointly reduce economic dependence on either market income or family members. Comparing these two Nordic countries assesses young adult life courses in similar policy constellations with different economic climates during labor market entry. In the 1990s, Finland experienced a severe recession, while the Danish economy remained largely stable. Germany represents the conservative prototype relying on the family as the primary welfare provider. We divide Germany into two cases around major policy reforms in the 2000s: first, cohorts born 1963–71 in the former conservative West Germany with strong familizing policies and, second, cohorts born 1972–81 in reunified Germany, including the former more gender-egalitarian

East, who experienced most of their young adult life courses after extensive defamilization reforms following the Scandinavian model in the 2000s.

To answer the research questions above, we identify typologies of work-family life courses from ages 21 to 40 for each country using multichannel sequence and cluster analysis. We rank the typologies by accumulated earnings at age 40. The Bayesian information criterion (BIC) for sequence comparison (Liao and Fasang 2021) assesses degrees of cross-national difference between high- and low-earning life courses (research question 1). Sequence visualization techniques inform the typical qualitative difference between low earners' work and family lives across countries (research question 2). For low-earning life course types in each country, we generate indicators for the degree of state support, family support through a second earner, and relative standard of living compared to their cohort peers between ages 21 and 40 to inform research question 3 on their primary sources of economic support. To assess research question 4 on gender inequality, regression models calculate gendered likelihoods of experiencing high- and low-earning life course types.

We make three contributions to the literature. First, we show that young adults who accumulate high earnings experience similar work-family life courses everywhere. In contrast, typical life courses of low earners, particularly their family lives, differ widely between mature European welfare states. Second, we develop a theoretical framework and empirically assess how specific constellations of decommodifying, familizing, and defamilizing policies shape typical life courses of low earners, their primary sources of economic support, and their relative standard of living. Third, we show that women have a substantially lower likelihood of experiencing life courses with high earnings accumulation in all countries. Women are most concentrated in low-earning life courses in welfare states with explicit or implicit familization compared to relative gender equality among low-earning life course types in the Nordic countries that combine high and universal decommodification with strong defamilization.

THE LIFE COURSE TYPOLOGY APPROACH

The life course paradigm (Elder, Johnson, and Crosnoe 2003; Mayer 2009; Bernardi, Huinink, and Settersten 2019) holds that macrostructural contexts shape the timing and sequencing of individual life courses and how work and family lives mutually influence each other. Institutionalist life course approaches assume that specific combinations of legal, economic, and social constraints coerce life courses into a few possible and prevalent types while hindering other theoretically possible lives that are factually never observed (Studer 2021). Boundaries of life course types are fuzzy, with outlier life courses that do not fall firmly into any of the core types. Life course typologies represent socially stratified biographical experiences following individuals over

several decades as they experience multiple, often interrelated, changes in their work and family lives. Work and family trajectories continually condition and constrain each other differently for men and women, depending on structural opportunities defined by the economy and social policy constellations (Fasang and Aisenbrey 2022). For instance, unstable, low-earning work lives can depress chances for partnering and discourage parenthood, while the presence of children and stable partnerships can open or limit employment opportunities.

In addition to earnings accumulation, a normative timing and sequencing of young adult life courses is a socially valued outcome (Karhula et al. 2019). Status attainment processes are associated with age norms on the appropriate timing and sequencing of work and family events (Neugarten, Moore, and Lowe 1965; Settersten and Hagestad 1996). Life courses that conform with majority age norms can generate "resources and rewards to those who observe culturally mandated schedules" (Furstenberg 2005, p. 155), including social recognition and access to resources, such as tax breaks and transfers conditional on marriage. For our study cohorts, life course norms were overall less binding than they used to be, with an average shift toward postmaterialism and liberal family values since the 1970s, spearheaded by the higher educated (Surkyn and Lesthaeghe 2004). Notwithstanding, across Europe, young adults' plans and intentions for their own lives continue to strongly favor completing education and establishing economically secure work lives before entering parenthood in stable partnerships, for most, ideally with two children (Liefbroer 2009; Beaujouan and Berghammer 2019).

Policy constellations can hinder or support young adults in realizing their life goals. Different types of employment interruptions, for example, due to unemployment or parental leave, are associated with access to different state benefits that vary across countries. Often, welfare benefits that bridge periods of nonemployment are conditional on marriage and parenthood (DiPrete 2002) or prior contributions to social insurance schemes. Nonemployed young adults are a selective and shifting part of the population that varies across countries and historically disproportionately includes women. The life course typology approach analyzes complete birth cohorts for each country, including individuals who cycle in and out of employment. Life course typologies display which work and family lives typically combine and mutually sustain each other in a given policy context (Fasang and Aisenbrey 2022). Prevalent life course types in one country that are factually never observed in another highlight which combinations of work and family lives sustain or preclude each other in certain policy constellations.

PREVIOUS RESEARCH

Life course studies interested in gender inequality have highlighted how work and family life courses typically combine for men and women and

are associated with later-life well-being in different countries (Lacey et al. 2016; Madero-Cabib and Fasang 2016; Aisenbrey and Fasang 2017; Ice et al. 2020; Jalovaara and Fasang 2020; Muller, Hiekel, and Liefbroer 2020; Comolli, Bernardi, and Voorpostel 2021; Buyukkececi, Fasang, and Kraus 2023). Economically successful work lives and parenthood in stable partnerships mutually support each other over the life course for men but largely preclude each other for women, especially in conservative welfare states (Aisenbrey and Fasang 2017; Muller et al. 2020; Fasang and Aisenbrey 2022). Beyond current conditions, past work and family life courses are more consequential for women's later-life subjective and economic well-being than for men's (Madero-Cabib and Fasang 2016; Comolli et al. 2021). Moreover, women with family lives of early motherhood and marriage suffer the largest gaps in later-life earnings and employment relative to enduringly single and childless women, and these gaps are substantially greater in countries without defamilizing work-family reconciliation policies (Stafford et al. 2019; Muller et al. 2020).

To construct work life courses, the studies above typically rely on retrospective information on employment and occupational prestige, which is known to understate gender inequalities in earnings (Widmer and Ritschard 2009; Aisenbrey and Fasang 2017). Female-typed occupations, for example, in the care and educational sectors, tend to have relatively high prestige but low earnings (Acker 1973). None of the above studies has mapped trajectories of earnings accumulation parallel to work and family life courses or systematically linked cross-national life course differences to state support, family support, and relative living standards across early adulthood. Earnings predict life chances above and beyond occupational measures of social class (Sørensen 1977; Mood 2017; Shahbazian and Bihagen 2022). In addition, earnings are more suitable for assessing gender inequalities and can accumulate wider disparities than gaps measured at any single time point (Tamborini, Kim, and Sakamoto 2015; Parolin and VanHeuvelen 2023). Only a few recent studies combine life course typologies with prospective earnings and pension income measured at one time point later in life (Madero-Cabib and Fasang 2016; Muller et al. 2020; Comolli et al. 2021). Only Jalovaara and Fasang (2020) link family life course types to accumulated earnings at age 40 in Finland.

Another line of research investigates processes of intragenerational career progression and earnings trajectories across the life course (Cheng 2014; Bönke, Corneo, and Lüthen 2015; Tamborini et al. 2015; Cheng and Song 2019; Gabay-Egozi and Yaish 2019; Bloome and Furey 2020; Lersch, Schulz, and Leckie 2020; Hällsten and Yaish 2021; Ren 2021; Castro Galvao 2023; Parolin and VanHeuvelen 2023). Women enter the labor market with lower baseline wages and experience flatter wage growth, contributing to cumulative (dis)advantage between men and women (Cheng 2014). Several

studies applied simulation techniques to infer long-term earnings gaps associated with motherhood, partly based on theoretically predefined "stylized life courses'" or "illustrative biographies" mainly using cross-sectional data (Davies, Joshi, and Peronaci 2000; Sigle-Rushton and Waldfogel 2007; Doren 2019; Kleven et al. 2019). Findings using data from the Luxemburg Income Study show the largest simulated long-term motherhood earnings penalties in conservative countries followed by liberal countries and Nordic countries (Sigle-Rushton and Waldfogel 2007).

Studies on earnings trajectories tend to include only rudimentary controls for family lives, such as the number of children, or focus on earnings in response to a specific family event, such as divorce. Several studies only consider men to circumvent the analytical and methodological challenges of accounting for women's interrupted work biographies (Bönke et al. 2015; Cheng and Song 2019; Ren 2021; Parolin and VanHeuvelen 2023). Next to individual earnings, state transfers and potential family support through a second earner determine young adults' relative living standards. Similar individual earnings trajectories can amount to very different relative living standards depending on welfare policies and parallel family lives.

Our study ranks work-family life course typologies by accumulated earnings by midlife. For life course types that accumulate low earnings, we assess the extent of state support and family support they receive across young adulthood to gauge their relative living standards compared to their cohort peers. We build on several previous studies in particular. Groh-Samberg and Hertel (2011) first used sequence analysis to examine status attainment processes as "trajectory classes" (Bourdieu 1987) for Germany. Karhula et al. (2019) proposed a sequence sibling design to assess family of origin effects on status attainment processes in Finland. Aisenbrey and Fasang (2017) compared gender inequality in work-family life course typologies using occupational prestige for West Germany and the United States. In the United States, women have almost equal access to occupationally successful work-family lives as men but suffer strongly elevated probabilities of experiencing the economically most precarious life courses of family complexity and recurring nonemployment. In West Germany, women have substantially lower chances of entering high-prestige careers than men. However, they are less concentrated in low-earning work lives and typically secured by family support through a male breadwinner.

Our study extends previous research in several ways. In terms of measurement and methods, we improve the assessment of gender inequality in life courses by using gross individual earnings instead of occupational prestige to specify the work trajectories and rank life course typologies by accumulated earnings. To augment the cross-national comparison, we calculate the degree and significance of the cross-national difference in high- and low-earning life course types using the BIC and likelihood ratio test

(LRT) for sequence comparison (Liao and Fasang 2021). These measures resolve a core critique of sequence analysis as being too dependent on subjective interpretations and lacking clear indicators for comparison that plague comparative life course studies to date (Piccarreta and Studer 2019).

Conceptually and theoretically, we complement previous single-country or two-country life course studies with a more general comparative framework on life course variation in different policy constellations in five country cases. We split the German sample around the reunification and major defamilizing policy reforms in the 2000s. In addition, we compare life course variation within the Nordic welfare state model with and without an economic recession during labor market entry. Specific policy constellations in our comparison countries jointly place varying emphasis on the state, market, or family as welfare providers. We introduce cross-nationally comparable indicators of the degree of state support, family support, and the relative standard of living of low-earning life course types from ages 21 to 40. These indicators directly speak to our theoretical framework on the relative importance of the state, family, and market for securing low-earning life courses.

LIVES IN WELFARE STATES: STATE, MARKET, FAMILY

Research linking welfare states to life courses initially conceptualized broad regimes contrasting open versus closed employment relationships, or liberal, conservative, and social democratic welfare and life course mobility regimes (Esping-Andersen 1990; DiPrete 2002; Mayer 2005). The link between policies and life courses remains vague in broad regime approaches. Single policy evaluations lose sight of the joint impact of policy constellations on multiple interrelated events in the life course. As a result, scholars advocate for theorizing and empirically assessing how specific policy constellations are associated with life courses (Nelson et al. 2022). Different welfare, labor market, and family policies jointly affect the interrelated timing and sequencing of work and family events.

Table 1 shows birth cohorts and observation windows for each country to specify relevant policy constellations for our study cohorts. We split the German case around the reunification in 1990 and a paradigm shift in family policy with the Elterngeld reform in 2007 that massively raised paid parental leave and gradually extended public child care starting in 2004. West German cohorts born 1963–71 were between ages 36 and 44 in 2007 and experienced active family formation in a context of strong familizing policies. Cohorts born between 1972 and 1981 in reunified Germany included the more gender egalitarian and formerly more defamilized eastern part of the country. These cohorts were between ages 26 and 35 in 2007, and thus mainly before or in the middle of their active family formation at the 2007

TABLE 1
COHORTS, OBSERVATION YEARS, AND CASE NUMBERS

Country	Data Set	Cohorts	Observation Years	Cases
United Kingdom	British Household Panel Survey and Understanding Society	1968–79	1991–2019	1,170 (12% missing earnings imputed)
West Germany	German Socioeconomic Panel	1963–71	1984–2011	1,204 (7% missing earnings imputed)
Reunified Germany	German Socioeconomic Panel	1972–81	1993–2021	1,175 (11% missing earnings imputed)
Finland	Statistics Finland Registers of Population and Social Statistics, Registers of Income Statistics	1968–78	1989–2018	2,000 (random selection of cohort population)
Denmark	Statistics Denmark Registers of population and housing, taxes, and education	1968–78	1989–2018	2,000 (random selection of cohort population)

NOTE.—In the German and British survey data we imputed a maximum of six years of missing values were in three different scenarios (see app. B). The cluster typologies were robust to excluding missing values and different imputation scenarios.

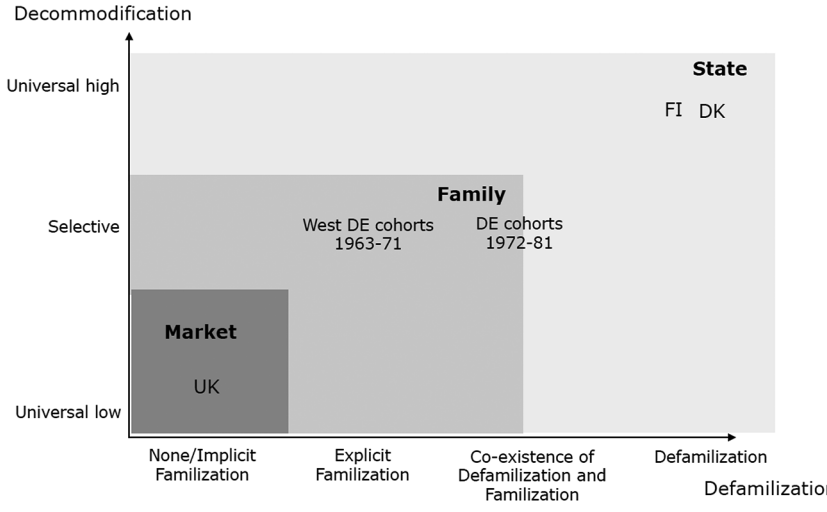

FIG. 1.—Policy constellations and state, market, and family emphasis in welfare provision. Based on policy data from the SPIN databases (see app. A).

Elterngeld reform.[2] Cohorts born in 1981 are observed until age 40 in 2021. They are the youngest possible cohorts that can be included to date. The other countries cover cohorts born between 1968 and 1979, which we observe between 1990 and 2020.

Figure 1 and table 2 summarize policy constellations using previous literature and our own analysis of policy indicators from the SPIN database (see app. A; Nelson et al. 2020). SPIN provides Europe's most consistently harmonized and up-to-date social policy data. We select policy indicators (figs. A1–A4) that are harmonized for our countries and are particularly relevant for the life stage of young to midadulthood. For instance, we excluded old-age pensions but included education subsidies as indicators of decommodification. For familization and defamilization, we consider child care and child benefits but not elderly care. Given mounting criticism of one-dimensional summary indicators of policy dimensions (Leitner 2003; Scruggs and Allan 2006; Zagel and Lohmann 2021), we separate the degree and selectivity of decommodification and treat familization and defamilization as distinct dimensions that can coexist and thereby create mixed incentives (Lohmann and Zagel 2016). Figure 1 shows how constellations of decommodifying, familizing, and defamilizing policies jointly emphasize the state, market, or family as primary welfare providers.

[2] Average age of first birth was 30 for women in 2007 in Germany. See https://www.bib.bund.de/DE/Fakten/Fakt/F18-Alter-Muetter-bei-Geburt-Deutschland-West-Ost-ab-1960.html.

TABLE 2
Policy Constellations in Comparison Countries

	United Kingdom	West German Cohorts 1963–71	Reunified German Cohorts 1972–81	Finland	Denmark
Welfare emphasis	Market	Family	Family/state	State	State
Decommodification	Universal low	Selective high	Selective high	Universal high	Universal high
Defamilization	Implicit familization	Explicit familization	Coexistence defamilization/familization	Defamilization	Defamilization
Recession	No	No	No	Yes	No

Decommodifying policies render young adults independent from the labor market through social insurance, social assistance, and education subsidies. To assess the degree of decommodification (fig. A1) we use replacement rates of average production worker wages for unemployment insurance (fig. A1*A*); sickness insurance (fig. A1*B*); combined out-of-work benefits including unemployment, housing, and social assistance (fig. A1*C*); and average nonrepayable student loans (fig. A1*D*). Denmark and Finland consistently score highest on all indicators of the degree of decommodification, Germany only moderately lower, and the United Kingdom by far the lowest. For example, the replacement rate of combined out-of-work benefits hovered around 60% and 70% in Germany and the Nordic countries but only 25% in the United Kingdom (fig. A1*C*). The labor force coverage rate of unemployment insurance (fig. A1*A*) and sickness insurance (fig. A1*B*) indicates the selectivity of decommodification (fig. A2). Germany has the consistently lowest coverage rates and, thus, the highest selectivity compared to all other countries.

Familizing and defamilizing policies affect young adults' economic dependence on family members. Because of data limitations, we focus on young adults' family formation and exclude support from and obligations to their parents. Total child benefits and joint taxation of couples are indicators of familization that encourage female homemaking and economic dependence on male breadwinners (fig. A3). The following three indicators measure defamilization: replacement rate of paid parental leave, duration of total parental leave, and percentage of children under age three in formal care (fig. A4). Familization is highest in Germany, followed by the United Kingdom. Defamilization is strongest in Denmark, Finland, and reunified Germany after 2007.

Despite various policy reforms in each country, cross-national differences in the level of the indicators (app. A) are remarkably stable in our observation window (see also Abrahamson 2010; Van Winkle and Fasang 2021; Zagel and Van Winkle 2022). Decommodification was consistently lowest in the United Kingdom and highest and most universal in Denmark and Finland. In West Germany, relatively high but selective decommodification signifies a legacy of dualization that continued into reunified Germany despite the 2003 Hartz reforms toward moderate labor market deregulation (Seeleib-Kaiser 2016). The only fundamental paradigm shift in family policy occurred in Germany, moving from explicit familization in a conservative male-breadwinner model to coexisting familizing and defamilizing policies. The 2007 Elterngeld reform followed the Scandinavian model by massively raising the replacement rate and duration of paid parental leave and gradually extending public child care since 2004 (Ferragina and Seeleib-Kaiser 2015; Daly and Ferragina 2018; Zoch and Schober 2018). Strong familizing policies continued in reunified Germany and coexisted with new defamilizing policies. In the United Kingdom, familizing and defamilizing

policies are weak compared to the other countries, despite an extension of single-parent and child support in the 1990s. In Finland and Denmark, defamilization is strongest with some moderate coexisting familizing policies in Finland (cash for care benefits).

Each country's specific policy constellations jointly emphasize the market, state, or family as the primary welfare provider. The United Kingdom (bottom-left fig. 1) combines low decommodification with implicit familization through the relative absence of family policies. This policy constellation emphasizes the market and, implicitly through market failure, also the family as welfare providers. In West Germany (middle fig. 1), high but selective decommodification and explicit familization jointly reinforce the family as the primary welfare provider, typically through a male breadwinner well secured by social insurance schemes. In reunified Germany, the family remained essential for securing low-earning life courses, but state support increasingly complemented family support, particularly for women with care interruptions (middle fig. 1). The Nordic countries combine high and universal decommodification with strong defamilization to emphasize the state as the primary welfare provider, granting independence from the market and the family (top-right fig. 1).

Next to policy constellations, economic recessions affect young adults' lives. During recessions and economic uncertainty, young adults tend to delay partnering and parenthood (Easterlin 1976; Sobotka, Skirbekk, and Philipov 2011) and spend more time in education, in retraining, or on family leaves. Figure A5 shows general and youth unemployment rates for our comparison countries. Unemployment was at a similarly low level in all countries except for a massive recession in Finland in the early 1990s when our study cohorts entered the labor market.

In sum, we contrast the liberal United Kingdom, which emphasizes the market for welfare provision (and implicitly the family through inadequate state benefits), to conservative West Germany, which emphasizes the family, and social-democratic Denmark and Finland, which emphasize the state. Reunified Germany relies on the family and state provisions after the 2007 reforms. The within-Nordic comparison contrasts how similar policy constellations are associated with young adult life courses during an economic recession in Finland compared to a regular economy in Denmark.

HYPOTHESES

High-earning young adults will have similar life courses in all countries, corresponding with intentions for family formation in Europe (Beaujouan and Berghammer 2019; hypothesis 1): completing higher education, directly followed by continuous high-earning careers coupled with family lives of cohabitation before marriage with two children. High earners can afford

market alternatives where public provision of welfare services does not exist and are relatively shielded from economic recessions.

In contrast, low-earning young adults depend on national social policies and are more vulnerable to economic recessions. Consequently, their life courses, primary sources of economic support, and relative living standards will differ across countries. Table 3 summarizes our expectations on low-earning life courses. We first assess which typical work and family lives low-earning young adults experience (hypothesis 2). To inform research question 3 on the primary source of economic support (hypothesis 3), we use the theoretical framework in figure 1 to formulate expectations on the degree of state support and family support that low earners receive in different countries and gauge their standard of living relative to their cohort peers from early to midadulthood (table 3).

In the United Kingdom, typical low-earning work lives will either combine family complexity, that is, separation and frequent repartnering, with cycling in and out of low-paid jobs, or marriage and parenthood with extended nonemployment (table 3). State support across young adulthood will be low, with moderate family support in line with implicit familization. The resulting relative living standards compared to their cohort peers will be substantially lower, especially when a second earner in the household does not consistently secure them economically.

In West Germany, the lowest earning life course types will primarily comprise female homemakers who combine married parenthood with extended periods of nonemployment (see table 3). State support will be moderate compared to extensive family support, mainly from male breadwinners, who are well secured by selective high decommodification. Because of high family support, their living standard will only be moderately lower compared to their cohort peers.

In reunified Germany, low-earning life courses will continue to include female homemakers, given the coexistence of familizing and defamilizing policies. However, typical homemaker life courses will be less prevalent and less female dominated than for older cohorts in West Germany. As old life course types wane, new types will emerge for younger cohorts following the policy shift. The introduction of defamilizing policies after 2007 and the reunification with the already formerly more defamilized, gender-egalitarian eastern part of the country will increase the prevalence of low-earning life courses not secured by a second earner. As a result, single parenthood combined with low-earning work lives secured by state benefits will be more common, similar to the Nordic model (see below). Defamilization policies support single parents, whereas female homemaker life courses remain secured by a male breadwinner. Overall, either state or family support will ensure only moderately lower relative living standards for low-earning young adults compared to their cohort peers (table 3).

TABLE 3
HYPOTHESES ON LIFE COURSE TYPES THAT ACCUMULATE LOW EARNINGS

	United Kingdom	West German Cohorts 1963–71	Reunified German Cohorts 1972–81	Finland	Denmark
Typical life courses	**Family complexity** and volatile work lives	**Married parenthood, many children** and extended periods out of labor force	**Single parenthood** and volatile work lives	**Single parenthood** and volatile work lives	**Single parenthood** and volatile work lives
	Married parenthood, many children and extended periods out of labor force		**Married parenthood, many children** and extended periods out of labor force	**Single childless** and volatile work lives (large group)	**Single childless** and volatile work lives (small group)
State support	Low	Medium	Medium/high	High	High
Family support	Medium	High	Medium	Low	Low
Standard of living relative to cohort	Substantially lower	Moderately lower due to family support	Moderately lower due to family or state support	Moderately lower due to state support	Moderately lower due to state support

NOTE.—Family life course types highlighted in bold because they are expected to vary most across countries.

In Denmark and Finland, universal high decommodification and strong defamilization will be associated with single childlessness or single parenthood among low earners. Unlike family complexity among low earners in the United Kingdom, we expect stable single parenthood in the Nordic countries with lower repartnering combined with employment lives cycling between benefits and low-earning work. High state support lowers economic pressure for repartnering. Family support will be low because no second earners are in the household, amounting to moderately lower relative living standards (table 3). Because of the 1990s recession in Finland, extended single childlessness will be more widespread than in Denmark. Finnish young adults with extended childlessness will also be more likely to eventually enter stable employment and form families after the recession in midadulthood.

Taken together, in reunified Germany, we expect that former life course types will coexist with new ones after the reunification and the paradigm shift in family policy. In contrast, in the Nordic comparison with similar policy constellations, we expect differences in the relative size and specific characteristics of low-earning life course types related to the recession but not entirely different types.

Women will be overrepresented in low-earning life course types in familizing policy constellations, that is, in West Germany (explicit familization), the United Kingdom (implicit familization), and reunified Germany (coexistence of familization and defamilization). In the Nordic countries the probability of experiencing low-earning life course types will be relatively gender equal (hypothesis 4).

DATA

We use prospective data from administrative registers in Denmark and Finland, as well as survey data from the British Household Panel Survey and Understanding Society (Wright 2021; ISER 2023) and the German Socio-Economic Panel (SOEP 2022; table 1). Prospective data avoid retrospective underreporting of complex life courses and well-known reliability problems in retrospective earnings reports (Manzoni et al. 2010). Life courses are coded yearly from ages 21 to 40.[3] Analyses for Germany and the United Kingdom use a survey design weight and longitudinal weights that account for attrition. We excluded individuals living in institutions throughout the observation period, such as prisons or care facilities, from the Danish and Finnish administrative data. The probability sampling of the surveys does not cover this population. In the survey data, we allowed for a maximum of six years of missing values, which we replaced with retrospective information from

[3] Most data sets contain monthly information, but key indicators on earnings and unemployment are only consistently available yearly.

family histories or by multiple imputations (see app. B). To emulate a similar longitudinal data structure, we allowed for six years of missing information in the administrative data, which can arise when individuals go abroad and return or spend up to six years in institutions. Results were robust when including or excluding individuals with missing information. We drew random samples of 2,000 individuals for Finland and Denmark to have similar sample sizes across countries. Findings were robust when using more than 10,000 cases from the Nordic register data.

The same nine family states were most prevalent in all countries, attesting to their relative family demographic similarity (Surkyn and Lesthaeghe 2004): "single childless" (SNC), "single parent" (SP), "cohabiting childless" (CNC), "cohabiting, 1 child" (C1C), "cohabiting, 2+ children" (C2C), "married childless" (MNC), "married, 1 child" (M1C), "married, 2 children" (M2C), and "married, 3+ children" (M3C). Single parents comprise resident and nonresident single parents. When individuals separate or divorce, they return to the single (parent or childless) categories. Separation appears in the order of sequence states.

The work trajectories comprise three nonemployment states and five employment states. The nonemployment states include any type of "education or training program" (EDU), "unemployed" (UN), or "out of the labor force" (OLF). We prioritize education over other concurrent states, such as side jobs. A year is coded as unemployed if a person is unemployed for at least six months consecutively or with interruptions in a given year. Unemployment is self-reported in the surveys and registered in the administrative data. Our yearly measure of unemployment filters out seasonal or transitory unemployment in school-to-work transitions, which is frequent and does not necessarily signal a disadvantage. Longer-term unemployment indicates a more comparable disadvantage across countries. We prioritized labor earnings over unemployment for years in which both were recorded. The "out of the labor force" category comprises different reasons that could not be further distinguished consistently across countries: welfare receipt, family leave, long-term sickness and disability, housework, military service, and some early retirement. In our age range, the majority is welfare receipt or family-related leaves, including parental leave, housework, and family care. We follow conventions in assigning women in the Danish and Finnish registers one year out of the labor force after the birth of a child, which cannot always reliably be identified in the registers and has become standard practice as the best approximation (Jalovaara and Fasang 2020).

The employment states are coded as quantiles of gross earnings for the total population ages 18–60 in each country in a given calendar year, including self-employment and excluding zero earnings. We thereby place young adults in comparable positions in their national gross earnings distributions. Individuals who recorded zero earnings in an entire year, even if they

are reported as employed, are classified as out of the labor force. This pertains mainly to family leaves.[4] Accumulated gross earnings were calculated as the sum of yearly earnings from ages 21 to 40.

METHODS

We first use multichannel sequence analysis to group individuals with similar family and similar work lives into a life course typology for each country separately (Pollock 2007; Gauthier et al. 2010). The multichannel sequence distance matrix enters a partitioning around medoids cluster analysis based on initial Ward clustering (Studer 2013). Life course typologies reflect core patterns with fuzzy boundaries. There is rarely one exactly correct number of groups with unambiguous assignment of individuals (Warren et al. 2015; Piccarreta and Studer 2019). We chose seven clusters as the best grouping in all countries, guided by statistical cluster cutoff criteria and substantive considerations (Aisenbrey and Fasang 2010). In all countries, multiple cluster cutoff criteria supported six and seven clusters as the best groupings with minor differences (see app. C). In all countries, the highest and lowest earning life course types that are the focus of our study remained the same when allowing for adjacent numbers of groups. We define low-earning types as life course clusters with average accumulated earnings at age 40 below 60% of the national cohort median.

The BIC and LRT for sequence comparison directly compare the highest and lowest earning life course types between countries (Liao and Fasang 2021; research question 1). Analogous to error terms when comparing nested regression models, the BIC and LRT use sequence distances from the gravity center, that is, the (hypothetical) sequence that has the lowest distance to all sequences in a cluster, to compare groups of life courses (Liao and Fasang 2021). The BIC measures the degree of difference, and the LRT the statistical significance of differences between two groups of sequences. Established thresholds to interpret BICs (Kass and Raftery 1995) suggest a difference of 0–2 as "not worth a mention," 2–6 as positive, 6–10 as strong, and >10 as very strong. These thresholds were developed for regression models and are conservative lower bounds in sequence comparisons. Sequences can vary enormously between groups, the more time points and states they comprise. Calculating the BIC and LRT requires merging national data sets based on extensive permission procedures to upload the British and German survey data into the remote systems of Statistics Finland and Statistics

[4] We replicated the analyses with net earnings for all countries except Finland because of data limitations. Results were qualitatively the same. For selected countries, replications with the Erikson/Goldthorpe/Portocarero (EGP) class scheme suggested similar findings but with smaller gender differences, as could be expected (available from authors).

Denmark. Data protection regulations made directly comparing the Finnish and Danish administrative data impossible.

State distribution plots and relative frequency (RF) sequence plots (Fasang and Liao 2014) visualize the qualitative differences between the lowest earning life course types across countries (research question 2). RF sequence plots select a set of representative sequences for each cluster and visually follow volatility in individual sequences.

Three indicators assess the primary sources of economic support and relative living standards (research question 3). The average equivalized post- to pregovernment household income ratio for each life course type by age assesses the degree of state support (see app. B on components of household income and equivalization). The ratio of average pregovernment household income to individual gross earnings for each life course type by age, including zero earnings, indicates the degree of family support. The percentage deviation of mean equivalized postgovernment household income for each life course type from the cohort median measures relative living standards (see table 3). We can only construct household incomes after age 27 for our study cohorts for Finland because of data limitations.

To assess gender inequality (research question 4), we estimate logistic regression models on women's probabilities of experiencing different life course types ranked by accumulated earnings. We consider female disadvantage strongest, where women are least likely to enter high-earning life course types and most likely to enter low-earning life course types compared to men.

Silhouette values indicate the degree of cluster coherence based on the similarity of each individual to the cluster he or she was assigned to relative to the next closest cluster (Studer 2013). We analyze the full life course typologies, including sequences with low silhouettes, in all analyses except for the regression models on women's likelihood of being in different life course types. Robustness checks excluding individuals with silhouettes below zero (15%–19% of each national sample) yielded similar results and supported the same substantive conclusions. Effect sizes are slightly lower for the entire sample than when we exclude individuals with low silhouette values and contrast "pure" types in the regression models (comparison available from authors). All sequence and cluster analyses used the R packages TraMineR, TraMineRExtras (Gabadinho, Ritschard, and Studer 2011), and WeightedCluster (Studer 2013). The sequence plots used the RColorBrewer and wesanderson packages (Neuwirth 2014; Ram and Wickham 2018).

RESULTS

We first contrast cross-national differences in the highest earning life course types to differences between low-earning types. Figure 2 shows the fanning out of average accumulated earnings by age for the highest earning life

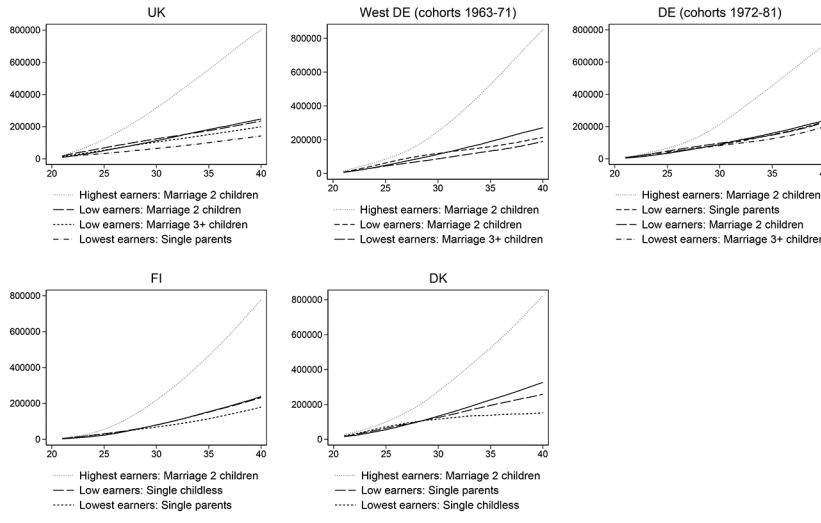

FIG. 2.—Average accumulated gross earnings by age 40 for highest earning and low-earning life course types. Solid lines indicate 60% of cohort median accumulated earnings.

course type and the low-earning life course types with below 60% of their cohort median accumulated earnings by age 40 for each country (see state distribution plots of full typologies in fig. C3). The solid lines in figure 2 indicate the 60% of the cohort median accumulated earnings threshold on the basis of which we define low-earning life course types. Low-earning life course types in all countries show sizable earnings gaps to the medium-earning groups (plots of mean accumulated earnings for all life course types available from authors). We find three low-earning groups in the United Kingdom and reunified Germany and two low-earning groups in West Germany, Finland, and Denmark. The higher number of low-earning life course types in the United Kingdom corresponds with previous research showing that life courses are more destandardized and cluster into more less coherent types in liberal welfare states (Leisering 2003). In reunified Germany, a higher number of low-earning life course types signifies the coexistence of old and new life course types after a paradigm shift in family policy.

Cross-National Similarity in Life Course Types That Accumulate the Highest Earnings

Figure 3 shows BIC values for the highest earning and low-earning life course types (values in table 4). In line with hypothesis 1, work-family life courses that accumulate the highest earnings are similar across countries. In contrast, low-earning life course types differ starkly across countries,

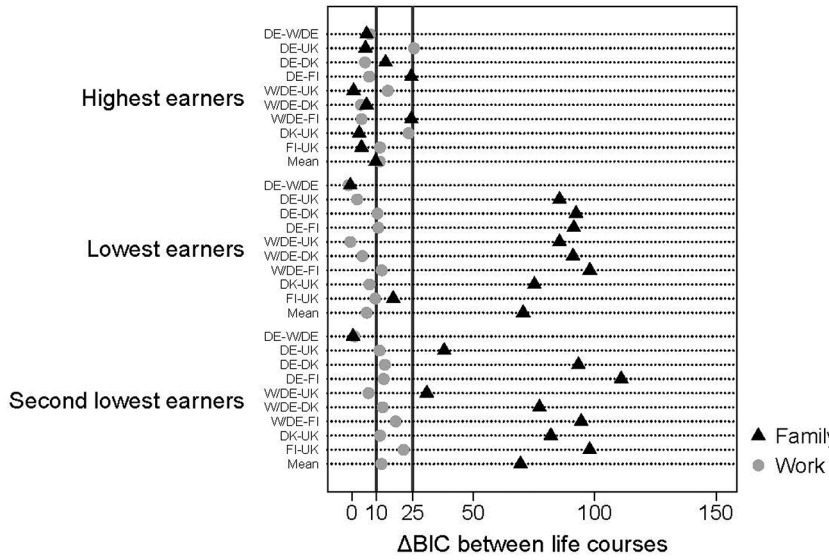

FIG. 3.—BIC difference between family and work lives of highest and lowest earning life course types. Vertical lines mark BIC differences of 10 and 25 (thresholds for strong difference). Register data of Finland and Denmark cannot directly be compared because of data protection legislation.

especially for family lives. For family lives, BIC differences in the pairwise country comparisons average 9.7 for the highest earning life course types, compared to 70.5 for the lowest earning and 69.4 for the second lowest earning life course types (table 4, fig. 3). BIC differences for the work lives of the highest earners average 11.4, compared to 6.0 for the lowest earners and 12.1 for the second lowest earning life course types. Slight deviations in BIC values should not be overinterpreted. BIC differences between the family lives of low-earning life course types are, on average, manifold higher than those of the highest earning life course types. Work lives of low-earning life course types are more similar across countries than family lives, as they tend to share experiences of extended and recurrent periods of nonemployment.

The highest earning life course types resemble each other in transitioning from higher education directly into the highest paying jobs in all countries (see RF sequence plots for highest earners in fig. C4). By age 30, they settle in stable, well-paid jobs, and their earnings accumulation strongly diverges from other life course types (fig. 2). In all countries, the highest earning work lives come with family lives of cohabitation and marriage after completing education, followed by mainly two children in a stable marriage (fig. A4). The highest earning life course type conforms to life course norms about the appropriate timing and sequencing of work and family events in young

TABLE 4
Degree of Difference in Life Course Types

	Highest Earners/ Marriage 2 Children*			Lowest Earning Clusters†			Second Lowest Earning Clusters‡		
	ΔBIC	LRT	*P*	ΔBIC	LRT	*P*	ΔBIC	LRT	*P*
Family life courses:									
DE-WDE	5.98	11.23	.001	−.712	4.59	.038	.37	5.67	.018
DE-UK	5.54	10.84	.002	85.46	90.67	.000	37.96	43.26	.000
DE-DK	13.80	19.10	.000	92.29	97.59	.000	93.27	98.57	.000
DE-FI	24.44	29.74	.000	91.40	96.70	.000	110.90	116.20	.000
WDE-UK	.63	5.92	.019	85.46	90.76	.000	30.80	36.10	.000
WDE-DK	5.95	11.25	.001	91.04	96.33	.000	77.20	82.50	.000
WDE-FI	24.44	29.74	.000	97.96	103.26	.000	94.43	99.73	.000
DK-UK	2.96	8.25	.008	75.14	80.43	.000	81.90	87.20	.000
FI-UK	3.89	9.19	.005	16.96	22.25	.000	97.91	103.21	.000
Mean	9.7			70.5			69.4		
Work life courses:									
DE-WDE	7.25	12.55	.001	−1.415	3.88	.051	.97	6.27	.012
DE-UK	25.51	20.21	.000	2.08	7.38	.009	11.33	16.63	.000
DE-DK	5.31	10.61	.002	10.42	15.72	.000	13.48	18.78	.000
DE-FI	7.06	12.36	.001	10.80	16.09	.000	13.05	18.35	.000
WDE-UK	14.68	19.98	.000	−.70	4.60	.035	6.77	12.07	.001
WDE-DK	3.61	8.91	.005	4.20	9.49	.002	12.61	17.91	.000
WDE-FI	3.90	9.20	.003	12.22	17.52	.000	17.97	23.26	.000
DK-UK	23.33	28.63	.000	7.12	12.42	.000	11.54	16.84	.000
FI-UK	11.52	16.82	.000	9.55	14.85	.000	21.25	26.55	.000
Mean	11.4			6.0			12.1		

Note.—DE = reunified Germany, DK = Denmark, FI = Finland, UK = United Kingdom, and WDE = former West Germany.

* High earners in all countries.

† UK: family complexity; DE: many children, out of labor force; WDE: many children, out of labor force; FI: single parents; DK: single childless.

‡ UK: many children, out of labor force; DE: low-earning mothers; WDE: low-earning mothers; FI: single childless; DK: single parents.

adulthood. Work-life courses of the highest earners in Denmark, (West) Germany, and Finland are particularly similar due to similarities in higher education systems. Conversely, because British young adults, on average, complete college at an earlier age, the highest earning life course type in the United Kingdom has slightly higher BIC differences than the other countries (table 4). In all countries, young adults' education is highest in the highest earning life course type, and 70%–80% are men (tables C1–C5).

Low-Earning Life Course Types: State Support, Family Support, and Relative Living Standard

We present low-earning life course types for each country and jointly consider the various interrelated outcomes hypothesized in table 3. Figure 4

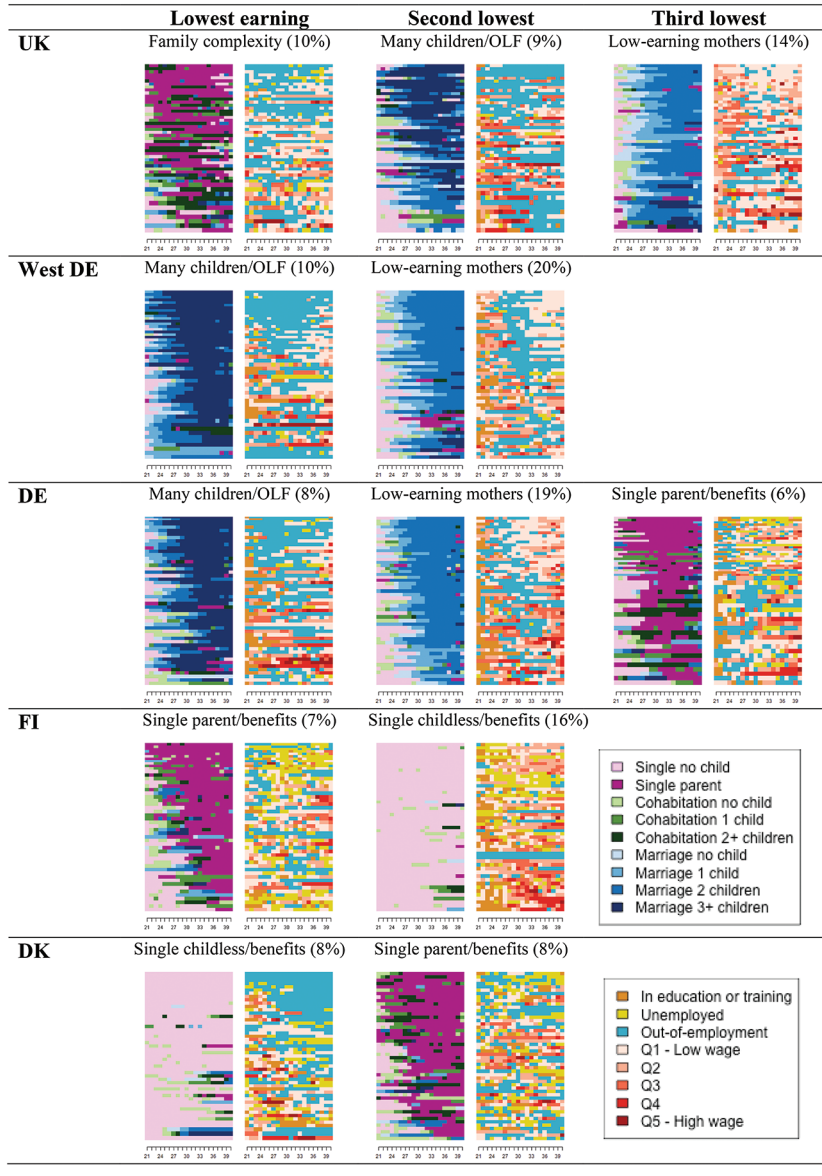

FIG. 4.—RF sequence plots of low-earning life course types

shows RF sequence plots for low-earning life course types (research question 2). Figures 5, 6, and 7 present the degree of state support, family support, and relative living standards, respectively, for low-earning life course types (research question 3). Figure 8 shows estimates from logistic regression

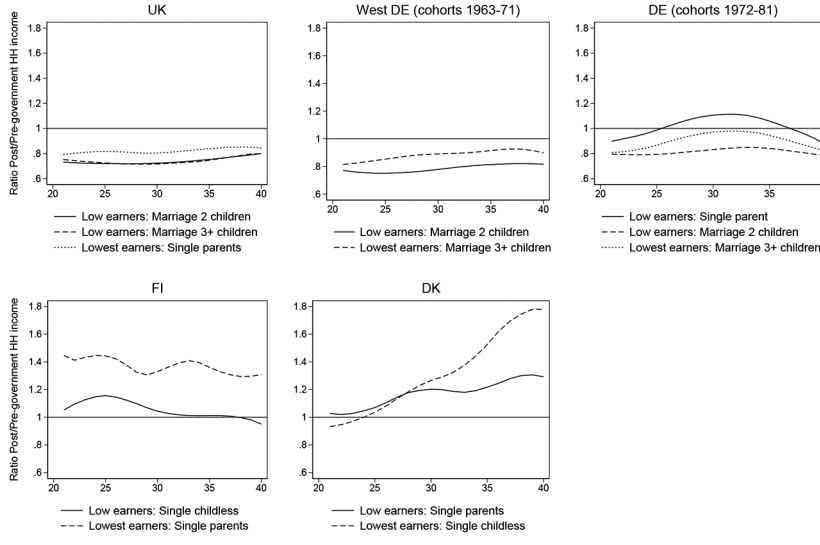

FIG. 5.—State support: ratio of post- to pregovernment household income for low-earning life course types.

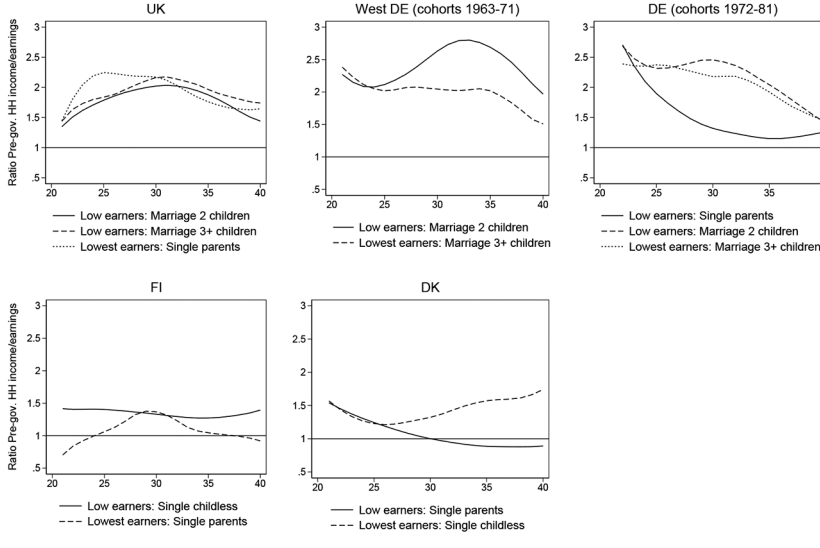

FIG. 6.—Family support: ratio of pregovernment household income to gross earnings for low-earning life course types.

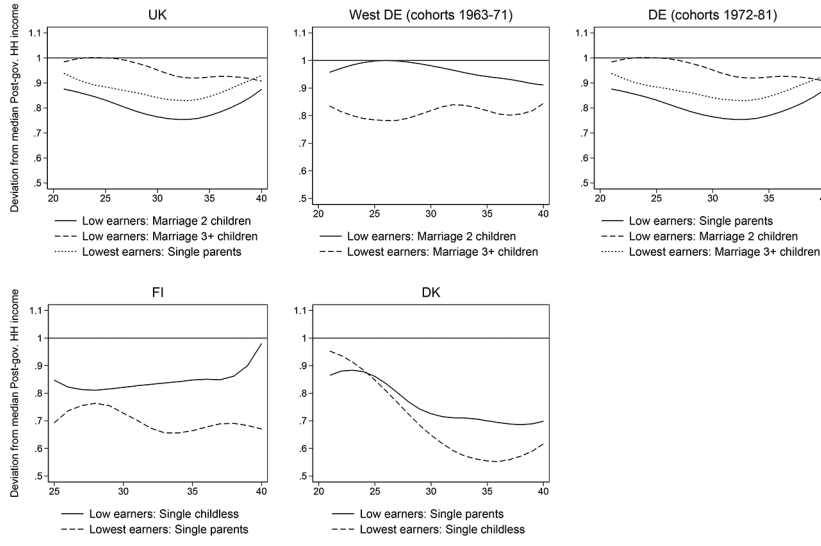

FIG. 7.—Living standard: percentage deviation from cohort median postgovernment household income for low-earning life course types.

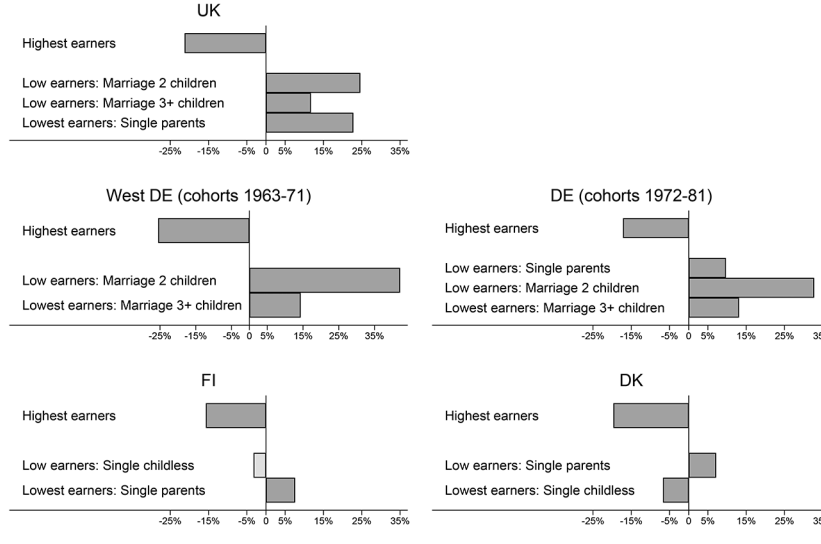

FIG. 8.—Predicted probability of women to be in highest earning and low-earning life course types (no controls, excluding silhouettes < 0).

models on women's probability of being in the highest earning life course type and the low-earning life course types in each country (research question 4; full tables and graphs for the full typologies are available from the authors).

United Kingdom.—In line with expectations (table 3), in a policy constellation of low decommodification and implicit familization, low-earning life course types receive low state support (fig. 5) and moderate family support (fig. 6) and experience substantially lower living standards relative to their cohort peers (fig. 7). Women are substantially more likely to experience all three low-earning types than men (fig. 8). The lowest earning life course type is characterized by family complexity with single parenthood, frequent repartnering, cycling in and out of low-earning work, and extended periods out of the labor force (9%; fig. 4). This family complexity group receives the highest state support in the United Kingdom. However, their absolute ratio of post- to pregovernment household income is low compared to all other countries at around .8. That is, their postgovernment household income is 80% of their pregovernment household income. Family support is more extensive than state support. Household income is twice as high as individual earnings between ages 25 and 30 and dissipates to a ratio of 1.5 after age 30 when individuals in this group increasingly separate. Relative living standards amount to only 60% of the cohort-median postgovernment household income at age 25 but recovered to 80% by age 40.

In line with expectations (table 3), the second lowest earning life course type in the United Kingdom comprises early marriage with three or more children, combined with extended periods out of the labor force (9%). The third lowest earning group similarly experiences parenthood in stable marriages. However, young adults in this group have only two children and reenter the labor market to a greater extent than their peers with more children. This group mainly comprises women who earned medium wages until they had children, then took relatively short care leaves followed by low-earning part-time work in which they remained until age 40 (figs. 4 and 8). Because state support is low, married female homemaker life course types rely on family support that peaks at age 30 when they typically have their second or third child. Relative living standards hover around 80% of the cohort-median household income for the three-child group and is higher at around 90% for the group with only two children and more robust labor market attachment, which signifies the one-and-a-half earner model in the United Kingdom.

Overall, findings corroborate implicit familization in the United Kingdom due to low decommodification and few familizing or defamilizing policies, where market mechanisms do not effectively secure young adult life courses (Leitner 2003). Low-earning individuals in stable marriages, mainly women, are secured through a second earner in the household. In contrast, the volatile family complexity group suffers from severely lower relative

living standards, particularly around age 30 when single parenting young children.

West Germany, cohorts 1963–71.—As expected for a policy constellation of selective decommodification and explicit familization, the lowest earning life course types in West Germany mainly comprise women (fig. 8) who combine two or three children in stable marriages with extended periods out of the labor force (fig. 4). Being married with three children is associated with the lowest earnings accumulation, followed by a cluster of being married with two children and more consistent reemployment into low-paid jobs following care interruptions. The two lowest earning groups in West Germany closely correspond to Britain's second and third lowest earners and signify typical female life courses in explicitly or implicitly familizing welfare states. The two married female homemaker groups are more sizable in West Germany at around 20% each compared to 9% and 14% in Britain (fig. 4).

In West Germany and Britain, women with three or more children and extended periods out of the labor force receive similar family support at a pregovernment household income of about twice their earnings and a relative living standard of around 80% of their cohort-median postgovernment household income. In contrast, the life course type with only two children and earlier reemployment enjoys higher family support in West Germany through well-secured male breadwinners in the selectively decommodifying welfare state, which lifts their relative living standard very close to their cohort's median.

Reunified Germany, cohorts 1972–81.—In line with assumptions for selective decommodification and coexisting familizing and defamilizing policies, the two typical female homemaker life course types found in West Germany continue for younger cohorts in reunified Germany (fig. 4). They are only slightly less prevalent by 1 and 2 percentage points. Women still have an elevated probability of experiencing these life course types but to a lesser extent than older cohorts in West Germany (fig. 8). As expected, after major defamilizing policy reforms, we find a new low-earning life course type of stable single parenthood with volatile work lives that cycle between unemployment, being out of the labor force, and low-paid work. Women's likelihood of experiencing the single parenthood life course type is only slightly elevated compared to single (resident and nonresident) fathers, who make up a sizable share of this group.

Compared to the British family complexity cluster, single parenthood in reunified Germany is more stable with less repartnering. Relative to the British family complexity cluster, the German single-parent group is smaller, spends more time in employment, accumulates higher earnings than the typical female homemaker life courses, is less female dominated, and receives no family support but far more state support. As a result, the relative living standard of single parents in reunified Germany is higher at around

80% of their cohort-median household income compared to 60% in the United Kingdom. The German single-parent group resembles the single-parent life course type found in the Nordic countries (see below), as expected for defamilizing work-family reconciliation policies that foster reemployment and lower parents' economic dependence on a second earner.

Finland and Denmark.—As expected for policy constellations of high decommodification and strong defamilization, the two lowest-earning life course types in Denmark and Finland comprise either single parents or single childless individuals. The single-parent groups comprise around 8% of the population in both Nordic countries. In Finland, single parenthood, on average, starts a few years later and more often through separation than being single at birth, as in Denmark. Corresponding work lives are similar in Finland and Denmark, cycling between benefits, brief periods out of the labor force, and low- to medium-earning work (fig. 4). Around age 30, before they typically separate, young adults in the single-parent cluster receive moderate family support in Finland but not in Denmark, where single parents are more frequently single parents at birth without preceding cohabiting partnerships (fig. 6). In both countries, the single-parent group receives substantial net state support (fig. 5), granting them a relative living standard of around 70% of their cohort median postgovernment household income (fig. 7).

Consistent with the severe recession during which our study cohorts entered the labor market in Finland, the relative sizes and specific expressions of the single childless groups differ within the same Nordic policy constellation, highlighting within-regime variation with economic conditions. The single childless group is twice as large in Finland (16%) as in Denmark (8%), with notably different work lives in the two countries. The smaller Danish group appears more negatively selected. After brief periods of (re)training and low-paid work, the Danish single childless group increasingly moves into enduring benefit receipt first on unemployment (indicated by yellow in fig. 4) and then out of the labor force on other types of benefits, also seen in the high and rising state support until midlife (fig. 5).

Consistent with prior research (Sobotka et al. 2011), young adults delay or forgo family formation when they cannot attain secure labor market positions. The Finnish single childless group shows extended periods of unemployment benefits after completing education, interrupted by low-paid work until they slowly stabilize into medium-paid jobs in their thirties after the recession (fig. 4). State support for the Finnish single childless group dissipates toward midlife (fig. 5). Their relative living standard recuperates from 80% of the cohort's median household income to approximating the median at age 40 (fig. 7). Conversely, in Denmark, the more negatively selected smaller group of single childless people suffers from continually deteriorating relative living standards to just below 60% of the cohort median at age 35 (fig. 7). Unlike women's elevated likelihood of experiencing the

lowest earning life course types in West Germany, the United Kingdom, and reunified Germany, the lowest earning life courses are most gender equal in Denmark and Finland (fig. 8; hypothesis 4).

DISCUSSION

The timing and sequencing of events in work and family lives are tightly linked to earnings accumulation across the life course. Life courses depend on structural opportunities that vary across countries with different policy constellations—for individuals who accumulate low earnings until midlife more so than for those who accumulate high earnings, as we showed in this study. The empirical analyses used longitudinal survey and register data that, for the first time, allowed us to map 20 years of young to midadulthood using prospective earnings and employment information in five European country cases. Multichannel sequence analysis collapsed complex multidimensional life courses into meaningful types. The BIC and LRT for sequence comparison allowed a more rigorous empirical test of degrees of difference and the statistical significance of life course differences across countries than was possible before.

Our contribution is threefold. First, we show that work-family life courses with high earnings accumulation are similar, irrespective of national welfare states. In contrast, young adults who accumulate low earnings differ widely regarding their typical family lives, the extent of state and family support they receive, and their relative living standard (see also Kangas and Rostgaard 2007; Zimmermann and Konietzka 2018).

Second, we proposed a theoretical framework based on constellations of policies relevant to the life stage of young adulthood, to hypothesize cross-national differences in low-earning life courses, their primary sources of economic support, and their relative living standards from early adulthood to midlife. Constellations of decommodifying, familizing, and defamilizing policies jointly either emphasize the market (United Kingdom), family (West Germany), family and state (reunified Germany), or state (Denmark and Finland) as the primary welfare provider for securing low-earning life courses. To link policy constellations to life courses, we used indicators that directly assess state support, family support, and relative living standards among low-earning life courses. Our comparative design contrasted a split country case before and after Germany's reunification and major defamilizing reforms. In addition, our analyses reveal differences in low-earning life courses within the social democratic welfare model, with and without a recession during labor market entry. We thereby highlight life course variation between and within welfare states. To place countries in the policy space of decommodification, familization, and defamilization in young adulthood, we relied on high-quality comparative policy data from the SPIN databases (Nelson et al. 2020).

Third, we show that women predominantly populate the lowest earning life course types in all countries characterized by explicit familization (West Germany, reunified Germany) or implicit familization (United Kingdom). These lowest earning life course types include married mothers with extended periods out of the labor force who rely on substantial family support to secure a relative living standard that is only moderately below their cohort median. All countries with extensive defamilization (Denmark, Finland, and reunified Germany) comprise a stable single-parent group that receives extensive state support.

The family complexity group in the implicitly familizing policy constellation of the United Kingdom differs notably from the single-parent groups in contexts of high defamilization (Denmark, Finland), even if defamilization coexists with familizing policies (reunified Germany). In defamilizing policy constellations, single parents accumulate higher earnings, spend more years in employment, receive substantial state support, and enjoy only moderately lower living standards than their cohort peers. Selective, high decommodification of male breadwinners in West Germany reinforces explicit familization, which jointly suppresses single parenthood and separation among low earners to the extent that it does not occur as a prevalent typical life course experience. The suppression of separation and divorce is consistent with predictions for the conservative life course mobility regime (DiPrete 2002).

Policy constellations of universal high decommodification and strong defamilization (Denmark and Finland) further include a low-earning single childless group that relies on substantial net state support. Consistent with delayed family formation and protracted labor market entry during recessions, this group is more sizable in Finland than in Denmark. In Denmark and Finland, typical low-earning life courses are relatively gender equal. In contrast, our findings highlight the feminization of low earnings accumulation in familizing welfare states. Consistent with the gender welfare state paradox (Mandel and Semyonov 2006), women have between 15% and 20% lower chances of entering the highest earning life course type in all countries, including the ostensibly more egalitarian Nordic countries.

More generally, our comparative design corroborates a higher number of low-earning life course types in liberal welfare states with passive life course policies that leave the formation of life courses to market forces (Leisering 2003). Findings further support a higher number of life course types after policy shifts, such as the German reunification and defamilizing family policy reforms in the 2000s. More low-earning life course types are likely as old types dissipate and new types emerge in changed policy contexts. In contrast, the within-Nordic comparison suggests that economic recessions instead alter the relative size and exact expression of low-earning life course types but do not lead to entirely new types. Institutional regulatory frameworks

with specific policy constellations shape the number of low-earning life course types, whereas economic cycles seem to alter the relative size of life course types.

Several implications arise from our findings. First, women are most concentrated in low-earning life course types in countries where the welfare state least supports them, such as Germany and the United Kingdom. Given limited public provision, West Germany and the United Kingdom have strong legacies of outsourcing unpaid care work to female homemakers. In contrast, the Nordic countries collectivize care in state-funded provision in which women are independently employed and accumulate moderate earnings. Younger cohorts of women in reunified Germany had more access to paid parental leave and public child care, similar to the Nordic countries, and gender inequality in the low-earning life course types indeed decreased compared to older cohorts in West Germany.

Second, the life course typologies inform the intergenerational reproduction of social inequality by showing differential fertility attached to typical trajectories of status attainment (Hillmert 2015; Lawrence and Breen 2016). In Germany and the United Kingdom, low-earning life course types have above-average fertility. The opposite is the case in the Nordic countries. Consequently, the next generation will have, on average, more advantaged and more equal starting conditions in Finland and Denmark, compared to Germany and the United Kingdom. As a result, early family support and education policies should target a larger share of children from socioeconomically disadvantaged backgrounds in Germany and the United Kingdom. Recent policy changes in the United Kingdom do the opposite by limiting the generosity of benefits and increasing the poverty risk for large families (Stewart et al. 2022).

Third, single childless adults with precarious employment are an often-overlooked risk group in the Nordic countries that does not benefit from policies targeted at families with children. Universal decommodification mitigates economic hardship for single childless young adults in absolute terms, but their relative living standards are notably lower compared to their cohort peers. Low-earning single childlessness might be part of the puzzle of recently declining fertility in the Nordic countries despite their extensive gender-egalitarian work-family reconciliation policies (Jalovaara et al. 2019). The Nordic model served as a blueprint to raise female employment and increase fertility in other countries, for example, in the German Elterngeld reform in 2007 (Daly and Ferragina 2018), but increasingly seems to fail to hold fertility above replacement levels also in the Nordic countries.

Our findings come with several limitations. The data did not permit considering familization and defamilization through young adults' parents, as we lacked comparable indicators of parental support and care needs. In addition, individuals with nonnormative life courses of single childlessness

and precarious work lives might be more likely to drop out of surveys. A comparison with German and British birth registers is reassuring that we cover single childlessness in our cohorts reasonably well in the survey data (available from authors). Single childless groups appear in our analyses in all countries coupled with medium- or high-earning work lives. The coupling of a sizable group of single childless people with precarious work careers and extended periods out of the labor force is distinct for the Nordic countries and consistent with them being less dependent on a second earner because of universal high decommodification and defamilization.

Further, nonresident single fathers are likely to be underrepresented, particularly in the survey data. Our single-parent groups should, therefore, be considered lower bounds in terms of size and their association with precarious work lives. The yearly data might miss relevant life course volatility on a shorter time granularity, which is more relevant for the rhythm of work lives than family lives, particularly in liberal welfare states. Our estimates of employment volatility are conservative, focusing on longer-term unemployment, which signifies a similar disadvantage in all countries.

Finally, our analysis and small-*N* country comparison cannot causally link policies to life course outcomes statistically. We follow a relatively narrow range of birth cohorts as they age through specific policy constellations over two decades of the life course. To strengthen confidence in our interpretation of the link between policy constellations and life courses, we split the German country case around the reunification and major policy reforms and present the within-Nordic comparison. In addition, we used indicators on earnings accumulation and state and family support across early adulthood that directly link to core components of our theoretical framework on state, market, and family emphasis in welfare provision. In future research, the sequence analysis multistate model might be promising to link single policy changes to life course trajectories (Studer, Struffolino, and Fasang 2018) but would require data covering a more comprehensive cohort range, focusing on shorter life course subsequences and only one life dimension.

Future research should explore how life course typologies correlate with social and political outcomes, including health and political behavior, and specify the mechanisms that connect them. Young adults with similar work and family lives share biographical experiences, opportunities, and, to some extent, time use patterns (Wright and Shin 1988). If similar biographical experiences go along with sharing other environments, they could form similar identities and exposure to similar lifestyles and attitudes. Life course types with fuzzy boundaries capture both group-based and gradational stratification. To assess associations between life course types and outcomes, it is promising to first focus on firm representatives of a given type. Weak representatives reflect "outlier life courses" that are interesting in their own right. Outlier life courses might be associated with unstable attitudes

that could delay committed life choices typically made in young adulthood. Our study compared the highest and lowest earning life course types. The middle classes merit an in-depth investigation. Country-specific analyses could separate subgroups, for example, for men and women or racial groups, to assess intersectional inequalities in life courses and earnings accumulation (Fasang and Aisenbrey 2022). Comparing life courses and economic rewards across cohorts instead of countries is one avenue of assessing social change (Gruijters, Van Winkle, and Fasang 2023).

We conclude that high-earning young adults, disproportionately men, share a remarkably uniform life experience across countries that combines rapid earnings accumulation well into midlife with stable married parenthood, irrespective of national policy constellations. In contrast, typical low-earning life courses, disproportionately experienced by women, vary substantially across countries and continue to strongly depend on constellations of decommodifying, familizing, and defamilizing policies in national welfare states.

Our study could be interpreted along the lines of a cross-national Anna Karenina principle in young adult life courses based on Tolstoy's notion that "all happy families are alike; each unhappy family is unhappy in its own way" (Tolstoy [1878] 2003). Across a range of disciplines (Diamond 1997; Bornmann and Marx 2012; Zaneveld, McMinds, and Thurber 2017), the Anna Karenina principle denotes that a comprehensive set of conditions has to be met for success, whereas different versions of "not succeeding" arise if any one of the conditions is not met. Our study suggests that welfare policies do not matter much as a condition for the most economically successful individual life courses. However, on a societal level, different welfare systems struggle in different ways to economically secure their most vulnerable populations.

APPENDIX A

Policy Indicators on Decommodification, Defamilization, and Familization

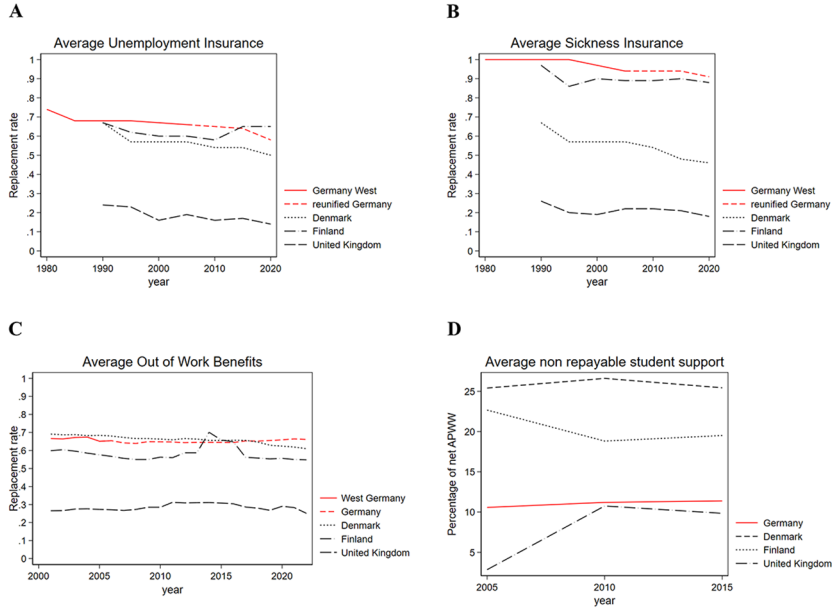

FIG. A1.—Policy indicators on the degree of decommodification. All indicators are taken from the SPIN database: https://www.su.se/social-policy-indicators-database/. *A*, Replacement rate of average production worker wage for 1 and 26 week unemployment insurance for single and family worker taken from the Social Insurance Entitlement Database (SIED). *B*, Replacement rate of average production worker wage for 1 and 26 week sickness insurance for single and family worker taken from SIED. *C*, Replacement rate of average production worker wage for combined out-of-work benefits including unemployment benefits, social assistance, and housing benefits taken from the Out of Work Benefits Database. *D*, Average nonrepayable student support as percentage of net average production worker wage averaged across three model families taken from the Student Support and Fees Dataset.

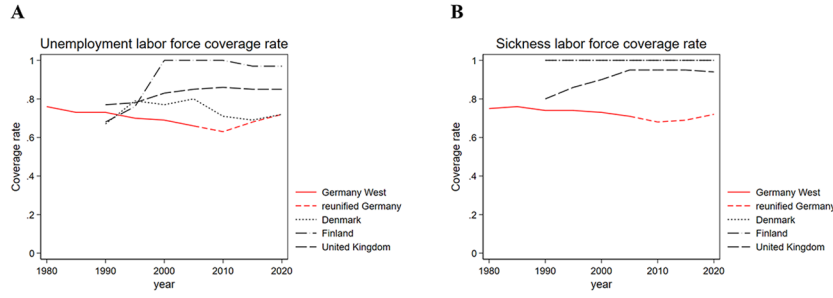

FIG. A2.—Policy indicators on the selectivity of decommodification. All indicators taken from the SPIN database: https://www.su.se/social-policy-indicators-database/. Labor force coverage rate of unemployment insurance (*A*) and sickness insurance (*B*) from the Social Insurance Entitlement Database. For Sickness insurance, Denmark and Finland are plotted on top of each other at 100%.

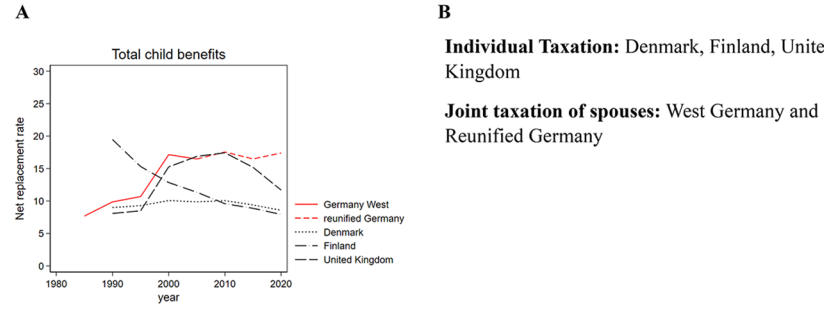

FIG. A3.—Policy indicators on familization. All indicators taken from the SPIN database: https://www.su.se/social-policy-indicators-database/. *A*, Net replacement rate of average production worker wage of all child benefits taken from the Child Benefits Database, which calculates benefit levels for a two-parent model family with two children ages 2 and 7. Only one of the spouses is assumed to work full time, either earning an average production workers' wage or earning half an average standard workers' wage. The other spouse is defined as being out of the labor force. *B*, See Leitner (2003) and Lohmann and Zagel (2016).

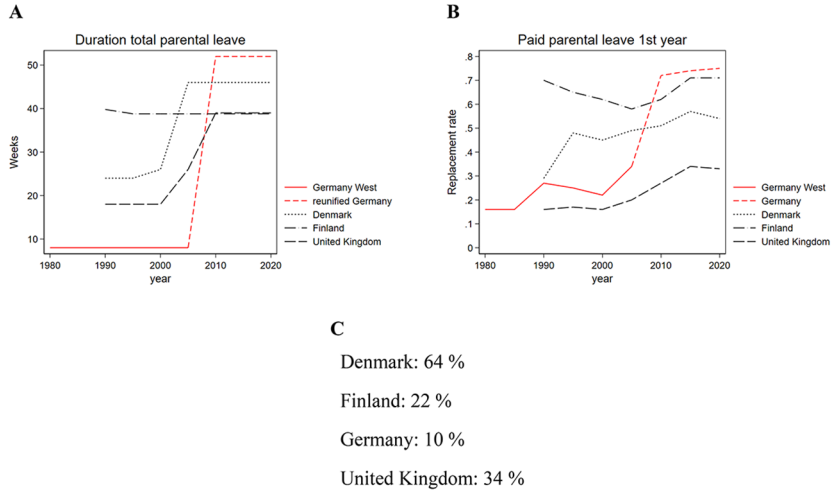

FIG. A4.—Policy indicators on familization. All indicators taken from the SPIN database: https://www.su.se/social-policy-indicators-database/. *A*, Duration of total paid parental leave for mothers and fathers taken from the Parental Leave Benefits Dataset (PLB). *B*, Net replacement rate of average production worker wage for paid parental leave in the child's first year taken from the PLB. Benefit levels are calculated for a model family with two earners and two children ages 0 and 5, where both parents have been engaged in paid work two years before the birth of the second child. PLB data assume that both parents have earned an average production workers wage, in order to capture the levels of earnings-related parental insurance that are central for gender egalitarian outcomes. Taxes are estimated on the basis of income tax legislation. *C*, Percentage of children under age 3 in formal child care in the 1990s taken from Leitner (2003, p. 361).

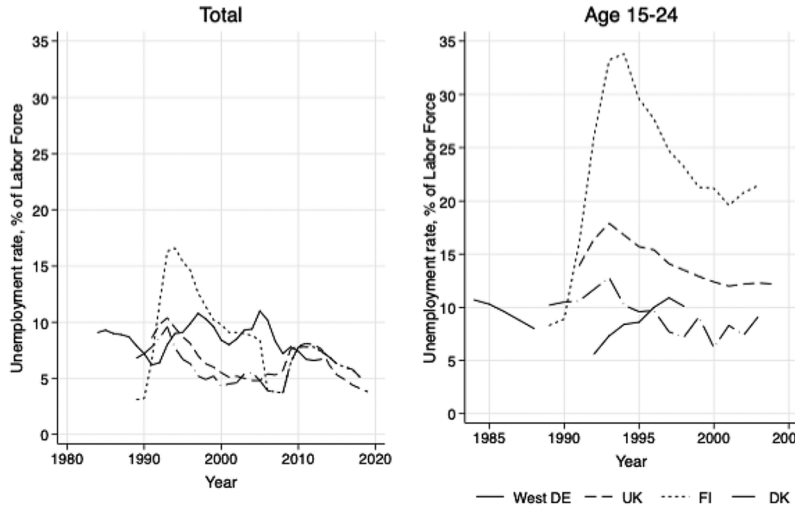

FIG. A5.—Unemployment and youth unemployment. Source: OECD employment statistics, German Statistical Office.

APPENDIX B

Data Appendix

Missing Values and Imputation in the Survey Data for the United Kingdom and Germany

For Germany and the United Kingdom, missing prospective family information was filled with retrospective family histories. We allowed for a maximum of five years of missing values in the survey data, which resulted in missing values on 8% of person-years in work sequences and 3% of person-years in family sequences in Germany. In Germany gross earnings were missing for 8% of person-years, and pre- and postgovernment household income both for 7% of person-years. In the United Kingdom, 13% and 4% of person-years had missing values in work and family sequences, respectively. In the United Kingdom gross earnings were missing for 14% of person-years, pregovernment household income was missing for 15% of person-years, and postgovernment household income was missing for 22% of person-years.

We compared three different strategies for dealing with missing values: (1) adding a missing value state in the sequences, (2) a simple multiple imputation model, and (3) a more complex age-sensitive multiple imputation model. Results were very similar, always suggesting six or seven clusters as the best groupings with small changes between these two options. Specifically, in all three scenarios, the clusters with the highest and lowest cumulative earnings

that are the main focus of our analysis remained the same. There was some change in the middle of the life course distribution (see an overview of typologies with different imputation scenarios in fig. B1).

Specifically, in scenario 1, "missing value state," we defined a missing value state coded in dark gray in the sequences. Scenario 2, "simple imputation," uses multiple imputation based on gender, education, work and family states, birth cohort, and earnings at age 40. Scenario 3, "age-specific imputation," uses multiple imputation with the variables in scenario 2 additionally including number of children and, for the United Kingdom, a 16 category region code that was not necessary for Germany, which is already restricted to only West German regions. We further include earnings at all ages, age, and age^2 as variables that should capture the age-specific occurrence of different family states in the observed data during the imputation. We used the imputed work and family states to impute earnings and added all of these to impute pre- and postgovernment household incomes and again maintain the age and age^2 variables for age-sensitive imputation. Imputed values for earnings and pre- and postgovernment household incomes from scenario 3 were very similar to imputation based on the Little and Su method (Fisher et al. 2019) for longitudinal imputation, further strengthening confidence that our imputation approach is reasonable or at least a good approximation based on the information available.

The main differences for the seven group scenario are that scenarios 1 and 2 split two groups of individuals who remain single childless for extended periods of time and delayed family formation into a high and medium earning group (fig. B1). In contrast, the more sophisticated age-sensitive imputation in scenario 3 splits two groups of (*a*) single childless delayed family formation with medium to high earnings and (*b*) a married childless group with medium earnings. The main differences in the imputation scenarios thereby refer to less discriminant groups of medium earners who are childless for extended periods of time, either single or married, and delay family formation. These groups are particularly heterogeneous in terms of low average silhouette width (see fig. C2 on silhouettes by cluster). In contrast, the top and the bottom of the life course typology distribution remain remarkably similar and have higher average silhouette width, thus representing more coherent groups.

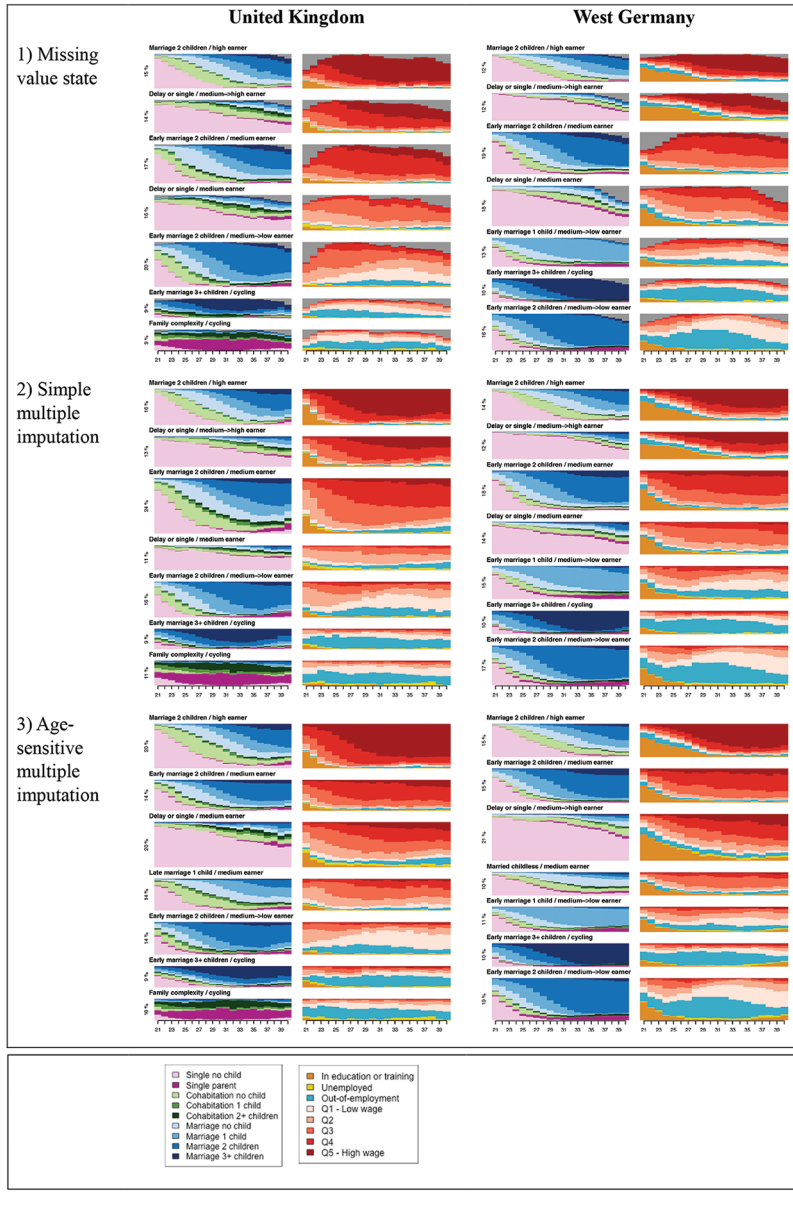

FIG. B1.—Life course typology under three scenarios for dealing with missing values in the United Kingdom and Germany.

Components of Household Income

Pregovernment Household Income (SOEP).—Combined income before taxes and government transfers of all individuals in the household 16 years of age and older. This variable is the sum of total family income from labor earnings, asset flows, private retirement income, and private transfers. Labor earnings include wages and salary from all employment including training, self-employment income, and bonuses, overtime, and profit sharing. Asset flows include income from interest, dividends, and rent. Private transfers include payments from individuals outside of the household including alimony and child support payments.

Postgovernment Household Income (SOEP).—This variable represents the combined income after taxes and government transfers in the previous year of all individuals in the household. It is the sum of total family income from labor earnings, asset flows, private retirement income, private transfers, public transfers, and social security pensions minus total family taxes. Labor earnings include wages and salary from all employment including training, self-employment income, bonuses, overtime, and profit sharing. Asset flows include income from interest, dividends, and rent. Private transfers include payments from individuals outside of the household including alimony and child support payments. Public transfers include housing allowances, child benefits, subsistence assistance from the Social Welfare Authority, special circumstances benefits from the Social Welfare Authority, government student assistance, maternity benefits, unemployment benefits, unemployment assistance, and unemployment subsistence allowance. Social security pensions include payments from old age, disability, and widowhood pension schemes. The tax burdens provided here are based on updated and modified tax calculation routines developed by Schwarze. The tax burden includes income taxes and payroll taxes (health, unemployment, retirement insurance, and nursing home insurance taxes). These routines are described in Schwarze (1995).

APPENDIX C

Methods Appendix

Cluster Cutoff Criteria and Silhouette Widths

There are several cluster cutoff criteria with different strengths and weaknesses. If several criteria have a local maximum for a certain number of clusters, this is taken as support for a meaningful cluster structure (Studer 2013). In the United Kingdom, West Germany, and reunified Germany, cluster cutoff criteria clearly indicate seven clusters as the best grouping with a local maximum on several cluster cutoff criteria (fig. C1). Finland

shows about equally strong support for six or seven clusters, and Denmark shows the strongest support for six groups. In Denmark, moving from six to seven groups splits a larger group of single childless individuals with heterogeneous work trajectories into a higher and lower earning group of single childless people who are substantively important and therefore retained. In Finland, the high and low earning single childless group was only separated in an eight-cluster grouping, whereas seven clusters separated cohabitants with and without children who were similar in their work trajectories (available from authors). We therefore retain the cohabitants as one group but split the single childless group with widely diverging economic trajectories into seven clusters also in Finland, to augment the comparative interpretation of the seven most salient life course types in each country. Specifying the number of groups is rarely a clear-cut decision in sequence analysis (Piccarreta and Studer 2019). More generally, a higher number of groups could indicate a weaker association between work and family lives. If the same type of family lives co-occurs with many different work lives, these will appear as separate groups. Absolute values of the cluster cutoff criteria were relatively low, which is typical of multichannel sequence analysis in life course applications with relatively few time points of observation (20 years on a yearly basis in our case). Sequence data are far more complex than data used in the original cluster analysis applications in which the cluster cutoff criteria were developed (Studer 2013). The sequences are clustered using many characteristics and sorted into the group that best reflects their overall life experience. This might be marriage for 15 years, even if it is followed by separation.

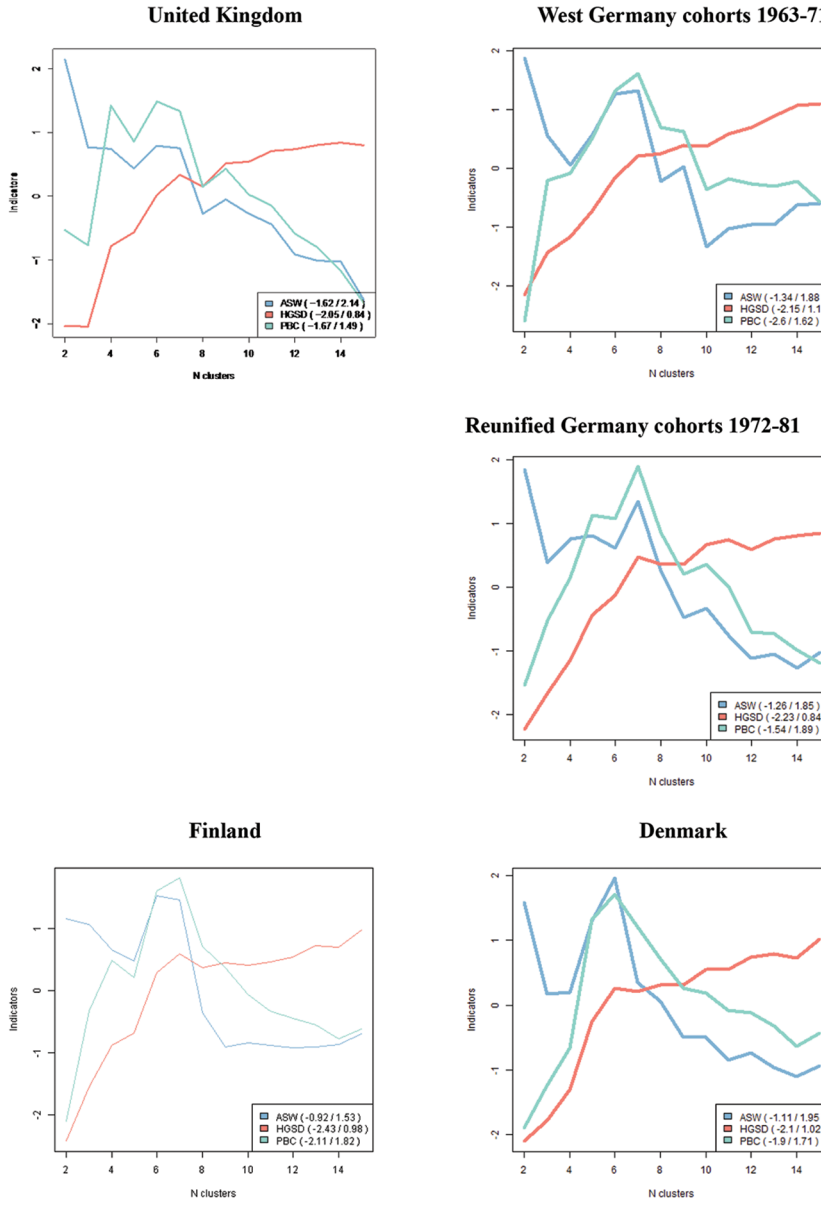

FIG. C1.—Cluster quality criteria for different cluster solutions. ASW = average silhouette width, HGSD = Hubert's gamma Sommer's D, and PBC = point biserial correlation.

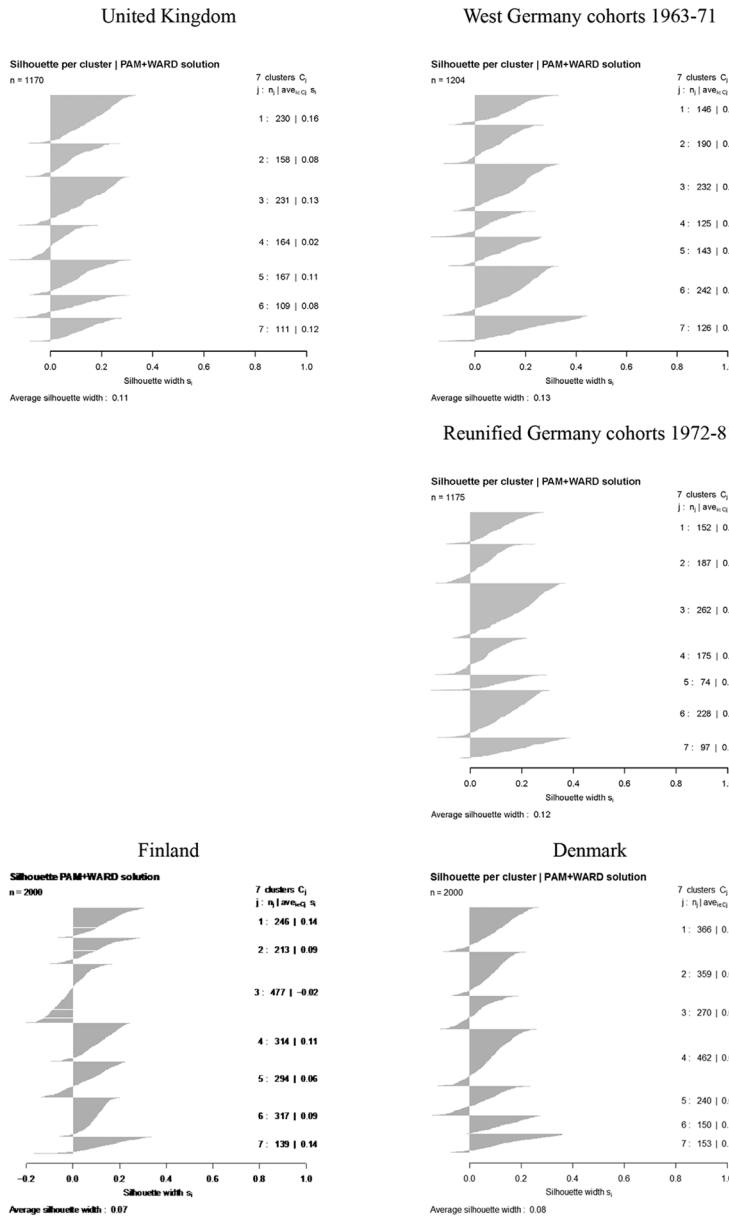

FIG. C2.—Individual silhouette values by cluster. Groups sorted from highest earning (1) to lowest earning (7) in each country.

Descriptive Tables

TABLE C1
DESCRIPTIVE STATISTICS UNITED KINGDOM, PERCENTAGES WEIGHTED

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Total
N	111	109	167	164	231	158	230	1,170
Unweighted (%)	9	9	14	14	20	14	20	100
Weighted (%)	7	7	14	13	24	14	22	100
Gender (%):								
Female	93	88	91	60	39	48	35	57
Migrant (%):								
First and second generation	8	17	12	6	13	7	18	12
Education (%):								
Low	26	24	20	7	10	6	2	11
Medium	64	52	69	72	60	54	45	58
High	9	23	11	21	29	38	53	30
Parental education (%):								
Degree qualification	9	13	10	9	17	13	23	15
Mean at age 40:								
Gross earnings	8,193	8,894	12,393	22,314	22,674	31,330	52,762	25,582
Cumulative earnings	126,009	178,255	214,549	380,097	401,054	505,167	780,204	413,237
HH income (pre)	17,533	20,103	22,972	28,715	29,667	29,457	43,339	29,195
HH income (post)	14,825	16,105	19,123	22,188	23,831	22,293	31,992	22,751
Complexity work (%)	9.4	9.1	10.2	10.8	10.6	10.2	8.2	9.8
Complexity family (%)	7.5	7.5	7.2	7.4	5.8	7.4	7.7	7.1

NOTE.—Cluster 1, family complexity; 2, early marriage three or more children; 3, early marriage two children; 4, late marriage one child; 5, delay or single/medium earner; 6, early marriage two children/medium earner; 7, marriage two children/high earner. Education: low, International Standard Classification of Education (ISCED) 1–2; medium, ISCED 3–5; high, ISCED 6. HH = household.

TABLE C2
DESCRIPTIVE STATISTICS WEST GERMANY COHORTS 1963–71, PERCENTAGES WEIGHTED

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Total
N	126	242	143	125	232	190	146	1,204
Unweighted (%)	10	20	12	10	19	15	12	100
Weighted (%)	10	20	12	10	19	15	12	100
Gender (%):								
Female	81	92	76	42	35	8	13	50
Migrant (%):								
Not German born	48	23	20	10	12	29	9	21
Education (%):								
Low	44	15	15	6	4	14	0	13
Medium	42	68	69	65	58	58	25	57
High	14	17	17	29	37	28	75	30
Parental education (%):								
Postsecondary	3	4	1	10	11	4	17	7
Mean at age 40:								
Gross earnings	13,976	12,038	19,617	28,172	35,966	37,351	62,758	29,572
Cumulative earnings	190,075	214,289	342,133	491,267	528,255	629,848	850,245	458,889
HH income (pre)	21,577	24,838	30,965	33,637	38,215	26,907	49,146	31,990
HH income (post)	19,271	20,426	24,052	25,529	27,894	21,302	34,303	24,526
Complexity work (%)	7.5	9.4	9.9	10.4	10.2	10.5	8.8	9.6
Complexity family (%)	5.4	6.4	5.3	6.3	4.1	6.6	6.9	5.8

NOTE.—Cluster 1, early marriage three or more children; 2, early marriage two children; 3, early marriage one child; 4, childless marriage/medium earner; 5, delay or single/upward mobility; 6, early marriage two children/medium earner; 7, marriage two children/high earner. Education: low, International Standard Classification of Education (ISCED) 1–2; medium, ISCED 3–5; high, ISCED 6. HH = household.

TABLE C3

DESCRIPTIVE STATISTICS REUNIFIED GERMANY COHORTS 1972–81, PERCENTAGES WEIGHTED

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Total
N	97	228	74	175	262	187	152	1,175
Unweighted (%)	8	19	6	15	22	16	13	100
Weighted (%)	8	19	6	16	23	15	13	100
Gender (%):								
Female	86	88	87	67	346	29	30	58
Migrant (%):								
Not German born	18	13	4	6	5	10	3	8.3
Education (%):								
Low	20	8	17	8	5	4	2	7
Medium	59	66	58	63	53	57	18	54
High	21	26	25	30	42	39	78	38
Parental education (%):								
Postsecondary	6	21	17	12	20	18	35	17
Mean at age 40:								
Gross earnings	18,621	19,829	19,204	25,383	32,035	38,769	46,592	29,715
Cumulative earnings	199,157	226,820	231,361	400,032	442,734	590,245	704,999	418,461
HH income (pre)	27,581	28,633	25,844	34,437	35,005	36,009	48,073	34,344
HH income (post)	22,553	22,289	21,863	25,433	26,295	26,336	33,409	25,728
Complexity work (%)	9.7	8.3	10.3	10.3	10.2	10.7	8.7	9.8
Complexity family (%)	6.8	6.3	6.5	6.5	4.1	7.2	7.1	6.1

NOTE.—Cluster 1, early marriage three or more children; 2, early marriage two children; 3, single parenthood; 4, early marriage one child; 5, delay or single/medium earner; 6, early marriage two children/medium earner; 7, late marriage two children/high earner. Education: low, International Standard Classification of Education (ISCED) 1–2; medium, ISCED 3–5; high, ISCED 6. HH = household.

TABLE C4
DESCRIPTIVE STATISTICS DENMARK

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Total
N	153	150	240	462	270	359	366	2,000
Unweighted (%)	8	8	12	23	14	18	18	100
Gender (%):								
Female	31	69	70	64	56	38	27	50
Migrant (%):								
First and second generation	12.5	10.8	11.8	5.2	3.3	4.7	2.2	6.1
Education (%):								
Low	4.2	11.3	11.2	12.3	15.8	42.0	42.1	15.1
Medium	54.9	56.6	71.5	80.9	81.2	69.3	58.5	69.9
High	3.0	1.4	12.7	6.8	7.7	19.4	37.3	14.9
Parental education (%):								
Postsecondary	69.7	67.4	77.6	73.5	75.7	81.8	87.7	77.8
Mean at age 40:								
Gross earnings	5,422	16,602	32,692	40,348	42,551	43,844	75,937	42,464
Cumulative earnings	188,780	304,865	465,738	635,264	667,546	662,136	933,409	620,229
HH income (pre)	10,349	16,283	28,952	39,692	39,215	42,973	58,157	38,342
HH income (post)	17,485	19,724	24,596	28,589	28,898	31,955	38,647	29,097
Complexity work (%)	8.3	11.4	11.6	11.1	11.2	10.4	9.2	10.5
Complexity family (%)	4.3	7.0	7.8	7.2	7.7	4.9	7.8	6.8

NOTE.—Cluster 1, single childless; 2, single parent; 3, marriage two or more children; 4, marriage two children/medium earner; 5, cohabitation two or more children/medium earner; 6, delay or single/medium earner; 7, marriage two children/high earner. Education: low, International Standard Classification of Education (ISCED) 1–2; medium, ISCED 3–5; high, ISCED 6. HH = household.

TABLE C5
DESCRIPTIVE STATISTICS FINLAND

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Total
N	139	317	294	314	477	213	246	2,000
Unweighted (%)	7	16	15	16	24	11	12	100
Gender (%):								
Female	71	44	69	67	44	30	20	49
Migrant (%):								
Born outside Finland	8	2	4	4	2	3	1	3
Education (%):								
Low	30	15	8	4	10	8	2	10
Medium	58	63	62	67	64	43	32	57
High	12	22	30	30	26	49	66	33
Parental education (%):*								
Postsecondary	60	75	74	72	71	76	82	74
Mean at age 40:								
Gross earnings†	13,709	17,114	25,955	27,000	31,948	43,071	64,625	31,875
Cumulative earnings†	163,244	219,348	310,006	331,765	430,082	590,007	760,253	402,691
HH income (pre)	12,594	26,082	26,399	30,147	33,663	43,532	52,048	32,667
HH income (post)	16,404	24,421	22,742	24,701	27,542	32,556	36,867	26,790
Complexity work (%)	10.9	10	11.2	11.2	10.4	8.9	8.7	10.2
Complexity family (%)	6.6	4	7.2	6.9	7.1	4.1	7.3	6.3

NOTE.—Cluster 1, single parent; 2, single childless; 3, early marriage three or more children/medium → low earner; 4, early marriage two children/medium earner; 5, cohabitation/medium earner; 6, delay or single/medium → high earner; 7, marriage two children/high earner. Education: low, International Standard Classification of Education (ISCED) 1–2; medium, ISCED 3–5; high, ISCED 6. HH = household.

* Because of missing values, $N = 1{,}978$ for clusters 133, 315, 288, 310, 475, 211, and 246.

† Because of some missingness in household and income information, $N = 1{,}994$ for clusters 139, 316, 294, 314, 476, 210, and 245.

Full Enlarged State Distribution and Relative Frequency Sequence Plots

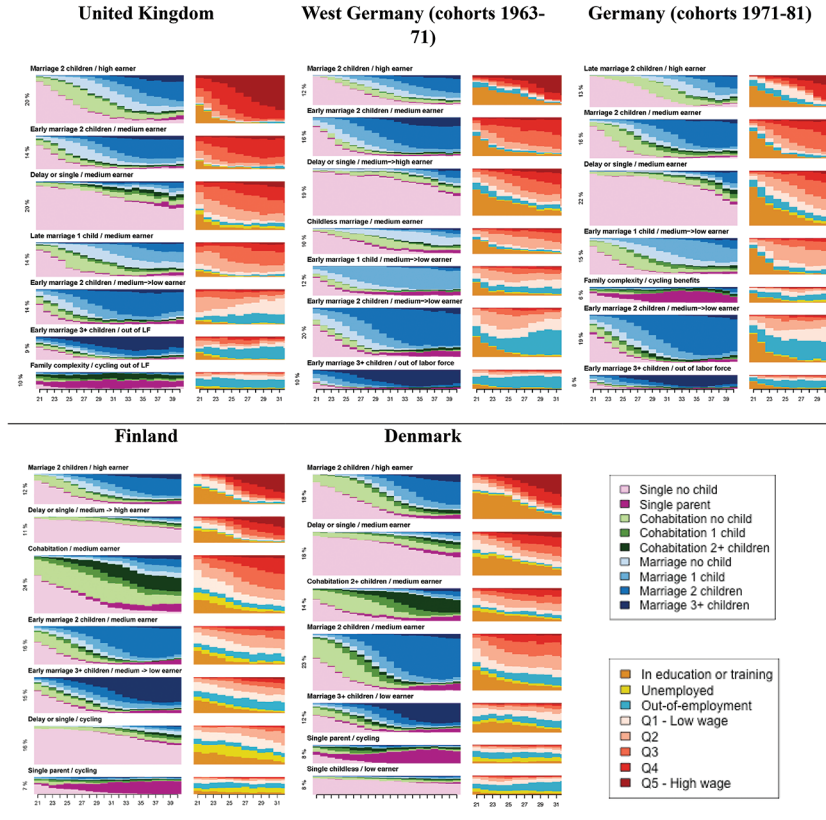

FIG. C3.—State distribution plots of seven life course types ranked by accumulated earnings.

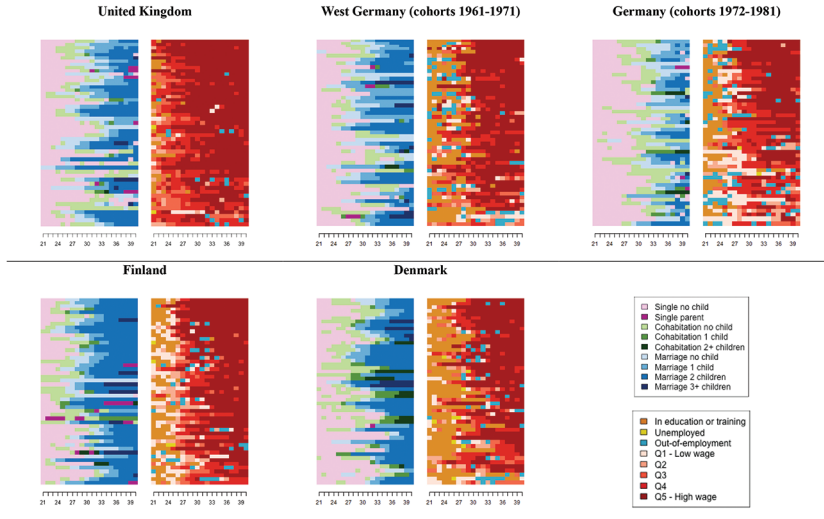

FIG. C4.—RF sequence plots: highest earning life course types. Sequences sorted by silhouette width, with sequences that most strongly represent the cluster at the top. Each sorted group is divided into 50 equal-sized frequency groups, for which the medoid sequences (lowest sum of distances to all other sequences in the frequency group) are selected as representatives.

REFERENCES

Abrahamson, Peter. 2010. "European Welfare States beyond Neoliberalism: Toward the Social Investment State." *Development and Society* 39 (1): 61–95.

Acker, Joan. 1973. "Women and Social Stratification: A Case of Intellectual Sexism." *American Journal of Sociology* 78 (4): 936–45.

Aisenbrey, Silke, Marie Evertsson, and Daniela Grunow. 2009. "Is There a Career Penalty for Mothers' Time Out? A Comparison of Germany, Sweden and the United States." *Social Forces* 88 (December): 573–606.

Aisenbrey, Silke, and Anette E. Fasang. 2010. "New Life for Old Ideas: The 'Second Wave' of Sequence Analysis Bringing the 'Course' Back into the Life Course." *Sociological Methods and Research* 38 (3): 420–62.

Aisenbrey, Silke, and Anette E. Fasang. 2017. "The Interplay of Work and Family Trajectories over the Life Course: Germany and the United States in Comparison." *American Journal of Sociology* 122 (5): 1448–84.

Beaujouan, Eva, and Caroline Berghammer. 2019. "The Gap between Lifetime Fertility Intentions and Completed Fertility in Europe and the United States: A Cohort Approach." *Population Research and Policy Review* 38 (4): 507–35.

Bernardi, Laura, Johannes Huinink, and Richard A. Settersten. 2019. "The Life Course Cube: A Tool for Studying Lives." *Advances in Life Course Research* 41:100258.

Bloome, Deirdre, and Jane Furey. 2020. "Lifetime Inequality: Income and Occupational Differences and Dynamics in the US." *Research in Social Stratification and Mobility* 70:100470.

Bönke, Timm, Giacomo Corneo, and Holger Lüthen. 2015. "Lifetime Earnings Inequality in Germany." *Journal of Labor Economics* 33 (2): 171–208.

Bornmann, Lutz, and Werner Marx. 2012. "The Anna Karenina Principle: A Way of Thinking about Success in Science." *Journal of the American Society for Information Science and Technology* 63 (10): 2037–51.
Bourdieu, Pierre. 1987. *Die feinen Unterschiede: Kritik der gesellschaftlichen Urteilskraft*. Berlin: Suhrkamp.
Buyukkececi, Zafer, Anette E. Fasang, and Vered Kraus. 2023. "Rising Patriarchy and Declining Economic Opportunity: Life Courses and Social Change in Egypt between 1965 and 2018." *Population and Development Review* 49 (3): 561–98.
Castro Galvao, Juliana de. 2023. "Gender Inequality in Lifetime Earnings." *Social Forces* 101 (4): 1772–802.
Cheng, Siwei. 2014. "A Life Course Trajectory Framework for Understanding the Intracohort Pattern of Wage Inequality." *American Journal of Sociology* 120 (3): 633–700.
Cheng, Siwei, and Xi Song. 2019. "Linked Lives, Linked Trajectories: Intergenerational Association of Intragenerational Income Mobility." *American Sociological Review* 84 (6): 1037–68.
Comolli, Chiara L., Laura Bernardi, and Marieke Voorpostel. 2021. "Joint Family and Work Trajectories and Multidimensional Wellbeing." *European Journal of Population* 37 (3): 643–96.
Daly, Mary, and Emanuele Ferragina. 2018. "Family Policy in High-Income Countries: Five Decades of Development." *Journal of European Social Policy* 28 (3): 255–70.
Davies, Hugh, Heather Joshi, and Romana Peronaci. 2000. "Forgone Income and Motherhood: What Do Recent British Data Tell Us?" *Population Studies* 54 (3): 293–305.
Diamond, Jared M. 1997. *Guns, Germs, and Steel: The Fates of Human Societies*. New York: Norton.
DiPrete, Thomas. 2002. "Life Course Risks, Mobility Regimes, and Mobility Consequences: A Comparison of Sweden, Germany, and the United States." *American Journal of Sociology* 108 (2): 267–309.
Doren, Catherine. 2019. "Which Mothers Pay a Higher Price? Education Differences in Motherhood Wage Penalties by Parity and Fertility Timing." *Sociological Science* 6:684–709.
Easterlin, Richard A. 1976. "The Conflict between Aspirations and Resources." *Population and Development Review* 2 (3): 417–25.
Elder, Glen H., Monica K. Johnson, and Robert Crosnoe. 2003. "The Emergence and Development of Life Course Theory." Pp. 3–19 in *Handbook of the Life Course*, edited by J. T. Mortimer and M. J. Shanahan. Boston: Springer.
Esping-Andersen, Gosta. 1990. *The Three Worlds of Welfare Capitalism*. Cambridge: Polity.
Fasang, Anette E., and Silke Aisenbrey. 2022. "Uncovering Social Stratification: Intersectional Inequalities in Work and Family Life Courses by Gender and Race." *Social Forces* 101 (2): 575–605.
Fasang, Anette E., and Tim F. Liao. 2014. "Visualizing Sequences in the Social Sciences." *Sociological Methods and Research* 43 (4): 643–76.
Ferragina, Emanuele, and Martin Seeleib-Kaiser. 2015. "Determinants of a Silent (R) evolution: Understanding the Expansion of Family Policy in Rich OECD Countries." *Social Politics* 22 (1): 1–37.
Fisher, Paul, Laura Fumagalli, Nick Buck, and Silvia Avram. 2019. "Understanding Society and Its Income Data." Working Paper 2019-08. Understanding Society at the Institute for Social and Economic Research, Colchester, UK.
Furstenberg, Frank F. 2005. "Non-normative Life Course Transitions: Reflections on the Significance of Demographic Events on Lives." *Advances in Life Course Research* 10: 155–72.
Gabadinho, Alexis, Gilbert Ritschard, and Matthias Studer. 2011. "Analyzing and Visualizing State Sequences in R with TraMineR." *Journal of Statistical Software* 40 (4): 1–37.

Gabay-Egozi, Limor, and Meir Yaish. 2019. "Intergenerational Educational Mobility and Life Course Earnings in Israel." *Social Science Research* 83:102302.
Gauthier, Jacques-Antoine, Eric D. Widmer, Philipp Bucher, and Cédric Notredame. 2010. "Multichannel Sequence Analysis Applied to Social Science Data." *Sociological Methodology* 40 (1): 1–38.
Groh-Samberg, Olaf, and Florian R. Hertel. 2011. "Laufbahnklassen: Zur empirischen Umsetzung eines dynamisierten Klassenbegriffs mithilfe von Sequenzanalysen." *Berliner Journal für Soziologie* 21 (1): 115–45.
Gruijters, Rob J., Zachary Van Winkle, and Anette E. Fasang. 2023. "Life Course Trajectories and Wealth Accumulation in the United States: Comparing Late Baby Boomers and Early Millennials." *American Journal of Sociology* 129 (2): 530–69.
Hällsten, Martin, and Meir Yaish. 2021. "Intergenerational Educational Mobility and Life Course Economic Trajectories in a Social Democratic Welfare State." *European Sociological Review* 38 (4): 507–26.
Hillmert, Steffen. 2015. "Changing Structures of Opportunity: A Life-Course Perspective on Social Mobility and Reproduction." *European Sociological Review* 31 (2): 184–96.
Ice, Erin, Shannon Ang, Karra Greenberg, and Sarah Burgard. 2020. "Women's Work-Family Histories and Cognitive Performance in Later Life." *American Journal of Epidemiology* 189 (9): 922–30.
ISER (Institute for Social and Economic Research, University of Essex). 2023. "Understanding Society: Waves 1–13, 2009–22 and Harmonised BHPS: Waves 1–18, 1991–2009," 18th ed. UK Data Service SN: 6614. https://doi.org/10.5255/UKDA-SN-6614-19.
Jalovaara, Marika, and Anette E. Fasang. 2020. "Family Life Courses, Gender, and Mid-Life Earnings." *European Sociological Review* 36:159–78.
Jalovaara, Marika, Gerda Neyer, Gunnar Andersson, Johan Dahlberg, Lars Dommermuth, Peter Fallesen, and Trude Lappegård. 2019. "Education, Gender, and Cohort Fertility in the Nordic Countries." *European Journal of Population* 35 (3): 563–86.
Kangas, Olli, and Tine Rostgaard. 2007. "Preferences or Institutions? Work-Family Life Opportunities in Seven European Countries." *Journal of European Social Policy* 17 (3): 240–56.
Karhula, Aleksi, Jani Erola, Marcel Raab, and Anette Fasang. 2019. "Destination as a Process: Sibling Similarity in Early Socioeconomic Trajectories." *Advances in Life Course Research* 40:85–98.
Kass, Robert E., and Adrian E. Raftery. 1995. "Bayes Factors." *Journal of the American Statistical Association* 90 (430): 773–95.
Kleven, Henrik, Camille Landais, Johanna Posch, Andreas Steinhauer, and Josef Zweimüller. 2019. "Child Penalties across Countries: Evidence and Explanations." *AEA Papers and Proceedings* 109:122–26.
Lacey, Rebecca, Mai Stafford, Amanda Sacker, and Anne McMunn. 2016. "Work-Family Life Courses and Subjective Wellbeing in the MRC National Survey of Health and Development (the 1946 British Birth Cohort Study)." *Journal of Population Ageing* 9 (1–2): 69–89.
Lawrence, Matthew, and Richard Breen. 2016. "And Their Children after Them? The Effect of College on Educational Reproduction." *American Journal of Sociology* 122 (2): 532–72.
Leisering, Lutz. 2003. "Government and the Life Course." Pp. 205–25 in *Handbook of the Life Course*. Boston: Springer.
Leitner, Sigrid. 2003. "Varieties of Familialism: The Caring Function of the Family in Comparative Perspective." *European Societies* 5 (4): 353–75.
Lersch, Philipp M., Wiebke Schulz, and George Leckie. 2020. "The Variability of Occupational Attainment: How Prestige Trajectories Diversified within Birth Cohorts over the Twentieth Century." *American Sociological Review* 85 (6): 1084–116.

Liao, Tim, and Anette E. Fasang. 2021. "Comparing Groups of Life-Course Sequences Using the Bayesian Information Criterion and the Likelihood-Ratio Test." *Sociological Methodology* 51 (1): 44–85.
Liefbroer, Aart C. 2009. "Changes in Family Size Intentions across Young Adulthood: A Life-Course Perspective." *European Journal of Population* 25 (4): 363–86.
Lohmann, Henning, and Hannah Zagel. 2016. "Family Policy in Comparative Perspective: The Concepts and Measurement of Familization and Defamilization." *Journal of European Social Policy* 26 (1): 48–65.
Madero-Cabib, Ignacio, and Anette E. Fasang. 2016. "Gendered Work-Family Life Courses and Financial Well-Being in Retirement." *Advances in Life Course Research* 27:43–60.
Mandel, Hadas, and Moshe Semyonov. 2006. "A Welfare State Paradox: State Interventions and Women's Employment Opportunities in 22 Countries." *American Journal of Sociology* 111 (6): 1910–49.
Manzoni, Anna, Jeroen K. Vermunt, Ruud Luijkx, and Ruud Muffels. 2010. "Memory Bias in Retrospectively Collected Employment Careers: A Model-Based Approach to Correct for Measurement Error." *Sociological Methodology* 40 (1): 39–73.
Mayer, Karl U. 2005. "Life Courses and Life Chances in a Comparative Perspective." Pp. 17–55 in *Analyzing Inequality: Life Chances and Social Mobility in Comparative Perspective*, edited by Stefan Svallfors. Stanford, CA: Stanford University Press.
Mayer, Karl U. 2009. "New Directions in Life Course Research." *Annual Review of Sociology* 35:413–33.
Mood, Carina. 2017. "More than Money: Social Class, Income, and the Intergenerational Persistence of Advantage." *Sociological Science* 4:263–87.
Muller, Joanne S., Nicole Hiekel, and Aart C. Liefbroer. 2020. "The Long-Term Costs of Family Trajectories: Women's Later-Life Employment and Earnings across Europe." *Demography* 57 (3): 1007–34.
Nelson, Kenneth, Daniel Fredriksson, Tomas Korpi, Walter Korpi, Joakim Palme, and Ola Sjöberg. 2020. "The Social Policy Indicators (SPIN) database." *International Journal of Social Welfare* 29 (3): 285–89.
Nelson, Kenneth, Rense Nieuwenhuis, and Mara A. Yerkes, eds. 2022. *Social Policy Research in Changing European Societies: Research Agendas for the 21st Century*. Cheltenham: Elgar.
Neugarten, Bernice L., Joan W. Moore, and John C. Lowe. 1965. "Age Norms, Age Constraints, and Adult Socialization." *American Journal of Sociology* 70 (6): 710–17.
Neuwirth, Erich. 2014. "RColorBrewer: ColorBrewer Palettes," version 1.1–2. https://cran.r-project.org/package=RColorBrewer.
Parolin, Zachary, and Tom VanHeuvelen. 2023. "The Cumulative Advantage of a Unionized Career for Lifetime Earnings." *Industrial and Labor Relations Review* 76 (2): 434–60.
Piccarreta, Raffaella, and Matthias Studer. 2019. "Holistic Analysis of the Life Course: Methodological Challenges and New Perspectives." *Advances in Life Course Research* 41:100251.
Pollock, Gary. 2007. "Holistic Trajectories: A Study of Combined Employment Housing and Family Careers by Using Multiple-Sequence Analysis." *Journal of the Royal Statistical Society* A 170 (1): 167–83.
Ram, Karthik, and Hadley Wickham. 2018. "wesanderson: A Wes Anderson Palette Generator," version 0.3.6. https://cran.r-project.org/package=wesanderson.
Ren, Chunhui. 2021. "A Dynamic Framework for Earnings Inequality between Black and White Men." *Social Forces* 100 (4): 1449–78.
Schwarze, Johannes. 1995. *Neue Befunde zur Lohnkurve in Deutschland: eine Analyse mit Paneldaten für Raumordnungsregionen 1985 und 1989* [New Findings on the Earnings Curve in Germany: An Analysis with Panel Data for Regions 1985 and 1989]. Discussion Paper No. 119. German Institute for Economic Research (DIW), Berlin.

Scruggs, Lyle, and James P. Allan. 2006. "Welfare-State Decommodification in 18 OECD Countries: A Replication and Revision." *Journal of European Social Policy* 16 (1): 55–72.
Scruggs, Lyle, and James P. Allen. 2008. "Social Stratification and Welfare Regimes for the Twenty-First Century: Revisiting 'The Three Worlds of Welfare Capitalism.'" *World Politics* 60 (4): 642–64.
Seeleib-Kaiser, Martin. 2016. "The End of the Conservative German Welfare State Model." *Social Policy and Administration* 50 (2): 219–40.
Settersten, Richard A., and Gunhild O. Hagestad. 1996. "What's the Latest? Cultural Age Deadlines for Educational and Work Transitions." *Gerontologist* 36 (5): 602–13.
Shahbazian, Roujman, and Erik Bihagen. 2022. "Does Your Class Give More than a Hint of Your Lifetime Earnings?: Assessing Indicators for Lifetime Earnings over the Life Course for Sweden." *European Sociological Review* 38 (4): 527–42.
Sigle-Rushton, Wendy, and Jane Waldfogel. 2007. "Motherhood and Women's Earnings in Anglo-American, Continental European, and Nordic Countries." *Feminist Economics* 13 (2): 55–91.
Sobotka, Tomáš, Vegard Skirbekk, and Dimiter Philipov. 2011. "Economic Recession and Fertility in the Developed World." *Population and Development Review* 37 (2): 267–306.
SOEP (Socio-Economic Panel). 2022. "Socio-Economic Panel (SOEP), Data from 1984-2020, EU Edition." https://doi.org/10.5684/soep.core.v37eu.
Sørensen, Aage B. 1977. "The Structure of Inequality and the Process of Attainment." *American Sociological Review* 42 (6): 965–78.
Stafford, Mai, Rebecca Lacey, Emily Murray, Ewan Carr, Maria Fleischmann, Stephen Stansfeld, Baowen Xue, Paola Zaninotto, Jenny Head, Diana Kuh, and Anne McMunn. 2019. "Work-Family Life Course Patterns and Work Participation in Later Life." *European Journal of Ageing* 16 (1): 83–94.
Stewart, Kitty, Aaron Reeves, Ruth Patrick, Nic Brimblecombe, and Tania Burchardt. 2022. "A Time of Need: Exploring the Changing Poverty Risk Facing Larger Families in the UK." London School of Economics and Political Science, Centre for the Analysis of Social Exclusion. https://policycommons.net/artifacts/3113450/exploring-the-changing-poverty-risk-facing-larger-families-in-the-uk/3906645/.
Studer, Matthias. 2013. "WeightedCluster Library Manual: A Practical Guide to Creating Typologies of Trajectories in the Social Sciences with R." LIVES Working papers 24. Swiss Centre of Expertise in Life Course Research.
Studer, Matthias. 2021. "Validating Sequence Analysis Typologies Using Parametric Bootstrap." *Sociological Methodology* 51 (2): 290–318.
Studer, Matthias, Emanuela Struffolino, and Anette Eva Fasang. 2018. "Estimating the Relationship between Time-Varying Covariates and Trajectories: The Sequence Analysis Multistate Model Procedure." *Sociological Methodology* 48 (1): 103–35.
Surkyn, Johan, and Ron Lesthaeghe. 2004. "Value Orientations and the Second Demographic Transition (SDT) in Northern, Western and Southern Europe: An Update." *Demographic Research* 3:45–86.
Tamborini, Christopher R., Chang H. Kim, and Arthur Sakamoto. 2015. "Education and Lifetime Earnings in the United States." *Demography* 52 (4): 1383–407.
Titmuss, Richard M. 1974. *Social Policy*. London: Allen & Unwin.
Tolstoy, Leo. (1878) 2003. *Anna Karenina*. Translated by Richard Peaver and Larissa Volokhonsky. New York: Penguin.
Van Winkle, Zachary, and Anette E. Fasang. 2021. "The Complexity of Employment and Family Life Courses across 20th Century Europe: More Evidence for Larger Cross-National Differences but Little Change across 1916–1966 Birth Cohorts." *Demographic Research* 44:775–810.
Warren, John R., Liying Luo, Andrew Halpern-Manners, James M. Raymo, and Alberto Palloni. 2015. "Do Different Methods for Modeling Age-Graded Trajectories Yield Consistent and Valid Results?" *American Journal of Sociology* 120 (6): 1809–56.

Widmer, Eric D., and Gilbert Ritschard. 2009. "The De-standardization of the Life Course: Are Men and Women Equal?" *Advances in Life Course Research* 14 (1–2): 28–39.
Wright, Erik O., and Kwang-Yeong Shin. 1988. "Temporality and Class Analysis: A Comparative Study of the Effects of Class Trajectory and Class Structure on Class Consciousness in Sweden and the United States." *Sociological Theory* 6 (1): 58–84.
Wright, Liam. 2021. "Working-Life Histories in the UKHLS and BHPS." OSF, November 12. https://doi.org/10.17605/OSF.IO/C3V9F.
Zagel, Hannah, and Henning Lohmann. 2021. "Conceptualising State-Market-Family Relationships in Comparative Research: A Conceptual Goodness View on Defamilization." *Journal of Social Policy* 50 (4): 852–70.
Zagel, Hannah, and Zachary Van Winkle. 2022. "Women's Family and Employment Life Courses across Twentieth-Century Europe: The Role of Policies and Norms." *Social Politics: International Studies in Gender, State and Society* 29 (2): 446–76.
Zaneveld, Jesse R., Ryan McMinds, and Rebecca Vega Thurber. 2017. "Stress and Stability: Applying the Anna Karenina Principle to Animal Microbiomes." *Nature Microbiology* 2 (9): 1–8.
Zimmermann, Okka, and Dirk Konietzka. 2018. "Social Disparities in Destandardization: Changing Family Life Course Patterns in Seven European Countries." *European Sociological Review* 34 (1): 64–78.
Zoch, Gundula, and Pia S. Schober. 2018. "Public Child-Care Expansion and Changing Gender Ideologies of Parents in Germany." *Journal of Marriage and Family* 80 (4): 1020–39.