

The Influence of Educational Expansion on Partnership Stability: A Cohort Study of First Partnerships in Switzerland¹

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Abstract: This study examines the association between educational attainment and separation risks in marital or non-marital first partnerships to query the extent to which educational expansion has affected trends in partnership stability. Because the educational gradient in separation changed from being positive for women (and, to a lesser extent, for men) to being statistically non-significant at the same time as educational expansion took place, the latter can only serve as a minor explanation of the exceptional rise in breakup rates in Switzerland.

Keywords: educational expansion, educational gradient, cohabitation, separation, divorce

Der Einfluss der Bildungsexpansion auf Partnerschaftsstabilität: Eine Kohortenstudie zu ersten Partnerschaften in der Schweiz

Zusammenfassung: Um den Einfluss der Bildungsexpansion auf Partnerschaftsstabilität einzuschätzen, untersucht diese Studie den Zusammenhang zwischen dem Bildungsniveau und dem Trennungsrisiko in ehelichen oder nichtehelichen ersten Partnerschaften. Da sich der Bildungsgradient im Trennungsrisiko für Frauen (und, auf einem geringeren Niveau, für Männer) im Zuge der Bildungsexpansion von einem positiven auf ein statistisch nicht-signifikantes Niveau gesenkt hatte, ist letztere keine wesentliche Erklärung für die starke Zunahme der Trennungsraten in der Schweiz.

Schlüsselwörter: Bildungsexpansion, Bildungsgradient, Kohabitation, Trennung, Scheidung

L'influence de l'expansion de l'éducation sur la stabilité des couples : une étude de cohortes de premiers couples en Suisse

Résumé : Pour estimer l'impact de l'expansion de l'éducation sur la stabilité des couples, cette étude analyse l'association entre le niveau de formation et les séparations de couples mariés ou en cohabitation non-maritale. Comme le gradient de l'éducation dans les séparations a diminué d'un niveau positif pour les femmes (et dans une moindre mesure pour les hommes) à un niveau statistiquement non-significatif durant l'expansion de l'éducation, celle-ci n'est pas une explication importante pour la hausse exceptionnelle des taux de séparation en Suisse.

Mots-clés : expansion de l'éducation, gradient d'éducation, cohabitation, séparation, divorce

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1 Introduction

Educational expansion figures prominently in accounts of rising divorce rates (Diekmann and Schmidheiny 2001; Lesthaeghe and Neels 2002; Arránz Becker 2015; Wagner et al. 2015) even though the micro-level association between educational attainment and the dissolution of intimate partnerships remains ambiguous. While socio-economic resources have been found to be a good predictor of the quality and stability of partnerships (Conger et al. 2010; Jalovaara 2012b; Williams et al. 2015), there are important caveats. For one, the advantages accruing from education can also make separation easier: the cultural resources and social opportunities that highly educated men and women have access to can give them a superior ability to cope with the consequences of a breakup, thereby making it more feasible (Leopold and Leopold 2016). For another, economic models suggest that the benefits deriving from higher educational attainment are subject to a gender divide: the increased resources foster partnership stability with respect to men's educational attainment, but lower the stability of partnerships involving highly educated women insofar as their professional obligations diminish their contributions to the couple's household work (Becker 1981). Determining the influence that educational expansion has had on partnership stability thus hinges on whether *educational attainment is associated with higher or lower rates of partnership breakup* and, because women experienced more significant increases in educational attainment (OECD 2016), whether the *association differs between men and women*. The first part of this article addresses these two issues on the basis of a sample of first partnerships that formed between 1935 and 2007.

Educational expansion can only explain increasing partnership breakup rates if greater individual educational attainment increases the risk of separation *and* if this positive educational gradient has remained stable over time. However, a large and growing line of research stresses that the association between educational attainment and partnership behavior depends upon the social and historical context (Teachman 2002; de Graaf and Kalmijn 2006; Härkönen and Dronkers 2006; Martin 2006; Bernardi and Martínez-Pastor 2011; Kalmijn 2013; Matysiak et al. 2014; Puur et al. 2016). The working assumption of this article is that three different factors have contributed to lowering the initially positive educational gradient of first partnership breakups. First, groups of differing educational status have become more similar with respect to attitudes on partnership behavior. Second, increasing social acceptance of separation has led to larger increases in breakup rates among the less educated than among the more educated. Third, while the first two processes hold for both genders, the changes have been more pronounced for women than for men. Taking these assumptions as points of departure, the second part of the article examines whether during the social change that accompanied educational expansion *the educational gradient of partnership breakup changed from being positive*

to being neutral or negative; and, if so, whether this change was more pronounced for women's educational attainment. Finally, the extent to which increases in men's and women's educational attainment can serve as an explanation for historical changes in partnership stability is then quantified in light of the empirical results shown in the first and the second part.

The crucial question is, *would the probability of partnership breakup be lower for today's couples if the increase in educational attainment had not taken place?* Yet, a coherent answer to this question requires taking another development into account. At a time when marriage rates are decreasing and there is a growing tendency to postpone marriage, a comprehensive picture of trends in first partnership breakups cannot ignore the steadily rising trend of nonmarital cohabitation (NMC) (Härkönen 2015). Since NMCs involve a lower level of formal commitment and a lower exit cost than marriages, the rising number of NMCs is likely to have contributed to the overall increase in partnership instability (Jalovaara 2012b). That the rise of NMC has coincided with educational expansion is also unlikely to be purely accidental. While highly educated (and often affluent) individuals, particularly men (Xie et al. 2003), may represent more attractive potential marriage partners (Jalovaara 2012a), their better ability to cope with separation and the uncertainties accompanying partnerships that form during the course of long educational trajectories, may also entail that they are more likely to remain unmarried in their first partnerships (Nazio and Blossfeld 2003; Ní Bhrolcháin and Beaujouan 2013). Thus, in effect, if highly educated individuals are more likely to live in NMCs in first partnerships, the rise in NMC can be presumed to have reinforced the role of educational expansion in increasing partnership instability. Conversely, if lesser educated individuals are more likely to live in NMCs, the role of educational expansion in partnership instability can be presumed to have been mitigated by increases in NMC.

In terms of NMC, Switzerland seems a particularly instructive case. While in 1979 half of the cantons prescribed penalties for nonmarital cohabiters, by 1996 NMC had been legalized in every canton. By providing a comprehensive picture of trends in first partnership separation for marital and non-marital unions alike, this study aims to enrich existing research on the impact of educational expansion (Wagner et al. 2015). It also tests the robustness of the results found by Härkönen and Dronkers (2006), who concluded that there was no change in the educational gradient for divorce among Swiss women. The "gender revolution" in Switzerland has been comparatively mild (Levy et al. 2002; Goldscheider et al. 2015), with a large part of the increase in women's employment being attributed to part-time jobs (Liechti 2014). Nevertheless, by considering the effects of men's and women's education independently, this study helps to discern the relative importance of changes in the educational gradient of separation that are specific to women as well as those which are less gender specific.

2 Exchange-theoretic and economic explanations of educational expansion and partnership stability

Educational attainment is linked to the criteria that exchange-theoretic and economic models of the micro-level mechanisms of partnership behavior consider relevant for partnership stability: *partnership quality*, the *opportunity structures* individuals face when considering breaking up and the *investments* individuals make in the relationship (Becker et al. 1977; Lewis and Spanier 1979; Rusbult 1983; Arránz Becker 2015). Looking at the arguments related to each of these criteria more closely is instructive for the development of theoretical expectations on the influence of educational expansion on partnership stability.

There is a branch of research that consistently associates higher *partnership quality* with more affluent social groups (Conger et al. 2010). Studies in this vein argue that a higher living standard and social status (Jalovaara 2012b), later matches (Kuperberg 2014) and higher levels of personal satisfaction and well-being (Amato and Rogers 1997) are skewed towards more educated groups and associated with higher partnership satisfaction and stability. Better educated individuals, moreover, are thought to be more likely to enter partnerships from educationally homogenous partner markets such as universities (Schwartz and Mare 2005), making them more likely to perceive their partnerships as satisfying (insofar as they share a greater range of common interests and behaviors with their partners) (Arránz Becker 2015). Economic arguments used to explain why education could *lower* partnership satisfaction, on the other hand, focus firmly on *women's* education. Because women, even if they are well-educated, often earn less than their husbands, such arguments posit that couples attain the highest levels of utility if men specialize in a career while women specialize in housework, where they have a comparative advantage (Becker 1981). Since the opportunity cost of remaining out of the labor market is higher for well educated women than it is for less educated women, the probability that one of the partners will specialize in household work is diminished for couples in which the woman holds a higher degree. As a consequence, this partnership dynamic delivers lower gains to the couple and heightens their risk of separation (Becker et al. 1978).

Opportunity structures, i. e. alternatives to continuing a partnership, mitigate the barriers to separation (Arránz Becker 2015). A higher level of education makes the transition following a breakup easier insofar as a couple's economic, cultural and social resources reduce the immediate and more distant consequences of separation. People with higher levels of education have been shown, for instance, to more readily overcome the economic consequences of divorce (Leopold and Leopold 2016), to experience lower drops in social support in the aftermath of separation (Kalmijn and Uunk 2007) and to encounter less difficulties re-partnering after separation (cf. Ivanova et al. 2013).

Micro-level models lead to conflicting assumptions on the role that educational attainment plays in the transition from cohabitation to marriage (Ní Bhrolcháin and Beaujouan 2013; Maslauskaitė and Baublytė 2015). It is clear that marriage, as a form of *partnership investment*, complicates separation just as material (e. g., shared homeownership) or immaterial (e. g., children) (Wagner et al. 2015) investments do (Kopp 2010; Rusbult 1983). What is less clear is how the probability to marry is affected by being well educated. On the one hand, socio-economic resources can help to speed up transitions from cohabitation to marriage (Jalovaara 2012a), particularly for men (Xie et al. 2003). On the other, the extensive time required to complete their education makes it more likely that highly educated individuals enter first partnerships during the course of their studies. Since NMC allows for greater flexibility than marriage it may be seen as a preferable option for couples who have not yet established their professional careers (Nazio and Blossfeld 2003; Ní Bhrolcháin and Beaujouan 2013).

In sum, exchange-theoretic and economic models of partnership stability paradoxically place individuals with more education at both a higher and a lower risk of partnership breakup than individuals with less education. To resolve this paradox within the parameters of such theories entails choosing among the following mutually exclusive hypotheses. *Either* the link between education and partnership stability is mainly determined by higher marriage rates and partnership quality, in which case *less educated individuals are more likely to end a first partnership than more educated ones (H1a)*, and *educational expansion has contributed to more stable partnerships*. *Or* the link is mainly determined by the uncertainty of longer educational trajectories and attractive alternatives to continuing the partnership, in which case *individuals with a higher level of education are more likely to end a first partnership than less educated ones (H1b)*. Lastly, economic models lead to the hypothesis that *higher educational attainment among women more strongly increases separation risks than higher educational attainment among men (H1c)*. Hence, H1b suggests that *educational expansion has decreased partnership stability* and H1c that this influence mainly originates from women's increase in educational attainment, given its more substantial *and* influential nature.

3 Social change and education-specific breakup rates

The second part of this article turns to accounts that suggest that the balance between the contradictory hypotheses above critically depends upon the social context (cf. Härkönen and Dronkers 2006; Kalmijn 2013), i. e. the normative and economic environments that influence the formation, institutionalization, maintenance and separation of partnerships (Arránz Becker 2015). This perspective is used here to examine how changes in *compositional differences* between educational groups and

education-specific behaviors in partnerships have altered the role educational expansion has played in changing partnership stability. These changes are expected to have been intertwined with the gender revolution (Goldscheider et al. 2015) and concomitant *changes in gender relations*.

Research suggests that there has been a gradual convergence in the composition of different educational groups regarding characteristics related to partnership behavior. Alongside the sheer numerical increase of higher educated groups, that is, there has been a change in the attitudinal composition of these groups. In the US, for instance, the reported attitudes in favor of divorce decreased among highly educated and increased among lowly educated young adult women between 1970 and 2000 (Martin and Parashar 2006). Whether the *economic status* of educational groups has converged over the same time, however, is a more controversial question. Although educational groups seem to have become more similar in their occupational prestige (Klein 2015), the association between educational attainment and occupational class seems relatively rigid (Bukodi et al. 2016).

A second point has to do with the interconnections between the diffusion of new forms of partnership behavior, their social acceptance and the *adaptation of these behaviors by lower educational groups*. A central principle of scholarship on the diffusion of innovation is that barriers to new forms of behavior are greatest at the early stages of their diffusion (Rogers 2003). The boundaries that can serve to hinder the advance of new forms of behavior emerge in part from uncertainty about a given behavior's advantages and disadvantages, which, in turn, may reinforce certain socially shared valuations. Several studies have applied these ideas to partnership behaviors to argue that the level of diffusion of NMC or divorce exercises an influence on its social acceptance (Liefbroer and Dourleijn 2006; Soons and Kalmijn 2009; Kalmijn 2010; Schnor 2014; Verbakel 2012). The level of social acceptance, in turn, is believed to influence the partnership behavior of less educated groups (de Graaf and Kalmijn 2006). When NMC and divorce are associated with high social or legal disapproval (as, e.g., evidenced by prohibition laws or complicated legal procedures), it is likely that NMC and divorce are limited to those groups which are most able to deal with social or legal disapproval. The power and resources stemming from educational attainment foster greater abilities to deal with social sanctions and legal impediments (Matysiak et al. 2014). When such impediments are prevalent, therefore, less educated individuals can be expected to be less likely to live in NMC, or to divorce once they have married. As the diffusion of NMC and divorce increases and social hurdles are lessened, however, these groups become more likely to adopt such behaviors (Härkönen and Dronkers 2006; Bernardi and Martínez-Pastor 2011; Ní Bhrolcháin and Beaujouan 2013; Maslauskaitė and Baublytė 2015; Puur et al. 2016).

Reductions in the compositional and behavioral differences between educational groups are also related to changes in the roles women play within partnerships. There

are four main theories that address the question of how *changes in gender relations* have contributed to modifying the association between level of education and partnership breakup. One suggests that with the *normalization of women's participation in the labor market* women in lower educational strata have also come to be more likely to be gainfully employed (Liechti 2014). This, in turn, has lowered differentials in the abilities of women from various educational strata to cope with separations; and it has potentially made NMC and divorce more of an option for less educated women (Härkönen and Dronkers 2006; Matysiak et al. 2014). A second focuses on gender differences in educational expansion. In Switzerland, as well as in many other countries, the increase in educational attainment over the last few decades was more pronounced for women than for men (OECD, 2016). Due to the *leveling of gender ratios within higher educational groups*, increases in educational homogamy can be expected to have been particularly pronounced among the upper echelon of the educational distribution (Diekmann and Schmidheiny 2001; Schwartz and Mare 2005). This trend can be posited to have increased the partnership stability of those with higher levels of education (Arránz Becker 2015). A third builds on the idea that traditional gender norms prevent men from contributing to the couple's housework even if the female partner outearn them (Grunow et al. 2007). Because highly educated women are more often the primary contributors in their household than less educated women, their satisfaction with their partnerships has particularly benefited from a decline of such norms. Finally, a fourth argument emerges from the influence of *gender norms on partnership instability*. At a time when women's labor market participation was lowly valued, couples in which the woman held a high educational degree and was engaged in the labor market were unlikely to receive much social support. As norms and behaviors became adapted towards more egalitarian arrangements, however, women's education and economic independence have received more social support, making them less of a threat to the stability of partnerships (Matysiak et al. 2014; Schwartz and Han 2014; Killewald 2016). Despite their differing points of emphasis, where all arguments centering on social change generally tend to agree is that the association between educational achievement and partnership breakup has become less important in recent decades.

Since decreasing social and legal hurdles to NMC and divorce are expected to have increased breakup rates among lower social strata, and increased homogamy is expected to have particularly decreased breakup rates among higher social strata, *I hypothesize that the educational gradient in partnership breakup was positive among the older cohorts and has steadily decreased since (H2a)*. Changes in the labor market position of lesser educated women, the increasingly egalitarian partnerships of highly educated women and the higher social acceptance of their consistently higher labor market engagement, however, lead to the further hypothesis that *the level of the initial positive educational gradient as well as its subsequent decrease have been more pronounced for women than for men (H2b)*. It is probable that these processes were

reinforced by a convergence of educational groups with respect to their attitudes on partnership behavior.

Table 1 presents an overview of the hypotheses derived from exchange-theoretic and economic models and social-theoretical accounts. The first row lists their predictions concerning the association between education and partnership breakup, as well as their gender- and cohort-specificity. The second row presents the implications of the hypotheses for two contrary scenarios that illustrate the influence of educational expansion on partnership breakup: (A) how much the probability of breakup would change for a recent cohort given a scenario in which it had the same (lower) levels of education as older cohorts, and (B) how much the probability of breakup would change for an older cohort if it had had the same (higher) levels of education as more recent cohorts. H1a and H1b predict an inverted effect for the two scenarios: if, for example, education is positively associated with breakup (H1b), in scenario A the recent cohort would have a lower probability of breakup than observed, while the older cohort in scenario B would have a higher probability of breakup. Under H2a and H2b, on the other hand, only scenario B makes a difference: since educational level does not exert an influence over the recent cohort, changes in its educational distribution have no consequences for partnership stability.

Table 1 Overview of hypotheses and their consequences for standardization scenarios

	Exchange-theoretic and economic models		Social-theoretical accounts
Association between education and partnership breakup	H1a: –	H1b: + H1c: ++ for women	Older cohort: H2a: + H2b: ++ for women Recent cohort: H2a: 0 H2b: women 0
Difference in breakup probability: scenario vs. observed			
Scenario A: recent cohort with education of older cohort	higher lower	lower higher	no change higher
Scenario B: older cohort with education of recent cohort			

4 Sample and measures

The analyses draw on the combined data from four Swiss surveys that retrospectively assessed partnership histories: The Family and Fertility Survey (1994 and 1995, henceforth FFS), the biographical surveys from the first (2001/2002, SHPI) and the third (2013 and 2014, SHPIII) sample of the Swiss Household Panel and the

Inquiry on Families and Generations (2013, IFG). Population universes always refer to the Swiss population in the sample year. Results are reweighted to adjust for survey design (all surveys) and non-response bias (SHP) (FSO, 2015; FORS, 2014, 2015). Weights were normed such that each survey is represented in first partnership cohorts according to its actual representation in specific cohorts and such that observations keep their relative importance with respect to other observations of the same survey. Statistical inference thus parts from the assumption that all partnerships in a given cohort are random draws from these cohorts.²

Based on data plausibility and the comparability between cohorts and datasets, several restrictions were made. First of all, partnerships are restricted to *first significant heterosexual partnerships*³, *no matter their timing* in the life course. Significance is marked by entering either into a common household or direct marriage. Less significant forms of relationships, such as dating partnerships, are not considered. Two types of first partnerships are distinguished: *first NMCs and first marital partnerships*. NMCs are cohabitations with an intimate partner that never turned into marriages, and first marital partnerships are either cohabitations with an intimate partner that led to marriage (premarital cohabitations, PMC) or marriages that preceded or coincided with the start of cohabitation (direct marriages). A core problem with this binary distinction is that the shorter a given cohort is observed (i. e. the shorter the time between survey and formation year), the higher is the share of NMCs that will eventually turn into marriages. In order to reduce this bias, I excluded 2 196 first partnerships that had been observed less than 6 years at the moment of the survey.⁴ Another 191 observations were excluded due to the restriction of the age at formation to 15 to 45.⁵ Finally, 138 cases were excluded due to lack of information on the variables used (see below). The analyses in this article thus draw on a total sample of 23 310 first partnerships formed between 1935 and 2007, of which 18 722 were marriages and 4 588 NMCs.

The main dependent variable is the *duration of first partnership*, measured in number of years. Duration is calculated as the difference between the calendar year in which the first partnership ended (or the year of the survey if the observation is right-censored) minus the calendar year of formation. The moment of formation is defined either as the year the couple moved in together, or the year of marriage, depending on which event happened first. The end of a marital relationship is defined either as the separation from the spouse (IFG, FFS), or a change in civil

2 Results base on the assumption that underrepresentation of the oldest cohorts due to age restrictions in surveys (IFG), mortality or migration does not affect the hypothesized associations.

3 Homosexual partnerships have, if identifiable, been excluded (IFG, FFS). In the IFG, this concerns 0.6% of all first partnerships.

4 The general conclusions of the article are robust to larger (e. g., 8 years) or shorter minimal observation periods.

5 45 was chosen as the upper limit in order to decrease bias to due mortality among older cohorts.

status (SHPI, SHPIII⁶). The end of a NMC is the dissolution of the relationship with a co-resident partner (IFG), or the end of the common household with the partner (FFS, SHPI, SHPIII).⁷

Trends in historical time are approximated with *first partnership cohorts*. Cohorts are comprised of first partnerships that were formed in the same historical time period. Depending on the type of analysis, I chose different cohort group widths.

Educational attainment was measured in terms of the number of years of education and was recoded from given information on the highest diplomas achieved by respondents.⁸ This type of recoding implies constant, linear effects on the separation risks of an additional year of education and ignores qualitative differences between diplomas with identical duration. *Educational homogamy* is measured by whether partners fall into the same educational category and is restricted to respondents of the IFG. The analyses that refer to education as a categorical variable are supplemented with information on category definitions.

Educational attainment relates to many other dimensions that affect marriage or separation decisions. To reduce the mediating effects of these correlates, estimates are controlled for three factors that are associated with partnership breakup. *Age at formation* measures the age at which the respondent entered the partnership. Research shows that the risk of separation is lower for couples that formed at older ages, which is true for NMCs, PMCs and direct marriages. An important interpretation of this finding relates it to ongoing personal development and the associated likelihood of mismatches for young couples (Kuperberg 2014). *Parent-hood* is measured according to whether the respondent has had his or her first child during or prior to the relationship. It can be assumed that parenthood during the partnership fosters relational stability, as it represents a form of investment in the partnership (Wagner et al. 2015). The relationship is less clear when the child was born before the partnership started, since this can indicate that a person other than the one the respondent entered the partnership with is the co-parent. *Parental separation* is measured according to whether the respondent's parents are separated. Parental separation has been shown to decrease the likelihood of marriage (Erola et al. 2012) and to increase the risks of separation (Diekmann and Schmidheiny 2013).

6 Strongly deviating from official numbers on "legal separations," most endings of marital relationships in SHPI and SHPIII were reported as "legal separations" and not as "divorces." This suggests that respondents had often reported the end of marital relationships as a change in civil status.

7 For the SHPI it is not possible to exclude endings of NMC due to death of partner.

8 Highest education achieved was translated into years of education using the information of the Federal Office of Statistics for 1997: "No diploma" 8 years; «Obligatorische Schule» 9 years; «An-lehre» 9.75 years; «Handelsschule/Haushaltslehrjahr» 10 years; «Berufslehre» 10.5 years; «Diplom-mittelschule» 11.5 years; «Vollzeitberufsschule, Berufsmaturität, Meisterdiplom/Fachausweis» 12 years; «gymnasiale Maturität, Techniker-/Fachschule» 12.5 years; «höhere Fachschule/HTL/HWV» 15 years; «Uni/Hochschule» 17.5 years; "Others" 9 years (Jann and Engelhardt 2008, 47).

5 Educational expansion, the spread of NMC, and changes in cohort characteristics

Table 2 reports the characteristics of consecutive cohorts in the sample. Educational expansion is reflected in an average increase of 2.6 years of schooling for women and 1.5 years for men between the oldest and the youngest cohort. The most striking change in the other characteristics of the cohorts is the increase in NMC. While around 95% of first partnerships formed before the 1970s led to marriage, this share has sunk strongly in the more recent cohorts. Among all cohabitations formed in the year 2000, only 61% had become marital by 2013. In most cohorts, individuals with tertiary education showed the *highest tendency to remain unmarried in first partnerships*. This pattern is in line with the idea that the most educated groups, possibly due to their extended educational trajectories, less frequently institutionalize their first partnerships with marriage. However, theoretical predictions from diffusion models that declare a decrease in the educational gradient do not hold for the spread of NMC in Switzerland (cf. Ní Bhrolcháin and Beaujouan 2013). Although the level of educational differentials varies between cohorts, the most highly educated individuals consistently showed the highest ages at formation, the lowest rates of fertility in first partnerships and the largest share of individuals who experienced parental separations. In all but the most recent cohort, moreover, they had the lowest share of educational homogamy. In line with the predicted effect of leveling gender ratios in institutions of higher education, increases in educational homogamy were strongest among upper educational groups.

Table 2 Changes in characteristics across cohorts of first partnerships

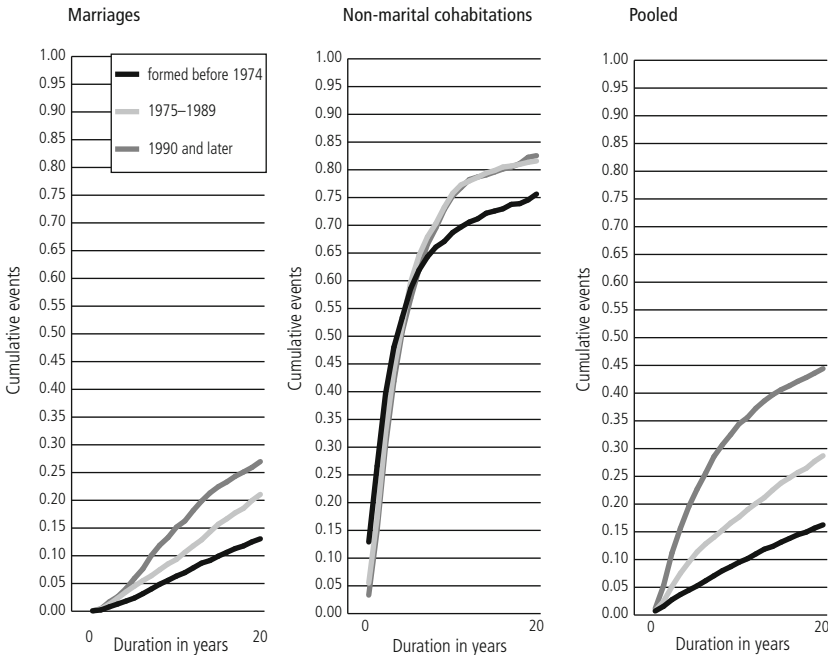
	Years of education, average		Share NMC, %			Age at formation, average years			Has a child before or after formation, %			Experienced parental separation, %			Share homogamous in education, %			N, total
	Women	Men	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	
Before	10.4	11.6	3	5	2	24	25	26	81	78	81	3	3	5	65	41	13	1009
1960s	10.7	11.9	4	4	7	23	24	25	87	84	81	3	5	6	65	54	39	3380
1970s	11.2	12.1	7	8	14	23	24	25	86	80	76	5	7	7	61	64	42	5162
1980s	11.5	12.3	10	15	17	24	25	26	84	76	69	10	10	12	63	64	45	6117
1990s	12.3	12.8	20	29	36	25	26	27	71	63	56	7	17	16	64	61	51	4713
2000s	13.0	13.1	22	42	42	27	26	28	71	55	51	18	20	22	54	59	59	2929

Notes: L = less than vocational degree (< 10.5 years of education), M = vocational or general education (> 10.4 and < 12.6), H = higher vocational or tertiary degree (> 12.5). Numbers on educational homogamy based on IFG only.

6 The influence of educational expansion on partnership breakups

First partnerships have become less stable in Switzerland (see Figure 1). While only 13% of marital partnerships formed before 1975 separated within the first 20 years of marriage, this share more than doubled to 27% for those formed after 1989. NMCs, meanwhile, have become slightly more stable across cohorts during the initial years of partnerships. In the longer run, however, NMCs remain far less stable than marriages: in the most recent cohort 82% of couples living in NMC dissolved before reaching 20 years together compared to 76% in the oldest cohort. Hence, NMC is clearly and consistently less stable than marriage, and the overall increase in separation rates is stronger when accounting for unmarried cohabitation. This becomes clear when comparing increases in separation rates between marital partnerships and the pooled sample: with an increase from 16% to 44%, the rise in the rate of breakup after 20 years is considerably steeper in the pooled sample.

Figure 1 Cumulative separations for three cohorts – married, NMC, and pooled



Notes: Solid line = formed before 1974; short dashed = 1975-1989; long dashed = 1990 and later.

What role has the expansion in individual educational attainment played in the overall trends in partnership stability? To answer this question, I estimated Royston-Parmar flexible parametric models of the log cumulative hazard function of breakups of first partnerships in the pooled sample. This type of survival regression is advantageous because it allows for the direct modelling of different shapes of cumulative hazard functions for NMC and marriages using time-dependent dummies for the type of partnership (Royston and Lambert 2011), which strongly improves the fit of the model.

The results are presented in three parts. In the first, Table 3 contains coefficients from varying models: a first model including cohort dummies, educational attainment and control covariates (age at formation, formation before and after the birth of the first child, and parental separation) (Model 1); an identical model testing for gender differences in the coefficient for educational attainment (Model 2); a model including time-dependent effects of NMC (Model 3); and the same model including a dummy for educational homogamy (Model 4). In the second part, Figure 2a and 2b reveal the dynamics underlying the average-across-cohort effects of educational attainment based on gender-specific cohort-education interactions (see Table 4 appendix). The third part (Figure 3) distills this information and compares observed and standardized trends in the predicted probabilities of partnership breakups (Klein, 2005). One comparison is of the predicted probability of breakup for the 1960's cohort with their given distribution of education to two scenarios in which their distribution is reweighted to that of the 1980s and the 2000s, respectively. The second comparison, conversely, is of the level for the 2000's cohort to two scenarios in which it assumes the educational distribution of the 1980s and 1960s, respectively.

On average across all cohorts, education was positively but moderately associated with partnership breakup: in opposition to H1a but confirming H1b, an additional year of education increased the cumulative hazard function of breakup by 3.4% ($p \leq 0.001$, Model 1); this overall coefficient was driven by the higher coefficient for women's education (5.5%, $p \leq 0.001$); and in support of H1c, gender differences were significant ($p \leq 0.001$, Model 2). Accounting for NMC (Model 3) strongly flattens the trend of cohort dummies, which underlines the importance of NMC for increasing breakup rates. NMC's contribution to the higher average breakup rates among more highly educated strata is also supported by the further reduction of the already small average coefficient of education than in model 1. Estimated coefficients for control variables and educational homogamy (Model 4) are in line with expectations: having experienced parental separation and having had a child before the partnership started increased the risk of separation; while being older at the time of formation, having a child during the partnership and being in an educationally homogamous partnership reduced it.

Table 3 Covariate effects on the cumulative hazard function of separation of pooled first partnerships

	1) Cohorts, controls and education	2) Gender interaction	3) NMC	4) Educational homogamy
Before 1960s: reference (1970s)	0.458*** (0.0496)	0.462*** (0.0500)	0.620*** (0.0641)	0.506*** (0.0984)
1960s	0.720*** (0.0406)	0.721*** (0.0407)	0.803*** (0.0446)	0.610*** (0.0497)
1980s	1.465*** (0.0659)	1.462*** (0.0658)	1.312*** (0.0576)	1.383*** (0.0845)
1990s	2.123*** (0.102)	2.110*** (0.101)	1.494*** (0.0732)	1.709*** (0.113)
2000s	2.349*** (0.138)	2.322*** (0.137)	1.224** (0.0762)	1.729*** (0.143)
Education overall	1.034*** (0.00554)		1.023*** (0.00536)	1.015* (0.00716)
Education women		1.055*** (0.00721)		
Education x men		0.962*** (0.00985)		
Educational homogamy				0.595*** (0.0255)
NMC vs. marriage: p0			9.243*** (0.591)	9.693*** (0.798)
Time-v. effect: NMC x p25			0.380*** (0.0327)	0.519*** (0.0579)
Time-v. effect: NMC x p50			0.891 (0.0647)	1.144 (0.112)
Time-v. effect: NMC x p75			0.965 (0.0332)	0.926 (0.0430)
Time-v. effect: NMC x p100			0.942*** (0.0119)	0.965 (0.0184)
Age at formation	0.946*** (0.00361)	0.946*** (0.00360)	0.958*** (0.00331)	0.963*** (0.00428)
Had child before formation	2.936*** (0.258)	2.953*** (0.260)	2.585*** (0.232)	2.401*** (0.304)
Child during partnership (time-varying)	0.262*** (0.00909)	0.263*** (0.00910)	0.430*** (0.0186)	0.457*** (0.0249)
Parental separation	1.458*** (0.0641)	1.456*** (0.0640)	1.267*** (0.0552)	1.206** (0.0748)
Constant: p0	0.137*** (0.0101)	0.138*** (0.0102)	0.0636*** (0.00576)	0.0804*** (0.00684)

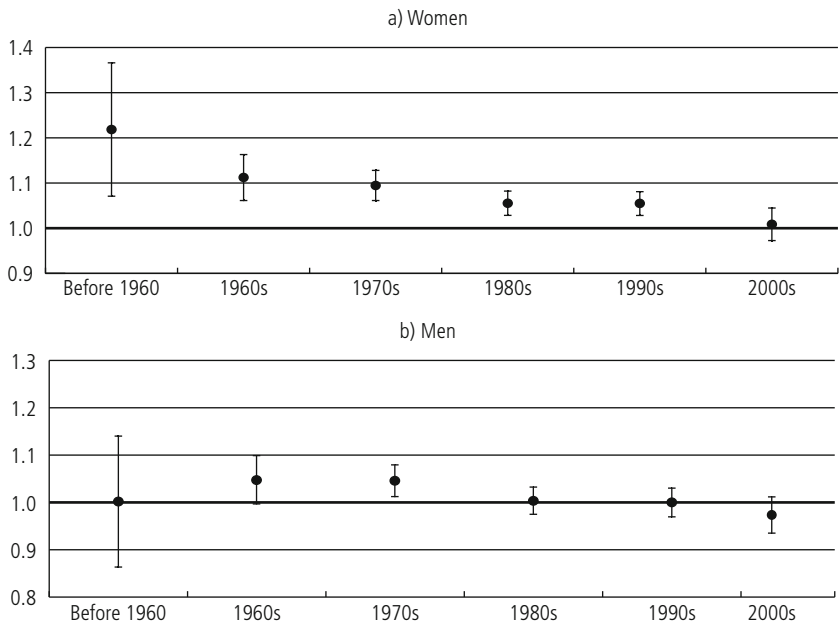
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Continuation of table 3.

	1) Cohorts, controls and education	2) Gender interaction	3) NMC	4) Educational homogamy
Internal knot 1: p25	5.452*** (0.115)	5.454*** (0.115)	10.51*** (0.874)	10.30*** (1.059)
Internal knot 2: p50	1.595*** (0.0262)	1.594*** (0.0262)	1.962*** (0.138)	1.877*** (0.171)
Internal knot 3: p75	0.950*** (0.00931)	0.950*** (0.00932)	0.993 (0.0324)	1.015 (0.0426)
External knot: p100	1.036*** (0.00600)	1.036*** (0.00600)	1.061*** (0.0111)	1.060*** (0.0147)
AIC	37 650.6	37 629.8	33 349.0	17 851.4
N splited episodes	33 834	33 834	33 834	17 512
N events	7 081	7 081	7 081	3 822
N responents	23 310	23 310	23 310	12 274

Notes: Reported are exponentiated coefficients indicating the factor by which the cumulative hazard functions change with the covariate. The effect of having a child during the partnership is time-varying using the method of episode splitting. Model 4 is restricted to respondents in the IFG. All other models include dummies for data source (not reported). * p≤0.05, ** p≤0.01, *** p≤0.001, Standard errors in parentheses. Table created with esttab (Jann 2007).

Figure 2 Coefficient of education by cohort and 95% confidence intervals

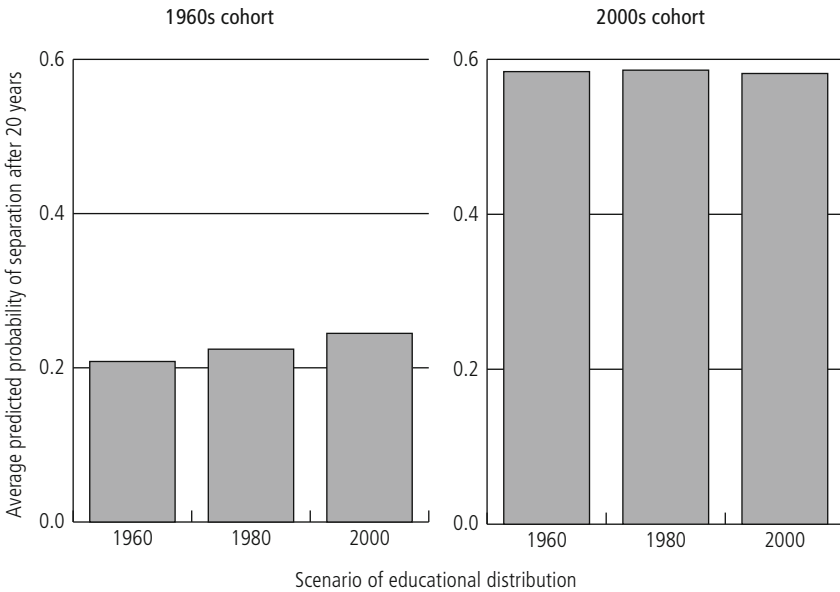


Notes: Based on tests of education-cohort-interaction terms (Table 4).

Figure 2a and 2b illustrate the effects of an additional year of schooling for women and men by ten-year-formation cohorts. Decreasing educational differentials in breakup rates for both men and women caused the effects of an additional year of schooling to tend towards one, indicating no association. More specifically, the effects of education shifted from being positive on a statistically significant level to being statistically non-significant. This supports the hypothesis of a positive educational gradient at earlier levels of diffusion and a less positive gradient in a context where divorce and NMC have become more prevalent (H2a). Although this general pattern also holds for men⁹ (the strongest positive effect for men was in the 1970s cohort and decreased thereafter), it is more pronounced and consistent for women (H2b).

A summary of the relevance of these shifts to the overall trend in breakup behavior can be seen in Figure 3. The probability of separation for the 2000s' cohort

Figure 3 Predicted probability of separation by cohorts and standardization scenarios



Notes: Predicted separation probabilities based on model 2 with three-way interactions between educational categories (years of education split at 10, 11.5, 12, and 15), cohort dummies and gender. 1960s cohort – 1960 and 2000s cohort – 2000 bars display predictions calculated from observed distributions of education. Standardizations of educational distribution based on inverse probability weights calculated from a logit model of the probability of being in reference cohort vs. being in comparison cohort (1960 vs. 1980 and 2000, 2000 vs. 1980 and 1960) on interactions between gender and education (same educational categories as in model on separations).

9 The pattern also holds for men when adjusting for their partner’s education (based on IFG only, not reported).

was nearly three times higher than for the 1960s' cohort in all standardization scenarios. This points to the relatively low overall importance of individual educational attainment for partnership stability. Nevertheless, the different scenarios illustrate the relevance of changes in education-specific breakup behavior. Education played a considerable role in partnership breakup rates in the 1960s: the adjustment of the 1960s' cohort's educational distribution to that of the 2000s' cohort is associated with an increase in its average predicted probability of breakup from 0.208 to 0.245. On the other hand, reweighting the educational distribution of the 2000s' cohort hardly changes average predictions. Since education had a moderately negative effect on separation rates in the youngest cohort, the probability of partnership breakup would even have been slightly higher than observed (0.584 vs. 0.582) if its members had only attained the distribution of education found in the 1960s' cohort.

7 Conclusions and relevance

In examining the impact that the expansion of men's and women's educational attainment has had on the stability of first partnerships in Switzerland the present article found that the overall association between educational attainment and the rate of partnership breakup was positive but moderate (H1b) and that the coefficient was significantly higher for women (H1c) who also experienced more significant increases in educational attainment. The results suggest that part of this overall positive educational gradient is explained by the greater percentage of highly educated individuals in NMC.

However, educational expansion would only be liable for the heightened instability of first partnerships if higher levels of education predicted higher rates of partnership breakup *and* if this influence remained constant throughout the entire period of educational expansion. The study's crucial finding is that partnership breakup rates would *not* lie substantially lower today if couples had remained at the much lower levels of education seen in previous cohorts. The results suggest that at the same time as individual educational attainment increased, the association between education and partnership breakup weakened, thus mitigating the effect of educational expansion. Indeed, in contradiction to previous research on women's education and divorce in Switzerland (Härkönen and Dronkers 2006), the association between educational attainment and partnership breakup changed from positive for the older cohorts to a non-significant level for the youngest cohorts (H2a).

The potential indirect effects of educational expansion on trends in partnership instability, such as how increasing educational levels may have changed partnership behavior by influencing social norms and structures (cf. Lesthaeghe and Neels 2002; Vitali et al. 2015), are beyond the purview of this article. The main conclusion it reaches is that as long as educational expansion is understood simply as the *de facto*

rise in individual educational attainment, it does little to explain the drastic increase in partnership breakup rates. One of this study's contributions is thereby to affirm and strengthen the findings of previous research on the influence that increased education has had on the rise in marital dissolution (Wagner et al. 2015). Yet, its insight into the influence of the rise in NMC has (arguably) greater implications for the ongoing investigation of trends in partnership instability. If future research seeks to understand potential changes in the consistently high rates of breakup found in NMC, it will need to devote continued attention to the behavior and composition of cohabiting couples (cf. Schnor 2014).

The consequences separations have for the individuals involved is what makes trends in partnership separation particularly significant (Arránz Becker 2015). Educational differentials in partnership breakup matter because educational attainment stands for a diverse set of resources that help individuals cope with separation. This study has only *described* the trends regarding educational differentials in partnership breakups without explicitly testing the mechanisms behind them. Nevertheless, two results can serve as an impetus for further research to more closely examine the relationship between education and partnership instability.

The first relates to the importance of the rise in NMC for separation trends. In opposition to conventional diffusion models, the greater percentage of highly educated people living in NMC has not declined during the course of NMC's proliferation. Educational differentials in NMC have even increased: among the most recent cohorts, it is the least educated who lag most strongly behind the trend towards NMC. Since pooling NMCs and marriages together rather than considering marriages alone reveals a greater instability of partnerships among more highly educated individuals, future research should examine whether the higher tendency towards cohabitation among better educated couples in Switzerland is independent of the type of NMC. Are couples with high levels of education only more likely to remain unmarried in first partnerships that overlap with educational trajectories, or does this also hold for more meaningful childbearing unions that mostly tend to form later in life (cf. Schnor and Jalovaara 2017)?

The second result concerns the reasons behind the change in the educational gradient of separation that are suggested by the separate examination of changes in the coefficients for women's and men's educational achievement. The initially higher positive gradient for women and its stronger decrease (H2b) emphasizes the relevance of gender-specific explanations (Matysiak et al. 2014). However, since the general pattern in Switzerland is comparable between genders – unlike in Italy, for instance (Salvini and Vignoli 2011) – gender-neutral explanations also seem relevant. For instance, pointing to the importance of *opportunity structures*, many studies have stressed the role played by social and cultural aspects of family change (e.g., Härkönen and Dronkers 2006). Seen from this perspective, educational gra-

dients in partnership breakup decreased because the unhappy couples among the least educated became more likely to separate once social constraints had weakened.

I'd like to close this article by suggesting that future research expand its focus on the factors that determine educational differences in partnership breakup by taking into account their influence on *partnership quality* and *partnership investments*. For instance, in the wake of educational expansion, educational homogamy mainly increased among the most educated, thereby decreasing their separation risks. To what extent was this risk reduction due to higher partnership satisfaction? An equally stabilizing role could be played by men's increasing contributions in the domestic sphere, which are likewise most widely dispersed among the most educated (Grunow et al. 2007; Goldscheider et al. 2015). Conversely, the difficult economic conditions that afflict some segments of moderately and lowly educated groups may contribute to the share of troubled partnerships among them (Williams et al. 2015) and reduce their likeliness of marrying.

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9 Appendix

Table 4 Gender-specific coefficients underlying the model for Figures 2a and 2b

	1) Women	2) Men
Before 1960s: reference (1970s)	0.496*** (0.0768)	0.541*** (0.0937)
1960s	0.742*** (0.0557)	0.734*** (0.0659)
1980s	1.439*** (0.0795)	1.490*** (0.111)
1990s	2.007*** (0.124)	2.245*** (0.170)
2000s	2.403*** (0.185)	2.517*** (0.231)
Education: 1970s	1.095*** (0.0170)	1.046** (0.0174)
Education x Before 1960s	1.113 (0.0710)	0.958 (0.0691)
Education x 1960s	1.016 (0.0284)	1.002 (0.0294)
Education x 1980s	0.964 (0.0194)	0.960 (0.0214)

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Continuation of table 4.

	1) Women	2) Men
Education x 1990s	0.963 (0.0193)	0.956* (0.0217)
Education x 2000s	0.921*** (0.0220)	0.931** (0.0243)
Age at formation	0.940*** (0.00492)	0.949*** (0.00542)
Had child before formation	2.782*** (0.303)	3.254*** (0.471)
Child during partnership (time-varying)	0.286*** (0.0124)	0.237*** (0.0130)
Parental separation	1.599*** (0.0880)	1.302*** (0.0921)
Constant: p0	0.130*** (0.0101)	0.148*** (0.0192)
Internal knot 1: p25	5.494*** (0.157)	5.460*** (0.171)
Internal knot 2: p50	1.576*** (0.0350)	1.621*** (0.0404)
Internal knot 3: p75	0.953*** (0.0122)	0.944*** (0.0143)
External knot: p100	1.036*** (0.00766)	1.037*** (0.00928)
AIC	19 680.6	17 912.1
N splitted episodes	18 844	14 990
N events	4 004	3 077
N responents	12 986	10 324

Notes: Reported are exponentiated coefficients indicating the factor by which the cumulative hazard functions change with the covariate. The effect of having a child during the partnership is time-varying using the method of episode splitting. Both models include dummies for data source (not reported). * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$. Standard errors in parentheses. Table created with `esttab` (Jann 2007).

