

***Can We Better Understand  
Complexities of Human Development  
In Terms of World Wide  
Space and Time Realities?***

*CCSS 2017 Summer Discussion Session #1.2*

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**Chaos and Complex Systems Seminar**

Department of Physics

University of Wisconsin-Madison

**Summer 2017 Preview Discussion**

Summer Session: Noon-Union Terrace, July 18,2017

*(If rain, Lounge Overlooking Hooper Sailing Dock)*

*Part 1: Growing Up and Growing Old*

October 10, 2017

Chamberlin Hall, Room 4274

1150 University Avenue, Madison

Noon- 1 PM

*Part 2: Space, Time and "Consciousness"*

*Spring Semester, 2018*



Dancers Dancing  
*Total Confidence in their Art*

***Modern Life:  
Two Studies***

Syrian Refugees  
*Total Uncertainty in their Flight*



# Chaos & Complex Systems Seminar

Department of Physics, University of Wisconsin-Madison—A Weekly Interdisciplinary Seminar, Since 1996

## ***Can We Better Understand Complexities of Human Development In Terms of World Wide Space and Time Realities?***

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Part 1 October 10, 2017 Growing Up and Growing Old  
Chamberlin Hall, Room 4274, 1150 University Avenue, Madison

[Part 2 Spring Semester, 2018 Space, Time, and "Consciousness"]

Scholars and lay people, in all academic disciplines and in all walks of life, acknowledge the extreme complexities of human behavior.

Yet there have been few attempts, if any, to encourage deeply systematic appraisals of these complexities across societies, cultures and the times spans of human development. There are no standard systems of criteria that allow for orderly understanding of how complex human behavior unfolds in widely different settings.

**Yet that unfolding shapes adult behavior, and adult behavior shapes social decisions everywhere.**

These two mated presentations borrow and adapt a standard framework of understanding from physical science to try to repair this deficiency: the concept, and representations, of the electromagnetic energy spectrum. This is the energy spectrum that powers our modern age and our current **Information Revolution**. Perhaps the analogy can help us reach better decisions in our challenged societies.

***Can careful thought and diligent study of multiple spectra of human development enable us to gain new insights into forces that shape how peoples' lives actually unfold in the vast variety of human ways of life?***

Maybe. Stay tuned. Make up your own mind.

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## ***A PROVOCATIVE PERSPECTIVE...***

*Anthropologist Hugh Brody  
reminds us of a startling fact  
in his thoughtful account of his ventures among  
the far-flung Canadian Inuit, and others,  
where he lived and studied  
for many years,  
above the Arctic Circle:*

***“...for something like 90 per cent  
of our [human] ancestry  
we have lived as hunter-gatherers,  
not as farmers.” \****

**Compare that human experience  
with...**

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...Thomas Friedman's new book  
On the extraordinary impacts  
of our current Information Revolution:

## **THANK YOU FOR BEING LATE:**

*An Optimist's Guide to Thriving in the Age of Accelerations.*

*(It's a personal, "private" title for a book with very powerful fact-laden messages about the dangers and challenges for **all** Americans—and people everywhere in our explosive and exploding world.)*

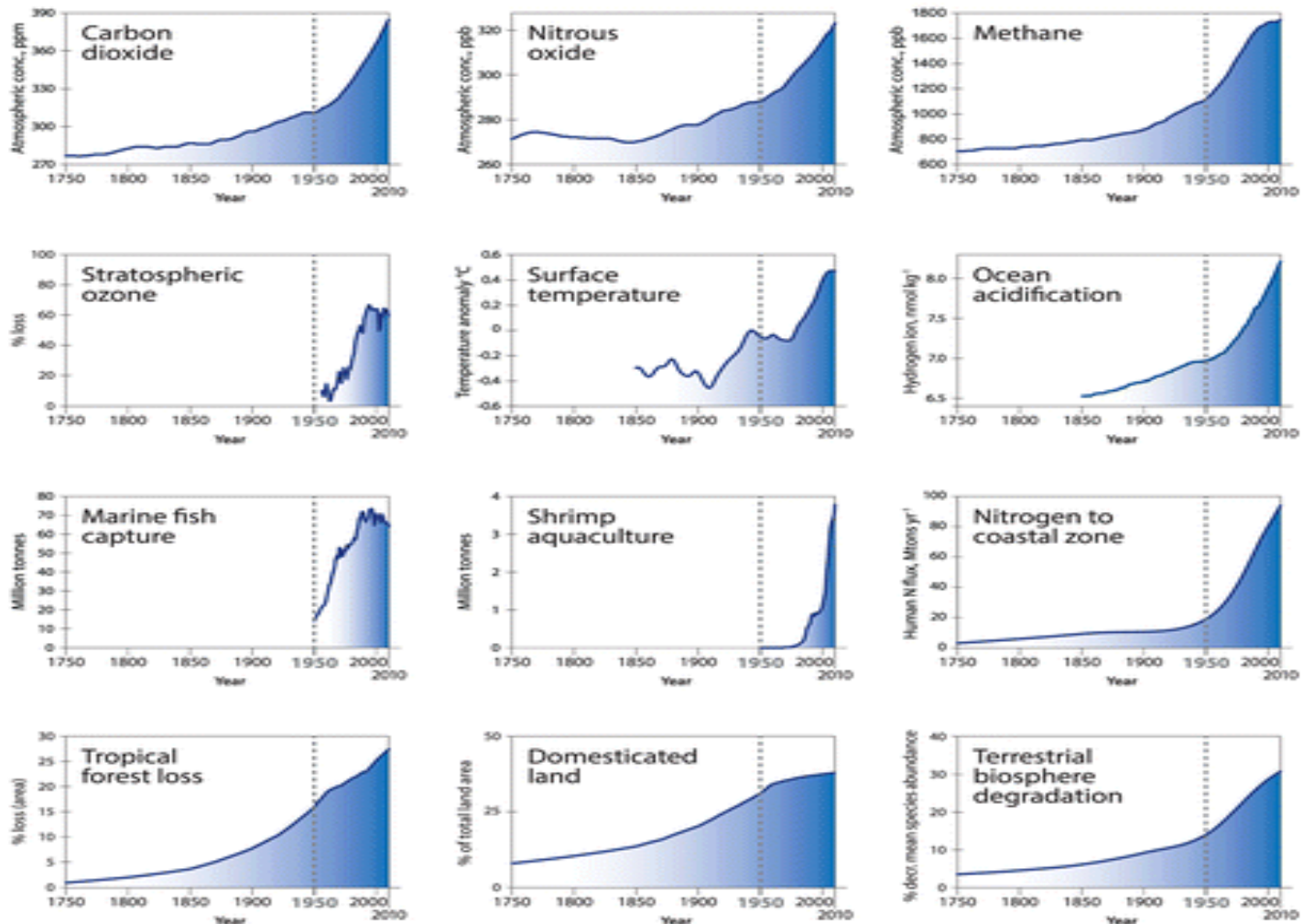
**This is how Friedman introduces the two charts near the center of his book:**

***"We are now in a no-analogue world.*** That means we're somewhere that we've never been before as a human species. We've pushed all of Earth's key systems up to and maybe beyond „„safe operating boundaries....[It is} "a non-analogue world"  
This is what the graphs look like. > > > >

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## Earth system trends

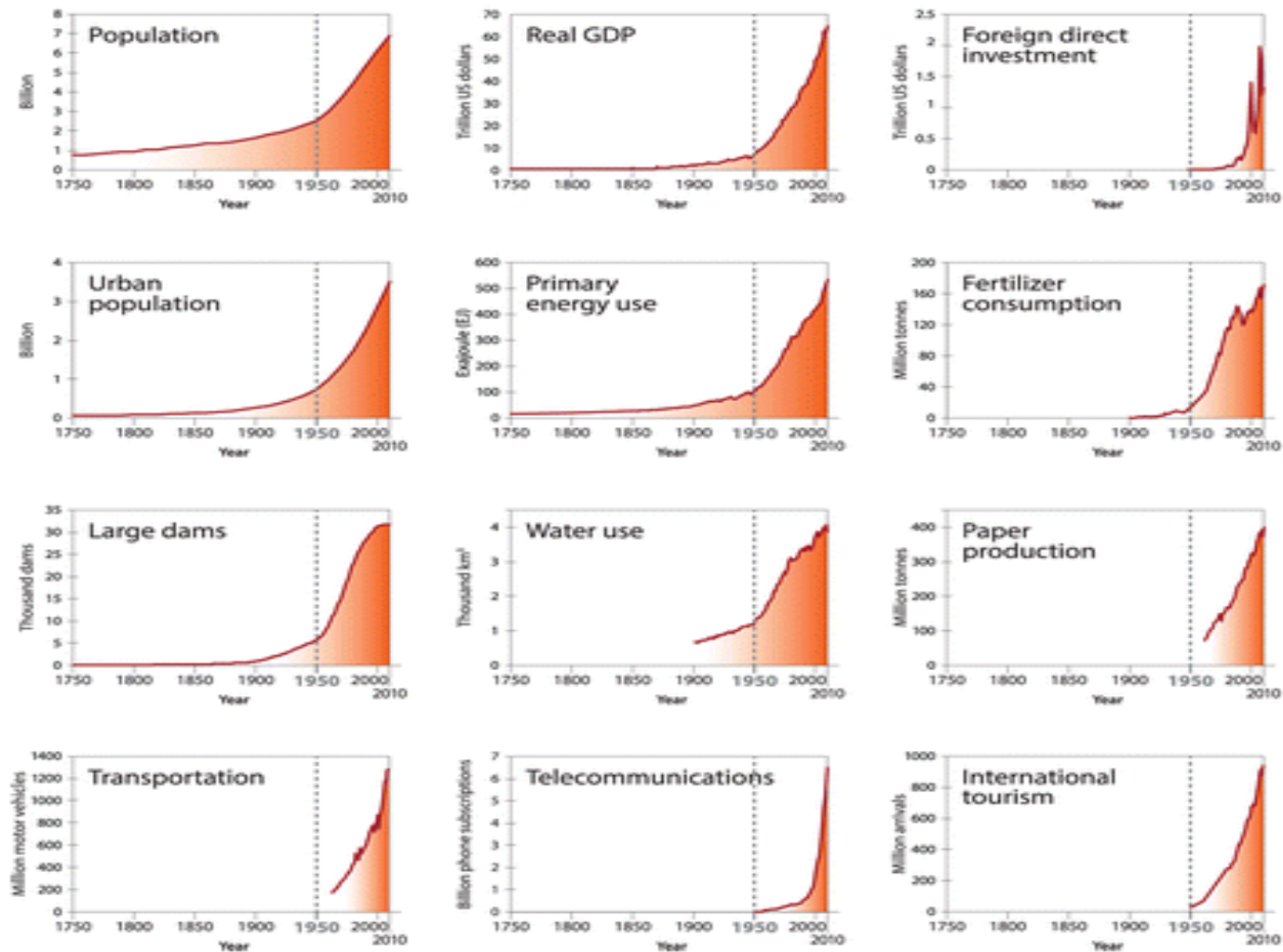


\*Steffen, W. et al., The trajectory of the Anthropocene: The Great Acceleration. *The Anthropocene Review*, vol. 2, no.1, pp 81-98

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## Socio-economic trends



\*Steffen, W. et al., The trajectory of the Anthropocene: The Great Acceleration. *The Anthropocene Review*, vol. 2, no.1, pp 81-98

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The trajectory of the Anthropocene: The Great Acceleration

Will Steffen, Wendy Broadgate, Lisa Deutsch, Owen Gaffney, Cornelia Ludwig

First Published January 16, 2015

[PDF download for The trajectory of the Anthropocene: The Great Acceleration](#)

[Article Information](#)

Article has an altmetric score of 325 Free Access

Abstract

The 'Great Acceleration' graphs, originally published in 2004 to show socio-economic and Earth System trends from 1750 to 2000, have now been updated to 2010. In the graphs of socio-economic trends, where the data permit, the activity of the wealthy (OECD) countries, those countries with emerging economies, and the rest of the world have now been differentiated. The dominant feature of the socio-economic trends is that the economic activity of the human enterprise continues to grow at a rapid rate. However, the differentiated graphs clearly show that strong equity issues are masked by considering global aggregates only. Most of the population growth since 1950 has been in the non-OECD world but the world's economy (GDP), and hence consumption, is still strongly dominated by the OECD world. The Earth System indicators, in general, continued their long-term, post-industrial rise, although a few, such as atmospheric methane concentration and stratospheric ozone loss, showed a slowing or apparent stabilization over the past decade. The post-1950 acceleration in the Earth System indicators remains clear. Only beyond the mid-20th century is there clear evidence for fundamental shifts in the state and functioning of the Earth System that are beyond the range of variability of the Holocene and driven by human activities. Thus, of all the candidates for a start date for the Anthropocene, the beginning of the Great Acceleration is by far the most convincing from an Earth System science perspective.

*> > >These few pages only scratch the surface of the October presentation < < <*

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***The Next Two Slides***

***Greatly Amplify***

***The Significance***

***Of All***

***The Foregoing Information –***

***Especially For Every American***

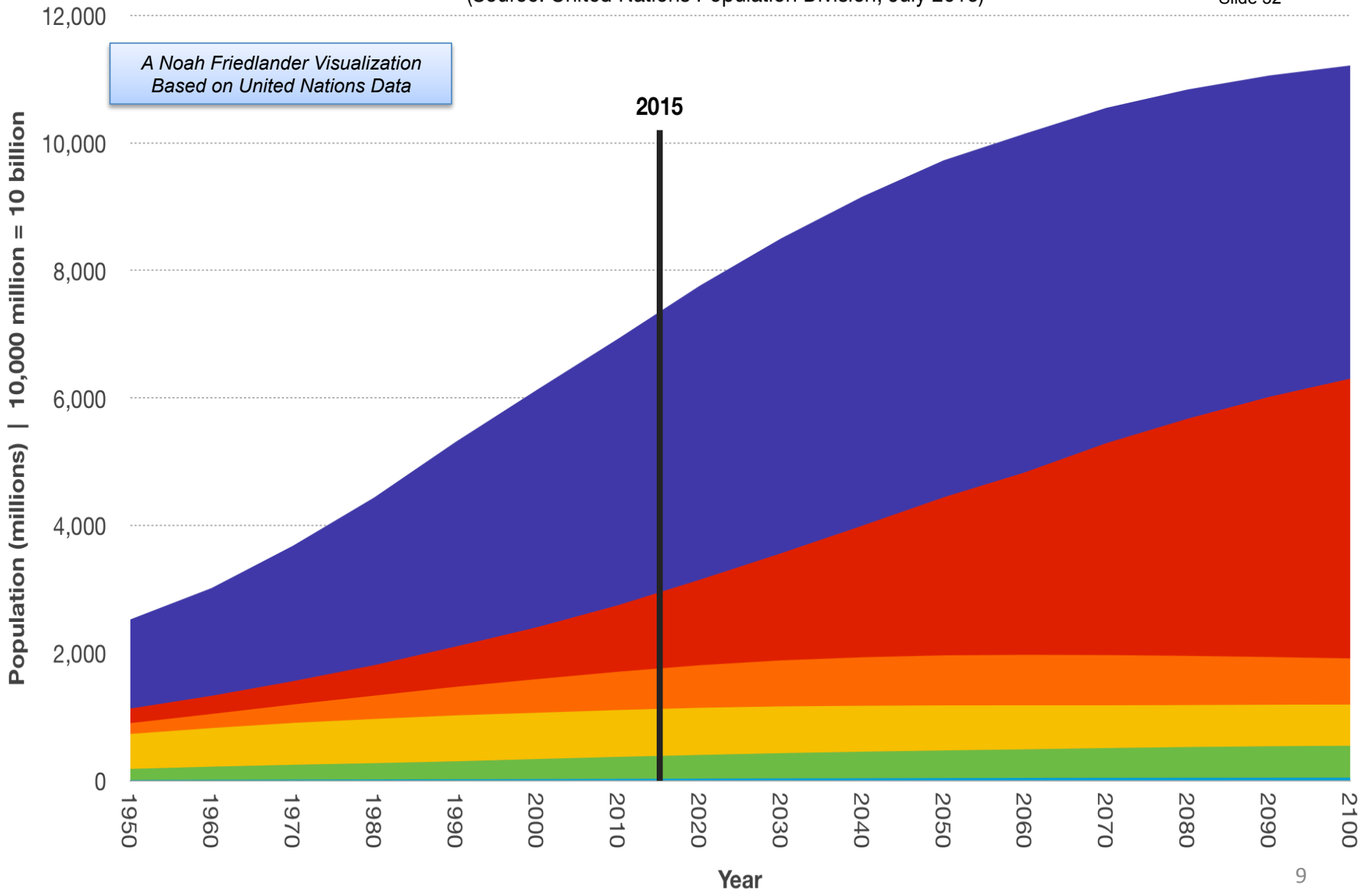


Oceania North America Europe Latin America Africa Asia

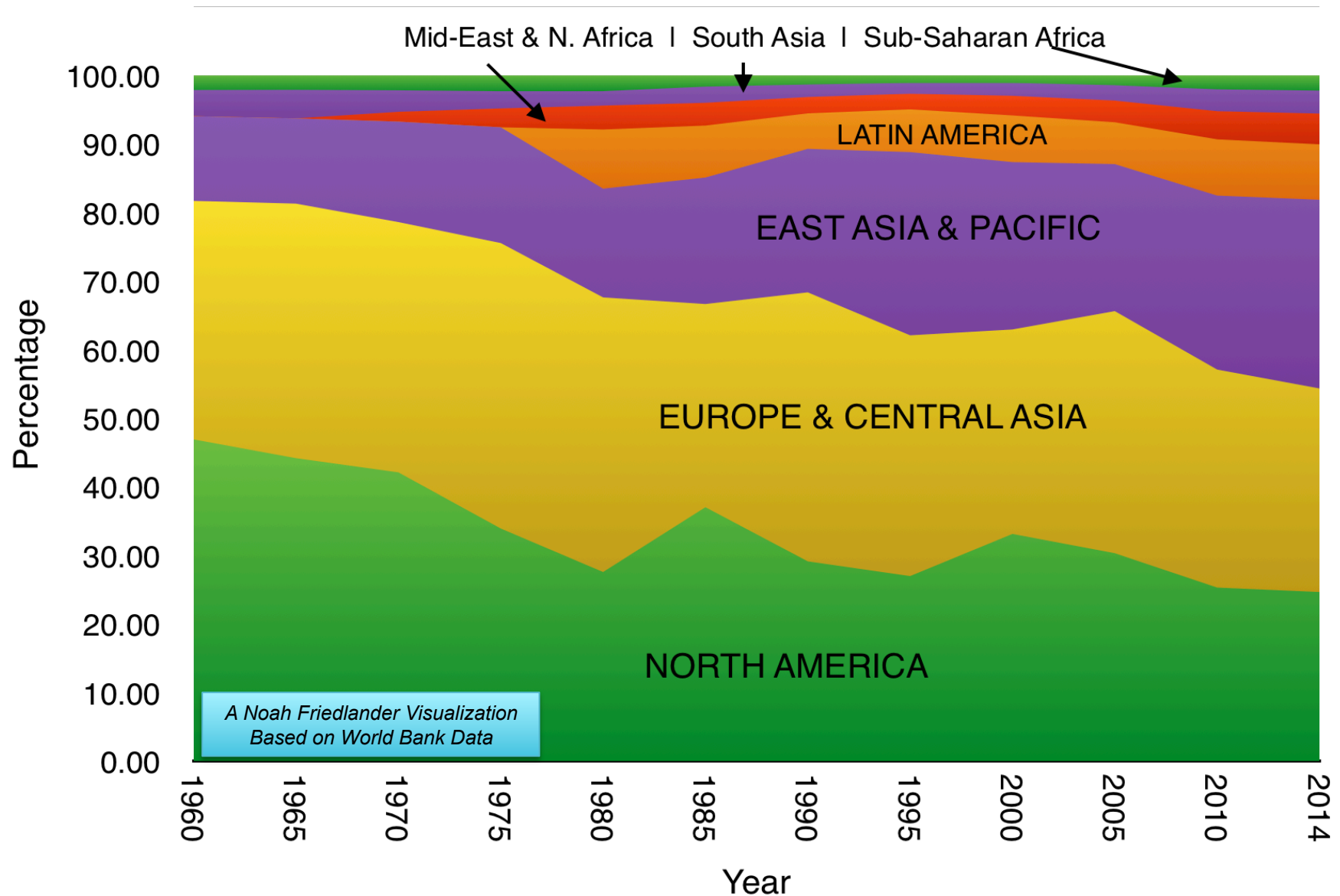
### World Population; 1950-2100

(Source: United Nations Population Division, July 2015)

Slide 32



## Regional Gross Domestic Product as Percent of World; 1960-2014



(Source: World Bank via Google Public Data Explorer, 2014)