

**SOCI 101**  
**INTRODUCTION TO**  
**SOCIOLOGY**

**HUMAN**  
**POPULATION**

[SOCIOLGY.MORRISVILLE.EDU](http://SOCIOLGY.MORRISVILLE.EDU)  
 > **SOCI 101**

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**Human Population**

**1. The Population "Explosion"**



**On October 31, 2011 (+/- 6 months), the world saw its 7 billionth human being born.**

**During the duration of this 30 minute video \*, the world population will GROW by over 4,000 people.**

\* (Here's the calculation: every second ~5 people will be born, while ~3 will die, creating 2.3 new world citizens per second ---that's 138 citizens per minute \* 60 minutes = 8,280 people/hour divided by 2.)

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**Human Population**

**2.a. Demography: the study of human population**

**Demographers** are interested in the causes and consequences of human population growth.

**PRE-HISTORY: Impact of the Paleolithic Era**  
 (250,000 B.C. – 10,000 B.C.)  
 For most of human history, human population grew to about **170 million**; changes started with the birth of civilization

**i. Impact of the Agricultural Revolution**  
 (~ 10,000 B.C. – 1800 A.D.)  
 Over the next ~12,000 years, the human population grew to **1 billion**;

**ii. Impact of the Industrial Revolution (~1800 – 1950):**  
 Over 150 years of industrialism, the human population grew to **3 billion**.

**iii. Impact of Modern Globalization (~1950 – 2011):**  
 Over the past 60 years, the human population has more than doubled to reach **7.5 billion**.

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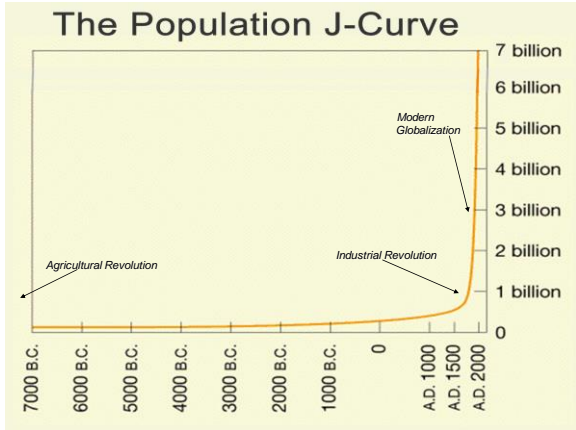
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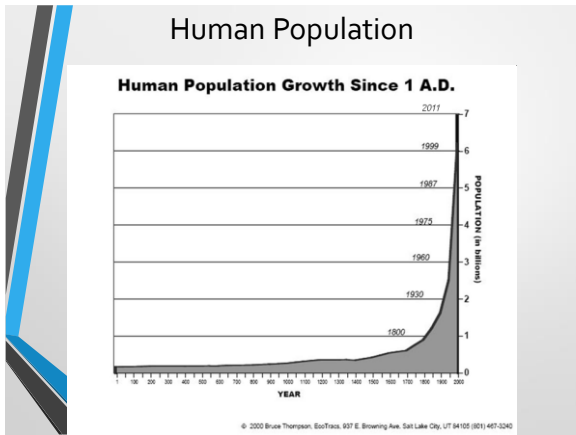
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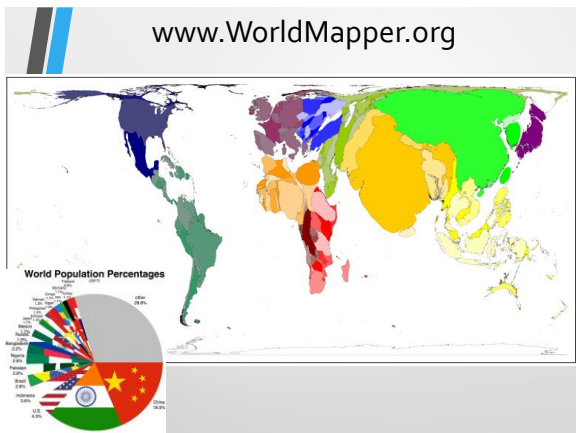
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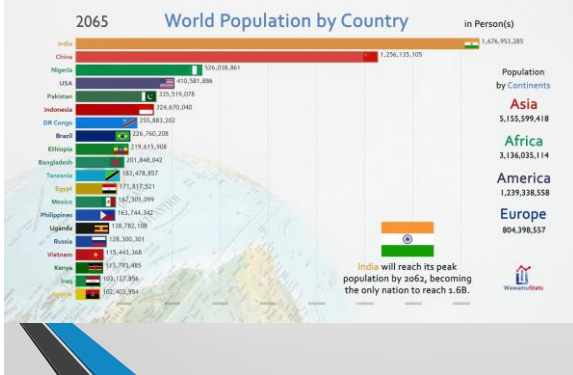
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## The Future of Population Growth




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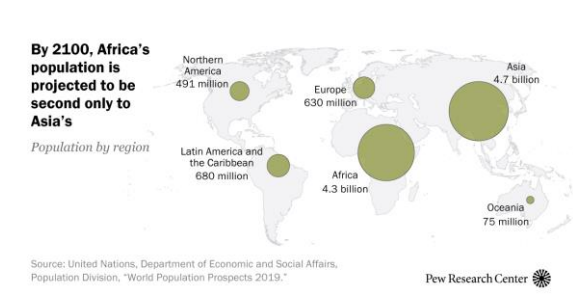
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## The Future of Population Growth




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## Human Population

### 2.b. Exponential Growth: The Lily Pond Parable



If a pond lily doubles every day and it takes 30 days to completely cover a pond, on what day will the pond be 1/2 covered?  
[Click this link to discover the answer!](#)

- On what day will it be 1/4 covered?
- What kind of environmental consequences can be expected as the 30th day approaches?
- What will begin to happen past the 30th day?
- At what point (what day) would preventive action become necessary to stop unpleasant events from happening?
- With respect to human population, what corresponding day are we at in the world?

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# Human Population



## 3. The population explosion

The formula for calculating population change:

$$\text{Population Growth Rate} = \frac{\text{Births} - \text{Deaths} \pm \text{Migration}}{\text{Time}}$$

Q: What part of this formula is affecting the global population explosion today?

A: The population explosion is due to a reduction in mortality (death rate) throughout the world, NOT an increase in fertility (birth rate).

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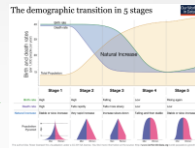
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# Human Population



## 4. Current Population Theory: The "Demographic Transition"

Demographic = Population  
Transition = Change

a. Demographic transition theory states that due to a decrease in mortality as a result of **technology transfer** we have seen a renewed explosion in world population since 1950.

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# Human Population



## 4. The Demographic Transition

b. According to demographic transition theory,

4 stages of industrialization (and population transition) have occurred or are currently transforming nearly all societies in the modern world.

- i. Pre-industrial society (agricultural);
- ii. Early industrial society (simple mechanical);
- iii. Mature industrial society (complex mechanical);
- iv. Post-industrial society (technocratic\*).

\* "Technocracy" is the type of social organization that is completely dependent on technological infrastructure (as in communication, transportation, energy networks) and the elite technical experts who become important to political rule and economic decision-making.

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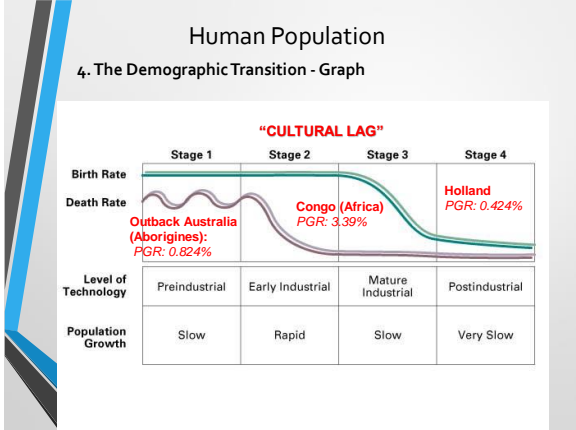
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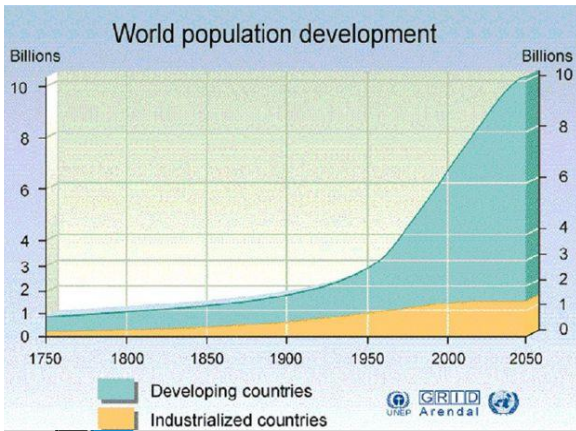
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### Human Population

#### 4. The demographic transition, cont.

**The Good News:**

c. Worldwide fertility rates are dropping, but are still above "replacement rates":

- 1965 World fertility rate: 5.0 births / woman
- NOW: World fertility rate: 2.7 births / woman
  - 1965 US fertility rate: 2.93 births / woman
  - NOW: US fertility rate: 1.89 births / woman

**Replacement fertility rate (no population growth) is 2.1 births per woman, or one child to replace each parent (with the ".1" taking into account premature deaths).**

**The Bad News:**

Current urbanization threatens global environment.

From: <http://www.enviroliteracy.org/subcategory.php/30.html>

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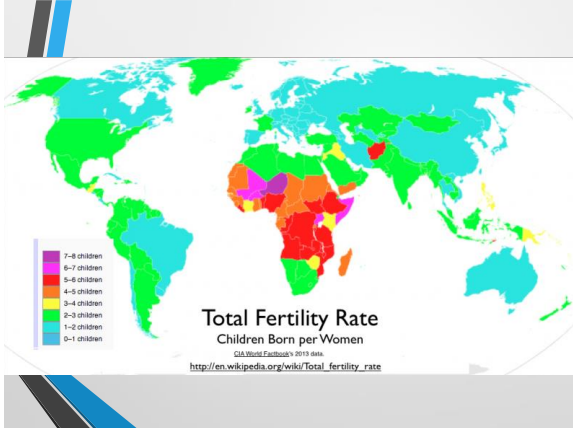
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## Human Population

### 4. The Dilemma: Overpopulation



d. **What is overpopulation?** It is *not* a result of sheer population number or density; rather it is **related to sustainability** and **competition for resources**.

Competition for resources stems from **limited quantities** of raw materials that **the natural environment can provide for a given population**: this is known as the planet's **carrying capacity** (c.f., [The Lily Pond Parable](#)).

*In the "Lily Pond" metaphor, the edges of the pond (the boundaries for further lily pad growth) represent the carrying capacity of the earth for further human growth.*

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