Two-thirds of the world doesn't exist yet

How population projections to 2150 redraw the global tobacco epidemic

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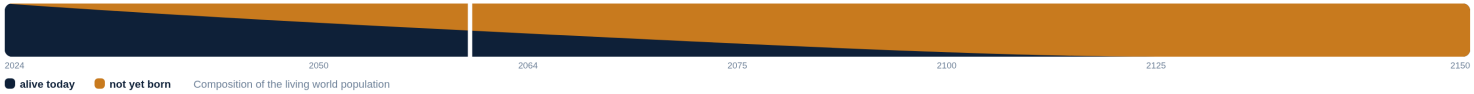
Research questions:

1. How many of the people affected by long-run health policy are not yet born?
2. How does discounting them change where the global tobacco burden falls?



Background:

Tobacco control, pension design and climate mitigation all trade a cost paid now against a benefit received by someone who may not be born for fifty years. Economics handles this with an exponential discount factor. Population ethics asks whether people who do not yet exist have claims on us at all.

Neither literature measures the quantity both depend on: **how many future people there are.** The UN World Population Prospects, the reference dataset for this work, stops at 2100. Beyond it, analysts freeze the population or extrapolate a single global rate, discarding the regional divergence that dominates the century.

Methodology: extending the projections

Ten regions (Lancet Commission on Investing in Health scheme), single year of age and sex. Total population and age structure are extended separately, so fertility can be varied without distorting the pyramid.

$$r_{2100} = (P_{2100} / P_{2090})^{1/10} - 1$$

$$r_{target} = 0.005 \times (F - 2.1)$$

$$r(t) = r_{2100} + (r_{target} - r_{2100}) \cdot \min(t/T, 1)$$

Growth blends linearly from the UN's own 2090 to 2100 momentum toward the rate implied by target fertility F over T = 50 years, so the handoff at 2100 is continuous. Age structure comes from a cohort component model run at the UN's terminal mortality rates.

Methodology: counting future lives

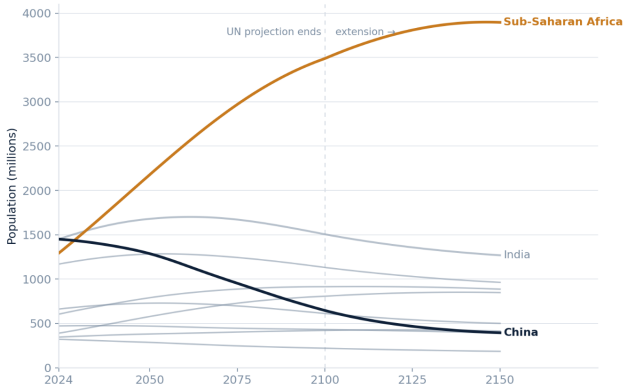
A person alive in year Y at age a was born in Y − a. For reference year X = 2024 this splits every projected year into C(Y), already born, and D(Y), born afterwards.

$$W(Y) = C(Y) + \alpha \cdot D(Y)$$

α is the moral weight on people who do not yet exist: α = 1 under a totalist view, α = 0 under a strict person affecting view. It is held **separate** from the discount factor σ^t, so that weighting by existence and discounting by delay can be told apart.

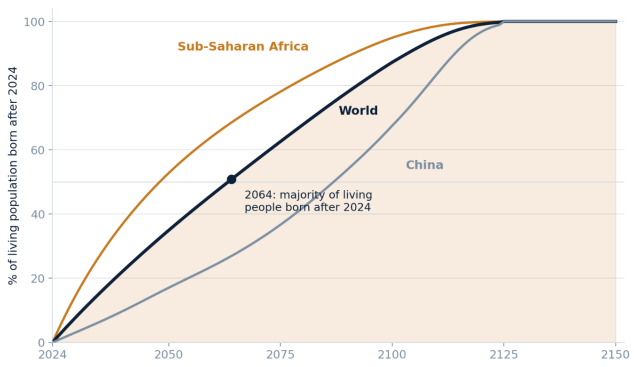
Results: the world stops growing but never stops changing

World population peaks at **10.28 billion in 2084** and falls to 9.75 bn by 2150, only 19% above today. That near stability hides an extreme regional split.



Sub-Saharan Africa triples while China falls to 27% of its current size. Dashed line marks the end of the UN projection.

Results: turnover outruns growth



Share of the living population born after 2024. Sub-Saharan Africa crosses the halfway mark in 2048, China not until after 2100.

2064
Year most living people were born after 2024.

68.3%
Of the 1.25 trillion person years lived 2024 to 2150, the share belonging to people not yet born.

By 2100, 87.3% of living people were born after 2024. By 2125, nobody alive today remains. **The population is roughly the same size. It is composed of entirely different people.**

Region	2024	2150	ratio
Sub-Saharan Africa	1,293	3,895	3.01
Central Asia	390	848	2.17
Middle East & N. Africa	604	887	1.47
India	1,451	1,269	0.87
North Atlantic	472	391	0.83
China	1,451	395	0.27
World	**8,158**	**9,746**	**1.19**

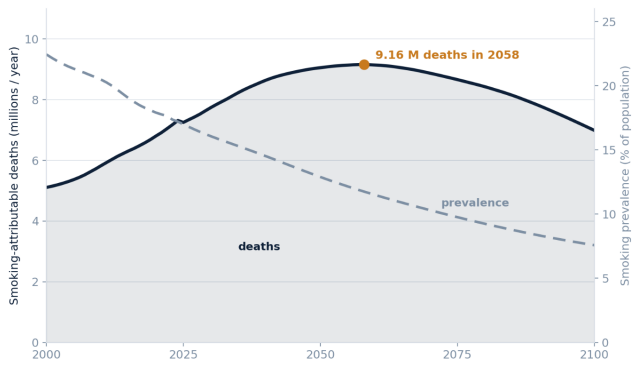
Population in thousands, default fertility settings.

Results: discounting removes most of the future

Future share of person years	0%	1%	3%	5%
World	68.3	57.3	38.0	26.0
Sub-Saharan Africa	83.3	75.3	57.6	43.1
North Atlantic	59.1	47.0	28.0	17.6
China	38.9	29.1	16.7	10.8

A rate chosen for reasons of financial opportunity cost delivers, as a side effect, close to a **50% discount on unborn people as a class**.

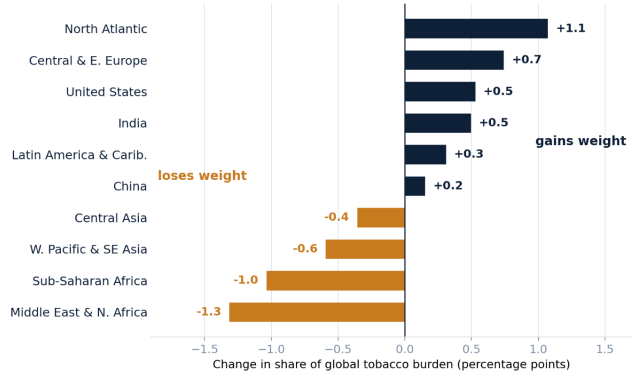
Results: tobacco deaths peak long after prevalence falls



639 million smoking attributable deaths projected 2025 to 2100. Prevalence falls throughout the century; deaths peak 34 years later.

10.1% fall on people not yet born in 2024, rising to 31.2% in Sub-Saharan Africa and falling to 4.9% in China.

Results: discounting moves the burden



Shift in each region's share of global tobacco mortality when 2025 to 2100 deaths are discounted to 2024 at 3%.

Discounting is not only a temporal operation. Because epidemic timing correlates with region, it moves measured burden away from the two epidemics still growing, Sub-Saharan Africa and MENA, and toward those already past their peak.

Separating α from σ does not settle the ethics. It makes visible how much a modelling convention is deciding on its own. A companion survey experiment, now in pre-registration, is designed to estimate α empirically rather than assume it.

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For the full report, references, data sources and contact details, please scan.