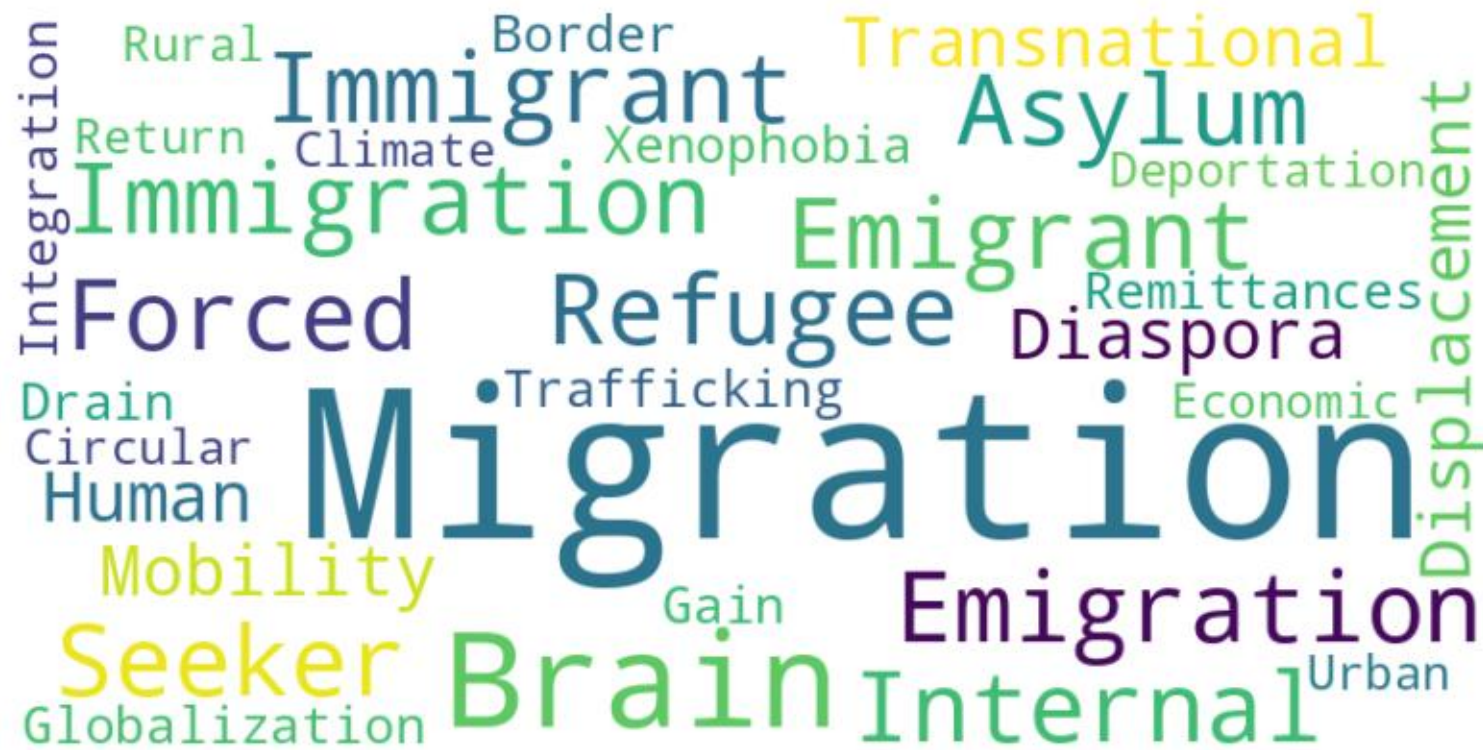# Unveiling Migration: From Ancient Journeys to Modern Models

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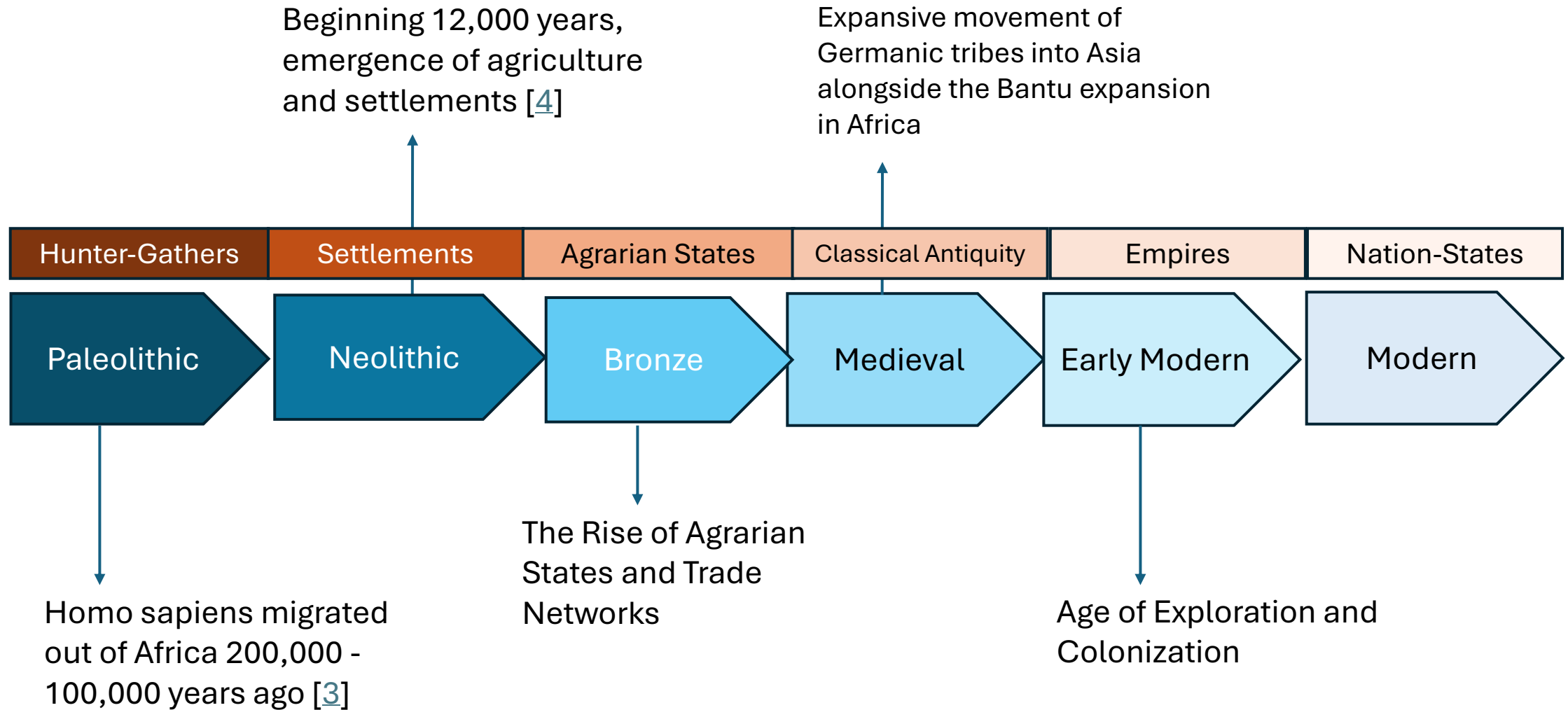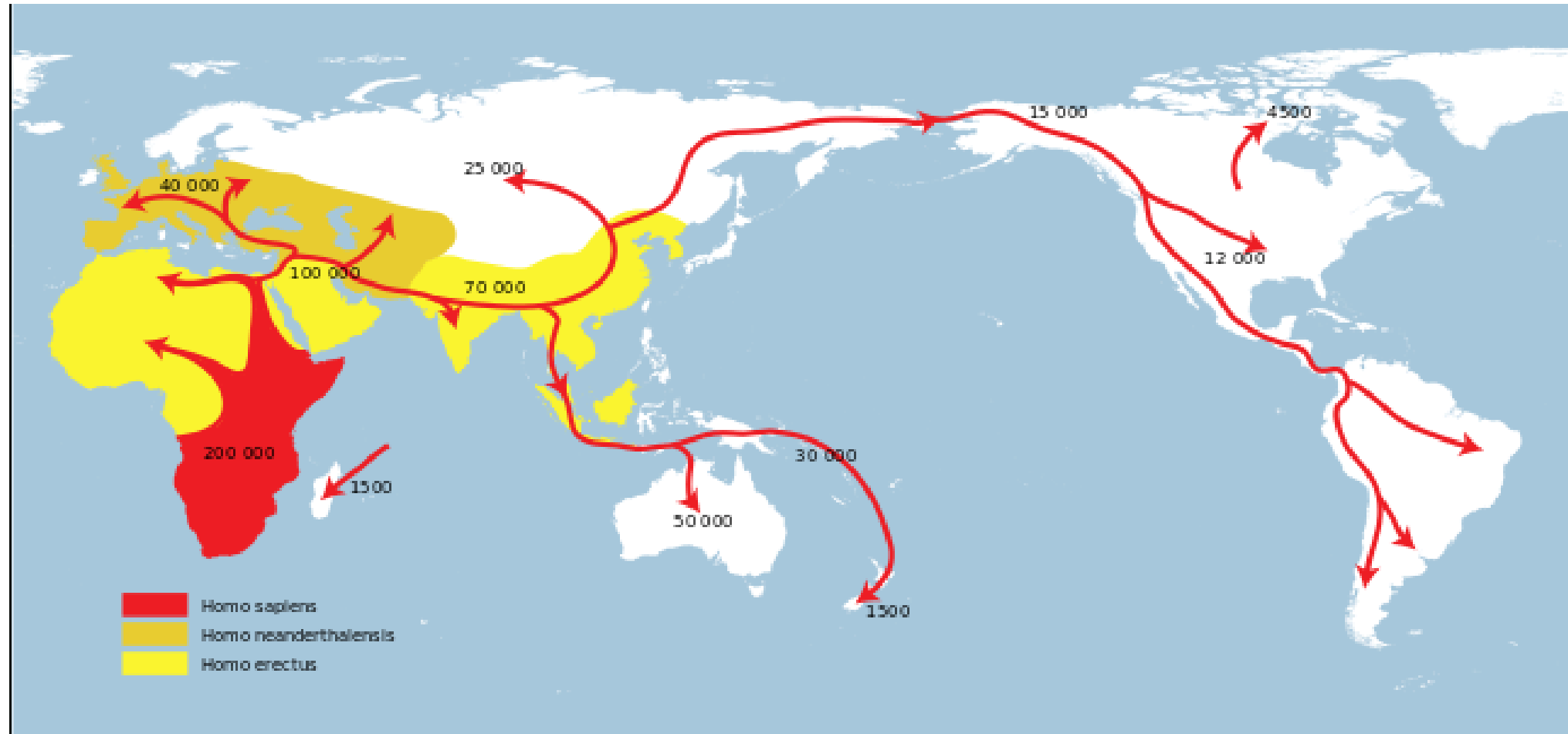# The Global Migration Landscape

Global Migration at a Glance

- **Statistics:** According to the UN, approximately one in 30 people are migrants, with 281 million living outside their birth countries, and 60% are migrant workers [1]

- **Key Drivers:** These include increased access to information, lower transportation costs, ease of travel, seeking better economic opportunities, escaping political instability, conflict, or persecution

- **Impact:** Growth at micro and macro levels, cultural diversity, political debate on immigration, deportation, asylum

- **Types of Migration:** Forced/voluntary migration, internal and international migration, legal and irregular migration

Image Most Common Origin of Country of Immigrants to Western Europe [2]

Historical Overview of Migration

Beginning 12,000 years, emergence of agriculture and settlements [4]

Expansive movement of Germanic tribes into Asia alongside the Bantu expansion in Africa

Hunter-Gathers	Settlements	Agrarian States	Classical Antiquity	Empires	Nation-States
Paleolithic	Neolithic	Bronze	Medieval	Early Modern	Modern

Homo sapiens migrated out of Africa 200,000 - 100,000 years ago [3]

The Rise of Agrarian States and Trade Networks

Age of Exploration and Colonization

Major migration routes of early Homo sapiens out of Africa 50,000-70,000 years ago
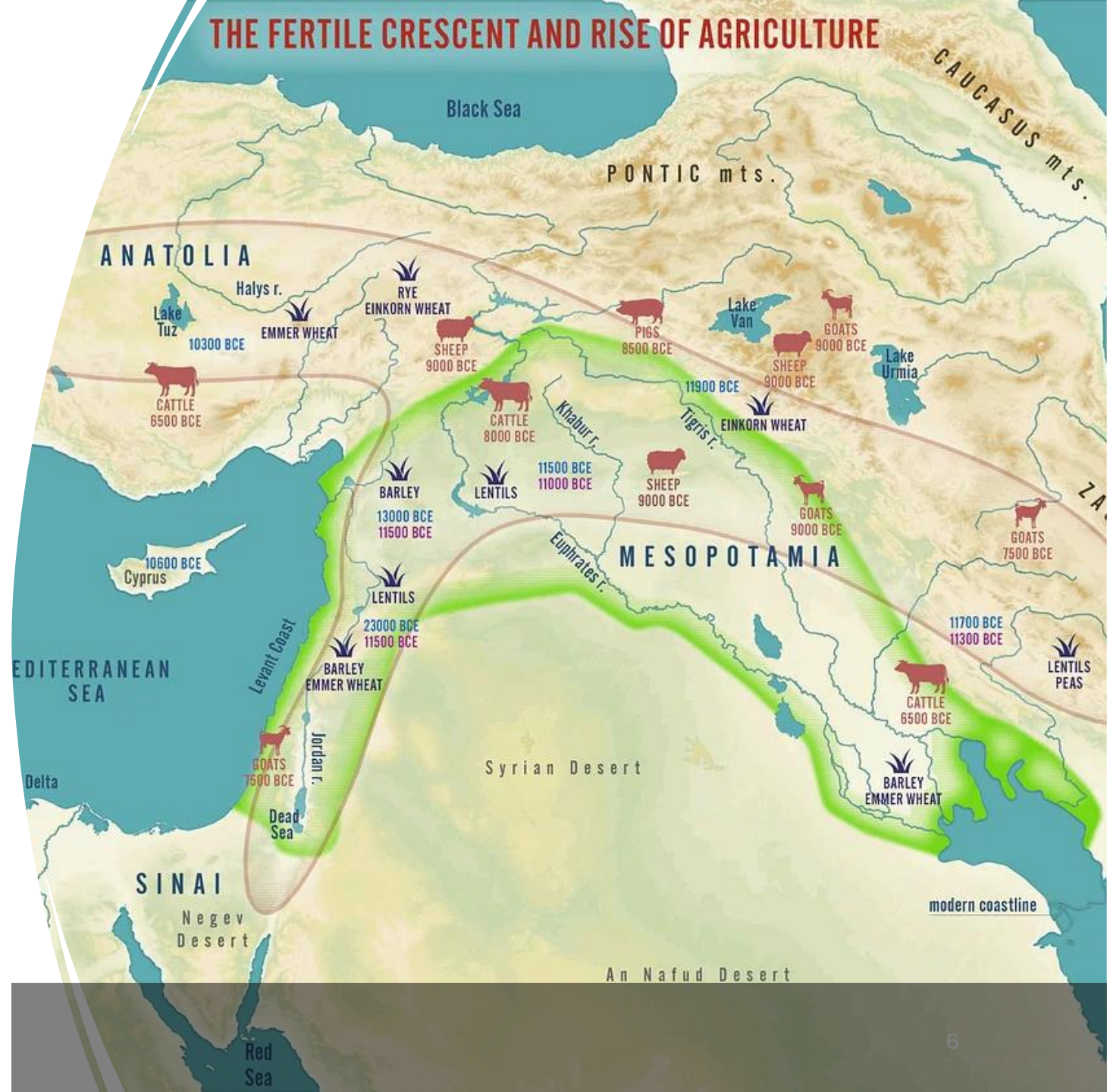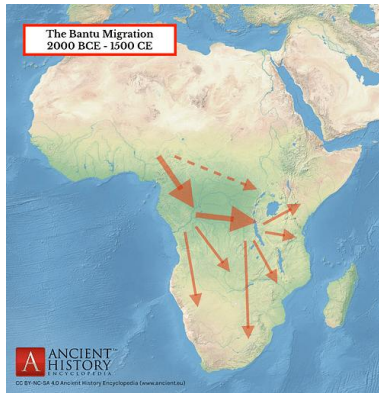
Paleolithic Early Human Migration

[3]

Stone Age Revolution

- Transition from small, nomadic bands of hunter-gathers to agricultural settlements and early civilization [4]

- The rise of agrarian states led to settled societies, population growth, and social complexity [5]
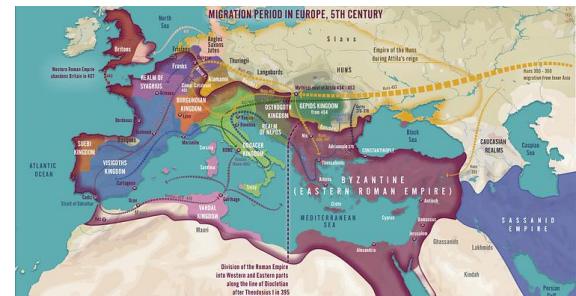
Image from World History Encyclopedia

THE FERTILE CRESCENT AND RISE OF AGRICULTURE

Migration Transforming Landscapes

Starting 1000 BCE: The Bantu Expansion

The Bantu Migration 2000 BCE - 1500 CE

300 to 700 CE in Europe: Migration Period

13-14th CE: Mongol Empire

2nd – 15th century: The Silk Road

The Bantu population spread agriculture, language, and culture across much of sub-Saharan Africa [6]

Large-scale movements of people to Asia and Africa through warfare and conquest [7]

The Silk Road was a network and trade route that facilitated the exchange of goods, ideas, and people, leading to cultural diffusion and population movements [8]
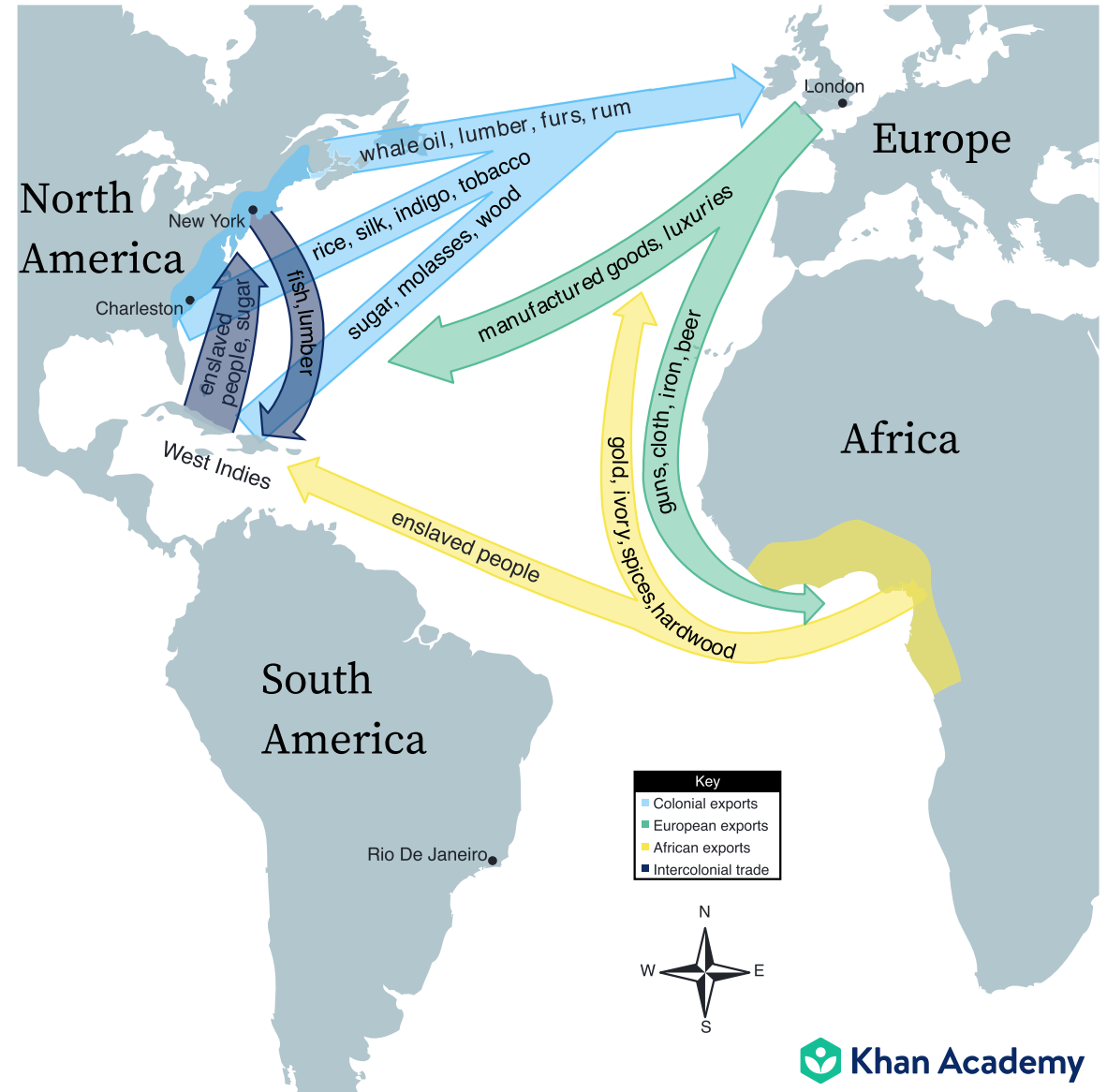
The Age of Discovery

- European explorers sailed to the Americas, in search of wealth (gold), national prestige (glory), and the spread of Christianity (God)

- Explorers brought plants, animals, and diseases between to the Americas [9]

- Colonization resulted in the displacement of indigenous population, loss of ancestral lands, enslavement Africans and indigenous people

Traditional Migration Theories

Literature Review
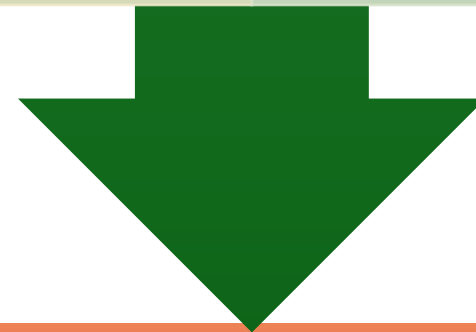
Migration is a Multidisciplinary Field

Traditional migration theories usually is rooted in one of the following disciplines [11]
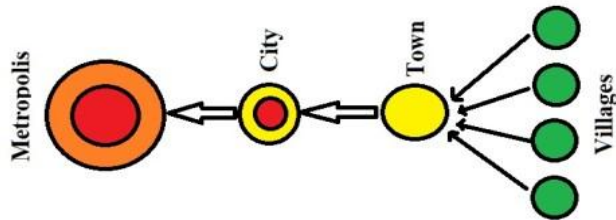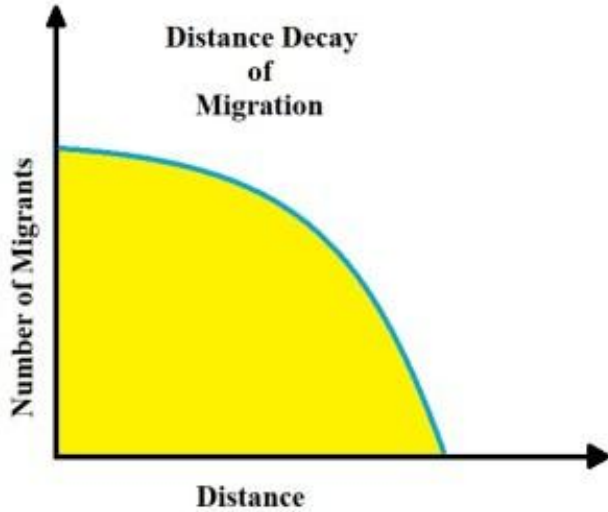
Geography	Economics	Behavioral Science	Social Science

We need to create an interconnected puzzle of theories in migration studies

Ravenstein's Laws of Migration [12]
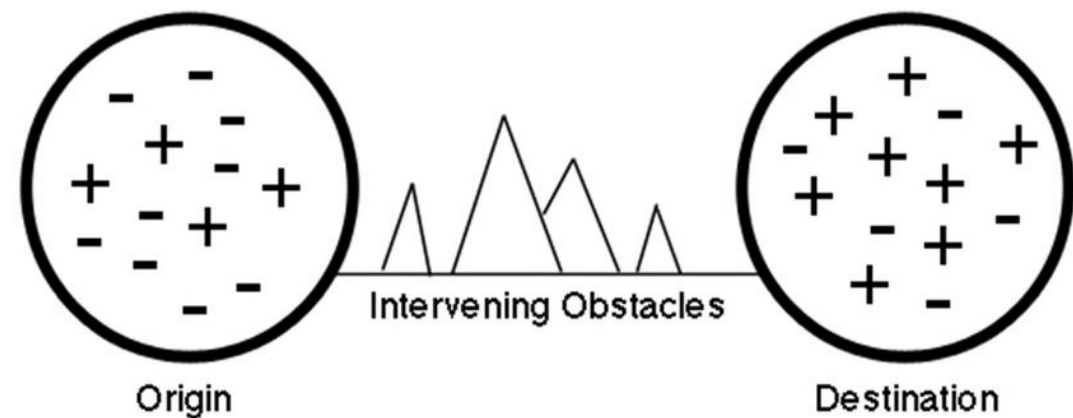

Image courtesy Pan Geography [13]

1. Migration Distance Decay
2. Long-distance migrants move towards larger cities
3. Stages of Migration
4. Migration is not unidirectional
5. Gendered Migration
6. Economic motives are primary drivers for migration
7. Migration fosters innovation and technological development creating positive

Lee's Theory of Migration: Push-Pull

An individual's decision to migrate is driven both by "push" factors that compel them to leave their place of origin and "pull" factors that attract them to a new destination. Neoclassical economists emphasize utility maximization, rational choice and wage differentials [14]

Image courtesy Research Gate Publication of African Renaissance [15]

Limitations of Traditional Theories

- Relocation is costless and unrestricted

- Preferences remain constant over time

- Rational actor willingness to migrate seeking to maximize their utility

- Push-pull model depicts migrants as passive actors responding to external structural forces, without fully accounting for their agency in the decision-making

- Newer migration theories attempt to address the limitations

Immigration Myths and Biased Migration Conversations [16]

The Need for a Theoretical Framework

- Immigration is a hotly debated topic with polarizing views, often lacking nuance
- Disjointed efforts in migration studies lead to one-sided biases
- Migration data lacking on global scale, silos within countries
- Academic divide in migration studies. Quantitative approaches taken up by economists, computer scientists, and geographers independently. Qualitative approaches by social scientists focusing on migrant stories and surveys

de Haas's Aspirations and Capabilities Framework

Framework moves beyond economic models to include migrant's perceived freedom to choose where to live

- **Aspirations**: An individual's motivations in terms of material, social, and personal motivations

- **Capabilities**: An individual's access to economic, social, human, and cultural capital influences their willingness to migrate

		Migration Capabilities	
		Low	High
Migration Aspirations	High		
	Low		

High-skilled migration

16

The Micro-Level Influence: Migration as a Freedom

- de Haas draws on Sen's 1999 [18] capabilities framework and Berlin's [19] positive liberty to model agency of migrant's decision-making and willingness to migrate

- Unlike the rational theory, migration is not only means-to-an-end to improve living conditions but also as a potentially wellbeing-enhancing factor

- Instrumental versus intrinsic willingness to migrate

The Macro-Level Influence: Broader Social Constructs

Going beyond individual motivations and circumstances, firms and organizations actively shape migration through recruitment, interventions, and policies

Negative liberty refers to the absence of constraints while positive liberty refers to the ability to take control of one's life

Unlike the rational theory, migration is not only means-to-an-end to improve living conditions but also as a potentially wellbeing-enhancing factor

The Macro-Level Influence: An Introduction to Agglomeration Economies

- Economic hubs, formed by geographically concentrated firms, foster a cooperative ecosystem

- In a globalized economy, companies can draw talent from anywhere in the world

- These agglomeration economies act as a magnet for migration due to their benefits and potential for innovation
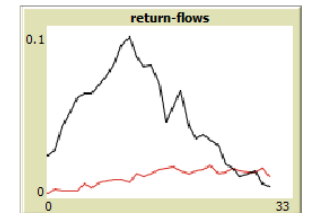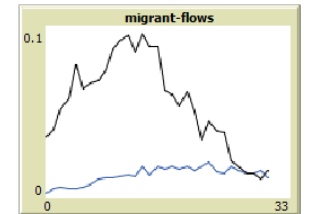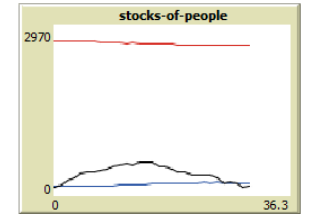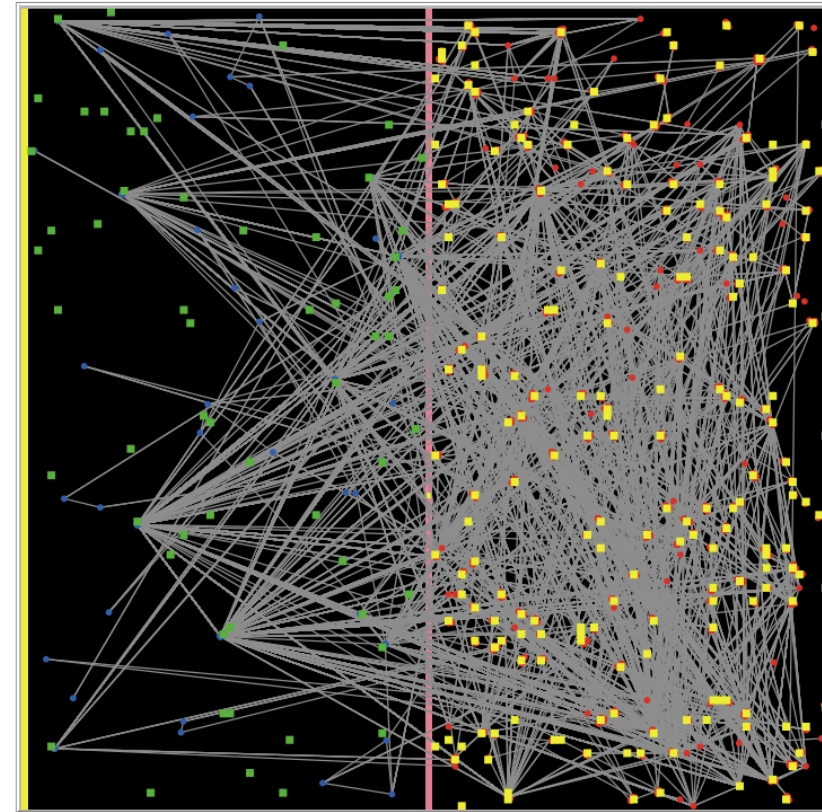
High-Skilled Migration and Agglomeration

- Reinforces Ravenstein's migration law with long-distance migration towards cities

- High-skilled migration is a significant force shaping global labor markets, boosting innovation and productivity in agglomeration economies [20]

- High-skilled individuals are increasingly seeking opportunities beyond their national borders
  - equipped with tertiary education
  - specialized knowledge
  - in-demand technical expertise

- Challenges: Rising housing costs and low supply, congestion, competition for resources

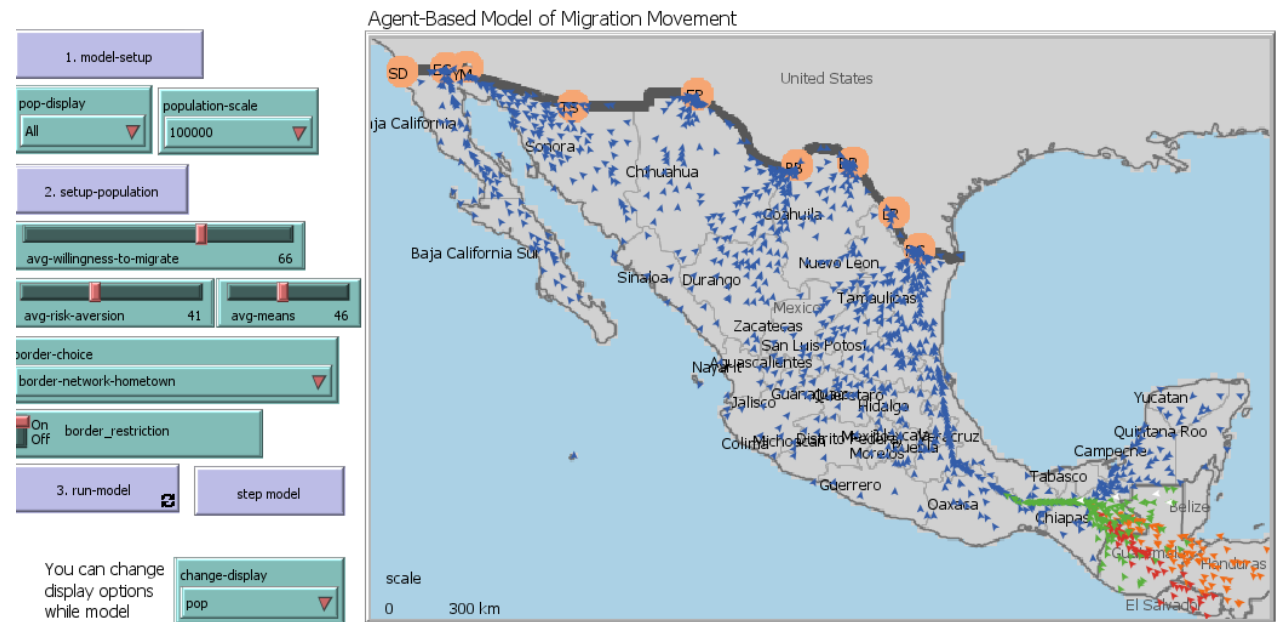# Two Computational Models

A model of circular migration

- A model developed in NetLogo by Anna Klabunde [21] from a computational economic perspective
- Agent-based model analyzing migrant networks with parameterizing using Mexican Migrant Project [22]

Migration Along the United States-Mexico Border

- Al-Khulaidy and Swartz's "ABM Migration SpringSim2020" is a NetLogo model showing migration along the United States and Mexico Border [23] [24]
- Fall 2024, myself and others in group project, we updated the model to add migrants originating from four additional Central American countries.

Conclusion

1. Migration is a complex social phenomenon with a long history

2. Key drivers for migration is a combination of micro-level individual's factors and macro-level structural forces

3. While traditional theories like push-pull models highlight key drivers for migrations, de Haas's capabilities framework offer a more nuanced understanding from a social behavior theory

4. Agglomeration economies play a significant role in shaping global migration patterns, particularly for high-skilled individuals

5. Agent-based modeling offers a valuable tool for simulating and understanding migration dynamics

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