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The Second Demographic Transition Theory: A Review and Appraisal

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demographic change, ideational change, family, fertility, marriage, cohabitation

Abstract

References to the second demographic transition (SDT) have increased dramatically in the past 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 United States, the West, and beyond. As has been the case for other unilinear, developmental theories of demographic or family change, the SDT failed to predict many contemporary patterns of change and difference. Finally, we review previous critiques and identify fundamental weaknesses of this perspective, and we provide brief comparisons to selected alternative approaches.

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1. INTRODUCTION

The demographic transition (DT) (i.e., the transition from high to low death and birth rates) absorbed demographers' attention for much of the second half of the twentieth 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 Bongaarts & Watkins 1996, Casterline 2003). However, for understanding fertility changes within already-low-fertility populations, the DT 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 and theoretical framework for studying family and fertility change in contemporary Europe as well as the Western world more broadly (see, for example, McLanahan 2004, Sobotka 2008, Bianchi 2014). It is now also being proposed for understanding family change in Asian and Latin American countries (Atoh et al. 2004; McDonald 2009; Esteve et al. 2012a,b).

The SDT entails "sustained subreplacement fertility, a multitude of living arrangements other than marriage, the disconnection between marriage and procreation, and no stationary population" (Lesthaeghe 2010, p. 211). 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 and 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, or concept (used in multiple ways in the literature) gained considerable traction in the 1990s (Billari & Liefbroer 2004). By the turn of the century, it had become "the theory of the decade . . . that launched a thousand research projects" (Coleman 2004, p. 11). **Figure 1** shows the increase in citations that mention the SDT.

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.

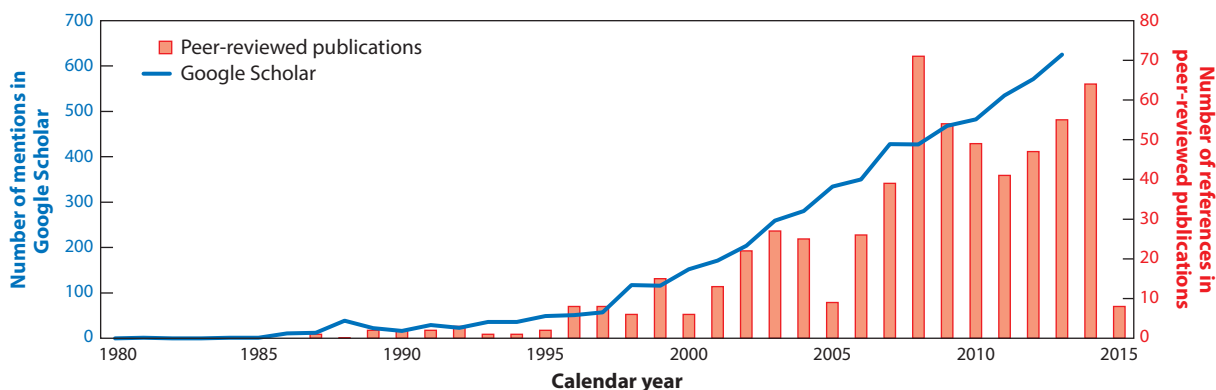


Figure 1

Peer-reviewed publications and Google Scholar citations mentioning the second demographic transition in their text (*right axis*) have increased over time. Google Scholar data (*left axis*), which includes books and reports, provide many more citations and show a similar, dramatic, upward climb.

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.

2. THE SDT

2.1. Original Statements

Lesthaeghe & van de Kaa (1986) coined the term second transition over thirty years ago; 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. Initially, Lesthaeghe & 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 he titled this piece *Europe's Second Demographic Transition* (van de Kaa 1987). This bulletin became the seminal and most cited work on the SDT; as of February 23, 2017, according to Google Scholar, it has been cited nearly 2,270 times.

Examining demographic change in 30 European countries, van de Kaa (1987, p. 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, 2002).

According to van de Kaa (1987), the SDT began in Europe after World War II. He argued that the war led to an increase in premarital intercourse and that 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 socioeconomic conditions after the war made children more affordable, and thus fertility rates also increased up until the 1960s.

Van de Kaa (1987) 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 intrauterine device, 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). 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 relate to changes in family formation and structure, and one captures the shift in contraceptive use (from preventive to self-fulfilling). Van de Kaa (1987, p. 9) argued that although 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 1,252 citations (according to Google Scholar as of February 23, 2017), built on van de Kaa’s description by further codifying the features of the SDT and their sequence into three phases (see **Table 1**, column 2). In a more recent statement, Lesthaeghe (2010, cited 639 times per Google Scholar as of February 23,

Table 1 Key aspects or phases of the second demographic transition (SDT) and recent elaborations

Basic features of the SDT (van de Kaa 1987)	Phases of the SDT (Lesthaeghe 1995)	Elaborations of the SDT in response to conflicting empirical evidence and criticism from peers (Lesthaeghe 2010)
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	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 nonmarital fertility Phase III (1985 onward): Divorce rates plateau; decline in remarriage; recuperation of 30+ fertility, which pushes period fertility rates up	1. Variable rates of change 2. Variable developmental paths 3. Some heterogeneity in the end stage

2017) 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 did so without removing the SDT’s fundamental developmental character—a feature we critique in our concluding appraisal.

2.2. The (First) Demographic Transition

For some readers, a discussion of the SDT begs for a description of, and links to, the first. As noted at the outset, the (first) DT refers to the decline of fertility and mortality from high 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 DT 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 DT was inevitable, unilinear, and irreversible (Casterline 2003).

The massive, two-decade-long European Fertility Project (Coale & Watkins 1986) assessed the fit of European historical data to this theory. Although not discrediting the distal influences of industrialization, on a decadal timescale 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 & 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 (1977) contributed greatly to the European Fertility Project through his early empirical work, *The Decline of Belgian Fertility, 1800–1970*, and his analyses of the European Project’s multination provincial data (Lesthaeghe & 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–World War II period were of similar character (see Cleland & Wilson 1987, Bongaarts & Watkins 1996). The role of new ideas legitimating small family size and family planning is now central to the DT.

Why is the 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 the SDT argue that the focal phenomenon changed—it was no longer smaller family size, but rather, it became fertility postponement and increased voluntary childlessness (van de Kaa 2001, 2002; Lesthaeghe 2010). The watershed between the first DT and the SDT is the shift in norms, from altruistic to individualistic (Lesthaeghe 1995, 2014; van de Kaa 2002). New motivations underlying family formation behavior distinguished the second transition from the first. Greater female emancipation and individual autonomy were more central to the SDT than they were to the first transition (Lesthaeghe 1995).

2.3. 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.

2.3.1. Shift from king-child to king-couple. Van de Kaa and Lesthaeghe were heavily influenced by Aries's (1980) claim that motivational shifts led to fertility decline in the West over the twentieth century. 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 postwar period reflected a different outlook on life. To explain, Aries (1980, p. 646) pointed out that “society has always controlled nature and domesticated sexuality.” As early as the sixteenth century, Europeans practiced fertility control in the form of delayed marriages. Malthus [1985 (1798), p. 70] 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 or destiny was the norm. Consistent with this Malthusian claim, marriage timing was the only mechanism of fertility control available (Aries 1980).

Change occurred when couples began to plan their families using foresight and organization. For Aries (1980, p. 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, relied on behavioral and sex-proximal methods (especially withdrawal and abstinence), and was in part successful because of a culture of self-control or noncoital, 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 (Aries 1980, p. 648). The

post-baby boom resumption of declining birth rates was categorically different from that of the 1930s. According to Ariès (1980), the vast majority of couples now limited family size not to move up the social ladder but instead to free themselves from family obligations. And the availability of advanced contraceptive technology alone could not explain its wide acceptability and uptake.

Ariès (1980) 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-killing 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. The couple and their relationship were now king and might make room for a child.

The proponents of the SDT coined this the transition from the "king-child with parents" to a "king-couple with child" (van de Kaa 1987, p. 11; 2002, p. 5). The justification of the SDT as a distinct transition rests heavily on this historical interpretation. Because 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 Ariès's (1980) motivational shift theory but several other irreversible revolutions in the Western world: the sexual revolutions proposed by Shorter (1971), Westoff & Ryder's (1977) contraceptive revolution, and 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 quality (Lesthaeghe 1995).

2.3.2. The Maslowian drift and rise of individualism. Inglehart's (1990) claims of a shift from materialist to postmaterialist values also played a critical role in the elaboration of the SDT (van de Kaa 1987; Lesthaeghe 1995, 2010). This value shift embodies the Maslowian drift that both proponents place at the heart of the SDT—a shift toward higher-order needs of self-actualization and individual autonomy to motivate behavior once more basic needs such as 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 postwar economic affluence and security (Lesthaeghe 1995, 2011). In a recent statement of the theory, Lesthaeghe (2010) linked the Maslowian drift with a set of other transitions—the contraceptive, sexual, and gender revolutions—all fitting within a framework of rejection of authority and overhaul of normative structures.

2.3.3. 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, 2014) acknowledge that the SDT does not negate economic explanations of family change, such as those offered by Becker (1973, 1974, 1981) and Easterlin (1976). They acknowledge that the shifts in the quality-quantity tradeoff with respect to children are a useful concept in explaining the first DT. 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 postwar period, and this is where the economic theories are at odds with one of the central tenets for the SDT—the irreversibility of changes in family and fertility (weakening of traditional family systems and below-replacement fertility) (Lesthaeghe 1995, 2010). In the language of classical economics, tastes and preferences have irreversibly changed.

The SDT treats ideational change primarily "as exogenous influences that add stability to trends over and beyond economic fluctuations" (Lesthaeghe 2014, p. 18113). So Lesthaeghe (1995, 2010) emphasizes that, although compatible, the economic models are incomplete without the ideational explanations that the 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 (1981) structural economic theory or Easterlin's (1976) 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 postmaterialism, is the central explanation, without which all other explanations are incomplete.

2.3. 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 and family change remained the primary focus. Specifically, the SDT's proponents (van de Kaa 1994, 1999) incorporated mortality and migration through discussions 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 DT, emigration acted as a safety valve in maintaining equilibrium; in the SDT, immigration played a key role in maintaining national-level demographic homeostasis. Replacement migration is to the SDT 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 twentieth century (van de Kaa 2002).

In contrast, changes in mortality during the SDT were not uniquely different from those that took place during the first transition. That is to say, life expectancy continued to improve throughout the two transitions. However, according to the SDT proponents, similar to changes in fertility, mortality changes in the SDT 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 reflected value systems stressing self-fulfillment and individual freedom (van de Kaa 2002, 2004a). 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 the SDT has also expanded. Lesthaeghe (1995) aggressively extended the geographic reach of the SDT theory to all OECD countries. The SDT went from explaining changes in Europe to changes in industrialized nations more broadly, which meant the addition of the United States, Canada, Australia, New Zealand, and Japan. In his more recent work, Lesthaeghe (2010, p. 234) 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." 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 linked to postponement, rising age at marriage conditional on female autonomy and partner choice, rise in prevalence and acceptance of premarital cohabitation, and a link between demographic change and value orientation. 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 (Lesthaeghe 2010).

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 or 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, p. 5).

Lesthaeghe’s work, by contrast, has often used the term SDT theory or theoretical framework (Lesthaeghe & 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–World War II demographic change (Lesthaeghe 1998) and establishing the links between the spread of postmaterialist values and that change (Surkyn & 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.

3. 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 reestablishes an acceptable fit between data and theory. Below, we describe the fit of the SDT predictions with observed changes, and we note elaborations of the SDT (if any) to this evidence.

3.1. Union and Family Formation

Changes in union formation are at the heart of the SDT. 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 nonmarital births to increase.

Broadly speaking, recent changes in union formation are consistent with the SDT expectations (see Cherlin 2012) as well as with what Cherlin (2004, p. 848) called the “deinstitutionalization of marriage.” Age at marriage has increased worldwide (Ortega 2014); Asian countries such as Japan, Korea, and Taiwan are now some of the latest-marrying countries in the world (Raymo et al. 2015), and African nations are also experiencing a rapid increase in age at marriage (Shapiro & Gebreselassie 2014). Furthermore, the proportions of people who never marry have increased in all Western countries from their levels in the early twentieth century (van de Kaa 2002, Cherlin 2014). The decline in rates of first marriage 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 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 twentieth 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), in a way analogous to what Thornton calls developmental idealism

(2001). Or more likely, high and rising ages at marriage are a response to greater economic crises and uncertainty (Shapiro & Gebreselassie 2014) or women's dissatisfaction with the conflicts of rapidly changing economic participation and persistent traditional gender roles (Frejka et al. 2010, Jones & Yeung 2014).

Proponents of the 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 past two decades, some of these countries have experienced greater marital stability. Data for OECD countries show 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 what is seen in the United States (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, such as poverty, than increases in individualism or self-actualization. Moreover, in East Asia as well as in countries such as the United States, marriage remains a valued institution, with most young adults expressing the desire to marry at some point in the future (Thornton & Young-DeMarco 2001, Manning et al. 2007, Smock & 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 the 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% in France and Finland to less than 10% in Italy and Poland (Heuveline & Timberlake 2004). Cohabitation in the United States has increased among all social classes; however, duration remains shorter than in most other Western societies, and a 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 United States, couples 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 & Smock 2005). Heuveline & Timberlake's analysis (2004) shows that even among the SDT leaders such as Sweden, close to two-thirds of cohabitations end in marriage.

Furthermore, 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, 2015). Recent studies show that Latin America is experiencing a cohabitation boom (Esteve et al. 2012b), although earlier studies analyzing similar data found early and persistent marriage in the region (Fussell & 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 (Hayford et al. 2014, Hiekel & Castro-Martín 2014). Nonmarital fertility in the United States increased dramatically over the past 50 years; however, it is strongly correlated with poverty and low education, pointing toward structural explanations more than cultural explanations of ideational change motivating behavior (Gibson-Davis et al. 2005, Cherlin 2010, Bailey 2013). Scholars find similar patterns for Russia as well (Perelli-Harris & Gerber 2011). Nonmarital fertility remains very low in many parts of southern Europe and is rare even in the Asian countries said to be experiencing the SDT (Ravaneral et al. 1999, Jones 2007, Raymo et al. 2015).

3.2. Subreplacement Fertility

The second main SDT prediction is that below-replacement fertility (via a 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 in Latin America as well (Rowland 2007, Rosero-Bixby et al. 2009, Merz & Liefbroer 2012).

A large literature on the phenomenon of low and lowest-low fertility has also emerged (e.g., Foster 2000, Frejka & Calot 2001, Kohler et al. 2002, Morgan 2003, Sobotka 2004, Morgan & Taylor 2006, Goldstein et al. 2009, Rindfuss & Choe 2016). At the end of the twentieth century, fertility rates in the Western world varied substantially; some countries had fertility near replacement levels [total fertility rate (TFR) = 2.1] 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 which were cited as leaders of the SDT (e.g., Scandinavian countries, France). Fertility rates for eastern and southern European countries, which began their SDT 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 TFRs \leq 1.5 (see Rindfuss & Choe 2015). The SDT did not anticipate this diversity initially. The proponents argue that although 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).

3.3. Links with Ideational Change

Although some studies find links between postmaterialism and (a) postponement of marriage and (b) nontraditional family norms and attitudes more broadly (e.g., Gubernskaya 2010, Bystrov 2014), 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: northwestern Europe. Contrary to original SDT predictions, van de Kaa (2001) found Inglehart's (1990) postmaterialist values to be positively correlated with TFRs 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 & Lopez-Gay (2013) found that cohabitation and nonconventional family formation more closely mirror the history of secularization, whereas fertility postponement is more closely linked to structural factors such as female education and employment.

Surkyn & 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 the SDT. Specifically, they show that nonconformist 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. By contrast, 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.

3.4. 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 subreplacement 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 (Kuijsten 1996, Billari & Wilson 2001, Billari & Liefbroer 2010). Of special importance is the failure of the SDT to predict or account for the variation in low fertility. In some countries, fertility continues to fall, and it is recuperating in others. Furthermore, some countries leading the fertility decline, such as Japan, are lagging behind in cohabitation and nonmarital childbearing rates. Other countries that were late to transition, such as those in southern Europe and some in East Asia, now have some of the lowest fertility rates but have seen slow increases in cohabitation, divorce, and nonmarital fertility (Ravaneral et al. 1999, Dominguez-Folgueras & Castro-Martín 2013). The vanguards of the SDT—countries such as Sweden that have 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 differentials 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 (see also Cherlin 2016). Finally, and of critical importance, the SDT's posited link between ideational change (postmodernist values) and fertility and family change does not find consistent empirical support.

4. CRITIQUES

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

4.1. Criticisms of the SDT

We note above that the SDT predictions comport with some major features of recent family and fertility change. This is expected because the SDT was constructed to account for these facts. Furthermore, 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 the SDT—the Aries (1980) and Inglehart (1990) claim of the watershed changes in ideology that undergird the SDT—a shift from materialism to postmaterialism (or the related child-king to king-couple). This undergirding mechanism is problematic (Coleman 2004) because consistent empirical evidence is lacking (see Section 3.4; see also, e.g., Raymo et al. 2015). Furthermore, Coleman (2004, pp. 14–15) 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 2013, Van Bavel & 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 Thornton 2005, pp. 104–7). 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) discussion of Inglehart’s (1990) 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 & Lesthaeghe 2004). Even as early as the beginning of the 1990s, van de Kaa recognized that it was problematic to force “a multi-dimensional reality into a linear, sequential narrative” (van de Kaa 1994, p. 104). 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 Riley & McCarthy 2003, Rivkin-Fish 2003, Johnson-Hanks 2008). 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 naive (e.g., Handwerker 1986, Thornton 2001, McCann 2009). Lesthaeghe & Neidert (2006, p. 669) make the case that US family patterns are a “textbook example” of (and not an exception to) the SDT. They acknowledge that the SDT is less visible or powerful in the “Midwest, the Great Plains, and the South” (Lesthaeghe & Neidert 2006, p. 694). 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. But these regional patterns are now etched into the US political and cultural divide (the red versus blue phenomenon) and show no signs of wear (see Morgan 2011, 2015). Is it useful to view these twenty-first-century US 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, p. 216) or, as stated above, in making regional exceptions to create “textbook examples” (Lesthaeghe & Neidert 2006). This exercise assigns value judgments 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.

4.2. Gender Systems Given Short Shrift

Bernhardt (2004) has argued that inattention to gender is one of the main shortcomings of the SDT (see also Solsona 1998, McDonald 2000, Arpino et al. 2014, García-Manglano et al. 2014). 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).

Although the SDT largely understates the role of gender change, competing theories have assigned it a pivotal role in explanatory models of fertility and family change (Chesnais 1996, McDonald 2000, Mason 2001, Janssens 2007, Esping-Andersen & Billari 2015, Goldscheider et al. 2015). For instance, McDonald (2000) distinguished between gender equity in family- 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 such as 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 & 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) DT: Following the DT's first three stages [phase 1: high vital rates; phase 2: declining fertility and a slower fertility decline; and phase 3: low vital rates], countries will experience below-replacement fertility in phase 4 and will show recuperation from very low fertility in phase 5. The shift from phase 4 to 5 is explained by the "gender equity catch-up" (Esping-Andersen & Billari 2015, p. 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 facilitates greater gender equity (Esping-Andersen & Billari 2015, p. 393).

As a final example, Goldscheider et al. (2015) explicitly offer 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 et al. 2015, p. 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 or class (Cherlin 2016). It is problematic to replace one unilinear or convergence explanation with another.

4.3. The Import of Globalization

Mills & 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 information technology 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 the 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 a 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 people spend 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 (such as the SDT and some other frameworks discussed above); rather, it provides for path dependence produced by the interaction of globalization forces and country-specific institutions.

4.4. 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 interconnectedness 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 subnarratives" (Lesthaeghe 2010, p. 225). Although 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 (2004b) are also on record acknowledging that the forces of globalization and gender are at play. Although gender change and globalization are powerful forces that must be part of any compelling explanation of recent family and fertility change, we will not make great strides forward by rejecting the SDT in favor of a theory privileging gender or globalization. Mills & Blossfeld (2013, p. 29) 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." 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 the 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 multilevel, 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 and 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" (Johnson-Hanks et al. 2011, p. 56). These TCA building blocks integrate and make inseparable ideational causal forces (including ones central to the SDT) and changes in material conditions (that lie at the heart of globalization and gender frameworks).

Johnson-Hanks et al. (2011) provide several extended applications of this TCA theory of fertility and family change (see also Bachrach & 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 SDT is one example; theories embracing the duality of structure provide flexible alternatives, ones that embrace path dependence.

5. CONCLUSION

Ron Lesthaeghe and Dirk van de Kaa offered the 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 and attitudes—enabled and required these changes, claims that are suspect. Furthermore, Lesthaeghe has expanded the geographical scope of the SDT greatly in the past two decades. Although 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 a theory not anchored in stages and one that does not posit a unilinear, developmental path toward some end stage—in the case of the 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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