1) **Potential Titles: Union Trajectory-Pathways to Achieved Parity at Age 40 – How do they differ for men and women, and by highest educational attainment? Union Trajectories and Achieved Parity: Understanding Differential Educational and Gender Effects of Union Histories on Childbearing**

Intro and Research objective: Family formation, including union formation, dissolution, and childbearing behaviors, are core processes of/at the heart of human societies, and are among the most well studied topics/human processes in the social sciences. Yet, the family formation process (and stability/dissolution) is often complex, spanning over many years in the life course, and its various elements such as timing of union formation and occurrence and timing of births are intertwined/not independent of each other. This often makes it difficult to study the directionality of causal pathways between the events themselves (e.g. how does the timing of union formation and stability of unions relate to the timing and quantum of births?). Additionally, this complexity adds difficulty in isolating the effect of other social forces, such as educational attainment, on family formation behaviors, as these social forces are often related to the various elements all at once, producing a type of chain of effects. For example, when studying the relationship between education and second births, we often tend to neglect the fact that education has a strong effect on the formation of co-residential unions and their duration/time to dissolution, as well as on the probability and timing of a first birth (on an individual level, in consideration of her and his individual educational and career trajectories), so that measurements of the effect of education on second births are likely biased when these previous selection-mechanisms into unions and parenthood based on education are not taken into account when investigating second births.

Hence, specifically estimates for the effect of socio-economic resources/education on achieved parity at the end of the childbearing life span are likely biased, unless their effect on the complexity of union histories can be taken into account when estimating these associations. A more holistic approach to studying the relationship between socio-economic resources and achieved parity, which would estimate the effect of education simultaneously on union histories and childbearing outcomes, however, has been difficult to undertake, due to data and methodological limitations. Hence, our knowledge on the complex effects of education and employment trajectories on childbearing behavior is still limited. Our paper is setting out to add to the debate on the relationship between education and childbearing behaviors, and aims at simultaneously estimating the effect of education on union formation and dissolution- as well as achieved parity at age 40(-42)

What we know from previous literature: Achieved parity at the end of the fertile life span in many countries differs by educational attainment, both among men and women. Women in many countries in the past and today have on average had fewer babies the more education they obtained (REF). How childbearing trajectories differ by educational trajectories has been well studied, among the many factors we know are the postponement of first birth with increasing education, increases in childlessness as educational attainment increases, and gradients in parity progression ratios by education. What is also known, but less well connected to the literature on childbearing behavior, is that the timing of union formation and union dissolution and their risks also differ significantly by educational attainment, for both men and women. (In addition, interactions of his and her resources have been shown to further affect union dissolution rates in some contexts and for certain resources but not others.) It is also well known that there exist

educational gradients in childbearing behaviors. On average, the more educational attainment a person has the further the first birth is postponed. Among women, childlessness tends to be highest among the most highly educated, but this does not apply to the most recent/1970 birth cohort in Finland any more. Among men, childlessness tends to be lower with increasing educational attainment. From what is known in the literature, completed parity… Timing of first co-residential union formation (which means mostly cohabitation in birth cohorts born after 1960)– differs (Jalovaara 2012)

Research questions and focus of study: What is completed parity at age 40 by education in Finland, for men and women? Which role do union formation/dissolution trajectories play for completed parity, and how do they mediate the effect of education on parity at age 40? Do educational differences in achieved parity at age 40/42 remain once we are able to control for differing union histories?

Objective of this paper: Estimate the effect of education on completed parity after taking relationship histories and how they differ by educational trajectories into account. Does the effect of education measured without controlling for relationship histories remain robust or is its conventionally measured effect biased? Unit of analysis are individuals, both women and men.

Data: Finnish Register data, birth cohort 1969/70, followed until the age of 40/42, featuring information on full cohabitation and marital union trajectories.

Measurements: (Completed) Parity is measured at age 40. Educational attainment is measured at age 30. Since educational upgrading during the adult lifespan is a common occurrence in this Finnish birth cohort, a robust check with measuring education at earlier or alter points in the life course seems sensible.

Methodological Strategy: The unit of analysis are individuals. Latent Class Analyses for longitudinal data will be used to estimate latent classes of relationship trajectories/patterns, from an individual/life course perspective. Such could for example be early and stable marriage/cohabitation, late and stable union, early union followed by dissolution and re-partnering etc. In a second step, achieved parity at age 40 will be estimated as a distal outcome of these latent union trajectory classes (as a dependent process predicted by the trajectories), and the effect of final education on both trajectories as well as achieved parity at age 40 will be estimated jointly.

2) **Potential Titles: Unfolding Families: Unifying the Analysis of Union and Childbearing Trajectories Using Simultaneous Equations** (A Holistic Approach to Studying the Role of Education for Union and Childbearing Trajectories / The role of education for union durations and childbearing: Unifying Trajectories / Education, Unions and Childbearing: A Holistic Analysis of Family Formation Trajectories)

Intro and Background: Over the past two decades, couples and unions as the unit of analysis have made it to the center stage in the research on childbearing behavior and union formation (Matysiak and Nitsche, forthcoming), complementing studies on family formation that employ an individual perspective. The gain of looking at couples instead of individuals is manifold. Theoretically speaking, dynamics on the couple level bring an additional layer into decision-making of coupled individuals and it has been argued that understanding interactive dynamics between two partnered individuals can aid in explaining childbearing behaviors, expanding on knowledge gained from looking at childbearing trajectories from an individual perspective.

Becker and others, for example, suggested in the economic theory of the family that partners in committed unions practice utility maximization of the family, with one partner specializing in labor market employment while the other one specializes in looking after the home and bringing up children as the most rational/ideal way of combining work- and family life, at least at the end of the 20th century (Becker 1981). Oppermann expanded on this economic theory of the family by arguing… Being part of a couple hence is theorized to shape behavior in ways that could not be present in the absence of a partner/being in a union.

Practically speaking, despite rapid historic changes in marriage and cohabitation behavior, the large majority of children today are still born to co-residential couples (Perelli-Harris et al 2012). Unions, and their formation and dissolution processes, hence, are for the most part a prerequisite of or accompanying process to childbearing. Additionally, what is known from the literature is that the timing and quantum of both union-formation and dissolution behavior as well as childbearing behavior varies significantly by educational attainment. There is an educational gradient in the quantum and timing of first marriage or cohabitation (REF), and it has also been shown that union dissolution/divorce rates differ by education (REF), both from an individual as well as from a couple perspective (additive effects of individuals' education). Likewise, the timing of the first birth, and the quantum of births/achieved parity at the end of the reproductive life span have been shown to differ by education, at least in many advanced nations in general, including Finland (REF). This applies to both women and men, and it has moreover been shown that there are additional effects of the educational pairings of both partners on parity progression rates (Nitsche et al. 2015). Yet, the association between educational attainment and union trajectories on the on hand, and the relationship between educational attainment and childbearing behavior on the other hand, is more often than not, addressed separately in the relevant demographic or sociological literature. Specifically, the selection into unions and the differential union stability by educational background likely is part of the relationship between education and childbearing behavior that's usually assessed in studies on fertility.

Open questions that remain: There are some studies which have attempted to assess the effect education has on childbearing behaviors while adjusting for its effect on the selection into unions and their stability. CITE SOME STUDIES However, not much is known on whether the effect of education on the timing and occurrence of first, second, and third or subsequent births operates mainly through the pathway of affecting unions, through the pathway of affecting childbearing-decision-making, or through both pathways.

Objective of this paper: Using a union/couple perspective, the objective of this paper is to better understand the effect of/relationship between his, her, and the partners' joint education on family formation trajectories using a holistic approach that jointly estimates the effect of education on probabilities of remaining in the union, ending the union, and progressing to the next parity. More specifically, the focus of our paper is to estimate the effect of education (and possibly other measures of socio-economic background) on each parity progression, while jointly estimating its effect on the competing risk of ending the union before a possible birth of the next child, or of remaining in the union but without progressing to the next parity. Thus, the objective of this paper is to obtain a 'cleaner' estimate of the effect of educational attainment of both partners (individually and their educational pairing) on cumulative incidences of parity progressions, while 'adjusting' for potential bias of the estimate that would follow if the effect of educational attainment on the selection out of unions/remaining in unions remained unaccounted for. The first selection step, namely selection into the union and how this may be dependent upon educational trajectories up to the point of union formation, cannot be

addressed by this approach. However, we will be able to control for parental socio-economic background (during childhood), at least for a subset of the sample (Marika: do I remember correctly that parental background variables are not available for everyone?)

Data: Finnish Register data, birth cohort 1969/70, followed until the age of 40/42, featuring information on full cohabitation and marital union trajectories.

Planned Methodological Strategy: The unit of analysis are couples, more specifically unions, from start to end of the union. Structural equation estimation for event history data (repeated events) will be employed to estimate the effect of education on sequential parity progression and union dissolution risks. We identified a third 'competing risk', namely remaining in the risk set (union is uninterrupted), but while 'stopping' at the previous parity, and not proceeding to the next birth.

Open question: what to do with multiple unions of the same person? Would we just include first co-residential unions, or include several unions of the same person?

3) **Potential Title: The New Couple: Reversed Educational Distributions and Union Trajectories in the 21st Century** / All New or Same Old Story? Union Trajectories and Partners` Resources in the Time of Reversed Gender Ratios in Education / Changing Educational Distributions: What the Mean for Union Formation and Dissolution in the 21st Century in Finland

Background: Theories on the family (Becker, Oppenheimer etc), and on the relevance of resource-based dynamics between partners (bargaining) have offered arguments on the differential roles both partners and their joint absolute and relative socio-economic resources play on various family related outcomes such as the formation, stability, and dissolution of unions, decision-making around childbearing, and other household related productions such as the division of paid employment and housework. One argument that is currently being made repeatedly in the relevant literatures is that the gender reversal in education has profound and direct consequences on gender balances in mating markets and within families, and will affect these above mentioned family related outcomes (REF…). This research rests on the implicit assumption that an imbalance in education among partners in a couple, e.g. hypogamy or hypergamy, is automatically an expression of an imbalance in power, for example in income, occupational status, career stability and prospects, etc. However, not a lot is known about the consequences and implications of partners' relative educational attainment for the distribution of those other resources among partners, and how this may have changed over time. While it is possible that, on average, higher educational attainment translates into higher income etc., it could also be that this relationship is more nuanced, hinging upon other factors such as field of study or occupational subjects. For instance, careers in occupations which can be accessed through vocational training (such as certain craftsmanship occupations) may be financially more rewarding than female dominated occupations which can only be accessed through tertiary education, such as school-teachers or [another example].

In addition to the financial and career resources that come with educational attainment and which hence lead to various distribution of such resources across couples of varying education pairings, couples of differing educational pairings also most likely vary on relationship related dimensions. For example, couples with two highly educated partners will on average enter a union at an older age than couples with two low educated partners, and homogamous highly educated unions may also be of a higher union order, on average, than other types of unions. These dimensions may matter for family related outcomes (such as stability of unions), but have been rarely addressed explicitly in the literature in greater depth. We are aiming at closing this gap in the literature in order to facilitate a

better understanding of how these couple may be different and what educational pairings of partners' mean in the early 21st century.

Objective of paper: In this study, we will address this question of how couples of varying educational pairing differ, on average, on various socio-economic and relationship related dimensions. We will also address how this has changed over time/birth cohorts (can we do that/do we want to do that?)

Why is this relevant? Could we create an 'gender equality' index? Are we interested in how these things changed over time? Is it to show evidence on how these couples are very different on many dimensions which need to be better discussed when looking at these relative measures? Are we making new theoretical arguments on couples based on this? Do we want to show that effects of relative/absolute resources hinge upon other sometimes unaccounted for dimensions of these couples and that results of the effects of the resources on family outcomes will differ based on whether this is being controlled for?

Dimension	Both highly ed	She high he medium	She high he low	He high she medium.	He high she low	Both medium etc.
Socio-economic						
Aver. Relative Income						
Average rel occupational status						
Employment status combinations and distr., e.g. both full time, he full she parttime etc.						
Contract length						
Parental leave months per kid she						
Parental leave months per kid she						
Parental socio-ec status						
Years in educ						
Age at highest degree						
Relationship						
Age gap btw partners						
Age at union/cohab start						
Ages at first birth						
No of children						
Average union length bf split						
Average union order (how many coresidential unions bf)						
Percent married vs cohab						
Cohab duration bf marriage						

Issues: how to show this? An average over all the measured couples years? In the last year of obs adjusted for the other factors? From a cross sectional perspective, in a given calendar year?

4) Potentially: Conceptual paper about the definition and different ways of measuring unions and couples

- Two different perspectives: Follow unions – begin (getting together) to the end (separation, death, censored). Idea, a union is inherently a longitudinal concept, with a start and an endpoint.
- Couples: looking at couples, as the unit of analysis,
- What is the right way of looking from the couples perspective?
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LITERATURE

Jalovaara, M. (2012). Socio-economic resources and first-union formation in Finland, cohorts born 1969–81. *Population studies*, *66*(1), 69-85.