

# AFTER CAIRO: NEW COMPLEXITIES IN FERTILITY AND DEVELOPMENT

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## I. SINCE CAIRO: DEMOGRAPHIC SHIFTS ADD MORE COMPLEXITY

If the United Nations Conference on Population and Development were held today, there would be considerably less agreement than at the contentious Cairo meeting in 1994, where religious conservatives battled religious and secular liberals over provision of family planning, contraception and abortion to populations in developing nations. Much of the debate then was about the morality of contraception and especially abortion, and who should pay for it; few disputed the common perception that development in poor nations required a lowering of high fertility rates. Today, twenty years later, the consensus among economists and other social scientists is that the issue of fertility and its relationship to economic and social well-being is much more complex than was understood earlier.

In 1994 there was more or less consensus among social scientists working with developing nations that high TFRs oppressed poor families, threatened access to education, made adequate nutrition difficult, and were associated with high levels of maternal mortality and morbidity—often from botched abortions, many of which were conducted illegally.<sup>1</sup> High TFRs also increased demands for poor nations to provide clean water, electricity, schools and teachers, not to mention jobs, to fast-growing populations.<sup>2</sup>

But high TFRs are not the only threat to development. One of the biggest threats since Cairo has been low TFRs—far below replacement levels—in developed nations. Too low TFR triggers a number of adverse social and political conditions: the number of workers becomes too small to support the retired, threatening retirement funds and national healthcare funding in developed nations.<sup>3</sup> Shrinking populations also bring risks of political instability, as voters respond to these economic threats.<sup>4</sup>

While feminist and anti-feminist perspectives dominated Cairo, since 1994 environmental concerns have had a much increased impact on fertility discussions. Many who supported reducing high TFRs in 1994 rejected the goal of replacement rate. Though they acknowledged that population growth in many poor nations was too high to allow economic development, they thought some increase necessary to fuel economic growth. There was and still is great doubt about how a world capitalist system could adjust to stable demand.<sup>5</sup> However, within global environmental circles ecological awareness has increased since 1994 to a consensus that though some developed nations may want temporary increases in fertility (which are unlikely to occur), and some developing nations still need to lower fertility, the eventual goal—not to be long postponed—must be replacement rate.<sup>6</sup> World population, at 7.2 billion in May 2014,<sup>7</sup> will reach at least 9 billion before it declines; that level is thought to be very close to, if not above, the maximum carrying capacity of the earth's environment.<sup>8</sup>

World attitudes toward China's rapid fertility drop following the 1979 One Child Policy provide one example of how much thinking about fertility has changed since Cairo. While at

Cairo there was strong criticism of the over-zealous implementation of that policy at the local level (e.g., forced late abortions), the progress China had made in education, infrastructure, and industrialization when shed of the burden of high fertility was also recognized. Today, discussions of China's development most often focus on its aging population: that aging is thought to be causally connected to the gradual slowdown in China's economic engine over the last few years which has caused political unrest.<sup>9</sup> In response to its changing demography, China has recently begun a rudimentary old age pension to partially support its elderly people, millions of whom lack support from their dead or absent children. New laws mandate that adult children regularly care for aging rural parents. China also relaxed the One Child Policy, so that couples comprising two only children—and since 2014 couples with one only child – can legally have two offspring, not only one,<sup>10</sup> though if they follow the pattern of more developed nations, many couples who legally could have a second child will not. Clearly, the One Child Policy was not a panacea for China's demographic problem.

In some ways the Cairo debates around contraception were already anachronistic. Contraception had already reduced World TFR from 4.9 children per woman in 1950 to 3.1 by 1994, and beginning in 1970 the annual decreases had grown.<sup>11</sup> In December 2010, World TFR was 2.6; by December 2013, 2.4, not so far from the general replacement rate of 2.1.<sup>12</sup> Yet these numbers represent a more complex and varied picture. Some nations with TFRs between 1.3 and 1.6 have populations that are shrinking and aging quickly. Other nations, most in Africa, have high TFRs of 5.0–7.6.<sup>13</sup>

In 1994 as now, Africa displayed the slowest decline in fertility rates, though since 1994 more nations in Africa—in both the sub-Sahara and the Muslim north—have experienced significant TFR decline. Then as now, research has shown that it is largely the provision of contraceptives that accomplishes fertility decline.<sup>14</sup> There are three interrelated factors: the proportion of women of reproductive age who use a modern method of contraception, the proportion of women who would use it if it were available to them (labelled unmet need), and the TFR. As the unmet need for contraception declines, the proportion of women using contraception increases, and TFR declines.<sup>15</sup> In Africa, which has many of the remaining high fertility rates (Niger 7.6; Chad 7.0; Somalia 6.8; Democratic Republic of the Congo 6.3; Angola 6.3; Uganda 6.2; Central African Republic 6.2; Mali 6.1) the nations with the higher rates of fertility also have the lowest rates of contraception provision.<sup>16</sup>

Those opposed to contraception at Cairo often pointed to the terrible abuses that governments in many developing nations had inflicted on their populations in the 1960s and 1970s—especially forced sterilizations—strongly implying that contraceptive use in developing nations was not a free choice, but resulted from coercion.<sup>17</sup> Today, we no longer have large-scale forced sterilizations or non-consensual insertion of implantable contraception as happened in a number of nations in the past (India, China, Indonesia, Kenya, and even in the U.S. to some populations). Especially in Africa, the principal source of contraceptive coercion is by husbands and mothers-in-law *not* to use contraception. This is not to say that any choice for contraception is totally free; it is rather a response of couples to the real circumstances of their lives, circumstances which for some are very constrained. Yet it would be irresponsible not to consider one's economic and social circumstances in making reproductive choices.

The motivations for using contraception vary with individual circumstance, but there are common influences. Children's need for increasing levels of education in the contemporary world is one: whether parents aspire for their children simple literacy or graduate degrees, they want their children to be able to support themselves and future families. A second motive is the drop in buying power of working class wages in most of the world over the last 40–50 years,

which has forced many two parent families to have two wage earners, and has forced many single parent families into desperate poverty. Thus more and more women work outside the home today in both rich and poor nations, and find childcare a continuing problem. Health issues with frequent childbearing also support contraceptive use — using contraceptives to space pregnancies by a year or two not only cuts fertility rates, but also cuts maternal mortality and morbidity rates. And not least of all, among the poorest of the poor, to be able to adequately feed all one's children, and not need to choose daily which child to keep short of food, is a major impetus to contraception.

In richer nations, and among the rising middle classes in developing nations, the women's movement, by opening education and careers to girls, has also contributed to a drop in fertility, as each additional year of education for girls decreases expected fertility by delaying marriage, making it more likely that girls/women will find work outside the home, and thus have less time and energy for large families.

The ideal would be gradual progress toward a goal of replacement TFR, so as neither to burden a small population of youth with a large aging population, nor deny the traditional support of multiple children to an aging population in poor nations which do not have pension systems. But the move to smaller families is primarily a response to widespread economic and social shifts and to the vastly increased effectiveness and availability of contraception, which have not supported gradualness.<sup>18</sup> While the initial national decreases in fertility in the developed world beginning in the early 19<sup>th</sup> century were small and gradual because the available means of contraception were primitive, unreliable, and often available only to the few, today multiple forms of contraception are extremely reliable, inexpensive or free, and increasingly available. Thus the same degree of drop in TFR that occurred in Western Europe and North America over the 19<sup>th</sup> and first half of the 20<sup>th</sup> century has taken place in many developing nations in less than forty years. During these decades people moved from rural to urban areas, where both food and increased education costs for a more skilled job market made children more expensive.

Since the 1960s, more effective and available contraceptive methods have accelerated fertility decline in both developed and developing nations.<sup>19</sup> Fertility decline in Western Europe and Japan has created severe economic problems (Canada and the United States having maintained higher fertility levels only through large scale immigration).<sup>20</sup> In many developing nations, where the rate of fertility decline has been more pronounced but more recent, these economic and political problems loom large on the horizon.<sup>21</sup>

According to demographers, continuation of current trends will lead to a peak population of about 9 billion about 2050, after which population size will likely decline as more and more nations' TFRs fall below replacement. Japan's fertility peak was reached in 1947, with steep declines ever since. Today Japan has a TFR of 1.39, and the oldest population in the world. There are 34 nations with TFRs under 1.5, including Spain, Italy, Germany, Georgia, Croatia, Slovenia, Austria, Slovakia, Ukraine, Czech Republic, Romania, Poland and Lithuania. In Asia, China has a current TFR of 1.55, S. Korea 1.24, Hong Kong and Taiwan 1.1, and Singapore 0.79. Iran's government has recently reversed its support for birth control, faced with a fast falling TFR, currently at 1.86.<sup>22</sup> Brazil, with the largest population in Latin America, has a TFR of 1.81.<sup>23</sup>

We know what causes a general recourse to contraception, but we know less about why couples in rich and middle income areas are turning more towards having only a single child or none at all. We know virtually nothing about causes of the contemporary steep declines in marriage rates. Some religious leaders interpret the cause of childlessness or stopping at one child to be selfish consumerism, an unwillingness to share resources with children. Others point

to the frustrations of trying to manage two full-time jobs and multiple children in a society in which responsibility for children lasts longer and costs more due to education.

## II. CHURCH RESPONSIBILITY FOR POPULATION STABILITY AND SUSTAINABILITY

Given the above I will propose four commitments for a responsible Catholic Church: 1. Revise the ban on contraception and support nations in modern methods of stabilizing population size at replacement level;<sup>24</sup> 2. Urge nations and private institutions, including the churches, to support families by providing good-quality childcare and education affordable for all; 3. Continue to develop a more egalitarian approach to parenting, by teaching that parenting responsibility is equally shared by men and women; and 4. Promote marriage by recognizing remarriage after divorce and different levels/stages of marital relationship.

### *Revising the Stance on Contraception*

Globally, the ban on contraception is taken seriously by only a small minority of Catholics, even among clergy.<sup>25</sup> If the consensus of the faithful has any meaning at all, the teaching that contraception is a serious moral evil should end. However, the Church's treatment of marriage and family has centered so long on fighting contraception that it will be difficult for the Church to allow methods of birth control other than natural family planning (NFP), and still more difficult to encourage as responsible forms of birth control it has condemned as 'artificial'.

In the history of the church, sex, even within marriage, has usually been demonized, its pleasure (possibly) justified only by procreation (often treated as the price of lustful pleasure) with birth prevention usually treated as a matter of sin and selfishness, and NFP requiring moral justification.<sup>26</sup> Though there has been some nuancing in recent years, couples have long been admonished both to embrace pronatalism as a hedge against selfish consumerism, and not to be slaves to sin through too frequent or enthusiastic sexual indulgence.<sup>27</sup> Tepid statements recommending both generosity in welcoming children and limiting numbers to the level couples can provide for must give way to more specific and admittedly complex statements on alternating fertility and birth control out of social responsibility to the larger community.

Despite a relatively long history of Church suspicion of states and their power, especially in matters concerning families, at least since John XXIII and Vatican II the Church has recognized the responsibility of states for the provision of those services that are most affected by the impact of rapid fertility fluctuations (education, healthcare, adequate food and shelter),<sup>28</sup> and therefore should also recognize a valid state interest in tracking and influencing demographic trends and fertility rates. Caution is necessary lest states illegitimately coerce the reproductive decisions of couples, but there are legitimate ways that states can encourage or discourage fertility. Some of the more common methods are giving annual tax deductions for children, perhaps even larger ones for second and later children, or one-time monetary awards for later children. Russia, for example, offers a purse of almost \$10,000 to couples having a second child (but only pays when the child reaches 3). Some caution is necessary in setting these amounts lest they not only incentivize good parents who would have liked another child but felt constrained for economic reasons, but also incentivize irresponsible parents simply seeking easy money.

### *Universal Access to Quality Childcare and Education*

Some social scientists working in development and population propose that especially in rich nations where fertility rates are often far below replacement, the conditions most useful in

raising fertility are access to quality childcare and education, including university education.<sup>29</sup> Many families dependent upon both parents' salaries cannot find a way to have a child or another child without endangering one income because the cost of quality childcare is so high, and is often unavailable for very young children (self-toileting is a requirement for many childcare centers). Cheaper informal childcare is sometimes available, but in many developed nations such provision is often illegal, because the site is not licensed, or does not have certified instructors, child-sized bathroom facilities and adequate kitchens, or is overcrowded. Many parents are also aware that informal care, however well intentioned, often amounts simply to storing children away. Even when parents manage to find adequate childcare, everyday childhood illnesses can exclude a child, and the need for a parent to take over can threaten his or her employment, unless there is a non-working family member or friend who can step in.

Among aspiring middle classes, it is not enough to have access to childcare—that childcare needs to be of high quality, so that children entrusted to it will be made ready to compete for the education and careers their parents want for them. If quality childcare were universal, other burdens on parents could also be lessened. For example, routine medical care such as inoculations, eye tests, physicals, and teeth cleanings could be administered there, saving parents from taking time off work for this reason.

Higher education and training are an increasing problem for parents in those nations like the U.S. which do not provide either for free. While there can be problems with the early testing of children into educational tracks in nations which do provide free higher education for those in appropriate tracks,<sup>30</sup> the greater problem is the high cost of education for families, even in public schools, in nations such as the United States, where public schools are subsidized, but still expensive. The average debt of U.S. college graduates in 2013 was over \$35,000.<sup>31</sup> If students whose parents paid the entire cost of living and tuition were excluded, the level of debt would be even higher. The student default rate on federal government-guaranteed loans stands at almost 15%.<sup>32</sup> Thus many parents, faced with the threat of job loss for a few years after the birth of a child, and the need to save many thousands of dollars to provide even minimal assistance to children attending university, decide not to take the high risks involved in extending their family.

Promoting state provision of quality childcare and education should not be difficult for the Church, so long as there is no prohibition on religious education. The latter, of course, should be subject to the same regulations—health, safety, and basic educational curricula—as publicly provided childcare and educational institutions. Church officials are very aware that even in very Catholic areas of the U.S. where the Church once served the majority of Catholic families by educating children in parochial schools, the church has not had the resources to provide elementary and secondary education for working class families since (low paid) nuns virtually disappeared from parochial schools in the 1960s and 1970s. The U.S. Catholic Church has never been a major provider of childcare, while Catholic colleges and universities, like many Catholic high schools, though offering many partial scholarships based on need to assist the lower middle class, are among the high cost private institutions that mostly serve the upper middle class.

#### *Promote Equal Parenting Responsibilities*

Most appeals for gender equity in parenting are aimed at easing the double burden on women of both family support and childcare (not to mention housework). But marriage rates are decreasing, especially among the working class in many nations, and more children are being raised by single mothers who either never married, or are divorced. Many men have little connection to children. Not only for the good of the children and their mothers, but also for the good of men themselves, men need to be more connected to the domestic world. Global studies

of unemployment, and of response by families to natural and manmade disasters, show that women cope better with these situations than men because they are grounded by the continuing duties—however exhausting—not only of childcare, but also of domestic chores such as grocery shopping, meal preparation, and laundry.<sup>33</sup> The continuation of a domestic schedule that connects one person to others and occupies the hands and mind helps to sustain personal identity and purpose, without which it is easy to drift into more dangerous habits to escape the boredom and emptiness that accompany unemployment or other serious disruptions of life routines: drugs, alcohol, gambling and crime.

Traditional jobs for working class men are disappearing quickly due to mechanization, and the trend looks likely to accelerate globally in the next decades.<sup>34</sup> Increasingly, jobs demand more education at the same time that increasing numbers of men seem to have decided to drop out of education and training. U.S. women earn many more high school diplomas and bachelor degrees than men and, in the last decade, more masters and doctorate degrees than men also.<sup>35</sup> This trend appears in other developed nations, and even some developing nations around the world.<sup>36</sup> At the same time in many nations male rates for alcoholism and drug addiction seem to exceed women's.<sup>37</sup> Once the biological aspect of parenting has been greatly reduced by a much lowered number of children for each woman to bear and nurse, there is no reason that parenting cannot be more egalitarian. Children raised with involved fathers do better in school, and are more likely to gain secure and better paid employment, than those with absent fathers.<sup>38</sup> Where men are equally responsible parents, women have the burdens that accompany parenting reduced, and men benefit through closer relationships to the young and their joy, energy, and boundless ambition. Children benefit at multiple levels, both material and psychological.

Vatican II's Pastoral Constitution on the Church in the Modern World, *Gaudium et spes*, took the first steps toward recognition of egalitarian parenting when it addressed mothers and fathers together, as parents, about shared responsibilities for children,<sup>39</sup> instead of laying out the traditional line of fathers being the heads, providers, and protectors of families, and mothers being the heart and soul of families. But the Church has never consistently carried through this Vatican II shift. John Paul II, in particular, reverted to the pre-Vatican II treatment of gender roles in the family.<sup>40</sup> It is time to lift up as examples families in which men, too, share domestic duties, or even take on the larger role in domestic duties when the wife's employment is more time-consuming.

### *Saving Marriage*

Today in the West there are many fewer marriages than in the past. In 1950 in the U.S. there were 90 marriages a year per 1000 unmarried women; in 2013 there were only 31.1 marriages per 1000 unmarried women. The trend has been steadily downward since 1970.<sup>41</sup> In Europe as a whole, the 2010 marriage rate was 8.8 per 1000 women compared to 15.8 in 1970.<sup>42</sup> While informal unions, rather than marriage as such, have been much more common in many parts of the world, including Latin America and Africa, than in Europe and the U.S., there has also been a decline in the rate of marriage in major Latin nations, e.g. Brazil and Mexico, since 1990.<sup>43</sup> Data is difficult to interpret for many nations where informal unions are common, but there is some suspicion among demographers that declining rates of marriage are widespread. How much of that decline is due to couples marrying at a later age is unclear. It is fairly clear that in much of the world a great deal of the decline is due to the drop in employment and wages for lesser-skilled workers.<sup>44</sup>

In the U.S. and Europe, couples most often live together for a few years, and if they have the resources they think necessary for married life—which occurs at much higher rates among the more educated middle class—they marry. In the U.S., whites have higher marriage rates than

Hispanics, and much higher rates than African-Americans, whose marriage rates have plummeted since the 1950s because of the much larger proportion of African-American males in the category of low-skilled workers whose wages and employment have decreased. Studies show that the erosion of stable working class employment for men is the principal barrier to marriage for many young couples. Employment for women has little effect on whether cohabiting couples marry; it is male employment that is seen as the enabler of marriage. This is almost certainly somewhat related to a desire for children, and a recognition that having a child may itself endanger a mother's salary—she may lose her job, or need to reduce to part-time working. Thus middle class couples with higher levels of male education and employment have higher marriage rates, and lower rates of children born outside marriage. In the working class where conditions for marriage are uncertain, marriages are less common.

The consequences of this pattern for U. S. children (for whom we have more data) are also clear. Informal unions are less stable than marriage, and children born into them are more likely than children born into marriage (despite the high incidence of divorce) to live in poverty with a single female head of household.<sup>45</sup> A great deal of 1990s research on the effect of divorce on U.S. children is relevant here, showing that children born in informal unions that end are even more likely to have absent non-supporting fathers than children of divorce. Children living with single parents are economically disadvantaged. Poor single parents cannot afford the books, home computers, and private lessons that make it easier for children to succeed in school. Moreover, many live in rundown neighborhoods with high crime rates, low-quality schools, and few community services. Many studies have shown that economic resources explain some of the differences in well-being between children with single parents and those with continuously married parents.<sup>46</sup> Research illustrating that children do better at school and have fewer behavioral problems when absent fathers pay child support also suggests the importance of income in facilitating children's well-being in single-parent households, as does the data comparing children of middle class single mothers with those of working class single mothers.<sup>47</sup> Nor can single parents devote the same amount of personal attention to children that two parents can.

How can the church influence this situation, which seems to be significantly, though not completely, economically determined? First, as noted above, it would certainly help if women and men were acknowledged to have equal and shared responsibility for children – that men need not be more responsible for economic provision than women, and women need not be more responsible for daily care than men. Equally important in this message is continuing the demand for equal pay for women. But the church needs to also rethink what it means by marriage.

Relationships end. In spring 2014 the German Bishops' Conference proposed to allow some divorced and remarried Catholics to take Communion. According to Cardinal Marx of Munich, president of the Conference, remarried Catholics would apply, and go through a period of repentance before being admitted to Communion.<sup>48</sup> Pope Francis seemed to be encouraging such action when he discussed the issue of divorced and remarried Catholics soon after his election. Though Archbishop Gerhard Müller, prefect of the Congregation for the Doctrine of the Faith, wrote in *L'Osservatore Romano* that such offers were 'an objectively false appeal to mercy,'<sup>49</sup> German plans have not been jettisoned. The scheduled October 2014 Synod of Bishops Extraordinary General Assembly on the Family—not yet held at this writing—will discuss this issue.

One of the more surprising aspects of the current pattern of cohabitation before marriage among Catholics is that many parents and even grandparents of cohabiting couples do not object to what they were raised to see as blatant and serious sin. These parents and grandparents know

the failure rate for marriage, and should their young adult children/grandchildren marry and divorce, they neither want to see them doomed to permanent singleness, possibly even childless singleness, nor do they want them to be cut off from the church due to remarriage. Thus the effect of the ban on remarriage after divorce (termed adultery) is to encourage what the church calls fornication. To open communion to divorced and remarried Catholics might be a first step to stopping remarried spouses, their children and families from leaving the church.

What is equally needed is some form of ritual recognition of what has been condemned in the past as ‘trial marriages.’ There can be little doubt that public profession of vows after some course of preparation could strengthen relationships of couples who are cohabiting and help more of them cross the threshold to full marriage. At the very least, the possibility of such a ritual would allow an individual to test the commitment of a partner who wants to cohabit—if the partner is serious about the relationship, he or she should commit to the course of preparation and take public vows. Ritual recognition of such ‘trial marriages’ could also encourage cohabiting couples to participate in the Church; at present, many such couples feel branded as sinners, and not welcome in church.

A traditional worry of the Church about such unions was the insecurity of children born into them—and it seems from present trends that this worry was well founded.<sup>50</sup> If the Church were to recognize such unions, it should strongly encourage delaying childbirth until full marriage in the interests of children.

## CONCLUSION

These shifts are possible, however unlikely it is that they can be accomplished quickly. Both Church theology and regulations on marriage, parenting, gender roles, and the role of the state have clearly changed historically, and so could change again. The universality of the Church today is an obstacle to effective teaching, in that many, but not all, of the demographic trends discussed above that are far advanced among Catholics in developed nations are much less visible in many developing nations, whose bishops will be loath to implement the proposed shifts. Only when bishops see these trends affecting the most devout and connected of their laity are they likely to see the trends as imposed by historical circumstances, and not simply as moral weaknesses.

## Notes

1 Lisa B. Haddad and Nawal M. Nour, ‘Unsafe Abortion: Unnecessary Maternal Mortality,’ *Reviews in Obstetrics and Gynecology* Spring 2009; 2(2): 122–126; World Health Organization, ‘Population Dynamics and Reducing Maternal Mortality,’ 2009, p. 3 [http://www.un.org/esa/population/publications/PopAspectsMDG/09\\_WHO.pdf](http://www.un.org/esa/population/publications/PopAspectsMDG/09_WHO.pdf) accessed 5/30/2014; M.A.Koblinsky, ‘*Reducing Maternal Mortality: Learning from Bolivia, China, Egypt, Honduras, Indonesia, Jamaica, and Zimbabwe.*’ (Washington, D.C.: The World Bank, 2003).

2 T.Paul Schultz (Economic Growth Center, Yale University), ‘Fertility in Developing Countries,’ May 2007, <http://www.econ.yale.edu/~pschultz/cdp953.pdf>. Accessed 5/30/2014.

3 One way of addressing a lack of sufficient workers is immigration, but many developed countries dealing with low fertility rates, including Europe, Japan and Australia, as well as many semi-developed nations with low fertility rates, including China, seem intolerant of immigrants and often of home-grown minorities as well. See Andreas Zick, Beate Küpper, Andreas Hövermann, *Intolerance, Prejudice and Discrimination: A European Report.* (Berlin: Forum Berlin, 2011); Anna Triandafylidou and Ruby Gropas, *European Immigration: A Sourcebook.* (Burlington, VT: Ashgate, 2007); Mikhail Alexseev, and Richard C. Hofstadter. ‘Russia, China and the Immigration Security Dilemma.’ *Political Science Quarterly* 121.1 (Spring 2006): 1–32.



4 Many politically unpopular policies adopted in Western Europe following the 2008 recession—e.g., raising retirement age and cutting pensions – are connected to decades of low TFR. Nations lack sufficient younger workers to support the generous retirement programs of the past.

5 Debates on the possibility of prosperity without economic growth due to stable, developed populations continue, because the source of profit, the engine of capitalist economies, would be unclear.

6 Cf. Daniel C. Maguire and Larry Rasmussen, *Ethics for a Small Planet: New Horizons on Population, Consumption, and Ecology*. (New York: S U N Y, 1998).

7 7, 229,000: Population Reference Bureau's World Population Clock at <http://www.prb.org/>. Accessed 5/30/2014.

8 UNEP Global Environmental Alert Service, 'One Planet, How Many People? A Review of Earth's Carrying Capacity,' June 2012. [http://na.unep.net/geas/archive/pdfs/GEAS\\_Jun\\_12\\_Carrying\\_Capacity.pdf](http://na.unep.net/geas/archive/pdfs/GEAS_Jun_12_Carrying_Capacity.pdf). Accessed 5/30/2014.

9 Prema Nakra, 'China's One Child Policy: The Time for Change Is Now.' *World Future Review* 4.2 (Summer 2012): 134–145.

10 Mariano Castillo, 'China to Ease One-Child Policy, Abolish Labor Camps, Report Says,' CNN World, November 16, 2013. <http://www.cnn.com/2013/11/15/world/asia/china-one-child-policy/>. Accessed 4/30/2014; James T. Areddy, 'China Formally Eases One-Child Policy.' *The Wall Street Journal Eastern Edition*. December 30, 2013. 1A.

11 'Demography: A Tale of Three Islands,' *The Economist*, October 22, 2011. <http://www.economist.com/node/21533364>. Accessed 5/30/2014.

12 Replacement rate depends on the number of females who survive to procreate. A replacement rate of 2.1 means that on average women in a society replace themselves and their male partner, with a slight excess to account for those females who die as children. In some very poor areas, the replacement rate may be as high as 3.0, due to high child mortality.

13 Africa now has a collective population of 1.1 billion, expected to reach 2.4 billion by 2050, and potentially 4.2 billion by 2100—levels their governments are in no way capable of responding to. See UN Press Release 13 JUNE 2013. [http://esa.un.org/unpd/wpp/Documentation/pdf/WPP2012\\_Press\\_Release.pdf](http://esa.un.org/unpd/wpp/Documentation/pdf/WPP2012_Press_Release.pdf) accessed 6/4/2014; *The Economist*. 'Fertility Treatment: African Demography.' March 8, 2014.

14 While increasing female education and employment often provide motives for contraception, they can have no effect on fertility among the poor without contraceptive provision. See Bamikale Feyisetan and John B. Casterline, 'Fertility Preferences and Contraceptive Change in Developing Countries,' Population Council, 2000. <http://www.popcouncil.org/uploads/pdfs/wp/130.pdf>. Accessed 6/1/2014.

15 Population Reference Bureau. '2013 World Population Data Sheet.' <http://www.prb.org/Publications/Datasheets/2013/2013-world-population-data-sheet/data-sheet.aspx>. Accessed 4/8/2014.

16 *The Economist*. 'Fertility Treatment: African Demography.' March 8, 2014.

17 Betsy Hartman, *Reproductive Rights and Wrongs: The Global Politics of Population Control*. (Boston: South End Press, 1995).

18 S. Ryan Johansson, 'The Moral Imperatives of Christian Marriage: Their Biological, Economic and Demographic Implications in Changing Historical Contexts,' in John A. Coleman, S.J., Ed., *One Hundred Years of Catholic Social Thought* (Maryknoll, NY: Orbis, 1991), pp.135–154.

19 The exception is Japan, whose fertility peaked in 1947, and rapidly declined due to high abortion rates. The Japanese medical profession rejected oral contraceptives as dangerous until the late 1990s, so the majority of fertility decline in Japan was due to abortion and condoms.

20 The U.S. through immigration maintained TFR close to replacement level until the economic recession of 2008, when it dropped slightly below; Canada's rate is only 1.6, and maintained only through the higher fertility of new immigrants.

21 These problems will be larger because most developing nations, unlike Europe and North America, have no pension systems for the elderly, with the sole exception, usually, of military, or, at most, civil service retirees.

22 'Iran: Make More Babies,' *The Economist*, June 7, 2014, p. 53.

23 All the TFR figures in this section are 2011 figures from the World Bank. <http://wdi.worldbank.org/table/2.17>. Accessed 3/12/14.

24 This would mean the church would allow not only NFP but also 'artificial' methods of contraception. The U.S. Dept. of Health and Human Services says that of 100 women who use NFP for a year, from 1–25 will get pregnant, and advises that in order to reach the lower range of this effectiveness rate one must have the cooperation of one's spouse, and should utilize all three methods of NFP (calendar, cervical mucus, and basal body temperature). <http://www.hhs.gov/opa/pdfs/natural-family-planning-fact-sheet.pdf>. Accessed 6/3/2014.

25 See reports from bishops about results of the 2014 survey the Vatican sent bishops' conferences on 'pastoral challenges of the family in the context of evangelization.' German, Swiss, Irish and American bishops who revealed results from their congregants reported large majorities who do not accept the teaching on contraception. Many conferences declined to release results. 'The Church and Reform: Vatican Survey Confirms Rift between Catholic Faithful and Hierarchy,' *Conscience* XXXV.2 (2014):11.

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28 John XXIII, *Mater et Magistra*, May 15, 1961 n. 150, but especially John XXIII, *Pacem in Terris*, April 11, 1963, n. 11. For centuries, the Church was in conflict with European states regarding everything from who can appoint bishops to where churchmen should be tried for crime, or who can educate children. Moving into the late modern era, the Church saw itself as the defender of the rights of individual citizens against the growing control of national governments. Thus trusting states to pursue the welfare of citizens, especially in private areas involving families, did not come easily. See Richard L. Camp, *The Papal Ideology of Social Reform*. Leiden: Brill, 1969.

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