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THE SECOND DEMOGRAPHIC TRANSITION THEORY: A Review and Appraisal

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Abstract

References to the second demographic transition (SDT) concept/theoretical framework have increased dramatically in the last two decades. The SDT predicts unilinear change toward very low fertility and a diversity of union and family types. The primary driver of these changes is a powerful, inevitable and irreversible shift in attitudes and norms in the direction of greater individual freedom and self-actualization. First, we describe the origin of this framework and its evolution over time. Second, we review the empirical fit of the framework to major changes in demographic and family behavior in the U.S., the West, and beyond. As has been the case for other unilinear, developmental theories of demographic/family change, the SDT failed to predict many contemporary patterns of change/difference. Finally, we review previous critiques and identify fundamental weaknesses of this perspective, and provide brief comparisons to selected alternative approaches.

Keywords

Demographic change; ideational change; family; fertility; marriage; cohabitation

I. INTRODUCTION

The demographic transition, i.e., the transition from high to low death and birth rates, absorbed demographers' attention for much of the second half of the 20th Century. This empirical and theoretical attention produced an impressive set of mechanisms that together provide a compelling explanation for the decline in vital rates (see Casterline 2003; Bongaarts and Watkins 1996). However, for understanding fertility changes within already low-fertility populations, the demographic transition literature offers little. Building on and against this classical tradition, the framework of a "second demographic transition" (SDT) has become a population researcher's "go-to" concept/theoretical framework for studying family/fertility change in contemporary Europe as well as the Western world more broadly (see for example Bianchi 2014; Sobotka 2008; McLanahan 2004). It is now also being proposed for understanding family change in Asian and Latin American countries (Esteve et al 2012; Esteve et al 2012b; McDonald 2009; Atoh et al 2004).

The second demographic transition entails “sustained sub-replacement fertility, a multitude of living arrangements other than marriage, the disconnection between marriage and procreation, and no stationary population” (Lesthaeghe and Surkyn 2008, pp.82; Lesthaeghe 2010, pp. 211; Lesthaeghe 2014, pp 18112). The primary driver of these trends is the cultural shift toward postmodern attitudes and norms (i.e., those stressing individuality and self-actualization) (van de Kaa 2001). At the macro level the SDT provides a view of how societies evolve over time, stressing the role of ideational change in bringing about a package of demographic/family behaviors. At the individual level, the SDT framework offers individuals’ value orientations as the principal determinants of persons’ fertility and family behavior.

Originally proposed in 1986 by two European demographers, Ron Lesthaeghe and Dirk van de Kaa, the SDT framework/theory/concept (used in multiple ways in the literature) gained considerable traction in the 1990s (Billari and Liefbroer 2004). By the turn of the century it had become “the theory of the decade...that launched a thousand research projects” (Coleman 2004, pp. 11). Figure 1 (right axis) shows the increase in peer-reviewed articles in the social science journals that mention “second demographic transition” in their text. Google Scholar data (left axis), that includes books and reports, provide many more citations and shows a similar, dramatic, upward climb.

This review’s next section focuses on the content and scope of the SDT, and how they have evolved over time. The subsequent section assesses the fit of empirical evidence with the SDT. The final section reviews criticisms aimed at the SDT and briefly discusses some alternative approaches. We conclude with an appraisal that raises concerns about this widely used perspective. Specifically, the SDT clings to a problematic developmental perspective and as an inevitable result is inconsistent with important features of family and fertility in developed country contexts.

II. THE SECOND DEMOGRAPHIC TRANSITION

A. Original statements

Lesthaeghe and van de Kaa coined the term ‘second transition’ in 1986; the phrase appeared in the title of the introductory chapter of a special volume (published in Dutch) on the demographic situation in low fertility countries (Lesthaeghe and van de Kaa 1986). Initially, Lesthaeghe and van de Kaa offered the second transition as a possible phenomenon (SDT was followed by a question mark in the title of the chapter). A year later, the Population Reference Bureau commissioned van de Kaa to write a bulletin on the demographic situation in Europe and van de Kaa titled this piece *Europe’s Second Demographic Transition* (van de Kaa 1987). This bulletin became the seminal and most cited work on SDT; according to Google (accessed on 7.21.16) it has been cited 2270 times.

Examining demographic change in 30 European countries, van de Kaa (1987, pp.5) argued that “the principal demographic feature of this second transition is the decline in fertility from somewhat above the ‘replacement’ level of 2.1 births per woman...to a level well below replacement.” The driving force behind this transition was ideational change -- a

dramatic shift from altruistic to individualistic norms and attitudes (van de Kaa, 1987, pp. 5; van de Kaa 2002, pp.5)

According to van de Kaa (1987), the second demographic transition began in Europe after World War II. He argued that the war led to an increase in premarital intercourse and the age at first sexual intercourse declined in the postwar period. However, social attitudes were slower to change and marriage was still required for legitimacy and acceptability of sexual relations. As a result the age at marriage declined during this period. The improvement in socio-economic conditions after the war made children more affordable and thus fertility rates also increased up until the 1960s (pp.10).

Van de Kaa (1987, pp. 10–11) proposed that early marriages loosened the temporal link between marriage and childbearing, as young married couples waited to have children until they were financially ready. Advances in contraceptive technology, with the introduction of the pill and IUD, further weakened the link between the two. The rise in divorce and separation along with the decoupling of sexual relationships and procreation led to a decline in marriage rates and an increase in cohabitation. After initially persisting, the pressure to marry by the time of first birth gave way as well (i.e., nonmarital fertility rose). Marriage (and consensual unions) no longer primarily reflected the desire for children and fertility rates declined well below replacement levels.

This is the “standard” sequence of events during the SDT (van de Kaa 1987, pp.11). van de Kaa (1987) acknowledged that changes in family formation in all 30 countries would not evolve according to this ‘standard’ sequence, but they would all experience the four basic features of the transition to below replacement fertility, and could be grouped according to where they were in the sequence (see Table 1, column 1). Three of these features were related to changes in family formation and structure, and one captures the shift in contraceptive use (from preventive to self-fulfilling). Van de Kaa (1987, pp.9) argued that while the timing and speed of the sequence of this second transition could differ substantially, there was still evidence of “logical ordering”.

Lesthaeghe’s (1995) chapter “The Second Demographic Transition in Western Countries: An Interpretation”, which is the second most cited work on the SDT, with 1188 citations (Google scholar as of 07.21.16), built on van de Kaa’s description by further codifying the features of SDT and their sequence into three phases (see Table 1, column 2). In a more recent statement, Lesthaeghe (2010, cited 547 times, Google Scholar 8/1/2016) elaborates the SDT in response to conflicting empirical evidence and a set of criticisms by his peers. We return to this evidence and criticism below, but Lesthaeghe (2010) acknowledged different rates of social and demographic change and some variation in developmental paths. He also allowed for some heterogeneity in the end stage. However, he does so without removing the SDT’s fundamental developmental character – a feature we critique in our concluding appraisal.

B. The (first) demographic transition

For some readers, a discussion of the second demographic transition (SDT) begs for a description of, and links to, the first. As noted at the outset, the (first) demographic transition

(DT) refers to the decline of fertility and mortality from high levels to low levels, with an intervening period of rapid population growth caused by an earlier and more rapid decline in mortality (than fertility). According to early statements of the demographic transition theory, the driver of these changes was industrialization (and associated social and economic development, i.e., modernization) that both increased children's likelihood of survival and increased their cost to parents. These changes, in turn, increased motivation for reduced family size but did not undermine the universal expectation of marriage and parenthood. This description of change was based on patterns in the West but the scope of the theory was assumed to be global. Demographers posited that this demographic transition was inevitable, unilinear and irreversible (Casterline 2003).

The massive, two-decade long European Fertility Project (Coale and Watkins 1986) assessed the fit of European historical data to this theory. While not discrediting the distal influences of industrialization, on a decadal time scale the fertility decline took on a pattern best described as "social contagion", a change driven by new ideas and new options as opposed to individual decision-makers changing assessment of the "costs" of children (Cleland and Wilson 1987). In other words, the decline of fertility in Europe showed a pattern suggesting "contagion" or "diffusion" – the best predictor of fertility decline for European provinces was the fertility behavior of neighboring provinces – rather than structural changes.

Lesthaeghe contributed greatly to the European fertility project through his early empirical work, *The Decline of Belgian fertility, 1800–1970* (Lesthaeghe 1977), and his analyses of the European Project's multi-nation provincial data (Lesthaeghe and Wilson 1986). He argued that new modes of thinking were fundamental to the speed and timing of fertility decline. These new modes of thinking involved the social acceptability and multiple advantages of controlling fertility. Subsequent fertility declines among developing countries in the post WWII period were of similar character (see Cleland and Wilson 1987; Bongaarts and Watkins 1996). The role of new ideas legitimating small family size and family planning are now central to the DT.

Why is the second demographic transition (SDT) not just a continuation of the first? Given the findings of the European Fertility Project on the role of "new modes of thinking" one possible narrative would stress continuity in the mechanisms producing change. But instead the proponents of SDT argue that the focal phenomenon changed – it was no longer smaller family size; it became fertility postponement and increased voluntary childlessness (Lesthaeghe 2010, pp. 216; van de Kaa 2001, pp.302; van de Kaa 2002, pp.10). The watershed between the first and the second demographic transitions is the shift in norms, from altruistic to individualistic (van de Kaa 2002, pp.5; Lesthaeghe 1995, pp.19*; Lesthaeghe 2014, pp.18112). New motivations underlying family formation behavior distinguished the second transition from the first. Greater female emancipation and individual autonomy were more central to SDT than they were to the first transition (Lesthaeghe 1995 pp.18).

C. Theoretical motivations

Van de Kaa and Lesthaeghe mention three arguments that convinced them that the SDT was truly different from the DT, a discontinuity anchored in an irreversible shift in motivation and sentiment. We discuss these in turn.

Shift from king-child to king-couple—Van de Kaa and Lesthaeghe were heavily influenced by Aries' claim that motivational shifts lead to fertility decline in the West over the twentieth century (Aries 1980). Aries argued that even if the phenomenon of fertility decline experienced by the western world during the 1960s was not new, as pointed out by historians, the motivations behind it were; the resumption of fertility decline in the post-war period reflected a different outlook on life. To explain, Aries pointed out that “society has always controlled nature and domesticated sexuality” (1980 pp. 646). As early as the 16th century, Europeans practiced fertility control in the form of delayed marriages. Malthus (1888) captured this view by claiming that the “passion between the sexes” was too great for married couples to practice fertility control via abstinence (and Malthus viewed other means as immoral). People did not think to control the frequency of intercourse to influence pregnancy; “automatic unplanned behavior” and surrender to impulses/destiny was the norm. Consistent with this Malthusian claim, marriage timing was the only mechanism of fertility control available (Aries 1980, pp.646).

Change occurred when couples began to plan their families using foresight and organization. For Aries (1980, pp.646), this “revolution in sensibility” was perhaps as important as the French or Industrial Revolutions. He argued that this “planned parenthood” occurred before the availability of modern contraceptive technology, it relied on behavioral and sex-proximal methods (especially withdrawal and abstinence), and was in part successful because of a culture of self-control or non-coital, premarital eroticism.

Aries (1980) claimed that this is when affection became centered on children and the family, and families became more inward looking, organizing themselves in terms of children and their futures (note that he does not explain why this change took place). This led to a child-oriented society and to greater investment in children; these changes encouraged small families. During this period, birth control and lower fertility were the consequence of wanting one's children to be upwardly mobile.

In response to the persistence of the child's status as “king” during the Baby Boom period of rising fertility, Aries argued that younger women began to revolt against the burdens of motherhood. This was aided by the revolution in contraceptive technology – ‘the era of the pill began’ – and triggered a shift from “trustful modernity” to rebellion by the late 1960s (1980, pp.648). The post-baby boom resumption of declining birth rates was categorically different from that of the 1930s. According to Aries, the vast majority of couples did not now limit family size in order to move up the social ladder, but instead to free themselves from family obligations (1980, pp.648). And the availability of advanced contraceptive technology alone could not explain its wide acceptability and uptake.

Aries rejected alternative explanations and believed that the refusal to have an undesired child (by resorting to abortion) was a critical new phenomenon. It reflected the end of the

“child-king” days, the child was no longer essential in couples’ plans; instead a child was just one of the components that might allow adults to blossom as individuals (pp.649). The couple and their relationship was now “king” and might make room for a child.

The proponents of SDT coined this the transition from the “king-child with parents” to a “king-couple with child” (van de Kaa 1987, pp. 11; van de Kaa 2002, pp.5;). The justification of the SDT as a distinct transition rests heavily on this historical interpretation. Since the SDT is not solely about changes in birth rates, its proponents incorporated other theories of social change in their explanatory framework. Lesthaeghe (1995) argued that the SDT reflects and builds on not just Aries’ motivational shift theory, but several other irreversible revolutions in the Western world: the sexual revolutions proposed by Shorter (1971), Westoff’s (1977) contraceptive revolution, as well as Sauvy’s (1960) characterization of the first transition as altruistic (and the second as individualistic). The shift to “king couple” or the rising importance of the adult dyad led to an increase in the minimal standards of union/marriage quality (Lesthaeghe 1995).

The Maslowian drift and rise of individualism—Inglehart’s claims of a shift from materialist to post-materialist values also played a critical role in the elaboration of the SDT (van de Kaa 1987; Lesthaeghe 1995; Lesthaeghe 2010). This value shift embodies the “Maslowian drift” that both proponents place at the heart of the second demographic transition – a shift toward higher-order needs of self-actualization and individual autonomy to motivate behavior once more basic needs like survival and safety have been satisfied (Lesthaeghe 1995). The demographic changes since 1960 cannot be divorced from Inglehart’s (1990) ‘silent revolution’ that is argued to have taken place in Western nations as a result of the post-war economic affluence and security (Lesthaeghe 1995; 2011). In recent statement of the theory, Lesthaeghe (2010, pp.216) linked the Maslowian drift with a set of other transitions, the contraceptive revolution, the sexual revolution and the gender revolution, all fitting within a framework of rejection of authority and overhaul of normative structures.

Pushback against economic explanations—This SDT ideational reorientation occurred during peak years of economic growth. Both SDT proponents (van de Kaa 1987, 1994; Lesthaeghe 1995; Lesthaeghe 2014) acknowledge that SDT does not negate economic explanations of family change, such as those offered by Becker (1973, 1974, 1991) and Easterlin (1973, 1976). They acknowledged that the shifts in the quality-quantity tradeoff with respect to children as a useful concept in explaining the first demographic transition. Moreover, they credit rising female labor force participation as having an important role in the SDT. However, the economic models for fertility change allow for the reversal of trends experienced in the post-War period, and this is where the economic theories are at odds with one of the central tenants for the SDT – the irreversibility of changes in family and fertility (weakening of traditional family systems and below replacement fertility) (Lesthaeghe 1995, Lesthaeghe (2010, pp.)). In the language of classical economics, tastes and preferences have irreversibly changed.

SDT treats ideational change primarily “as exogenous influences that add stability to trends over and beyond economic fluctuations” (Lesthaeghe 2014, pp. 18113). So Lesthaeghe

(1995, 2010) emphasizes, that although compatible, the economic models are incomplete without the cultural/ideational explanations that SDT theory offers. He uses the strong empirical link between cohabitation and secularization to highlight this point, arguing that this link cannot be accounted for by Becker's structural economic theory or Easterlin's theory of labor market conditions (Lesthaeghe 1995). Secularization is a manifestation of individual autonomy. Economic theories are incomplete without the Maslowian shift to higher order needs.

In summary, for the SDT, ideational change, as seen through the increase in individual autonomy, secularization, female emancipation, and post-materialism, is the central explanation, without which all other explanations are incomplete.

D. Expanding the SDT substantive and geographic scope

Initially the SDT was proposed as an explanation for below-replacement fertility and union formation changes in Europe. Early on the theory's scope expanded to include mortality and migration patterns, but fertility/family change remained the primary focus. Specifically, SDT's proponents (van de Kaa 1994, 1999) incorporated mortality and migration in a discussion of the unexpected and dramatic improvements in life expectancy (at birth as well as at advanced ages), and the initiation of guest worker schemes in Western European countries. Both van de Kaa and Lesthaeghe have argued that the role of migration changed. In the first transition (DT) emigration acted as a safety valve in maintaining equilibrium; in the second transition (SDT) immigration played a key role in maintaining national-level demographic homeostasis. "Replacement migration" is to the second demographic transition what replacement fertility was to the first transition (Lesthaeghe 2010, 2014). These changes in migration patterns contributed to an important divide in Europe's population development halfway through the 20th century (van de Kaa 2002).

On the other hand, changes in mortality during the second transition (SDT) were not uniquely different from those that took place during the first transition. That it is to say that life expectancy continued to improve throughout the two transitions. However, according to SDT proponents, similar to fertility, mortality changes in the second transition were, and continue to be, strongly influenced by ideational and normative changes. That is, individuals took on greater responsibility for their health and adopted preventive measures that reflect value systems stressing self-fulfillment and individual freedom (van de Kaa 2002 pp.22, 2004 pp.6). These SDT insights into the causes of migration and mortality change have not had the impact of those focusing on family and fertility.

The geographic scope of SDT has also expanded. Lesthaeghe (1995) aggressively extended the geographic reach of the SDT theory to all OECD countries (Lesthaeghe 1995). SDT went from explaining changes in Europe to changes in industrialized nations more broadly, which meant the addition of the US, Canada, and Australia, New Zealand and Japan. In his more recent work Lesthaeghe (2010) claims that the SDT may have explanatory value for understanding worldwide family and fertility changes, given that the countries under consideration are "wealthy enough to have undergone the Maslowian drift" (pp. 234). Several East Asian countries, which have industrialized and urbanized, qualify for being considered as a testing ground for the SDT. But Lesthaeghe (2010) cautions that even in

countries that meet this criteria, additional features are required for the identification of the SDT: below replacement fertility is linked to postponement; rising age at marriage conditional on female autonomy and partner choice; rise in prevalence and acceptance of premarital cohabitation; a link between demographic change and value orientation (pp234). He accounts for the fact that not all four of these features were present in all European countries before they entered the SDT by stating that the demographic characteristics of the SDT do not have to occur simultaneously but instead are likely to be lagged (2010, pp.234).

We should note, that the more recent works of van de Kaa and Lesthaeghe have diverged somewhat. Works by van de Kaa do not typically refer to the SDT as a theory or even a theoretical framework. Only a few years after his original piece on the SDT (van de Kaa 1987), van de Kaa (1994) broadened the historical description to include two other dimensions of the social system in addition to culture/ideational change – structure and technology. Later he proposed treating the ideational change framework of the SDT as an anchored narrative or social history, with sub-narratives where necessary to explain variations (van de Kaa 1996). He does, however, still support the validity of the SDT as a new demographic regime or “revolution” (van de Kaa 2010, pp.5).

Lesthaeghe’s work on the other hand has often used the term “SDT theory” or theoretical framework (Lesthaeghe and Surkyn 2008; Lesthaeghe 2010, 2011, 2014). He is also much more vested in the ideational change explanation, with much of his work focusing on the contribution of the ideational change theory to understanding post WWII demographic change (Lesthaeghe 1998), and establishing the links between the spread of post-materialist values and that change (Surkyn and Lesthaeghe 2004). Much of the following discussion in this review focuses on Lesthaeghe’s highly visible and expansive use of the SDT, as opposed to van de Kaa’s historical and more circumscribed descriptive work.

III. EMPIRICAL ADEQUACY OF THE SDT

Lesthaeghe (e.g., 2010) has elaborated the SDT in response to emerging and (according to the SDT) unexpected demographic realities. This is an expected step in “the wheel of science” (or paradigmatic science) that re-establishes an acceptable fit between data and theory. Below we describe the fit of SDT predictions with observed changes, and we note elaborations of SDT (if any) to this evidence.

A. Union and family formation

Changes in union formation are at the heart of the second demographic transition. The SDT-related value changes are predicted to cause: mean age at marriage to increase, first marriage rates to decline, divorce rates to rise, cohabitation to become increasingly common and accepted, and the proportion of non-marital births to increase.

Broadly speaking, recent change in union formation are consistent with SDT expectations (see Cherlin 2012: 585–586) as well as with what Cherlin (2004) called the “deinstitutionalization of marriage”. Age at marriage has increased worldwide (Ortega 2014); Asian countries like Japan, Korea and Taiwan are now some of the latest-marrying countries in the world (Raymo et al 2015) and even African nations are experiencing a rapid

increase in age at marriage (Shapiro and Gebreselassie 2014). Further, there is no Western country where the proportions never-marrying have not increased from their levels in the early 20th century (van de Kaa 2002; Cherlin 2014). The decline in rates of first marriage rates has been even more dramatic in East Asian countries with economic growth matching Western nations, although variations by socioeconomic class remain (Raymo et al 2015). In China age at marriage increased dramatically in the 1970s, but, has experienced relatively little marriage change (albeit in the expected direction) since. Marriage remains nearly universal and within a narrow age range (Raymo et al 2015).

But when one looks more closely at the data questions arise. First, although marriage rates did decline in most industrialized countries after the middle of the 20th century, these trends show a modest reversal in the vanguard nations of the SDT (Sweden and Denmark) as early as the 1990s (van de Kaa 1994). Second, the mean age at marriage in low and middle-income countries is currently reaching the level that wealthier countries had reached in the 1970s (Cherlin 2014), with several countries in Africa experiencing age at marriage nearly as high as that in contemporary Europe. Perhaps postmodern values are diffusing to new settings spawning an earlier start of the SDT (Lesthaeghe 2010: 244–45), in a way analogous to what Thornton calls “developmental idealism” (2001). Or more likely, high/rising ages at marriage are a response to greater economic crises and uncertainty (Shapiro and Gebreselassie 2014) or women’s dissatisfaction with the conflicts of rapidly changing economic participation and persistent traditional gender roles (Frejka et al 2010; Jones and Yeung 2014).

The proponents of SDT claim that the weakening of the institution of marriage is one of the main characteristics of the SDT. This is seen through trends in both divorce and remarriage – with the SDT predicting that divorce rates increase and remarriage rates decrease. Demographic data show that, despite cross-national differences, divorce rates increased for almost all industrialized countries during the 1980s and 1990s (van de Kaa 2002). However, in the last two decades some of these countries have experienced greater marital stability. Data for OECD countries shows that although all countries have experienced an increase in divorce from 1975 levels, half of the OECD countries saw a decline in divorce rates from 1995 (OECD 2015). The East Asian nations have recently experienced an increase in divorce rates (Raymo et al 2015). However, similar to the US (Cherlin 2010), divorce shows a strong negative educational gradient in East Asia (Raymo et al 2015), once again suggesting that the variation may have more to do with structural factors, like poverty, than increases in individualism or self-actualization. Moreover, in East Asia as well as in countries like the U.S., marriage remains a valued institution, with most young adults expressing the desire to marry at some point in the future (Thornton and Young-DeMarco 2001; Manning et al 2007; Smock and Greenland 2010; Raymo et al 2015).

Increases in cohabitation predicted by the SDT are also widely observed. Several studies have documented the increase in both acceptability and prevalence of cohabitation across most industrialized nations. There are however sharp differences in cohabitation rates across countries. Even in Europe, the prevalence of cohabitation ranges from more than 75 percent in France and Finland to less than 10 percent in Italy and Poland (Heuveline and Timberlake 2004). Cohabitation in the U.S. has increased among all social classes, however, duration

remains shorter than in most other Western societies, and large proportion of these unions end in marriage (Cherlin 2010). Moreover, in many places where cohabitation is common it continues to function as a precursor for marriage, rather than a substitute. In the U.S. couple's often "slide" into a cohabiting union, rather than consciously choosing it as an alternative for marriage or as a rejection of authority or traditional norms (Raley 2001; Manning and Smock 2005). Heuveline and Timberlake's analysis (2004) shows that even among SDT leaders like Sweden close to two-thirds of cohabitations end in marriage.

Further, despite high levels of economic and social development and some of the lowest fertility rates, Asian countries such as Japan and South Korea have only recently started experiencing an increase in cohabitation, and it functions primarily as a precursor to marriage rather than an alternative (Raymo et al 2009; Raymo et al 2015). Recent studies show that Latin America is experiencing a cohabitation boom (Esteve et al 2012), although earlier studies analyzing similar data found early and persistent marriage in the region (Fussell and Palloni 2004).

A final expected change in union formation by the SDT is the separation of fertility and marriage. Here there is great variability across and within developed countries (Hiekel and Castro-Martin 2014; Hayford et al 2014). Non-marital fertility in the U.S. increased dramatically over the last 50 years, however, it is strongly correlated with poverty and low-education, pointing towards structural explanations more than cultural explanations of ideational change motivating behavior (Bailey et al 2013; Cherlin 2010; Gibson-Davis et al 2005). Scholars find similar patterns for Russia as well (Perelli-Harris and Gerber 2011). Non-marital fertility remains very low in many parts of Southern Europe and is rare even in the Asian countries said to be experiencing the second demographic transition (Ravaneral et al 1999; Jones 2007; Raymo et al 2015).

B. Sub-replacement fertility

The second main SDT prediction is that below replacement fertility (via marked degree of postponement and definitive childlessness) will become a permanent feature in countries where material needs have been satisfied and the Maslowian drift has occurred (Lesthaeghe 2010). Several studies find an increase in both attitudes and experiences of childlessness, not just in the West but Latin America as well (Rowland 2007; Rosero-Bixby et al 2009; Merz and Liefbroer 2012).

A large literature on the phenomenon of low and lowest-low fertility has also emerged (e.g., Goldstein et al 2009; Morgan and Taylor 2006; Sobotka 2004; Kohler et al 2002; Morgan 2003; Frejka and Calot 2001; Foster 2000). At the end of the 20th century, fertility rates in the western world varied substantially; some countries had fertility near replacement levels (TFR=2.0) and some at much lower levels (TFR<1.5). In fact, there was evidence of a recovery in fertility rates for several countries, many of whom were cited as leaders of the SDT (e.g., Scandinavian countries, France). Whereas fertility rates for Eastern and Southern European countries, who had begun their second transition later, had fertility rates below 1.5 (Sobotka 2008). Fertility rates for the Asian countries, that had experienced few of the family formation shifts characteristic of the SDT, also remained well below 2 births (Atoh et al 2004).

In sum, economically developed countries have sorted themselves into two groups: one approximating replacement level fertility (TFRs 1.8–2.1) and another with TFR's of 1.5 and below (see Rindfuss and Choe 2015). The SDT did not anticipate this diversity initially. The proponents argue that while the SDT was a good predictor of postponement, it did not predict the variations in fertility rates or the divergence in recuperation rates (Lesthaeghe 2010). They later distinguish between SDT aspects related to self-actualization and emancipation to account for recuperation differentials (Lesthaeghe 2010, 2011).

C. Links with ideational change

While some studies find links between post-materialism and postponement of marriage and nontraditional family norms and attitudes more broadly (e.g., Bystrov 2014; Gubernskaya 2010), the SDT's posited link between ideational change (postmodernist values) and fertility decline does not find consistent empirical support, even in the regional heart of the SDT – North Western Europe. Contrary to original SDT predictions, van de Kaa (2001) found Inglehart's postmaterialist values to be positively correlated with total fertility rates for a sample of European countries. Lesthaeghe (2010, 2011, 2014) has also acknowledged that the SDT theory affects components of fertility in opposite directions – some fostering postponement and thus lowering fertility, others fostering recuperation. Another study by Lesthaeghe and Lopez (2013) found that cohabitation and non-conventional family formation more closely mirror the “history of secularization”, whereas fertility postponement is more closely linked to structural factors like female education and employment.

Surkyn and Lesthaeghe (2004) used large-scale, cross-sectional data from the 1999–2000 European Values Survey for two Iberian, three Western European, and two Scandinavian countries and interpreted their results as supporting the ideational change hypothesis of SDT. Specifically, they show that “non-conformist orientation” is strongly linked with household type in all three regions. Married couples who never cohabited and cohabiting couples with children were at two ends of the conformist-orientation spectrum. On the other hand, Van de Kaa's (2001) analysis of the World Values Survey data from the 1990s found no correlation between the proportion of extramarital births and postmodern or postmaterialist values, leading him to speculate that this might be explained by preexisting differences in the acceptability of childbearing outside marriage across European societies.

D. Empirical fit: an appraisal

Lesthaeghe (2014) maintains that the 1980s version of the SDT was correct in predicting a shift in value orientations, the spread of different partnership formation patterns, and sub-replacement fertility. Yet, it is hard to find a consistent pattern across countries, beyond perhaps the spread of cohabitation. Several studies show that even within Europe there is growing evidence of divergence rather than convergence between countries (Billari and Wilson 2001; Billari and Liefbroer 2010). Of special importance is the failure of SDT to predict or account for the variation in low fertility. In some countries fertility continues to fall, and it is recuperating in others. Further, some countries leading the fertility decline, such as Japan, are lagging behind in cohabitation and non-marital childbearing rates. While countries that were late to transition, like those in Southern Europe and some in East Asia,

now have some of the lowest fertility rates but have seen slow increase in cohabitation, divorce and non-marital fertility (Ravaneral 1999; Dominguez-Folgueras and Castro-Martin 2013). The vanguards of the SDT, countries like Sweden with high postmaterialist and secular values, have started to experience recuperation in fertility rates.

Second, the SDT does a poor job accounting for within country variation. The SDT views these differential as a “cultural lag” as opposed to persistent differences linked to persistent inequality or identity differences, a point we return to in the critique below (also see Cherlin 2016). Finally, and of critical importance, the SDT’s posited link between ideational change (postmodernist values) and fertility/family change does not find consistent empirical support.

IV. CRITIQUES

The SDT has been challenged. We review a set of criticisms aimed at SDT and offer some additional ones. We then focus on two important forces, gender change and globalization, largely ignored in SDT.

A. Criticisms of SDT

We note above that the SDT predictions comport with some major features of recent family and fertility change. This is expected since the SDT was constructed to account for these facts. Further, as expected subsequent SDT statements are elaborated to account for “new facts” not predicted. But a key criticism related to “theory fit” takes aim at the heart of SDT – the Aries/Inglehart claim of the watershed changes in ideology that undergird the SDT – a shift from “materialism/post-materialism” (or the related “child-king” to “king couple”). This undergirding mechanism is problematic (Coleman 2004, pp19) because consistent empirical evidence is lacking (see section above, e.g., Raymo et.al. 2015). Further, Coleman (2004, pp14–15) points out that a transition “should be complete and irreversible... (and) ... shared by most individuals in a population”. It is a change “between one long term sustainable demographic pattern and another”. Coleman challenges the view that all aspects of the SDT are new (see also Cliquet 1991; Bailey et al 2013; Van Bavel and Reher 2013) and questions whether the changes we observe are complete and irreversible. Coleman raises these issues citing empirical patterns that do not conform to the SDT (as we do for some trends above).

But we raise a more fundamental criticism: this search for developmental stages and irreversible transitions is wrongheaded. Such developmental theories generally fall victim to three interrelated problems: reliance on cross-sectional data, an expectation of common processes and patterns of change, and the description of the “end state” as the most developed western society. Thornton’s (2001; 2005) critique of developmental theories (of the family) and “reading history sideways” apply (see 2005 pp.104–107). Note that the original SDT statements were clearly an exercise in examining cross-sectional data and interpreting differences observed as if they represented longitudinal change, i.e., reading history sideways (see Thornton’s [2005 pp. 116–17] discussion of Inglehart’s work that is a foundation of the SDT). The SDT places countries into groups of ‘leaders’ and ‘laggards’ depending on how far along they are in a predetermined set of stages (e.g., Lesthaeghe

1995). And the end state of the development process is best exemplified by the country most accepting of postmodern values.

Let us be specific about the negative consequence of each problem. First, interpreting cross-sectional data as representing longitudinal change requires strong assumptions that should be the focus of inquiry. Rather than looking at context-specific histories, the SDT relies heavily on widely available cross-sectional data showing national-level demographic indicators. If one assumes a uniform pattern of societal change, then these cross-sectional data can be used to construct the “stages” of the SDT (see Surkyn and Lesthaeghe 2004). Even as early as 1993, van de Kaa recognized that it was problematic to force “a multi-dimensional reality into a linear, sequential framework” (van de Kaa 1994). However, this did not lead to significant revisions of the SDT.

Second, assuming similar processes and patterns of social change is almost always empirically inaccurate. Developmental theories posit a universal explanation for demographic patterns across times, places, and cultures (for critiques see Johnson-Hanks 2008; Riley and McCarthy 2003; Rivkin-Fish 2003). The SDT sees postmodern values as a powerful “exogenous” force with consistent effects worldwide. This search for a universal explanation assumes that changes in the meanings and practices surrounding reproduction and family formation occur in patterns shared across cultures. Changes in demographic rates are seen as indicators of progress in the universal transition toward modernization (now postmodernism) (Rivkin-Fish 2003). However, an immense literature reveals that the assumptions of modernization stages are historically naïve (e.g., Handwerker, 1986; Thornton 2001; McCann 2009). As a specific example, Lesthaeghe and Neidert (2006) make the case that U.S family patterns are a “textbook example” of (and not an exception to) the SDT. They acknowledge that the SDT is less visible/powerful in the “Midwest, the Great Plains, and the South”. They attribute this to lower levels of education and less secularization in these areas and suggest that SDT changes will come to these areas soon (p. 694). But these regional patterns are now etched into the U.S. political/cultural divide (the Red vs. Blue phenomenon) and show no signs of wear (see Morgan 2011; 2015). Is it useful to view these 21st century U.S. regional differences as backwardness and as a temporary phenomenon?

And third, assumptions about the order of transitions and the end state are frequently driven by ethnocentric biases, as opposed to sound theory (McCann 2009). We fear that the SDT reinforces and furthers fundamentally ethnocentric interpretations. We know that the SDT was based upon White-European family experience and that its most advanced form is posited to be emerging in western populations most accepting of postmodern values (e.g., Nordic countries). Examples of this can be seen in the exclusion of “the ethnic component” from national fertility and family indicators when searching for empirical evidence of the SDT (Lesthaeghe 2010, pp. 216), or as stated above, in making regional exceptions to create “textbook examples” (Lesthaeghe and Neidert 2006). This exercise assigns value judgements to difference. Is it true that all people value what white Europeans do?

In sum, reading history sideways does not, in and of itself, refute the SDT theory; it only indicates that the empirical underpinnings are weak. But in theory construction, van de Kaa

and Lesthaeghe chose the kind of broad, ethnocentric explanations that have attracted many sociologists and demographers in the past – grand theories of sequential, developmental change driven by a single powerful force inexorably leading to an end stage. This end stage is approximated by the current patterns in countries seen as “most advanced”.

B. Gender systems given the short shrift

Bernhardt (2004) has argued that inattention to gender is one of the main shortcomings of the SDT (also see Arpino 2014; García-Manglano et al 2014; McDonald 2000; Solsona 1998). She points out that individual autonomy and self-actualization are not gender-neutral concepts; they hold different meanings and implications for men and women. Thus, the consequences of women’s increasing self-actualization and individualism are more consequential for family change than men’s shifts to higher-order preferences (Bernhardt 2004; see Solsona 1998 for a substantive example).

While SDT largely understates the role of gender change, competing theories have assigned it a pivotal role in explanatory models of fertility and family change (Goldscheider et al 2015; Esping-Anderson and Billari 2014; Mason 2001; McDonald 2000; Chenais 1996). For instance, McDonald (2000) distinguished between gender equity in family-oriented and individual-oriented institutions, a distinction crucial for understanding not just the transition from high to low fertility but also the decline to lowest-low fertility. In line with Lesthaeghe’s argument that the first transition involved changes in the private sphere, McDonald (2000) asserts that the shift from high to low fertility is primarily due to slow improvements in gender equity within family-oriented institutions followed by rapid increases in gender equity in individual-oriented institutions like the education and labor market systems, particularly in Western nations. However, the rapid increase or ‘revolution’ in the individual-oriented institutions, without complimentary and continued shifts in the family institutions leads to very low fertility. Goldscheider (2000) makes a similar argument for family formation patterns; much of the decline in marriage, as seen by increases in both divorce and cohabitation, can be attributed to the gender asymmetry in responsibilities (equal share of economic tasks but unequal share of domestic tasks).

Esping-Andersen and Billari (2015) offer another framework centered on gender-equity regimes. They suggest a longer-term developmental perspective when trying to understand fertility change, and argue that recent changes are an extension of the (first) demographic transition: following the DT first three stages (*i.* high vital rates, *ii.* declining fertility and a slower fertility decline and *iii.* low vital rates), countries will experience below replacement fertility in phase *iv* and will show recuperation from very low fertility in phase *v*. The shift from phase *iv* to *v* is explained by the “gender equity catch-up” (pp.394). In this framework persistently low fertility is explained by the lag in public and private gender equity (work-family conflicts), and recuperation occurs because of what they call a “gender-equity dividend” – a relative scarcity of marriageable women relative to men that facilitate greater gender equity (pp.393).

As a final example, Goldscheider et. al (2015) explicitly offers a gender framework as an SDT competitor. Their approach predicts the recuperation of fertility to replacement levels and greater union stability. The gist of the argument is that there are “two halves” of the

gender revolution. “Structural changes” in women’s roles in the public sphere (employment), i.e., in the first half of the gender revolution, have disrupted traditional gender relationships producing the “negative trends in fertility and union stability identified by the SDT” (Goldscheider 2015, pp. 229). The second half of the gender revolution, a change that is at best partial in many countries, involves changes in men’s roles. These changes, viewed as inevitable by Goldscheider et.al will produce a more equitable division of parenting and household labor. These changes in turn will increase fertility and union stability (see Miettinen et al 2011 for an empirical example).

These gender-based correctives have their own problems. For one, they beg the question: what causes gender change? Second, they assume that all women are able to find men with egalitarian views and substantial earning-potential, the likelihood of which is higher among the more educated group/class (Cherlin 2016). It is problematic to replace one unilinear/convergence explanation with another.

C. The import of globalization

Mills and Blossfeld (2013) argue that globalization has critical implications for understanding recent decades of family and fertility change and that the SDT has ignored this powerful set of forces (see also Esping-Anderson 1999). Globalization theory (Blossfeld et al 2005) offers a structural explanation based on four pillars: the declining importance of national borders for economic transactions; accelerated global interconnectedness through the IT revolution; tougher tax competition between countries accompanied by deregulation and privatization; and the exposure to an increasingly volatile global market. These four shifts, experienced across the globe, have led to high levels of life course uncertainty, including economic, temporal, and employment-related uncertainties. For instance, the young adult population is increasingly vulnerable to labor market uncertainty, which has contributed to postponement of life transitions, including entry into partnerships and parenthood.

One of the key factors distinguishing globalization theory from SDT theory is the importance it attributes to the role of domestic path-dependent institutions in filtering uncertainty, often unequally across different social groups. The major institutions at play include the nation’s welfare regime, employment system, and education system. Cross-national differences in family patterns and fertility levels are accounted for by differences in these three institutions. Countries with social-democratic regimes (e.g., Sweden) make the transition to partnership and parenthood easier than conservative welfare systems (e.g. Germany) relying on male breadwinner model. When men in these latter societies face labor market uncertainty, they are likely to postpone family transitions. Similarly, countries with open employment systems are able to mitigate and distribute uncertainty differently from those with closed employment systems. Educational systems differ in the amount of time spent in schools, the relative importance given to qualification versus ability-based learning, standardization, and links to labor market entry. These factors in turn influence the degree to which young people face uncertainty. The forces of globalization exacerbate inequality by offering more opportunities to better-educated youth.

Inequality is a central tenet of the globalization framework, whereas the SDT is relatively silent on this topic. The SDT silence on inequality and its emphasis on ideology suggest that all individuals have the agency and power to exercise individual freedom, achieve self-actualization and shape their life course. Under the globalization framework, institutional incompatibility of combining work and family, particularly in the context of labor market uncertainty is the driving force behind changes in family and fertility. The globalization framework does not imply unilinear change or country level convergences in fertility and family patterns (like SDT and some other frameworks discussed above), rather it provides for path dependence produced by the interaction of globalization forces and country-specific institutions.

D. Critical appraisal

Above we have argued that the underlying mechanism producing the SDT (a shift to postmodern values) is not reliably present prior to expected changes (in family and fertility). But more fundamentally, we challenge the search for all-powerful exogenous forces that produce predictable stages in the unilinear movement toward an “end stage”. This end stage resembles the contemporary country with the widest acceptance of postmodern values. Van de Kaa (1994) and later Lesthaeghe (2010) do admit that the SDT’s proposed sequence of changes in family and fertility and the inter-connectedness between key components was overly rigid. In fact, Lesthaeghe recently stated that the SDT should not be taken as a “teleological grand script with a standard scenario” but rather as a “general narrative that leaves room for many sub-narratives” (Lesthaeghe 2010, pp.225). While this suggestion seems to resolve the “fit to data”, it begs the question “what is left” of the original theory? And what are the mechanisms and processes that drive this attenuated SDT?

We have also reviewed SDT critiques that have argued for the incorporation of gender change and globalization into the SDT. Moreover, Lesthaeghe (2014) and van de Kaa (2004) are also on record acknowledging that the forces of globalization and gender are at play. While gender change and globalization are powerful forces that must be part of any compelling explanation of recent family/fertility change, we will not make great strides forward by rejecting the SDT in favor of a theory privileging gender or globalization. Mills and Blossfeld (2013) recognize the limits of their globalization approach and suggest that integrating the SDT and globalization frameworks “offers a more coherent perspective to understand changes in family formation since the late 1960s” (pp. 29). This is a promising direction, but the path forward is not specified. How will these approaches be integrated?

What is needed is a theory with mechanisms that can incorporate the import of new ideas as well as the material conditions of life, a theory that acknowledges the “duality of structure” (Sewell 1992; 2005). The family and fertility regime that SDT predicts is a social structure produced by the simultaneous and inseparable impact of ideas (schemas or frames in people’s brains and in the world) and materials (in the world) that promote or constrain particular behaviors. This multi-level, interactive process would produce commonly observed path dependence, i.e., variation in the rate and nature of social change. One effort in this direction is the Theory of Conjunctural Action (TCA); it adopts this duality of structure approach and applies it to family change and variation (Johnson-Hanks et al 2011).

TCA emerged from a consilience project that engaged many scientists; it provides an innovative framework that incorporates causal factors/processes at multiple levels of analysis. The TCA's core argument is that social and family demographers need to conceptualize human behavior as "emerging out of construal, grounded in schemas and materials, identity and structure" (pp. 56). These TCA building blocks integrate and make inseparable ideational causal forces (including ones central to SDT) and changes in material conditions (that lie at the heart of globalization and gender frameworks).

Johnson-Hanks et al (2011, see Chapters 3, 4 and 5) provide several extended applications of this TCA theory of fertility and family change (also see Bachrach and Morgan 2013). But the TCA key components are integral to explanations of many phenomena. As a result, application of this framework (or one like it) makes social demographic work more relevant to work in other substantive domains. Likewise, insights from other domains would be more easily grasped by social demographers. The social demographer's penchant for parsimony, at the expense of substantive plausibility, has led to overreliance on theories posing inevitable, irreversible, and unilinear change. The second demographic transition is one example; theories embracing the "duality of structure" provide flexible alternatives, ones that embrace path dependence.

V. CONCLUSION

Ron Lesthaeghe and Dirk van de Kaa offered the Second Demographic Transition (SDT) as a description of Western European, post-Baby Boom family and fertility patterns, a useful descriptive contribution. Key components were below replacement-level fertility and an increasing diversity of union types. They posited that attractive new ideas, postmodern ideas/attitudes, enabled and required these changes, claims that are suspect. Further, Lesthaeghe has expanded the geographical scope of SDT greatly in the last two decades. While, the SDT has been elaborated in the face of conflicting empirical evidence and criticisms from social demographers, it retains fundamental weaknesses -- many shared with other developmental theories popular with family sociologists and social demographers. Social demographers should explore theory not anchored in "stages" and one that does not posit a unilinear, developmental path toward some "end stage" -- in the case of SDT, one assumed to look like the "advanced" Western country most accepting of postmodern values. Instead, they should adopt or develop frameworks that incorporate postmodern values as one of many, interacting sources of change.

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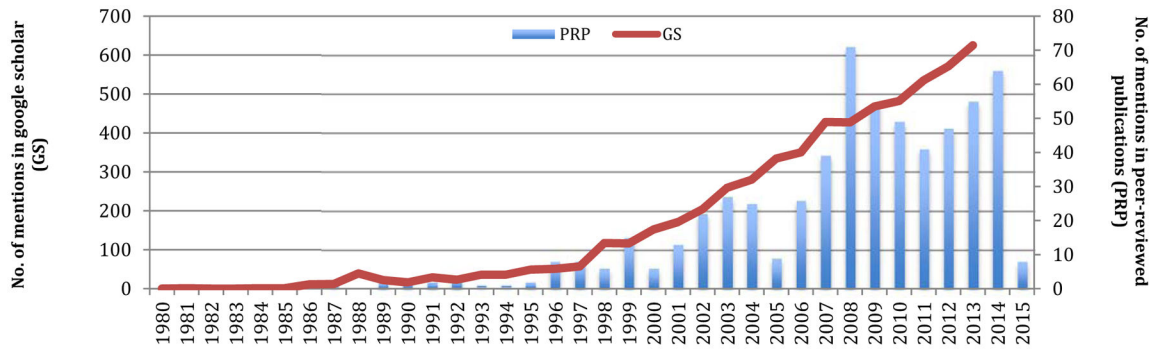


Figure 1. Citations to the Second Demographic Transition (SDT): Peer-reviewed publications and Google Scholar cites

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Table 1

Key aspects/phases of the SDT and recent elaborations

Basic features of the SDT (van de Kaa 1987)	Phases of the SDT (Lesthaeghe 1995)	Elaborations of SDT in response to conflicting empirical evidence and criticism from peers (Lesthaeghe 2010)
<p>The weakening of marriage as the only type of family structure, resulting from high divorce rates and a rise in cohabitation. Shift in family relations from 'king-child with parents' to 'king-couple with child'. A shift from preventive contraception to self-fulfilling contraception. The uniform family (the conjugal family) starts giving way to more pluralistic forms of families.</p>	<p>Phase I (1955 – 1970): Increasing divorce; fertility decline; contraceptive revolution; stop in declining age at marriage. Phase II (1970–1985): Rise in premarital cohabitation; rise in non-marital fertility. Phase III (1985-onward): Divorce rates plateau; decline in remarriage; recuperation of 30+ fertility, which pushes period fertility rates up.</p>	<p>I. Variable rates of change, II. Variable developmental paths, III. Some heterogeneity in the end stage</p>