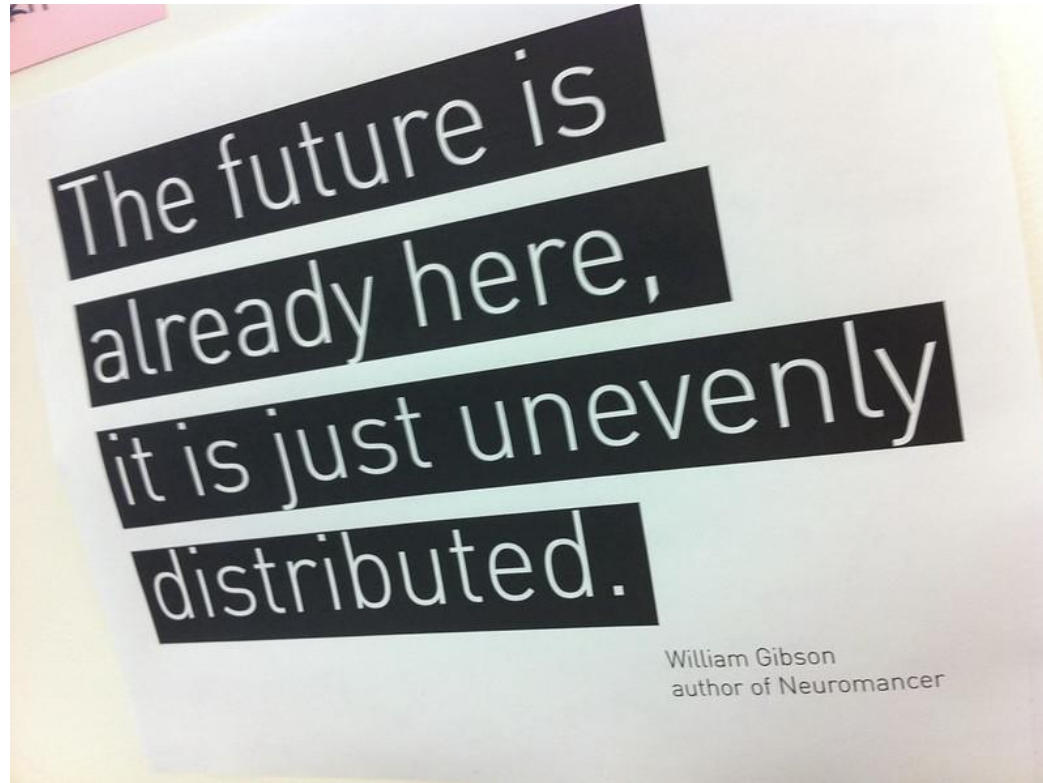# Astronomy for Development In the Andean Region

Jaime E. Forero-Romero
Los Andes University (Colombia)
June 2020

I am going to talk about the future

The future is already here, it is just unevenly distributed.

William Gibson
author of Neuromancer

For 9 years I was "The Other"

I came back to Latin America 8 years ago

We started the Andean ROAD 5 years ago

Development means becoming The Other

Routledge
Taylor & Francis Group

RESEARCH ARTICLE

Check for updates

Education for the future? Critical evaluation of education for sustainable development goals

Helen Kopnina [ID]

Amsterdam Institute for Advanced Labour Studies, University of Amsterdam, Amsterdam, Netherlands

Conclusion

This article has developed an argument that education for sustainable development and education for sustainable development goals propagated by UNESCO exhibit some worrying tendencies and contra-dictions. This education is based on the broader objective of sustainable development, which tends to focus on economic measures concerning poverty alleviation, health improvement but which do nothing to slow growth in population and consumption. While sustainable development and the SDGs tend to

Development means becoming The Other

RESEARCH ARTICLE

Check for updates

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Helen Kopnina

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ment is problematic. While Indigenous learning and traditional ecological knowledge are as endangered as some species and habitats, ecopedagogy, ecocentric education, and education for wonder, in part inspired by these traditional forms of relating to the environment, offer such alternatives. Pragmatically, education for degrowth, critical of both demographic and economic growth, also offers ways forward in supporting women's (reproductive) rights and family planning, as well as the steady-state economy, Cradle to Cradle and circular economy. Education that targets both non-anthropocentric ethic and, pragmatically, degrowth as two key strategies for addressing unsustainability, seems a better alternative for universal education that the currently popular ESDG.
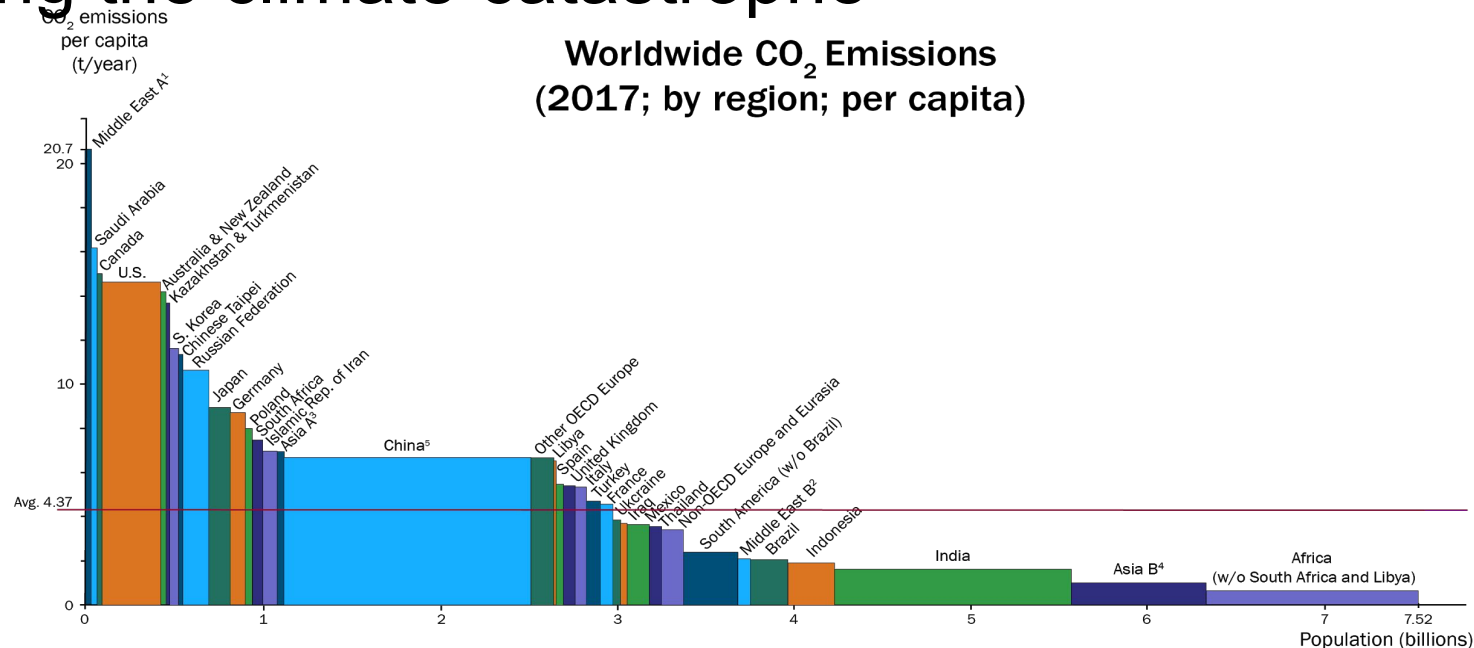
In the next five years we want to collaborate with other communities

INTERCULTURAL EXCHANGE OF KNOWLEDGE
FOR A GOOD LIVING OF ALL BEINGS

https://www.minkalab.org/menu-eng/

Facing the climate catastrophe

Worldwide CO$_2$ Emissions
(2017; by region; per capita)

CO$_2$ emissions per capita (t/year)

Middle East A[1]
Saudi Arabia
Canada
U.S.
Australia & New Zealand
Kazakhstan & Turkmenistan
S. Korea
Chinese Taipei
Russian Federation
Japan
Germany
Poland
South Africa
Islamic Rep. of Iran
Asia A[3]
China[5]
Other OECD Europe
Libya
Spain
United Kingdom
Italy
Turkey
France
Ukraine
Iraq
Mexico
Thailand
Non-OECD Europe and Eurasia
South America (w/o Brazil)
Middle East B[2]
Brazil
Indonesia
India
Asia B[4]
Africa (w/o South Africa and Libya)

20.7
20
10
Avg. 4.37
0

0   1   2   3   4   5   6   7   7.52

Population (billions)

Notes:
Energy-related CO2 emissions only; no other greenhouse gases
[1] Middle East A: Bahrain, Oman, Kuwait, Qatar, United Arab Emirates
[2] Middle East B: Israel, Jordan, Lebanon, Syrian Arab Republic, Yemen
[3] Asia A: Brunei Darussalam, Malaysia, Mongolia, Singapore
[4] Asia B: Asia w/o Asia A, China, India, Thailand, Chinese Taipei, Indonesia, Korea, Japan
[5] China: People's Rep. of China, Hong Kong
Version: 17-Dec-2019 by AQAL Capital GmbH (https://aqalcapital.com) and Tom Schulz

Facing the climate catastrophe

Worldwide CO$_2$ Emissions
(2017; by region; per capita)

CO$_2$ emissions per capita (t/year)

COP21 Paris Agreement

Population (billions)

Notes:
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[1] Middle East A: Bahrain, Oman, Kuwait, Qatar, United Arab Emirates
[2] Middle East B: Israel, Jordan, Lebanon, Syrian Arab Republic, Yemen
[3] Asia A: Brunei Darussalam, Malaysia, Mongolia, Singapore
[4] Asia B: Asia w/o Asia A, China, India, Thailand, Chinese Taipei, Indonesia, Korea, Japan
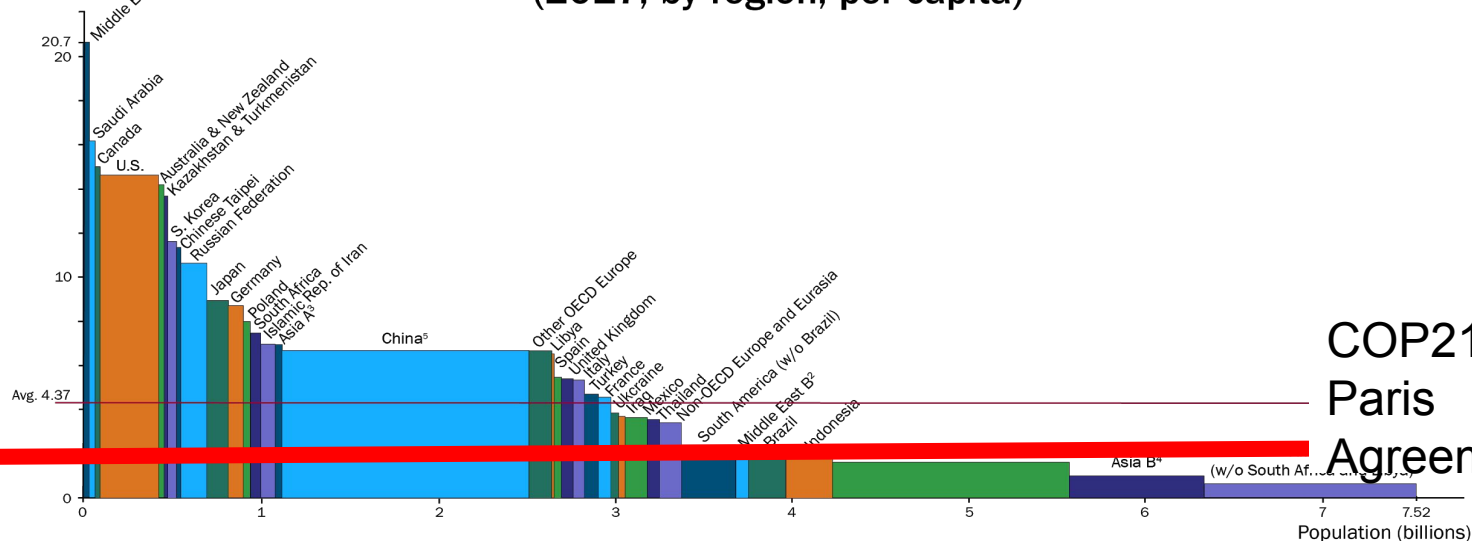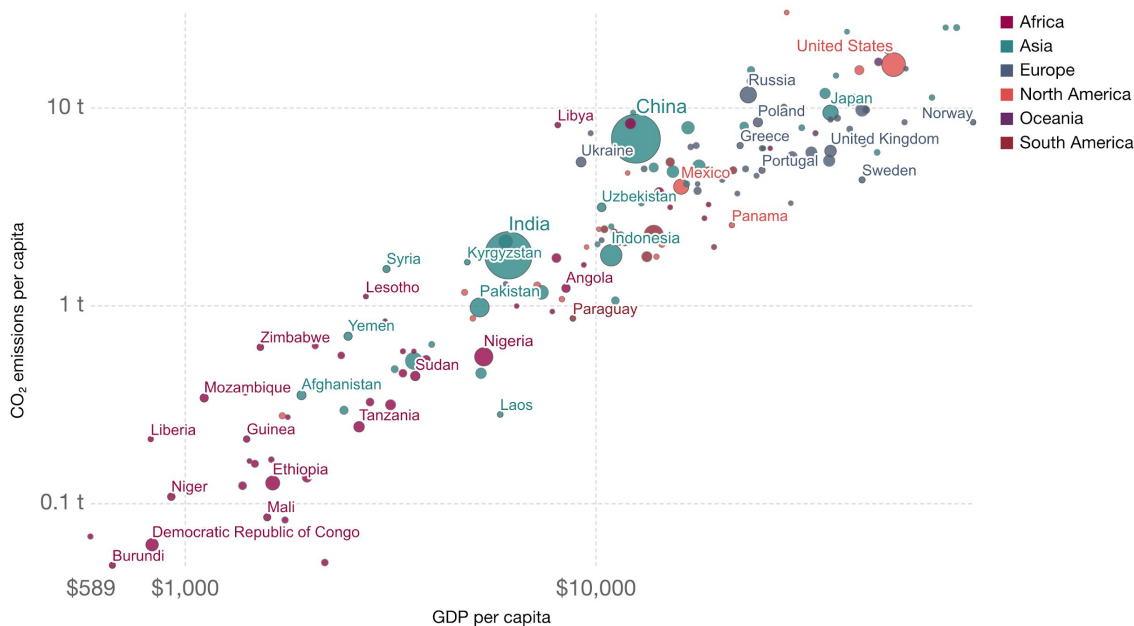[5] China: People's Rep. of China, Hong Kong
Version: 17-Dec-2019 by AQAL Capital GmbH (https://aqalcapital.com) and Tom Schulz

"We" are already living in the future.

CO_2 emissions per capita vs GDP per capita, 2016

Carbon dioxide (CO_2) emissions per capita are measured in tonnes per person per year. Gross domestic product (GDP) per capita is measured in international-$ in 2011 prices to adjust for price differences between countries and adjust for inflation.

Our World in Data

- ■ Africa
- ■ Asia
- ■ Europe
- ■ North America
- ■ Oceania
- ■ South America

CO_2 emissions per capita

10 t

1 t

0.1 t

GDP per capita

$589 $1,000 $10,000

United States
Russia
Japan
China
Libya   Poland   Norway
Ukraine   Greece   United Kingdom
Mexico   Portugal   Sweden
Uzbekistan   Panama
India
Indonesia
Kyrgyzstan   Angola
Syria
Lesotho   Pakistan   Paraguay
Yemen
Zimbabwe   Nigeria
Sudan
Mozambique   Afghanistan   Laos
Tanzania
Liberia   Guinea
Ethiopia
Niger
Mali
Democratic Republic of Congo
Burundi

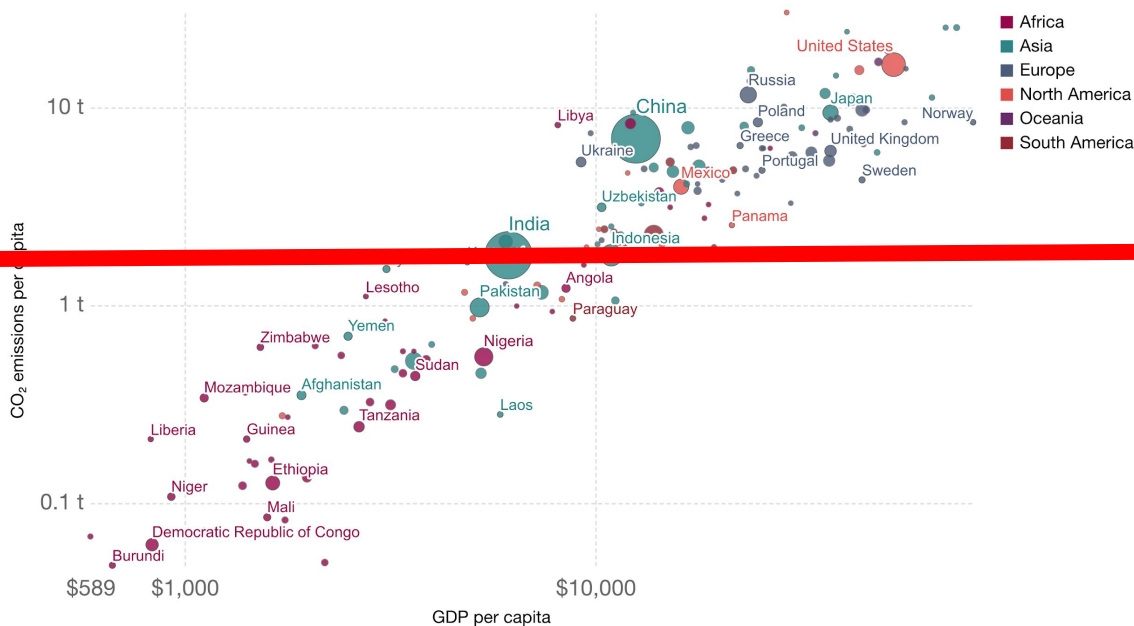Source: Global Carbon Project; Maddison (2017)   OurWorldInData.org/co2-and-other-greenhouse-gas-emissions/ • CC BY

"We" are already living in the future.

CO₂ emissions per capita vs GDP per capita, 2016

Carbon dioxide (CO₂) emissions per capita are measured in tonnes per person per year. Gross domestic product (GDP) per capita is measured in international-$ in 2011 prices to adjust for price differences between countries and adjust for inflation.

COP21
Paris
Agreement

Source: Global Carbon Project; Maddison (2017)   OurWorldInData.org/co2-and-other-greenhouse-gas-emissions/ • CC BY

Development means becoming The Other

First time as tragedy, the second time as farce

"Hegel bemerkt irgendwo, daß alle großen weltgeschichtlichen Thatsachen und Personen sich so zu sagen zweimal ereignen. Er hat vergessen hinzuzufügen: das eine Mal als große Tragödie, das andre Mal als lumpige Farce."

– Karl Marx: *Der achtzehnte Brumaire des Louis Bonaparte*.

Hegel remarks somewhere that all great world-historic facts and personages appear, so to speak, twice. He forgot to add: the first time as tragedy, the second time as farce

– Karl Marx: *The Eighteenth Brumaire of Louis Bonaparte*

Contact information

We are three coordinators

Jaime Forero-Romero je.forero@uniandes.edu.co

German Chaparro germancho@gmail.com

Angela Patricia Perez Henao angela.perez@parqueexplora.org

Our github page where we keep track of our telecons and discussion:

https://github.com/AndeanROAD

Please feel free to send us an email if you want to join our efforts.