The Political Significance of the "Second Demographic Transition" in the US: A Spatial Analysis.

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PRELIMINARY DRAFT

Prepared for presentation at the Annual Meetings of the Population Association of America, New York City, March 28-30, 2007.

1. Voting behavior and demographic transitions: earlier work.

One of the very first persons to observe an empirical and statistical link between voting outcomes and actual demographic behavior was the Austrian professor Julius Wolf (1862-1937). Wolf was professor of economics and social sciences in Zürich, and noted the remarkable correlation between the birth rates in German administrative areas (*Kreize*) and the voting outcomes in favor of the Socialist party immediately after World War I (1928). Also before the war, Wolf had devoted quite a bit of attention to the problem of the fertility decline in Germany, and he discussed the issue within the framework of political and cultural changes within the German population (1912). Outside Germany, Wolf's work was largely unknown or forgotten, and it remained completely absent from the volumes produced during the Princeton project on the reconstruction of the European fertility transition. But not only the Princeton book by John Knodel (1974) on Germany missed the statistical link that Wolf had teased out, but also subsequent work on the Prussian fertility transition by Patrick Galloway et al. (1994) overlooked this very important source.

Within the Princeton project, Massimo Livi-Bacci was the first to establish the connection between the historical fertility transition and religious and political developments. Livi-Bacci (1971) did so in his volume on the Portuguese fertility decline, but he did not yet engage in a more advanced statistical analysis. The link between the speed of the marital fertility decline and voting for secular political parties (typically freethinking Liberals, Socialists and Communists at that time) as opposed to religious and traditionalist parties emerged very clearly in the volume on the Belgian fertility transition (Lesthaeghe, 1977), and yet again in Livi-Bacci's volume on Italy (1977). Moreover, more advanced multivariate analyses showed that the effect of political secularization on the marital fertility decline was independent of the structural effects as measured through the regional levels of urbanization, industrialization, schooling, and declines in infant and childhood mortality. Ron Lesthaeghe and Chris Wilson (1986) went on to show that this

independent effect not only emerged in Belgium, but also in the Netherlands, Germany, Italy, Switzerland and Denmark, where secularization could be captured via the political spectrum as it existed at the beginning of the 20th Century.

The extraordinary early French fertility and nuptiality transitions can be tied to secularization. Crucial pieces from the point of view of the role of the ideational factor were (i) Etienne van de Walle's reconstruction of the fertility transition in the French *départments* (1974), (ii) Timothy Tackett's map of secularization (*prêtres réfractaires*) at the time of the French revolution (1986), (iii) David Weir's work (1982) on a sample of French villages establishing connections with different forms of agriculture and rural social organization, and (iv) the impressive cultural and ethnographic atlas of 19th Century France by Hervé LeBras and Emmanuel Todd (1981). When these sources were brought together for the French *départments* (Lesthaeghe, 1992, 2002) the crucial roles of late secularization, a history of political and cultural resistance to the centralizing power of Paris, and the persistence of peasant agriculture were again in evidence. These features slowed down the French modernization of the reproductive regime and shaped the demographic map during much of the 19th and early 20th Century. The much later industrialization in France would only start leaving its traces during the second half of the French fertility transition. Although voting behavior was not directly utilized in this research (fertility transition far too early), the French example documented that the political, religious and cultural features of French regions were again non-redundant explanatory elements in accounting for spatial patterns of demographic change.

2. Coale's preconditions for demographic innovation and change.

The emerging findings of the Princeton European fertility project convinced Ansley J. Coale that the older accounts with their almost exclusive stress on either the micro or macro-economic explanations for the fertility decline (e.g. social capillarity or quantity/quality swap, urbanization, industrialization, education, rising real incomes) or their strong focus on the effects of a mortality decline, were missing crucial ingredients. At the 1973 IUSSP conference, Coale proposed a simple set of preconditions for a fertility transition to occur. Moreover, all three conditions have to be met *simultaneously*:

(i) Couples will only adopt a new form of behavior if this yields a number of benefits for them or for their already born children (= the "Readiness" condition);

(ii) The new form of behavior must be culturally (i.e. referring to ethics and morality, religion, belief system) acceptable (= the "Willingness" condition);

(iii) There must be "technical means" (e.g. methods of contraception, legal contexts) available that facilitate the adoption of the new form of behavior (= the "Ability" condition).

The "Ready, willing and able" or RWA-paradigm has a number of important features, which lead to further modeling at the level of individuals and population distributions (cf. Lesthaeghe and Vanderhoeft, 1999, 2001). These features are:

(i) No transition to a new form of behavior will occur if at least *one* of the conditions is not adequately met (= bottleneck or limiting condition).

(ii) Any of the three, R, W or A, can be a limiting condition, and this will depend on the *historical* context.

(iii) It is not necessary that a single condition remains the limiting one during the entire process. In fact, the slowest moving condition at the onset can be *"leapfrogging"* over the others, so that another condition can become a new bottleneck later on.

(iv) The model draws attention to a variety of conditioning factors of an economic, cultural, institutional or technical nature, and is sufficiently *flexible* to accommodate a wide variety of historical experiences.

(v) The RWA-model typically produces the well known *elongated S-curves* (e.g. Verhulst's logistic curve) during this process of adoption of a new form of behavior, and is fully compatible with the "contagion"-model of diffusion.

(vi) But the model does not exclude the possibility for the emergence of a subgroup in the population which follows a different pattern or evolves at a different speed of change. In that case, more *heterogeneity* will appear, with subgroups that meet all three conditions and others that meet just one or none at all. Also *backlashes* are possible with a subgroup reacting to the changes occurring in the mainstream population. The outcome can be bimodality as far as the new forms of behavior are concerned, but also a long drawn out distribution with respect to opinions.

The RWA-model has not only been applied to the first demographic transition (FDT), i.e. the historical decline in marital fertility and the adoption of more effective contraception, but has also been useful in explaining regional leads and lags with respect to the variables of the so called "second demographic transition" (SDT), i.e. the rise of divorce, postponement of marriage and parenthood, rise in pre- and post-marital cohabitation, parenthood within cohabiting unions, growth of other patterns of union and household formation (e.g. LAT-relations, "hotel families"), and structural sub-replacement fertility. For instance, in the case of France, Belgium and Switzerland, Lesthaeghe and Neels (2002) found that the regions that were innovators during the FDT also tended to be in the lead with respect to the SDT. Conversely, slow adopters of fertility control in the FDT were also at the slow end of the regional SDT distribution. In other words there was a noticeable spatial continuity in these countries between FDT and SDT. One of the possible explanations for such continuity over more than a century (and 2 centuries in France!) is that the same bottleneck condition was emerging during the two transitions, thereby producing similar maps for both FDT and SDT. This explanation gained credibility when it was found in a canonical correlation analysis that the demographic indicators of both FDT and SDT were related most strongly to the historical and contemporary indicators of secularization and voting for non-religious parties.

Until now we have taken the indicators of secularization and political variables as proxies for the willingness condition, and as such as independent predictors of regional demographic outcomes. But of course, any correlation can be interpreted in the opposite

causal direction as well. Such a reverse interpretation is again offered by Livi-Bacci in his volume on the Italian FDT (1977:288): excellent predictors of the 1974 regional referendum outcomes with respect to the modernization of Italian divorce laws happened to be the 1931 and even 1911 levels of marital fertility. Hence, political scientists interested in contemporary spatial outcomes of referenda or elections could just as well use pre-existing FDT or SDT demographic patterns as predictors. We will not guarantee that they will get a good estimate of intercepts or overall outcome levels, but they are likely to do a reasonably good job with the prediction of leads and lags, i.e. the location of regions relative to each other on the scatterplot. This is likely to hold best if the political campaigns focus on issues related to individual freedom of choice or to interference in matters of life and death.

3. The American "Culture Wars".

The "Culture War" (either singular or plural) in the present day American context refers to the political divide among both politicians and public with respect to a series of cultural values. The term itself stems from the 19th Century German "*Kulturkampf*" regarding Bismarck's attempts to favor Protestant over Catholic institutions and status. But in the US the expression gained wide use following the 1991 publication of James Davison Hunter's book entitled "*Culture Wars – The Struggle to Define America*" and Pat Buchanan's 1992 "Culture War – speech". Buchanan, mounting a campaign to get the Republican presidential nomination, said that there was a religious and cultural war going on for the soul of the nation, and he considered that struggle just as critical as the cold war had been. Hunter on the other hand is an academic and professor of sociology, but he also refers to a major realignment and polarization that transformed American politics. He observes that on a growing number of "hot button" issues, from abortion to gun control, there is a bipolar alignment, with the poles being labeled respectively as "Progressivism" and "Orthodoxy". Those that are inclined toward "Progressivism", irrespective of social class, educational level or denomination, stress that ethics and politics should be informed by facts, experience and understanding. Morality is relative and subjective to a specific context, and individual autonomy is a central prop of this outlook. "Orthodoxy" on the other hand is the tendency to believe that ethics are absolute and external to the individual, but defined by God in holy scriptures (Bible, Koran …), and upheld by organized religion and "responsible" civil authorities.

The Wikipedia entry for "Culture War" gives an overview of the "battleground issues" and we have copied and rearranged that list in Table 1. One will notice that many issues touch upon family values, sexuality, religion and secularism, gender, minorities, privacy, deviant behavior, race and immigration. On all these issues the polarity is defined in terms of dimensions that deal with individual freedom of choice, appreciation for diversity of life styles, strife for equality and emancipation, or the role of punishment and retribution.

TABLE 1: Wikipedia list of "Battleground issues in the US culture wars".

Dimension	Battleground Issues
Interference with Life and Death	Abortion, Reproductive rights and feminist movement, Right to die movement, Euthanasia, Terri Schiavo controversy. Stem cell research.
Sexuality	Adolescent sexuality, Homosexuality, Lesbian & gay rights, Gay marriage, Permissive society, Sexual revolution, Sexual education and abstinence only.
Family	Feminism, Family values, Sanctity of marriage
Race and migration, minorities	Race, racism & xenophobia, Race and intelligence, Illegal immigration, English-only movement, Identity politics, Affirmative action, Political correctness
Secularism	Secularization, Separation of church and state, Public display 10 Commandments, Freedom of Religion, God in pledge of allegiance, School prayer, Moral absolutism versus moral relativity, Creationism and intelligent design
State surveillance	Censorship, Video game controversy, Patriot Act, Invasion & right of privacy, Terrorist surveillance program.
Crime	Drug prohibition, Capital punishment
Media	Media bias in the US
US international role	Iraq war, Torture and prisoner abuse, Abu Ghraib

Source: http://en.wikipedia.org/wiki/Culture_war

Of course, the US version of "Culture Wars" did not just pop up in the early 1990s as a jack in the box. As in Western Europe, the roots are traceable to much earlier historical developments such as the Enlightenment. But much more recently a major acceleration in favor of "Progressivism" has occurred during the 1960s when all Western publics shifted toward the so-called "Post-materialist" orientations that stress expressive values, self-actualization, freedom of choice, individual autonomy, relative morality, emancipation, and grass roots democracy. These trends are very well documented by Ron Inglehart, 1970, 1990, (see also the European and World Values Studies) in the sphere of politics, and by Duane Alwin (1988, 1989, 1990) in that of socialization and education.

But the notion of an American "Culture War" is also being challenged by many. The most cogent criticism comes from Morris Fiorina and his colleagues Samuel Abrams and Jeremy Pope (2005). These political scientists argue that the "Culture War" is a myth and that there is no such thing as a polarized America. Their main arguments are:

(i) The public is not divided in a bimodal and antagonistic way, but only "closely" divided (p. 14) along a unimodal distribution;

(ii) All the "Culture War" rhetoric stems from elites who foster their own agendas. (actually, also Hunter's point). Hence reality is better described by "*polarizing elites, but centrist voters*" (p.167 ff);

(iii) Shifts in candidate or party position or shifts in issues have been mistaken for shifts and polarizations among the public at large.

This of course begs further questions: what does "*closely divided*" mean if the unimodal distribution exhibits an increasingly large variance so that the two extreme quartiles move further apart? And how do we assess that the party or elites shifts are so much more important that they dwarf the overall population shift? Or, why could the shifts in issues among elites and public not *both* be present, given that cultural change can affect *all* population strata?

In what follows we will certainly accept the point made by Fiorina et al., and by numerous other political commentators for that matter, that the positions of parties and presidential candidates in the US have indeed shifted (and on morality issues already noticeably so with Ronald Reagan). But, we will also try to illustrate that a major feature occurring at the level of the *entire population, and not just among elites* has also played a decisive role. By this feature we refer to the US version of the second demographic transition. And as the SDT unfolds well before the elections of G.W. Bush (or even Ronald Reagan), we feel that in the case of the US the SDT can now also be inserted at the predictor side of the equation, with the voting in elections and referenda after 2000 as the dependent variables.

The thesis that the SDT – or at least the spatial pattern of it – is co-responsible for spatial differentials in election results, can of course be challenged by an alternative thesis that sees both SDT and political results as caused by a common set of economic or cultural antecedents, such as the degree of urbanization of a region, its aggregate level of education or of wealth, the position of women, the racial or religious composition etc. In other words, according to the alternative thesis the zero-order correlation between SDT and political outcomes of elections and referenda would be a spurious one, and solely reflecting the effects of common causal antecedents. To test this alternative view, we shall use the classic technique of partial correlation in the subsequent sections. But before doing that, we need to operationalize the SDT dimension first.

4. The SDT- dimension in the US.

(note: this section largely corresponds with the already published text by the authors in Population and Development Review, December 2006, 32, 4:669-698. The reason for including it again is that it gives the necessary demographic background information.)

In this section we shall document that marriage and fertility postponement, premarital cohabitation and even fertility within cohabitation follow similar trends as in Western Europe, but also that the current spatial variation in the US remains very important.

First of all, ages at first marriage for both non-Hispanic white and black populations alike have been rising since the 1970s and that occurred in tandem with a rise in both single living and especially cohabitation. As can be seen in Table 2 with data from the US National Survey of Family Growth (R.K. Raley, 2000, p. 27), the majority (62%) of the cohort of white women born in 1950-54, and reaching age 25 in the late seventies, was married by age 25 and they had done so without premarital cohabitation. In that cohort, a further 12% was already married by

that age, but had started a cohabiting union prior to their marriage. Another 6% of white women was still in cohabitation by age 25, and only 20% had not yet started a union at all. The contrast with the cohort born in the years 1965-69, and reaching age 25 in the early nineties, is striking. For the latter the proportion directly moving into marriage was almost halved, from 62% to 32%, and the shares of those married after cohabitation and of those still in cohabitation by age 25 both doubled, from 12% to 25% and from 6% to 14% respectively. Also, the proportion still single rose from 20% to 29 %. Note the shift among the black population as well: by age 25, the percentage directly married without prior cohabitation declined from 44% to barely 18% in the same period, whereas the proportion still cohabiting by age 25 increased from 12% to 23%.

Table 2: Changes in patterns of union formation among US white and black women: positions at age 25 for 4 birth cohorts.

At age 25 :	1. No union	2. Cohabiting and not married	3. Married after cohab	4. Married without cohab
White women, cohort of:				
1950-54	20%	6	12	62
1955-59	22	11	18	49
1960-64	25	14	21	40
1965-69	29	14	25	32
Black women, cohort of:				
1950-54	31%	12	13	44
1955-59	47	16	10	27
1960-64	44	22	12	22
1965-69	46	23	14	18

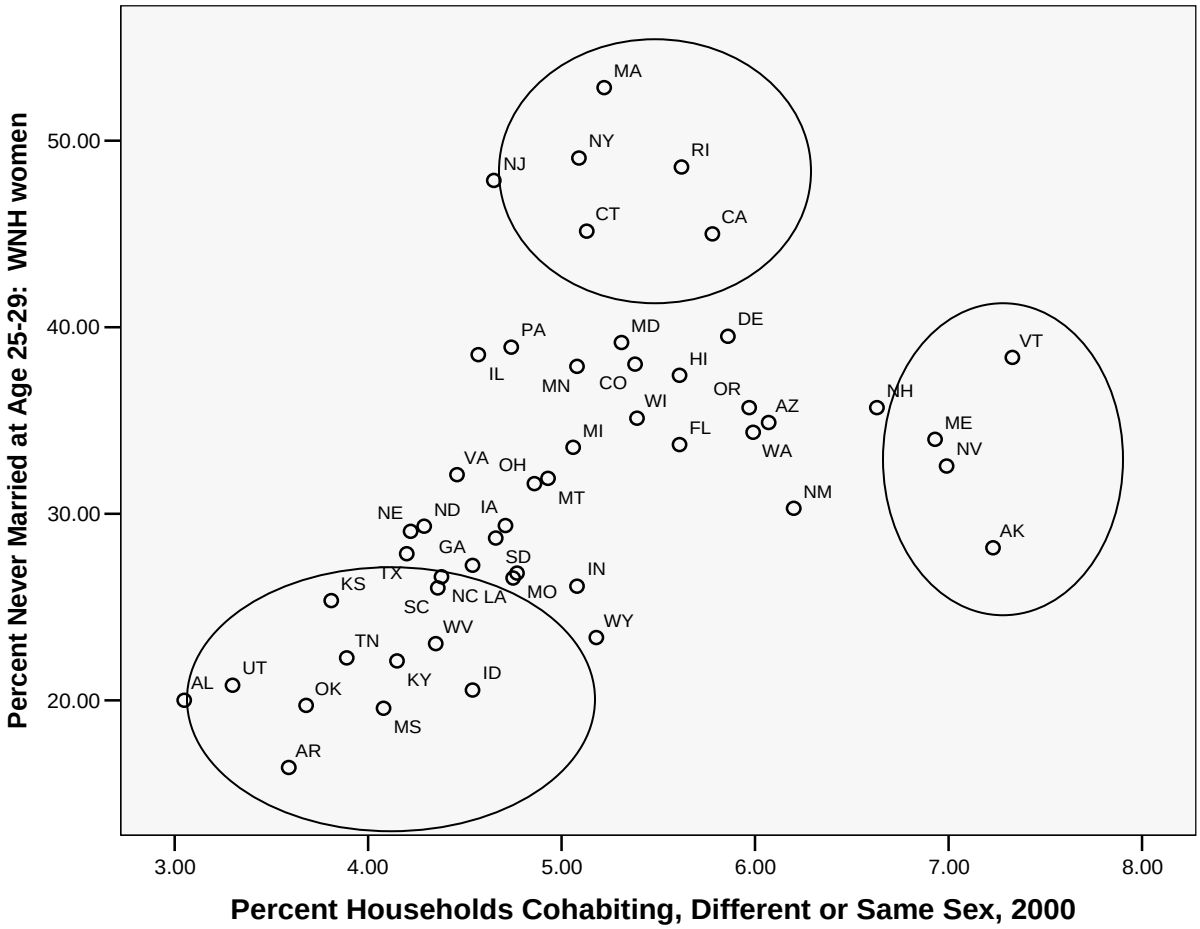
Source: US National Survey of Family Growth, 1995 as reported by R.K. Raley, 2000, p.27, fig 2.5.

From these figures it is clear that not only the age at first marriage was rising, but also that the spread of cohabitation was largely responsible for this. In other words, the US is hardly an exception in this respect and exhibits a trend similar to Europe's since the 1970s.

However, as in the EU (from Sweden to Greece), the US overall pattern hides very large spatial differentials. The degree of heterogeneity can be appreciated from Figure 1, where a plot is presented of the 50 states according to an indicator of marriage postponement and an indicator of the incidence of cohabitation. More precisely, marriage postponement is measured via the proportion of women aged 25-29 never married as recorded in the US Census of 2000, and cohabitation as the percentage of all households headed by unrelated adults of the same or of a different sex. Obviously, the positive relationship between the two indicators shows up ($r = .51$), but the main purpose of the figure is to highlight the position of the various states in this typical SDT two-dimensional space of marriage being postponed or declining in favor of cohabitation. The plot reveals the existence of several clusters with more distinct patterns (circles are just hand-drawn):

1. There is *a pattern of early marriage and little cohabitation*. A large part of the South fits this picture, with states ranging from West Virginia, Tennessee, Kentucky and the Carolinas to Alabama, Mississippi, Oklahoma, Arkansas and Texas. But also Utah and Idaho have less than a quarter of non-Hispanic white women never married in the age group considered, in combination with less than 5 percent of households headed by cohabitants.
2. At the other end, a first contrasting group is characterized by *very late first marriage and medium levels of cohabitation,* and it is made up of several northeastern states (New York, Massachusetts, Rhode Island, New Jersey, Connecticut) and California.
3. And a second contrasting one combines *a high incidence of cohabitation with intermediate proportions never married women 25-29.* This group contains the rest of New England, but also Nevada and Alaska. Evidently, the states in group 3 have a higher proportion of younger adults in a union (either marriage or cohabitation) than group 2.

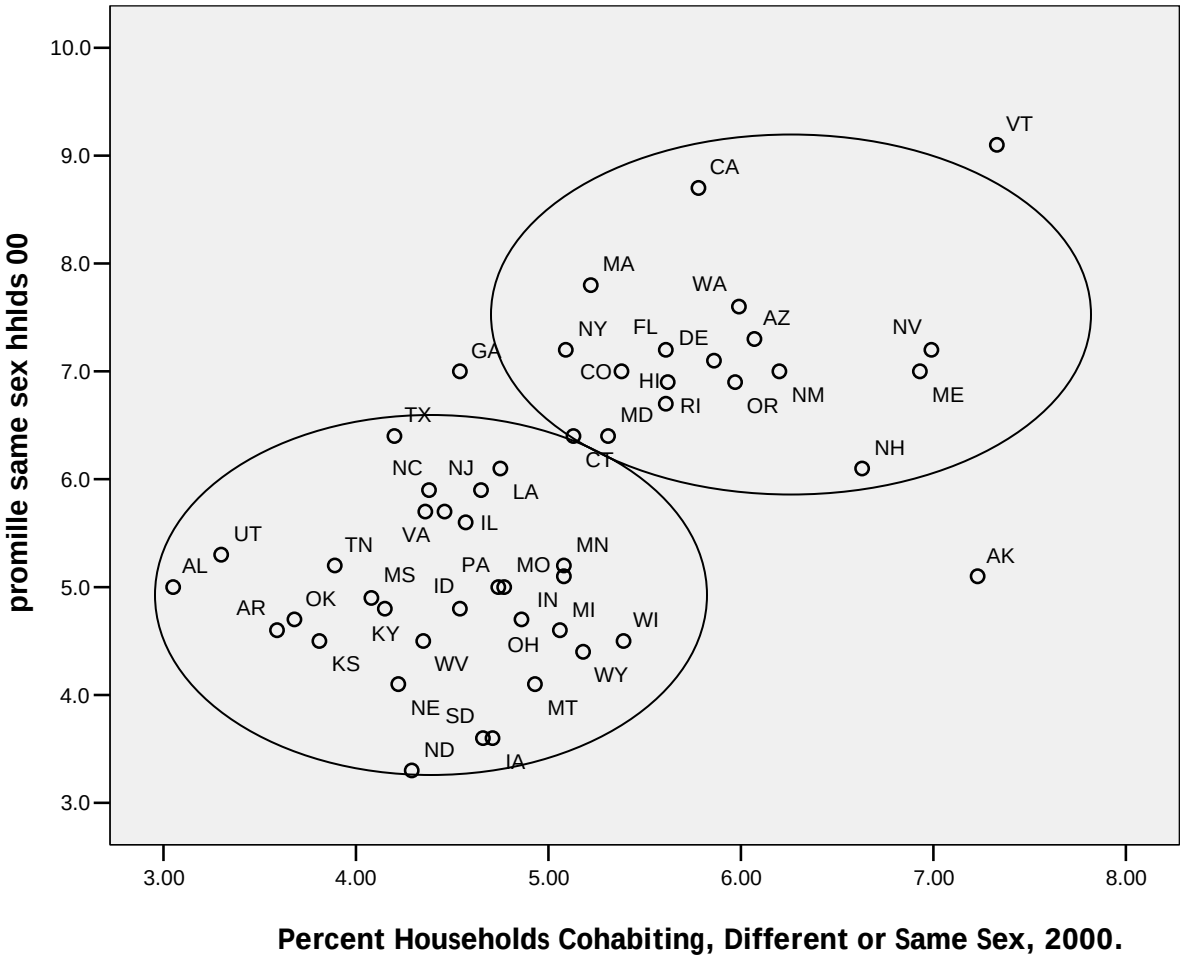
Figure 1: Location of states with respect to the postponement of marriage (Y-axis) and the incidence of cohabitation (X-axis): 2000



Source: Census of Population and Housing, SF1 files: 2000.

A similar picture can also be presented with respect to same sex households. This is done in Figure 2. Note, however that the incidence of cohabitation in general is expressed as a percentage of all households, whereas that of same sex cohabitation in pro mille: needless to say, same sex cohabitation is still a very exceptional feature.

Figure 2: Location of states with respect to the incidence of same sex cohabitation (Y-axis) and all forms of cohabitation (X-axis): 2000



Source: Census of Population and Housing, SF1 files: 2000.

The plot in Figure 2 clearly indicates that there is again a correlation (r = .60) between the incidence of same sex and of overall cohabitation. But, as in the previous figure, there is still quite a bit of variation left. The striking feature of the plot is the existence of two clusters of states that are more differentiated by the incidence of single sex households than by that of overall cohabitation. Also, among the states that have higher percentages cohabiting (e.g. more than 5 percent), some have considerably higher shares (e.g. above 7 per thousand) of same sex households than others. The "most tolerant" states with respect to both cohabitation in general and same sex cohabitation are clearly Vermont and California, followed by Massachusetts, Washington, New York, Delaware, Florida and Maine. They are very closely followed by a few

others such as Colorado, Oregon, New Mexico and Hawaii. At the other extreme are states with a low incidence of both same sex and overall cohabitation, but there is no systematic southern cluster. Instead, the low cohabitation states on both accounts are often mid-western and include the Dakotas, Iowa, Kansas, Nebraska, Montana, and Idaho, along with Ohio, West Virginia, Kentucky, Oklahoma and Arkansas.

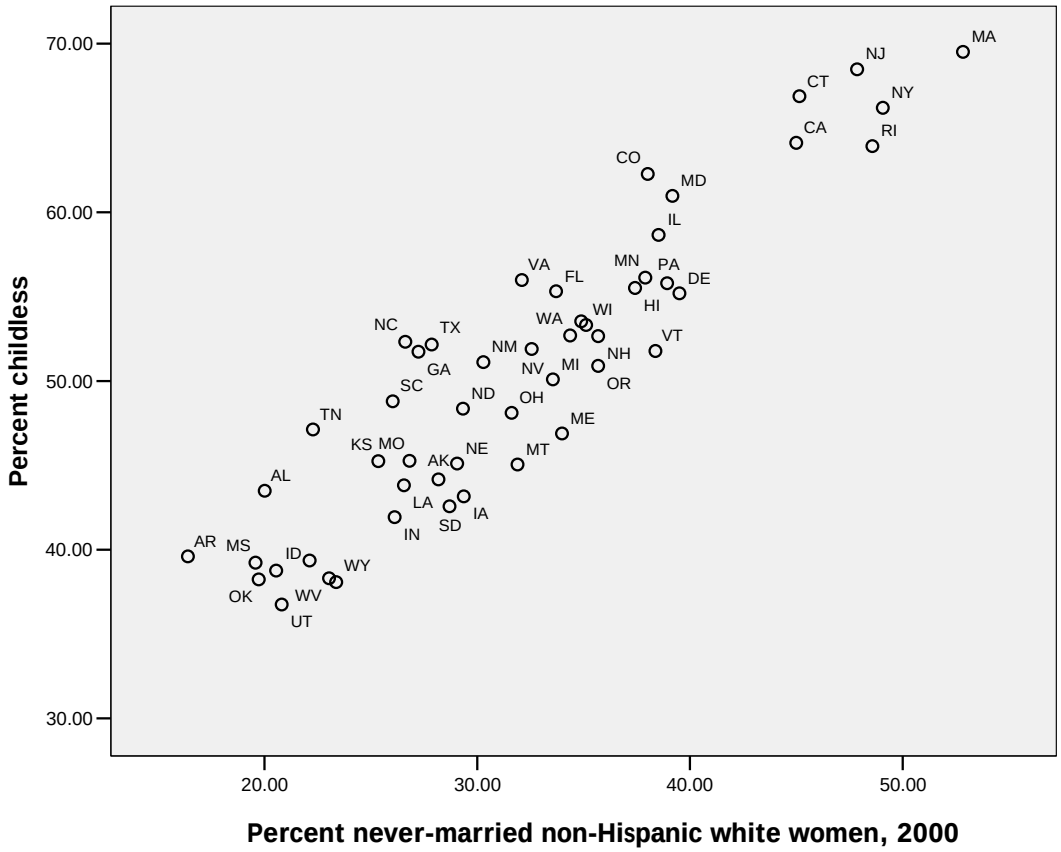
In Europe and Canada the steady expansion of the proportions cohabiting was soon followed by the emergence of a new feature: procreation within cohabitation or parenthood without converting the cohabiting union into a marriage. In countries with low teenage non-marital fertility, the trend of within cohabitation fertility can fairly well be documented by the overall increase in out of wedlock fertility, but in the US the matter is much more complicated and does not permit such a straightforward interpretation. The main reason for this is that the unmarried birth rate has a number of contributing components which cannot easily be separated via the current background information. For our purposes we would ideally need to know whether the birth occurred to a single mother or a cohabiting one, but there is to our knowledge no information in the vital registration on the presence of a partner in the household. Hence, in order to get an idea about a possible trend in cohabitation fertility, we have to work via indirect indications, such as the age and the ethnic affiliation of the mother. But none of that comes remotely close to a direct measurement based on information about the presence of a partner at the time of the birth.

The basic facts (see S. Ventura and C. Bachrach, 2000) are that non-marital fertility rose uninterruptedly from a low level of about 90,000 in 1940 to 1.47 million in 2003 (*Medical News Today*, Oct. 31, 2005). In terms of the share of all births, non-marital births accounted for 3.8 % in 1940 and for 35.7% in 2003. The birth rate per 1,000 unmarried women aged 15-44 rose from 7 in 1940 to 46 in 2004 (NCHS, 2005). But since the number of unmarried women has been growing rapidly (expansion of the population at risk), the non-marital birth rate 15-44 has tended to stabilize since the early 1990s. In terms of absolute numbers, a decline in non-marital births is found among teenagers but not in the older age groups. Also in terms of non-marital birth rates per 5-year age groups, there is a sustained decline since 1991 among teenagers, but not so much among the older women, including those in their thirties (S.Ventura and C. Bachrach, p. 24, NCHS, 2005, figure 1). In fact, women in the age groups 20-24 and 25-29 are the main contributors to the overall rise in numbers of non-marital births after 1994. Moreover, the decline in the share of teenagers occurs both among black and white populations, but the rises after age 20 are predominantly a white contribution (see S.Ventura and C. Bachrach, p. 19-20). This fuels the speculation that there has been a gradual shift in terms of relative contributions from teenagers remaining single to women in their twenties proceeding with reproduction within cohabitation. This is corroborated by survey data (National. Survey of Families and Households 1988, and National. Survey of Family Growth 1995 – see R.K. Raley, 2001: table 4) which show that the share of all births contributed by cohabiting women 15-29 rose from about 5% in the period 1970-74 to 12% in 1990-94, and that of single women 15-29 rose from 13% to 23%. Evidently the share of births among married women then declined from 82% to 65% over the same period. Also an *in*creasing proportion of singles decided to cohabit before the child's birth, and a *de*creasing proportion of cohabitors converted their union into marriage before that birth (J.A. Seltzer, 2000, R.K. Raley, 2001). These survey figures document the trend prior to 1995, and no such a clear decomposition is available for subsequent years. But the bottom line is that, despite the lack of such a finer decomposition, all indications

point in the direction of both a greater incidence and a greater acceptability of procreation within cohabitation in the US as well.

A third, and major component of the SDT is the postponement of parenthood and the development of a late fertility schedule. The degree of postponement can be documented easily via the proportions of women never married in the age group 25-29 or 30-34 and via the proportions that are still childless by these ages. In Figure 3 those percentages found in the census of 2000 by state are shown for non-Hispanic white women aged 25-29.

Figure 3: Location of states with respect to percentages never married (X-axis) and childless (Y-axis) among non-Hispanic white women 25 to 29: 2000

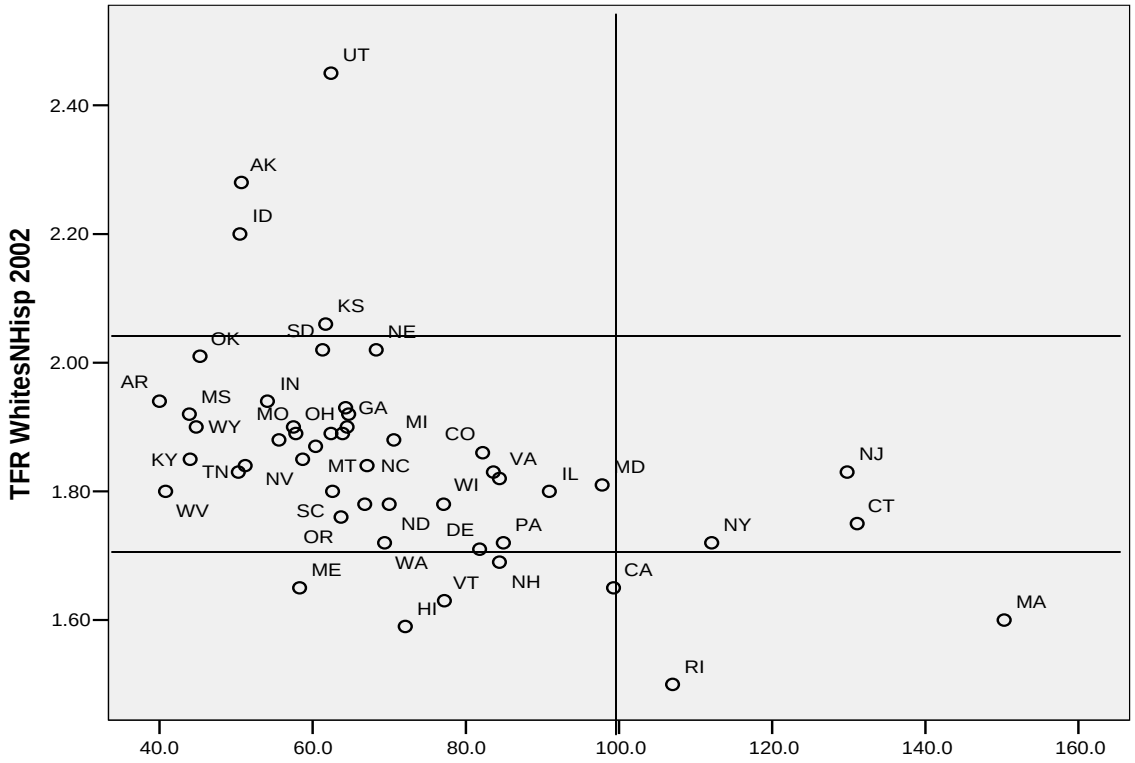


Source: Census of Population and Housing, SF1 and PUMS files: 2000

There is of course a strong positive correlation between these postponement indicators (r = .92), but the scatterplot mainly shows the spatial pattern of the unfolding of the SDT. The vanguard in the US with respect to postponement is once again made up of Massachusetts, New Jersey, New York, Connecticut, Rhode Island and California. In these six states, about half of the non-Hispanic white women are not yet married, and more than 60 percent have not made it yet to parenthood. At the other extreme, there is a group of states where less than a quarter of non-Hispanic white women are still single and less than 40 percent still childless. This group is composed of West Virginia, Kentucky, Oklahoma, Mississippi, Arkansas, Utah and Wyoming.

The postponement of fertility is also associated with well below replacement fertility, as is shown in Figure 4. Here we have made use of the non-Hispanic white total fertility rate for 2002 and an index of fertility postponement for these women at the same date (data in Sutton and Mathews, National Vital Statistics Report, 2004, vol. 52, no. 9). The latter index is the ratio of the sum of the age specific fertility rates above age 30 over the sum of these rates between 20 and 29. In this index, teenage fertility is left out since this constitutes an entirely different issue and a variable with another sociological connotation.

Figure 4: Location of states with respect to the total fertility rate (TFR) in 2002 and the index of fertility postponement in 2002: non-Hispanic white women



Source: NCHS, 2004, vol. 52, no. 9).

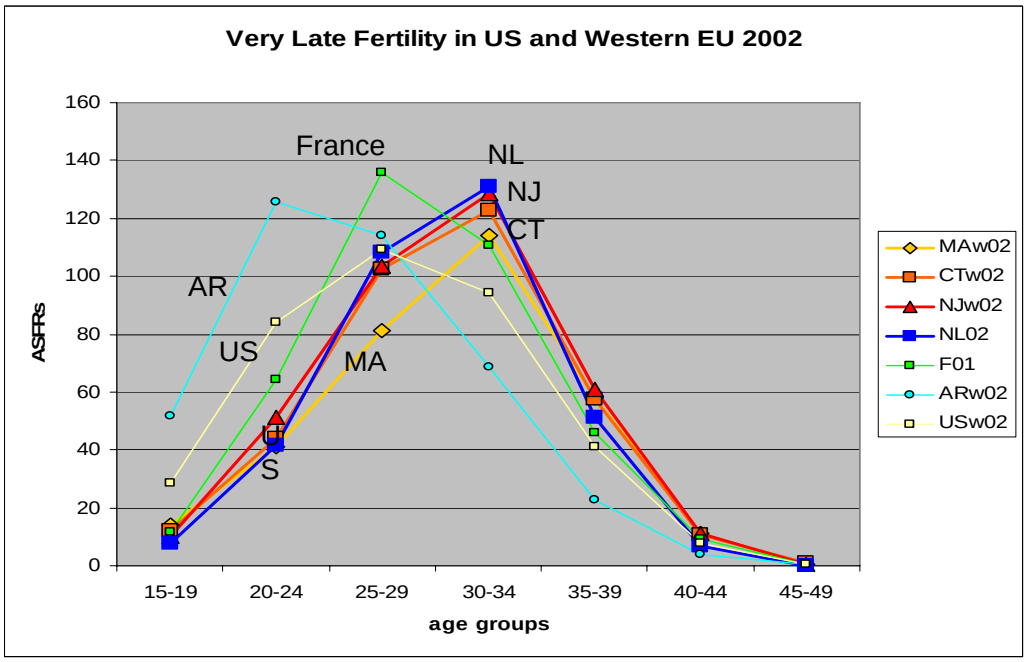
First of all the figure reveals that for the non-Hispanic white population of the US, only four states have above replacement fertility (i.e. higher than 2.05 children) : Utah and Idaho, Alaska and Kansas. Three come very close: Oklahoma, South Dakota and Nebraska. All of these states have early fertility schedules for non-Hispanic white women. But in many other states, an early fertility schedule (not counting teenage fertility) is not a guarantee for preventing sub-replacement fertility. For instance, Arkansas, Kentucky, West Virginia, Mississippi and Wyoming have the youngest fertility schedules in the US, but all have sub-replacement fertility among non-Hispanic white women.

Obviously, at the other end of the distribution the leading states with respect to postponement typically dip below a TFR of 1.80 (California, New York, Connecticut) and even below 1.60

(Rhode Island and Massachusetts). Evidently, these states have patterns of fertility that are completely similar to those of the western European countries. In fact, in the EU the Netherlands have for a long time held the record of fertility postponement, and as shown in Figure 5, the non-Hispanic white population of Connecticut and New Jersey are just as late, and Massachusetts even beats the Dutch in this respect. For comparison also the schedules for France and the US as a whole (non-Hispanic whites) are added to the figure, together with the earliest age schedule of all US states, i.e. that of Arkansas.

If we take a typical western European or Scandinavian postponement index of about 0.80 as a benchmark and compare the US non-Hispanic white populations with the European SDT countries, then we should add a number of other states to the American trio of Massachusetts (postponement index = 150 as against 126 for the Netherlands or 107 for Sweden), Connecticut (131) and New Jersey (130). These extra states would be: New York (112), Rhode Island (107), California (99), Maryland (98), Illinois (91) Minnesota (84), New Hampshire (84), and Delaware (81). In these instances fertility after age 30 would be 80% or more of that between ages 20 and 29. At the other end of the distribution the lowest postponement indices in the non-Hispanic white populations of the US are for Arkansas (40), Mississippi (41), West Virginia (41), Kentucky (45), Wyoming (45), Oklahoma (45),Tennessee (50), Alaska (51), Idaho (51) and Alabama (51).

Figure 5: Age specific fertility schedules in the Netherlands and France and in selected non-Hispanic white populations of the US, 2002.



In Europe the Dutch (NL) had the latest age schedule of fertility, with a typical peak in the age group 30-34. The non-hisp. white populations of New Jersey and Connecticut now have a schedule that is just as late, and non-hisp. whites of Massachusetts even have a later one. Arkansas has the youngest age pattern among non-hisp. whites of all 50 states, with white teenage fertility being higher than that of all women after age 35.

From this section it is evident that the demographic map of the US with respect to patterns of family formation exhibits very strong contrasts. A very sizable portion of the US non-Hispanic white population exhibits all the typical SDT characteristics, whereas another major segment of it shows few signs of this new demographic pattern.

5. Spatial patterns of family formation: dimensions and correlates at the state level.

In this section we intend to give a more complete analysis of the spatial dimensions of the US patterns of reproduction and their socio-economic and cultural or political correlates. For this purpose we have enlarged the set of demographic indicators to include other variables pertaining to teenage and non-marital fertility, incidence of abortion, divorce rates, and household composition indicators measured at the level of the 50 states. As a rule of thumb, we have also chosen two different indicators to capture a particular phenomenon in order to minimize idiosyncratic indicator effects. For instance, the incidence of abortion is measured once per 1,000 live births and once per 1,000 women aged 15-44. Similarly, fertility postponement is indicated by the vital statistics based postponement ratio (previously described) and by the census based percentage of women still being childless at ages 25-29 or 30-34. In the current analysis, 19 such demographic indicators are used, and they essentially contain two distinct dimensions in the patterning of US family formation. These two dimensions emerged very clearly from a classic Principal Component Analysis (PCA), followed by a Varimax orthogonal factor rotation. Together the two factors explain 67.3 percent of the total variance contained in the 19 indicators. The definitions of the variables and the respective factor loadings are presented in Table 3 below. The variables are ordered by absolute value of factor loadings on factor 1.

Table 3: Demographic indicators and their two underlying dimensions: definitions and factor loadings (50 states).

Loading = correlation with:	*Factor1 SDT*	*Factor 2 VUL*
% non-Hisp white women 25-29 without children in household, 2000	**.933**	-.186
% non-Hisp white women never married, 2000	**.905**	-.370
% non-Hisp white ever married women without own children in household, 2000	**.902**	-.097
Abortions per 1000 live births, 1992	**.887**	.057
% non-Hisp white women 30-34 never married, 2000	**.882**	-.326
Abortion rate per 1000 women 15-44, 1996	**.836**	.136
Fertility postponement ratio (fert.30+/ fert.20-29), 2002	**.794**	-.411
Same sex households per 1000 households, 2000	**.754**	.191
Non-Hisp white total fertility rate, 2002	**-.725**	.009
Non-Hisp. white fertility rate 15-19, 2002	**-.675**	**.633**
% households that are "families", 1990	**-.642**	.328
% households with same or different sex cohabitors, 2000	**.517**	-.148
Divorce rate per 1000 population, 1990	-.457	**.548**
Total fertility rate, all races, 2002	.338	-.155
% non-marital births, 1990	.329	**.803**
% teen births, 1986	-.303	**.875**
Divorce rate per 1000 population, 1962	-.277	.462
% population 30+ living with and responsible for grandchildren,2000	-.189	**.886**
% non-marital births, 2000	.182	**.851**

Factor loadings > .50 in red.

The first principle component is mainly identified by all the postponement indicators of both marriage and parenthood among non-Hispanic whites, the higher incidence of abortion, the non-conventional household types based on cohabitation, and by lower overall fertility levels. In other words, the first principal component clearly identifies the emergence of the SDT in the 50 states.

A typical American feature compared to the western European pattern, however, is that divorce rates in the US are not positively correlated with this SDT dimension. Apparently, the very early rises in American divorce rates from the late 1940s onward created a different spatial pattern, which is not related to that of the current SDT. This feature is also related to the fact that Catholic states rather than Protestant ones kept low divorce rates in the US. But the bottom line here is that the early divorce maps do not predict the later SDT ones in the US, whereas they do in several EU countries (R. Lesthaeghe and K. Neels, 2002).

The other principal component (uncorrelated to the first one) is identified by high teenage fertility, including that of non-Hispanic whites, high fertility out of wedlock, and the emergence of households where not the parents but the grandparents have become the caretakers of children. This is evidently an older dimension of early family formation in the US with unmarried teenagers or young women, black or white or Hispanic, becoming mothers, ending up as single parent households, or needing their own parents to look after their children.

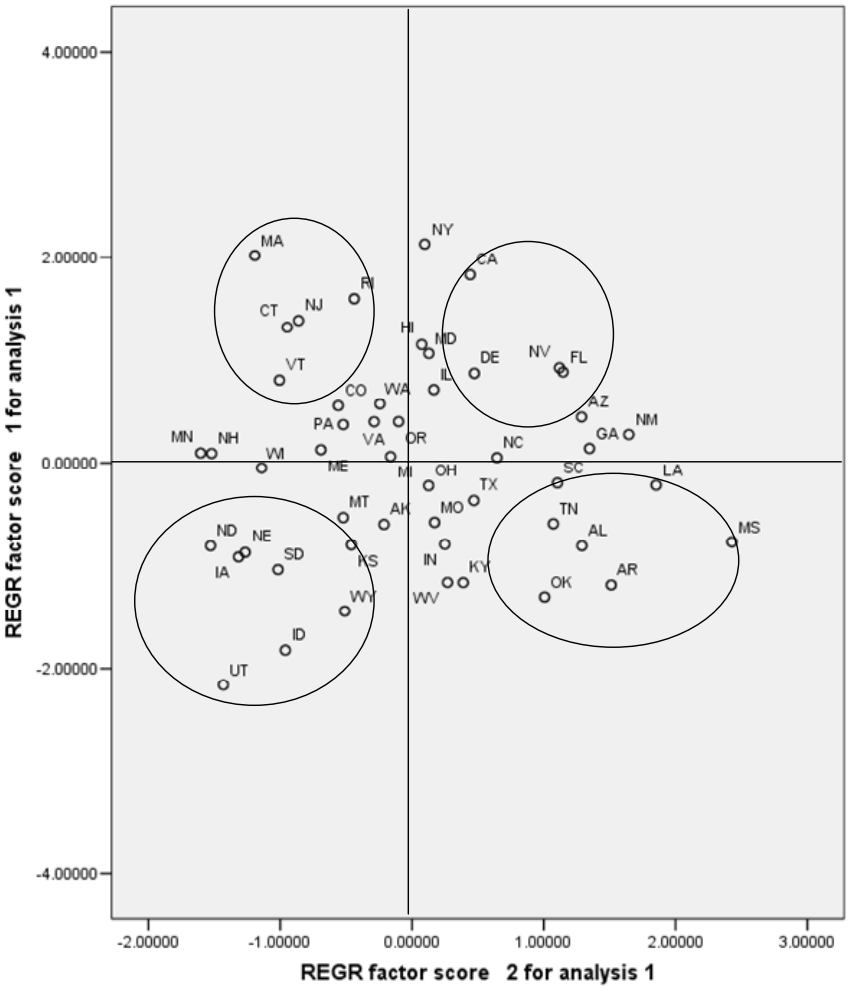
The location of the states with respect to these two dimensions of American family formation is shown in Figure 6. The four quadrants in the figure identify four contrasting types of family formation. At the bottom left are states that are resisting the SDT-features so far, but that are also conservative in the sense that they have few teenage mothers, low non-marital fertility, and hence few grandparents needing to look after grandchildren. The typical states in this cluster are the Dakotas, Nebraska, Iowa, Wyoming, Idaho and Utah. The other cluster that is resistant to the SDT so far, but has high proportions of teenage mothers, lone mothers and reliance on grandparents is located in the lower right hand corner of Figure 6. It contains typically southern states, such as South Carolina, Alabama, Mississippi, Louisiana, Tennessee, Oklahoma and Arkansas.

The states that are leading with respect to the SDT are found in the upper half of Figure 6, but they too are differentiated with respect to what happens with their children. High on SDT, but conservative re teenage motherhood are several northeastern states: Massachusetts, Vermont, Rhode Island, Connecticut and New Jersey. Also high on SDT but experiencing more early teenage fertility and lone or needy parents are California and Nevada, but also Delaware and Florida. Aside from the four “corner” types in Figure 6, there is of course the middle of the road America with average scores on both dimensions. Typical examples thereof are Michigan, Ohio, Virginia or Oregon which are all located near the center of the graph.

Figure 6: Location of states with respect to two principal components of US family formation (scales in standard deviations).

SDT –dimension:

NHWites marriage + fertility postponement, subreplacement fertility, low teenage fertility, abortion, cohabitation, same sex hhlds.



Older dimension : high teenage and non marital fertility (also for NHWs), grandparents resp. for grandchildren, higher divorce.

These two basic dimensions of US family formation can be related to a series of economic (income, poverty), socio-economic (education, urbanity), political (voting) and cultural (ethnicity, religion) variables. The correlates of the two dimensions are presented in Tables 4 and 5. The left hand column repeats the correlation or factor loadings of each of the demographic indicators and the principal component, whereas the left hand column reports the best predictors of each principal components together with the correlation coefficients. These tables permit a further interpretation of the regional demographic picture of the US.

Table 4: Best indicators and correlates of the SDT-dimension

US 50 states: First demographic dimension (SDT)
Factor loadings (left) and Best correlates (right)
PCA with Varimax rotation

% No own child NHW women 25-29, 2000	+.93	% Vote Bush, 2000	-.88
% Never married, NHW women 25-29, 2000	+.91	% Vote Bush, 2004	-.87
% No own child NHW ever married 25-29	+.90	Disposable Personal Income, 2001	+.70
Abortions per 1000 live births 1992	+.89	% Metropolitan, 2000	+.68
% Never married NHW women 30-34, 2000	+.88	% Metropolitan, 1970	+.65
Abortion rate per 1000 women 15-44, 1996	+.84	% Catholic, 1990	+.62
NHW fertility postponement index, 2002	+.79	% Evangelical*, 2000	-.62
% Same sex households, 2000	+.75	% Population 25+ with BA, 1990	+.62
NHW total fertility rate, 2002	-.73	% Workers unionized, 2001	+.50
NHW 15-19 total fertility rate, 2002	-.68	Disposable personal income, 1980	+.49
% Households "families" 1990	-.64	% Vote Nixon 1972 (vs McGovern)	-.46
% Cohabiting housholds, 2000	+.52	% Vote Goldwater 1964 (vs Johnson)	-.43
Divorce rate per 1000 population, 2000	-.46		

**NHW = Non-Hispanic whites*

**Includes Mormons in Utah*

Table 5: Best indicators and correlates of the teenage and non-marital fertility dimension

US 50 states: Second demographic dimension (Vulnerable children)
Factor loadings (left) and Best correlates (right)
PCA with Varimax rotation

% grandparents responsible for grandchildren in households, 2000	+.89	% Population 25+ HS graduates, 1990	-.69
% births to teenagers, 1986	+.88	% population in poverty 1998-2000	+.66
% births to unmarried women, 2000	+.85	% population black, 2000	+.66
% births to unmarried women, 1990	+.80	% population non-Hispanic white, 2000	-.61
NHW 15-19 total fertility rate, 2002	+.63	% Evangelical/Mormon	+.57
Divorce per 1000, 1990	+.55	% vote Golwater 1964 (vs Johnson)	+.54
Divorce per 1000, 1962	+.46	% vote Nixon 1972 (vs McGovern)	+.54
NHW Fertility postponement index, 2002	-.41	% Population 25+ with BA, 1990	-.45
		Disposable person income, 2001	-.43

Table 4 shows that the SDT- dimension is strongly correlated with being a wealthier state, with disposable household incomes above the US average, and with being highly urbanized and high percentages of the population living in metropolitan areas. Moreover, the SDT map also correlates positively with high proportions of Catholic populations (many not practicing) and higher proportions of adults having college degrees (BA and higher). Finally, also states with high proportions of unionized workers tend to score higher on the SDT dimension.

The SDT is clearly negatively correlated with high proportions being Evangelical Christian and with conservative Republican voting in the past, i.e. in favor of Goldwater (as opposed to Johnson) and in favor of Nixon (against McGovern). But the most striking feature of all in Table 3 is undoubtedly the very strong negative correlation between the SDT pattern and the percentage vote for G.W. Bush (-.88 and -.87) in 2000 and 2004 respectively. The so called "blue states" are high on SDT and the "red ones" low.

The correlates of the teenage and unmarried mothers dimension are all too well known. These demographic features are correlated with lower average disposable incomes, lower proportions finishing high school, with higher proportions in poverty, higher proportions black or Hispanic, but also with high proportions Evangelical Christians or Mormons. America's "Bible belt" that reacts strongly against the manifestations of the SDT also tends to be the home of poverty and low education based teenage childbearing, young lone mother families, and higher divorce rates (see Table 5).

5. The SDT- Bush connection.

In the introduction we have pointed out that demographers have on occasion been quite successful in predicting election results, although their preoccupation goes in the opposite direction: linking demographic outcomes to cultural and political indicators. The very strong negative correlation found here between the SDT dimension (i.e. factor 1 in Table 3) and the percentage votes for G.W. Bush is to our knowledge one of the highest spatial correlations between demographic and voting behavior on record.

While some may have expected these correlations to be stronger in 2004 than in 2000 because the electorate seems to have been far more divided and polarized on issues in 2004, an examination of selected results from the exit polls for both elections shows that most of the 'cultural divide' was well-established in 2000. Of course, the controversy over the Florida vote in 2000 cemented already existing divisions. Events between 2000 and 2004 (9/11, war on terror, war in Iraq, same sex marriage amendments, etc.) and the increasingly right and left leaning news sources further contributed to the perception of a more polarized public in 2004.

Table 6 shows the percentage voting for Bush in 2000 and 2004 according to their exit poll answers. The percentages voting for Bush in the exit polls according to demographic, ethical and cultural characteristics are remarkably similar across the two elections. For instance, 74 percent of those who felt abortion was always illegal voted for Bush in 2000 and 77 percent with these views voted for him in 2004. The religious right went strongly for Bush in both elections (80 and 78 percent).

Table 6. Percentage Voting for Bush in 2000 and 2004 according to Responses to Election Day Exit Polls

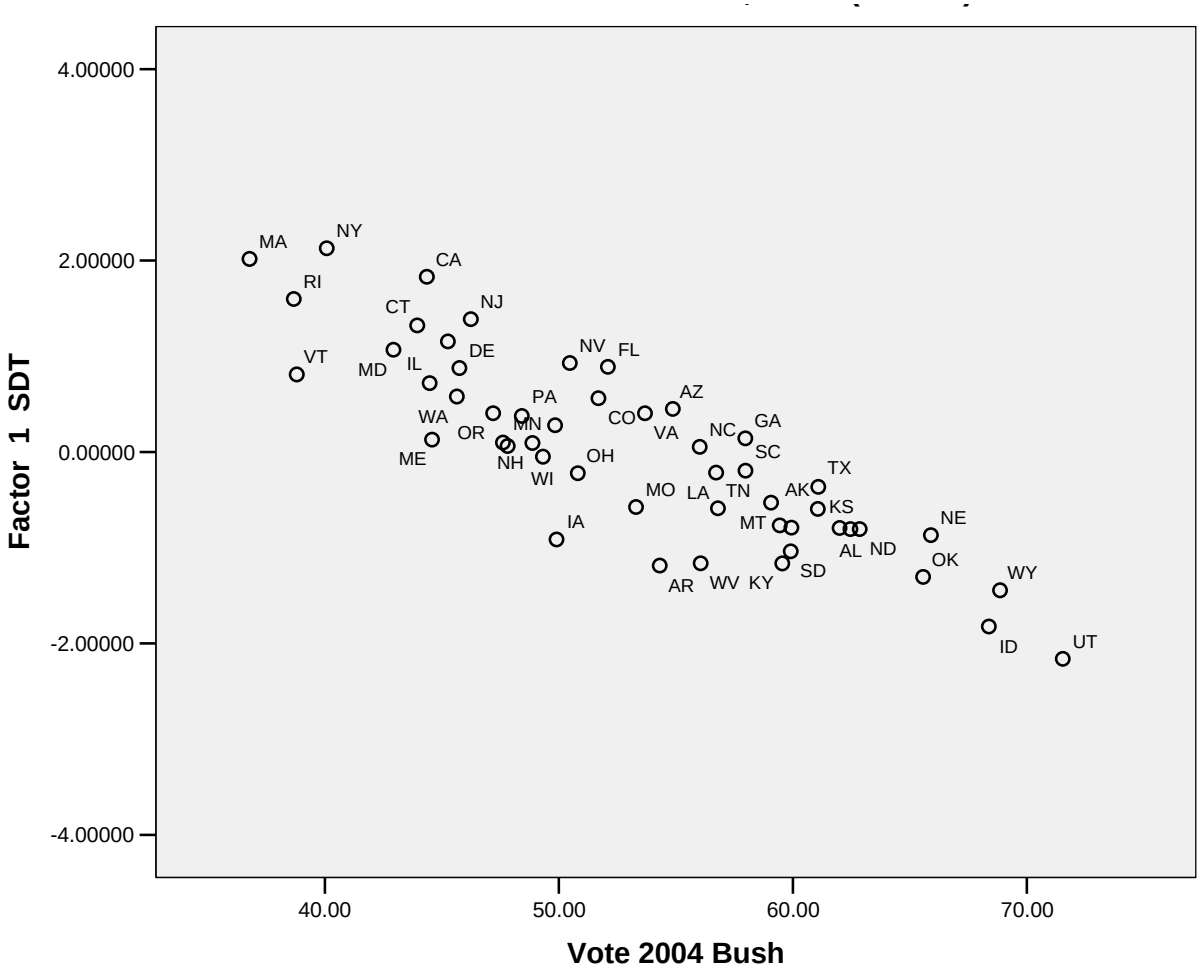
Vote for Bush in Election Year:	2000	2004
Demographic Characteristic		
Women	43	48
White	54	58
African American	9	11
Hispanic	35	44
Married	53	57
Married, with kids	56	59
Gay	25	25
Union Member	34	38
Political Identity		
Democrat	11	11
Liberal	13	13
Conservative	81	84
Religion/Religiosity		
Protestant	56	59
White Protestant	63	68
White religious right*	80	78
Church, more than weekly	63	64
Church, weekly	57	58
Church, monthly	46	50
Church, a few times a year	42	45
Church, never	32	36
Values		
Abortion always legal	25	25
Abortion mostly legal	38	38
Abortion mostly illegal	69	73
Abortion always illegal	74	77
Clinton scandals were very important	80	-
Lieberman's religion makes him a worse V.P.	72	-
Moral values are most important issue	-	80
Terrorism is most important issue	-	86
Same sex couples should be allowed to legally marry	-	22
Things are going well in Iraq	-	90

*Choice was white religious right in 2000 and born again white in 2004

Of course, some issues like terrorism, the war in Iraq, and same sex marriage were not on the radar in 2000. Voters' feelings on these issues were strongly associated with their vote in 2004. Some comparable items available in 2000 and not in 2004 were questions about the importance of the Clinton scandals and Lieberman's religion.

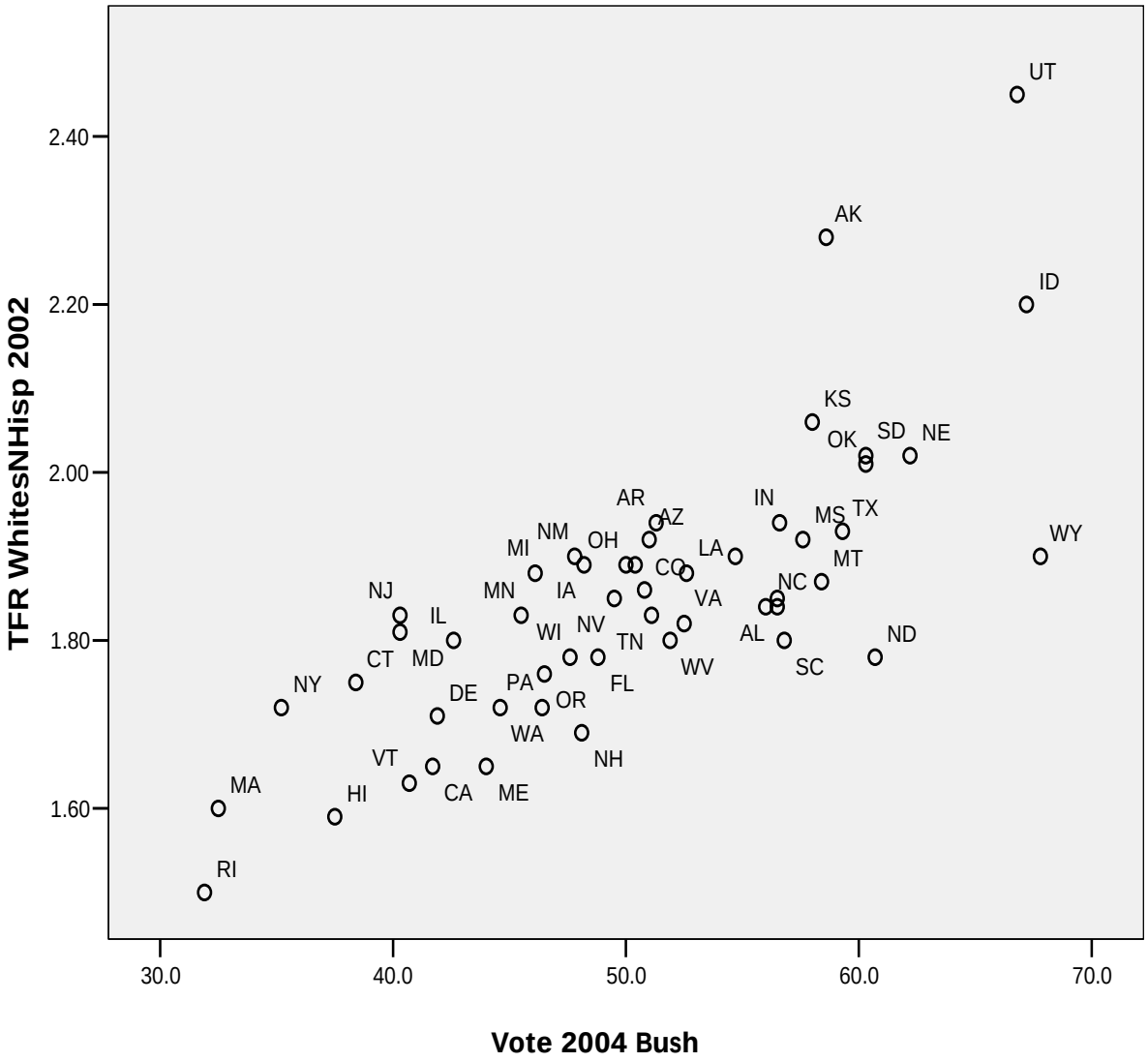
It is useful to reproduce the scatterplot between the SDT values and the vote for Bush across the 50 states. Because the correlation between a state's vote for Bush in 2000 and 2004 is .97, we will only show the results for 2004. This is presented in Figure 7.

Figure 7: Relationship between the "Second Demographic Transition" Dimension US 50 states and the Vote for Bush, 2004 (r = -.87)



Obviously also strong correlations hold with respect to the various components of the SDT dimension. For instance, the percentage voting for Bush correlates strongly with the percentage of non-Hispanic white women never married at ages 25-29 (postponement of first marriages) (r = -.84) or with the percentage of non-Hispanic white women 25-29 without children (fertility postponement) (r = -.78), and even with the non-Hispanic white TFR in 2002 (r = +.77). This latter relationship is shown in Figure 8.

Figure 8: Relationship between the non-Hispanic white Total Fertility Rate, 2002, and the Percentage Vote for Bush, 2004. (r = +.77)



These findings beg the question of whether the zero-order correlations are spurious or not. More specifically, it would be dangerous to give them a direct causal interpretation, since they could be the results of a common set of other variables that causally influence both demographic behavior and voting pattern. In other words, two variables that are themselves causal results of the same determinants must of necessity be correlated.

In order to check this hypothesis, a number of partial correlation tests were performed. The zero-order correlation between voting and SDT will be spurious if the partial correlations are zero or are drastically reduced. The outcomes of the test are reported in Table 7 for the correlation between the votes for Bush and the Non-Hispanic white TFR and the SDT factor as identified in Table 3.

Table 7. Partial Correlations: Are the zero order correlations between the non-Hispanic white TFR or the SDT dimension and the vote for Bush in the 50 US States resistant to controls?

ZERO/PARTIAL CORRELATIONS:	NHW TFR 2002		SDT factor	
Vote for Bush in	2000	2004	2000	2004
No controls	.771	.782	-.880	-.871
After controls for:				
Three structural variables: Disposable personal income 2001 % population 25+ with BA, 1990 % population metropolitan, 2000	.755	.761	-.787	-.812
Three structural variables + Ethnicity % black, 2000 % hispanic, 2000	.755	.761	-.840	-.853
Three structural variables + Religion % Evangelica/Mormon % Catholic	.686	.686	-.734	-.742
Religion alone % Evangelical/Mormon % Catholic	.654	.667	-.788	-.755

The first partial correlation test assumes that the common causal factors producing a high zero order correlation between the demographic and the voting variables are of a structural nature, e.g. a states' average disposable household incomes, educational levels and degree of urbanization. When the three best correlates of these independent dimensions are controlled for, the partial correlation is barely reduced, and still stands well above .70. Evidently, the regional patterns related to income, education and urbanity fail to account for the Bush-SDT or the Bush-TFR correlation.

We hardly do better if we add two more variables related to the ethnic composition of a state. The percentages black and the percentages Hispanic in the total population in tandem with the three structural variables fail to reduce the partial correlation. The third panel shows the results of adding two variables related to religion to the structural ones. These are the percentages Evangelical + Mormon and the percentages Catholic. The result is better, but the partial correlations are still in the neighborhood of .70, and hence far from zero. In fact, if we omit the three structural variables and only make use of the two religious predictors, the results are even better in reducing the Bush-white TFR partial correlation to around .65. For the Bush-SDT correlation, the best result is achieved by leaving in the three structural predictors (-.73 or -.74).

The conclusion we draw from the results shown in Table 7 is that the zero order correlation between the SDT variables and the voting for Bush cannot be considered as spurious or as the mere outcome of the operation of the common causal determinants used here. The control variables simply fail to reduce the zero order correlation coefficients to a significant extent to warrant such a conclusion. And since the demographic picture was unfolding well before the

2000 and 2004 elections, this leaves us with no alternative other than temporarily accepting the hypothesis that the spatial pattern of the SDT in the US was a non-redundant co-determinant of the red, purple and blue voting outcomes at the level of states.

But states are very heterogeneous too. Hence, we will examine the outcomes with counties as the unit of analysis before we formulate more final conclusions.

6. The SDT-Vote Bush relationship at the county level

Obviously, correlations coefficients can turn out to be considerably weaker if we examine relationships among all 3141 counties in the US. Political scientists may only be interested in the relationship at the state level as only the state vote is important for presidential elections. However, our earlier findings will be far more robust if we can show that the relationships hold across counties in the US and within its regions too. To this effect, a much larger data file was constructed, with multiple indicators for degree of urbanity, material wealth and poverty, female education, ethnic composition, and religious affinity. In addition, the demographic variables were constructed for non-Hispanic whites wherever possible. In a number of instances, some measures are based on older data (1988), which allows us to capture the geographic pattern of a feature as it was unfolding at earlier stages (4).

Just as in the analysis with the 50 states, very similar factors emerge as underlying demographic dimensions for the 3141 counties. In the appendix we have also included maps and cartograms showing the spatial distribution of the SDT factor in the US by county. The scale ranges from dark blue to dark red with dark blue associated with high values on SDT and red associated with areas that have not begun the second demographic transition. Notice the correspondence of the blues and reds with the presidential election results from 2004. The first map is a classic one with counties drawn to geographic scale, whereas the cartogram uses the Gastner-Newman algorithm to draw counties proportional to population. The comparison of the two shows how misleading a classic map can be when it comes to representing population characteristics (see appendix 1). Map and cartogram were produced by Didier Willaert at the *Vrije Universiteit* in Brussels (VUB). More maps and cartograms are available on http://sdt.psc.isr.umich.edu/ showing further sub-dimensions of the SDT and the "Children and Young Women Vulnerability" Factor of Table 8. (cf. infra: "VUL")

Turning to the results of the principal components analysis of Table 8, there is again a clear SDT-factor based on indicators of postponement and on indicators of households formed on the basis of unmarried cohabitation. Note that *negative* correlates of the SDT factor are teenage fertility, and the TFR which of course incorporates this early fertility level in its calculation. On the other hand, there is an uncorrelated second factor which again loads strongly on teenage fertility, divorce, female headed households, children growing up with grandparents and in households other than that of a married couple. The second factor is again indicative of the degree of vulnerability of young women and children.

Table 8: Demographic indicators and their two underlying dimensions: 3141 counties *

Item	Factor 1 SDT	Factor 2 VUL
% never married females, 25-29 [WNH]	**.837**	-.018
% age at first birth= 28+ in 1988 [WNH)	**.812**	-.293
Mean age at first birth in 1988 [WNH]	**.792**	-.410
% childless women, 25-29 [WNH]	**.787**	-.091
% never married females, 30-34 [WNH]	**.780**	.074
Fertility postponement ratio, 1988 - 30+/20-29 [WNH]	**.733**	-.329
% cohabiting households [WNH]	**.652**	.284
% cohabiting households [Total]	**.606**	.461
% teen births, 1988 [WNH]	**-.556**	**.613**
% same sex cohabiting households [Total]	**.517**	.364
Total Fertility Rate, 1999 [WNH]	**-.503**	-.143
% same sex cohabiting households [WNH]	.495	.263
% pop 30+ living with and responsible for grandchildren [WNH]	-.449	**.646**
% pop 30+ living with grandchildren [WNH]	-.318	**.699**
% children living in married couple family [WNH]	-.273	**-.609**
% children living in married couple family [Total]	-.245	**-.746**
% pop 30+ living with and responsible for grandchildren [Total]	-.227	**.641**
% unmarried births, 1988 [WNH]	.164	**.479**
% currently divorced women, 35-44 [WNH]	.127	**.530**
% pop 30+ living with grandchildren [Total]	-.101	**.657**
% female-headed families/households [Total]	.069	**.706**
% female-headed families/households [WNH]	.031	**.649**

*** WNH= white non-Hispanic; date is 2000 unless otherwise specified.**

It should also be noted that the overall SDT-factor itself can be decomposed in (i) a "postponement" component, indicative of late marriage and especially late fertility, and (ii) a "cohabitation" component. Figures 11 and 12 in the appendix illustrate the spatial distribution of these two components of the SDT factor.

If the two separate components are constructed for the 3141 counties, they correlate at the 0.69 level. This is worth mentioning, since in several European countries these two SDT components, postponement and cohabitation respectively, do not correlate that strongly, either over time or spatially. In this respect, the stronger spatial correlation between these SDT components in the US makes the country more of a textbook example than an exception.

As in the state-level portion of the analysis, we want to examine the relationship between the second demographic transition factor and the vote for Bush. Table 9 shows the results of tests of the relationship between the spatial SDT pattern and election results (2004).

Table 9: Zero order correlation between the Percent voting for Bush 2004 and the SDT dimension, and partial correlations after controls for structural and cultural variables (all counties and counties with at least 25,000 inhabitants).

	All counties	No small counties
Zero order correlation Vote Bush – SDT factor	-.568	-.667
Partial correlations after controls for:		
3 structural variables:		
Log population density, %families with incomes of $75,000+, and %women 25+ with professional degrees	-.453	-.552
Same 3 structural + 2 ethnicity variables		
%black, %Hispanic	-.541	-.618
Same 3 structural + 2 religion variables		
% Evangelical (+Mormon), % Catholic	-.346	-.398
2 religion variables alone	-.468	-.532

As expected, the negative correlation between the SDT factor and the Bush vote weakens as one moves from the 50 states to the 3141 counties, i.e. from -.88 to -.57. But there are various reasons for this reduction in the strength of association. The classic one is that many counties have very small populations so that there is increased volatility in the measurements, and in the demographic ones in particular (5). Hence, we reran the analysis for counties with at least 25,000 inhabitants. In that instance, the zero order correlation between the SDT and the vote for Bush changes in the expected direction and is restored to -.67. This is again indicative of a strong correspondence between a detailed voting map and a SDT map.

What happens if controls are introduced for variables that are commonly considered as causal antecedents of both voting pattern and of demographic household formation patterns? If the original correlation is reduced to levels close to zero after such controls, then there will be no longer a basis for considering any spatial causal relationship between SDT and voting (in either direction). If the partial is reduced but still substantially larger than zero, then the control variables are partially responsible for the original correlation, but not entirely. In that instance, there is still room for a direct causal interpretation between SDT and voting outcomes, but the effect is smaller than what a full causal interpretation of the zero order correlation would imply.

As was also done for the earlier 50 states analysis, the best predictor of voting in each set of structural groups of determinants was entered as a control variable in Table 9. For the degree of urbanity this turned out to be the logarithm of population density, for material wealth the percentage of families with incomes of $75,000+, and for education the percentage of women aged 25+ with professional degrees. The other structural indicators are strongly correlated with one of these three entered here, and any additional use of multicollinear information is largely redundant and will not improve the results.

In addition to the three best structural controls also two variables are introduced that capture ethnic heterogeneity at the county level: the percentage black and the percentage Hispanic in 2000. And the same was also done to capture the religious factor: the two variables are the percentage Catholic and the percentage Evangelical or Mormon among church adherents (D. Jones et.al., 2002). Throughout the remainder of the paper dealing with county-level information we shall refer to these 7 covariates as the "*classic seven*".

The results in Table 9 indicate that the control for five variables (capturing urbanity, material wealth, female education, Evangelical/Mormon, and Catholic adherence) is the most powerful in reducing the zero order correlation between the SDT and the Bush vote. The combination with the ethnic composition added to the three structural indicators is less successful. But in either column of Table 9, the smallest partial correlation is still far from zero and the best combination of control variables cannot reduce the original correlation by half. Evidently, these results still mean that we cannot discard the possibility of a direct causal effect of the county demographic pattern on the latest Presidential election outcome.

The objection to this causal inference as it stands now is of course that there always could be some set of controls variables for which the partial correlation will be close to zero. But such new control variable(s) must be a good correlate of both the voting and the demographic patterns and weakly correlated with the controls already used in Tables 7 and 9. The hunting season is open ….

But aside from the effect of volatility of several measures for counties with small populations, there is another reason for the reduction of the SDT-Voting correlation when 3141 counties are considered instead of the 50 states. This reason emerges in Table 10, where the analysis has been run separately for the counties within the four census regions and nine census divisions in the United States. It appears that the national correlations, both zero order and partials, are pulled down by weak relations for the South, and particularly for the two South Central divisions. By contrast, the zero order and partials remain very high for the counties in New England and the Mid Atlantic states and in the Mountains and Pacific ones. Hence, it appears that the southern voting patterns may still be conditioned by powerful older determinants other than those connected to the unfolding of the SDT, such as the persistence of ethnically or social class based political antagonisms. Recall, that the spatial distribution of the SDT dimension shows that most of the South is in the very early stages of the second demographic transitions. Likewise, most spatial distributions of the black and to some extent also Hispanic populations (e.g. in Texas) show them to be concentrated in these census divisions as well.

Table 10: Zero-order and Partial Correlations between the SDT factor and the vote for Bush according to different aggregations (county is unit of analysis)

Geography	N counties	Zero	3 Struct	3 Str + 2 Ethn	3 Str + 2 Relig	2 Ethn	2 Relig
United States	3141	-.568	-.453	-.541	-.346	-.600	-.468
Region							
NorthEast	217	-.803	-.729	-.725	-.635	-.739	-.684
Midwest	1055	-.605	-.518	-.506	-.454	-.557	-.570
South	1424	-.415	-.365	-.380	-.243	-.364	-.288
West	445	-.773	-.639	-.646	-.513	-.760	-.681
Division							
NwEngland	67	-.700	-.482	-.461	-.414	-.629	-.665
Mid Atlant	150	-.790	-.552	-.494	-.442	-.601	-.680
ENCentr	437	-.606	-.616	-.608	-.525	-.537	-.523
WNCentr	618	-.572	-.462	-.442	-.395	-.542	-.549
South Atl	590	-.510	-.406	-.500	-.339	-.569	-.455
ESCentr	364	-.252	-.287	-.347	-.247	-.168	-.185
WSCentr	470	-.284	-.286	-.234	-.162	-.167	-.147
Mountns	280	-.750	-.592	-.598	-.469	-.740	-.661
Pacific	165	-.733	-.636	-.625	-.582	-.700	-.742

Source: Census of Population and Housing, summary files and microdata files; Natality detail file, 1988; and Religious Congregations and Membership in the United States: 2000.

Note: The aggregations are US census regions and US census divisions: http://www.census.gov/geo/www/us_regdiv.pdf

The main conclusion to be drawn from this exercise is that the spatial correlation between the outcomes of the last two presidential elections and the demographics of the SDT does not appear to be a spurious one, i.e. caused by a set of common causal antecedents (here: the "classic seven"). It is furthermore amazing that this resistant correlation pops up in all regions of the US, with the exception of the South where the large Afro-American population continues its post-Kennedy tradition to vote systematically in favor of Democrats. This documents that whenever "Culture War" issues are part of the agenda – and they are very likely to be in *any* postmodern industrial society – voting patterns will be influenced by life style preferences and their SDT indicators. The main difference between the US and Western Europe in this respect is that the former experienced some backlash among the religious right. It seems that the transition with respect to the "Willingness" distribution in the US has not been homogeneous, but that a significantly large tail of that distribution is still at the "non-willing" end of the spectrum.

Not only presidential elections provide a testing ground, but also the recent referenda in which a number of amendments to the state constitutions were proposed. These pertained to same-sex marriage and stem-cell research. We shall now turn our attention to these referenda.

7. State referenda on banning same-sex marriage and stem-cell research.

The social movement to obtain legal protection of civil marriage for same-sex couples began in the 1970s in the wake of the overall acceleration of all emancipation movements, but the issue became prominent on the US political agenda in the 1990s along with other "culture wars". The European examples with legal gay marriage (Netherlands 2001, Belgium 2003, Spain 2005) may not have shaped the current American debate to any significant extent, but the legalization of such unions in Ontario (2003), Massachusetts (2004) and Canada as a whole (2005) meant that same-sex marriages performed in these areas would have to be recognized in other American states as well, just like the Nevada divorces of the 1950s. At the Federal level the *Defense of Marriage Act* of 1996 defines marriage explicitly as between opposite genders, and hence no federal agency recognizes same-sex marriage. But, many issues regarding marriage are regulated at the state level, which explains the flurry of referenda after that date that deal with that topic.

The current situation is as follows: only Massachusetts has legalized same-sex marriage, but a similar law is proposed in Maine, New Jersey, New York and Rhode Island. Civil unions are permitted in Connecticut, New Jersey and Vermont, and domestic partnerships are permitted in California, Washington DC and Maine. In all other states, same-sex marriage is either *prohibited* by statute or by a state constitutional amendment. And it is the latter group of states that have referenda for which we shall now analyze the data. Counties in these states are again the units of analysis.

Table 11 provides the list of states with a constitutional amendment, together with the date of the referendum. The wording of the amendment and the result of the voting result is given in Appendix 2. Note that there is quite a bit of state by state variation in wording and content, and that there is an overall duality between states that simply define marriage as between a man and a women (and refuse to recognize out of state same-sex marriage), and states that expand on this by also refusing the mutual benefits of married partners to cohabitors of the same sex or even to all cohabitors.

The results of Table 11 can be summarized as follows. First there is of course a positive correlation in all states between the county 2004 presidential election (vote Bush) and the same-sex marriage amendment. But these correlations are weakest in the Southern States: race was a major determinant in the presidential election, but it was not when voting on a clear life style issue. As a result, we should expect that the actual demographics of the SDT should be much better predictors of the same-sex marriage amendment than of the presidential elections in these states. This turns out to be true: weak correlations between county votes for Bush and SDT in Alabama, Arkansas, Kentucky, Oklahoma, South Carolina and Tennessee are all much larger and typically back to the normal overall average (-.71) when the same-sex marriage ban is related to the SDT. But, this not only holds for the counties in the Southern states, but across the board for counties in *all* 26 states that are analyzed in Table 11.

Table 11: Prediction of the Vote in Favor of banning Same-Sex Marriages and the Vote for Bush (2004) on the basis of the SDT-dimension for 2108 counties in 26 States. Zero order correlations and partial correlations after controls for 2 variables measuring the counties' religious composition (% Evangelical + Mormon, % Catholic).

Year of Vote	State	Cnty [N]	Zero order	Yes on marriage amendment and SDT		Vote for Bush and SDT	
			Yes on SS Marriage ban and Vote for Bush	*Zero*	*Partial [relig]*	*Zero*	*Partial [relig]*
	26 states	2108	.450	-.713	-.562	-.468	-.367
	51states	3141	-	-	-	-.568	-.468
	State by state						
2006	**Alabama**	67	.776	-.554	-.324	-.248	-.071
1998	**Alaska**	Not included					
2006	**Arizona**	15	.760	-.682	-.786	-.284	-.469
2004	**Arkansas**	75	.379	-.547	-.469	-.171	-.247
2006	**Colorado**	63	.832	-.875	-.824	-.737	-.758
2004	**Georgia**	159	.354	-.803	-.672	-.415	-.400
1998	**Hawaii**	Not included					
2006	**Idaho**	44	.917	-.816	-.719	-.826	-.725
2004	**Kansas**	105	.702	-.704	-.660	-.561	-.508
2004	**Kentucky**	120	.171	-.819	-.763	-.180	-.140
2004	**Louisiana**	64	.664	-.837	-.747	-.462	-.282
2004	**Michigan**	83	.596	-.707	-.750	-.526	-.504
2004	**Mississippi**	82	.576	-.681	-.462	-.502	-.374
2006	**Missouri**	115	.642	-.823	-.759	-.614	-.562
2004	**Montana**	56	.708	-.712	-.692	-.383	-.453
2000	**Nebraska**	93	.614	-.691	-.670	-.601	-.576
2002	**Nevada**	17	.777	-.899	-.654	-.753	-.490
2004	**North Dakota**	53	.683	-.619	-.561	-.260	-.237
2004	**Ohio**	88	.644	-.856	-.833	-.625	-.605
2004	**Oklahoma**	77	.568	-.685	-.643	-.121	-.125
2004	**Oregon**	36	.944	-.897	-.891	-.818	-.825
2006	**South Carolina**	46	.082	-.665	-.488	-.178	-.270
2006	**South Dakota**	66	.618	-.570	-.519	-.336	-.302
2006	**Tennessee**	95	.036	-.769	-.625	.028	.005
2005	**Texas**	254	.524	-.747	-.605	-.412	-.150
2004	**Utah**	29	.819	-757	-.660	-.801	-.629
2006	**Virginia**	134	.618	-.827	-.772	-.525	-.458
2006	**Wisconsin**	72	.644	-.646	-.596	-.311	-.237

28 states have had votes on amendments to protect the sanctity of marriage. Most of these have occurred since the Massachusetts court decision (Nov 2003).The language differed across states: either the amendment specifies that *'Marriage is solely between a man and a woman'*, or adds an extra stipulation saying that *'domestic unions would not have the rights accorded to married couple.'* irrespective of the sex of the cohabitants. Results for Hawaii are not included because there are only 5 counties, and also those for Alaska are omitted because of the strange results in numbers voting. In 2006, there are exit polls showing the association between voting on the marriage amendment and other voter characteristics for Arizona, Tennessee, Virginia and Wisconsin.

The partial correlation is net of % Evangelical/Mormon and % Catholic

Table 12: Zero order and partial correlations between the SDT-dimension on the one hand and Vote in favor of banning Same-Sex Marriages (2000-2006, N=2108 counties) and the Vote against Stem-cell Research (Missouri, N=115 counties) on the other.

	Zero order and Partial Correlations	
	SDT and Ban same-sex marriage	*SDT and Ban stem-cell research*
	All counties N=2108	Missouri N=115
No Controls	-.713	-.610
*Controls** for:*		
3 structural variables	-.633	-.303
2 religion	-.594	-.613
2 ethnicity	-.730	-.499
3 structural + 2 religious	-.486	-.347
3 structural + 2 ethnic	-.619	-.246*

All significant at .001 level, except * is significant at .01 level.
**see the "classic seven" in Table 9.

By now it should also come as no surprise that the zero-order correlations between same-sex marriage amendments and the SDT dimension are resistant for statistical controls involving the "classic seven". In Table 11 partial correlations are reported for counties within each state. More specifically, the controls are for the two religion variables, which are the two with the strongest zero-order reduction capacity with respect to both the presidential elections and the same-sex marriage ban referenda. Not surprisingly, also the partials are much higher in the latter case, illustrating that the SDT dimension can again be taken as a very good predictor of the counties' location in the distribution of referendum results, not only across all 26 states, but also within each of them separately.

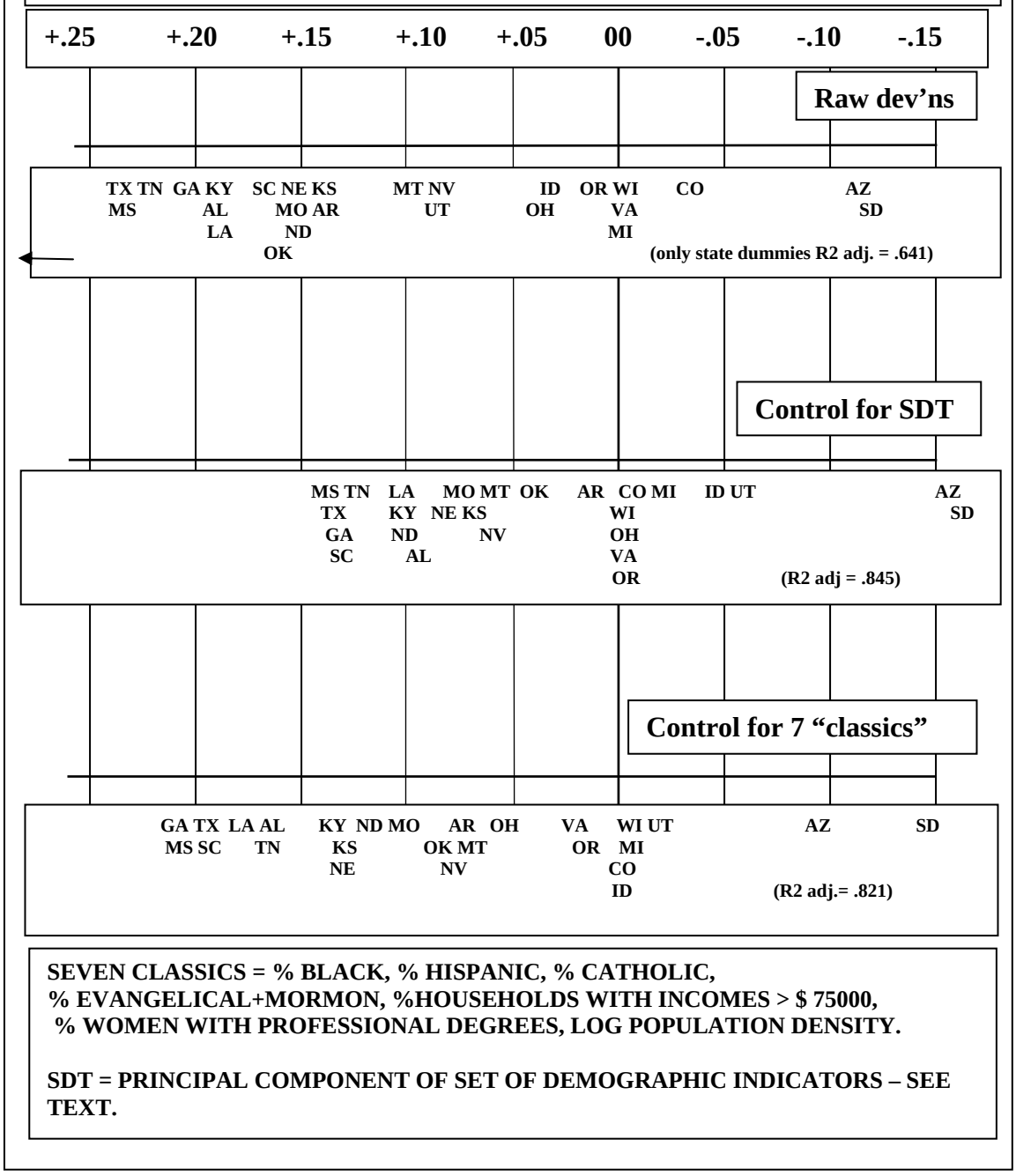
More details are given in Table 12. In this table, all counties are analyzed together, but more extensive controls for the "seven classics" are being performed. In the case of same-sex marriage referenda the zero order correlation with the SDT is -.71, and no combination of the "seven classics" manages to reduce it to the level of statistical insignificance. Not surprisingly, the combination of the three structural variables (log density, household income, women with professional degrees) together with the religious divide produces the strongest reduction in the correlation. But in that case, the partial is still a respectable -.49. Another way to illustrate the point is given in Figure 9. Here we show to what extent the spread of county averages by state re the same-sex marriage ban is being reduced by just predicting the results on the basis of the SDT alone and alternatively by predicting it on the basis of all "seven classics" together. The top part of the figure shows the distribution of the county averages by state, relative to the reference

state which is Wisconsin. The average of the Wisconsin counties was 64 percent in favor of banning same sex marriage. The scale in Figure 9 measures the deviations (in proportions) from .64. If no covariates other than state dummies are in the regression, the raw distribution of state averages is produced. Ecological autocorrelation is of course not negligible since the “state only”- model produces an adjusted R squared of .64.

At the next step, either the SDT dimension or all “seven classics” are added to the regression. Again the sole use of the SDT dimension produces an increase in R squared to the level of .85, and the spread of state by state county averages on the same-sex marriage issue is reduced quite clearly too. The remarkable feature, though, is that the adding in of the SDT dimension fails to explain the negative outliers of the Arizona and South Dakota counties. In all other cases, the state deviations from Wisconsin are reduced by up to 12 percentage points. When the “seven classics” are used, R squared also increases to a respectable level of .82, but the reduction in the spread is less evident: the counties of Arizona and North Dakota remain negative outliers, but at the other end of the spectrum, deviations from Wisconsin are only reduced by some 5 percentage points. It is worth noting that the same feature is observed when exactly the same exercise is performed for the 2004 presidential elections for all 3141 counties (see Appendix 3): the spread of state-wise county averages is reduced *more* when adding the SDT to the regression than when adding all “seven classics” together.

Finally several “technical” dummies were added to the analysis to test the effects of organization features in the same-sex marriage referenda. It turned out that the percentages approving the amendments in the counties were slightly reduced when the referendum was organized after 2004, when it was the result of a citizen initiative rather than of the normal legislative process, and when the amendment was of the stricter type, i.e. also formulating restrictions on cohabitation and not only on same-sex marriage. In terms of extra variance explained, R squared increases from .508 with only the SDT in the regression to .577 with SDT and the “technical” dummies together. When the “seven classics” are added in as well, the adjusted R squared increases further to .620. Starting the prediction in the reverse order would not be bad either, but still not as good: the “seven classics” together explain 44.9 % of the variance as opposed to 50.8 % for the SDT, and the addition of the “technical” dummies would improve the former to the level of 51.4 % as opposed to 57.7% when starting the regression with the SDT.

FIGURE 9: State averages of county results: deviations relative to Wisconsin (ref. cat.= .64 YES) -- Proportions Favoring Ban on Same Sex Marriage.



Finally, as already shown in Table 12, a similar analysis can also be performed for the results of the voting on the ban of stem-cell research in the Missouri counties in 2006. In contrast to the same-sex marriage amendments, this ban was actually defeated. This topic is also a "battleground" issue in the "culture wars" debates, but compared to same-sex marriage, it is much further removed from family issues and every day life styles, and

many people do not realize the significance nor comprehend the nature of stem-cell research. Nevertheless, the prediction of the positions of the 115 Missouri counties on the basis of the SDT-dimension is again quite successful, with a zero order correlation of -.61. Also, controls for the other competing explanations equally fail to reduce the partials to levels that are no longer significant. However, the reductions induced by such controls are more substantial than in the case of the same-sex marriage amendments. More specifically, the control for the religious divide is no longer the most forceful one despite the evangelical mobilization against stem-cell research. Instead, the partial is lowest after controls for the three structural variables (-.303). Particularly female education and household income (% women professional degrees and % households with more than $75,000) are good predictors of these voting results in the Missouri counties, and these variables are therefore effective in reducing the spatial zero-order correlation between the stem-cell vote and the SDT-dimension.

8. Conclusions

In this paper we have tried to show that there is a strong and resistant correlation between the spatial pattern of the SDT in the US and the results of recent presidential elections and referenda. This is not the first time that such robust associations emerge. In fact, the current US version looks quite familiar to those found in several western European countries.

As is usually true for correlations, there are two ways of looking at them. If it can be shown in a reasonable way (proof is impossible) that the correlations are not likely to be merely spurious, then causal interpretations can go either way. In our case, we can argue that the unfolding of the ideational map in the US has codetermined the development of the SDT geography, but also that there is feedback, and that the SDT-map codetermines the subsequent political maps. We think that such a recursive model of co-development has been in operation, and that the spatial correlations in cross-sections are clear traces of it.

The US laboratory in this respect is a very gratifying one: variances are large. And they have been expanding since the 1960s as a result of the full unfolding of less conventional life styles and the rise of alternative forms of family formation along the classic ones. This occurred in tandem with a de-standardization of the life course and a diversification of the values system. Trends in the US, as in Europe, are overwhelmingly toward more heterogeneity in these respects. What is unique to the US is that there has also been a religiously based reaction to the rise of secular individualism, and this increased the variance of the ideational spectrum even more.

Such a diversification is a feature operating within the population at large and affects every newly incoming generation. It is not something that is solely confined to small groups of opinion builders or cultural/religious/political elites. In our view, the current US version of the *Kulturkampf* operates at both levels, i.e. within the public at large and within the cultural pressure groups. The latter are playing intermediate roles: they pick up

the signals in the population, interpret these in their own ideological fashion, and feed their versions back to the public. The outcome is a shifting set of issues in politics *along with* shifting public positions. We therefore think of our findings here as a correction of the Fiorina et al. position that the "Culture Wars" are mainly operating at the level of elites and that there has been little change in the public at large. The American public may definitely be more centrist than the bloggers and elites, but it certainly is very heterogeneous. The two extreme quartiles hold very different views and display very different behaviors as well. The unfolding of the SDT over time in the US and the current SDT geographical contrasts both testify to that effect.

And the bottom line is that political scientists may occasionally benefit from the pictures and collages that demographers put together so diligently ….

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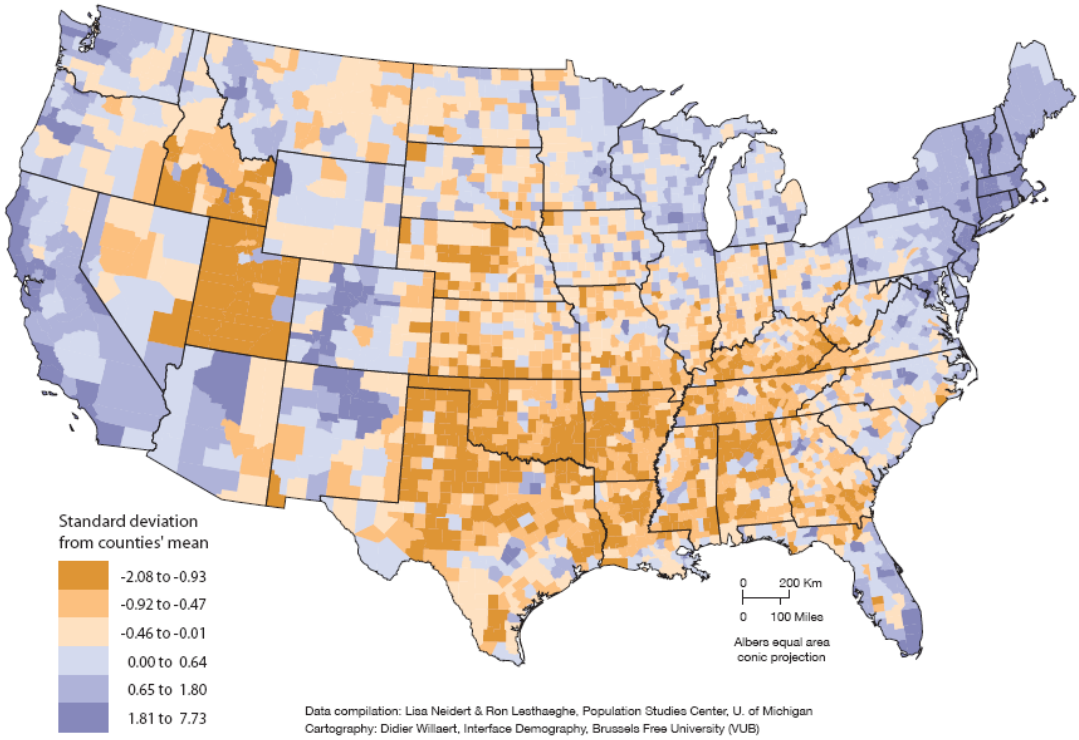
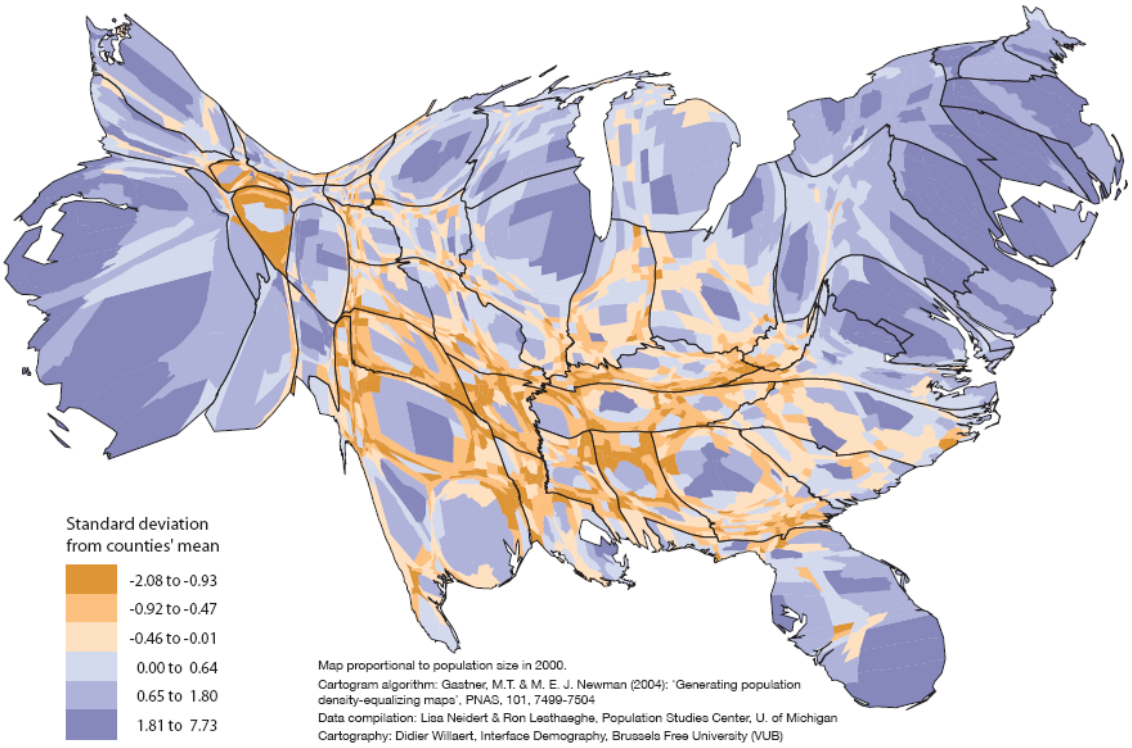
Map of the overall "Second Demographic Transition" factor (SDT) in the US by county

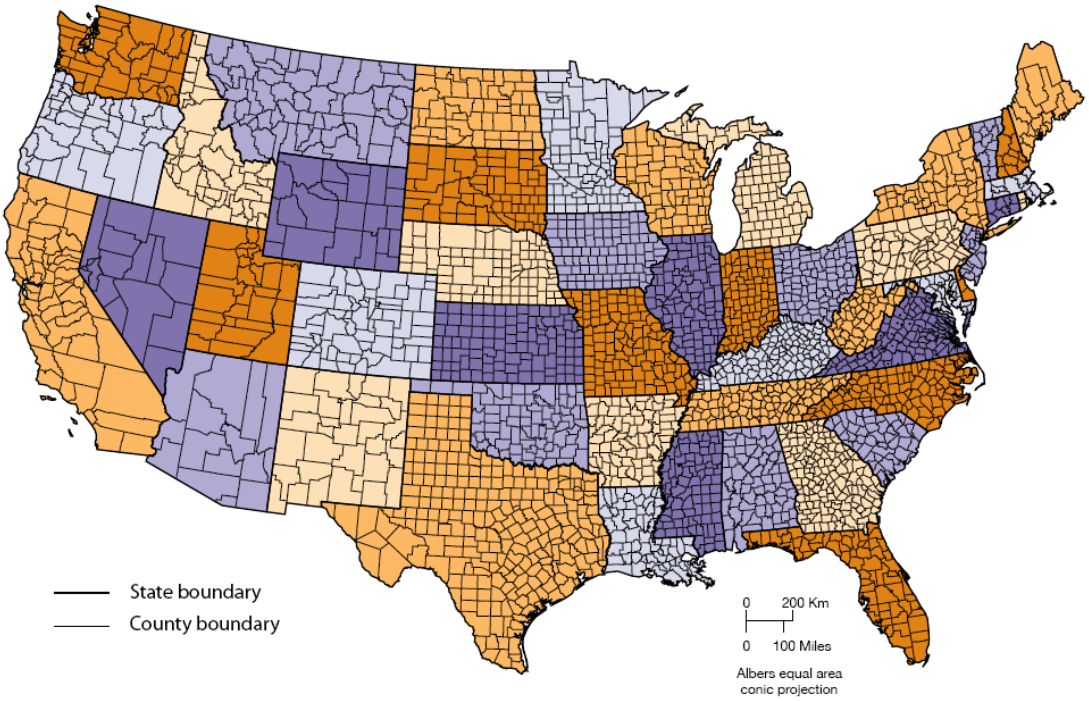


Population cartogram of the overall "Second Demographic Transition" factor (SDT) in the US

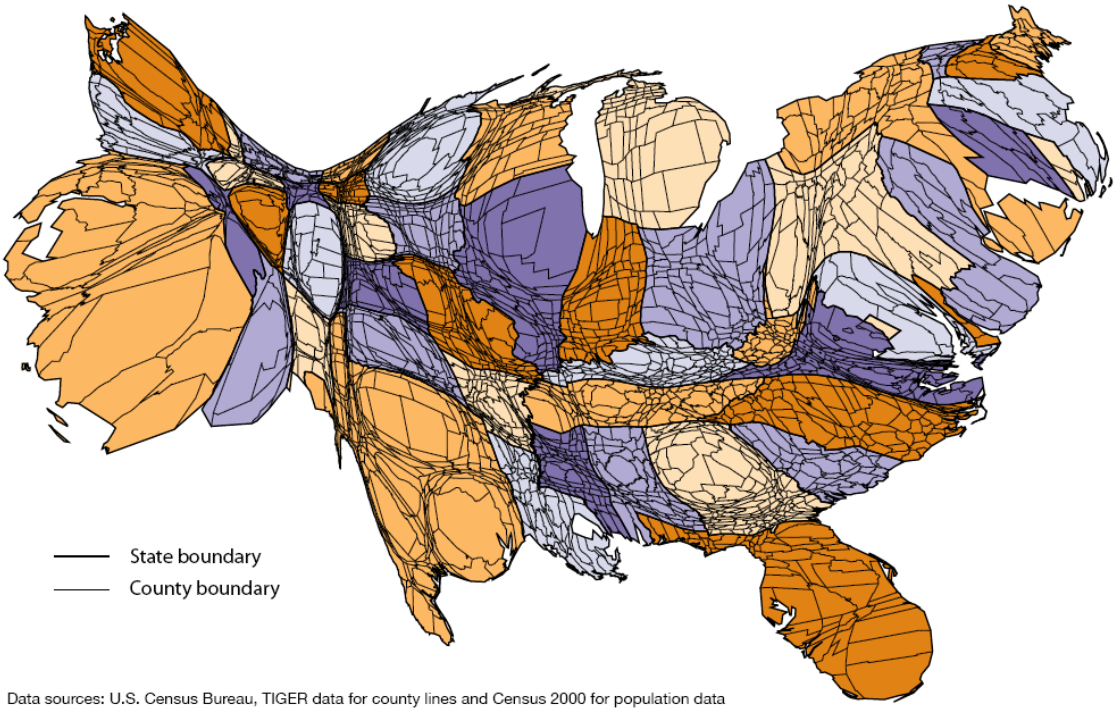


Map proportional to population size in 2000.
Cartogram algorithm: Gastner, M.T. & M. E. J. Newman (2004): 'Generating population density-equalizing maps', PNAS, 101, 7499-7504
Data compilation: Lisa Neidert & Ron Lesthaeghe, Population Studies Center, U. of Michigan
Cartography: Didier Willaert, Interface Demography, Brussels Free University (VUB)

Counties (48 contiguous United States)



Corresponding population cartogram (2000 population)



Data sources: U.S. Census Bureau, TIGER data for county lines and Census 2000 for population data

Cartogram algorithm: Gastner, M.T. & M. E. J. Newman (2004): 'Generating population density-equalizing maps', PNAS, 101, 7499-7504

Cartography: Didier Willaert, Interface Demography, Brussels Free University (VUB)

Appendix 2. State-Specific Same Sex Marriage Amendments Details: Language, Timing, and Vote

State	Year	Date	Strictness	Initiative	Ballot Language	Vote: Percent Yes
AK	1998	Nov 3	Marriage is between a man and woman	Legislature	To be valid or recognized in this State, a marriage may exist only between one man and one woman.	68%
AL	2006	June 6	Marriage is between a man and a woman.	Legislature	Amendment 1 – Proposing an amendment to the Constitution of Alabama of 1901, to provide that no marriage license shall be issued in Alabama to parties of the same sex and the state shall not recognize a marriage of parties of the same sex that occurred as a result of the law of any other jurisdiction.	81%
AR	2004	Nov 2	No privileges for unions	Citizen initiative	Amendment 3 - Amend the state constitution to define marriage as the union of one man and one woman; Arkansas would not recognize same-sex marriages or partnerships from another state; would recognize common-law marriages from other states; the Arkansas Legislature would determine rights of married couples.	75%
AZ	2006	Nov 7	No privileges for unions	Citizen Initiative	Proposition 107 - Proposed amendment to the Arizona Constitution would define marriage as a union solely between a man and a woman; would prohibit the state from creating or recognizing any legal status for unmarried persons that is similar to that of marriage.	49%
CO	2006	Nov 7	Marriage is between man and woman	Citizen Initiative	Amendment 43 - Proposed amendment to Colorado Constitution would define marriage in Colorado as only a union between one man and one woman.	56%
GA	2004	Nov 2	No privileges for unions	Legislature	Amendment 1 - Amend the Georgia constitution to recognize	76%

					that marriage is only the union of a man and a woman; no same-sex marriages from other states or jurisdictions would be recognized by the state; no divorces could be granted by a Georgia judge in the case of same-sex marriages.	
HI	1998	Nov 3	Legislature can decide this issue	Legislature	The Legislature shall have the power to reserve marriage to opposite-sex couples.	69%
ID	2006	Nov 7	No privileges for unions	Legislature	Amendment 2 - Proposed amendment to Idaho Constitution states that a marriage between a man and a woman is the only legally valid domestic union in Idaho.	63%
KS	2005	Apr 5	No privileges for unions	Legislature	SCR1601 – Marriage shall be constituted by one mane and one woman only. All other marriages are declared to be contrary to the public policy of this state and are void. No relationship other than a marriage, shall be recognized by the state as entitling the parties to the rights or incidents of marriage.	70%
KY	2004	Nov 2	No privileges for unions	Legislature	Amendment 1 - Amend the Kentucky Constitution "to provide that only a marriage between one man and one woman shall be a marriage in Kentucky, and that a legal status identical to or similar to marriage for unmarried individuals shall not be valid or recognized"	75%
LA	2004	Sep 18	No privileges for unions	Legislature	Section 15. Marriage in the state of Louisiana shall consist only of the union of one man and one woman. No official or court of the state of Louisiana shall construe this constitution or any state law to require that marriage or the legal incidents thereof be conferred upon any member of a union other than the union of one man and one woman. A legal status identical or substantially similar to that of marriage for unmarried individuals	78%

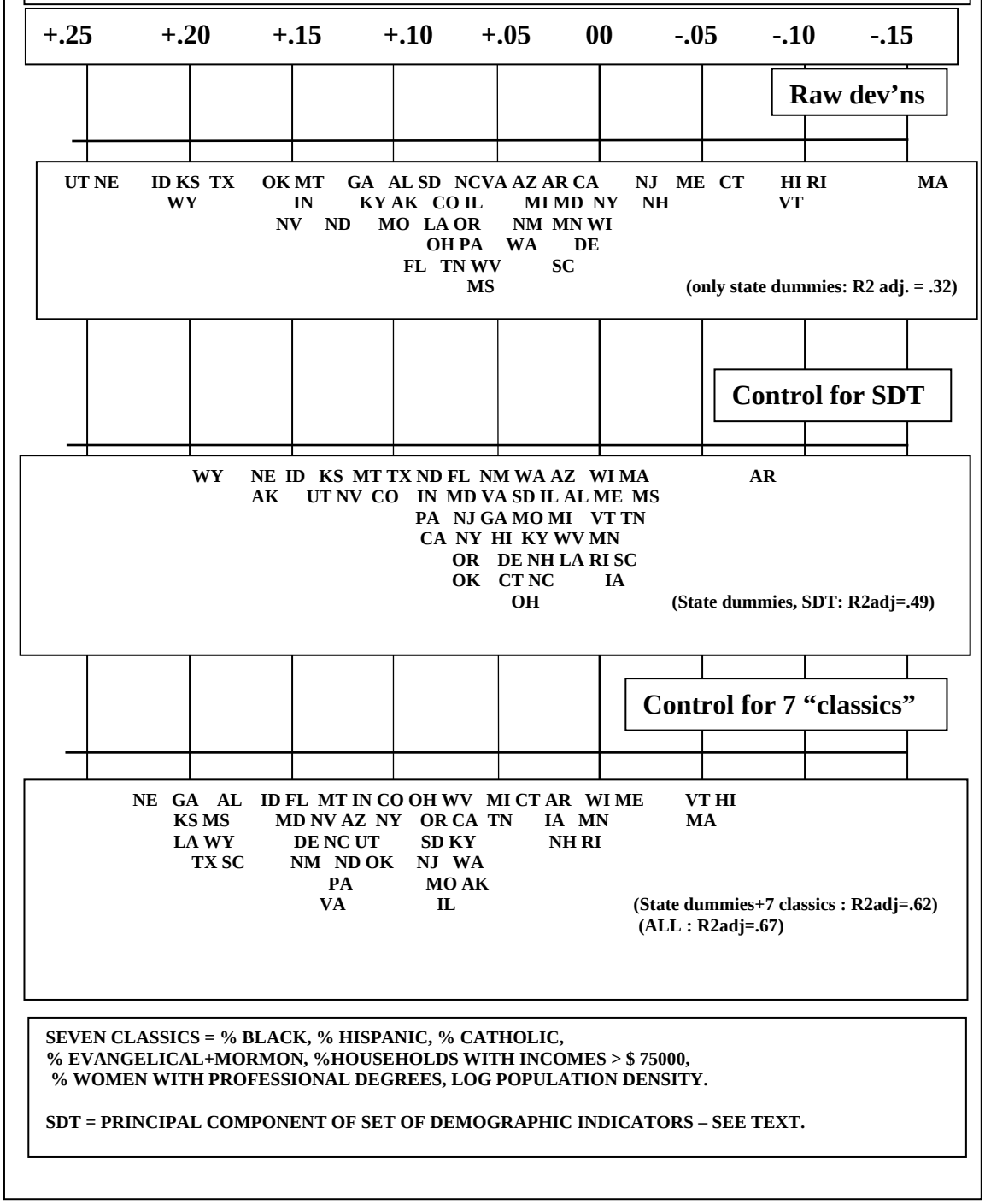
					shall not be valid or recognized. No official or court of the state of Louisiana shall recognize any marriage contracted in any other jurisdiction which is not the union of one man and one woman.	
MI	2004	Nov 2	No privileges for unions	Citizen initiative	Prop 2 - Amend the state constitution to provide that "the union of one man and one woman in marriage shall be the only agreement recognized as a marriage or similar union for any purpose."	59%
MO	2004	Aug 3	Marriage is between man and woman	Citizen initiative	Amendment 2 - That to be valid and recognized in this state, a marriage shall exist only between a man and a woman.	71%
MS	2004	Nov 2	Marriage is between man and woman	Legislature	Amendment 1 - Amend the state constitution to recognize marriage may be valid only when between a man and a woman; provides that a marriage from another state or foreign jurisdiction between persons of the same gender is void in Mississippi.	86%
MT	2004	Nov 2	Marriage is between man and woman	Citizen initiative	Initiative 96 - Amend the state constitution effective immediately to define civil marriage as between a man and a woman; prohibits marriage between persons of the same sex; marriages performed in other states would be recognized in Montana only if between a man and woman.	67%
ND	2004	Nov 2	No privileges for unions	Citizen initiative	Constitutional Measure 1 - Marriage consists only of the legal union between a man and a woman. No other domestic union, however denominated, may be recognized as a marriage or given the same or substantially equivalent legal effect.	
NE	2000	Nov 7	No privileges for unions (weak version)	Citizen initiative	Initiative 416 - Only marriage between a man and a woman shall be valid or recognized in Nebraska. The uniting of two persons of the	70%

					same sex in a civil union, domestic partnership, or other similar same-sex relationship shall not be valid or recognized in Nebraska.	
NV	2002	Nov 5	No privileges for unions	Citizen initiative	Question 2 - Only a marriage between a male and female person shall be recognized and given effect in this state. Voted on in two consecutive general elections (2000; 2002).	67%
OH	2004	Nov 2	No privileges for unions	Citizen initiative	Issue 1 - Amend the Ohio Constitution to recognize marriage as a union between one man and one woman; neither the state nor counties can give legal status to unmarried individuals whose relationships are intended to approximate the design or effect of marriage.	62%
OK	2004	Nov 2	No privileges for unions	Legislature	Question 711 - Amend the state constitution to define marriage as being between one man and one woman; only married people are eligible for the benefits for married people; same-sex marriages from other states are not valid in Oklahoma; it would be a misdemeanor to issue a marriage license in Oklahoma; by adding Section 35 to Article 2.	76%
OR	2004	Nov 2	Marriage is between man and woman	Citizen initiative	Measure 36 - Amend the Oregon Constitution to say that the state's public policy is that only a marriage between one man and one woman shall be legal. (Oregon statutes refer to out-of-state marriages as legal except where the marriage violates Oregon public policy).	57%
SC	2006	Nov 7	No privileges for unions	Legislature	Amendment 1 - Proposed amendment to South Carolina Constitution would specify that the institution of marriage in South Carolina consists solely of the union between one man and one woman. No other domestic union	78%

					would be recognized as valid or legal. The state would be prohibited from creating or recognizing any right or claim respecting any other domestic union, whatever it may be called, or from giving effect to any such right or benefit recognized in any other state or jurisdiction.	
SD	2006	Nov 7	No privileges for unions	Legislature	Amendment C - Proposed amendment to South Dakota Constitution would define and recognize marriage solely as a union between a man and a woman. It would also prohibit the Legislature from allowing or recognizing civil unions, domestic partnerships or other quasi-marital relationships between two or more persons regardless of sex.	52%
TN	2006	Nov 7	Marriage is between man and woman	Legislature	Amendment 1 - Proposed amendment to Tennessee Constitution would define marriage as a contract between one man and one woman.	81%
TX	2005	Nov 1	No privileges for unions	Legislature	Prop 2 - The constitutional amendment providing that marriage in this state consists only of the union of one man and one woman and prohibiting this state or a political subdivision of this state from creating or recognizing any legal status identical or similar to marriage."	76%
UT	2004	Nov 2	No privileges for unions	Legislature	Amendment 3 - Amend the Utah Constitution to recognize that marriage consists only of the legal union between a man and a woman; no other domestic union would be recognized as a marriage or given the same or substantially equal legal effect; amendment would take effect on January 1, 2005.	66%
VA	2006	Nov 7	No privileges for unions	Legislature	Ballot Question 1 - Proposed amendment to Virginia	57%

					Constitution would define marriage as a contract between one man and one woman. It would also ban the future creation or recognition of "another union, partnership, or other legal status to which is assigned the rights, benefits, obligations, qualities or effects of marriage."	
WI	2006	Nov 7	No privileges for unions	Legislature	Referendum 1 - Proposed amendment to Wisconsin Constitution would define marriage as a contract between one man and one woman. It also states that "a legal status identical or substantially similar to that of marriage for unmarried individuals shall not be valid or recognized in this state."	59%

Appendix 3: Proportions voting for G.W. Bush in 2004: state averages of county results, before and after controls; deviations relative to Wisconsin (ref. cat = .506). N=3141 counties.



SEVEN CLASSICS = % BLACK, % HISPANIC, % CATHOLIC, % EVANGELICAL+MORMON, %HOUSEHOLDS WITH INCOMES > $ 75000, % WOMEN WITH PROFESSIONAL DEGREES, LOG POPULATION DENSITY.

SDT = PRINCIPAL COMPONENT OF SET OF DEMOGRAPHIC INDICATORS – SEE TEXT.