

Perspectives: Views of our World

Good morning Arlington Street Church! It is a joy to be here with you again. In anticipation of Earth Day this Tuesday, April 22, we come together to celebrate the beauty and the bounty of the third rock as well as reflect on the fragile nature of this spheroid we call home. It is an interesting coincidence that many of my colleagues have been in Boston this week for the Association of American Geographers Annual Meeting. Welcome to any geographers that may be joining us today.

As one who makes maps, a cartographer, I am keenly aware of the variety of ways we may graphically represent our earth in map form. In your order of service you will find an insert with two different views of our planet. As described there you will see that there are two properties of map projections that have distinctly different attributes – one that minimizes distortion in shape and one that minimizes distortion in size – these attributes are mutually exclusive. While we cartographers endeavor to minimize distortion in our projections there is only so much we can do in this regard – being that representing the features of a sphere on a plane is impossible to do without distortion. No matter how hard we try we cannot help but distort reality when we make a map.

We do, however, try to be conscientious when choosing a map projection – the subject of our study or the purpose of our map guides us in this decision. For, you see, each of these mutually exclusive properties has its uses and benefits as well as its drawbacks. There was a time – some 500 years ago or so, that the map on the right side of your insert was invaluable to navigation.

It is the, of late much-maligned Mercator projection. Revolutionary in its time, the Mercator projection didn't shorten trade routes but was invaluable in keeping sailors safer as they plied the seas, secure in the knowledge that their constant compass bearing could be shown as a straight line on the Mercator projection.

This important document, like so many before and since, was so widely disseminated that people began to accept it as true – in this case a true representation of the landmasses and sea bodies of our great blue planet. How much of this was by osmosis and how much was by a concerted effort on the part of the world powers that could gain the most by the distortions in the Mercator projection is arguable. Because the Mercator projection exaggerates features at high latitudes – the northern **and** the southern high latitudes. And since the majority of the landmass here on earth is in the northern hemisphere it is the northern hemisphere powers that benefited from the distortions of the Mercator projection.

Not only did it aid the United States of America's assertion of supremacy by virtue of our perceived size it also gave us a perfect scapegoat for our fears of domination. Early on it was the exaggerated size of Europe that was our threat, more recently (and arguably a direct cause of the Cold War) it was the exaggerated size of the red menace: The United Soviet Socialist Republic, and today – the exaggerated perceived threat of China.

With increased awareness of social interactions and conditions arose an interest in fair representation of people's lands. Those that study the interdependent web of life forms are not served by a map that so grossly

distorts the size of these lands. Equal-area projections are crucial for this purpose. Consider again the maps in your insert. The map on the left is an equal-area projection – one that represents landmasses and water bodies in relative size to each other. Compare the size of South America and Africa to that of Asia and Western Europe and North America – you can see they are not insignificant areas of our inhabited planet – but are in fact, very significant continents in their respective hemispheres.

A remarkable historian of the twentieth century was a man named Arno Peters, a man who understood the implications of equal-area mapping and the need for such maps to replace our subconscious views of the world. He devised a map of equal-area similar to the one on the left of the insert you hold. While Mr. Peters' legacy will be one of championing equal-rights by his equal-area projection, and for that we owe him an honorable place in history – he was a very dogmatic man who believed his map should supercede all others. I say it requires a multitude of views – including conformal and equal-area projections, mental abstractions of place, and the venerable three-dimensional globe.

A mental abstraction of place is a mental map - the image of the world stored in your mind's eye. Each of us has a different mental map of the world – each of us even has a different mental map of Boston. One thing that is true for all of us is that we are, each of us, at the center of our mental maps. Space, and therefore, our physical world, radiates out in all directions from where we stand. Even while our homes may be in Boston, while we are visiting Oakland or Istanbul our mental maps radiate from that place where we are at the moment of consideration. I chose a very easily

recognizable projection center for the maps I brought you but imagine a map where the Americas are on the right and Australia on the left. This map would be no less accurate or less distorted than those you hold.

Now, if you'll indulge me again, rotate the maps you hold so that Canada and Russia are at the bottom of the page. Is this view less accurate than the orientation it was printed – no it is not. Up is not North – Up is elevation. Up is levitation. Up is the sky. Up may even be Heaven, but Up is not North.

On this day of Earth's celebration – we absolutely are called to embrace each other for inclusion into the community of humanity. But perhaps more importantly on this day – we need to embrace each outside the community of humanity – the community of flora and fauna, of rocks and shores, of icebergs and volcanoes. Considering this - is it possible that no map projection is appropriate? Afterall, the act of projecting the oblate ellipsoid we call Earth onto a plane breaks dimension and reduces a three-dimensional, dynamic organism to a two-dimensional, static representation – literally flattening reality. Perhaps we should forego maps completely and insist the only just representation of the geoid is a globe – the closest graphic representation of Earth ever devised. Next time you imagine buying a world map may I suggest you buy a globe. You can hug a globe – you can't hug a poster.