Hans Rosling

The data visualisation legacy of Hans Rosling

How the master of 'edutainers' made statistics and facts engaging

The Chart Doctor

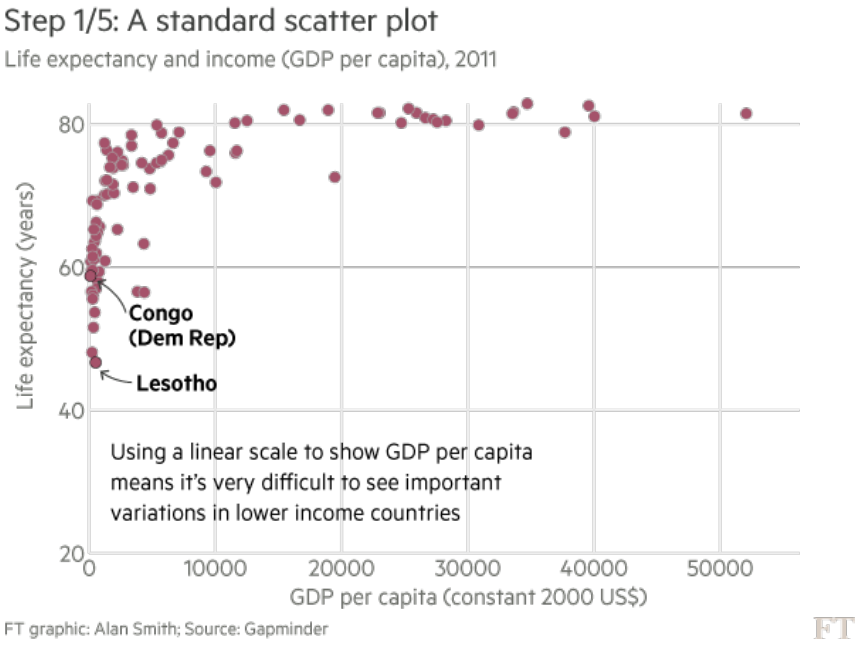
FEBRUARY 10, 2017 by: **Alan Smith**

Professor Hans Rosling, who died this week aged 68 (http://next.ft.com/content/df4af260-eece-11e6-930f-061b01e23655), was well known for innovative data visualisations and a unique presentation style which brought his charts to a wide audience. But what made his most famous data presentation, the 'Gapminder' bubble charts (https://www.ted.com/talks/hans_rosling_shows_the_best_stats_you_ve_ever_seen), so special?

The key is the way that Rosling incorporated lots of statistical relationships into his charts while

simultaneously making them engaging to a wide audience. Let's take a look at how his charts added layer after layer of information to build compelling graphics.

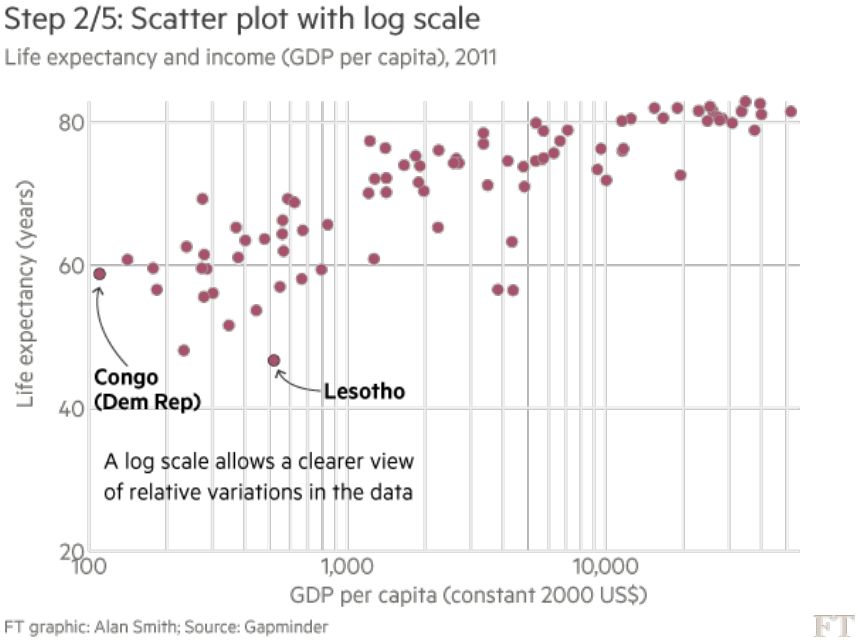
The chart starts life as a straightforward scatterplot, a common type of chart in the science community for showing the relationship between two variables. In this example, we're using life expectancy and income, a combination Rosling used often to look at global development.



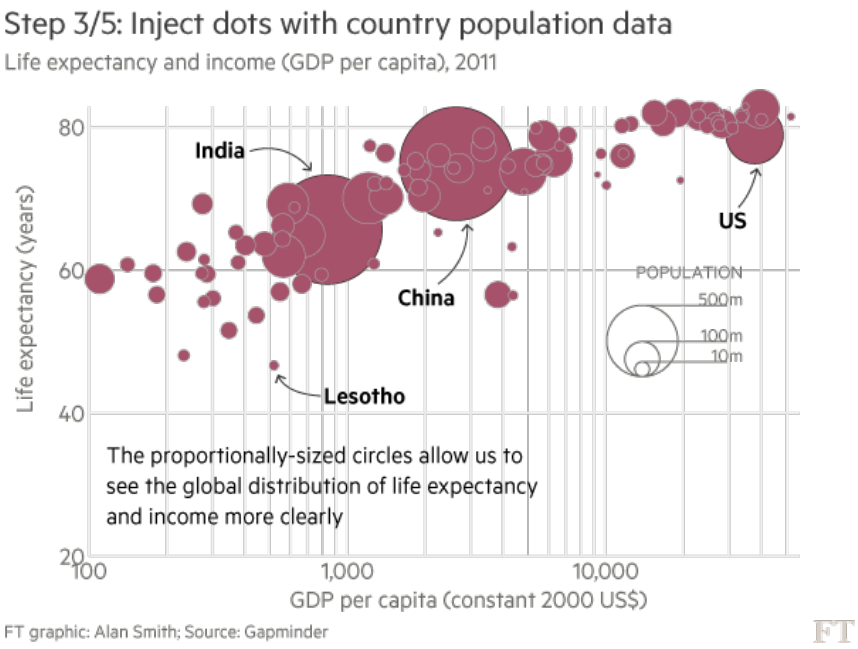
But people can find these charts dull and even difficult to read: recent research (http://www.pewresearch.org/fact-tank/2015/09/16/the-art-and-science-of-the-scatterplot/ft_15-09-11_scatterplot/) suggests that only about two-thirds of American adults are capable of reading and understanding them.

Even worse, a big part of the story is hidden by

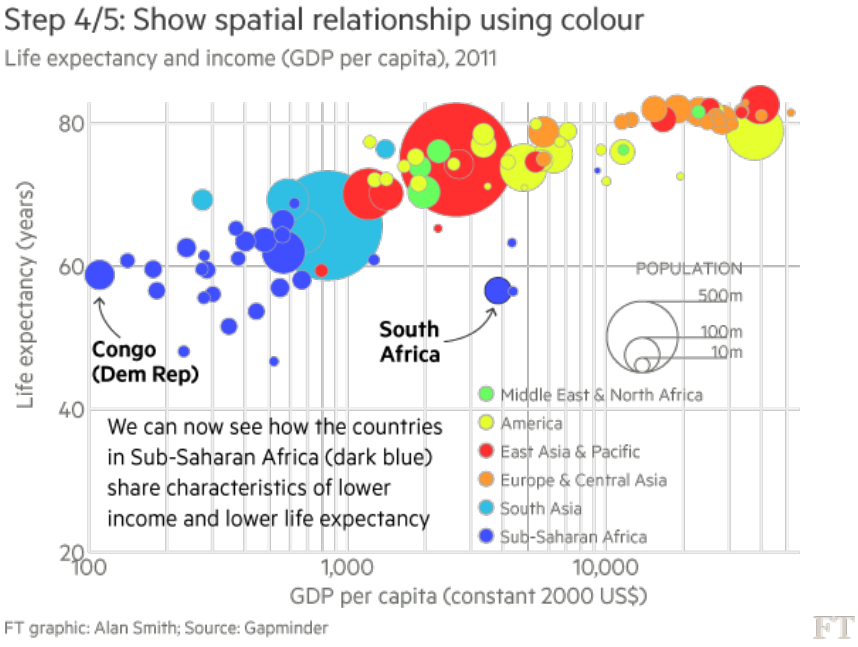
the standard linear axis for the GDP data. I wrote recently about why log scales (http://next.ft.com/content/3062d082-e3da-11e6-8405-9e5580d6e5fb) are good for showing hidden patterns in data. And Rosling was not afraid to show log scale charts to the general public — they allowed people to see (otherwise hidden) variations in income, particularly in lower-income countries.



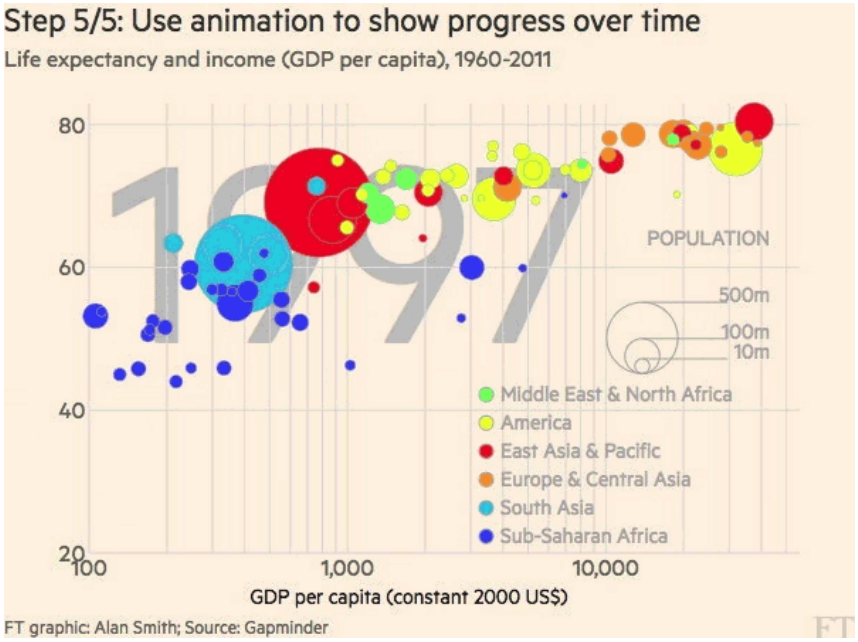
The next stage in the chart's development is to vary the size of each dot on the chart to represent the population of each country. This allows us to see both the size of each country's population and the overall distribution across the world.



Seeing the size of countries is useful, but a clever addition of Rosling's is the use of colour to show where in the world countries are — without having to resort to a map (http://next.ft.com/content/de3ef722-9514-11e6-a1dc-bdf38d484582). Now, for example, we can see the variation between countries in Sub-Saharan Africa and America.



The final stroke of genius in Rosling's charts is his recognition that how countries have changed over time is such an important part of the story. He was passionate in his belief that the world was getting better — people wealthier and living longer — and the final, complete moving bubble chart allows us to see just that.



So Rosling generated broad public interest in his charts by adding information, not taking it away or dumbing it down. The chart above contains no fewer than five of the nine statistical relationships on the FT Visual Vocabulary (http://next.ft.com/content/304419ec-63a3-11e6-8310-ecf0bddad227) (correlation, magnitude, distribution, spatial and change over time) — no mean achievement.

His public statements about access to data and the quality of it ("Clever people made a guess") drove enormous change in attitudes to the use of data for public good.

A unique presentation style

The charts — already engaging — were further brought to life by his breathlessly entertaining presentation style (which even extended to onstage sword swallowing).

I was lucky enough to present alongside Rosling twice, at a statistics conference in Rome in 2007 and at the United Nations in New York in 2010.

Related article

Hans Rosling, physician and statistician, 1948-2017 (http://next.ft.com/content/df4af260-eece-11e6-930f-061b01e23655)

The dean of data who brought life to world trends

He took a seemingly dry topic — statistics — and presented it in a way that seemed not just relevant, but infectiously enjoyable. Statisticians don't dance in the aisles, but this was the closest I'd seen. It left a deep impression on me, recalibrating my understanding of how far and wide statistics

could be communicated.

As brilliant as his presentations were, joining him for a panel session at the UN was equally instructive. A statistician in the audience asked, with a hint of disdain, why he thought all policymakers' decisions could be informed by being provided just two variables (from the x and y axes of his bubble charts). Rosling smiled politely, paused, and then replied, "If I could get policymakers to make decisions using just one variable, well then that would be significant progress."

Given the parlous state of evidence-based debate in 2017, Rosling's absence will be all the more noticeable. Consequently, his legacy — using visual techniques to bring statistics to previously data-shy audiences — is one that should be celebrated and used as a model for a new generation of data "edutainers".

Latest on Hans Rosling

Obituaries
Hans Rosling, statistician,

FT Alphaville
Man vs chimp, demographics edition

Follow the topics mentioned in this article

1948-2017

The dean of data who brought life to world trends

The World
David Pilling

Between the light bulb and the washing machine: The world's growing middle class

Obituaries

The Chart Doctor

Opinion

Visual Journalism

Data visualisation

Follow the authors of this article

Alan Smith

Take a tour of myF

Latest in Obituaries

Medical science

Sir Peter Mansfield, MRI pioneer, 1933-2017

Medical technologist who developed scanning process used in hospitals worldwide

Obituaries

Brenda Barnes, consumer executive, 1953-2017

Leader who found an equilibrium between boardroom and children

Africa

DRC opposition leader Etienne Tshisekedi dies

Added uncertainty over negotiations to end country's year-long political crisis