

Unconventional Cylindrical Projections

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For information on indications, precautions and side effects,
ask your doctor or pharmacist

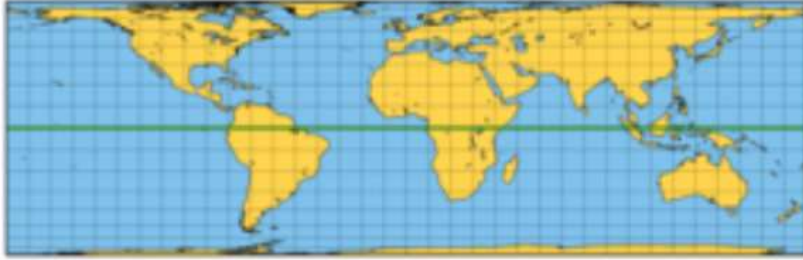


The globe is the most faithful representation of the Earth

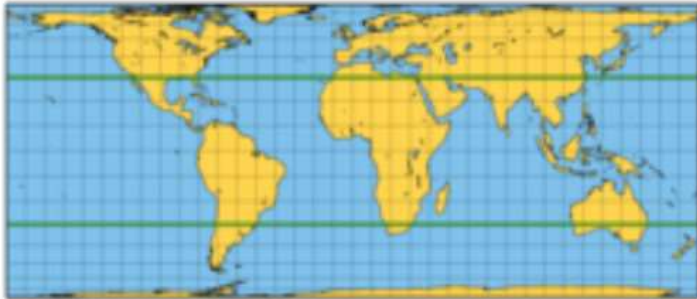


Equal-area cylindrical projections compared at identical scaling factors. Standard parallels are outlined.

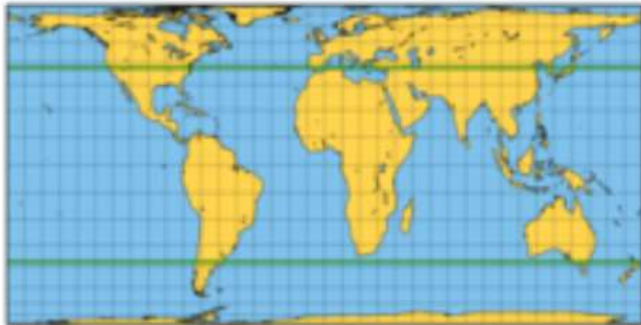
Lambert (1772);
standard
latitude 0° ,
aspect ratio
3.141:1



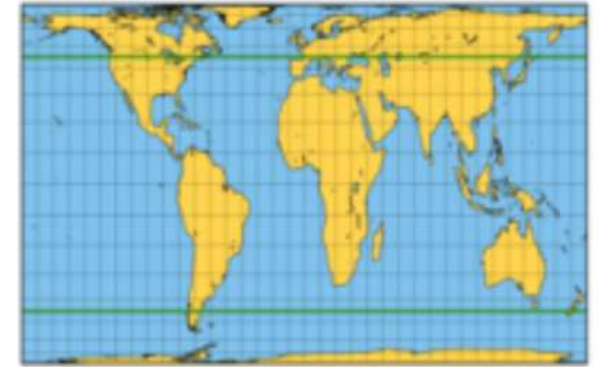
W.Behrmann (1910);
standard latitudes
 30° , aspect ratio
2.356:1



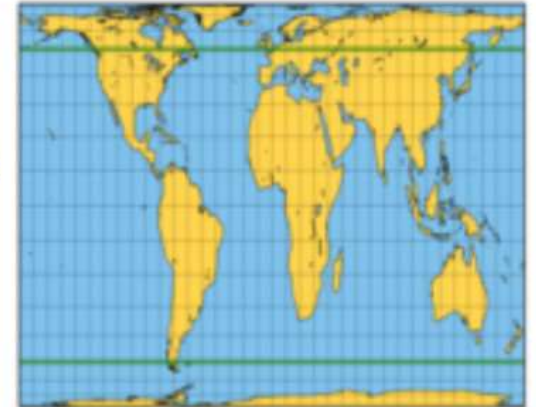
Trystan
Edwards (theoretical
constraint, 1953);
approximate standard
latitudes $37^\circ 24'$, aspect
ratio 1.983:1



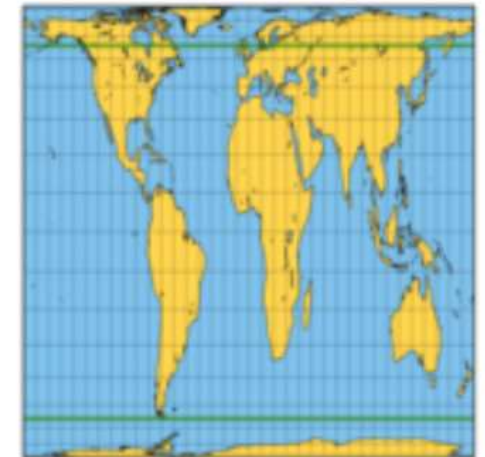
Gall (1855), Peters (1967);
standard latitudes 45° ,
aspect ratio 1.571:1



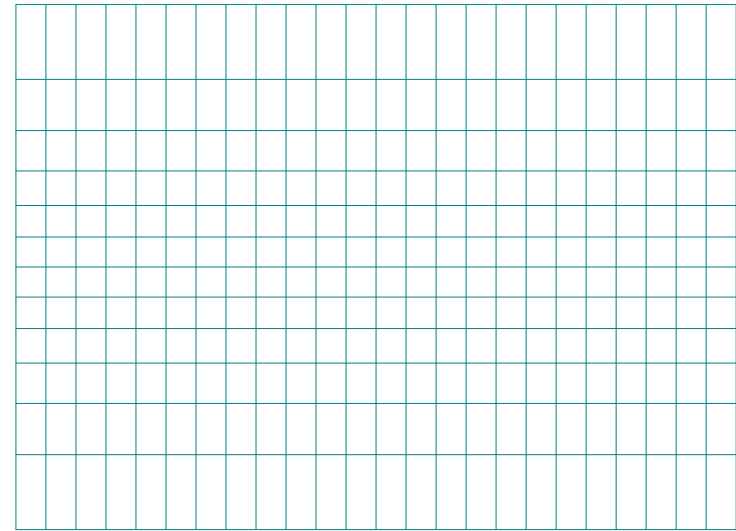
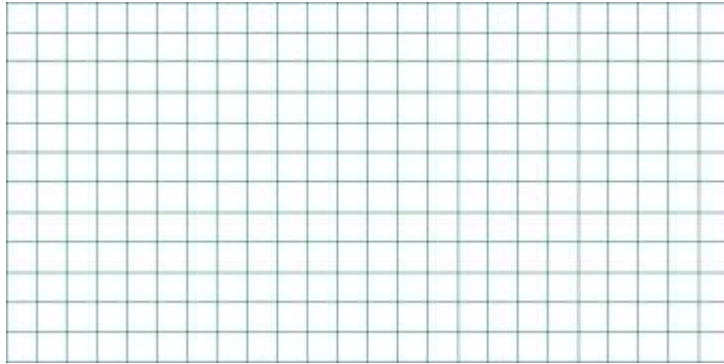
Trystan Edwards (actual, 1953);
approximate standard latitudes
 $50^\circ 52'$, aspect ratio 1.251:1



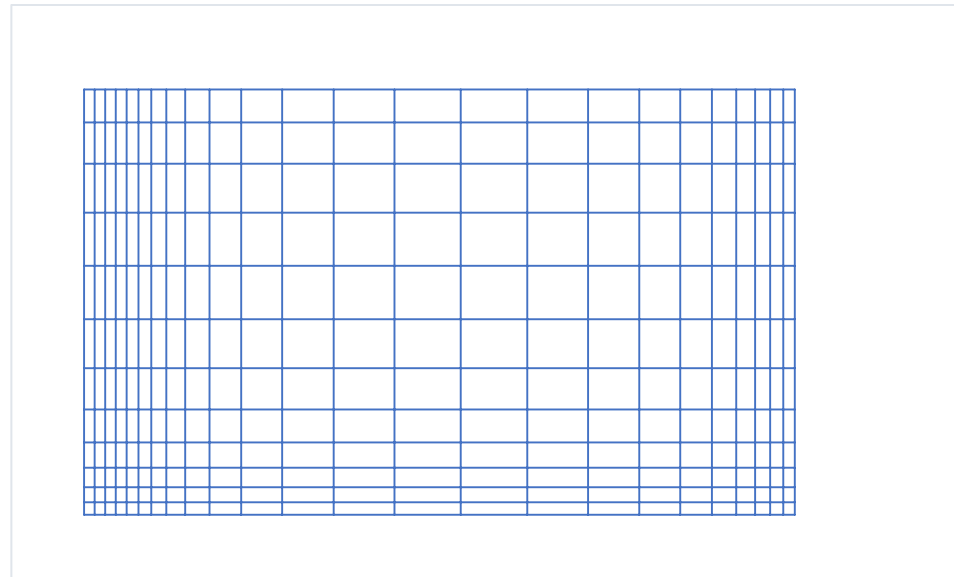
Tobler and Chen (1986);
approximate standard latitudes
 $55^\circ 39'$, aspect ratio 1:1



Which is the best?



Conventional cylindrical projections



Unconventional cylindrical projections

$$x = k(\lambda - \lambda_0) \qquad y = y(\varphi)$$

$$\lambda \in [-\pi, \pi] \qquad \varphi \in \left[-\frac{\pi}{2}, \frac{\pi}{2} \right]$$

Conventional cylindrical projections

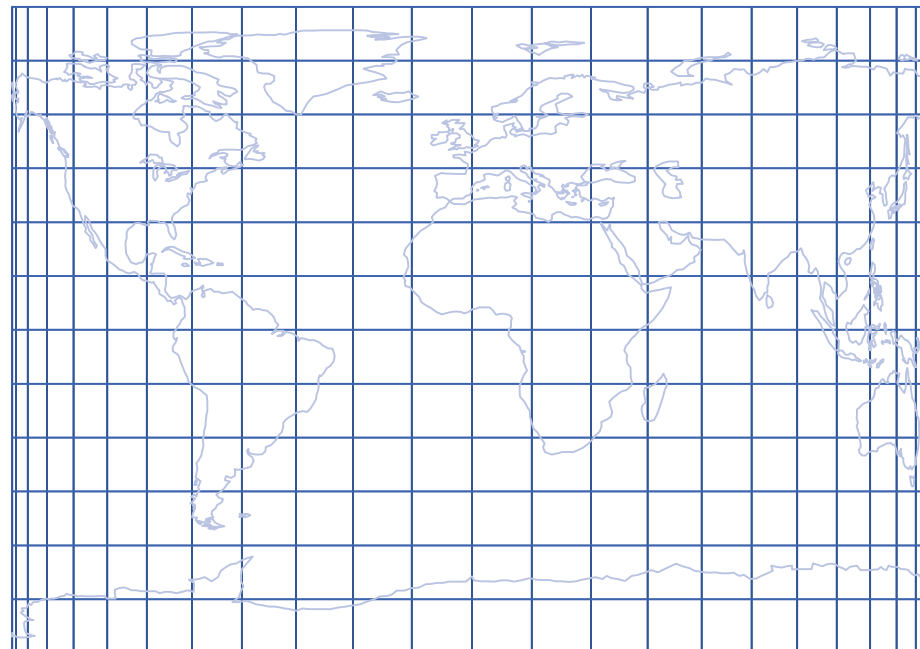
$$x = x(\lambda)$$

$$y = y(\varphi)$$

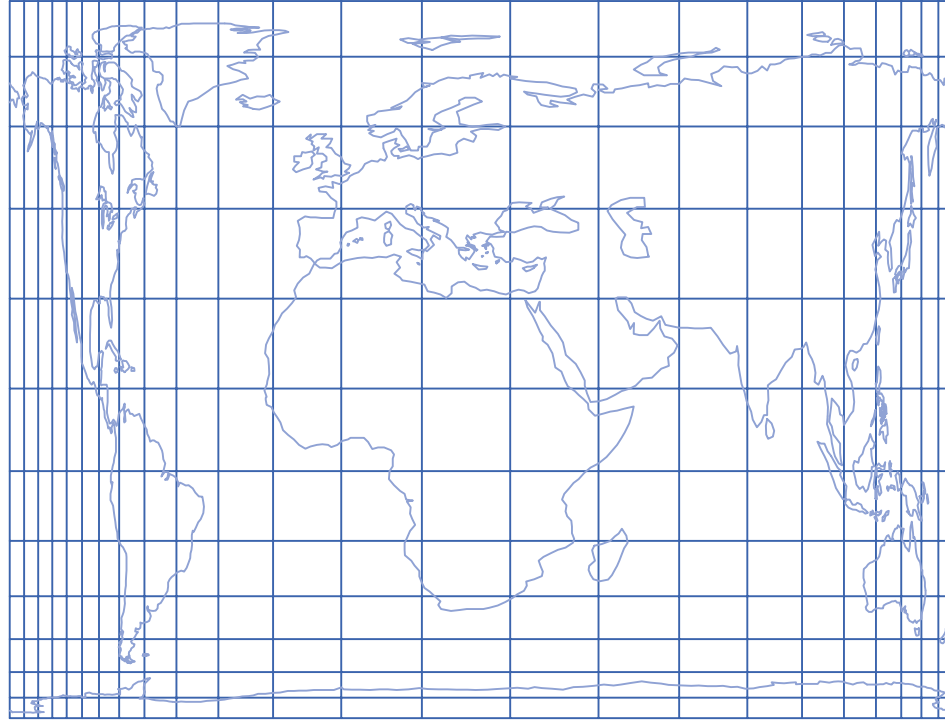
$$\lambda \in [-\pi, \pi]$$

$$\varphi \in \left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$$

Cylindrical projections in general

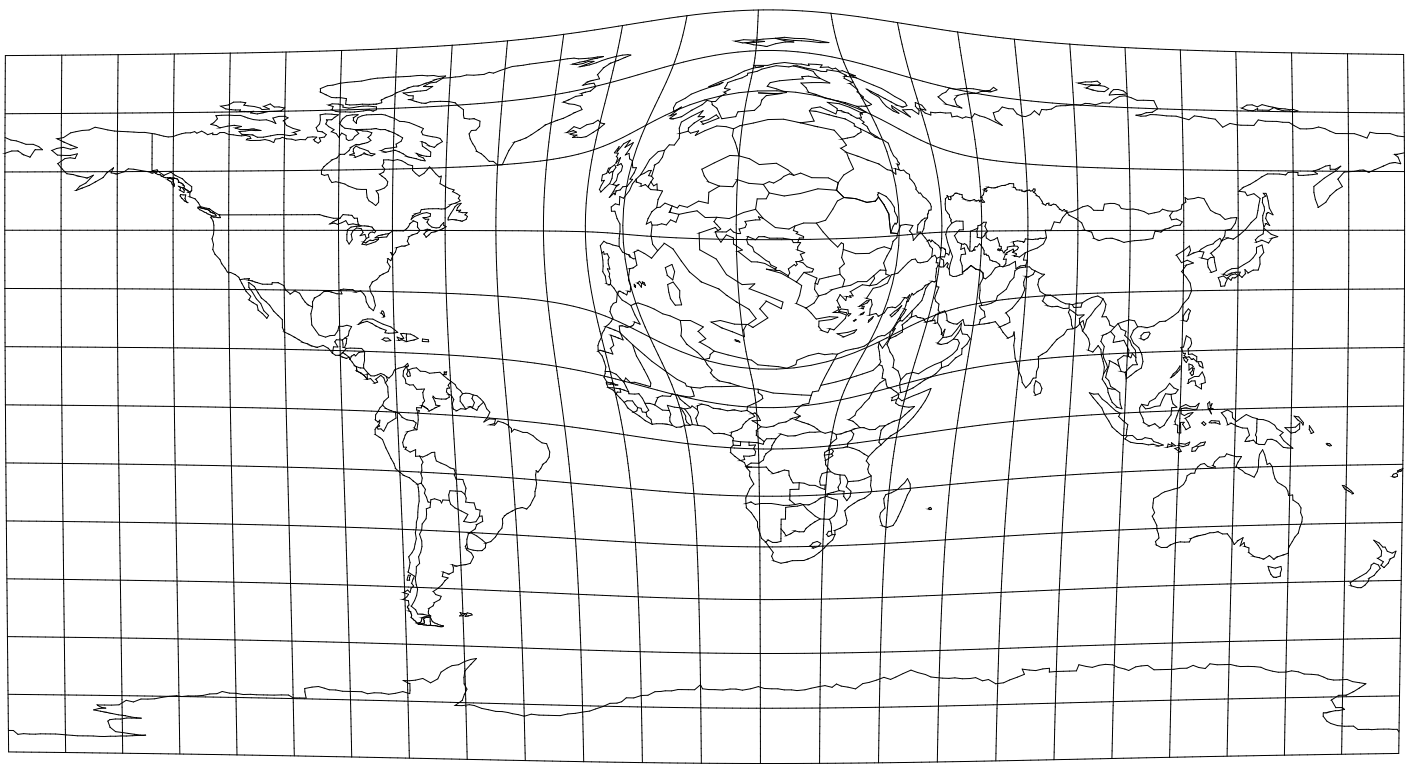


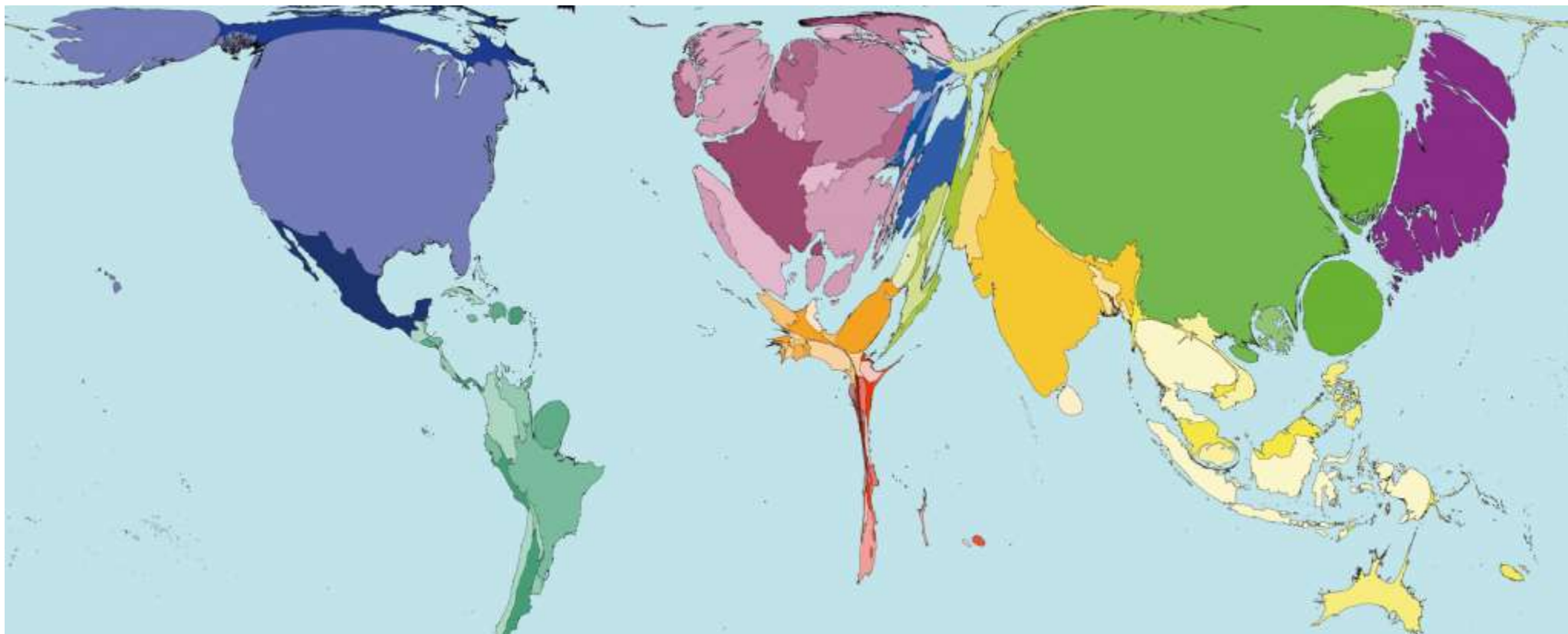
$$x = 2R \sin \frac{\lambda}{2} \quad y = R\varphi$$



$$x = R \left[\lambda + \frac{A(\lambda - \lambda_1)}{1 + C(\lambda - \lambda_1)^2} \right] \quad y = R \left[\varphi + \frac{A(\varphi - \varphi_1)}{1 + C(\varphi - \varphi_1)^2} \right]$$

površinski kartogram (area cartogram, Tobler 2017)
anamorfoza (anamorphic map, Gusein-Zade i Tikunov 2017)
karta s promjenjivim mjerilom (variable-scale map, Qihe i dr., 2000)
žarišna ili višežarišna karta (focal or multifocal map, Kadmon i Shlomi 1978)
karta pod povećalom (magnifying-glass map, Snyder 1987)
karta s ribljim okom (fish-eye fashion map, Snyder 2017)





Thank you!

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