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# The second demographic transition, 1986–2020: sub-replacement fertility and rising cohabitation—a global update

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## Abstract

The article considers the evolution of two “Second Demographic Tradition” (SDT) core characteristics: fertility postponement and the rise of cohabitation, with particular attention being given to the first two decades of the new century. It can be considered as the sequel to the concise overview of the SDT published earlier in the US Proceedings of the National Academy (PNAS) (Lesthaeghe, 2014). In the first section, three optimistic views concerning the evolution of fertility are considered: (i) rises due to the end of postponement, (ii) rises connected with advancing human development and (iii) rises associated with advancing gender equality. The focus in this section is mainly but not exclusively on the European experience and its large degree of variation in fertility patterns. It is argued that these three optimistic predictions of sustained fertility rises are mainly based on observations prior to 2010, with too much weight being given to four Nordic countries and too little to other Western European countries with very similar fertility levels. However, these expectations have been thwarted during the second decade, even in the presence of advances in human development and/or gender equality. Hence, the original SDT prediction of 1986 of *sustained sub-replacement fertility* still holds after 35 years. We expect this to continue during the third decade as well. Furthermore, single-factor explanations are not likely to do justice to far more intricate situations that are responsive to varying structural and ideational influences. In the second section, the evolution of cohabitation is traced in Europe, the USA and Canada, the Latin American countries, three East Asian populations and selected sub-Saharan cases. At the onset, cohabitation can start either from a SDT basis among the better educated or among the poorer classes following a pattern of disadvantage (POD). It is argued that the feature of cohabitation spreads rapidly among all social classes and across all education groups and that in the process of increasing cohabitation, the POD versus SDT argument loses its significance. On a global scale, the rise in cohabitation is contingent on two dimensions: (i) contrasting historical patterns of kinship organisation, including the position of women, and (ii) further advances of the “ethics revolution”, indicating the growing dominance of individual autonomy over traditional societal norms. As a result, no breakthroughs in the near future are expected in countries with a Muslim or Hindu tradition in which no such major cultural shifts have occurred so far.

**Keywords:** Sub-replacement fertility, Cohabitation, Second demographic transition

## Introduction

The initial building blocks for the theory of the second demographic transition (SDT) were laid in 1986 in a Dutch language article by myself and Dick van de Kaa (Lesthaeghe & van de Kaa, 1986). Its title was “A second demographic transition?” We were convinced that below replacement fertility was going to be a lasting feature, and that pre-marital cohabitation was going to expand in Europe. We had both lived through the cultural changes of the 1960s that questioned all forms of authority. And we based our argument on the fact that an era of much more individual discretion and autonomy was in the making, spurred on by a newly expanding educated “post-materialist” elite (Inglehart, 1977). We were not the only ones who thought along similar lines: in France Philippe Ariès (1980) and Louis Roussel (1983) were equally convinced that a page had been turned.

Major changes took place in global demography since 1986, and hence an assessment of the last 35 years may be in order. The present article is essentially a sequel to an earlier concise overview of the development of the theory of the “Second Demographic Transition” (SDT) in the Proceedings of the United States National Academy of Sciences (PNAS) (Lesthaeghe, 2014).<sup>1</sup> In that PNAS article, we presented a history of the concept along with a description of the basic ingredients both in terms of fertility and household formation trends, and in terms of the conditioning ideational factors operating at the individual level. In addition, we contrasted the SDT to the first demographic transition (FDT) in the West, again in terms of opposite demographic trends<sup>2</sup> and in terms of shifts in the conditioning societal correlates at the macro level. At the time of publication in 2014 of the PNAS article, it was already clear that the SDT was not merely a Western European idiosyncrasy as contended during the 1990s, but covered the entire Western world.<sup>3</sup> Furthermore, the incidence of cohabitation was rapidly increasing in Latin America (Esteve, Lesthaeghe, & Lopez-Gay, 2012), and this SDT feature also emerged in industrial nations of the Far East (i.e. Japan, Taiwan) where it was least expected (Tsuya, 2006; Raymo, Iwasawa and Bumpass, 2009). In 2014, we still lacked a clear view of what was happening in the People’s Republic (PR) of China, but very soon thereafter evidence was presented of rising pre-marital cohabitation in that vast population as well (Yu & Xie, 2015).

In the present article, we will address three alternative views which proposed a rise in fertility in the SDT countries during the period 1998–2014. In addition, we will also shed light on the discussion pitting the so called “pattern of disadvantage” (POD) against the SDT as two opposing prime causes of the increase in pre-marital cohabitation (e.g. Perelli-Harris & Gerber, 2011). We will show that the overall rise over time is often much larger than education or wealth related differences. Apparently, the feature of pre-marital cohabitation can spread like wildfire to all social classes of society.

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<sup>1</sup>See also the earlier review of global trends in Lesthaeghe (2010).

<sup>2</sup>The opposite trends were nuptiality and fertility postponements in the SDT versus earlier marriage and curtailment of fertility at older ages in the FDT. The other contrasts related to the rise of non-conventional forms of household formation in the SDT (single living, rising divorce rates, pre-marital and post-marital cohabitation, procreation within cohabitation, rise reconstituted families and same-sex households).

<sup>3</sup>During the 1990s, scepticism was still dominant in Southern and Eastern Europe and in the English-speaking world as well. The view that the SDT was not a transition and only a Western European idiosyncrasy was still defended as late as 2004 by D. Coleman (2004).

We will furthermore try to formulate perspectives for the future courses of fertility under SDT conditions in Europe and of cohabitation worldwide.

### **The disconnection between sub-replacement fertility and the rise of cohabitation at a global level**

In countries with a historical dominance of the nuclear and conjugal family, i.e. Europe and the “new Europes”,<sup>4</sup> the SDT features of both fertility postponement and increasing pre-marital cohabitation were fairly synchronised. In fact, at the onset fertility outside wedlock remained low, and consequently the rise of pre-marital cohabitation and/or prolonged residence in the parental household resulted in a postponement of parenthood. During the subsequent phase, when parenthood among cohabitants started rising, no reversal in the mean age of maternity took place, and sub-replacement fertility became a systemic feature of the SDT. In Europe, a dual reproductive system emerged with the German-speaking countries and the Southern European ones having lower fertility than the Nordic and other Western populations. They were joined during the 1990s by the formerly communist countries (FCCs) as a result of the political regime change and its concomitant economic shock: fertility plummeted to the “lowest-low levels”.<sup>5</sup> Subsequently, also the hitherto low mean age at motherhood started rising in a continuous way in the FCCs in tandem with the upward trend in pre-marital cohabitation and parenthood among cohabitants.

In other world regions with very different family and kinship systems, there was no such synchronism between the rise of cohabitation and fertility postponement. In a number of urban and industrialised Asian patriarchal societies,<sup>6</sup> the feature of fertility postponement surfaced already since the 1970s and gained momentum, cohort after cohort, to the point of pushing the period total fertility rates (PTFRs) to the “lowest-low” level.<sup>7</sup> In the PR China, the “One Child” policy had a similar effect of pushing fertility down to the sub-replacement level. But in none of these countries were there any signs yet of the possibility of rising pre-marital cohabitation. This would be a complete violation of the century-old system of controlled endogamous marriage. That would, however, change at the onset of the twenty-first century in Japan, Taiwan, PR China and the Philippines. Evidently, the marriage and fertility postponement transition preceded the timid trend toward pre-marital cohabitation by roughly two to three decades in these populations.

<sup>4</sup>By the term “new Europes” we refer to the US, Canada, Australia, New Zealand, Argentina and Uruguay who all have majority populations of European descent.

<sup>5</sup>The term “lowest-low fertility” was coined by Kohler, Billari, & Ortega, 2002 to refer to Period Total Fertility Rates (PTFR) below 1.3.

<sup>6</sup>By “patriarchal” we refer to those populations in which there is a strong male dominance and a subordinate position of women connected to class, caste and lineage endogamy, the permanent severance of ties of women to their own kin, obedience to their grooms’ family, the payment of a dowry accompanying a marriage (i.e. a transfer of goods to their new uxorial household) and often also a high degree of domestic encapsulation. Courtship and marriages are controlled or arranged, and, under such conditions pre-marital cohabitation is as good as non-existent. In this way a possible *mésalliance* resulting from individual freedom of choice is averted.

<sup>7</sup>In the period 1980–1985, Japan, Hong Kong and Singapore had PTFRs below replacement; in the period 2000–2005, “lowest-low” fertility was recorded for Japan (1.30), South Korea (1.21), Singapore (1.35), and Hong Kong (0.95), but sub-replacement fertility was also prevailing in Taiwan (1.57) and PR China (1.61). In 2010–2015 all had “lowest-low” levels, except PR China (1.64). Compared to 2000–2005 there were no major changes except in Hong Kong where the PTFR rose to 1.20.

It should also be stressed that there are many instances of patriarchal societies in Asia and North Africa which are characterised by a major postponement of marriage and parenthood, without any “corruption” of the patriarchal system through pre-marital cohabitation or fertility outside wedlock (Jones, 2005; Raymo, Park, Xie, & Yeung, 2015). Several of them now have PTFRs at the brink of the sub-replacement level (e.g. Turkey, Tunisia, Bangladesh) or are already passing that threshold (Iran). The fertility postponement in these cases may be connected to the SDT when it is driven by the quest for female advanced education and emancipation in certain urban parts of the population. But for the larger and poorer segments, postponement of marriage and of parenthood merely constitutes a response to economic stress and is as such not a SDT feature. Finally, there are also instances characterised by sub-replacement fertility as the result of early marriage and early motherhood, but with a rapid curtailment of further fertility at low parities via contraception or widespread sterilisation (e.g. Kerala in Southern India). These are still typically FDT cases in the latest phase of their fertility transition. *In other words, sub-replacement fertility is not of necessity a SDT feature but can be reached during the final phase of the FDT as well.*

Exactly the opposite story applies to the mixed cultures populations of Latin America and the Caribbean. In these instances, there was an extant tradition of pre-marital cohabitation and also a pattern of life-long cohabitation without any transition to marriage. But the picture in these culturally and ethnically mixed populations was quite heterogeneous to start with, with customarily high levels of cohabitation prevailing among formerly black slave populations (e.g. matrifocal visiting unions) and indigenous populations with a hunter-gatherer background. The same also held among the urban poor. Lower levels prevailed among ethnic populations stemming from pre-Columbian advanced societies which had more complex patterns of social stratification with possibly endogamous marriage among the elite castes (e.g. royalty, nobility, priests, military, craftsmen). Historically the lowest levels of cohabitation existed among the European and educated upper strata, who mostly adhered to the Catholic principles of marriage and prohibition of divorce.<sup>8</sup> By 2010–2015, most countries were already quite advanced with respect to the fertility transition (FDT) and several were close to or below the 2 children level.<sup>9</sup> However, this fertility transition was not the result of postponement. Instead, an early starting pattern of fertility prevailed in tandem with early partnership formation, typical for the last phase of the FDT. More specifically, fertility declined primarily via a reduction at higher ages and parities beyond two. This was achieved through a fairly rapid adoption of contraception and female sterilisation. To sum up, populations of this region witnessed a “cohabitation boom” since the 1980s, but without the other SDT component of fertility postponement (Castro-Martin, 2002; Fussell & Palloni, 2004; Esteve et al., 2012; Esteve, Lopez-Ruiz, & Spijker, 2013; Esteve & Florez, 2014).

The conclusion at this point is that the various aspects of the SDT can develop quite independently from each other in different historical and social settings. In the context of patriarchal family organisation, pre-marital cohabitation is still absent or only on the

<sup>8</sup>Of course, this did not preclude concubinage among white elites (e.g. Borges, 1985).

<sup>9</sup>TFR values in 2010–2015 were below the replacement level in Trinidad & Tobago (1.98), Jamaica (1.91), Colombia (1.82), Brazil (1.74), Costa Rica (1.76), Chile (1.65), Cuba (1.62) and Puerto Rico (1.22). Note that we count Argentina and Uruguay as part of the “new Europes”.

increase in Asian advanced industrial societies. In the latter instance, fertility postponement had already started two or three decades earlier. In the areas with the European nuclear family system, both cohabitation and fertility postponement evolved simultaneously. By contrast, in the mixed race populations of the Americas, the practice of cohabitation expanded without concomitant parenthood postponement.

### **Fertility recuperation in the new century: thwarted optimism**

In 1986, the SDT theory predicted the persistence of structural below replacement fertility in the West on the basis of several arguments. The rise of cohabitation, the further advances in female education levels, and the concomitant advancing of female emancipation and economic autonomy were structural features causing fertility postponement.<sup>10,11</sup> But, ideational factors, such as pronounced consumerism, advanced secularisation, the quest for self-actualisation, emancipation<sup>12</sup> and ethical autonomy, the keeping of an “open future”, and “post-materialist” or politically leftist convictions, were also considered as props of a new demographic regime. What the SDT could not yet foresee at this early date, however, was that fertility could also remain at levels below a PTFR of 1.5 children only.<sup>13</sup>

Contrary to the SDT view of long-term sustained low fertility, a number of optimist views were advanced during the period 1998–2014. They opened the perspective of a fertility increase, including a possible end to PTFR levels below 1.5. The first optimist view resulted from the technical “postponement adjustments”, the second was based on the supposed link to human development and the third one foresaw a fertility increase in function of advancing gender equality. These three views will now be discussed.

### **Postponement adjustments and higher fertility**

During the 1990s much attention was given to the postponement aspect of the fertility decline. The Bongaarts and Feeney (1998) tempo adjustments of period parity-specific total fertility rates dominated the scene in a pervasive way. Their method re-inflated the *prevailing* parity-specific period fertility levels by the complement of their average postponement rates as observed over several earlier years. In other words, the observed quantum of period fertility was held constant but was adjusted for recent tempo shifts to later ages. The meaning of this *hypothetical* measure is then clear: what would the PTFR at a given point in time be if no recent postponement had taken place. As such, their method nicely illustrates the effect of *past* postponement. However, a misinterpretation accompanied the notion of the adjusted PTFR: to what level would the PTFR increase if the postponement were to come to a halt. The adjusted PTFR now had a *prospective* interpretation, but relied on the silent hypothesis of no further quantum declines. Many assumed that the postponement would not continue for ever, and once the end being reached, fertility would universally bounce back in countries that had

<sup>10</sup>The SDT is not at odds with the neoclassical economic focus on rising opportunity costs for women leading to lower fertility.

<sup>11</sup>See also Billari, Liefbroer, and Philipov (2006) for the driving forces of postponement.

<sup>12</sup>Here, we mean both emancipation of women leading to more gender equality and emancipation of ethnic and sexual minorities.

<sup>13</sup>In 1986, nobody could foresee the collapse of communism 3 years later nor the subsequent dip of fertility in the FCCs to the “lowest-low level”. This post 1990 feature would constitute a major component of the subsequent and lasting fertility duality in Europe.

completed a postponement transition. The focus on the sole feature of tempo shift and the optimist interpretation of the adjustments distracted attention from the other crucial aspect: further quantum declines as a result of weak fertility recuperation at later ages, i.e. essentially between 30 and 40.

Realism commands that, *under SDT conditions*, fertility postponement and recuperation need to be considered *together*. We drew attention to this holistic approach in 1999 (Lesthaeghe and Willems, 1999) and subsequently developed a cohort fertility-based model of parametrised postponement and recuperation, leaving open the incomplete recuperation patterns of older cohorts after age 30 (Lesthaeghe, 2001).<sup>14</sup> In this approach, attention is drawn to the *prospective* degree of quantum recuperation of fertility that will be required to compensate for the degree of postponement as observed up to age 30 in successive cohorts. The benchmark cohort in this relational model can be taken as the last one with a completed cohort total fertility rate (CTFR) of close to two children. In that way, one can also visually appreciate how much recuperation after age 30 is required to bounce back to cohort replacement level fertility. In practice, it became quickly obvious at the onset of this century that the replacement level could not be realistically reached in the overwhelming majority of European populations. Instead, it became abundantly clear that sub-replacement fertility, and even the extra low versions of it, could last for a very long time. The relational cohort model of observed postponement and partially incomplete recuperation did not lead to any optimistic expectations. Some 20 years later, this is still the case.

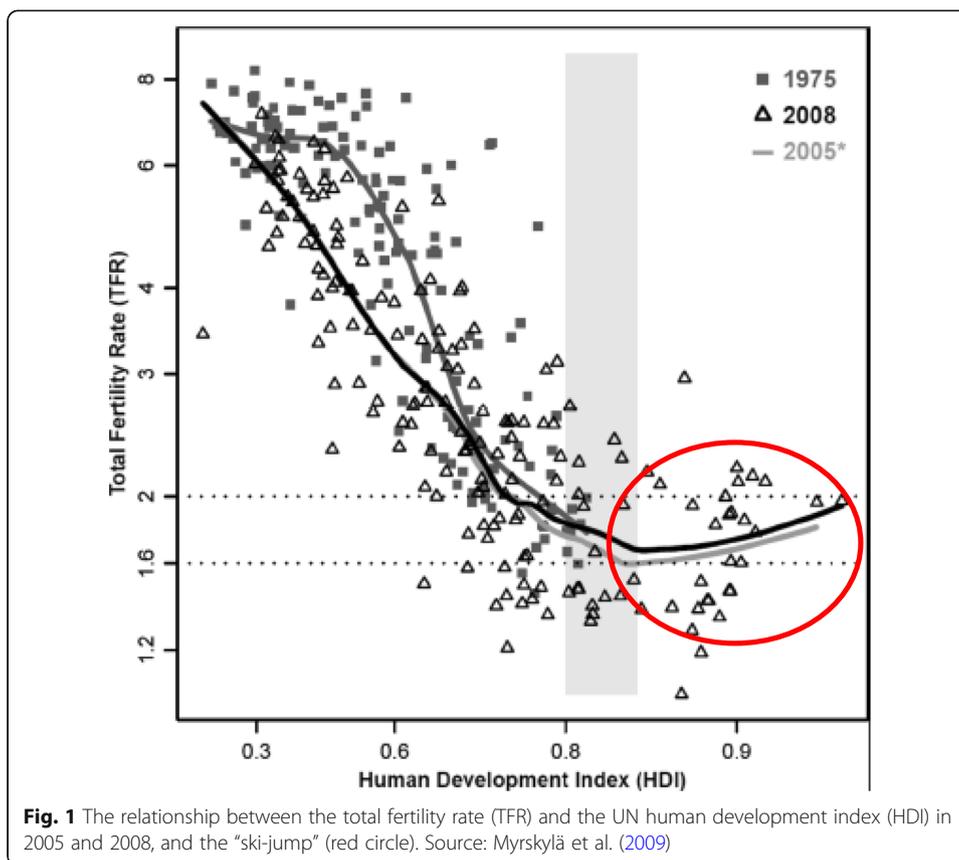
### Increasing fertility with advancing human development?

A causal link between higher fertility and advancing human development was advocated by Myrskylä, Kohler, and Billari (2009) for the industrialised countries in a very widely circulated article in the journal *Nature*. Its title was short and provocative: “Advances in development reverse fertility decline”. In this article, the authors claimed that improvements in the level of human development, as measured through the UN Human Development Index (HDI), in the lower fertility countries would produce a bouncing back to levels more commonly observed among countries with the higher HDI values. This is shown in Fig. 1 in which we marked the “ski jump” feature with a red circle. Especially, the Scandinavian countries with high HDI values and fertility closer to replacement during the first decade of the twenty-first century constituted the reference points.

The problem with that view is that it was based on measurements in a cross-section. The Myrskylä et al. article is in fact a notorious case of what Arland Thornton (2005) called “reading history sideways”. This concept refers to the fact that there is a frequent fallacy in the social sciences whereby a *future* evolution is proposed based on a single and *static* cross-sectional pattern, i.e. a statistical observation that itself contains *no analysis of an evolution over time*.

Closer inspection of the PTFR-HDI link for 460 regions in Europe shows that there is also a problem of “split correlation” (Lesthaeghe & Permanyer, 2014). Split correlation emerges when two distinct clusters are present. There is essentially no correlation

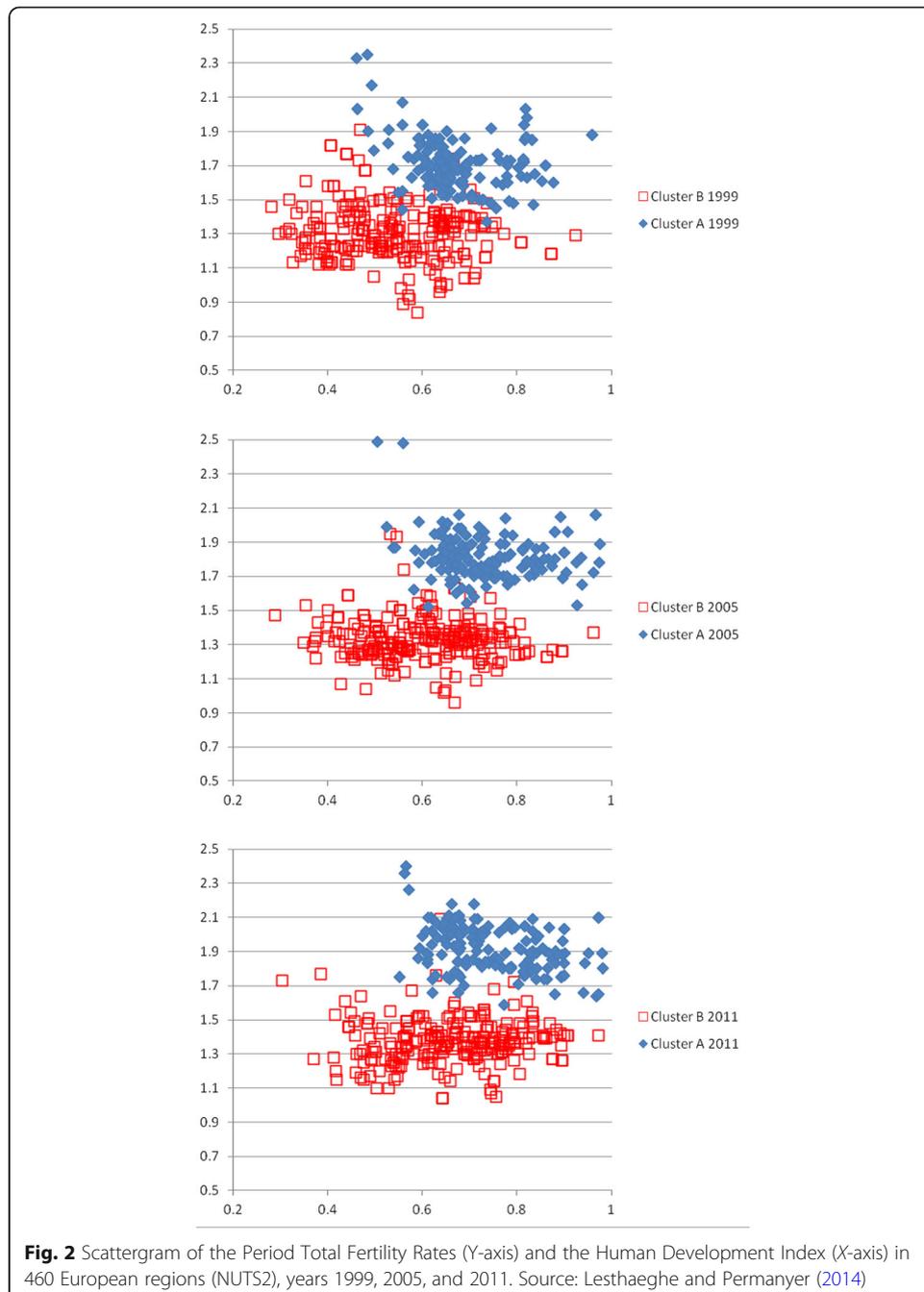
<sup>14</sup>This would be further elaborated and refined in Sobotka, Zeman, Lesthaeghe, and Frejka (2011). For early cohort analyses see also Frejka and Calot (2001), Frejka and Sardón (2004) and Frejka (2011).



within each cluster, but the overall regression slope is significantly different from zero simply because it runs through the lower and upper clusters combined. Split correlation is indicative of the fact that the  $X$  variable is not a causal antecedent of  $Y$  and that the explanation has to be sought elsewhere, i.e. in the variables  $Z_i$  that cause the existence of the distinct clusters in the first place. In our problem more specifically, there are two clusters of points in 1999 on the PTFR-HDI scattergram (see Fig. 2). The top cluster A in blue contains all the Nordic regions, and those of the Low Countries,<sup>15</sup> France, the UK and Ireland. The elongated lower fertility cluster B in red is composed of the mainly German-speaking countries, the Southern European regions and those of the former communist countries (FCCs), including the Baltic states and the Russian Federation. *In what follows in the rest of this article, we will continue using this A- and B-cluster reference.*

In 1999, the two clusters are already clearly visible, with just some 5 B-cluster regions having PTFRs of 1.7 or higher. In 2005, the two clusters become even more distinct with only 3 B-cluster regions with PTFR levels above 1.7. More importantly, both clusters move to the right, indicating improvements in the HDI. By 2011, the B-cluster scores noticeably higher on the HDI, but remains totally distinct from the regions of cluster A. *In other words, despite markedly improving HDI values in cluster B, there is no convergence whatsoever to fertility levels of cluster A.*

<sup>15</sup>The term Low Countries commonly refers to Belgium plus the Netherlands, and not to the latter alone.



The Myrskylä et al. thesis met with more scepticism. For instance Harttgen and Vollmer (2012) indicate that the presumed rise in PTFRs at the national levels is not robust to later revisions of the HDI and not to any HDI component either, whereas Furouka (2009) questions the mere existence of a new positive HDI-PTFR relationship. However, Myrskylä, Kohler, and Billari (2011) retested their hypothesis using the World Economic Forum's Global Gender Gap Index (GGG) (Hausmann, Tyson, & Zahidi, 2010) and pointed out that it could be that the "gender equity" factor would be responsible for the apparent cross-sectional positive correlation with national PTFR values. This is to some degree corroborated by Luci and Thévenon (2010), who, on the basis

of OECD data, point out that female employment could be the main driver but equally stress that the reversal is not strong enough to restore replacement level fertility.

We can also inspect the presence of the split correlation fallacy for other dimensions than the UNDP HDI indicator, and more specifically for gender equity measurements (Lesthaeghe & Permyer, 2014). This can only be done for entire countries for lack of more detailed regional indicators. We use 8 indicators, i.e. three measurements of the UN HDI, two indicators of gender equity GII and GEI\*, two measurements of female employment rates FER and one composite measure of the country positions on the SDT dimension.<sup>16</sup> In Table 1 we report the correlation coefficient between the PTFRs and the eight indicators, first for both clusters of countries together, and then for each cluster separately. As before, cluster A contains the Nordic and the five Western European countries, whereas cluster B contains the three German-speaking countries, the Southern European ones and all the FCCs.

The outcomes in Table 1 are quite telling: The overall correlations are typically positive for the overall sample of countries and exceed +.50.<sup>17</sup> The split correlation with the HDI as shown in Fig. 2 again appears very clearly when entire countries are concerned. The UNDP gender inequality indicator GII and the female employment rates FER do more poorly, even for both clusters combined. *Typical for the feature of split correlation is that these relationships vanish when measured within clusters.* There are only two exceptions in cluster A and none in cluster B. Apparently only among the Scandinavian populations, the Low Countries, France, Ireland and the UK is there a positive line up of the PTFR with the corrected Permyer gender equality index GEI\* and with the Sobotka SDT dimension. The negative correlation with the SDT indicator in cluster A refers to the period 2000–2001 when France and Ireland had higher fertility than the 4 Nordic countries. The overall positive correlation between the PTFR and the Sobotka SDT index is explained by the fact that the cluster A countries had higher values on both variables than most countries in the B cluster.

The overall outcome is clear: split correlation emerges when plotting PTFRs on national and regional HDIs. For the SDT and GEI\* predictors, there is only a relationship in cluster A but not in cluster B. The possible links between the PTFR and the FERs or UNDP-GII are unconvincing on all accounts. These findings for the first decade of the twenty-first century point to the possible relevance of gender equality for further exploration. But can this sole factor account for rising fertility?

#### **Will more gender equality produce a fertility increase?**

One of the remarkable observations since the formulation of the SDT in 1986 is that the relationship between fertility and female employment rates reversed: initially, the relationship was negative, and now it is positive among European countries. However, the fertility postponement did not start in the industrialised countries at the same time.

<sup>16</sup>We use the same HDI as Myrskylä et al., the GII is the gender inequality index of the UNDP in 2013 and the GEI\* is the improved version thereof proposed by Permyer (2013) and labelled as the Gender Equality Index for 2013. The FER values are those used by the OECD. The SDT measure is the composite indicator proposed by Sobotka (2008) and based on demographic SDT indicators (SDT1 = mean age first births and first marriage, proportion of non-marital births, total female marriage and divorce rates) and on 8 value orientations taken from the European Values Studies pertaining to family values, non-conformist values and secularisation (SDT2).

<sup>17</sup>The GII or the UNDP gender index has of course the reverse sign given that it measures *inequality*, not equality as the Permyer GEI\* corrected index does.

**Table 1** Correlation between the national PTFRs and selected social indicators of human development (HDI), gender relations (GII, GEI\*), female labour force participation (FER) and second demographic transition pattern (SDT): European countries

	Overall		Cluster A		Cluster B	
	R	Rsqr	R	Rsqr	R	Rsqr
TFR-HDI 2000	<b>+ .54</b>	<b>.29</b>	− .05	.00	+ .13	.02
TFR-HDI 2008	<b>+ .59</b>	<b>.36</b>	+ .05	.00	+ .14	.02
TFR-HDI 2012	<b>+ .54</b>	<b>.29</b>	− .09	.01	− .03	.00
TFR-GII 2012	− .33	.11	+ .38	.15	+ .11	.01
TFR-GEI*2013	<b>+ .58</b>	<b>.33</b>	<b>− .56</b>	<b>.28</b>	− .05	.00
TFR-FER 2000	+ .27	.07	+ .06	.00	− .08	.01
TFR-FER 2009	+ .40	.16	− .28	.08	+ .25	.06
TFR-SDT 2001	<b>+ .52</b>	<b>.27</b>	<b>− .68</b>	<b>.46</b>	+ .15	.02

Bold italics indicate *R* values  $\geq +.50$  and *Rsqr*  $\geq .25$

Source: Lesthaeghe and Permanyer (2014)

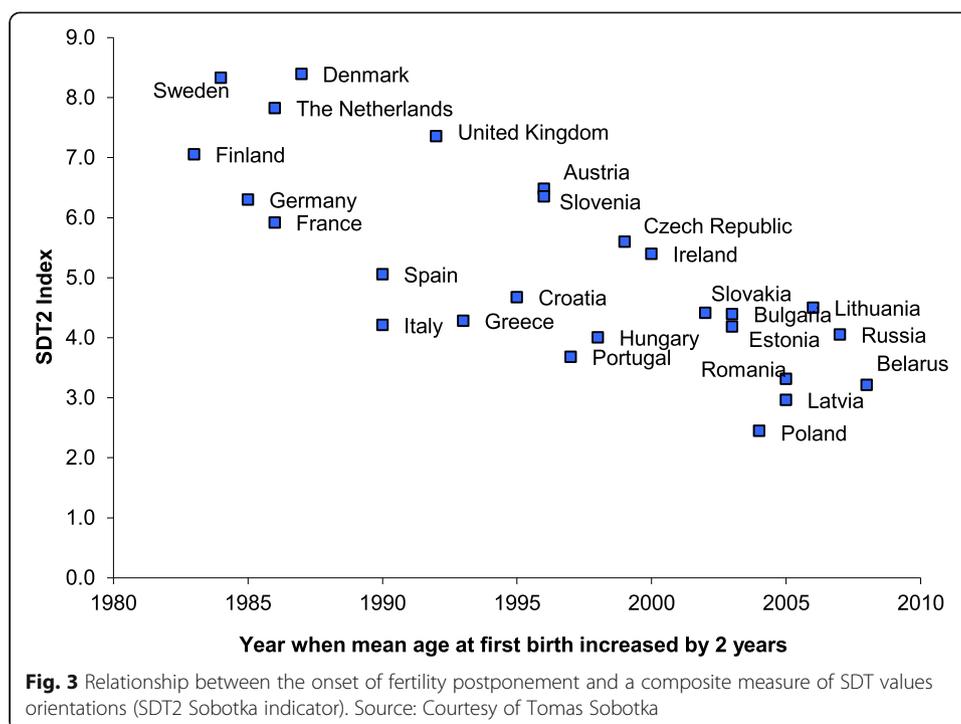
Those with higher female labour force participation and high SDT scores lead the postponement movement. This is shown in Fig. 3 by T. Sobotka who plotted the onset of the postponement against a set of values incorporated in his SDT dimension (SDT2).<sup>18</sup> The postponement timing indicator is the year in which the mean age at first birth had increased by 2 years compared to the postwar minimum (trend reversal).

The Nordic postponement leaders were the first with PTFR values to drop below replacement level, immediately followed by the rest of North-Western Europe. All this happened in the period 1968–1973. The Nordic countries reached their lowest PTFR level in the mid-1980s (Sobotka, 2008). In Southern Europe, fertility postponement came later, and PTFRs dropped below replacement level only in the late 1970s. Leaving the FCCs aside, the resulting 1980 PTFR ranking is as follows: the German-speaking trio being lowest, then Scandinavia, then the rest of Western Europe, with the PTFRs still being highest in Southern Europe (Sobotka, 2008, p. 33) given the later onset of the postponement. *The strong negative correlation between period fertility and female labour force participation, as observed in the period 1970–1990, is a direct result of the timing differences in the onset of postponement.* Early postponers had the highest female labour force participation and the higher SDT scores, as theoretically expected. Countries with low female labour force participation were later postponers and had the higher fertility, hence the negative relationship between the PTFRs and female labour force participation. *But this masked the underlying positive relationship between both higher female labour force participation and cultural dimensions of the SDT at one hand and the earlier onset of fertility postponement at the other.*

During the decades that follow, Scandinavian and Western European PTFRs stay level between 1.7 and 2.0,<sup>19</sup> whereas all the others, late postponement FCCs included, had dipped or were dipping below the 1.5 level. This caused the reversal of the relationship between period fertility and female labour force participation. Clearly, not only fertility

<sup>18</sup>The Sobotka SDT2 index is based on the 1999/2000 European Values Study for 29 countries. The items are: greater importance of leisure, low frequency church/mosque/synagogue visit, high degree of control over life, child not needed for women's life fulfilment, marriage being outdated institution, women not wanting to stay home, respect for parents not essential, and approve of abortion (see Sobotka 2008, appendix).

<sup>19</sup>Scandinavian PTFRs increase temporarily during the 1987–1992 years, but this was essentially related to the fertility peak in Sweden caused by the so called “speed premium”. See Hoem and Hoem (1997).

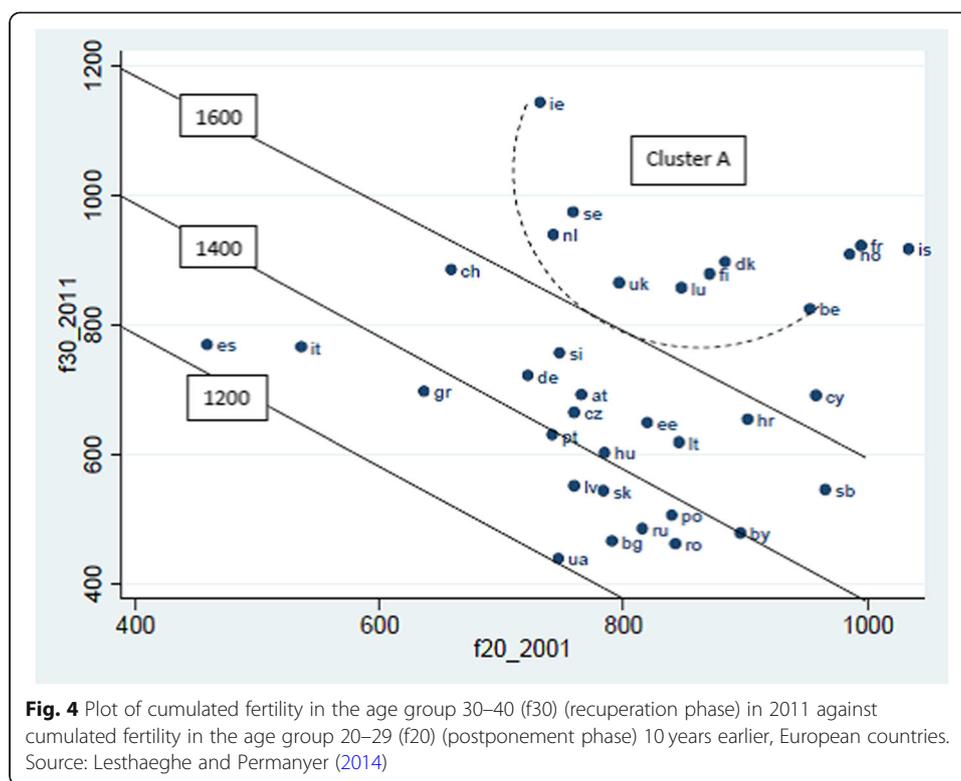


postponement but also very *differential recuperation at older ages* played a role and aggravated the split between the A and B clusters. This is depicted in Fig. 4 for the European countries. In this figure we plotted the fertility level in the age group 30–39 in 2011, illustrative of recuperation, against the level 10 years earlier in the age group 20–29, illustrative of postponement. The oblique iso-lines give the total fertility per 1000 women from ages 20 to 39, and this approximates the cohort experience. Except for the very strong postponement in Italy and Spain, and to a lesser degree also in Greece and Switzerland, *cluster A and cluster B countries had similar distributions of fertility levels in the 20–29 age group in 2001. But cluster A countries all have much higher recuperation levels in the age group 30–39 10 years later.*

Why did this duality between the A and B clusters develop? Was it because the A cluster of countries solely scored better on gender equality, or were there other factors at work, for instance dealing with policies reducing female opportunity cost of labour force participation, subsidising child-rearing expenditures or diminishing the work-family time stress via early and universal child care and schooling?<sup>20</sup> That stress can also be alleviated through more generalised part-time labour force participation, as in the Netherlands, the UK and Australia (McDonald, 2013). Or were macro-economic forces at work such as uncertainty caused by a globalising economy<sup>21</sup> and by weaker employment positions of young adults? Or were economic crises responsible for falls in period fertility levels at the younger ages? *In what will follow, we will argue that the*

<sup>20</sup>Switzerland, Germany (West) and Austria are among the wealthiest countries in Europe, and yet they join the B-cluster with extra low fertility. This contrasts with France and Belgium who stay in cluster A. The latter two countries had more generous child allowances, but particularly widely available pre-school child care from infancy onward (crèches, kindergarten) with long opening hours. A telling case is provided by the contrast between the German-speaking part of Belgium with higher fertility and ample child care provisions and the adjacent region in Germany having the opposite characteristics (Klüsener, Neels, & Kreyenfeld, 2013).

<sup>21</sup>On the topic of globalisation as a complementary explanation, see Mills and Blossfeld (2012).



*gender revolution could be a necessary, but by no means a sufficient ingredient for maintaining a stable PTFR level above 1.7. In fact, men doing more housework is only one, albeit a major component of a broader package of factors diminishing the work-family stress.*

According to several of our colleagues familiar with the Nordic scene, it is definitely the degree of gender equality that is the key to the fertility duality enigma (Esping-Anderson & Billari, 2015; Goldscheider, Bernhardt, and Lappegard, 2015). Firstly, they see phases in the development of gender equality, with initial rising of female labour force participation constituting a first phase (women entering the “public space”), and with equal sharing of domestic chores developing during the second phase (men entering the “private space”). Moreover, only this second phase, which is “the real gender revolution”, would be associated with rising fertility. The crucial variable for these authors is then the advancing from an incomplete to a complete gender revolution. Secondly, they argue that this second phase of the gender revolution would strengthen the family, and that therefore other reversals are taking place, such as diminishing divorce.<sup>22</sup> The SDT as originally described would be a good characterisation of the earlier phase, but its prediction of sustained below replacement fertility would be falsified when the second phase of the gender revolution comes into play. This was forcefully predicted by G. Esping-Anderson in his address to the European Population Conference in Stockholm, 2012. At that conference, the author contended that a U-shaped curve was in the making, with the right upward arm representing rising fertility directly as a result of

<sup>22</sup>In countries in which the majority of couples are cohabiting instead of being legally married, the divorce rate is highly affected by selectivity of marriage, and hence a poor indicator of overall couple instability.

advancing gender equality.<sup>23</sup> But the prediction was open ended as there was no specification of the size of the fertility increase, nor of the timing of the gender revolution reaching “maturity”.

Obviously, the Scandinavian countries are in the lead with respect to the transition from the first to the second stage of the gender revolution. More specifically, the ratios of female over male hours of domestic work for European Union member states around 2010 were already below 2 in Sweden (1.42), Denmark (1.74) and Finland (1.85), but above that level in the UK (2.04), Netherlands (2.11), Belgium (2.52) and Metropolitan France (3.25)<sup>24</sup> (EIGE, 2013). However, as shown in Table 2, there is no such appreciable difference in PTFRs between the two groups of cluster A: in the period 2000–2009, France and Norway are in the lead with PTFRs above 1.90, followed by Sweden, the UK, Denmark, Finland and Belgium with values between 1.80 and 1.89. In other words, fertility differences in cluster A countries cannot be accounted for by differences in male involvement in domestic work. Also, there is a PTFR rise during the first decade of the new century.<sup>25</sup> But, as shown in Table 2, *that rise is evident in all countries of cluster A, i.e. as much in the four western countries with the lower levels of male domestic work sharing (France, UK, Belgium, Netherlands) as in the Nordic countries with the higher levels.*

Also, the presumed U-shaped pattern is based on cross-sections, and not on an evolution over time. When the latter is considered, Martin Kolk (2019) no longer finds support for the Esping-Anderson & Billari, 2015.

During the second decade of this century, however, there is a substantial fall in the fertility levels affecting *all* cluster A countries. Initially this was attributed to the 2009 economic recession, but the decline manifested itself all the way through the decade. Finish fertility dropped below 1.6, Norway and the Netherlands fell back to the 1.60–1.69 category. The UK, Denmark and Belgium managed to remain above 1.70, and solely Sweden and France stayed above 1.80. Evidently, the optimistic view based on any advancing gender revolution got thwarted during the last decade: *the Nordic countries were not more robust than others despite their more advanced position on the gender revolution scale.*

These findings cast doubt on the Goldscheider et al. hypothesis. This is also echoed by Hellstrand et al. (2020) who analysed the Nordic second decade fertility reversal in greater detail, and found that fertility declined at all ages below 35. *Fertility declines above age 30 had hitherto never occurred in the Nordic countries.* Evidently, they are currently systematically diverging from the long-term pattern of stable and higher fertility. The authors find no signs of declining gender equality or of weakening family policies. In fact, in most Nordic countries, fathers tend to take full advantage of parental leave and most children are enrolled in day care from an early age. They furthermore show that decreasing first births are the main driver of the decline in period

<sup>23</sup>See also Esping-Anderson and Billari (2015) where the U-shaped curve is the key to their further argumentation.

<sup>24</sup>The harmonised time-budget data HORUS show a similar pattern and contrast between the Nordic and Western European countries, but France is no longer such an outlier with women doing more than three times more domestic work than men as reported in the EIGE data set. See Lesthaeghe and Permanyer (2014) for further details for the rest of Europe.

<sup>25</sup>Virtually, all commentators using data for the 2000–2010 decade formulate conclusions pointing to the high relevance of gender equality simply because the four Nordic countries determine the slope of regressions.

**Table 2** Period total fertility rates, European cluster A countries, 2000–2019

	2000–2004	2005–2009	2010–2014	2015–2019
Sweden	1.67	1.89	1.9	1.85
Norway	1.81	1.92	1.82	1.68
Denmark	1.76	1.85	1.73	1.76
Finland	1.75	1.84	1.77	1.53
France	1.88	1.98	1.98	1.85
UK	1.65	1.86	1.87	1.75
Belgium	1.68	1.87	1.78	1.71
Netherlands	1.74	1.75	1.71	1.66

Source: United Nations Dept. of Economic & Social Affairs, UN Population Division, World Population Prospects, the 2019 revision, UN data sheet

fertility, and therefore speculate that voluntary childlessness could be on the increase. Very much the same observations were made for Finland where the PTFR dropped to an all-time low of 1.49 in 2017 (Hellstrand, Nissen, & Myrskylä, 2019). Also in that country, a quantum decline is responsible and not further postponement. These observations are a far cry from the optimist theory based on the Esping-Anderson U-curve with fertility increases being driven by advancing gender equality.

To sum up, the “gender revolution” theory is based on a *single explanatory factor*. *This contrasts with a multitude of additional factors, both structural and ideational, that in conjunction cause sub-replacement fertility. In other words, gender equality is a major element in the explanation,*<sup>26</sup> *but by no means a sufficient one.* Furthermore, judging from the trends after 2009, also the gender revolution theory overplayed its hand in predicting a fertility increase.

### The end of fertility returning to replacement level?

The SDT theory essentially predicted a structural, long-term pattern of below replacement fertility, even for cohorts and not just for periods. It is not an optimist theory as it recognised the existence of major forces, both of a social structural as well as ideational nature, which would keep fertility levels down in industrialised societies. The predicted outcome manifested itself on a global scale, as advanced Asian societies and “new Europes” joined the club with sub-replacement fertility. Obviously, the 1986 version of the theory could not predict the dual fertility pattern in Europe and its persistence since the 1990s, nor the very low fertility in Japan, South Korea, Hong Kong, and China.<sup>27</sup> Apart from that, it is reasonable to conclude that *the prediction of generalised sub-replacement fertility still stands after 35 years*, and that this period may be heading for the half century, even in the countries with “mature” gender equality.

<sup>26</sup>It should be noted that rising female education and female emancipation were already considered as crucial ingredients of the SDT theory well before the “gender revolution” theory was formulated. But these developments were not taken as the sole determining factors. See for instance Lesthaeghe (1991) for empirical analyses that include effects of Protestantism, the rise in unemployment, closure of the female employment gap, out of wedlock fertility as an indicator of rising cohabitation, Inglehart “post-materialism”, and indicators of individual autonomy and female emancipation.

<sup>27</sup>For East Asia see inter alia Frejka, Jones, and Sardon (2010), McDonald (2009) and Gautier (2016).

### **The rise of pre-marital cohabitation**

Entering a consensual union involves a moral choice and presupposes a high degree of individual autonomy. The postponement of parenthood, by contrast, generally does not run counter to the prevailing cultural code. Only childlessness is subject to cultural stigmatisation, and its spreading requires a cultural reversal in the same way cohabitation does. On the whole, the rise of cohabitation is more contingent on ideational changes than the emergence of the SDT low fertility pattern. In the parlance of the “Ready, Willing and Able” paradigm (Coale, 1973; Lesthaeghe & Vanderhoeft, 2001), the rise of cohabitation requires the “Willingness” condition (cultural acceptability) to be fulfilled, whereas fertility is more dependent on the “Readiness” condition (the micro-economic utility assessment).

We should also distinguish between three “layers” of cohabitation: (i) an ethno-historical layer, (ii) a “poor man’s marriage” level, referring to a pattern of disadvantage (POD), and (iii) a SDT level emerging after the 1970s only. The ethno-historical and the POD layers are often interwoven and can appear as a combined “built in” pattern existing prior to 1970.

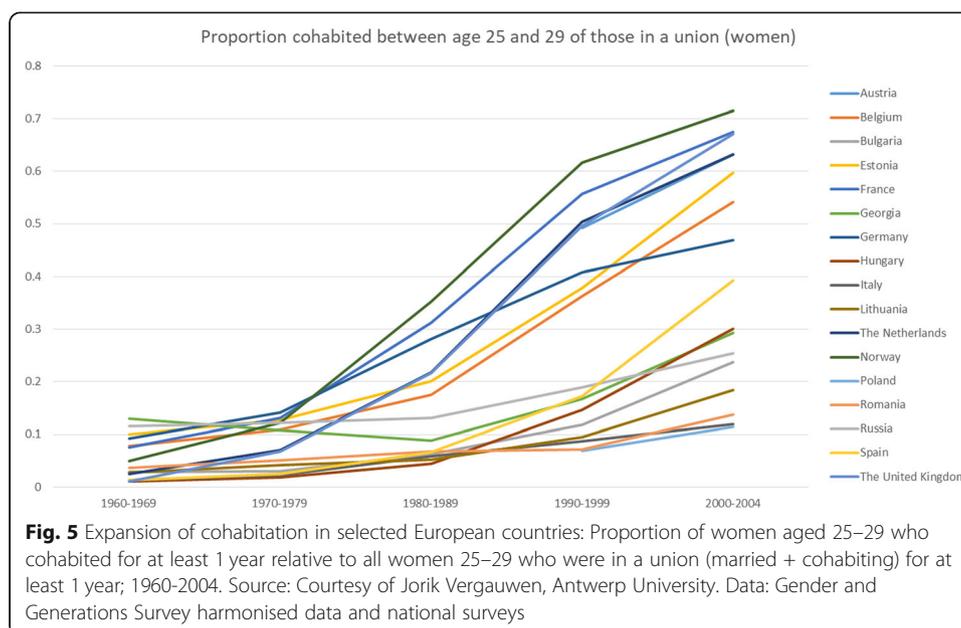
The major critique levelled at the SDT explanation of rising cohabitation concerns the source of its increase after 1970. According to the POD thesis, the rise was due to a worsening of the living conditions of the poorer segment, and not, as the SDT had posited due to a “cultural revolution” lead by a young, secular and educated stratum. Also, the economic crises in Latin American countries of the 1980s and the shift to capitalism in the FCCs during the 1990s were advanced as prime causes of the rise of cohabitation in these regions. The latter argument pertaining to the respective 1980s and 1990s crises is the weakest one, since the trend toward more cohabitation in the respective regions is a singular and uninterrupted one till today. This trend is currently affecting young cohorts who were still babies or were not yet born at the time of these crises. Also, there is no spurt in the cohabitation trend immediately following the respective crises, and in the Latin American instance, several countries witnessed an acceleration in their upward cohabitation trend only after the year 2000.

The argument that the source of the cohabitation rise was not necessarily the educated elite holds more water in various regions and warrants further inspection. Hence, we need to follow the effects of the three layers over time in the different world regions with their contrasting prevailing kinship systems and ethical/religious codes.

### **The rise of cohabitation in Europe: gradients by education**

In the discussion of the POD versus the SDT explanations for rising cohabitation use is commonly made of the education-related profiles. The European data commonly stem from sample surveys, and in what follows the results are based on the Gender and Generations Survey harmonised data set. The indicator is the share of cohabitation among all unions (i.e. marriage + cohabitation) for women 25–29, but with the added restriction that they had to be for at least 1 year in a union. In this way, we eliminate short-term cohabitation among younger women and obtain a more robust measurement of longer-term cohabitation in more established unions.

The overall evolution of this share of cohabitation is depicted in Fig. 5. This illustrates that again two groups of populations developed in Europe: the Nordic and



Western countries, including the German-speaking trio, have a take-off in the 1970s and evolve beyond the 50% level in 2000–2004. Norway is at the top and Germany at the bottom of this group. Note that Estonia too passed the 50% threshold.<sup>28</sup> The second group is made up of the rest of Europe, with a later take-off date in the 1990s, and generally with a slower development thereafter. In this group, Spain is in the lead, whereas Italy, Poland and Romania are at the tail of the distribution.

The education profiles use 3 groups based on the ISCED codes,<sup>29</sup> and the results for the same indicator among women 25–29 are given in Fig. 6. As expected on the basis of the SDT theory, the best educated group of women 25–29 is continuously in the lead from the start onward in Western countries: Netherlands, Austria, France, Belgium, and also Germany. Rather flat profiles are found for Norway and the UK with minor shifts in the pattern of the gradients by education. There are also interesting contrasts. For instance, Spain also follows the positive gradient and advances far more rapidly than Italy.

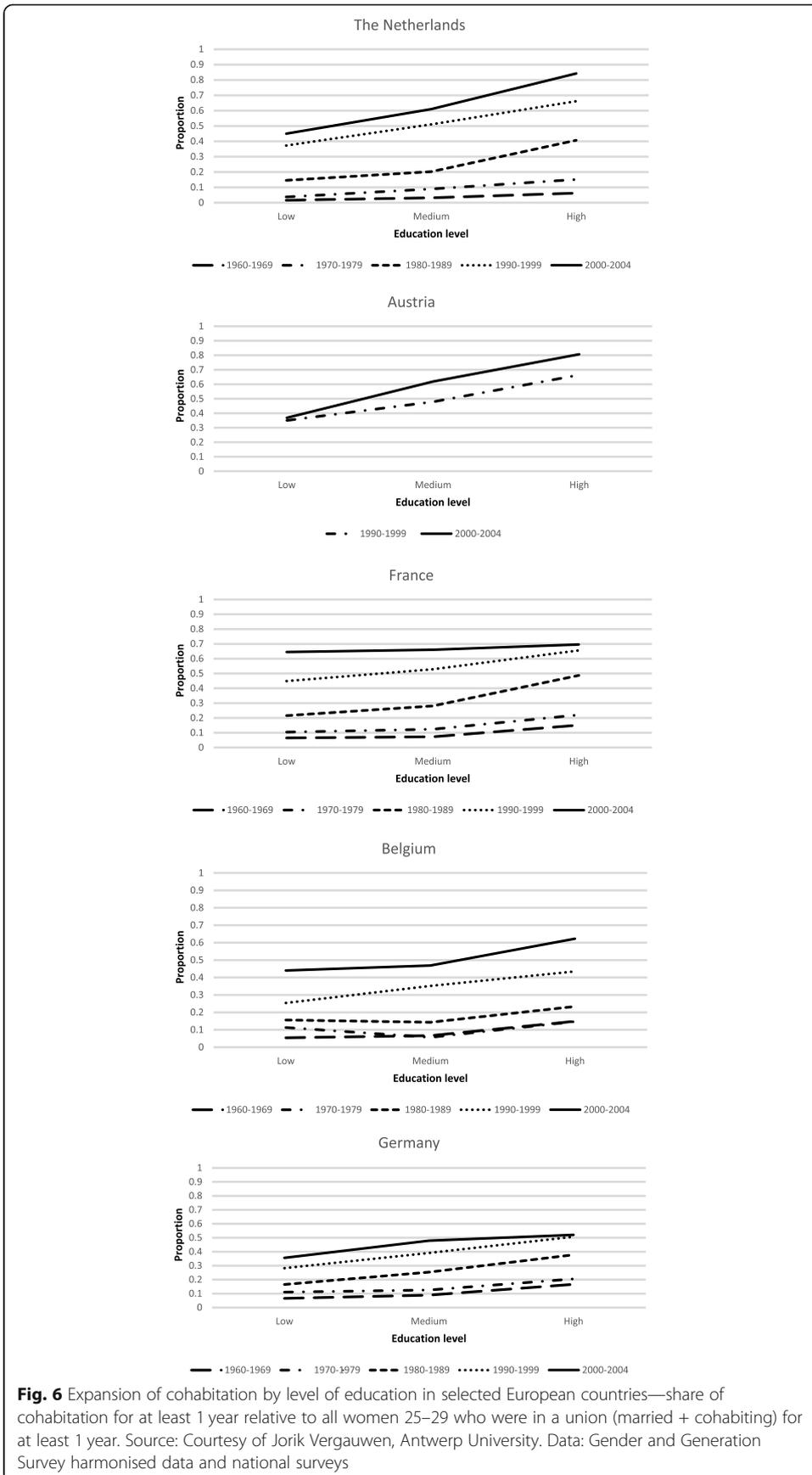
The POD pattern is more typical for the FCCs, where rises were initiated in the lower education category. Typical are Bulgaria, Romania and Russia. The exception appears to be Hungary, where the advances are more pronounced among the higher education group. However, equally relevant is the subsequent emerging of a *V-shaped pattern* indicative of a catching up by the better educated. This later V-shape is present in virtually all FCCs considered here.

On the whole, Fig. 6 indicates that *the successive upward shifts in the cohorts reaching the age group 25–29 become far more important than the education-related differences once the trend moves beyond the mere take-off phase.*<sup>30</sup> Obviously, pre-marital

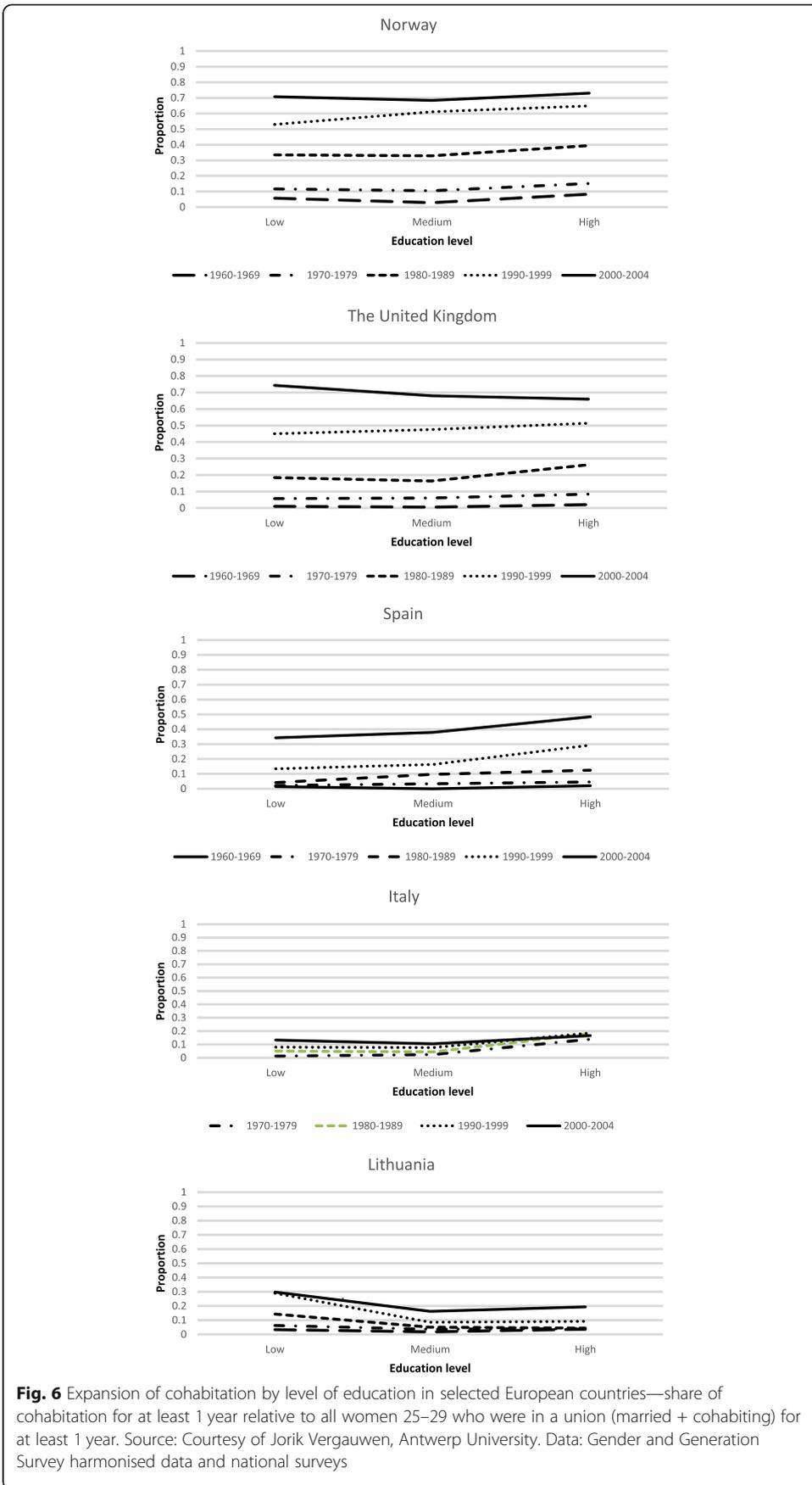
<sup>28</sup>Estonia is the only former communist country with such a rapid rise in cohabitation and follows the Nordic model, in contrast to Lithuania which is the most conservative country of the three Baltic states. See Katus, Puur, Põldma, & Sakkeus, 2007.

<sup>29</sup>The low group corresponds with ISCED 1 and 2, the middle group with ISCED 3 and 4 and the high group with ISCED 5 and 6.

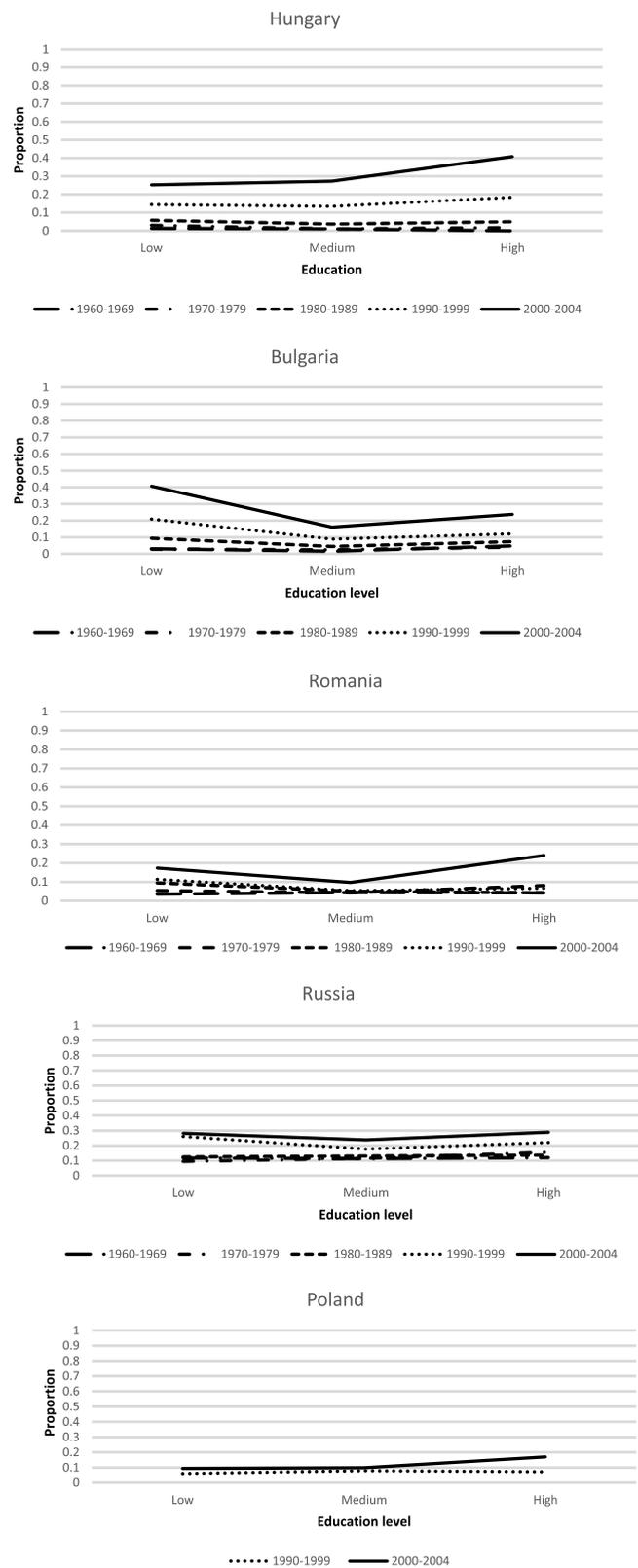
<sup>30</sup>Leridon and Villeneuve-Gokalp (1989) dated the rapid diffusion of pre-marital cohabitation across French social classes as early as the 1970s.



**Fig. 6** Expansion of cohabitation by level of education in selected European countries—share of cohabitation for at least 1 year relative to all women 25–29 who were in a union (married + cohabiting) for at least 1 year. Source: Courtesy of Jorik Vergauwen, Antwerp University. Data: Gender and Generation Survey harmonised data and national surveys



**Fig. 6** Expansion of cohabitation by level of education in selected European countries—share of cohabitation for at least 1 year relative to all women 25–29 who were in a union (married + cohabiting) for at least 1 year. Source: Courtesy of Jorik Vergauwen, Antwerp University. Data: Gender and Generation Survey harmonised data and national surveys



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*cohabitation spreads rapidly across all layers of population, and as a consequence, the POD versus SDT discussion becomes irrelevant once the trend starts accelerating.*

### Cohabitation in North America

Data on proportions currently cohabiting women of ages 20–25 among all such women in a union (married + cohabiting) are available for the USA and for Canada. The data for the US stem from the censuses of 1990 and 2000 and are basically best estimates. Thereafter, we can rely on direct questions in the American Community Surveys (ACS) for the years 2007–2011 (pooled data). The Canadian data are census data for the years 1986, 1996 and 2006 (Laplante & Fostik, 2016).

On the basis of percentages *ever-cohabited*, the US has experienced a transition from a slightly positive education-related gradient to a slightly negative one, but the education differences are again not substantial (Neels & Perelli-Harris, 2012). The data for *currently* rather than *ever-cohabiting* women for the US exhibit a more systematic negative gradient from age 25 onward, mainly because the better educated have faster transitions to marriages and not because of a lower incidence at earlier ages (Lesthaeghe & Esteve, 2016). On the whole, the incidence of cohabitation is lower in the US than in any of the other countries on the entire American continent, and lower than in Western European countries. At the 1990 census, the education gradient of current cohabitation exhibits a POD pattern among women aged 25–29 years. This pattern has been maintained over time, but is weakening in relative terms as the overall incidence of 25–29-year-old women cohabiting more than trebled from 1990 to 2007–2011 (see Table 3). The negative education-related gradient witnessed in the US censuses stems in part from the high cohabitation prevalence among the black population, as also shown in Table 3.

The middle education group (complete high school, some university) has the largest gains in rates of cohabitation across this period, and has come at par with the lowest education group. The proportion among those with at least a university degree also doubled. As with European countries, the overall rise in rates of cohabitation in the US is considerably more important than the educational differences. Another interesting feature for the US is that the two higher education groups in the younger age group 20–24 years in the ACS data have a slightly higher incidence of cohabitation than those

**Table 3** USA: percent cohabiting among women 25–29 in union, 1990–2011, by race and education

	Census 1990	Census 2000	ACS 2007–2011
White non-Hispanic	9.9	16.1	23.2
Black	16.7	23.5	31.1
Hispanic	9.8	13.7	21.9
Less than complete high school (LSH)	13.6	16.2	24.3
High school or some college (HS or SC)	9.9	16.4	24.4
BA or higher	9.7	15.3	20.5
Total	10.3	16.0	22.9

Lesthaeghe et al. (2016): authors tabulations based on the Censuses and American Community Survey samples from the IPUMS-USA database

with less than complete high school, indicating that the better educated initiate their partnerships via cohabitation at least as frequently as the least educated (Lesthaeghe, Lopez-Colas, & Neidert, 2016). This is in line with the much earlier, but forgotten, observation by Macklin (1972) that cohabitation had expanded among college students during the turbulent 1960s as well.

As age advances (i.e. as we examine cohorts of women of increasingly older ages than 25–29 years), the best educated have a larger drop off of rates of cohabitation than the less educated, reflecting that the best educated are more prone to convert their cohabiting union into a marriage (Lesthaeghe et al., 2016). This is a “sorting effect” (Fürstenberg, 2013): transition from cohabitation to marriage probably reflects the better financial position of university degree holders, and also a cultural “embourgeoisement” which sets them apart as an educated upper middle class.

For the Canadian provinces, measurements are available for 1986, 1996, and 2006 (Laplante & Fostik, 2016) for percentages of currently cohabiting women of 25–29 years among all women of that age currently in a union (married plus cohabiting). The education gradients are essentially flat in the provinces, with the highest incidence of cohabitation in Quebec (above 60% in 2006), the North (mainly Inuit) and the Atlantic provinces. The provinces with the lowest incidence of cohabitation (Ontario, Manitoba, Saskatchewan, Alberta, British Columbia) exhibit a slightly negative educational gradient in 2006 but there was no such negative gradient in 1986. Quebec is the exception: a higher proportion of the better-educated cohabited, and as a result this francophone province followed the Western European SDT pattern. The bottom line for all provinces is that the overall rise during the 20 years of observation is much more substantial than any of the educational differences.

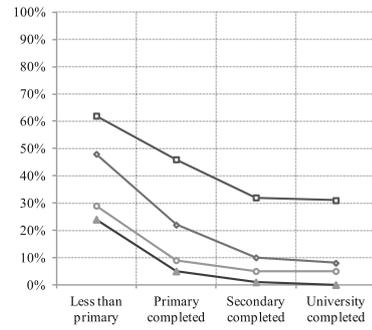
### **The Latin American education-related profiles of pre-marital cohabitation: multiple layers to be considered**

As is well known, many Latin American populations had significant proportions of consensual unions well before the cohabitation boom started in Europe and North America after 1970. The custom of cohabitation was mainly concentrated in the poorest strata. There also were important differences in rates of cohabitation between ethnic groups, with notably high rates among indigenous populations with hunter-gatherer or nomadic backgrounds, as well as the black populations. Also racially mixed populations tend to have extant traditions of consensual unions. These high rates of cohabitation contrast with the low rates among better-educated white populations, such as the late nineteenth and twentieth century European immigrants in the Southern Cone of South America (Uruguay, Argentina, Chile) who strengthened the institution of marriage. Furthermore, the European marriage became a mark of upward social mobility. The net result is that *all* Latin American countries, whether rich or poor, exhibit a negative education-related gradient. In short, at the onset there was a clear POD pattern, often with a strong ethnic component (Esteve, Lesthaeghe, Lopez-Gay, & Garcia-Roman, 2016) and this has remained a “locked-in” feature till the present day.

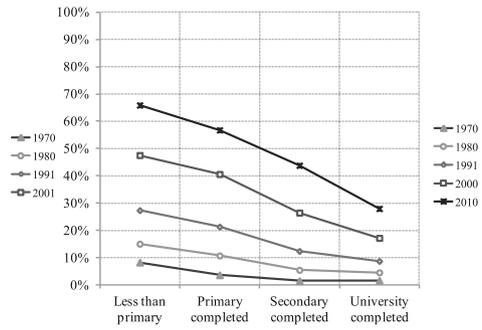
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<sup>31</sup>This pertains to Brazil, Colombia, Mexico, Uruguay and Chile for which several World Values Surveys are available.

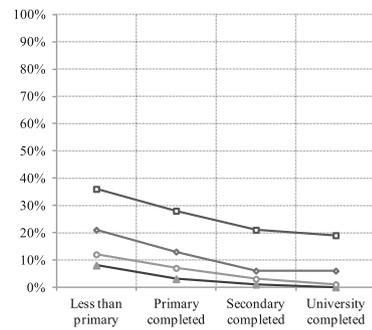
Argentina



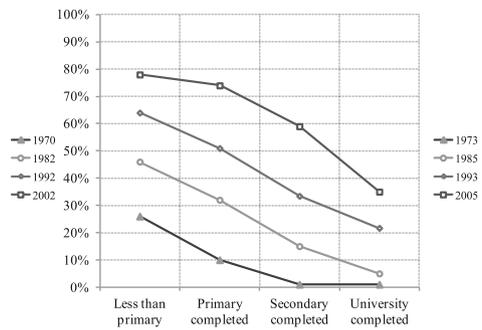
Brazil



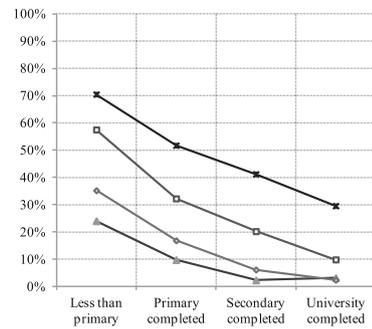
Chile



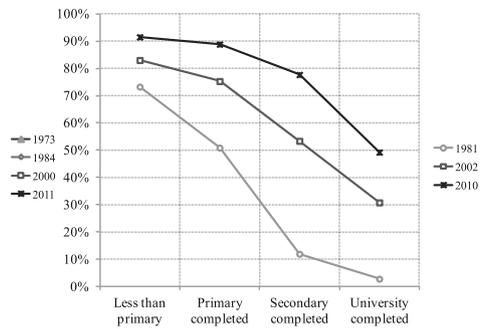
Colombia



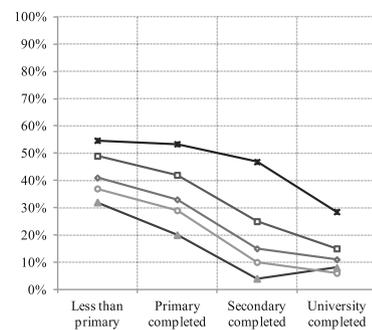
Costa Rica



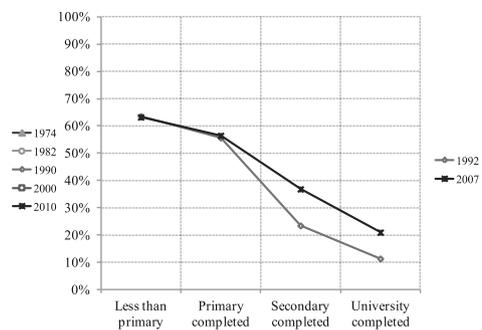
Dominican Republic



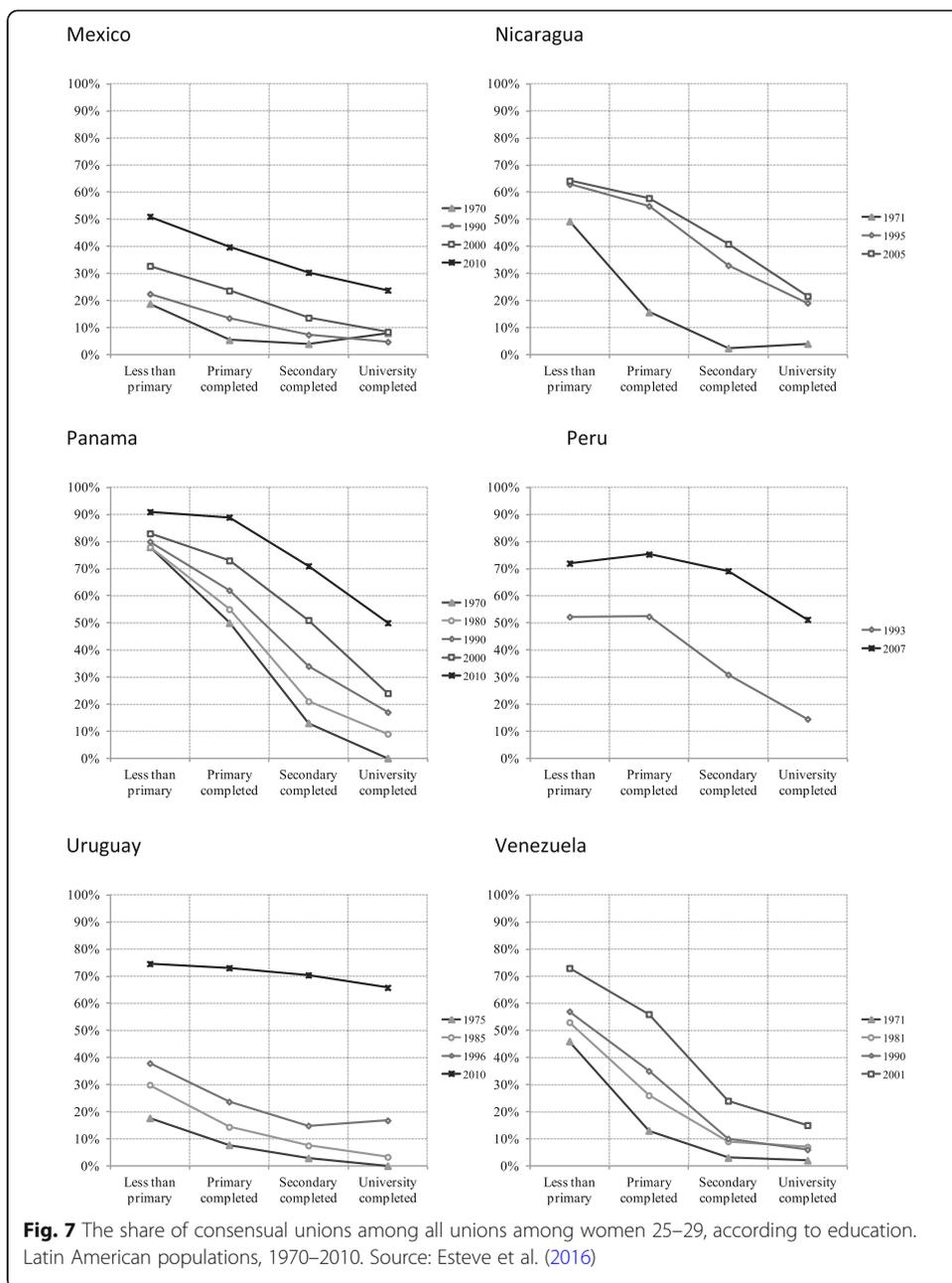
Ecuador



El Salvador



**Fig. 7** The share of consensual unions among all unions among women 25–29, according to education. Latin American populations, 1970–2010. Source: Esteve et al. (2016)



The question is whether this POD pattern has been strengthened during the cohabitation boom years, or whether the better-educated strata have been catching up. After four decades of observation the emerging outcome is quite clear: in most countries both the middle education groups and those with university education have experienced rapid rises in the proportions currently cohabiting at ages 25–29, i.e. when most unions have passed the phase of dating. The outcome is not POD where only the disadvantaged cohabit at high rates *versus* SDT but POD *and* SDT.

Of course, there are differences between the various countries as far as the orders of magnitude of POD and SDT are concerned. A few examples will illustrate this. Panama is at one extreme: the share of cohabiting women relative to all women aged 25–29 in a union (marriage + cohabitation) was already very high among the least educated in

the 1970s. Any subsequent large rises could only be among those with higher levels of education (see Fig. 7). A different pattern is evident in Brazil, where the largest increases in cohabitation between 1970 and 2010 were concentrated among the less educated, with only a modest increase among the better educated. *In the Brazilian case, the POD pattern has been accentuated over time. A similar enhanced POD pattern also holds for Venezuela.* In contrast, in Ecuador, Nicaragua, the Dominican Republic, Peru and especially in Colombia, the largest increases in rates of cohabitation were in the middle education groups, i.e. among women who had completed primary (including incomplete secondary) or with complete secondary education (Fig. 7). In another group made up of Costa Rica, Argentina, Mexico, and Chile, the initial rises in cohabitation began in the 1980s and 1990s, and tended to be concentrated among the least educated (i.e. a negative educational gradient), but there was a significant catching up of rates of cohabitation among the better educated after the turn of the century. The case of Uruguay (Fig. 7) is particularly striking: there was a huge increase in cohabitation between 1996 and 2010 in all educational strata, resulting in an almost flat education gradient by the later date. In fact, the Uruguayan experience of a sudden rapid rise in cohabitation closely resembles that of Quebec in Canada.

To sum up, with the exception of Brazil and Venezuela, the POD gradients of the other Latin American cases have altered over time as the middle and better educated, including those with university degrees, have been catching up after 2000. However, the education gradients are still negative around 2010, as this catching up phase among the upper strata is presumably still in progress. Only in Uruguay has the new gradient become education neutral by 2010 as a consequence of the rapid rise in cohabitation in all population strata after 1996.

The conclusion at this point is that, starting from a historically founded POD and/or ethnic negative gradient of cohabitation by education, a new component has been added in Latin America, resulting in major rises in rates of cohabitation after 1980, and particularly after 2000, among the better-educated strata. This increase in rates of cohabitation among the better educated is entirely consistent with the SDT prediction of a generalised diffusion of the “non-conformist” pattern of family formation. Finally, in several Latin American countries there is consistency between rising rates of cohabitation and ideational changes from the 1990s to the 2000s reflecting greater social liberalism across all education levels.<sup>31</sup> The ideational changes were especially marked among those with higher education. More specifically, as reported in the waves of the World Values Studies surveys (WVS), a distinct de-stigmatisation occurred with respect to divorce, homosexuality, suicide and euthanasia during that period (Lesthaeghe & Esteve, 2016). Although not measured in the WVS surveys, it is most likely that also the de-stigmatisation of cohabitation among the better educated is part of this ideational evolution.

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<sup>32</sup>In a 2000 International Union for the Scientific Study of Populations workshop held in Tokyo, it was still asserted that survey questions about cohabitation in Japan were ruled out since these would be most impolite.

<sup>33</sup>For controls on courtship in Asian patriarchal societies, see Quah and Kumagai (2015).

<sup>34</sup>For an update on family changes in South and Southeast Asia, see Yeung, Desai, and Jones (2018).

**Table 4** Partnership formation and parenthood, Japanese women aged 25–69 years in 2004

	% ever cohabitated	% married, not cohabitated	% neither cohabitated or married	% ever cohabitated of those ever in union	% pre-marital pregnancy of those ever having a child
25–29	20	34	47	37	43
30–34	17	62	21	22	28
35–39	16	77	8	17	19
40–44	12	8	5	13	16
45–49	8	87	5	8	14
50–54	7	89	4	7	10
55+	4	93	3	4	9

Source: Courtesy of Noriko Tsuya, data Japan Generations and Gender Survey (2004)

**The Pacific Asian experience: cohabitation as a novelty**

The fact that pre-marital cohabitation spread to several Pacific Asian societies from the 1990s onwards might come as a surprise, as hitherto cohabitation had been viewed very negatively.<sup>32</sup> It did not fit with the cohesively structured patriarchal traditions.<sup>33</sup> However, the proportions of the population married below age 30 had been falling since the 1970s and sometimes to very low levels (e.g. Jones, 2005).<sup>34</sup> Given this trend, it was not improbable that, besides increases in prolonged living with parents, there also could be some of those unmarried individuals living alone, sharing with other singles, and cohabitation could be a feasible alternative to marriage, particularly in situations with urban-bound migration and/or high housing costs.

**The Japanese experience: classic POD**

The first shock came from Japan in 2004 when the Mainichi Shimbun newspaper organised a survey asking the question: “have you ever cohabitated?” of single and married persons. The outcome was that over 20% of women born in the 1970s admitted to a period of cohabitation, which is double the figure for women who were 10 years older (Raymo, 2013). The Japanese Generations and Gender Survey (GGS) of 2004 confirmed the findings of increasing rates of cohabitation, and the 2009 Japanese Survey on Family and Economic Conditions probed even further by inserting a question about the first

**Table 5** Percentage of Japanese women aged 20–49 years in a union who experienced union formation by conception, cohabitation or marriage, by education; 2009

Education level	Conception	Cohabitation	Marriage
Junior high school	33.3	40.5	26.2
High school	18.6	24.9	56.5
Vocational training	18.7	30.5	50.8
College	11.9	16.5	71.6
University	6.8	23.9	69.3

Source: Courtesy of James Raymo; data: Japanese Survey on Family and Economic conditions 2009

step toward a relationship commitment, being one of three possibilities: a pregnancy, a period of cohabitation, or direct transition to marriage without prior cohabitation.

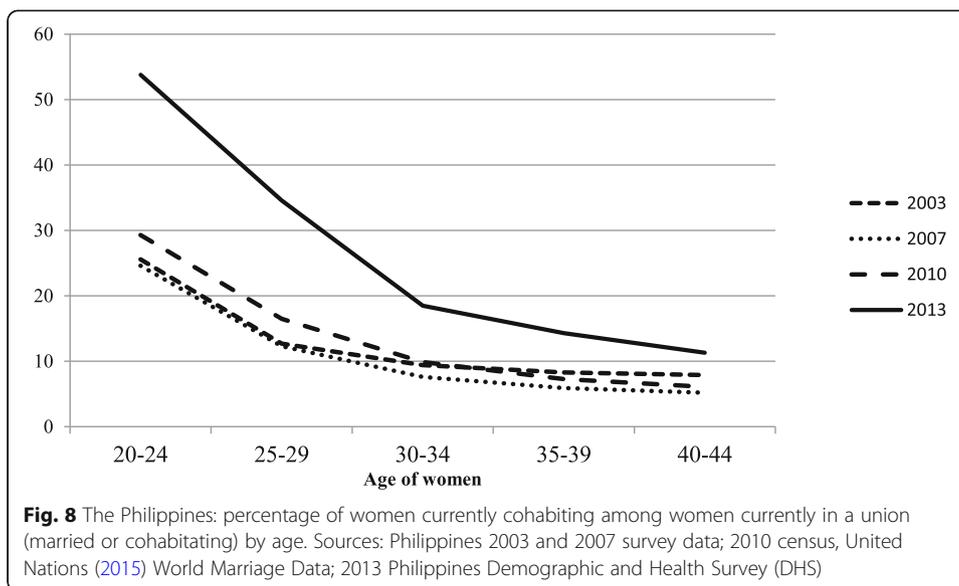
There are some limitations on the available data on the gradient of cohabitation by education in Japan: we only have a single time point report on the proportions ever cohabited among those ever in a union (see Table 4, column 4). Percentages by age of current cohabitation among those currently in a union, as in the European and Latin American instances, could not be found. The results for Japan nevertheless indicate that already before the turn of the century a major change had occurred in the patterns of union formation. In the youngest cohort, many had still not made it to a union, but of those who had, more than a third had done so via cohabitation and 43% moved into marriage as a pregnant bride (or far more rarely as a mother). Among the older cohorts we effectively move back in history, and find a steady rise in cohabitation among those ever in a union, and since the 1970s, an even more marked rise in bridal pregnancies and marriages occurring when the bride is pregnant. The proportion of women ever-cohabiting among those who have formed a union with a partner was 37% of women aged 25–29, which is a similarly high proportion as that observed in Spain and several Eastern European countries in the 1990s.

There is also evidence on the education gradient of the chance of a pre-marital pregnancy or birth for ever-married women by age. These data demonstrate a classic negative education gradient for both pre-marital cohabitation and pregnancy. That is, those women with lower education are more likely to cohabit or have a pre-marital pregnancy than those with higher education. Particularly for women with a university degree, the chance of either cohabitation or pre-marital pregnancy is only about half that for the female population as a whole (Tsuya, 2006).

Additional evidence on patterns of union formation is provided by the 2009 Japanese Survey on Family and Economic Conditions, some of which is summarised in Table 5. Among women aged 20–49 who had experienced at least one step in the family formation process, (i.e. had a conception, initiated cohabitation or entered a marriage), about 70% of women with a university degree (2 or 4 years) started with a marriage. In contrast, only 26% of women who did not finish high school had a marriage as a first step. The figure was about 50% for those women with high school or vocational school graduate education. Cohabitation, on the other hand, was the first step for 40% of women who had not completed high school education, and about 25% for high school or vocational school graduates. Hence, in the lower half of the educational spectrum, only a minority of women experienced a direct entry into marriage without prior pregnancy and/or cohabitation (Raymo, 2013). Furthermore, among highly educated women, cohabitation prior to marriage is associated with later childbearing within marriage. In contrast, among less educated women, cohabitation appears to hasten marriage and parenthood via pre-marital conceptions and marriages when the woman is pregnant (referred to in some countries as “shotgun marriages”, and known in Japan as *dekichatta kekkon*) (Raymo, Iwasawa and Bumpass, 2008). There needs to be more

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<sup>35</sup>The Catholic Church is obviously worried about the rise of cohabitation. The Manila Archdiocese and its Radio Veritas, for instance, commissioned a nation-wide “Truth” survey in 2012 among church attendants and found that 57.7% of the 2500 respondents was cohabiting instead of being married. Theoretically, cohabitants are banned from receiving communion. Also church and official organisations are instrumental in helping poorer couples to arrange church marriages.



recent analyses of social trends to find out what happened during the last decade through to 2019 and to detect whether or not the new cohorts of college educated Japanese women have been increasing rates of cohabitation relative to their predecessors. This process of increasing rates of cohabitation among the better educated has happened in so many other countries, it might well be happening in Japan as well.

**Cohabitation in an Asian predominantly Christian country: the Philippines**

In the Philippines, the 2013 Demographic and Health Survey (DHS) reported record high percentages of cohabiting women in all age groups. This was a surprising finding

**Table 6** Percentage of women currently cohabiting by education and wealth quintiles in the Philippines among: (a) all women aged 25-29 years and (b) among women in a union (married or cohabiting) 25-29 years

	(a) Percentage of all women		(b) Percentage of women in a union	
	2003	2013	2003	2013
By education				
No education	10.6	23.0	12.5	26.0
Primary school	10.2	27.3	12.1	32.2
Secondary school	6.5	32.1	8.4	40.3
Post-secondary	2.9	13.5	5.1	26.3
Total	6.3	23.8	8.7	34.6
By wealth quintile				
Poorest	12.5	26.0	13.7	28.0
Poor	15.5	31.8	17.2	38.0
Middle	8.6	25.4	10.5	35.1
Rich	7.8	24.6	11.2	41.3
Richest	5.4	14.0	9.7	30.1
Total	9.7	23.8	12.7	34.6

Source: Courtesy of Brienna Perelli-Harris on the basis of the Demographic and Health Survey data 2003 and 2013

in a largely Catholic country where both abortion and divorce are illegal.<sup>35</sup> The United Nations 2015 marriage data provide the results for earlier periods (United Nations Population Division, 2015). The 2013 DHS reports much higher percentages than the census of 3 years earlier. Such a large gap between observations only 3 years apart seems implausible. It is not clear whether the 2010 census underestimated the incidence of cohabitation, or whether the DHS was biased in the opposite direction. At any rate, whatever the source, it is clear that pre-marital cohabitation is quite common in the Philippines (Fig. 8).

The education gradient recorded in the 2013 DHS exhibits the typical negative slope (Kuong, Perelli-Harris, & Padmadas, 2016) observed in many other countries. However, Kuong et al. use *all* women in the denominator. Given the much higher percentages of women who have never been in a union among the wealthier and more educated groups than in the more disadvantaged groups, the reported negative slope of the gradient is exaggerated. In fact, when only women already in a union (cohabiting or married) are included in the denominator, the share of cohabitation no longer follows a negative gradient by education and wealth in 2013 but turns into an inverted U-shaped pattern. This is illustrated in Table 6.

Furthermore, given the strong Catholic stigmatisation of cohabitation, there might be many women who falsely report being single rather than acknowledge their cohabitation, and this might be more common among the better educated, wealthier parts of the population. Finally, it should be noted that there may also be some historical effect of cohabitation being acceptable among some ethnic minorities as well, which could explain a part of the incidence of cohabitation among the lower education groups. The Philippine's rate of cohabitation will be an interesting one to follow in the coming decade, as the best educated women could catch up with other socio-economic groups, despite strong Catholic opposition to pre-marital relations.

#### ***The Chinese experience: leading educated elites in large urban areas***

The Chinese experience of cohabitation follows a different track. The “Reform & Opening Up” policy of modernisation initiated tremendous transformations since 1978, and it was accompanied with strongly enhanced urbanisation and industrialisation. Although it was intended that modernisation would occur for the entire country, the policies of rapid development were mainly implemented in coastal areas and provincial capitals. As a result, these areas of rapid economic development were exposed to Western culture (Hu & Scott, 2016; Tian, 2016, 2017). In addition there were high rates of internal immigration from rural areas to the developing regions, which weakened traditional forms of social control. The concomitant changes in Chinese family structures are characterised by a reduction in household size, a decline in patrilocal multigenerational co-residence, high divorce rates, increases in single motherhood (Wang & Zhou, 2010), and a rise of the so called DINK couples (dual income, no kids) (Ma, Shi, Li, Wang, & Tang, 2011). Furthermore, urban China also experienced a sexual revolution (Feng &

<sup>36</sup>The Chinese Family Panel Study was conducted in 25 provinces, leaving out only the five most remote and sparsely populated ones. The baseline survey was organised in 2010 and covered 16,000 households. For further details see Xie and Lu (2015).

<sup>37</sup>Particularly, residents of the provinces of Shanghai and Guangdong have a higher incidence of cohabitation (Yu & Xie, 2015).

**Table 7** Percentages ever-cohabiting among all women, by age and completed level of education, People's Republic of China, 2014

Age	Illiterate <sup>a</sup>	Primary	Middle	High school	University
20–24	21.6	36.2	(22.7)	(15.6)	(5.9)
25–29	14.5	25.0	27.7	35.9	31.2
30–34	9.2	18.9	27.5	31.2	27.0
35–39	15.5	13.2	16.6	26.0	27.0
40–44	8.5	11.6	12.5	18.0	6.8

Source: Courtesy of J. Yu and Y. Xie; data: China Family Panel Study (CFPS) 2014 round

<sup>a</sup>Includes some women who are partially literate

Note: figures within parentheses denote that many women 20–24 in these higher education categories are not yet in any union. As they progress to enter unions the rates of cohabitation are very likely to increase considerably and surpass the percentages currently observed for the women aged 25–29

Quanhee, 1996; Parish, Laumann, and Mojola, 2007; Parish, Luo, Stolzenberg, Laumann, Farrier & Pan, 2007), and cultural change also manifested itself in a weakening of both the traditional filial duties and male dominated gender relations (Zhang, 2008; Liu, Karl, and Ko, 2013). For example, Liu et al. (2013) report that the notions of economic independence and individual autonomy entered the discourse of gender dynamics. Finally, there also seems to be a shift from a collectivist outlook to much greater individual autonomy (Yan, 2009, 2010).

In the context of these social changes, it should not come as a surprise that rates of pre-marital cohabitation increased. Relative to traditional marriage, cohabitation offers freedom of partner choice, sexual gratification, economies of scale in consumption and housing expenditures and potentially lower exit costs if the relationship does not work out. Moreover, as there is no evidence of substantial rates of pre-existing forms of cohabitation, there is presumably no significant locked-in effect of any historical legacy, as was the case of Latin America. The net result is the absence of the negative education gradient in the cohabitation pattern as shown in Table 7 with data from the 2014 round of the Chinese Family Panel study (CFPS).<sup>36</sup>

It should be noted that the percentages ever-cohabiting reported in Table 7, and provided by Yu and Xie, are related to the *total* number of women in the age groups, and not just to the more commonly used number of women in a union (cohabiting and married). This means that recent percentages in the youngest two age groups are systematically lower than those reported previously since the larger numbers of single women in these age groups are inflating the denominators. Despite this drawback it is still obvious that the percentages with a pre-marital cohabitation experience have been rising systematically in each successive cohort. The highest rate of cohabitation is among women with the most education, i.e. among those with complete high school or with a university degree (see also Yu & Xie, 2015). The lowest cohabitation rate is witnessed in women without any education, who are

<sup>38</sup>Yu and Xie also note that membership of the Communist Party or having a father who is a member reduces the likelihood of cohabitation.

<sup>39</sup>Among Islamised sub-Saharan African populations, a distinction should be made between those who adopted Arab customs such as endogamy and cousin marriage, and the others which were often conquered tribes but maintained the essential characteristics of sub-Saharan kinship organisation (e.g. exogamy, refusal of purdah, women active in trade, sometimes even survival of female secret societies)

<sup>40</sup>See Goody (1976) for a detailed elaboration based on the distinction between societies with or without "devolution of property" through the marriage of women, and the contrast between dowry and bridewealth.

illiterate or only partially literate. Presumably the least educated are disproportionately present in rural areas, which are more traditional and have not been exposed to outside influences to the same extent as the coastal cities or larger provincial urban areas. It should also be noted that there is a major shift in the educational composition of the five age groups presented in Table 7. For instance, in the oldest age group 40–44 years almost 60% of women belonged to the illiterate/partially literate category, and only 6% had a university education. Among young women aged 20–24, the illiterate/partially literate category was only 23% of those women, whereas the university educated were a full quarter of all those women. Hence in China the combination of a positive education gradient of cohabitation and the upward shift in educational attainment across cohorts reinforces the expansion of cohabitation as a mode of family formation. Additional evidence for China also reveals that the prevalence of cohabitation is positively related to urbanity,<sup>37</sup> to fathers having a college education, and, as expected, particularly to being a rural to urban migrant (Yu & Xie, 2015).<sup>38</sup>

#### ***China and Japan: contrast and similarity***

From the analyses of trends just presented, it is clear that the paths followed by rising cohabitation in Japan and China are very different, with the latter conforming more to the original SDT script of the 1980s. However, China and Japan still share “*an orderly transition*” to parenthood (Raymo et al., 2015) as pre-marital births are rare in both countries. Also, the mean duration of cohabitation was limited. It was about 1 year in China and about 18 months in Japan during the first decade of this century. This suggests that both countries were in a phase in which cohabitation was increasing in frequency and acceptability, and there might well be increasing duration of cohabitation in both countries, as had happened across many other countries. Whether China is currently joining the Japanese pattern of more pre-marital pregnancies and subsequent abortions or shotgun marriages cannot be ruled out but still needs to be documented. But on the whole, there is still a missing SDT component in both countries: procreation among cohabitants. However, more surprises may happen.

#### **Sub-Saharan Africa**

Sub-Saharan populations, including several Islamised ones,<sup>39</sup> have forms of social and lineage organisation that are the complete opposite of those in Asia.<sup>40</sup> Marriages are strongly exogamous, women remain members of their own lineage, men pay bride-wealth to the woman’s family, and polygyny is widespread and not just the prerogative of royalty only. Christianity and urbanisation have altered these traditional arrangements. The former has tried to turn marriage into a single celebration, i.e. a church marriage, rather than a prolonged process of negotiations, and into a closed monogamous relationship as well. Rapid urbanisation and substantial labour migration flows, by contrast, have had the opposite effect with large numbers of men, both single and married, vying for sexual gratification. In such instances, classic co-residential polygyny is being replaced by illicit concubinage, commonly referred to in francophone West-Africa as “*deuxième bureau*”, typically involving wealthier and/or older men. By contrast, cohabitation or “*viens on reste*” (or “*come we stay*” in Kenya) is a form of courtship among young adults who want to distance themselves from familial expectations and

marital norms. It is not a “poor man’s union” in Burkina Faso (Calvès, 2016). Hence, it is not a straight POD type of union, but an urban manifestation of autonomy by young adults. It can be a trial marriage, a form of “fait accompli” that youngsters try to impose on their parents, or an inter-ethnic relationship (Rossier, Sawadogo, & Soubeiga, 2013; Mokomane, 2005a, Maïga & Baya, 2014, Calvès, 2016). It can also be a way for both women and men to maintain their economic independence. Early evidence from the Ivory Coast (Meekers, 1992, Gage-Brandon, 1993), Cameroon (Calvès & Meekers, 1999), Togo (Meekers, 1995; Thiriart, 1999) and Burkina Faso (Legrand & Younoussi, 2009) shows that women living in consensual unions are better educated and more urbanised than their married counterparts. Recent evidence for Ouagadougou (Burkina Faso) indicates that educated young men in particular are considerably more likely to enter a consensual union than a marriage (Calvès, 2016). Moreover, cohabitation in Ouagadougou does not seem to be a short time arrangement: a year after the onset of cohabitation 96% of couples had not yet entered a marriage or experienced a rupture, and after 5 years the majority were still in a consensual union (Calvès, 2016).

In Eastern and in Southern Africa too, cohabitation has been increasing (Moore & Govender, 2013). Moreover, seasonal labour migrants can found a “little house” or a second family with children in the places of destination (Odimegwa et al., 2017). High separation rates lead, furthermore, to large numbers of single-mother families and to more out-fostering of children. Also, the evidence for Botswana suggests that cohabitation is more “a poor man’s marriage” (Mokomane, 2005b) than in Burkina Faso. Hence, it may well be that, depending on context, cohabitation in sub-Saharan Africa can be more of either type, POD or SDT, or of both types combined.

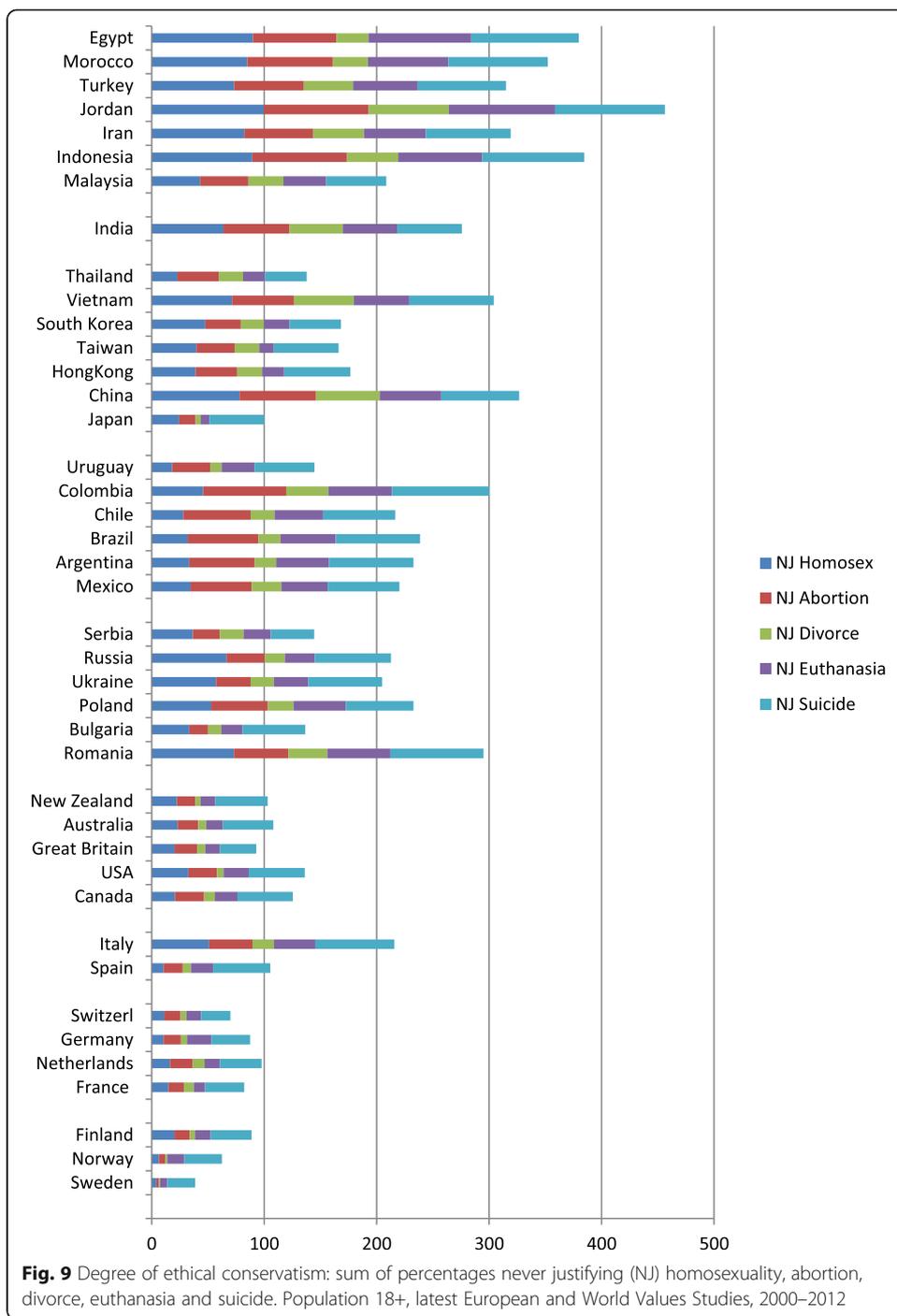
On the whole, the historical kinship organisation of the sub-Saharan populations will be favourable to both short- and long-term cohabitation further displacing the Christian or the traditionally negotiated marriage. Moreover, partnerships will retain their multiple forms as is already the case today, and the shifts away from classic legally or customarily recognised marriage seem to be on an ascending track. However, the main issue for sub-Saharan Africa is to advance its fertility transition, especially since many large West-African populations have barely started it. In other words, the “first demographic transition” (FDT) is still prominently on the agenda and likely to remain there for the next decades.

#### **A conditioning factor: the ethics revolution**

We have argued that the “willingness” factor or cultural acceptability is a more important condition for the rise of cohabitation than for the fertility postponement transition. Historically cohabitation was stigmatised in populations with an Asian patriarchal or European conjugal marriage tradition. A major ethical shift away from strong stigmatisation of certain behaviours to more tolerance and autonomy has occurred as early as the 1960s in the West, and is also developing in other parts of the world, such as Latin America (Lesthaeghe & Esteve, 2016). This involves a de-stigmatisation of divorce, abortion, homosexuality, euthanasia and suicide. The degree of resistance to any circumstantial evaluation of these ethical features can be gleaned from the World Values

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<sup>41</sup>As social contrasts are strong in Latin America, the emerging fertility postponement among the more educated could manifest itself in the form of a bimodal fertility distribution by age.



Survey data (WVS) of the first decade of this century. Figure 9 brings together the percentages of respondents aged 18+ who consider the just mentioned five acts as *never justified* (NJ) for a variety of countries, except sub-Saharan ones. The total length of the bars corresponds to the sum of these five percentages.

Obviously, the “ethics revolution” is in an advanced stage in the Nordic countries, immediately followed by Western Europe. It is also manifesting itself in Spain, but less so in Italy. The Anglo-Saxon world tends to be more conservative than Western Europe,

but not to the same degree as Central and Eastern Europe. In the latter group, Serbia and Bulgaria have witnessed a greater degree of de-stigmatisation than the others countries reported here. The difference between Bulgaria and Romania mirrors that between Spain and Italy, and in both pairs the first mentioned countries have a noticeably higher incidence of cohabitation coupled to a significantly more liberal ethics profile.

The Latin American countries are currently still more conservative than their European counterparts, and this is equally connected to a lower degree of secularisation. This also brings out once more the importance of the locked-in facilitating factor, i.e. the ethno-historical legacies of cohabitation in most of these countries. But, as mentioned before, the trend in ethical matters since the early 1990s goes in the direction of de-stigmatisation. The diffusion of more tolerant attitudes is top-down, i.e. spreading from the higher to the lower educated social strata (Lesthaeghe & Esteve, 2016). Also Uruguay stands out as a leader in the “ethics revolution” just as it witnessed the strongest cohabitation boom in all education groups. Given this top-down diffusion of liberal ethics, it is likely that the catching up with respect to cohabitation among the better-educated social strata may continue and result in a greater flattening of the education gradient. This trend may also be accompanied by a postponement of fertility among the more educated women, in which case a further step along the lines of the SDT would be taken.<sup>41</sup>

Among the Confucian and Buddhist countries listed in Fig. 9, another contrast appears between China and Japan: the ethics revolution in the latter has advanced to the Anglo-Saxon levels, whereas there is no such a comparable erosion of traditional ethics in China. This is an unexpected and puzzling finding given the high degree of secularisation of the Chinese population. Also Vietnam has maintained a more conservative position. South Korea, Hong Kong and Taiwan are at par, and Thailand has advanced slightly further on the de-stigmatisation path. These are all candidates for an incipient take-off or further expansion of cohabitation as a prelude to marriage, but probably not yet for accepting unmarried motherhood.

As described previously, India and all the Muslim countries have strong patriarchal forms of family organisation with weaker female positions. In addition, large segments of their female populations are persistently characterised by low education. When paired to a rigorist ethical stance, the expectations for the acceptability of pre-marital cohabitation are slim, notwithstanding the fact that some countries have completed their fertility transition (e.g. Turkey, Iran and Malaysia). Hence, despite the marked heterogeneity of the Muslim world in terms of human development and advancement of fertility control, these countries still form a major monolithic block of opposition to the “non-conformist” family aspects of the SDT.

### Conclusions and expectations

First and foremost, the record of the SDT since 1986 shows a very large array of combinations of SDT features and of timing profiles. Not surprisingly, this heterogeneity is perfectly comparable to that found with respect to the FDT and is equally contingent

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<sup>42</sup>For fertility expectations in post One-Child China being curtailed by low gender equality, see Yun Zhou (2018).

on historical path dependency and diverging contemporaneous socio-economic and cultural evolutions.

The record for the period after 1986 also lends additional support for more detailed conclusions:

- (i) Even if fertility postponement comes to a halt, there will not be a re-bouncing of fertility to replacement level in Europe. The quantum of fertility at the older ages, i.e. where recuperation should occur, is too small for such a recovery to emerge in the foreseeable future. Furthermore, the dual fertility system of Europe cannot be explained by a single factor such as the advanced state of the “gender revolution”, nor has that factor been capable of preventing further falls in Nordic fertility. A far more diversified package of structural and ideational factors has to be taken into account.
- (ii) Fertility in the Pacific industrialised countries is likely to stay at low to very low levels as well. Obviously they are not in the more advanced stage of the “gender revolution”,<sup>42</sup> but many other factors need to be taken into account as well, such as those associated with high tertiary education levels, with various aspects of the costs of living, and with high consumption and leisure aspirations. Moreover there is no cultural resistance to late marriage and to fertility at later ages so that fertility at young ages will remain low.
- (iii) Not all cases of sub-replacement fertility should be considered as a sign of emerging SDT. That level can also be reached without postponement transition, but as a final phase of the FDT.
- (iv) Southern European countries and FCCs are likely to experience further increases in pre-marital cohabitation and in the accompanying feature of higher fertility outside wedlock. However, diversity in degrees of cultural acceptance will result in persistent regional differences as well. Also, as these trends develop, the older POD pattern in several FCCs may weaken in favour of a more horizontal gradient with respect to education or social class. In these countries too, the amplitude of the progression of longer-term cohabitation will be more important than the education-related differences. Also in the USA, the POD and SDT patterns of cohabitation will continue to exist side by side, but regional contrasts could become more important than ethnic differentiations.
- (v) The Latin American gradients of cohabitation by education have traditionally exhibited a negative slope, and that feature has been maintained so far. However, middle and higher education groups have been catching up, particularly after the turn of the century. Brazil and Venezuela are exceptions with rises in cohabitation still being strongest in the low education group. In Uruguay, by contrast, the quantum jump upward in the incidence of cohabitation after 1996 has led to the washing out of education and class differences. As far as fertility is concerned, there are early signs of postponement, but so far only among selected urban and educated groups. This could lead to the emergence of a bimodal age-specific fertility distribution (Berquo et al., 2014; Rios-Neto, Miranda-Ribeiro, & Miranda-Ribeiro, 2018; Lima, Zeman, Castro, Nathan, & Sobotka, 2015), particularly for first births (Burkimsher, 2017).

- (vi) Pre-marital cohabitation also emerged in China and Japan. In the former, this feature is associated with urbanity and higher education. In the latter, a more typical POD pattern is followed, and the same holds for pre-marital pregnancies as well. However, in both countries there is no increase in fertility among cohabitants given the possibilities for abortion and shotgun marriage. *The SDT component of rising fertility outside wedlock is still missing.* In the Christian parts of the Philippines, pre-marital cohabitation rose in all segments of population, and most in the middle education and wealth groups. Parenthood among cohabitants is also more likely than in Japan and China, but it will be strongly condemned by the Catholic elite.
- (vii) The SDT feature of rising pre-marital cohabitation is not yet on the horizon in Hindu and Islamic populations which all have maintained the patriarchal characteristics more than those of Pacific Asia. Also, they have not yet shown signs of weakening traditional ethics or shifts in favour of individual discretion in these matters.
- (viii) In sub-Saharan Africa, by contrast, there are no major cultural impediments to rising pre-marital cohabitation, as there is an extant tolerance for a wide variety of households formation patterns in these lineage-based and exogamous societies. Also, cohabitation is not exclusively propelled by urban poverty and unemployment, as the case of Burkina Faso illustrates. On the whole, urban residence, migration and education are at present crucial differentiators, and this is not likely to change in the near future either. Sub-Saharan Africa is going down as an extreme case of dissociation between the cohabitation and fertility components of the SDT: cohabitation is likely to be a widespread phenomenon well before the fertility transition of the FDT has been completed.
- (ix) On a global scale, the rise of cohabitation is strongly conditioned by two overarching factors: (i) the contrasting historical patterns of kinship organisation, including the positions of women, and (ii) the advancing “ethical revolution” opening up multiple avenues for individual autonomy and discretion in matters of life and death.

**Abbreviations**

DHS: Demographic and Health Surveys; CFPS: Chinese Family Panel Survey; CTR: Cohort total fertility rate; FCCs: Former communist countries; FER: Female employment rate; FDT: First demographic transition; GEI\*: Gender equality index (Permanyer); GI: Gender Inequality Index (UNDP); GGS: Gender and Generations Surveys; HDI: Human Development Index; OECD: Organisation Economic Cooperation and Development; PNAS: Proceedings National Academy of Sciences; POD: Pattern of development; PFR: Period total fertility rate; SDT: Second demographic transition; UNDP: United Nations Development Programme; WVS: World Values Surveys

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**References**

- Ariès, P. (1980). "Two successive motivations for declining birth rates in the West", *Population and Development Review* (6) 4: 645-50.
- Berquo, E. S., Cunha-Waldvogel, B. C., Garcia, S., Cavalho-Ferreira, C. E., Giacomo de Lago, T., & Batista, L. E. (2014). Reprodução apos os 30 anos no estado de São Paulo. *CEBRAP Novos Estudos*, 100, 9–2.
- Billari, F. A., Liefbroer, A., & Philipov, D. (2006). The postponement of childbearing in Europe: Driving forces and implications. *Vienna Yearbook of Population Research*, 2006, 1–17.
- Bongaarts, J., & Feeney, G. (1998). On the quantum and tempo of fertility. *Population and Development Review*, 24(2), 271–291.
- Borges, D. E. (1985). *The family in Bahia, Brazil: 1870-1945*. Stanford: Stanford University Press.
- Burkimsher, M. (2017). Evolution of the shape of the fertility curve: Why might some countries develop a bimodal curve? *Demographic Research*, 37, 29–324.
- Calvès, A-E. 2016. "First union formation in urban Burkina Faso: Competing relationship transitions to marriage or cohabitation." *Demographic Research* 34, art. 15: 421-449.
- Calvès, A. E., & Meekers, D. (1999). The advantages of having many children for women in formal and informal unions in Cameroon. *Journal of Comparative Family Studies*, 30(4), 617–639.
- Castro-Martin, T. (2002). Consensual unions in Latin America: The persistence of a dual nuptiality regime. *Journal of Comparative Family Studies*, 33(1), 35–55.
- Coale, A.J. 1973. "The demographic transition reconsidered." Proceedings of the international population conference. Liège: International Union for the Scientific Study of Population (IUSSP). Vol 1: 53-72.
- Coleman, D. (2004). Why we don't have to believe without doubting in the "second demographic transition". Some agnostic comments. *Vienna Yearbook of Population Research*, 2004, 11–24.
- ELGE – European Institute of Gender Equality. 2013. Gender equality index, country profiles. Vilnius. <http://eige.europe.eu>
- Esping-Anderson, G., & Billari, F. (2015). Re-theorizing family demographics. *Population and Development Review*, 41(4), 607–628.
- Esteve, A., & Florez, E. (2014). Edad a la primera union y al primer hijo en America Latina: Estabilidad en cohortes mas educadas. *Notas de Poblacion*, 99, 39–65.
- Esteve, A., Lesthaeghe, R., & Lopez-Gay, A. (2012). The Latin American cohabitation boom. *Population and Development Review*, 38(1), 55–81.
- Esteve, A., R. Lesthaeghe, A. Lopez-Gay, J. Garcia-Roman. 2016. "The rise of cohabitation in Latin America and the Caribbean, 1970-2011." In Esteve and Lesthaeghe (eds): *Cohabitation and marriage in the Americas: Geo-historical legacies and new Trends*. Springer Open: 25-57.
- Esteve, A., Lopez-Ruiz, L. A., & Spijker, J. (2013). Disentangling how educational expansion did not increase women's age at union formation in Latin America from 1970 to 2000. *Demographic Research*, 28, 63–76.
- Feng, W., & Quanhee, Y. (1996). Age at marriage and the first birth interval – The emerging change in sexual behaviour among young couples in China. *Population and Development Review*, 22(2), 299–320.
- Frejka, T., & Calot, G. (2001). Cohort reproductive patterns in low fertility countries. *Population and Development Review*, 27(1), 103–132.
- Frejka, T., Jones, G. W., & Sardon, J.-P. (2010). East Asian childbearing patterns and policy developments. *Population and Development Review*, 36(3), 579–606.
- Frejka, T., & Sardon, J.-P. (2004). *Childbearing prospects in low-fertility countries - a cohort analysis*. Dordrecht: Kluwer Academic Publishers.
- Furouka, F. (2009). Looking for a J-shaped development-fertility relationship. Do advances in development really reverse fertility declines? *Economics Bulletin*, 29(4), 3064–3074.
- Fürstenberg, F. 2013. "Fifty years of family change – From consensus to complexity." Paper presented at the conference on family complexity, Poverty and Public Policy, Madison, University of Wisconsin: Institute for Research on Poverty.
- Fussell, E., & Palloni, A. (2004). Persistent marriage regimes in changing times. *Journal of Marriage and Family*, 66(5), 1201–1215.
- Gage-Brandon, A. (1993). The formation and stability of informal unions in Côte d'Ivoire. *Journal of Comparative Family Studies*, 24(2), 219–233.
- Gautier, A. 2016. "Government support for families and obstacles to fertility in East Asia and other industrialised nations." In Rindfuss R. and M. Choe (eds). *Low fertility, institutions and their policies – variations across industrialised countries*. Springer: 283-303.
- Goldscheider, F., Bernhardt, E., & Lappegard, T. (2015). The gender revolution: A framework for understanding changing family and demographic behaviour. *Population and Development Review*, 41(2), 207–239.
- Goody, J. (1976). *Production and reproduction – A comparative study of the domestic domain*. Cambridge: Cambridge University Press.
- Harttgen, K., & Vollmer, S. (2012). "A reversal in the relationship of human development with fertility ?" unpublished version of June 2012, ETH Zürich, Department of Economics, University of Göttingen, and Department of Global Health and Population. Harvard: University.
- Hausmann, R., Tyson, L. D., & Zahidi, S. (2010). *The global gender gap report 2008*. Geneva: World Economic Forum.
- Hellstrand, J., J. Nissen, M. Myrskylä. 2019. "All-time low fertility in Finland: Drivers, tempo effects, and cohort implications." Max Planck Institute for Demographic Research, Rostock, MPIDR-Working Paper 2019-006.
- Hellstrand, J., J. Nissen, M. Vitor, P. Fallesen, L. Dommernuth, M. Myrskylä. 2020. "Not just later, but fewer: Novel trends in cohort fertility in the Nordic countries." Max Plank Demographic Research Institute, Rostock, MPIDR- Working Paper 2020-007.

- Hoem, B., & Hoem, J. (1997). Sweden's family policies and roller-coaster fertility. *Demographic Research*, 13(2), 559–572.
- Hu, Y., & Scott, J. (2016). Family and gender values in China – Generational, geographic and gender differences. *Journal of Family Issues*, 37(9), 1267–1293.
- Inglehart, R. (1977). *The silent revolution - changing values and political styles among Western publics*. Princeton N.J.: Princeton University Press.
- Jones, G. W. (2005). The flight from marriage in south-east and East-Asia. *Journal of Comparative Family Studies*, 36(1), 93–119.
- Katus, K., Puur, A., Pöldma, A., & Sakkeus, L. (2007). First union formation in Estonia, Latvia and Lithuania: Patterns across countries and gender. *Demographic Research*, 2007, 247–300.
- Klüsener, S., Neels, K., & Kreyenfeld, M. (2013). Family policies and the Western European fertility divide: Insights from a natural experiment in Belgium. *Population and Development Review*, 39(4), 587–610.
- Kohler, H.-P., Billari, F. C., & Ortega, J. A. (2002). The emergence of lowest-low fertility in Europe during the 1990s. *Population and Development Review*, 28(4), 641–680.
- Kolk, M. (2019). Weak support for a U-shaped pattern between societal gender equality and fertility when comparing societies across time. *Demographic Research*, 40, 27–48.
- Kuong, B., Perelli-Harris, B., Padmadas, S. (2016). "The unexpected rise of cohabitation in the Philippines – Evidence for a negative educational gradient." Paper presented at the 2016 Annual meetings of the population Association of America, Washington DC, USA.
- Laplante, B., & Fostik, A. L. (2016). Cohabitation and marriage in Canada – The geography, law and politics of competing views on gender equality. In A. Esteve & R. Lesthaeghe (Eds.), *Cohabitation and marriage in the Americas – Geo-historical legacies and new trends* (pp. 59–100). Switzerland: Springer Open.
- Légrand, T. K., & Younoussi, Z. (2009). Consensual unions in Burkina Faso: Trends and determinants. *Canadian Studies in Population*, 36(3–4), 267–294.
- Leridon, H., & Villeneuve-Gokalp, C. (1989). The new couples: Numbers, characteristics and attitudes. *Population – English Selection*, 1, 203–230.
- Lesthaeghe, R. 1991. "The second demographic transition in Western countries – an interpretation." Interuniversity Programme in Demography, Vrije Universiteit Brussels, IPD-Working Paper 1991-2. German version 1992 in Zeitschrift für Bevölkerungswissenschaft 18 (3): 313-34. Also chapter in Oppenheim-Mason and Jensen (eds) 1994. Gender and family change in industrialised countries. Oxford, Clarendon Press: 17-62.
- Lesthaeghe, R. 2001. "Postponement and recuperation – recent fertility trends and forecasts in six Western European countries." Paper presented at the IUSSP Seminar "International perspectives on low fertility: trends, theories and perspectives." Tokyo, March 21-23.
- Lesthaeghe, R. (2010). The unfolding story of the second demographic transition. *Population and Development Review*, 36(2), 55–81.
- Lesthaeghe, R. 2014. "The second demographic transition: A concise overview of its development." Proceedings of the National Academy (PNAS), October 29, article nr 1420441111.
- Lesthaeghe, R., & Esteve, A. (2016). Cohabitation: The Pan-America view. In A. Esteve & R. Lesthaeghe (Eds.), *Cohabitation and marriage in the Americas – Geo-historical legacies and new trends* (pp. 269–291). Springer Open: Switzerland.
- Lesthaeghe, R., Lopez-Colas, J., & Neidert, L. (2016). The social geography of unmarried cohabitation in the USA, 2007–2011. In A. Esteve & R. Lesthaeghe (Eds.), *Cohabitation and marriage in the Americas – Geo-historical legacies and new trends* (pp. 101–132). Springer Open: Switzerland.
- Lesthaeghe, R., & Permanyer, I. (2014). "European sub-replacement fertility: Trapped or recovering?" *University of Michigan, population studies center research reports*, 14-822.
- Lesthaeghe, R., & van de Kaa, D. J. (1986). *Twee demografische transitie's*, in Lesthaeghe and van de Kaa (eds) "Groei of Krimp?" (book ed.). Van Loghum Slaterus, Deventer: Mens en Maatschappij.
- Lesthaeghe, R., & Vanderhoeft, C. (2001). Ready, willing and able. A conceptualisation of transitions to new behavioural forms. In J. Casterline (Ed.), *Diffusion process and fertility transition: Selected perspectives* (pp. 240–264). Washington DC: National Research Council and National Academic Press.
- Lesthaeghe, R., & Willems, P. (1999). Is low fertility a temporary phenomenon in the European Union? *Population and Development Review*, 25(2), 211–228.
- Lima, Everton, K. Zeman, R. Castro, M. Nathan, and T. Sobotka. 2015. "Bimodal age-specific fertility profiles in Latin America: The case of Chile and Uruguay," paper presented at the Population Association of America Annual Meeting, San Diego, CA, 30 April–2 May.
- Liu, L. H., Karl, R. E., and Ko, D. (2013) *The birth of Chinese feminism. Essential texts in transnational theory*. New York, Columbia University Press.
- Luci, A., & Thévenon, O. (2010). "Does economic development explain the fertility rebound in OECD countries?" HAL working papers, HAL-00520948.
- Ma, C. H., Shi, J. Q., Li, Y. H., Wang, Z. Y., & Tang, C. (2011). The new trends of changing family forms in urban China. *Sociology Studies*, 2, 182–216.
- Macklin, E. (1972). Heterosexual cohabitation among unmarried college students. *Family Coordinator*, 21, 463–472.
- Maïga, A., & Baya, B. (2014). "Au-delà des normes de formation des couples au Burkina Faso: Quand les cultures s'épousent." in: Marcoux, R. and Antoine, P. (eds.). *Le mariage en Afrique. Pluralité des formes et des modèles matrimoniaux*. Québec: Presses de l'Université du Québec: 61–82.
- McDonald, P. (2009). Explanations of low fertility in East Asia: A comparative perspective. In G. W. Jones, P. Straughan, & A. W. M. Chan (Eds.), *Ultralow fertility in Pacific Asia – Trends, causes and policy issues* (pp. 23–39). New York: Routledge.
- McDonald, P. (2013). Societal foundations for explaining fertility: Gender equity. *Demographic Research*, 28, 981–994.
- Meekers, D. (1992). The process of marriage in African societies: A multiple indicator approach. *Population and Development Review*, 18(1), 61–78.
- Meekers, D. (1995). Freedom of partner choice in Togo. *Journal of Comparative Family Studies*, 26(2), 163–178.
- Mills, M. and H-P Blossfeld. 2012. "The second demographic transition meets globalisation. A comprehensive theory to understand changes in family formation in an era of rising uncertainty." A. Evans and J. Baxter (eds). *Negotiating the life course. Stability and change in life pathways*. Springer: 9-33
- Mokomane, Z. (2005a). A demographic and socio-economic portrait of cohabitation in Botswana. *Societies in Transition*, 36(1), 57–73.

- Mokomane, Z. (2005b). Formation of cohabiting unions in Botswana: A qualitative study. *Journal of Contemporary African Studies*, 23(2), 193–214.
- Moore, E., & Govender, J. (2013). Marriage and cohabitation in South Africa – An enriching explanation? *Journal of Comparative Family Studies*, 44(5), 623–640.
- Myrskylä, M., Kohler, H.-P., & Billari, F. C. (2009). Advances in development reverse fertility declines. *Nature*, 460, 741–743.
- Myrskylä, M., H-P Kohler, F.C. Billari. 2011. "High development and high fertility at older ages and gender equality explain the positive link." University of Pennsylvania Scholarly Commons, Population Studies Center Working Papers Series nr 30.
- Neels, K., B. Perelli-Harris. 2012. "Heterogeneity in demographic change –the educational gradient of second demographic transition-behaviour in Europe and the US." Paper presented at the European Population Conference, Stockholm, Sweden.
- Odimegwu, C., Wet, N. D., Adedini, S., Nzimande, M., Appuni, S., Hochfeld, T., & Dube, T. (2017). Family demography in sub-Saharan Africa – A systematic review of family research. *African Populations Studies*, 31(1), 3528–3572.
- Parish, W., Laumann, E., & Mojola, S. (2007). Sexual behaviour in China – Trends and comparisons. *Population and Development Review*, 33(4), 729–756.
- Parish, W., Luo, Y., Stolzenberg, R., Laumann, E., Farrer, G., Pan, S., & S. (2007). A population-based study of Chinese urban adults. *Archives of Sexual Behavior*, 36(1), 5–20.
- Perelli-Harris, B., & Gerber, T. P. (2011). Non-marital childbearing in Russia: Second demographic transition or pattern of disadvantage? *Demography*, 48, 317–342.
- Permanyer, I. 2013: "Why calling it "equality" when it should be "efficiency"? A critical review of the EU Gender Equality Index and a constructive proposal." Unpublished manuscript, Centre d'Estudis Demografics, Universitat Autònoma de Barcelona.
- Quah, S. R., & Kumagai, F. (2015). Dating and courtship. *Routledge Handbook of Families in Asia*, Chapter, 5, 111–122.
- Raymo, J. 2013. Cohabitation in Japan. Minneapolis, USA National Council of Family Relations. [www.ncfr.org/ncfr-report/focus/family-focus-family-demography/cohabitation-japan](http://www.ncfr.org/ncfr-report/focus/family-focus-family-demography/cohabitation-japan)
- Raymo, J., Park, H., Xie, Y., & Yeung, W.-J. (2015). Marriage and family in East Asia – Continuity and change. *Annual Review of Sociology*, 41, 471–492.
- Raymo, J. M., Iwasawa, M., & Bumpass, L. (2009). Cohabitation and family formation in Japan. *Demography*, 46(4), 785–803.
- Rios-Neto, E., Miranda-Ribeiro, A., & Miranda-Ribeiro, P. (2018). Fertility differentials by education in Brazil: From the conclusion of fertility transition to the onset of postponement transition. *Population and Development Review*, 44(3), 489–517.
- Rossier, C., Sawadogo, N., & Soubeiga, A. (2013). Sexualités prénuptiales, rapports de genre et grossesses non prévues à Ouagadougou. *Population*, 68(1), 97–122.
- Roussel, L. (1983). Familles d'aujourd'hui et familles de demain. *Futuribles*, June, 1983, 29–43.
- Sobotka, T. (2008). Does persistent low fertility threaten the future of European populations? In J. Surkyn, P. Deboosere, & J. Van Bavel (Eds.), *Demographic challenges for the 21<sup>st</sup> century – A state of the art in demography* (pp. 28–84). Vrije Universiteit Brussel: VUB Press.
- Sobotka, T., Zeman, K., Lesthaeghe, R., & Frejka, T. (2011). *Postponement and recuperation in cohort fertility: New analytical and projection methods and their application* (pp. 2011–2012). Vienna Institute of Demography: European Demographic Research Papers.
- Thiriat, M. P. (1999). Les unions libres en Afrique subsaharienne. *Cahiers Québécois de Démographie*, 28(1–2), 81–115.
- Thornton, A. (2005). *Reading history sideways – The fallacy and enduring impact of the development paradigm on family life*. Chicago: University of Chicago Press.
- Tian, F. F. (2016). Transition to adulthood in China 1982–2005 – A structural view. *Demographic Research*, 34, 451–466.
- Tian, F. F. (2017). Global interactions and family formation pathways in reform-era urban China. *Chinese Sociological Review*, 49, 183–211.
- Tsuya, N. (2006). "Patterns and covariates of partnership formation in Japan." *Jinko Mondai Kenkyu. Journal of Population Problems*, 62(1–2), 1–19.
- United Nations, Department of Economic and Social Affairs, Population Division. (2015). *World marriage data 2015*. New York: United Nations.
- Wang, Q., & Zhou, Q. (2010). China's divorce and remarriage rates: Trends and regional disparities. *Journal of Divorce and Remarriage*, 51, 257–267.
- Xie, J., & Lu, P. (2015). The sampling design of the China family panel study. *Chinese Journal of Sociology*, 1(4), 471–484.
- Yan, Y. (2009). *The individualising Chinese society*. Oxford, UK: Berg Publishers.
- Yan, Y. (2010). The Chinese path to individualisation. *British Journal of Sociology*, 61(3), 489–512.
- Yeung, W.-J., Desai, S., & Jones, G. (2018). Families in southeast and South Asia. *Annual Review of Sociology*, 44, 469–495.
- Yu, J., & Xie, J. (2015). Cohabitation in China: Trends and determinants. *Population and Development Review*, 41(4), 607–628.
- Yun, Z. (2018). The dual demands. Gender equity and fertility intentions after the One Child policy. *Journal of Contemporary China*, November issue 2018.
- Zhang, Y. 2008. "Trends of divorce in today's China." (*dangdai zhongguo lihun qushi*). China Academy of Social Sciences. Retrieved from <http://www.sociology.cass.cn/shxw/shgz/shgz42/P020080218335825008116.pdf>

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