

Bias in Maps



The Earth is a sphere (three-dimensional) and a map is flat (two-dimensional), so it is impossible to produce a map which combines the true shape, bearing, and distance. ALL map projections misrepresent the surface of the Earth in some way. There are errors in distance and distortions in shapes. Cartographers try to preserve four things on a map.

Shape – an area’s shape is directly related to the actual shape in the real world

Area – an area’s size is proportional to its actual size in the real world

Direction – the lines of constant direction remain constant anywhere on a map

Distance – distance measured on a map are accurate

“A knowledgeable map reader, recognizing that a map is both a simplification and a distortion of reality, will look for clues to the cartographer’s purposes and biases.”

Mercator Projection

- Used for navigation since 1569, is most common
- Compass direction along a straight line between 2 points on the map are accurate
- Distortion in shape & size of regions (north is larger, tropics are smaller)
- Polar regions are larger, equatorial regions are smaller
- Still used by ships & pilots, in many atlases for school use

Robinson Projection

- In use from 1988 - 1998 by National Geographic
- Minimizes the distortion of size & shape of most regions
- Badly compresses & distorts the shape of countries in polar regions

Winkel Tripel Projection

- Created by Oswald Winkel in 1921
- Prime Meridian & Equator are straight lines while all other parallels & meridians are curved
- Adopted by National Geographic in 1998, replacing Robinson as it better represents the size & shape of Earth features, especially in the polar regions

Gall Projection

- Used in many textbooks
- Shows area-accurate view of the world
- Land mass size accurate, shape distorted



