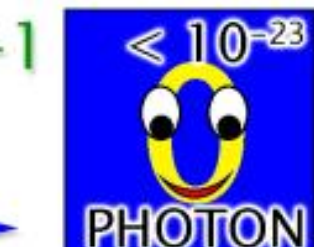
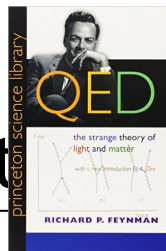


THREE GENERATIONS OF MATTER				CHARGE:	
MATTER CONSTITUENTS: FERMIONS	QUARKS	I	II	III	
		 2.75 UP	 1300 CHARM	 178000 TOP	 91188 Z^0
		 6 DOWN	 110 STRANGE	 4500 BOTTOM	 80430 W^+/W^-
	LEPTONS	 0.511 ELECTRON	 105.7 MUON	 1777 TAU	 $< 10^{-23}$ PHOTON
		 $< 3 \cdot 10^{-6}$ e NEUTRINO	 < 0.19 μ NEUTRINO	 < 18.2 τ NEUTRINO	 theory: 0 GLUON
				$\leftarrow \frac{2}{3}$ 0 $\leftarrow -\frac{1}{3}$ ± 1 $\leftarrow -1$ $\leftarrow 0$ 0	FORCE CARRIERS: BOSONS

ALL MASSES IN MEV;
ANIMAL MASSES
SCALE WITH
PARTICLE MASSES

The Standard Model fundamental particle zoo

Historisk översikt



Relativistisk kvantmekanik, kvantfältteori

Tidig
kvant-
mekanik

Kvantfysik

QED

QCD

Kvantkemi, materialfysik

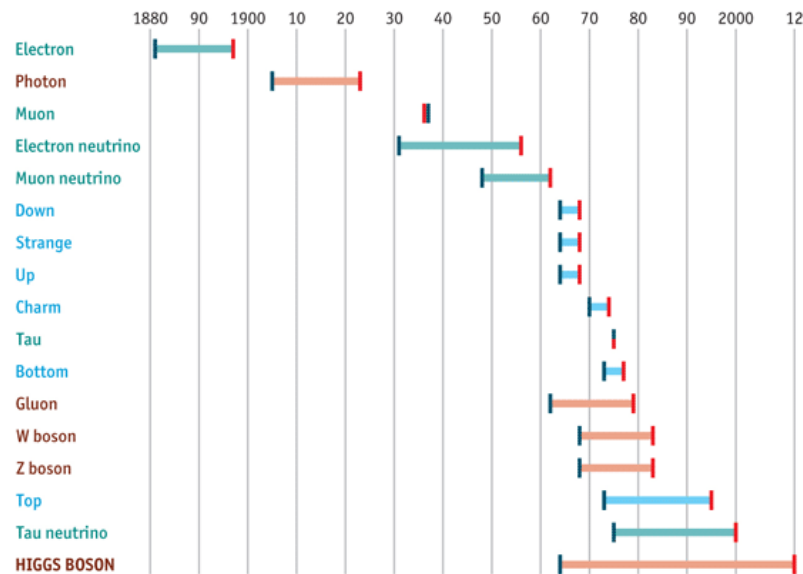
Atomfysik, kärnfysik, partikelfysik

1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020 2030

The Standard Model of particle physics

Years from concept to discovery

Leptons
Bosons
Quarks
Theorised/explained
Discovered

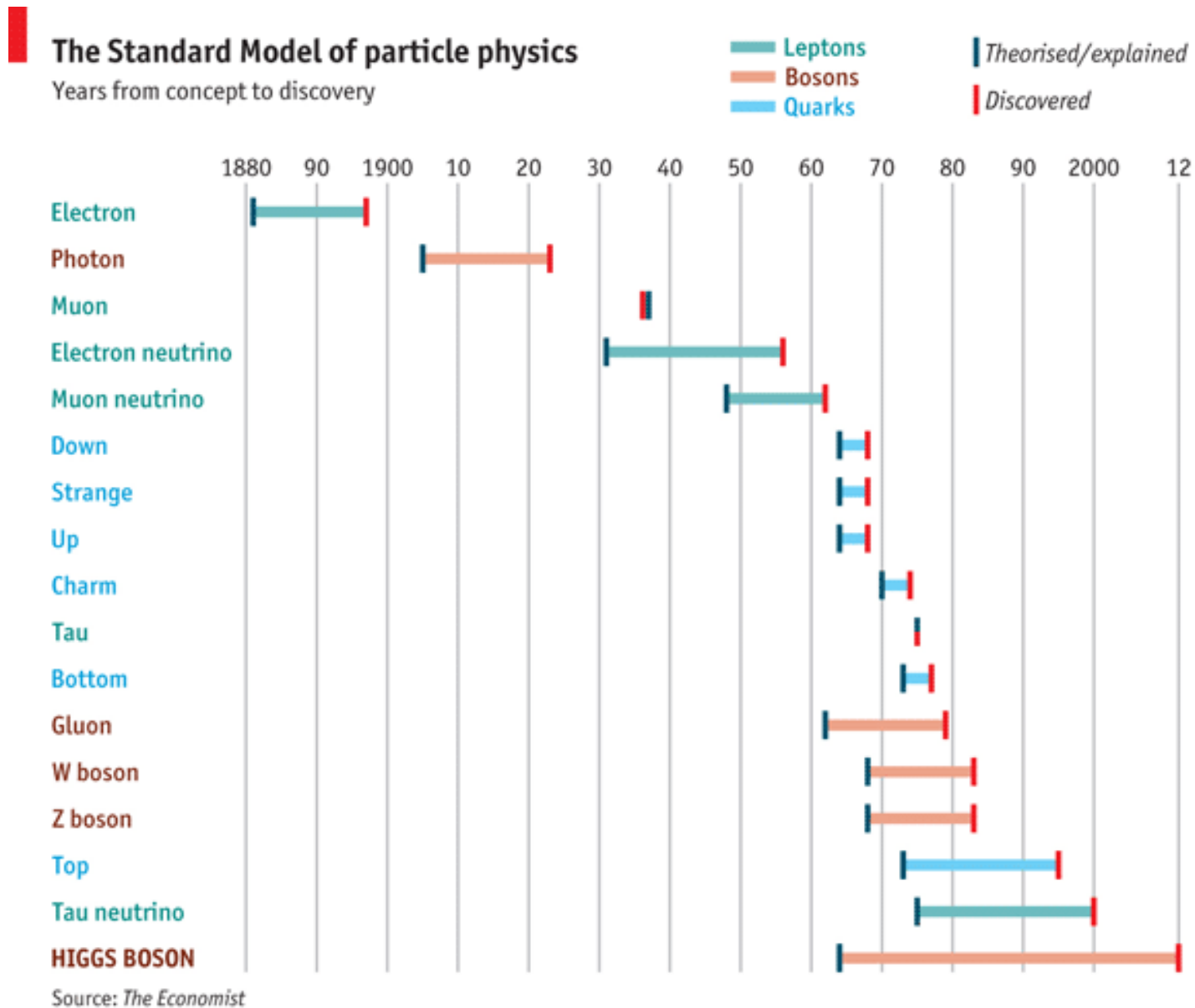


[12a]

[12b]

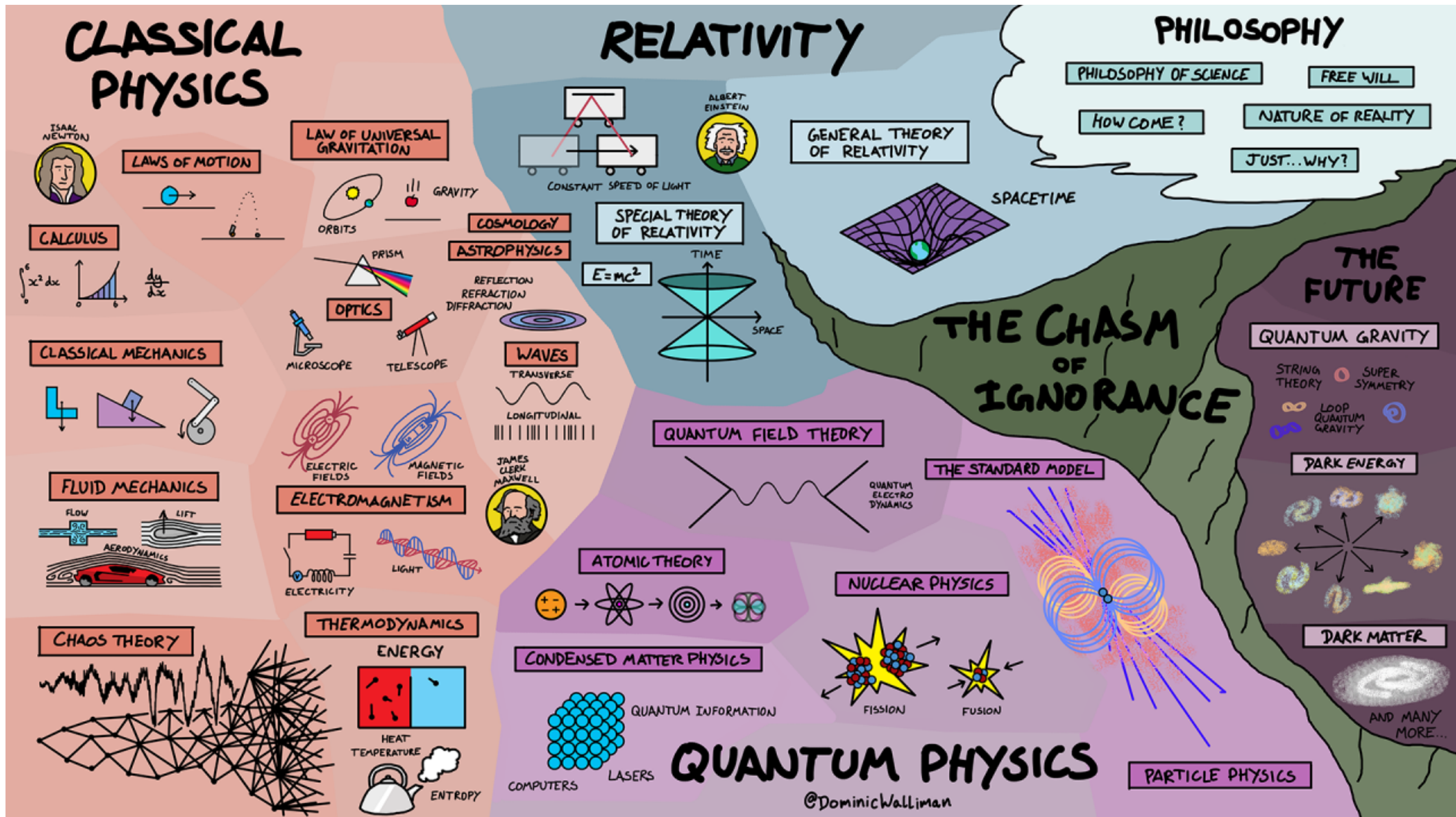
Source: The Economist

Historisk översikt



[12b]

Läget idag



Källor

EJ KLART!