

Newborn Sex Selection and India's Overpopulation Problem

Hrishikesh D. Vinod

Department of Economics, Fordham University, New York, USA

Email: vinod@fordham.edu

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ABSTRACT

We begin by noting how India is highly overpopulated and that this creates negative externalities for world environment. Next, we note that females in child-bearing ages alone determine the birth rate, compounding the population growth anywhere. Third, forcing families to have unwanted daughters can increase discrimination against women. Fourth, most countries impose no restrictions on women choosing the sex of their next baby. We use these propositions to argue that cultural preference against daughters in India has important benefits until India achieves net reproduction rate of unity. We argue that the correct policy for malnourished overpopulated India must be the exact opposite of the focus in North America and Europe, where they have an obesity epidemic and declining populations.

Keywords: Missing Women; Abortion; Environment; World Bank

1. Introduction

We show that the declining population problem in more developed countries (MDCs) of Europe and North America is diametrically opposite to the overpopulation problem in less developed countries (LDCs) in Asia, Latin America and Africa. Blinded by circumstances in MDCs many Western opinion makers fail to recognize the divergence and prescribe wrong-headed policies for LDCs, even though overpopulation hurts the world environment. The Western bias is not new and does have religious overtones. China's one-child policy has been roundly criticized by Westerners, although it has succeeded in preventing further overpopulation in China and allowed creation of about 10% annual growth in Chinese per capita GDP in recent years.

Even though India is soon going to become the most populous country in the world, the Indian policy makers are not giving a high enough priority to India's overpopulation problem. For example, the 1994 Pre-Natal Diagnostic Techniques Act (PNDTA) in India has outlawed sex selective abortions. This paper argues that PNDTA is wrong-headed for various reasons discussed in Section 2.2.

An example of misguided policy for LDCs is a massive report on gender inequality [1], by scholars based in rich countries. It talks about "missing women" under the false premise that world population should grow by equal number of sons and daughters. They are ignoring that LDCs need fewer daughters to reduce the net repro-

duction rate (NRR) (details in Section 1.2.1) to a number below the replacement rate of unity to solve their overpopulation problem. Another example is [2], where Germany-based scholars focus on the 3% increase in crime by attributing all of it to the greater proportion of young men in Chinese population due to China's one child policy.

The plan of the remaining paper is as follows. Section 1.1 begins with evidence explaining how India is overpopulated and why it is undesirable for the world environment. We indicate why scholars in rich countries are currently not concerned with the overpopulation problem. If we refocus attention on the overpopulation problem we need to focus on role of females discussed in Section 1.2 and that a cultural preference for boys instead of girls in India can be helpful. Section 1.3 discusses why overpopulation problem is harder to solve in democratic India, since reproductive rights are among fundamental human rights. We report recent reductions in the number of children desired by Indian families as a helpful trend which needs to be encouraged by avoiding all unwanted pregnancies.

Section 2 explains why "missing women" discussion in the Indian context is a distraction to be avoided by Indian policy makers. World Bank and intellectuals from rich countries are promoting the idea that a 50:50 ratio of boys to girls at birth is needed for absence of gender discrimination. Instead, Section 2.1 argues that curbing dowry amounts and the macho culture represent a far more urgent need, especially in India. Our concluding

Section 3 brings together all these arguments.

1.1. Overpopulated India Evidence and Environmental Externalities

Human population has grown exponentially over the last few centuries so that we are encroaching and overtaking the habitats of many other species. Holdren and Erlich [3] long ago debunked some misconceptions such as world environment is merely a matter of pollution or that one can ignore less visible indirect effects of overpopulation on food production, such as reduced ocean productivity. They blame unsustainable exponential human population growth for deteriorating world environment for all living creatures, calling it an “ecological disaster”, which has worsened since 1974. India’s overpopulation certainly contributes to this disaster. Chamie [4] argues that we have “Ponzi demography” equating population growth with economic prosperity, which privatizes the benefits and socializes the costs incurred from increased population growth.

Formerly less visible overlogging and expansion of agricultural lands, overfishing, declining populations of predator species are increasingly more visible. Man-made synthetic pollutants including computer components and excess production of naturally present toxic substances are increasing at alarming rates. With irreversibility of many environmental degradations, these authors recommend zero population growth for humans, requiring NRR to be less than unity. The world-famous high tech Indian city of Bangalore creates “stinking mountain of trash, the landfill has been poisoning local waters and sickening nearby villagers” [5]. The trash problem in many Indian cities including Mumbai is much worse. It is obvious that controlling population of India is a “moral value” on par with saving lives.

First, we consider UN population data from its department of economic and social affairs on world population (1950-2010), divided into two categories as more and less developed countries. We display the three time series in **Figure 1** showing continued growth in less developed countries (LDCs) and stabilization in more developed countries (MDCs). The population share of MDCs is steadily declining from about 32% to 18%. India’s share in the world population has increased from about 15% to 18% despite reduced birth rates in recent years.

A key implication of **Figure 1** is that MDCs do not have overpopulation problem, since their populations are not growing. In the absence of immigration from LDCs they face the problems of declining population. This completely changes the mindset of intellectuals in MDCs, who tend to be not interested in the overpopulation problem of India.

India has only 2.5 percent of world land and yet she must accommodate and feed 17 percent of world popu-

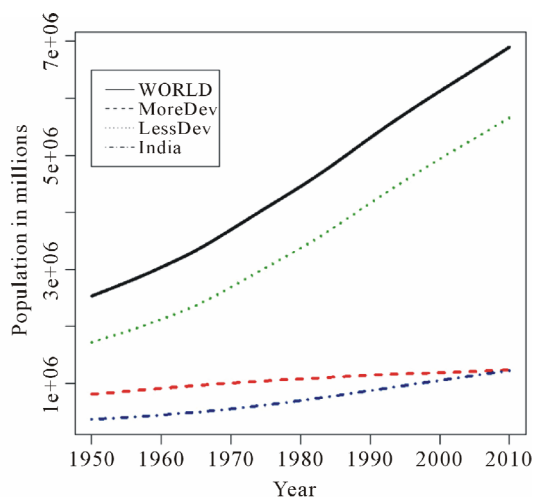


Figure 1. World population (top line) population in all less developed countries including China (second from top), more developed countries (second from the bottom) and India alone (bottom).

lation. There is very little elbow room in many urban centers in India, which is quite obvious to any visitor. According to [6] the population density of India is 377.7 inhabitants per square kilometer compared to only 142.9 for China and 31.85 for USA. Average annual renewable water resources per capita for USA is 9802, for China it is 2070 and for India it is only 1539 with a dependency ratio of 8.179% for USA, less than 0.9619% for China and 30.52% for India. Total per capita withdrawal of water is 1583 m³ for USA, 409.9 for China and 613 for India. These statistics reveal the severity of water shortage problems in India compared to China or USA.

Overpopulation in India makes daily life difficult in many big and small ways. We can list numerous major problems or negative externalities, including the following. Air and water pollution, depletion of underground resources including water, no space for housing, no space for infrastructure, malnourishment, dependence of agriculture on monsoon rains, stagnation of per capita growth despite growth in GDP because of a fast growing denominator, very large backlog of unsolved legal cases due to a lack of space for courts and general inefficiencies creating lawlessness when miscreants go unpunished.

Inadequacy of basic sanitation in India is dramatically illustrated in **Figure 2**. It shows that even in 2010 only 34% of Indians have basic sanitation, while 66% lack it. Since more than 95% Indian females do complete primary education, it is not the absence of sanitation education but water shortages and poverty arising from overpopulation should be blamed.

1.2. Females in Child-Bearing Ages Alone Determine Population Growth

If we properly focus on India’s overpopulation problem,

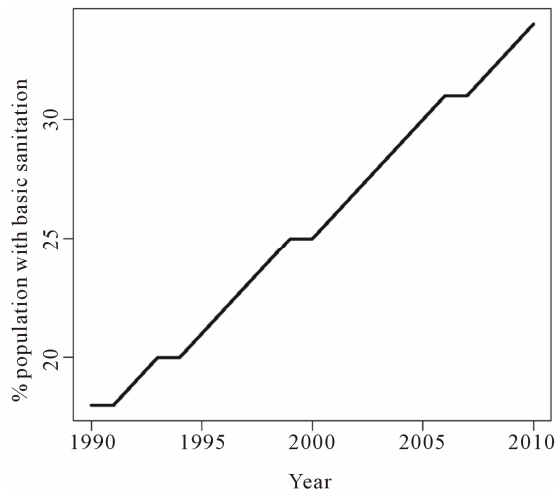


Figure 2. Percent population with basic sanitation facilities.

the importance of reducing the number of females in child-bearing ages becomes obvious. In demographic theory for mammals the aggregate population depends only on the population in the child-bearing ages. A clear implication of this proposition is that any attempt to control the population must focus on the females, especially those in the child bearing ages.

1.2.1. Compound Growth from Each Newborn Daughter

UN [7] 2010 report defines the “Net Reproduction Rate” (NRR) as: “The average number of daughters a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates and the mortality rates of a given period.” The NRR is expressed as number of daughters per woman. If NRR equals unity, each generation of mothers is having exactly enough daughters to replace themselves in the population. The UN reports that the NRR for India during the five years ending in 2010 is 1.17. This suggests that each newborn daughter contributes the following number of daughters to the Indian population due to compounding over the next four generations: (1, 1.17, 1.17², 1.17³), or (1, 2.17, 3.5389, 5.1405), since the NRR is defined net of possible mortality.

By contrast, there is no compounding when sons are born instead of daughters, yielding comparable net population increase of (1, 1, 1, 1). Thus China’s remarkable success in controlling population through one child policy is partly due to the cultural preference for sons, who are not subject to compounding. Our simple point here is that if population control is desired, cultural preference for sons is helpful.

1.3. Human Rights Includes Reproductive Rights

Overpopulation problem is harder to solve in democratic

India, because reproductive rights are among fundamental human rights. However, reproductive rights also include the right to choose the sex of one’s newborn. If abortion is legal in a country, as it is in India since 1971, the government violates the human rights of a woman if it forces a family to give birth to an unwanted daughter.

Consider the demographic data for India in detail. **Figure 3** shows how both the birth rate the death rate are going down. It is encouraging that the life expectancy for females (dotted line) which used to be slightly lower than in the total Indian population is now slightly higher.

In addition to the broad measures plotted in **Figure 3**, UN data cover a wide range of details. For example, for a subset of three years they have survey data regarding how many children were actually “wanted” by the family. Of course, some are unplanned pregnancies due to failure of birth control devices or other reasons and some mothers who want babies cannot have them due to health or other reasons. The following table shows that over time, Indian families do want fewer and fewer children. We argue that the best way for population control in democratic India is to support this trend of desiring fewer children and minimize unwanted pregnancies.

Year	Wanted	Births	Per	Woman
1993				2.6
1999				2.1
2006				1.9

2. Missing Women Discussion Is Distracting for India

Once we accept that India’s overpopulation has the highest priority, alleged discrimination against women

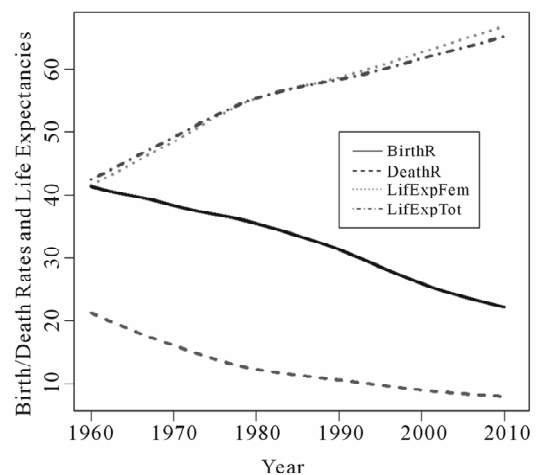


Figure 3. Birth rate, death rate, life expectancy for females and that for the total population.

cannot also have the highest priority, especially if some methods for solving the latter unnecessarily delay the date when India's NRR becomes unity.

A popular TV program aired in India by Aamir Khan called "Satyameva Jayate" has brought much needed attention to abortion for sex selection of the newborn or female foeticide. The program is readily available as the first episode on YouTube and features great photography and persuasive presentations. The program praises motherhood and interviews a few women whose families forced them to abort female fetuses against their wishes. These women were abused by husbands and family members, sometimes brutally tortured, allegedly for refusing to abort a daughter. The issue, however, is one of domestic violence against women and choosing the sex of the new baby is only the manifest cause of violence in the cases depicted on TV. It appears that the biggest share of unwanted pregnancies among Indian women are for daughters.

Let me say unequivocally that the perpetrators of domestic violence should be severely punished. Unfortunately, the TV audience's rage against domestic violence is subtly redirected to curtailing the right of mothers to choose the sex of their forthcoming babies. In fact, there are many other causes for domestic violence against women and children such as: machismo culture which tolerates male rage, domestic power struggles, dowry, poverty, and so forth. It is desirable to control all these factors, using all possible means including education and promoting greater awareness.

Since daughters tend to be naturally more care-giving and loving, Western countries have recently abandoned age-old preference for sons. More parents are choosing to stay with a daughter during their old ages instead of with their sons. Vinod [8] argued that free dowry market forces will automatically reduce the preference for male offspring with dowry amounts decreasing in the face of a shortage of girls for the number of eligible bachelors. If these natural and market forces are allowed to operate, the boys will have to start paying dowries and perhaps also pay a larger share of marriage ceremony expenses. If parents of daughters start receiving rather than paying huge dowry payments, it is certain to increase the desirability of having a daughter.

The increased desirability of daughters achieved through natural choice will certainly raise the status of all women in Indian society with many socio-economic benefits all around. We want all daughters to be treated as well as sons, if not better. By contrast, forcing mothers to have unwanted daughters will be counter-productive, because it can and does result in mistreatment of daughters after they are born, during their entire lives. A sad psychological effect on female children is that such parental mistreatment diminishes their own self-worth. There may

be some benefits associated with a 50:50 sex ratio among male and female births. However, the right way to achieve it is through education and persuasion, through free choice—not by forcing families to have unwanted daughters.

The sex ratio, or the number of females to males in the population depends on a long list of socioeconomic factors including birth order, social status, nutrition, seasonality, marriage system, length of marriage, ages, genetics, etc. mentioned by [9]. The profound effect of sex ratio on culture and society is claimed by some researchers. For example, [10], quotes a Harvard psychologist Guttenberg who claimed that excess men leads to conservative politics. **Figure 4** shows the sex ratio for various country groups including India, showing that India has one of the smallest ratios. However, it is not alarmingly small requiring a policy response. More important, smaller ratio will help India achieve a slower population growth through compounding discussed in Section 1.2.1.

The World Bank has produced an alarmist special report on gender inequality [1], which focuses on the issue of "missing women" mentioned earlier. However the data from the UN [7], regarding the number of males per female for India at about 1.08 is not much higher than that of the world as a whole at about 1.07. Unfortunately, the policies recommended by the World Bank focus exclusively on the 50:50 aspect of gender equality, while completely ignoring the overpopulation problem. It correctly mentions that policy makers in each country should not ignore the importance of "binding constraints". However, what about the constraint on everything caused by overpopulation?

I support three of the four policy goals advocated by the World Bank including:

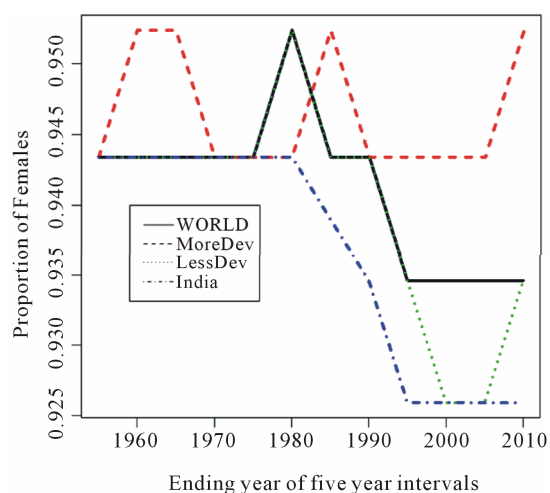


Figure 4. Sex ratio (number of females to one male) at birth in world population, in all less developed countries including China, in more developed countries and in India.

1) Reducing excess female mortality and closing education gaps where they remain. The mortality rate for female children (per 1,000 female children age one) has decreased during (2007 to 2011) as: (70, 68, 66, 63, 61), according to the World Bank data at <http://data.worldbank.org/indicator/SH.DYN.MORT>.

2) The second goal of improving access to economic opportunities for women is being achieved in India. Considering that only about 28% of Indian women completed primary education in 1971 the recent data in **Figure 5** is encouraging.

3) The third goal is increasing women's voice and agency in the household and in society. According to the UN Millennium Development Goals Report for 2012 women parliamentarians worldwide increased by 75% during 1995 and 2012. But in India the proportion of members of parliament marginally increased from 9.7% to 10.96% in the 11-year period between 1991 and 2012. Thus women's voice is not being heard as well in India.

4) The fourth goal stated by the World Bank is to limit the reproduction of gender inequality across generations. That is, the World Bank seems to prefer to solve the problem of missing women by forcing families to have unwanted daughters by imposing artificial numerical goals of 50:50 female to male births. If the World Bank truly cares for gender equality, it should replace the 50:50 sex ratio proposal by a direct attack on the macho culture, which often physically hurts women around the world, as described in the next subsection.

2.1. Macho Culture and Shortage of Marriage Age Girls

A very important reason for mistreatment of women almost everywhere is the machismo culture promoted in the entertainment media. A careful study by trained sta-

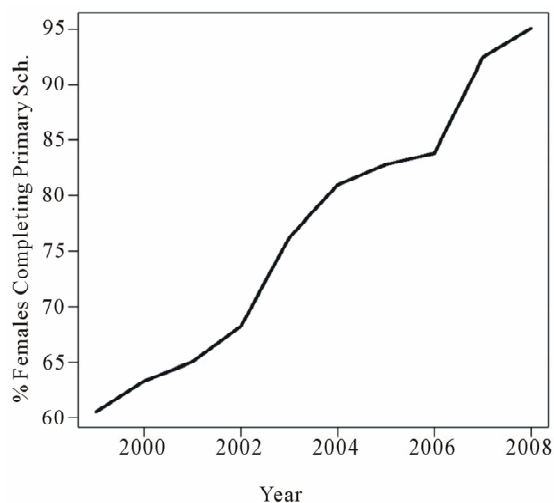


Figure 5. Percent females in India completing primary school education.

tisticians [11], shows that the macho culture incited during the “World Cup” soccer games in UK indirectly seems to lead to domestic violence against British women. World Bank report has conveniently ignored the violence against women in developed countries. Kristof [12] states that “One person in the United States is sexually assaulted every couple of minutes. A slight majority of rapes are never reported to the police, and others are never solved. For every 100 rapes, only three lead to any jail time”. A recent gang rape in Delhi has brought much needed attention to this. The problems in Indian villages are worse. Inadequate punishment of violence against women has almost nothing to do with shortage of marriageable age girls, absent in the US.

In human affairs there are always costs and benefits. Population control through less female births admittedly has social costs, which must be addressed in a humane fashion by helping to change attitudes towards daughters and reducing dowries. The sex preference for boys has been most prominent in the Indian province of Punjab, which also has one of the highest dowry amounts paid by parents of the bride. The Indian TV program mentioned at the beginning of Section 2 interviews some young men in Punjab who allegedly cannot find wives, playing to the machismo culture and its Bollywood hero Salman Khan. The Punjabi boys should focus on the high dowry problem in Punjab as the real cause of their predicament. As a remedy, these boys should be encouraged to offer large dowries to secure a bride, helping raise the status of women in Punjab. Fortunately there is evidence that persuasion can work. A Punjabi village of Kajampur achieved the 50:50 sex ratio without coercion according to [13].

Missing women can indeed create a problem after several years in terms of a shortage of marriageable girls. This can admittedly lead to a lack of safety for women on streets and prostitution. However, both problems should be dealt with by law enforcement tools. Prostitution, the so called oldest profession, has been present for thousands of years when there was no shortage of girls. Selling of Indian women from the Bihar province as sex slaves to Middle Eastern rich sheikhs was exposed a few years ago, having everything to do with poverty and nothing to do with shortage of females.

Violence against women is not treated seriously enough by law-enforcement authorities, perhaps because the victims are reluctant to press charges. Women have suffered acid attacks, “eve-teasing” or taunting and other forms of misbehavior in many parts of India for several decades. These are lawlessness issues and macho perpetrators against women should be punished severely. The relative shortage of women temporarily caused by reduction in the number daughters designed to solve the bigger overpopulation should not be allowed to be used as an excuse for violence.

The machismo is directly responsible for a number of social ills including violence against women and does not belong in civilized society where men and women are supposed to be equal. China has had too many marriage age boys per girl for some time now and they have largely avoided criminal mistreatment of women, perhaps because they do not have Bollywood praising the macho image. Indian culture says that India is a “land where women are worshipped” (Yatra Naryastu Poojyante). Why should Indian policy makers forget this particular tenet of Hindu culture and continue to provide any excuses to macho boy criminals?

2.2. Abortion Legislation and PNDTA in India

Medical Termination of Pregnancy (MTP) Act of 1971 legalized abortions if a woman’s physical and/or mental health were endangered, to avoid a potentially handicapped or malformed child, if the woman was raped, or if the pregnancy was a result of failure in sterilization. Abortion for girls under 18 and for “lunatics” required the consent of a guardian. The length of the pregnancy must not exceed twenty weeks in order to qualify for an abortion. Rule 5 of MTP adopted in 2003 denied right of a husband to compel his wife to give birth to a child and explicitly recognizes that unwanted pregnancy would naturally effect the mental health of the pregnant women.

The Pre-Natal Diagnostic Techniques Act (PNDTA) of 1994 criminalized giving or taking prenatal tests, including ultrasound scanning, solely to determine the sex of the fetus. (see http://www.medindia.net/indian_health_act/the_pre_natal_diagnostic_techniques_pndt_act_rules/list-of-acts.htm). The penalties under PNDTA were stiffened in 2002 as three years in jail and a Rs.10,000 fine for the first offence, and five-year imprisonment and Rs.50,000 for the second.

It is plausible that this legislation is a sinister way to control Indian women by denying their abortion privacy rights available since 1971. There are at least four additional reasons why PNDTA should be rescinded.

1) Although PNTDA is sold as a way to avoid discrimination against Indian women, it is more likely to cause greater discrimination against already born daughters as long as high dowry amounts persist. There is growing evidence of female infanticide in India. Everyone can agree that child murders are far worse than aborting a fetus before it matures.

2) It has not worked, since 50:50 ratio of boys to girls at birth is not being achieved at all. The TV program mentioned above was aired recently, and shows that sex selective abortions remain common throughout India. This paper argues that the 50:50 goal itself is flawed.

3) PNTDA violates a woman’s privacy and a basic human right to choose the sex of her baby. There is

nothing wrong with a family wanting to know the sex of the fetus. Ultrasound done for this purpose is perfectly legal in most countries, and should remain so. PNDTA amounts to chauvinistic control of women. Indian government should keep its nose out of such private decisions.

4) It exacerbates India’s overpopulation problem through compounding. Section 1.2.1 defines net reproduction rate (NRR) as daughters per woman in a cohort and shows how compounding will add five females to India’s population after about three generations. Brown [14] of Earth Policy Institute warns about impending food shortages due to overpopulation.

If Indian policy makers are serious about women’s rights and reducing overpopulation, PNDTA should be rescinded.

3. Concluding Remarks

We provide statistical evidence supporting the proposition that India is highly overpopulated and that this creates negative externalities for world environment. Our graphics shows the unique overpopulation problem, mostly absent in rich countries. For example, with 2.5% of world land and 17% of world population, it is not surprising that 66% of Indian population lacks basic sanitation, as seen in **Figure 2**. Hence population control should be the highest priority for India, requiring the net reproduction rate (NRR) to be unity.

The UN reports that the latest NRR for India is 1.17. Upon compounding 1.17 we show that each newborn daughter will contribute (1, 2.17, 3.5389, 5.1405) to Indian’s population over the next four generations. Since boys do not bear children, a newborn son will contribute only himself and only once to India’s population. If population control is the top priority, $NRR = 1$ should receive high priority. India’s politicians are participating in the “Ponzi demography,” a phrase coined by a former UN demographer, [4], for greater power and wealth for themselves at the cost of everyone else.

Dowry has been outlawed in India for decades, yet it persists and remains an important economic cause of discrimination against daughters. Forcing families to have unwanted daughters can increase discrimination against women as long as families have to provide for dowry liability when a daughter is born. Violence against women is a more important gender equality issue than the 50:50 sex ratio, and violence can be reduced by reducing the macho culture unabashedly promoted by the TV and Cinema.

It is unfortunate that the World Bank has joined the “missing women” bandwagon and seems to favor imposition of an artificial 50:50 numerical quota on the sex of the newborns in less developed countries, while ignoring the dire consequences of extreme overcrowding on

health and safety.

Missing women is a red herring mostly irrelevant for less developed overpopulated countries. This paper argues that Indian women should have the right to know and choose the sex of the fetus, as is available in almost all countries. Since this implies a clash of values, a woman's right to privacy should trump over the nicety of a 50:50 sex ratio at birth. Hence the Pre-Natal Diagnostic Techniques Act (PNDTA) in India should be rescinded.

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