

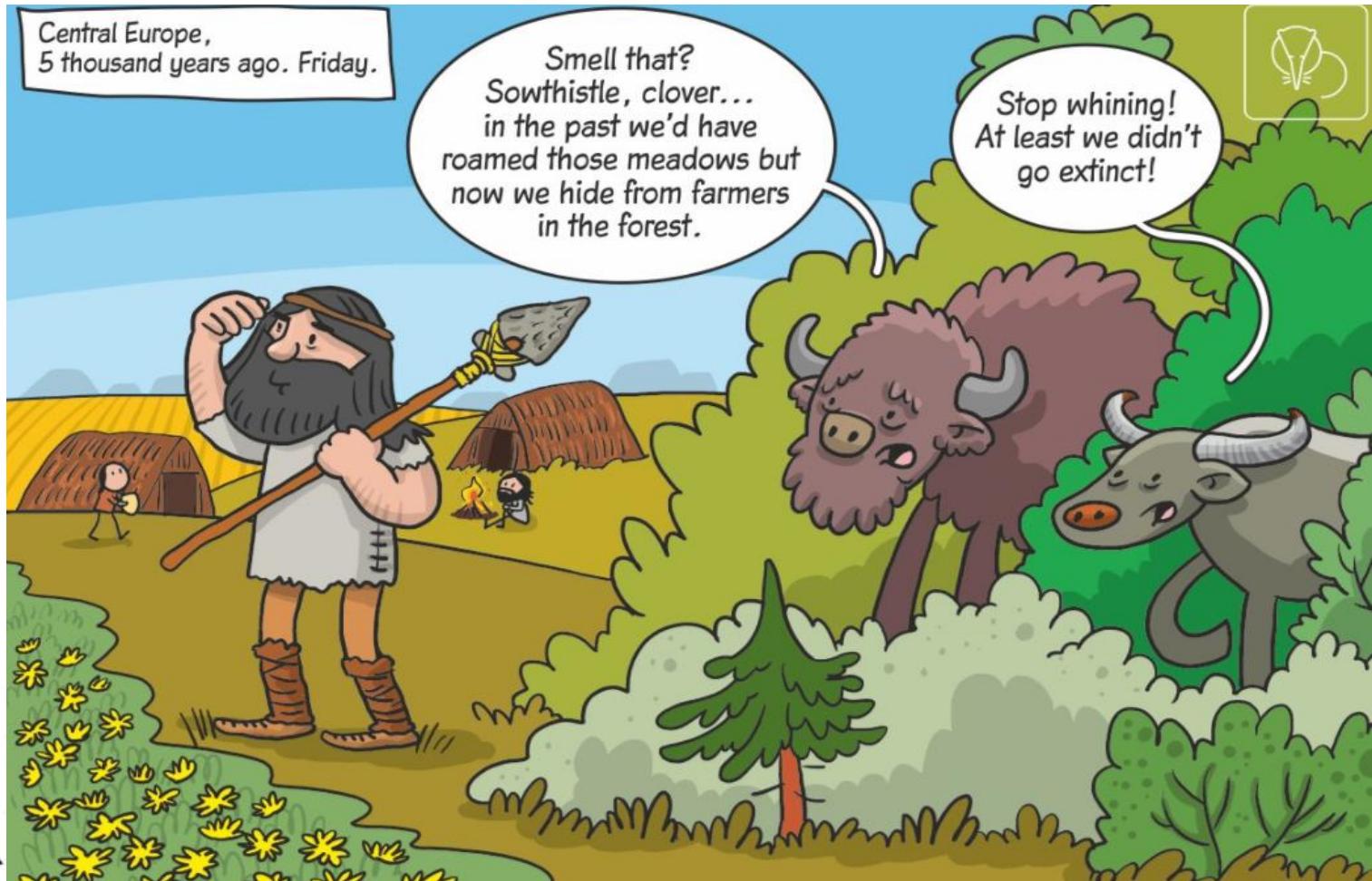
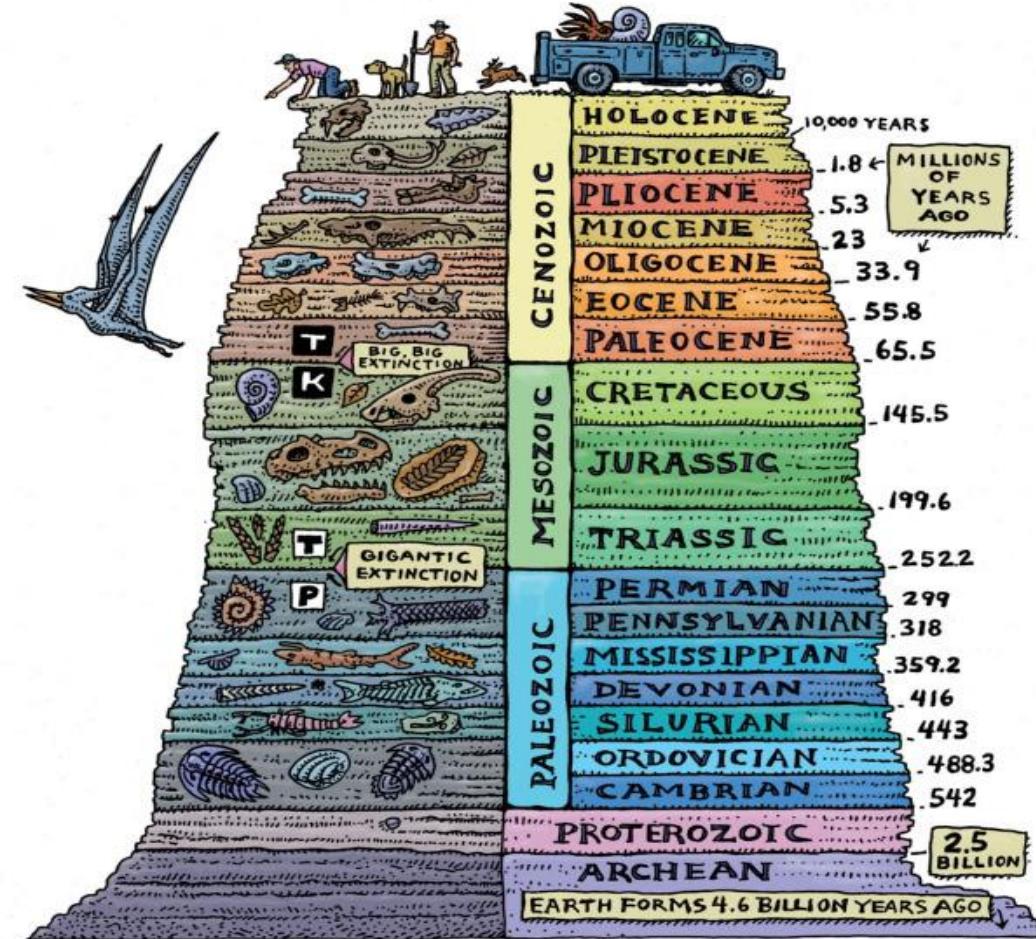
The Contemporary Conjuncture



- **climate catastrophe: climatology**
- **the 6th mass extinction: biology**
- **the “Anthropocene”: geology**



From Holocene to Anthropocene



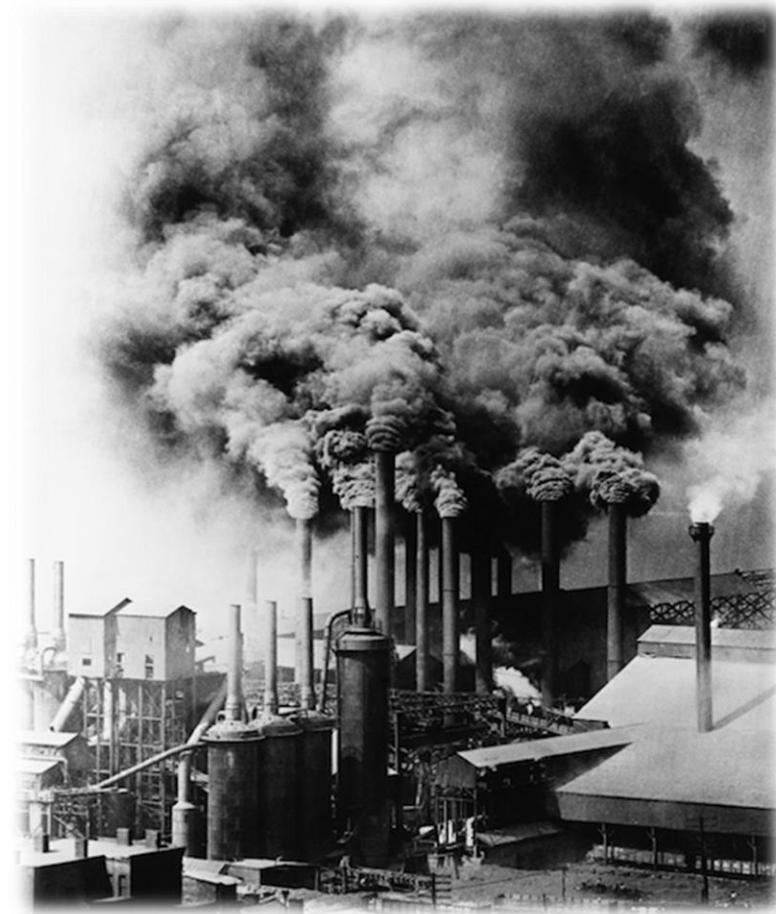
“Age of Humans”

- Crutzen and Stoermer (2000), The “Anthropocene”
- anthropozoic era – Stoppani (1873); anthropogenic age – Pavlov (1913); ‘noosphere’ – Teilhard de Chardin and Le Roy (1924)
- expansion of mankind in the past three centuries in numbers (**a ten-fold increase!**)
- per capita exploitation of earth’s resources
- urbanization has **increased tenfold in the past century**
- emission of CO₂, SO₂, NO, CO
- The “Anthropocene” – central role of **humans**

ANTHROPOCENE
an•thro•po•cene
(n) the proposed current geological epoch, in which humans are the primary cause of permanent planetary change.

The dating debate

- Crutzen and Stoermer – industrialization
- CO₂ concentration in atmosphere from 270–275 parts per million (ppm) to 310 ppm in the mid-twentieth century
- From linear to exponential growth – the “Great Acceleration” (Steffen 2005; Steffen et al. 2015); the “1950s syndrome” (Pfister 1995)



Stratigraphic Signatures

- The Anthropocene Working Group
- Report to be submitted to the Subcommission on Quaternary Stratigraphy
- International Commission on Stratigraphy > International Union of Geological Sciences

To what extent are human actions recorded as measurable signals in geological strata?

Is the Anthropocene world markedly different from the stable Holocene Epoch?

Evidences

- new materials, such as elemental aluminum, concrete, plastic, and carbon particles
- alterations in the processes of sediment creation
- altered geochemical signals in sediments and ice sheets
- increases in nitrogen and phosphorus
- presence in sediments and ice of radionuclides released by nuclear bomb testing
- changes in the carbon cycle based on data from ice core samples
- increase in global temperature and rising sea levels
- alterations in biodiversity

From strata to multi-layered arguments...

- New stratigraphic signatures!

“The Anthropocene is functionally and stratigraphically distinct from the Holocene” (Waters et al. 2016).

- From geology to climate science
- Transformations in earth systems
- “planetary boundaries” and the search for “safe operating space for humanity” (Rockstrom et al. 2009; Steffen et al. 2015)

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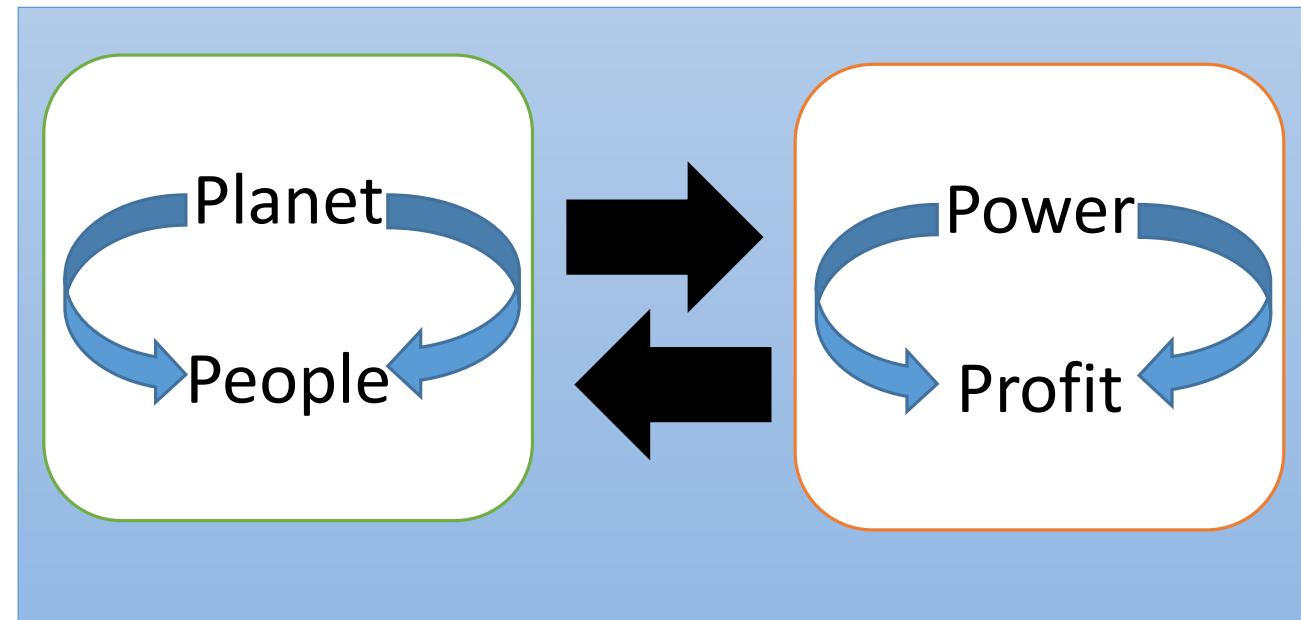
Is the Anthropocene neutral?



“Capitalocene is a kind of critical provocation to this sensibility of the Anthropocene, which is: We have met the enemy and he is us” (Moore 2017).

The 'Capitalocene': Taking capitalism seriously...

- Extermination of everything from megafauna to microbiota
- ...understanding it not just as an economic system but as a way of organizing the relations between humans and the rest of nature
- altered relationship with other planetary beings



Is COVID 19 a ‘Capitalocene’ challenge?



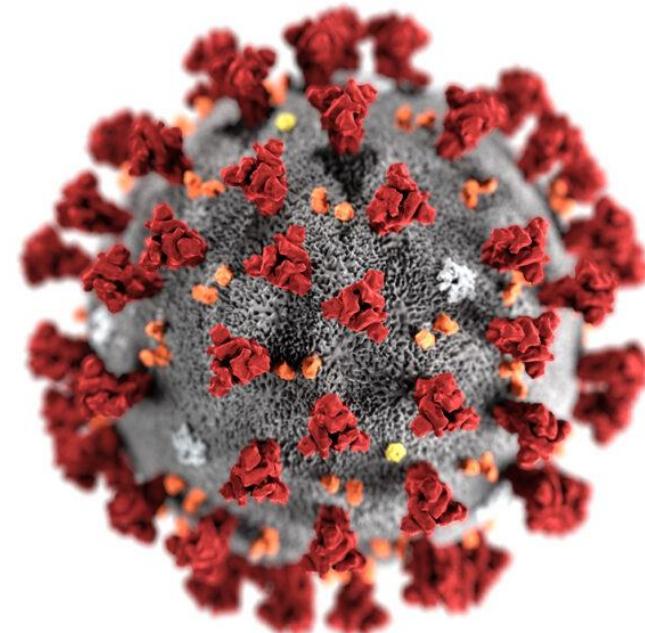
The image is a screenshot of a blog post from the website "Seeing the Woods". The header features a blurred background image of a forest and the title "Seeing the Woods" in a serif font. Below the title is the subtitle "A BLOG BY THE RACHEL CARSON CENTER". A dark blue navigation bar at the top includes links for "ABOUT THIS BLOG", "BLOG SERIES", and "CONTACT AND SUBMISSIONS". The main content area has a white background. The title of the post is "IS COVID-19 A ‘CAPITALOCENE’ CHALLENGE?". Below the title, there is a timestamp "Posted on May 11, 2020 by carsoncenter" and a link "Leave a Comment". Three photographs are displayed horizontally below the title: a group of pigs, a large flock of chickens, and a row of cows in a pen. At the bottom of the post, the text "Featured image courtesy of Elisabeth Abergel" is visible.

IS COVID-19 A ‘CAPITALOCENE’ CHALLENGE?

Posted on May 11, 2020 by carsoncenter | Leave a Comment

Featured image courtesy of Elisabeth Abergel

By Jenia Mukherjee and Amrita Sen





The hand of human intervention in mutual symbiosis and harmony with nature © Olaf Hajek

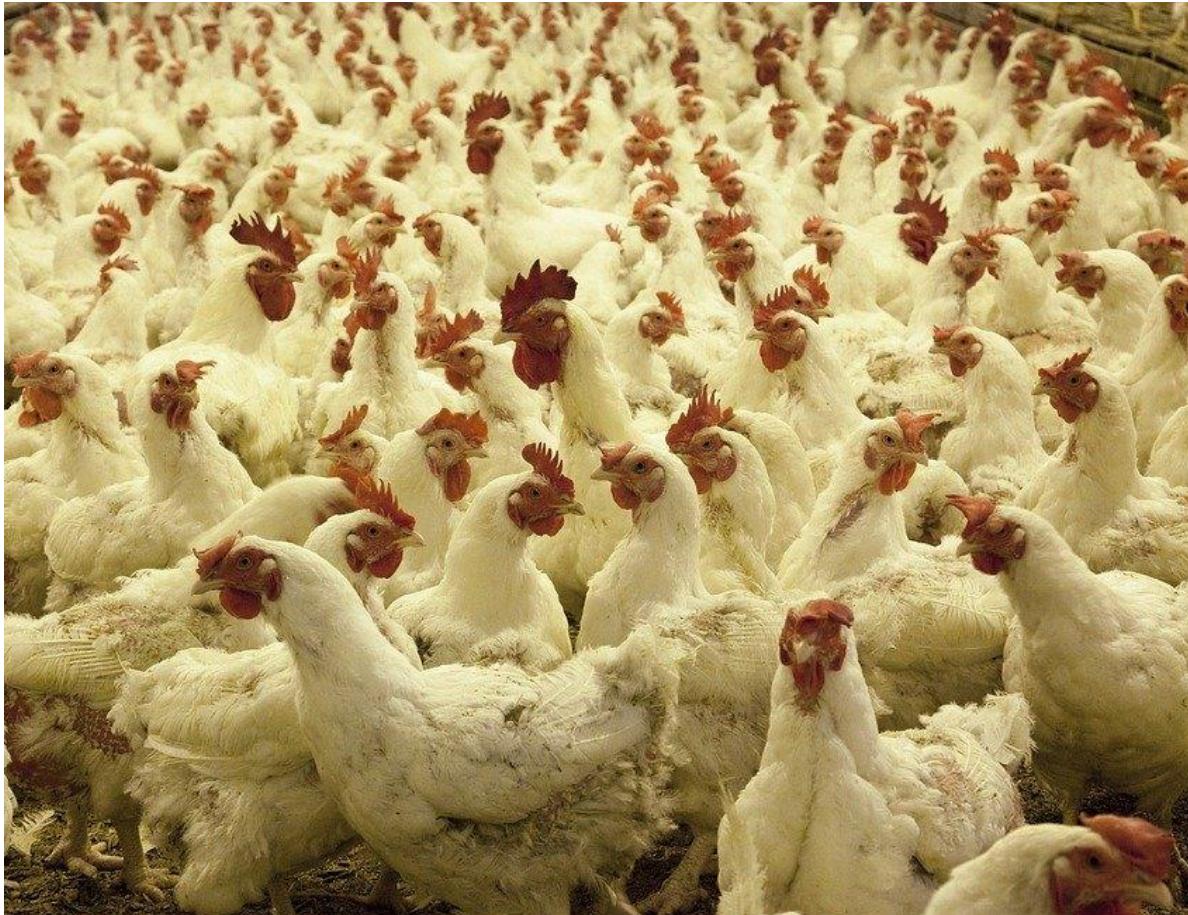


- Van Dooren (2020): “the real source of the crisis is human, not animal”
- the ‘dysfunctional relationship’ (Dooren, 2020) or ‘metabolic rift’ (Foster, 1999) between humans and animals (and also avian species)
- our complex entanglement to our environment (Peterson, 2020); “interspecies intersectionality”

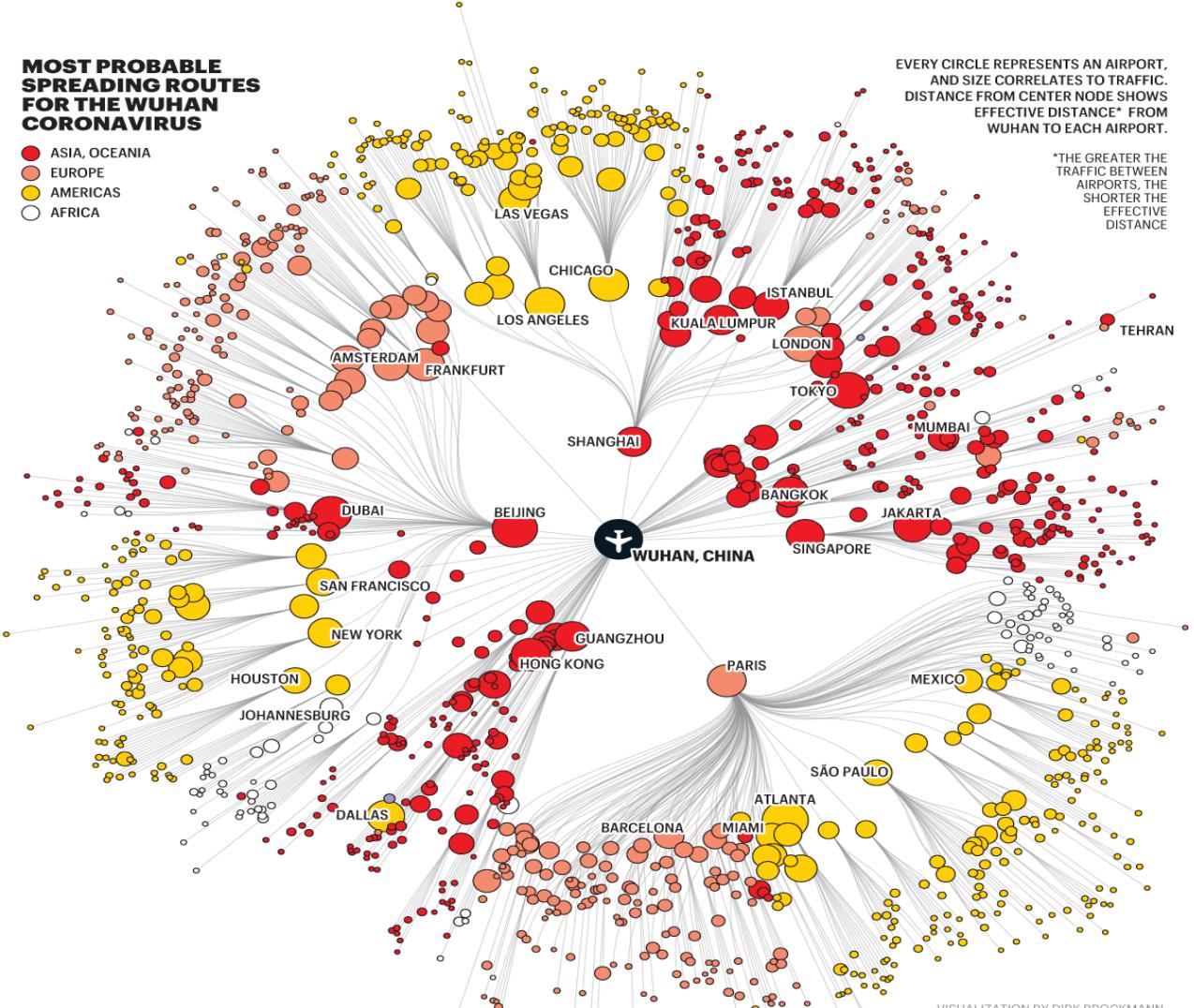
Wildlife trafficking



Cities, consumption, cultural transformations



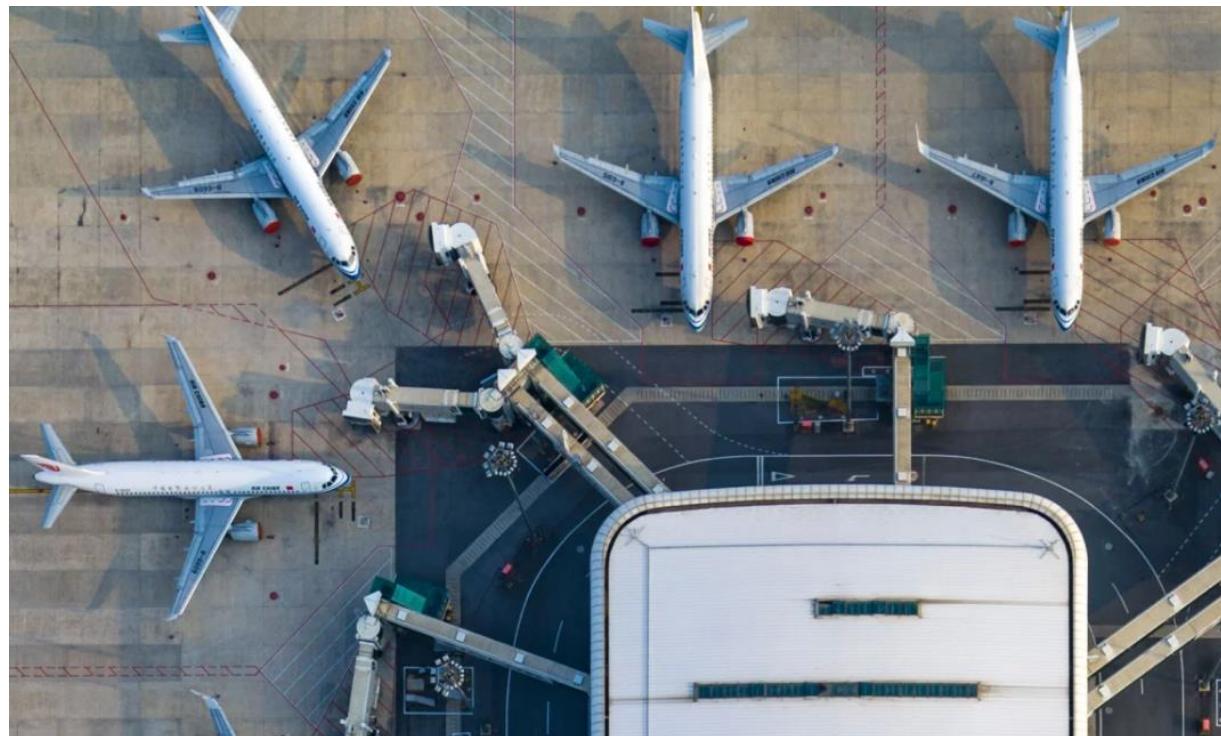
- dramatic rise in meat consumption; from eudemonic to hedonic notion of wellbeing
- cultural (and hence dietary) transformation
- 8–10 % annual growth (1990–2010) in the Indian poultry sector with an annual turnover of US\$7,500 million



Source: <https://fortune.com/longform/how-coronavirus-spread-map/>

Mapping a contagion!

“What were once local spillovers are now epidemics trawling their way through global webs of travel and trade” (Wallace, et al. 2020)



Cities, ‘circuits of capital’, “neo-liberal disease”

- **Global ‘circuits of capital’; permits and payments**
- **Worldwide wild food industry**
- **Urban-peri-urban interconnections; the immediate “spill over effects”**
- **from “borderlines” to “borderlands” (Hinchliffe et al., 2012)**

“...the expanding periurban commodity circuits shipping these newly spilled-over pathogens in livestock and labor from the deepest hinterland to regional cities” (Wallace, Chaves and Wallace 2020)

From virus to integral ecology

- The war is not between viruses and the vaccines.
- Blurring and breaking boundaries – interconnectedness [naturesociety; urbanrural; citynature, etc.]
- Multi-spatial interconnections; multispecies entanglements
- Integral ecology and wellbeing



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“Urbanocene” or the Urban Anthropocene?

- Myint (2018): a transformation from the Anthropocene to the Urbanocene
- Lussault (2020): Anthropocene as the Urbanocene; a spectacular evolution of the earth system, with urbanization as a primary driver
- “Part of story of the anthropogenesis of humans is the story of the species’ urbanization: anthropogenesis is urbanogenesis” (Mendieta, 2019: 93).



The ‘new’ urban / The urban moment

- 2007 – the urban population of the world surpassed the rural population
(World Urbanization Prospects, 2008)
- 1950 – 30%; 2018 – 55%; BY 2050 – 68% *(World Urbanization Prospects, 2018)*.
- Evident in the:
 - Rate
 - Scale
 - Shifting geographies of urbanization

Rate

TOTAL, URBAN AND RURAL POPULATIONS AND THEIR AVERAGE ANNUAL RATES OF CHANGE,
FOR THE WORLD AND DEVELOPMENT GROUPS, SELECTED YEARS AND PERIODS, 1950-2050

"clock speed" of cities

(Myint, 2018)

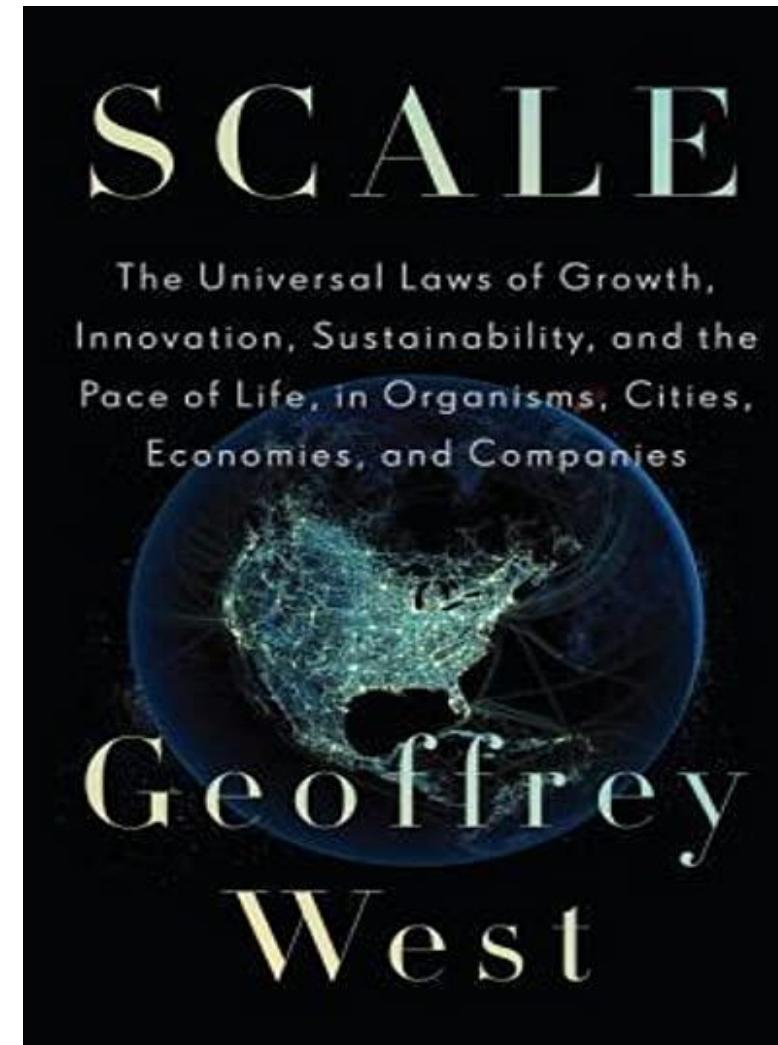
- **1959 – one billion**
- **1985 – two billion**
- **2002 – three billion**
- **2015 – four billion**
- **2028 – five billion**
- **2041 – six billion**

| Development group | Population (billions) | | | | | | Average annual rate of change (per cent) | | | | |
|-------------------------|-----------------------|------|------|------|------|------|--|-----------|-----------|-----------|-----------|
| | 1950 | 1970 | 1990 | 2018 | 2030 | 2050 | 1950-1970 | 1970-1990 | 1990-2018 | 2018-2030 | 2030-2050 |
| Total population | | | | | | | | | | | |
| World | 2.54 | 3.70 | 5.33 | 7.63 | 8.55 | 9.77 | 1.89 | 1.83 | 1.28 | 0.95 | 0.67 |
| More developed regions | 0.81 | 1.01 | 1.15 | 1.26 | 1.29 | 1.30 | 1.07 | 0.64 | 0.34 | 0.17 | 0.03 |
| Less developed regions | 1.72 | 2.69 | 4.18 | 6.37 | 7.26 | 8.47 | 2.23 | 2.21 | 1.50 | 1.09 | 0.77 |
| Urban population | | | | | | | | | | | |
| World | 0.75 | 1.35 | 2.29 | 4.22 | 5.17 | 6.68 | 2.95 | 2.63 | 2.18 | 1.69 | 1.28 |
| More developed regions | 0.45 | 0.67 | 0.83 | 0.99 | 1.05 | 1.12 | 2.06 | 1.04 | 0.64 | 0.46 | 0.34 |
| Less developed regions | 0.30 | 0.68 | 1.46 | 3.23 | 4.12 | 5.56 | 4.02 | 3.82 | 2.83 | 2.03 | 1.50 |
| Rural population | | | | | | | | | | | |
| World | 1.79 | 2.35 | 3.04 | 3.41 | 3.38 | 3.09 | 1.37 | 1.30 | 0.41 | -0.07 | -0.45 |
| More developed regions | 0.37 | 0.33 | 0.32 | 0.27 | 0.24 | 0.17 | -0.48 | -0.27 | -0.58 | -0.95 | -1.61 |
| Less developed regions | 1.42 | 2.01 | 2.72 | 3.14 | 3.14 | 2.92 | 1.75 | 1.52 | 0.51 | 0.00 | -0.37 |

Scale

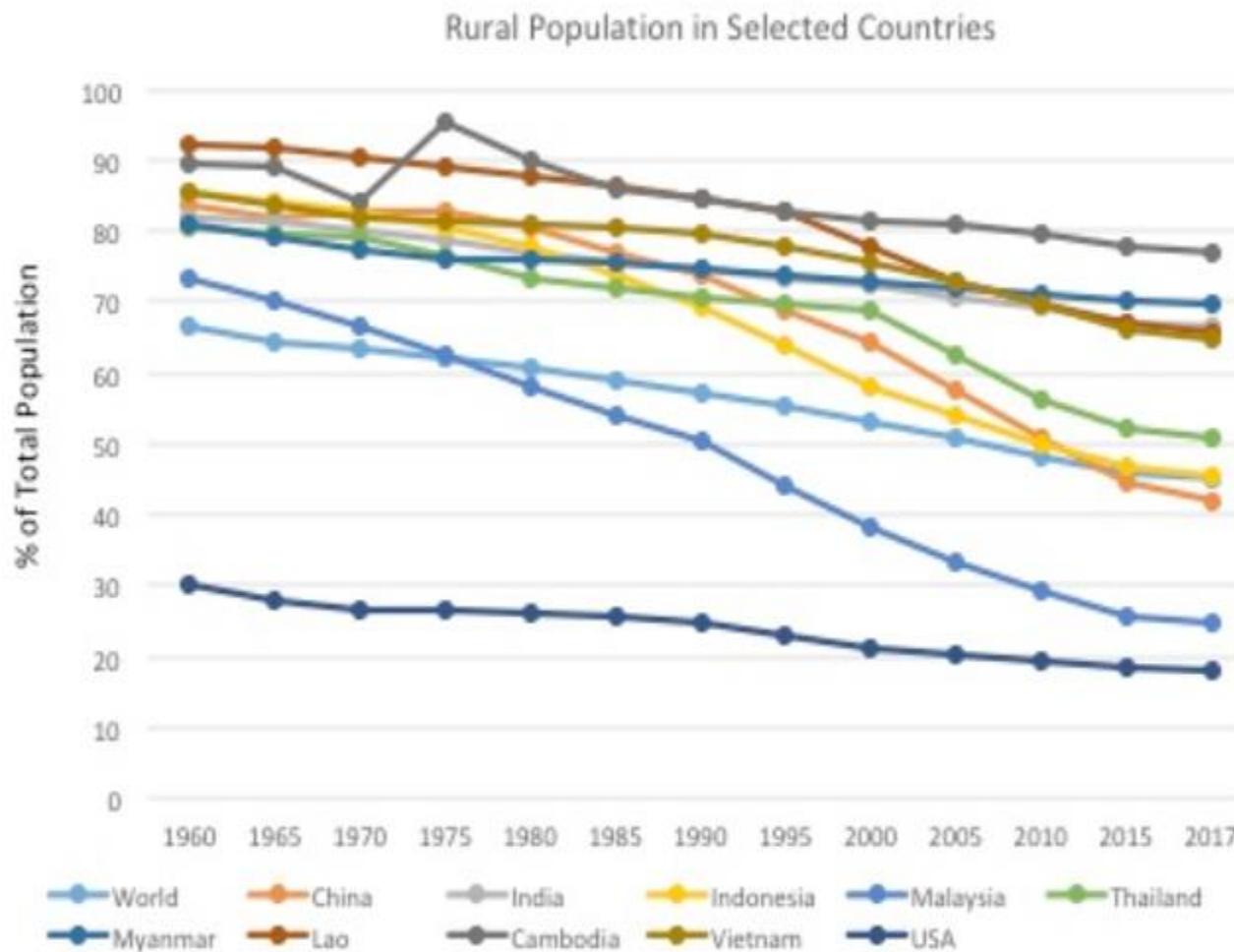
- size (and also numbers) really matters...
- cities are bigger than at any other time in terms of their physical extents, population sizes, economic importance, and environmental impacts (Seto et al., 2010)

| Number of cities with one million (or >) population | |
|---|---------------------------------|
| Year | Number of cities |
| 1800s | Beijing |
| 1900s | 16 |
| 2000s | 378 (India – 40; China – > 100) |
| 2025 | 600 |



Shifting geographies

- The world's largest internal migration of rural people to urban areas has been happening on a remarkable scale in Asian countries since 1990s.
- Between 1990 and 2017 China was the leading rural out-migrating society in the world (falling from 73.56 to 42.04 per cent of the total population), followed by SE Asia
- Sharp decline in Thailand's rural population, from 80% in 1960 to 48.46% cent in 2016
- 1900 – 2017: Indonesia (from 69.42 to 45.34 per cent) and Malaysia (halving from 50.21 to 24.55 per cent)



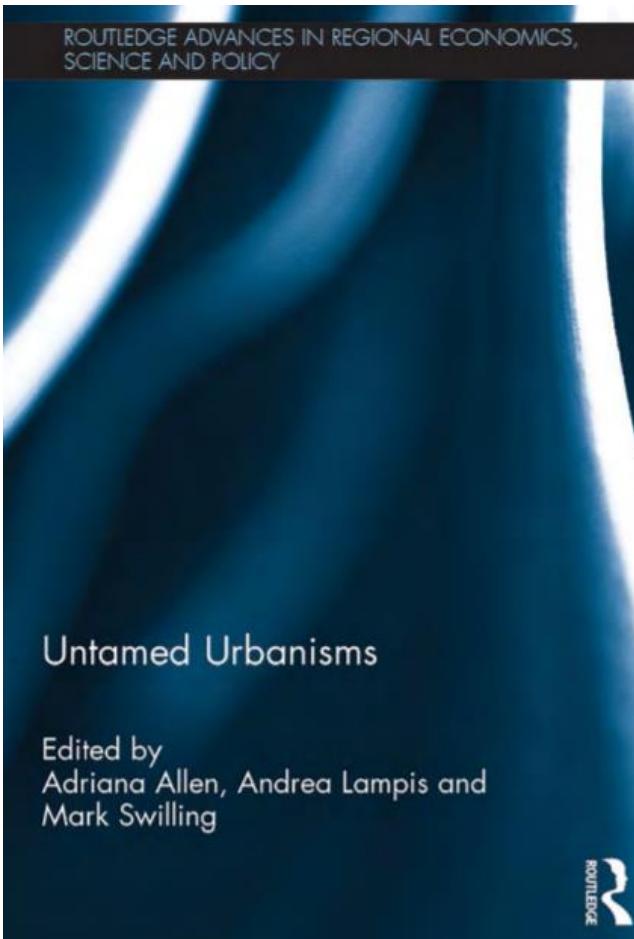
By 2030

- **the urban population in China is expected to exceed one billion, an increase of 400 million, and result in the creation of at least 30 cities of one million**

- **India is projected to surpass that of China, with its urban population nearly doubling from today's 350 million to 611 million and with an addition of 26 cities of one million**

Implications – metabolism to ‘metabolic rift’

- **consumption and consumerist cities**
- **a largescale, dispersed, fragmented, and (non-)networked landscape – planetary urbanization**
- **...metabolisms, economics and politics are increasingly out of sync with nature and with less-urbanized regions (Myint 2018)**
- **from centric formations to the new polymorphic urban tissue deeply extended in the once rural and natural environment (Novaković & Milaković 2018)**



The developing world has already entered into the high-growth, rapid transition phase of the urbanization process, marked by numerous problems and challenges including the swelling of slums and squatter settlements; lack of citywide infrastructures for services such as housing, health and sanitation; privatization and commercialization of infrastructures; city development plans based on the logic of foreign capital; the widening gap between the rich and the poor; and the changing nature of the rural–urban divide (Mukherjee, 2015: 33).

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