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When Do States Respond to Low Fertility? Contexts of State Concern in Wealthier Countries, 1976–2011

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Abstract

Since the 1970s, expressions of state concern over low fertility have greatly increased among wealthier countries. This study asks to what extent this increase is explained by demographic factors, national-level economic and political factors, and processes of international diffusion and changing international norms. Analyses integrate the world polity literature on global policy diffusion with a social problems approach to examine international diffusion of state concern among more powerful members of the world polity, a process that can produce changes in international policy consensus. Comparisons of the characteristics of states that do and do not express concern over low fertility find that among wealthier “first-world” countries, state concern has become more responsive to fertility rates: fertility rates are not significantly associated with concern early in the study period, but are strongly associated with concern later in the study period. There is no evidence that integration into the world polity is associated with concern in these countries, and some evidence that less integrated countries are more likely to express concern, suggesting that processes shaping the diffusion of state concern may differ from those identified as shaping policy diffusion in the existing literature. Among “second-world” former Eastern bloc countries, different patterns of associations reflect different political histories: concern is associated only with demographic factors, with no significant change in this association over time.

Introduction

Over the past 50 years, fertility rates declined to very low levels in many wealthy countries. In most Western European countries, the total fertility rate (TFR) dropped below the replacement level of 2.1 children per woman by 1975, and remains below replacement level today. In several of these countries, TFR has remained at very low levels (below 1.6) since at least 1990 (INED 2014). These low fertility rates have received intensifying attention in the mass media and in academic publications. The *Economist* published a special report (2009) with the heading “Most of the rich world is short of babies,” while a *New York Times Magazine* story on low birthrates across Europe was headlined “No Babies?” (Shorto 2008). Meanwhile, in academic journals, demographers warned of a “turning point” for Europe’s population (Lutz, O’Neill, and Scherbov 2003), and discussed prospects for policy responses to low fertility (e.g., McDonald 2006; Sleebos 2003).

During this period, expressions of state concern over low fertility have also increased. Among countries the United Nations (UN) considers “more developed,” the proportion reporting that fertility is too low has increased greatly since this information was first

published in 1976 (figure 1). This study examines this increase in state concern to determine how various national-level and international factors account for the increase, addressing two questions. First, to what extent is state concern explained by national-level demographic changes, versus national-level economic and political factors? Second, to what extent are international processes associated with the increase? Has state concern become more responsive to fertility rates over time, indicating a shift away from Western European postwar sensitivity that led nations to avoid discussion of policies to address low fertility? Is diffusion of concern more likely among countries that are more integrated into international structures, as predicted by theories of policy diffusion in the world polity literature?

Applying a social problems perspective, in which the definition of phenomena as “social problems” is seen as a social process itself worthy of explanation, this study explores an aspect of policy diffusion not addressed in existing studies: the diffusion of *state concern*. Much of the policy diffusion literature focuses on policies that address issues legitimized through strong consensus by powerful members of the world polity, such as democracy or human rights (e.g., Koo and Ramirez 2009; Torfason and Ingram 2010). Such consensus often receives official support from international organizations through both symbolic and material means. Presumably, powerful countries agree that policies are needed to address an issue only after they first agree that the issue is a problem. This analysis examines processes that operate before consensus is reached among core international policy actors, analyzing the factors associated with the rise of state concern among powerful countries.

Focusing on state concern rather than policy enactment as the outcome of interest, these analyses examine the occurrence of explicit public acknowledgments by state actors that fertility is too low—acknowledgments that may influence other actors and affect diffusion processes in the wider community, even when they do not result directly in policy changes.¹ State concern may not translate into state action for a variety of reasons: funding may be limited; the issue may not be considered a legitimate target for state intervention; or concerned parties may not agree on an effective course of action. However, expressions of state concern themselves are likely to promote further concern, particularly when international consensus is changing over time, and may signal intent prior to state intervention. As this study will show, state concern is associated with, but empirically distinct from, state intervention, and thus deserves attention in its own right.

The recent rise in concern over low fertility is an interesting case for investigating how state concern spreads across an international community. This study addresses complexities in the relationship between fertility levels, state concern, and state policy highlighted by some demographic researchers. For instance, some have noted apparent inconsistencies in fertility rates and state concern, as France was “dissatisfied” with a TFR of over 1.8 in 1989, while Austria, Portugal, and Spain were “satisfied” with TFRs below 1.5 (Gauthier 1996, 130). Others have described a disconnect between state concern and policy interventions. One study found that in 1999, six out of seven European countries reporting that their national fertility levels were too low also reported no state intervention in this area (Stark and Kohler 2002). Such observations raise the question of what factors, in addition to demographic trends, might shape state concern.

This study also addresses suggestions in the demographic literature that an independent cultural shift may have occurred in public discussion of low fertility in recent decades. Some prominent demographers have posited that norms preventing discussion of low fertility as a policy issue deterred state responses to fertility decline in wealthier countries after World War II. They argue that these norms arose because of “pronounced public resistance to explicitly pronatalist policies” explained in part by “infamous birth promotion programs in past fascist regimes” (Lutz, O'Neill, and Scherbov 2003, 1992; see also McDonald 2006). Demeny notes: “Governments of low-fertility countries ...explicitly disclaim even a concern about low birth rates” (2005, 3). In 1993, the Secretary General of the Council of Europe remarked that “the word ‘population policy’ arouses rather unpleasant memories in some countries, because governments talked of population policies in the darker periods of history” (Lalumière 1994, 21).

In recent decades, however, nations and international organizations seem more willing to discuss low fertility. International governmental organizations such as the Council of Europe, the Organization for Economic Cooperation and Development, the European Union, and the UN have explicitly addressed the issue of below-replacement fertility (Council of Europe 1994; Mahon 2006), lending legitimacy to public discourse of this issue. Did this change simply result from increasingly stark demographic changes—including declines in fertility—witnessed by many wealthier countries over the past 40 years? Or is this shift in the acceptability of state concern independent of demographic changes? As the “dark period” of state involvement in fertility during the first half of the 20th century recedes from view, do politicians feel less constrained about discussing state responses to low fertility?² To answer these questions, this study analyzes the relationships between expressions of state concern and measures of national-level characteristics and international processes. Additional analyses will also examine the relationships among these national and international factors, state concern, and state intervention.

Analyses use longitudinal data from a UN survey soliciting state views on population and population policy (currently published as *World Population Policies*). Data on emerging social problems must be approached with caution, because data collection often occurs only after the phenomenon has been recognized as a social problem. In this case, however, the UN collected these data mainly in response to *high* fertility, a major international concern in the 1960s when the survey was initiated (Symonds and Carder 1973, chapter 12). These data thus allow observation of the course of diffusion in international concern about the problem of *low* fertility from early to later stages. The data also allow longitudinal comparisons of the demographic, economic, and political characteristics of nations that do and do not report low fertility rates, as well as estimates of how international processes impact state concern when these national-level characteristics are accounted for.

Social Problems, Social Policy, and Low Fertility

The main innovations of this study are direct observation of state concern (as distinct from policy adoption) and international comparative analysis of concern over time, allowing new perspectives on how state actors come to define issues as problems requiring state attention. Analyses of state concern abound in the social problems literature, which examines how and

why certain issues come to be understood as problems requiring action (Hilgartner and Bosk 1988). However, this literature relies mainly on national-level case studies, leaving aside international processes that may affect the construction of social problems (Best 2001). A notable exception is Benson and Saguy's study of social problems in global context, which provides a theoretical framework for examining “*how, when, and why* cross-national similarities or differences [in social problems discourses] are created, maintained, or contested” (2005, 255). Thus far, empirical work using this approach examines the framing of social problems, focusing on the content of media coverage (Benson and Saguy 2005; Saguy, Gruys, and Gong 2010).³ This study applies this research agenda more broadly in cross-national analyses of factors that lead state actors to define issues as social problems. By examining the conditions under which states expressing concern over low fertility have gone from a small minority of wealthier countries to a majority, these analyses illuminate how once-marginalized discourse and action can gain legitimacy in the international community.

Despite recent interest in low fertility and related policies, including much research examining effects of policies on fertility, no quantitative cross-national studies have examined when state actors are most likely to explicitly address low fertility. The difficulty of understanding the causal effects of policy on demographic trends without a better understanding of the causal effects of demographic trends on policy adoption has been noted (Castles 2003). Many studies have examined the related topic of cross-national variation in social benefit provision, including family benefits, and some have analyzed the relationship between social context and policy development (e.g., Wennemo 1992; Misra 2003). This analysis expands upon those studies of social welfare policies in two important ways. First, existing studies address the broader realm of family policy, which serves many goals and may not be intended to (or not be admitted to) affect fertility. Determining whether family policy is intended to address concerns about fertility requires in-depth research on legislative debates and media coverage, and requires adjudicating among conflicting accounts of intent. In contrast, the current study examines *explicit* state acknowledgments of concern about low fertility. Second, unlike many studies that use cross-sectional comparisons of social policy across national contexts, this analysis explicitly considers changes over time.

Aside from a few qualitative studies that discuss how cross-national differences in population policy arose in Western Europe (Heeren 1982; McIntosh 1983), few analyses compare state-level reasons for enacting policies that respond to low fertility. Given this lack of accounting for variation in policy response across countries and over time, a recent special issue of the *Journal of European Social Policy* featured case-study research on this issue (Matzke and Ostner 2010). However, each of these case studies considered only one or two national contexts, and they were not integrated into a larger cross-national comparison. To date, no quantitative cross-national analysis of state responses to low fertility has been published.

International Policy Diffusion and State Concern

As the world becomes increasingly integrated across national borders, international institutions influence national-level policy debates and policy adoption. This influence may

occur through formal organizational mechanisms, such as rulings by the European Court of Human Rights or the World Trade Organization, or international treaties. It may also occur through less explicit processes, such as normative expectations for current or aspiring members of international organizations. A growing literature on international policy diffusion has demonstrated the influence of international institutions on policy adoption (e.g., Meyer et al. 1997; Ramirez, Soysal, and Shanahan 1997; Frank, Hironaka, and Schofer 2000; Frank, Camp, and Boutcher 2010). These studies have shown that national policies often reflect a desire for legitimacy before international audiences, drawing on the neoinstitutionalist insight that “organizations are thought to enact scripts composed of standardized elements deemed legitimate in their environments” (Hafner-Burton and Tsutsui 2005, 1382). Desire for legitimacy can produce a decoupling of policy adoption from actual practice, as practices like treaty ratification can be a “symbolic gesture ... to gain legitimation in international society” (Hafner-Burton and Tsutsui 2005, 1383), and corporate social responsibility frameworks are often “ceremonial commitments” not resulting in corresponding actions (Lim and Tsutsui 2012). This study examines the processes by which a state position—concern over low fertility—can change from non-legitimate to legitimate, by analyzing the conditions under which state actors express concern during the period before its legitimacy has been established.

Studies of population policies in the world polity literature have found that 20th-century national population policies were shaped by discourse within international organizations, governmental and nongovernmental. International organizations strongly influenced worldwide concern about high fertility in the 1960s and 1970s. Discussing how changes in national population policy followed from the influence of international organizations in recasting the issue, Barrett and Frank (1999) assert that “countries had to be taught that population regulation was in their national interest” (220). Researchers found that countries adopting national policies to lower population growth received significantly more international aid support (Barrett and Tsui 1999). Another study found that diffusion processes were shaped by national wealth and power, as wealthier countries facilitated the diffusion of population-control measures in less wealthy countries, but not at home (Barrett, Kurzman, and Shanahan 2010).

The current study builds on these findings, asking to what extent national and international factors are associated with the diffusion of the idea that *low* fertility is a problem that deserves state attention. It examines whether state officials' public expressions of concern over low fertility, which may be precursors to national policy adoption, follow the pattern found in existing studies of global policy diffusion, with more internationally integrated countries more likely than less integrated countries to express concern. It thus asks whether diffusion processes observed in the spread of policies from wealthier to less wealthy countries are also observed in the spread of concern within the community of wealthier countries at the core of the world polity.

Hypotheses

Analyses will test the extent to which the increase in concern over low fertility is associated with (1) national-level demographic characteristics, (2) other national-level characteristics

including economic and political factors, and (3) processes independent of national-level characteristics: international integration and changes over time in state response to demographic factors.

Several national-level characteristics are expected to be associated with expressions of state concern over low fertility. State actors are expected to respond to demographic indicators, with lower fertility rates associated with higher probability of state concern. Higher old-age dependency ratios (higher ratios of retirement-age to working-age people) are also expected to be associated with higher probability of concern, as one of the most widely cited rationales for concern over low fertility is that low fertility rates lead to population aging, which can affect national productivity and the maintenance of social welfare systems.

Migration may also affect state concern over low fertility. Higher immigration rates may decrease concern about low fertility by increasing the size of the working population. But they may instead increase concern about low native birth rates if there are worries about the native-born populations being “crowded out” politically and culturally, as well as demographically, by immigrant populations. In multivariable models controlling for both age structure and net migration, higher levels of immigration are thus expected to be associated with higher probability of state concern about low fertility.

Economic and political factors may also be related to state concern. Although lower birthrates have been associated with economic development in less wealthy countries, it has been argued that prolonged low fertility rates could damage economic performance in wealthier nations. Lower indicators of economic performance are thus expected to be associated with higher probability of state concern. The political outlook of the government is also expected to be related to state concern. As discussed above, in post-WWII liberal democracies, pronatalist views have generally been associated with the political right and rarely with the left. Greater representation of left-leaning parties in national government should therefore be negatively associated with state concern. Eastern European countries are not expected to follow this pattern, however, due to their particular political history.

In addition to national-level factors, this study also examines relationships between international processes and state concern. As suggested by past studies of policy diffusion, it is expected that greater integration into the international community will be positively associated with state concern.

Another international process hypothesis is derived from arguments that norms against state expressions of concern over low fertility have suppressed such expressions. If such suppression has diminished over time, this would be reflected in an increase in state concern, independent of the other characteristics described above. Therefore, a positive time trend in state concern, net of changes in other characteristics, is expected. Such a change in international norms could also result in a changing relationship between state concern and fertility rates. If norms suppressing state responses weakened over time, leading states to become progressively more responsive to demographic indicators, then fertility rates are expected to be more strongly associated with state concern at the end of the study period than at the beginning. Thus a significant, positive interaction between fertility rate and time

of observation is expected. Associations between concern and year of observation, or between concern and the interaction of fertility rate and year, cannot provide conclusive evidence for the existence of such a cultural shift in international norms, but would be consistent with such a shift.

Another international factor expected to be related to concern is regional differences between Eastern European countries and the other countries in the analysis. The UN-designated “more developed” countries include both the “first-world” countries of North America, Western Europe, Japan, and Australia, and the “second-world” countries of the former Eastern bloc. (The Data and Measures section contains further discussion of the term “more developed.”) Countries in these two groups are expected to differ due to their very different political histories. During the Soviet period, countries in the Eastern bloc experienced high levels of state involvement in the private sphere and family life, a political legacy expected to affect the post-Soviet period as well. Thus, Eastern bloc countries are expected to be more likely to express state concern over low fertility than other countries. Additionally, since population policy to address low fertility was not considered politically sensitive in this region, no shift in norms over time is expected for these countries—their responsiveness to fertility rates is not expected to change over time, net of national-level factors. International integration is not expected to be associated with concern, either, since the hypothesized diffusion process does not apply to the former Eastern bloc.

Data and Measures

Dependent Variables

The 43 countries included in the analysis are those the UN considers in “common practice” to be “developed” (United Nations 2013b, 37), excluding six such countries with populations below 100,000 (see table 1 for full list). These are the countries among which concern over low fertility has significantly increased since the 1970s.⁴ Of the 43 countries, 19 are former Eastern bloc countries, referred to henceforth as “Eastern.” The 24 non-Eastern bloc countries are referred to henceforth as “Western” for simplicity, although they include countries in North America, Asia, Oceania, and Western Europe.

The main outcome of interest, state concern, is measured by whether the state considers the nation's fertility level “too low,” rather than “satisfactory” or “too high.”⁵ (Only Albania and Macedonia considered fertility too high at any time during the study period.) This measure of state concern about low fertility is taken from the UN's Population Policy Data Bank (published in the series *World Population Policies* and *National Population Policies*). The UN issued 17 reports on population policies of governments worldwide between 1976 and 2011. Data were compiled in two-year intervals, except in the 1980s, when the interval was three years. The Data Bank uses information from a variety of sources for its classifications. The first source is “official government responses to the *United Nations Inquiry among Governments on Population and Development*,” which has been conducted eight times since 1976 (UNPD 2013, 2).⁶ In years in which no inquiry is conducted, and in the case of nonresponse, the UN uses other sources to classify the states' positions, including “publications, documents, speeches, and other materials issued by Governments ... materials provided by international organizations ... [and] non-governmental materials” (UNPD 2013,

2). The UN reports thus represent both state actors' self-representations of government concern and UN staff's evaluations of state concern.

As noted above, this data source is valuable for these analyses because it records state concern about low fertility over time from a point before concern was widespread, and because the data were collected the same way from year to year and as part of a larger questionnaire on population policy. However, potential shortcomings of these data must also be considered, including threats to both the accuracy of the data and the consistency of the two data sources: state-level responses to the UN survey and UN staff classifications.

First, although the UN requests information about the party completing the survey, it is not always provided, and is not included in the records available to researchers. Responses may be provided by high-level parties with accurate knowledge of the issue in some countries but not others. Such inaccuracy is likely to increase random error in the outcome variables. If survey participants from states less concerned about low fertility gave survey responses that were less accurate (had more random error) than did participants from states more concerned about low fertility, this would result in a bias toward null findings. This inaccuracy would thus not threaten findings of differences between the two groups.

Bias due to inconsistency of data across the two sources (state-level survey responses versus UN staff classifications) is also a potential concern. Although the Policy Data Base and related publications do not identify how observations were obtained, upon request the UN Population Policy Section provided this information for the study years 1989, 1995, 2001, and 2005. Between 63 and 67 percent of the observations for each of these years were based on survey responses, a level of nonresponse that warrants further investigation. Bias due to inconsistency of data source could occur if both (1) some countries systematically did not respond to the survey due to unobservable characteristics related to the outcome of interest, and (2) UN classifications systematically differed from states' self-reports. For example, states that are more cautious about reporting concerns due to political sensitivities could be less likely to respond to the survey, and UN staff could have fewer qualms about reporting state concerns than states themselves do. However, since the survey asks about views and policies on a wide variety of population issues, including overpopulation, teen pregnancy, and AIDS, the likelihood is low that reluctance to report concern over low fertility would drive nonresponse. That likelihood is further reduced by the option to report "no official position" on fertility levels (see note 5).

Since survey nonresponse could result in bias through other mechanisms, and since the form of bias due to nonresponse described above is unlikely but not impossible, the extent to which nonresponse is concentrated among certain countries was examined. During the four study years in which detailed data on nonresponse are available for the Western region, only three of the Western countries did not respond to any of the surveys: Germany, Iceland, and Ireland. For the Eastern region, detailed data on nonresponse are available for three points in time after 1993, when the full analysis of Eastern countries begins. Only two Eastern countries do not respond to the survey at any of these three times: Albania and Slovenia. Results from analyses excluding never-responding countries are compared to those from the full sample (see Additional Analyses below). Differences between results for these two

groups are not large, and mainly affect results for international integration for the Western region.

Supplementary analyses of state intervention also use reports of intervention from the UN Population Policy Data Bank. States are classified as having policies to raise, maintain, or lower the population, or as having no intervention—categorized here as no versus any intervention. The existence of a policy, rather than distinctions among kinds of policies, is most relevant for these analyses.

Independent Variables

Covariates include fertility rate, age structure of the population, net migration rate, national wealth, political position of the national government, integration into the international community, time of observation, and the interaction of time of observation and fertility rate. Period total fertility rate (TFR) is used to measure fertility.⁷ In regression models, TFR is lagged by one year, and measured in tenths to facilitate interpretation of coefficients. TFR is obtained from the Institut National d'Études Démographiques (INED 2014), with missing values filled in from Eurostat (Eurostat 2014a) and the Organization for Economic Cooperation and Development (OECD 2014).

Age structure is represented by the old-age dependency ratio—the number of people aged 65 and over per 100 people aged 15–64 in the population. This yearly measure is from Eurostat; missing data are interpolated from adjacent years in cases with small gaps (Eurostat 2014b), and all values are lagged by one year. Missing values for cases with no nearby values in Eurostat are replaced with UN estimates, available every five years, using the closest preceding year. Migration rates are measured using UN estimates of net migrants (immigrants less emigrants) per 1,000 people in the population (UN 2013a). This measure is available only as a five-year mean at five-year intervals, and is lagged in the analysis. For example, the migration rate used as a covariate of an observation in 1978 is the mean value, 1970–1975. National wealth is measured in thousands of US dollars using yearly real gross domestic product (GDP) per capita, adjusted for inflation, from the Penn World Table (Heston, Summers, and Aten 2012).⁸ The political position of the national government is measured using the percent of the cabinet composed of members of left-leaning parties, from the Comparative Political Dataset (Armingeon et al. 2014). Political position is measured in tens of percentage points, to facilitate interpretation of coefficients. Unfortunately, this variable is available for only a few of the countries in the Eastern region, and therefore must be omitted from analyses of the Eastern region. For the Western region, this variable is missing for only six observations, all for the country of Malta.

Integration into the world community is measured using the political globalization index from the KOF Index of Globalization (Dreher 2006; Dreher, Gaston, and Martens 2008). The political globalization index includes four measures, weighted approximately equally: number of embassies, membership in international organizations, participation in UN Security Council Missions, and international treaties. This index was rescaled to reflect a country's international integration relative to that of other countries for that year: each observation's value was divided by the mean value of the index for that year. Values greater than 1 indicate above-average integration in a given year, while values less than 1 represent

below-average integration for that year. Separate indices were constructed for each region to facilitate separate analyses by region.

Alternate models were also estimated using other measures of international integration: counts of membership in international governmental organizations (IGOs) and international nongovernmental organizations (INGOs). An index for each type of membership was created, with the raw membership count for a given country in a given year divided by the mean membership count for all countries in that year.⁹ INGO membership is taken from a summary table provided by the Union of International Associations (UIA), compiled from its *Yearbook of International Organizations* (UIA, 1978–2013).¹⁰ IGO membership is taken from version 2.3 of the International Governmental Organizations Data, updated through 2005 (Pevehouse, Nordstrom, and Warnke 2004). Years after 2005 are taken from the summary table provided by the Union of International Associations.

Time of observation is measured using dummy variables for each of three time periods, each containing approximately equal numbers of observations: 1976–1989, 1990–2000, and 2001–2011. The interaction of fertility rate with these time periods is also used. Models that treat time as a linear variable, and construct the interaction of time with fertility rate as the product of the centered value of each variable, produce similar results (discussed below). Categorical variables for time period are presented to simplify interpretation, particularly of interactions.

Analytic Approach

Multivariable logistic regression is used to examine the relationship between expressions of state concern about low fertility and measures of national-level characteristics and international processes. The unit of observation is the country-year. In all logistic regression analyses, standard errors are inflated to correct for clustering of observations by country using the cluster command in Stata 13.

Empirical tests of whether the Eastern and Western regions differ significantly are first conducted to determine whether separate analyses of the two regions are justified. A multivariable logistic regression model predicting state concern using pooled data from all countries, and including a dummy variable for region, finds a large and significant association between Eastern region and state concern (results not shown). This association holds when all other covariates are included in the model. A Chow test of multivariable logistic models of the Eastern and Western regions rejects the null hypothesis that the same model provides a good fit for the data from both regions (results not shown). These tests confirm theoretical expectations of significant differences between the two regions.

In analyses of the Eastern region, the study period starts in 1993, after the dissolution of the Soviet Union. This truncation is necessary because state concern is observed for only eight Eastern countries before 1991, but for all 19 Eastern countries starting in 1993. Some of these countries did not exist earlier, and for others no earlier data are available. For the eight countries observed throughout, the extensive social, economic, and political changes of 1991 would be incompatible with a model assuming continuity in demographic, economic, and

political processes before and after this point, and there are too few observations to model the earlier period separately.

Additional analyses of both regions test the robustness and validity of the results presented. Models using alternative specifications of variables representing international integration and time are tested, along with models with additional national-level covariates. The relationship between state concern (the main outcome examined in this study) and state intervention (the outcome more commonly found in the policy diffusion literature) is also investigated.

Results

Main Findings

Table 1 presents descriptive statistics for the Western and Eastern regions. For each covariate and each region, the first column displays the mean value for observations in which states report that fertility is too low. The third column displays the mean value for observations in which states do *not* report that fertility is too low. For the Western region, most hypothesized differences are significant in the expected direction, with three exceptions: state concern is associated with higher, not lower, GDP; no significant difference is found by representation of left-leaning parties in national government; and no significant difference is found by international integration. For the Eastern region, all hypothesized differences are significant in the expected direction. Political composition is not presented for Eastern countries because these data are missing for 133 observations.

During the entire study period, state concern was documented in 33 percent of the Western observations and 77 percent of the Eastern observations.

Table 1 highlights differences in many of the covariates of interest between the Eastern and Western regions. For example, means for both groups in the Eastern region are lower than means for both groups in the Western region for migration rates and GDP.

Bivariate relationships may simply reflect co-occurring processes: many of these countries simultaneously experienced lower fertility rates, higher GDP, older populations, and higher migration rates. Multivariable models allow disentangling of the relationships among these co-occurring processes and the outcome of interest—state concern. Results of multivariable logistic regressions for each region are presented in table 2, with three models (1a, 1b, and 1c) for each region. Model 1a shows associations with all covariates except time period and the interaction of time period with fertility rate. Model 1b adds time period, and model 1c adds the interaction of time period with fertility rate.

Western Region Results

Results for model 1a in the Western region show that when observations from different time periods are pooled (time is *not* accounted for), a 0.1 higher total fertility rate is associated with 38 percent lower odds of state concern, all else held equal—a large association that is significant at the 0.01 level. A significant association with old-age dependency ratio is also observed: one more retirement-age person per 100 working-age people in the population is

associated with 27 percent higher odds of state concern, all else held equal. The association with migration rate is also significant, with one more migrant per 1,000 individuals also associated with 27 percent higher odds of state concern. No significant association is found between GDP and state concern in model 1a. An association between political position and state concern is in the expected direction, but only marginally significant: a 10-percentage-point higher representation of left-leaning parties is associated with 6 percent lower odds of state concern.

Turning to the measure of international processes in model 1a for the Western region, a negative and marginally significant association between the political globalization index and state concern indicates that states with greater international integration have *lower* odds of reporting concern. This runs counter to results in the policy diffusion literature indicating that international integration is positively associated with policy adoption.

Model 1b, which includes time period with no interaction, finds no significant association of time period and concern, and yields essentially unchanged results with the exception of a change from marginally significant to not significant for the association between concern and political position.

Model 1c, which includes both time period and the interaction of fertility rate with time period, shows that the interaction is marginally significant for the second time period, 1990–2000, and highly significant for the third time period, 2001–2011 (the reference category is the time period 1976–1989). Figure 2 presents predicted probabilities of state concern in the Western region for each time period for selected fertility rates (mean TFR, half a standard deviation below and above the mean, and one standard deviation below and above the mean), holding all other covariates constant at their mean values. As shown, the negative slope of the association between fertility rate and concern grows steeper over time, and this change is more pronounced for fertility rates below the mean than for those above the mean. The probability of observing state concern in response to low fertility rises over all periods. Fertility rate is negatively associated with state concern in model 1c, but the association is no longer significant, indicating no significant association between TFR and state concern in the first time period.

To summarize, state concern about low fertility in the Western region is associated with older populations and higher migration rates, and may have some association with lower international integration. State concern is not significantly associated with national wealth in any models, nor with political position in models that account for time. Model 1b (with no interaction) finds no significant change over time in expressions of state concern, controlling for the other covariates. However, in model 1c, a significant interaction between time period and fertility rate indicates that expressions of state concern became more responsive to fertility rates over the course of the study period. This finding is consistent with the development of new norms in the Western region, and perhaps especially the relaxing of earlier taboos on expressing concern over low fertility.

Eastern Region Results

For the Eastern region, national-level covariates show a strong association between state concern and direct indicators of fertility. In the full model (model 1c), a 0.1 higher TFR is associated with 38 percent lower odds of expressing state concern, and an old-age dependency ratio that is higher by one person per 100 is associated with 45 percent higher odds of expressing state concern. No other significant associations with state concern were found. As expected, these patterns are quite different from those found in the Western region, and no evidence for the operation of international processes was found.

Additional Analyses: Robustness Tests

An alternate specification of time as a linear variable was tested, as well as the interaction of the linear time variable with fertility rate. Results from these models are generally the same as the results in model 1c, table 2, although in the Western region, constraining the measure of time to a linear form results in a significant main effect for fertility rate, in addition to a significant interaction. Using the linear time variable and adding a quadratic term to models 1b and 1c, neither the linear nor the quadratic term for year is significant; other results were essentially the same as for the main models (results not shown).

Alternate measures of integration into the international community, used in past studies of policy diffusion, were also tested. Models that replaced the political globalization index with IGO or INGO membership (collinearity prevented the use of both measures in a single model) found no significant association between either of these measures and state concern in the Western region (results not shown). This finding is consistent with the interpretation of model 1c, table 2, suggesting that effects of international integration on the spread of new concerns among core countries may differ from its effects on the spread of policies from core to peripheral countries.

Additional covariates were also tested. These included female labor-force participation (FLFP) rates, which might influence state concern over low fertility given perceptions of competing work and family roles for women. International Labour Organization estimates from the Key Indicators of the Labor Market (KILM) database and national estimates from the KILM database were used.¹¹ No significant association with state concern was found (results not shown). Like GDP, within-country income inequality could affect perceptions of economic well-being, so models using Gini coefficients in addition to and instead of GDP were tested. Gini coefficients from the Standardized World Income Inequality Database were used to test both net (post-tax, post-transfer) income and market (pre-tax, pre-transfer) income (Solt 2014). Tests yielded no significant association between Gini coefficient and state concern (results not shown).

To test robustness of results to survey nonresponse, countries that were chronic nonresponders were dropped from analyses. For the Western region, excluding chronic nonresponders (Germany, Iceland, and Ireland) produces results very similar to results for the full region, except for a change in the association of international integration with state concern, which slipped from marginally significant to not significant. The marginally significant negative association between international integration and state concern from

model 1c should thus be interpreted with caution. However, the robustness test still provides no evidence of a positive association of integration with state concern.

For the Eastern region, excluding chronic nonresponders (Albania and Slovenia) produces results very similar to results for the full region: the direction and significance level of the coefficients remain the same, except that the interaction of time period and fertility rate is now marginally significant. Predicted probabilities by time period and TFR (not shown) reveal a difference across time periods only at the highest levels of TFR, so the main finding stands: responsiveness to low fertility has not changed in the Eastern region during the study period.

Additional Analyses: State Intervention

Additional analyses were conducted with state intervention, rather than state concern, as the outcome of interest. If state concern about low fertility and state interventions addressing low fertility are associated in similar ways to the covariates analyzed, the two phenomena may not be empirically distinct. On the other hand, if no association is found between state concern and state intervention, this would raise questions about what these measures represent, and how they should be interpreted. Figures 3 and 4 show general trends in state concern and state intervention by region. In the Western region, increases in intervention lagged increases in state concern in the 1990s, then caught up rapidly and even overtook concern starting around 2005 (figure 3). In the Eastern region, intervention started at a much higher level than in the Western region, but its increase was much smaller than the steady increase in state concern (figure 4). The dotted lines show the composition of the state intervention figures, by state concern. Interestingly, in the Eastern region, an increase in states that report both intervention and concern is accompanied by a corresponding decrease in states that report intervention but not concern. In the Western region, however, the recent increase in intervention is due to increases in both states that report intervention and concern, and states that report intervention and no concern (although the latter increase is not as large as the former).

Table 3 shows large regional differences in reports of state intervention to address low fertility. Intervention is reported in only 32 percent of observations in the Western region, but in 86 percent of observations in the Eastern region. For the Western region, mean values of old-age dependency ratio, migration rate, and GDP differ significantly for states that do and do not report policy intervention, and reports of intervention occur later, on average, than reports of non-intervention. Of countries that report intervention, 60 percent also report concern, while only 20 percent of countries that do not report intervention report concern, a significant difference. For the Eastern region, old-age dependency ratio and GDP differ significantly for states that do versus do not report intervention, and reports of intervention occur significantly later, on average, than reports of non-intervention. Countries that report intervention are also significantly more likely to report concern than states that do not report intervention. The statistically significant relationships of covariates with state intervention are in the same direction as those covariates' associations with state concern, although generally weaker.

In table 4, model 2a reproduces the full model (1c) used to model state concern in table 2, but with state intervention as the outcome. Model 2b adds the measure of state concern to model 2a. For the Western region, none of the factors significantly associated with state concern are significantly associated with state intervention in model 2a, indicating that measures of state concern and state intervention indeed represent distinct constructs, to a surprising degree.

Multivariable models reveal an extremely strong association between concern and intervention in the Western region, however. When reports of state concern are included, fertility rate, GDP, and state concern are significantly associated with state intervention in the Western region (model 2b, table 4). However, controlling for state concern, a higher fertility rate is associated with *greater* odds of reporting intervention—a surprising finding. The association between state concern and state intervention is extremely strong: the coefficient is very large, dwarfing the size of other effects ($p < 0.001$).¹²

For the Eastern region, state concern is not significantly associated with state intervention, a surprising finding suggesting that in this region, state concern may not be a proximate cause of intervention. Given the high prevalence of reports of intervention and frequent reports of intervention even when no concern about low fertility is reported in the Eastern region, these results suggest that having a population policy may simply be seen as a normal function of government in Eastern Europe, regardless of concern over low fertility.

Overall, findings for the Western region suggest that reports of state concern and state intervention represent distinct but related constructs, supporting the validity of the analyses of state concern. Surprising findings for the Eastern region, however, suggest caution in interpreting results for this region. The distinct political and institutional history of this region may have contributed to a different understanding of the role of the state, resulting in no significant association between state concern and intervention.

Discussion

To better understand the processes associated with the recent large increase in expressions of state concern among wealthier countries, this study has examined factors associated with expressions of state concern over low fertility among 43 nations over a 35-year period. Analyses show significant and robust associations between national-level demographic characteristics and state concern in both “first-world” (“Western”) and “second-world” (“Eastern”) regions. They also show that, although state concern over low fertility is associated with aging populations and immigration rates in the Western region, demographic trends alone do not explain the increase in state concern there. Analyses of the relationship between international processes and state concern indicate that the diffusion of *emerging* concerns examined here may differ from the diffusion of policies that address *established* concerns. Although earlier studies of policy diffusion have shown that international integration facilitates policy adoption, these analyses of state concern find that international integration is negatively associated with expressions of state concern in the Western region (although the association was only marginally statistically significant), and is not significantly associated with state concern in the Eastern region.¹³

In keeping with recent indications that state reluctance to openly express concern over low fertility may have decreased, models including measures of time period and its interaction with fertility rates show that the relationship between fertility rates and state concern has indeed changed over time in the Western region. Expressions of state concern did become more responsive to fertility rates over the course of the study period, independent of national-level factors. This change suggests there may have been a shift in the acceptability of state concern over low fertility.

Although further investigation is needed, these results suggest that the study period may capture a process of consensus-building around state concern over low fertility in the Western region, among the core countries of the world polity. Over the course of this period, it became increasingly more common and more accepted for these states to express concern, as national-level demographic factors contributed to states' propensity to address low fertility. A new international consensus may thus be evolving, shaped by shared experiences at the national level, which has led these core countries in a new direction. In this case, the negative association between state concern and international integration suggests that international integration may predict adoption of an established consensus, but not contributions to the construction of a new consensus. It seems plausible that less integrated countries might be first to contravene established norms in the process of creating new ones.

The process of building consensus about state concern is expected to precede policy adoption, and empirically it seems to do so in the Western region, as state intervention lags behind state concern for most of the study period. It may be that a later process of policy diffusion, conforming to earlier studies' findings, will follow once consensus is established that policies to address low fertility are desirable. For now, this study provides sufficient evidence to justify further investigation of how the international diffusion of social problems relates to processes of policy diffusion.

Conclusion

This study has examined the factors associated with an increase in state expressions of concern about low fertility in wealthier countries since the 1970s. By examining state concern, rather than policy enactment, as the outcome of interest, this study integrates a social problems approach with the world polity literature on policy diffusion. It examines the interplay of national and international factors in the construction of social problems, applying this approach to the diffusion of a hitherto unexamined outcome—an explicit measure of state concern. By integrating these two approaches, this study draws attention to an important mechanism of social change: the processes by which the international community comes to view an issue or phenomenon as an appropriate target of policy reform, an important part of the agenda-setting process that deserves further study.

This study covers a period in which reports of state concern about low fertility in wealthier countries went from very rare to very common—from about 20 to about 70 percent of wealthier countries. It thus sheds light on a period of changing norms among core members of the world polity. The most important contribution of this study is the finding of an increase in state responsiveness to low fertility in the Western region over time, an increase

that is not merely a response to national-level demographic indicators (although national-level demographic indicators are associated with state concern), but represents a broader shift in state response to low fertility.

Some evidence suggests that this shift in responsiveness may not have operated through the mechanism identified in earlier studies of policy diffusion: integration into the world polity. Unlike earlier studies, analyses of the Western region find either negative associations or no significant association between international integration and concern, all else held equal. Although these results are not conclusive, they suggest that diffusion processes during construction of a new consensus among core countries and institutions may differ from more commonly studied diffusion processes, in which an existing core consensus is extended to more peripheral countries. This study thus demonstrates the need for further investigation of processes preceding the establishment of consensus in international institutions. While earlier policy diffusion studies, focusing on policy areas with strong consensus in the core international community, have found that international organizations influence national policy, this study suggests that future research should also focus on the processes by which international consensus changes over time, including diffusion of state concern within the core community.

More work is needed to build a framework for understanding how the positions of influential international organizations change. This study suggests that during periods of change in international norms, national characteristics and concerns may facilitate the definition of certain issues as problems for state concern and intervention. Further research could examine, for example, the extent to which changes in international organizations' positions reflect changes in the positions of the national representatives that populate them.

The relationship between state concern and state intervention is also an important issue that should be addressed more rigorously in future research. This study has shown how explicitly considering state concern as an outcome of interest can contribute to the study of changes in state policy. Both state concern and state intervention are important features of policy change, but the relationship between the two is complex. Analyses of the international diffusion of concern can improve understanding of how policy debates and policies themselves change over time in an increasingly interconnected global community.

Notes

1. Political discussions about “moving the middle” or “moving the goalposts” of public debate show that ideas on the margins of political acceptability, not expected to lead directly to action, can have political influence.
2. Observations of other countries' experiences with low fertility and the circulation of demographic theories such as the low-fertility-trap hypothesis (Lutz, Skirbekk, and Testa 2006) may also have contributed to an international environment that encouraged state actors' concern.
3. One study that examines the cross-national spread of concern beyond media content and policy adoption focuses on concern among individuals, finding that

over time, women in many countries have become more likely to define intimate-partner violence as a problem (Pierotti 2013).

4. In contrast, among “less developed” countries, concern remained very low throughout the study period: 8 percent of countries said fertility was too low in 1976, and 10 percent said so in 2005.
5. States may also report “no official position,” a response the UN reclassifies as “satisfactory.” Neither response represents an expression of concern.
6. Results for two earlier rounds of the inquiry were not published and are not available.
7. Although problems with period TFR as a summary measure of fertility are well known to demographers, it is used here as the fertility indicator used most widely by demographers and policymakers during the study period.
8. Adjusted GDP values are only available through 2010. Values for 2011 are extrapolated from 2010 values.
9. International integration is relatively high among Western countries, but there is a good amount of variance: standard deviations for the yearly IGO membership index (with mean 1) range from 0.17 to 0.22, and standard deviations for the yearly INGO membership index range from 0.32 to 0.36.
10. Missing data for INGO membership was imputed for 1976 using 1977 values, and for 1978–1982 using linear interpolation between 1977 and 1983. Observations with suspiciously sudden declines (US 1983–1986 and Germany 1999) were replaced by linearly interpolated values.
11. Missing KILM data were imputed using the value from the following year.
12. These large coefficients do not indicate collinearity. The largest variance inflation factor (VIF) for this model is below 4; guidelines suggest that values over 5 are reason for concern about collinearity.
13. Although the negative association of international integration with concern in the Western region disappears when countries that never self-report are excluded, there is still no significant positive association, a finding that differs from the existing literature.

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Biography

Emily A. Marshall is a Faculty Associate at the Population Studies Center at the University of Michigan. She will join the Sociology Department at Franklin and Marshall College in Fall 2015. Her recent research includes comparative historical studies of how fertility rates are interpreted, as well as the use of innovative methods to apply advances in the study of culture and cognition to demographic research. Her writing has appeared in *Poetics* and is forthcoming in *Population and Development Review*.

Figure 1. Proportion of wealthier countries reporting fertility is “too low”

Figure 2. Predicted probability of state concern for Western region, by TFR and cohort. Each increment of TFR on the x -axis is half a standard deviation from the mean TFR. The middle point on the x -axis is the mean TFR.

Figure 3. Proportion of countries reporting state concern and intervention, Western region

Figure 4. Proportion of countries reporting state concern and intervention, Eastern region

Group Means by Region, by State Concern over Fertility (reporting that fertility is “too low” or not; observations pooled across all years; standard deviations appear in parentheses below means)

Table 1

Independent variables	Western region, 1976-2011 (non-Soviet bloc countries)			Eastern region, 1993-2011 (former soviet bloc countries)		
	<i>Too low</i>	<i>N</i>	<i>Not too low</i>	<i>N</i>	<i>Too low</i>	<i>N</i>
TFR (by tenths, 1-year lag)	1.51 (0.22)	133	1.83 (0.30)	274	1.35 (0.13)	142
Old-age dependency (1-year lag)	23.1 (3.4)	133	20.0 (3.8)	275	20.6 (3.2)	143
Net migration rate (1-year lag)	3.5 (3.4)	133	2.0 (2.7)	275	-2.0 (6.4)	143
GDP (thousands of \$)	26.3 (12.6)	133	22.1 (13.4)	275	10.9 (6.0)	143
Politics: % Left	35.1 (37.6)	133	33.5 (38.0)	268	–	–
Political Globalization Index	0.98 (0.16)	133	1.01 (0.18)	275	1.06 (0.28)	143
Year	1998 (10)	133	1993 (11)	275	2003 (5)	143
					1998 (5)	44

p < .001 in boldface, *p* < .01 in italics with boldface, *p* < .05 in italics.

Western region: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany,* Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Malta, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States

Eastern region: Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Macedonia (FYR), Ukraine

Excluded from analysis (population < 100,000): Andorra, Holy See, Liechtenstein, Monaco, San Marino, Vatican City

Note: Montenegro is not included here since it does not appear in the population policy data until 2007.

*Germany is treated as a single country for the purposes of this study. Prior to reunification, figures for West Germany are used; starting in 1991, figures for the unified Germany are used. This treatment reflects the continuity in political structures from West Germany to the unified Germany.

Table 2

Logit Analysis Predicting State Concern about Low Fertility, by Region (coefficients presented as odds ratios; standard errors corrected for clustering of errors)

Independent variables	Western region, 1976–2011 (non-Soviet bloc countries)			Eastern region, 1993–2011 (former Soviet bloc countries)		
	<i>Model 1a</i>	<i>Model 1b</i>	<i>Model 1c</i>	<i>Model 1a</i>	<i>Model 1b</i>	<i>Model 1c</i>
TFR (by tenths, 1-year lag)	0.62**	0.61**	0.84	0.53**	0.57**	0.62**
Old-age dependency (1-year lag)	1.27**	1.24**	1.24**	1.42**	1.44**	1.45**
Net migration rate (1-year lag)	1.27**	1.29*	1.27*	0.99	0.99	0.99
GDP (thousands of \$)	0.98	0.97	0.98	1.02	0.99	1.00
Politics: % Left (tens of % points)	0.94 [†]	0.95	0.95	–	–	–
Political Globalization Index	0.65 [†]	0.65 [†]	0.65 [†]	1.08	1.10	1.09
Period 2: 1990–2000	–	0.78	0.51	–	–	–
Period 3: 2001–2011	–	1.58	0.76	–	1.93	0.75
TFR×Period 2 interaction	–	–	0.67 [†]	–	–	–
TFR×Period 3 interaction	–	–	0.54**	–	–	0.74
<i>N</i>	401 observations, 24 countries			185 observations, 19 countries		

**
 $p < .01$

*
 $p < .05$

[†]
 $p < .1$

Note: the reference period is 1976–1989 for the West. It is 1993–2000 for the East, because the analysis of the East begins in 1993.

Table 3
Group Means by Region, by State Intervention on Low Fertility (reporting a state policy to “maintain” or “raise” fertility; observations pooled across years)

Independent variables	Western region, 1976-2011 (non-Soviet bloc countries)			Eastern region, 1993-2011 (former Soviet bloc countries)		
	Intervention	N	No intervention	Intervention	N	No intervention
TFR (by tenths, 1-year lag)	1.73 (0.38)	129	1.72 (0.28)	1.43 (0.26)	158	1.39 (0.19)
Old-age dependency (1-year lag)	22.0 (4.0)	129	20.6 (3.9)	19.6 (4.2)	161	16.9 (2.9)
Net migration rate (1-year lag)	3.3 (3.7)	129	2.1 (2.5)	-2.7 (5.7)	161	-3.4 (15.0)
GDP (thousands of \$)	29.1 (16.8)	129	20.9 (10.4)	10.1 (6.2)	160	6.8 (3.5)
Politics: % Left	32.4 (34.5)	129	34.8 (39.4)	—	—	—
Political Globalization Index	0.98 (0.15)	129	1.01 (0.19)	1.00 (0.32)	161	1.01 (0.4)
Year	1998 (11)	129	1992 (10)	<i>2002</i> (6)	161	<i>2000</i> (5)
State concern	0.60 (0.49)	129	0.20 (0.40)	<i>0.80</i> (0.40)	161	<i>0.58</i> (0.50)

$p < .001$ in boldface, $p < .01$ in italics with boldface, $p < .05$ in italics.

Table 4
Logit Analysis Predicting State Intervention, by Region (coefficients presented as odds ratios; standard errors corrected for clustering of errors)

Independent variables	Western region, 1976–2011 (non-Soviet bloc countries)		Eastern region, 1993–2011 (former Soviet bloc countries)	
	<i>Model 2a</i>	<i>Model 2b</i>	<i>Model 2a</i>	<i>Model 2b</i>
TFR (by tenths, 1-year lag)	1.12	1.26 ^{**}	1.39 ^{**}	1.54 ^{**}
Old-age dependency (1-year lag)	1.14	1.06	1.37 ^{**}	1.30 [*]
Net migration rate (1-year lag)	1.10	1.00	0.99	0.95
GDP (thousands of \$)	1.04	1.05 [*]	1.06	1.09
Politics: % Left (tens of % points)	0.97	0.99	–	–
Political Globalization Index	0.82	1.02	0.93	0.89
Period 2: 1990–2000	0.44	0.50	–	–
Period 3: 2001–2011	0.75	0.87	1.60	1.10
TFR × Period 2 interaction	0.93	1.19	–	–
TFR × Period 3 interaction	0.92	1.22	0.96	0.95
State concern	–	24.17 ^{**}	–	4.73
<i>N</i>	<i>401 observations, 24 countries</i>		<i>185 observations, 19 countries</i>	

^{**}
 $p < .01$

^{*}
 $p < .05$

Note: The reference period is 1976–1989 for the West. It is 1993–2000 for the East, because the analysis of the East begins in 1993.