

MCDB 150 Global Problems of Population Growth Lecture 14 Notes

You remember that I told you that, for most of human history, the birth rate required to keep a population from going extinct was 40-50 births for every 1,000 people each year.

So that's approximately the long-term historical birth rate.

Most of the developing world entered the modern era with that BIRTH rate.

---->SLIDE #30

Here is a graph of birth rates for each region of the developing world.

In 1950, just after WWII, all lay between 40 and 50/K.

I'm using the term 'modern era' now to refer to the period after WWII.

In pre-modern times, populations weren't really growing,

so the death rate was about the same as the birth rate.

i.e., the aboriginal death rate is also 40 to 50 per 1,000.

Now, the colonial powers, for all their faults, brought in basic sanitation and basic public health and reduced the level of violence from communal warfare.

So by 1950 when almost the whole third world was still colonized,

The death rates everywhere were down to ~half that primitive rate.

After 1950, the death rate continued on down.

Sometime in the 50s the birth rate in the developing world started on a downward course.

From 1950 to ~1990 both the birth and the death rate continued down on approximately parallel courses.

Except for SSA

But, there is a huge gap

There are about 2X as many births as deaths persists throughout this period.

In South and Central America, the death rate is lower, so the birth rate is closer to 3X the death rate.

That gap is the population explosion.

The graph shows births and deaths per thousand people. As the base grows, the number of people that get added to the population each year got larger and larger.

This explains the 1950-1990 rise in the graph I showed you last time.

---->SLIDE #31

This description of what's happening in the developing countries makes it sound very much like what happened in Europe. But there are enormous differences.

Compare Sweden and Mexico.

---->SLIDE #33

1. Starts a century earlier in History

2. Starts at much lower levels of birth and death rate.
3. Declines in Sweden are slow and gradual.
4. Decline in Birth Rate in Mexico is amazingly rapid.
5. Decline in Death Rate in Mexico is amazingly rapid.
6. Magnitude of Gap is amazingly large.
7. By 1997, population was still exploding in Mexico,
not in Sweden.

A cartoon of the population explosion shows the differences between the developed and developing countries.

Livi-Bacci Fig. 5.1---->35

1. It's later. In the developing world, the pop explosion happened almost 100 years after it happened in Europe: 1870 vs. 1960.
2. Since the drop in mortality happened MUCH more rapidly.

1. The increase in population rises much faster.
It reached much higher growth rates than in Europe.

The growth rate in % is 2 to 3X anything Europe ever experienced.

The explosion developed much more rapidly -

Not giving these societies time to adjust to higher levels of population.

4. A decrease in fertility is happening faster.

Hopefully, the decline in growth will also be faster.

5. In Europe, the fertility transition happened largely before there were modern contraceptives.

The 3d world decline, people are definitely using modern contraception.

Mechanism is contraception:

SLIDE PRITCHETT 40

Why is everything happening faster in the currently developing countries.

Mortality decline: Medical science is already there.

Drop in Death Rate

An understanding of health was already there.

Vaccines, Vitamins, Viruses had all been discovered.

Governments that believed it was their responsibility to provide

Basic public health programs imposed by colonialists.

Technology of contraception already there

Development, in 1960s of pill, IUD, simple sterilization methods.

Acceptability, even cachet, from West.

Very extensive and effective means of mass communication.

Long experience w/ Family Planning Programs in the West.

WESTERNERS WERE BASICALLY THE GUINEA PIGS FOR CONTRACEPTION.

TRANSPLANT OF THESE PROGRAMS FROM THE WEST.

The later the faster – each country is being influenced by what has already happened in previous countries.

KAP = Knowledge Attitude Practice. I have this article

One of the main things you should understand, is that not only is the demographic transition quantitatively more intense in developing countries,

Everything is EMOTIONALLY MORE INTENSE

A change in the social norms about sex and reproduction attacks one of the most important foundations of a culture.

I gave you some readings describing the personal and emotional aspects of the fertility transition in Europe.

In the West, there is a long tradition of individualism –

Of each person doing what suits him or her.

And the changes in reproductive behavior were relatively slow.

So the West did not have a severe time of it.

In most developing countries, The stringency of the cultural constraints, the social control over the actions of individuals is much more intense.

Especially where sexuality is concerned.

Give you article about the murder of a Palestinian woman by her little brother because she was SUSPECTED of infidelity. From the article you can see the intensity of the passions aroused by sexual and reproductive matters.

A Jordanian woman (Norma Khouri, Honor Lost, Simon and Schuster, 2003) has recently written a book about her best friend. Her friend had been seen in public walking with a man who was not a relative. This was such a stain on the family's honor, that the woman's father stabbed her 12 times in the chest and stood over the body to make sure she was dead before calling an ambulance.

THE FAMILY WAS NOT POOR AND NOT MUSLIM,

BUT MIDDLE CLASS AND ROMAN CATHOLIC;

THEY OBEY THE RULES OF THE CULTURE WHERE THEY LIVE.

Khouri claims that this happens to thousands of women. See profile in New York Times 2/1/03.

There is a reading for later on about a very similar incident in India, where a woman is raped by her father-in-law and her own father insists on killing her.

Contrast with the Na of China or the Japanese Women of Suye Mura that .I had you read.

Secondly, the ECONOMIC CONSTRAINTS on development and modernization are more severe and intense. PEOPLE ARE POORER AND THE PHYSICAL INFRASTRUCTURE OF MODERNIZATION IS LESS WELL DEVELOPED.

The third world transitions are all happening at much lower incomes than when it happened in Europe.

I've included in today's packet a two page summary of headlines during a short visit to Tanzania - showing all the physical problems that underdeveloped countries have. In today's lectures you hear about some of the physical problems faced by Bangla Desh.

MULTIPLIER

A summary of the population explosion for each country or region is its MULTIPLIER.

How much has the population grown between a period before the explosion and now?

No country in Europe multiplied its population by more than a factor of 4.

The developing countries are experiencing much higher multipliers.

India will have grown by a factor of 4-5.

Mexico will have grown 7-10 times.

Kenya >15X

Fraction of world in developed vs. underdeveloped countries shifted one way and then the other.

Weeks pg. 38: Before the great expansion of European people's by their population explosion and migration, Europeans represented 18% of world's population.

At its maximum (1930s) this number had doubled.

European's represented 35% of the world's people.

As the non-European world started its mortality decline- things started reversing.

Right now (1995) the balance is essentially back where it had begun:

~18% of the world's people are again of European ancestry.

However the third world is still in the midst of its population explosion - so that number will shrink.

Projections: As percentage of world population

Currently there are 3X as many people in developed countries as in developing countries.

This will change to at least 6X as many.

Developed countries 25% --> 14%

Developing countries 75% --> 86%

In short, the relative population of developed countries will drop to less than half of what it is now.

And that presumes that fertility in the developed countries COMES BACK UP to replacement.

NOW THE EARTH IS A FINITE PLACE

BIRTHS MUST EVENTUALLY COME INTO BALANCE WITH DEATHS!

WHAT'S GOING TO SOLVE IT?

FAMINE DISEASE WAR

FAMINE: No-one knows how many people die of starvation or malnutrition.

Medical statistics: a disease or predisposing conditions?

FAO 25,000 people (adults and children) die EVERY DAY from hunger and related causes

FAO The State of Food Insecurity in the World, 2006) <http://www.wfp.org/hunger/stats>

That's over 9 Million deaths a year.

25K X 365.25=9,131,250

Currently a human dies of starvation every 3 ½ seconds in the world.

17.36/min X 75 mins = 1,300 during the course of this lecture.

Mostly it's chronically malnourished children and babies.

(Merck Man 711)

Malnutrition is THE leading cause of death in children in developing countries

UNICEF 2004 State of World's Children: 10 Meg children <5yrs die from diseases like diarrhea and measles.

From LA Times via PBPPost 12/04.

There are ~13 million child deaths a year.

The World Bank, in its Millennium Goals (2004) says that malnutrition is the underlying cause of death in nearly ½ of deaths of children under age 5

apparently from Lancet 2003 [361:6](#) see also <http://www.unicef.org/pon95/nutr0007.html>

Newsweek (1/17/08) reports 1/3 of child deaths due to malnutrition

From a special series on maternal and child malnutrition appearing online Jan. 17 in *The Lancet*.

<http://health.usnews.com/usnews/health/healthday/080117/malnutrition-responsible-for-a-third-of-child-deaths-worldwide.htm>

Kwashiorkor

---->Fig. 50

Kwashiorkor in Village

---->Fig. 51

AMERICAN BABY AND AFRICAN BABY - 6 MOS OLD

---->Fig. 52

In 2004 FAO estimated At least 5 million children are now dying of hunger every year.

14,000/day.

NYT 12/8/04

BMJ: Malnutrition kills about 3.5 million mothers and children under 5 years old every year,

BMJ;[336:912](#) (4/26/08)

200 Meg people have starved to death since Ehrlich wrote: The Population Bomb

As population grows, people get pushed out into inhospitable land.

Including land subject to climatic disasters. Like droughts.

Boy in Mali. This used to be one of the largest lakes in West Africa.

---->Fig. 54

People would not choose to live in such land if better land were available elsewhere.

Boy: 13 Lbs. Ethiopia or ??13Kg = 30 lbs??

---->Fig. 55

One of most disturbing images:

Mali 1985 This is what motherhood is all about. (dry breasts)

---->Fig. 57

You've seen this kind of picture endlessly:

They have almost lost the power to affect us.

NYT 12/8/04 Oxfam says that aid budgets of rich nations are half of what they were in 1960.

IN ORDER TO BALANCE POPULATION W/ FAMINE, STARVATION RATE WOULD HAVE TO INCREASE ~8X

DISEASE - AIDS

AIDS is a horrible, horrible epidemic taking away some of our very best young men and women in the prime of their life to a terrible death.

It killed about 3 million people in 2008.

CIA Factbook 2008

At end of 2007 UN said better data had lowered the estimate for # people infected

By 6.3 million to 33.2 million.

McNeil, Donald. U.N. Agency to Say It Overstated H.I.V. Cases by Millions. The New York Times. 20 November 2007. <http://www.nytimes.com/2007/11/20/world/20aids.html>

UNAIDS, the United Nations' AIDS-fighting agency, released a report acknowledging that "it overestimated the size of the epidemic and that new infections with the deadly virus have been dropping each year since they peaked in the late 1990s." The agency will lower the number of people it believes are infected to 33.2 million from 39.5 million as estimated last year. The changes reflect "more accurate surveys," particularly in India and some African countries. Epidemiologists have criticized for years the way estimates were made. Only in a small number of countries like Kenya and Zimbabwe have figures reflected widespread behavioral changes, like fewer partners. Despite the revised estimates, "the epidemic remains one of the greatest scourges of mankind."

But it is not a very important event demographically.

Calculated from the PEAK of the epidemic

GRAPH FROM UN '99 ---->SLIDE 70

AIDS in Uganda and South Africa

SLIDE 71

Here is a problem that is ½ as large as AIDS

woman cooking over smoky fire SLIDE 74

WHO estimates that 1.6 million people a year die from toxic indoor air.

Here is the solution to that problem

modern stove SLIDE 75

These can be made for as little as \$10.

If you want to save lives: what should you work on AIDS or stoves?

Pay attention to the demography.

Although AIDS will not cause a decline in population - it will really degrade the quality of the population. It takes away people in the prime of their working life. Terribly increases the dependency burden. In the worst hit countries 1/6 to 1/4 of all children will grow up w/o one or both parents. NYT 11/20/97 pA7 So AIDS will not solve the population problem, but will compound it:

Still too many children - BUT now these children will be orphans.

NYT 2/11/01 AIDS has orphaned 12 million children in Africa, nearly triple the number of political refugees there.

WAR - hardly touches statistics

Some people think that War will be the ultimate arbiter that balances births and deaths.

The Hiroshima bomb killed ~75,000 people.

The Nagasaki bomb killed ~25,000 people.

That's 100,000 people in 2 quick flashes.

But world population increases BY OVER 200,000 every day:

That's equivalent to 2 and 2

Columbia Encyclopedia: 130,000 killed or injured

WWII factbook, Harper 1982: 70,000 died immediately, up to 200,000 eventually.

Nagasaki: 20,000 died.

IF THE BALANCING OF BIRTHS AND DEATHS IS GOING TO BE DONE NEGATIVELY:

SOMETHING A LOT WORSE THAN WE'VE EVER SEEN IS IN STORE FOR US.

Up till now our discussion of the population explosion has been "Apocalyptic".

The end of the world is near.

But, there is a famous saying to the opposite:

If something can't continue forever,

It won't.

The alternative, of course, is that the birth rate must come down.

That is indeed what has been happening.

This lecture describes the fall in fertility in developing countries

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Compare these two interviews:

Mali (1983).

Sitan, a woman, has heard about the contraceptive pill but has not used it.

Interviewer:

Sitan, how many children more would you like to have?

Sitan: Ah! That is for God to decide.

Interviewer: You yourself, how many would you like to have in your whole life?

Sitan: I don't know the number.... It's when God stops my births.

Interviewer: How many boys and how many girls would you like to have?

Sitan: It's God that gives me children, since it is God that gives or not.

You, you can't make a choice about your children.

Despite the rather relentless interviewer, this woman insists that "you can't make a choice about your children."

For Sitan, the control of fertility is not "within the calculus of conscious choice".

You already read an article describing this stage in the 1st reading packet E. van de Walle, 1992.

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Both Bangla Desh and Mali are Muslim countries.

The religion in B-D is more conservative than in Mali.

In Bangla Desh, the gov't and international aid groups established a really excellent family planning program.

Mukti Ma is a community health worker, one of the women who work in the family planning program.

Shamiran is an 18 year old girl who is just learning about birth control.

She has overheard Mukti Ma, talking to her aunt and giving her pills.

The girl seeks more information from the aunt but was told that these matters will be explained to her only when she is married.

So she goes to school and discusses everything with the other girls.

Some knew of Mukti Ma and her work and some didn't.

But everyone was interested.

One girl said: "I would like to work as she does. Look at her. She wears her sari so nicely and goes to different neighborhoods.

My sister told me she earns a good amount of money."

Others said "But my father and grandmother said she is not a good lady."

Shamiran said: "Grandmothers and fathers are always behind the times.

They do not want to let girls go to school, I do not want to consider their opinions.

I like Mukti Ma's work and I will have pills to control births."

Some girls said "Yes, I think we should have this medicine so we will not have so many problems with so many children. With few children we will be able to keep our saris clean and nice." Everybody laughed together.

So here the conflict between the perceived self interest of the girls and the values their culture is trying to impose is very clear.

The girls see having many children as just causing a lot of problems.

What interests the girls is to look nice: to have their saris nice and clean.

To be able to earn money and go around to different neighborhoods.

But the enforcers of culture are trying to impose a different set of preferences:

The father and the grandmother say that Mukti Ma is a bad person.

They don't want to let the girls go to school.

However, the girls are powerless:

It is often claimed that men are to blame. They force women to have more children than the women want. There is some truth to that.

In many traditional societies, however, it is the mothers-in-law who is powerful in the house, especially in matters of reproduction. A teenage boy marries a teenage girl (they may never have met before). The girl moves into the boy's house where the mother rules the roost. The girl is treated like a servant – but she must produce children. In many cases, neither the girl nor her husband has much say in these matters.

Mothers in law are often the dominant enforcers of the cultural rules of reproduction.

The data I presented in the last lecture shows that the Shamiran's of the earth have taken over from the Sitan's.

I showed you data from every developing country that shows that women don't want all the children they currently have.

Actually, we've had this knowledge from surveys for decades.

1960s: Knowledge, Attitude, Practice (KAP) surveys

1972-1982: World Fertility Survey (WFS) 62 countries, 350,000 women interviewed.

Weeks, 6th ed p23, 114 and Family Planning Surveys (coordinated by US CDC)

from 1985 and continuing: Demographic and Health Surveys (DHS)

The answer came back overwhelmingly:

There was an enormous desire to reduce fertility.

Now it is easy to answer a survey and say that you don't want any more children.

But how serious are families about putting this into practice?

Evidence from sterilization

Evidence from abortion

Evidence from actual fall in birthrate

When medical care is available:

The most popular method of birth control chosen is the most permanent:

Sterilization is, by far, the dominant choice for contraception.

Brazil, Carvalho & Wong p383:

Fertility Transition in Latin America SML HB940.5 A3 F47X 1996 (LC)

By the late 80s, 40% of married women using contraception were sterilized (fn 12).

Is sterilization "resorted to especially by the poorest women, who are the least well informed and therefore more easily manipulated by anti-natalist forces or unscrupulous health workers?"

No, sterilization is more prevalent the higher the income of the family.

Oral contraceptives are more frequently used by less affluent women.

For the whole country, sterilization increases with both income and education.

Puerto Rico film: La Operation.

US: Sterilization is also the most preferred method in US. For instance, in 1987, 13.8 million women used tubal ligation as their method of birth control

13.2 million were using the birth control pill.

Even though families overwhelmingly want to reduce their fertility,

The mechanism is not always available.

The anecdotes I told you from Jewish and Italian women and other places are rather funny and make it seem like the transition through these stages is easy.

It's not. The transition is a very painful stage.

Between wanting to reduce fertility and being able to do it humanely, is a large gap.

Because of this gap, the desire to limit childbearing often results in

DESPERATE situations.

When desperate, women will go to almost any length to limit their childbearing.

University Teaching Hospital, Lusaka, Zambia

Ten women with botched abortions were lying on nine beds ... five others were sprawled on the concrete floors of the hallways. A few more were on the floor outside the entrance ... There were no blankets or covers ... Most wait 12 hours for treatment from a physician ... The "average" woman ends up overnight on the floor. She receives no food or water. The women were aborting on the floors or on their way to the single toilet at the end of the long hall. 30% of the patients complete their abortions on the concrete floor with no medical care. "All we can do is clean it up" said the Head Nurse.

This is not isolated:

Go anywhere in the underdeveloped world and you see this

In Kenyatta Hospital in Kenya - 50 women enter everyday - the victims of illegal abortion.

Planned Parenthood Federation of America, through its international unit had a project in Kenya to train the local private doctors in family planning and abortion services. The local doctors had been turning away abortion clients because they did not know where to refer them. One physician told the project director that he had turned away a young girl, only to find her in a hospital a few days later after she had procured [an illegal] abortion. The girl died. The private doctor said that he had since lived with a great deal of guilt. He is happy now that he can provide treatment using a very safe procedure. (Manual Aspiration.) (FPIA News 11/97)

It is not only 3d world wher abortion is prevalent.

Soviet Block:

Bulgaria: 57% of pregnancies end in abortion. Int Fam Plan Perspects 24:184

~1/2 of live births in a wide range of situations

In US and in the world as a whole: ~1 abortion / 3 live births.

Estimated 40-50 Million abortions worldwide, annually

About 1/2 of these are illegal 26meg legal, 20 Meg illegal Pop Today 4/99 p8

WHO estimates ~200K deaths annually from illegal abortions.

A woman dies every 3 minutes from a botched illegal abortion: 500/day

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During the transition, there are always factors pulling people one way or another on fertility decisions.

One of the most important factors pushing people toward small families is the media.

TV and the movies show a lot of small families that are wealthy and enjoying life.

The media is everywhere:

TV in cave in Tunisia 82

Oppositely, among the reasons to have large families:

need for extra farm labor

support by children in old age

their religion demands it

cultural reasons like in India, the need for a son to light the funeral pyre and send you properly into the afterlife. We discussed similar reasons in Africa.

status reasons: more children means more prestige for both men and women

macho reasons

etc., etc.

Even if a family wants to have fewer children there are many reasons to NOT accept family planning. For instance,

The services are primitive Beaten-up family planning bus in India.

SLIDE 83

Poor people do not have good food, sanitation or medical services.

So they are sick a lot.

They also don't have a scientific understanding of disease.

The evil eye is as reasonable a cause as a germ

I some illness strikes soon after initiating contraception

it's the fault of the contraception.

In fact, if almost anything goes wrong

it's the fault of the contraception.

Rumors of any illness 'caused' by contraception rapidly spread through the village.

One especially problematic side effect is breakthrough bleeding

Especially in a culture where menstruating women are considered 'unclean'.

In response to conditions like I have been describing, virtually every developing country in the world started a national family planning programs and encouraged non-governmental family planning programs to be established.

Progress Followed:

BOLIVIA:

Contraceptives have become available

½ of married women are using some form of contraception

25% are using a modern method.

ECUADOR

2/3 of women are using some method

50% are using a modern method.

Women had been having 6 children.

But now the birth rate has fallen to 3.3.

TUNISIA

60% of married women are using contraception.

50% a modern method

1 out of 8 married women has chosen to be sterilized.

Total fertility rate has dropped from 5.7 to 2.1, replacement level.

IRAN

Even Iran has recognized the problem. The population growth rate was 3.9%

In 1990, President Hashemi Rafsanjani instituted a family planning program.

All methods were made available free of charge.

→Iranian Women Packing Condoms SLIDE 3

In Nov 1990, Gov't. legalized female contraceptive sterilization and provided it free through the health care system. Originally, women must have had 3 children, including at least one son and have husband's consent.

Now, they don't even ask as long as they have 1 son.

In the first year 70,000 women of child-bearing age chose to be sterilized.

1997: Iran raised age of marriage from 9 to 13

from Julie

By 1997 use of modern contraceptives had doubled to 56% of married women.

Fertility rate also dropped in half: 5.2 --> 2.6 (1989-1997).

Pop Today 8/99

Now ¾ of Iranian married women are using contraception with 56% using a modern method.

2000 DHS: Iran reached replacement level fertility (2.1).

Pop Today 5/6 2002.

This story of falling fertility is repeated in most countries of the world.

At the peak of the population explosion:

Birth Rates fell:

Thailand	50% in 12 years
Columbia	40% in 14 yrs
Indonesia	46% in 20 years
Morocco	31% in 12 years
Turkey	21% in 10 years
Brazil	60% in 25 years
Mexico	30% in just 6 years
Botswana	26% since 70s
Zimbabwe	18% since 70s
Kenya	35% since 70s

In the face of all this evidence, information that we have known about for decades, many people still have the idea that aid programs for family planning is westerner's 'pushing' our cultural norms on helpless poor people.

This is an absolute myth.