Theories of Population Change

Key Terms:

- Primary Population Theories
- Secondary Population Theories
- Demographic Transition Theory
- Demographic Inertia

The lectures so far:

- Described population growth processes,
- Discussed the techniques of population projections taking into account these growth processes,
- Described the global population distribution patterns, and
- Discussed population composition – sex, age, and ethnic composition

But…

....it is important to move beyond descriptions towards understanding the causes and consequences of population processes.

Hence, the need for THEORY

A good (proven and scientific) theory will:

A. Enhance our ability to relate demographic changes to other demographic variables (e.g. does a change in age structure lead to changes in birth rates), and

B. Help us understand clearly, the impacts of changes in social and economic variables, as well as the physical environmental variables, on population growth rates.

Based on such knowledge we will be able to tackle questions such as:

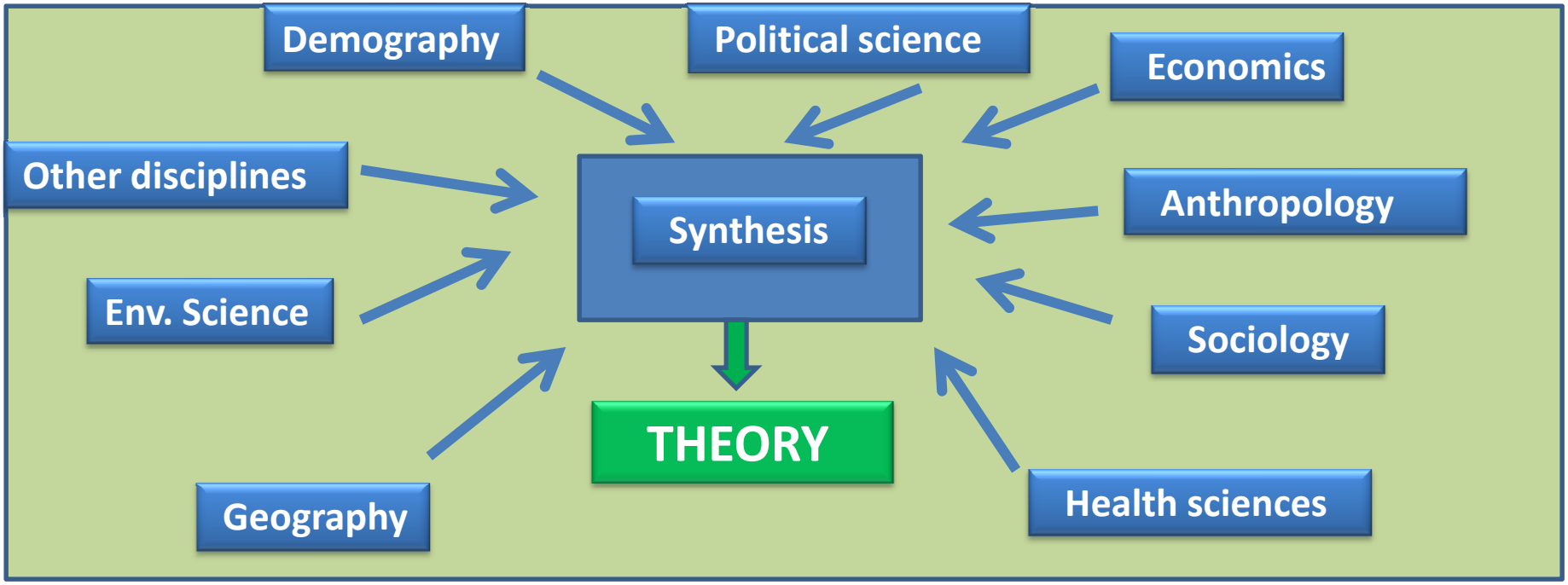
- **Will the world population ever stop growing?**
- **What will stop the growth?**
- **When will it stop?**

Prevailing answers (opinions) on the above questions include:

1. **A rapid rise in pop. followed by a leveling-off before the earth's carrying capacity is reached.**
2. **Population will eventually overshoot the carrying capacity of Earth…death rates increase due to lack of food …population numbers decline below the Earth's carrying capacity**
3. **An overshoot ….followed by a long period of fluctuation above and below the carrying capacity**
4. **Rise in population leads to degradation of carrying capacity …a drastic reduction in population size**

Theory: what is it?

"… a theory is a formal conceptual structure composed of laws and rules that bind together the otherwise disparate facts that come from empirical research".



Classification of theories

Primary theories

Vs.

Secondary theories

Classification of theories

Primary theories:

"Developed for explaining demographic behavior"

Secondary theories:

"…have as their main purpose the analysis of a much broader class of phenomena that have demographic implications."

Huh ! What is the difference ?

"If our intention is to identify specific factors related to fertility, mortality, or migration, our theory is then a primary one"

If a researcher's main interest is in the areas of, say, social class, or economic behavior, or political affiliations, the theory that may result from such studies – if used to explain demographic change – would be considered a secondary theory.

Classification of theories

Naturalistic

Vs.

Environmental

Naturalistic theories vs. Environmental.

Past theories – whether primary or secondary – have either been naturalistic or environmental.

Naturalistic: Nature is supreme and dictates the course of human population growth and change

"Environmental theories seek explanations of demographic behavior through a variety of processes that may themselves vary in time and space."

Classification of theories

Primary

Malthusian

By

Thomas Robert Malthus

Early Population Theories:

Thomas Robert Malthus

1766 - 1834

Picture source: http://www.liceofoscarini.it/studenti/c2003/evoluzione/Immagini%20ipertesto/malthus.jpg

In his own words: http://books.google.com/books?id=E_wtAAAAIAAJ&dq=Thomas+Robert+Malthus&pg=PP1&ots=hSFyY6EYu5&sig=XhoUxY2gX5wGHgjA-CWMltzV1VI&hl=en&sa=X&oi=book_result&resnum=6&ct=result#PPA1,M1

Followers : Malthusians

New followers: Neo Malthusians

He elevated the scientific study of populations to a much higher level and helped make population the main focus attention among social scientists

His Theory:

"Population, when unchecked, increases in geometric ratio. Subsistence increases only in a arithmetic ratio"

"…the human species would increase as the numbers 1,2, 4, 8,16, 32, 64, 128, 256, and subsistence as 1,2,3,4,5,6,7,8,9.

"In two centuries the population would be to the means of subsistence as 256 to 9; in three centuries as 4096 to 13; ……

"….population would always press against the means of subsistence, unless it was prevented by some very powerful and obvious checks

Preventive Checks

Affected birth rates:

Moral restraint and "vices" such as homosexuality and birth control

Positive Checks

Affected death rates:

Misery
Disease
Famine, war

His view that the principle of population was inflexible, inexorable, and inescapable, and that no exercise of reason could remove its effects, helped to saddle economists with the description of their field as "the dismal science".

Criticisms:

- Too much focus on land as a limiting variable in food production; didn't foresee use of large scale mechanization, fertilizers, better seeds, etc
- Food is not our only necessity; industrialization was soon to alleviate shortages in other areas of human needs
- Didn't foresee changes in transportation and trade
- Didn't foresee the revolutionary role of contraceptives; not even the possibility that couples would decide to limit the sizes of their families in response to changing socioeconomic conditions
- He didn't foresee the massive emigration out of Europe to new lands in the West and East

“However, the rapid increase in population during the twentieth century, coupled with considerable malnourishment in many areas, has revived an interest in Malthus's ideas.”

“Many ‘Neo-Malthusians’ still feel that population growth will still outrun the food supply, and that the world will not be able to continue supporting a growing population”

Two major voices: Paul Ehrlich (The Population Bomb – best seller)

And Garrett Hardin (tragedy of the commons).

Classification of theories

Primary

Easter Boserup,

Danish Economist, 1965

and

Karl Marx,

German Philosopher

Easter Boserup:

Population is not the dependent variable. It is the independent variable determining agricultural developments.

Karl Marx

There is no such thing as overpopulation.

Marx thought that "Malthus was a bourgeois chauvinist clergyman who upheld the established order of social inequality"

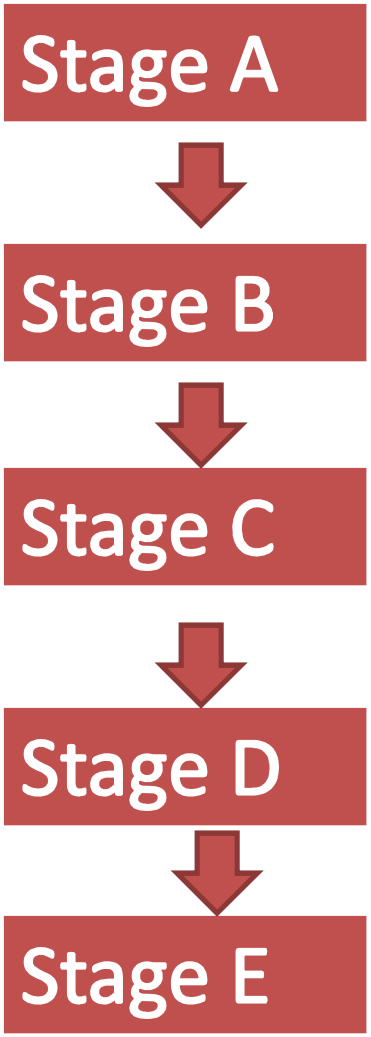
"If poor people were given control over the means of subsistence – equipment, knowledge, land, and an adequate share of the wealth – their production of goods and services would far surpass the growth of population"

The Demographic Transition Theory

Based on the experiences of Western European countries/populations

- **Focuses on historical changes in gaps between birth rates and death rates (see graph p. 91)**
- **The changes show "…a transition from a relatively stable demographic regime with high birth rates and death rates to a similarly stable regime with low birth rates and death rates…."**
- **This is known as the demographic transition**
- **The transition took places in STAGES**

The Stages of the Demographic Transition (A,B,C,D, and E – text p. 93)



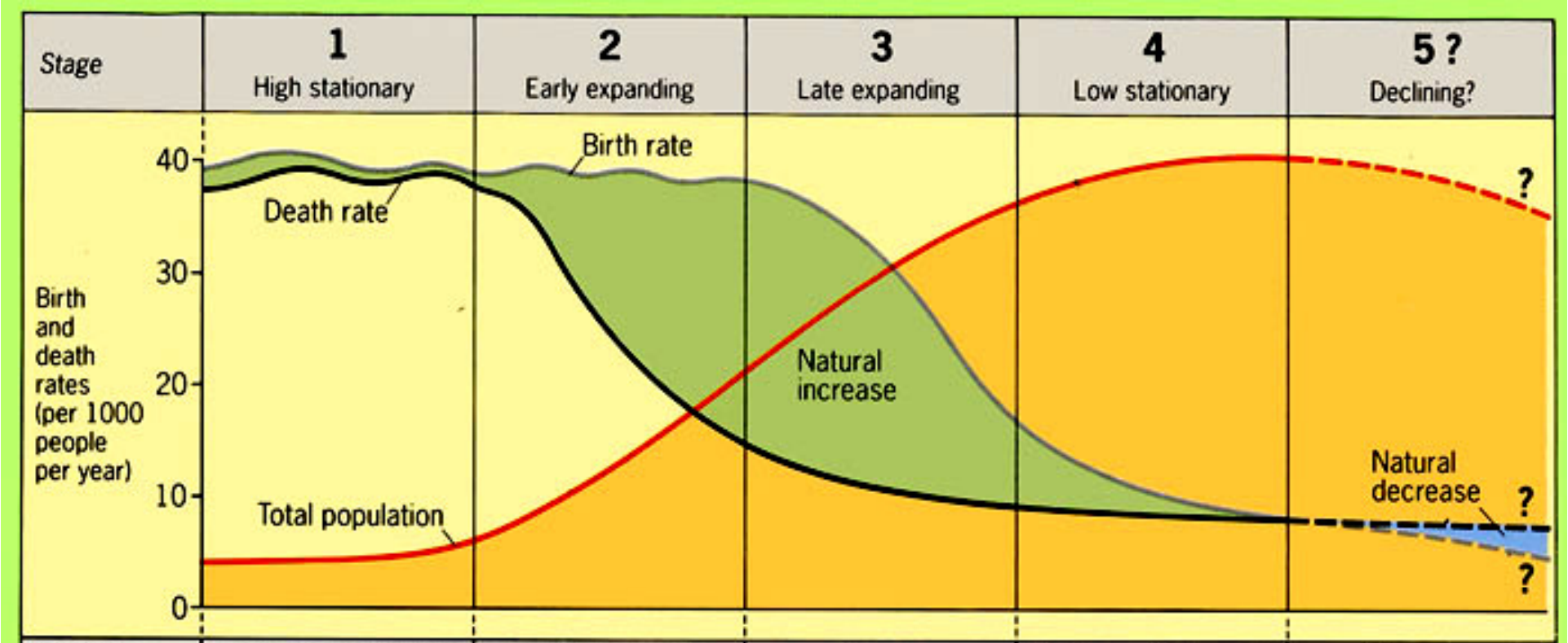
High birth rate and high death rate – pre-industrial Europe

High birth rate and declining death rate – Present-day Sub-Saharan Africa and many parts of Asia

High birth rate low death rate – Tropical Latin America, Some African Countries

Declining birth rate and low death rate – e.g. Argentina, China

Low birth rate and low death rate – Western world and Japan



Stage	1 High stationary	2 Early expanding	3 Late expanding	4 Low stationary	5? Declining?
Examples	A few remote groups	Egypt, Kenya, India	Brazil	USA, Japan France, UK	Germany
Birth rate	High	High	Falling	Low	Very low
Death rate	High	Falls rapidly	Falls more slowly	Low	Low
Natural increase	Stable or slow increase	Very rapid increase	Increase slows down	Stable or slow increase	Slow decrease
Reasons for changes in birth rate	Many children needed for farming. Many children die at an early age. Religious/social encouragement. No family planning.		Improved medical care and diet. Fewer children needed.	Family planning. Good health. Improving status of women. Later marriages.	
Reasons for changes in death rate	Disease, famine. Poor medical knowledge so many children die.	Improvements in medical care, water supply and sanitation. Fewer children die.		Good health care. Reliable food supply.	

http://www.geographyalltheway.com/igcse_geography/population_settlement/population/imagesetc/demographic_transition_detailed.jpg

“If we accept the demographic transition model and believe that there is a casual link between modernization and a decline in both vital rates, then the obvious solution to rapid population growth is to modernize the world as rapidly as possible”.

Demographic Transition

The speed at which nations move through these stages is critical

The nations in stage D (and to a lesser extent, those in stage C) are heading in the right direction

Criticisms

Conditions in today's developing countries differ considerably from those that prevailed in the Western nations that have now completed the transition. For example, some countries have fast tracked fertility decline by legislative means (China) or ideology (Cuba)

Heading toward zero population growth – - ZPG - the case of Sweden

Sweden (demographic transition completed)

- Births almost equal to deaths
- No/very little poverty
- One of the lowest infant mortality rates in the world
- Heavily involved in international development aid and family planning
- Natural increase – approximately 0.1%
- The population of those aged 65+ = 16%
- Care for the elderly has much to do with its growing national budget
- Immigration leading to growth in its Arabic-speaking population

Malthus and the Demographic transition

"Obviously, the demographic transition was not foreseen by Malthus, who believed that a population equilibrium would be reached by a rise in the death rate rather than a lowering of the birth rate."