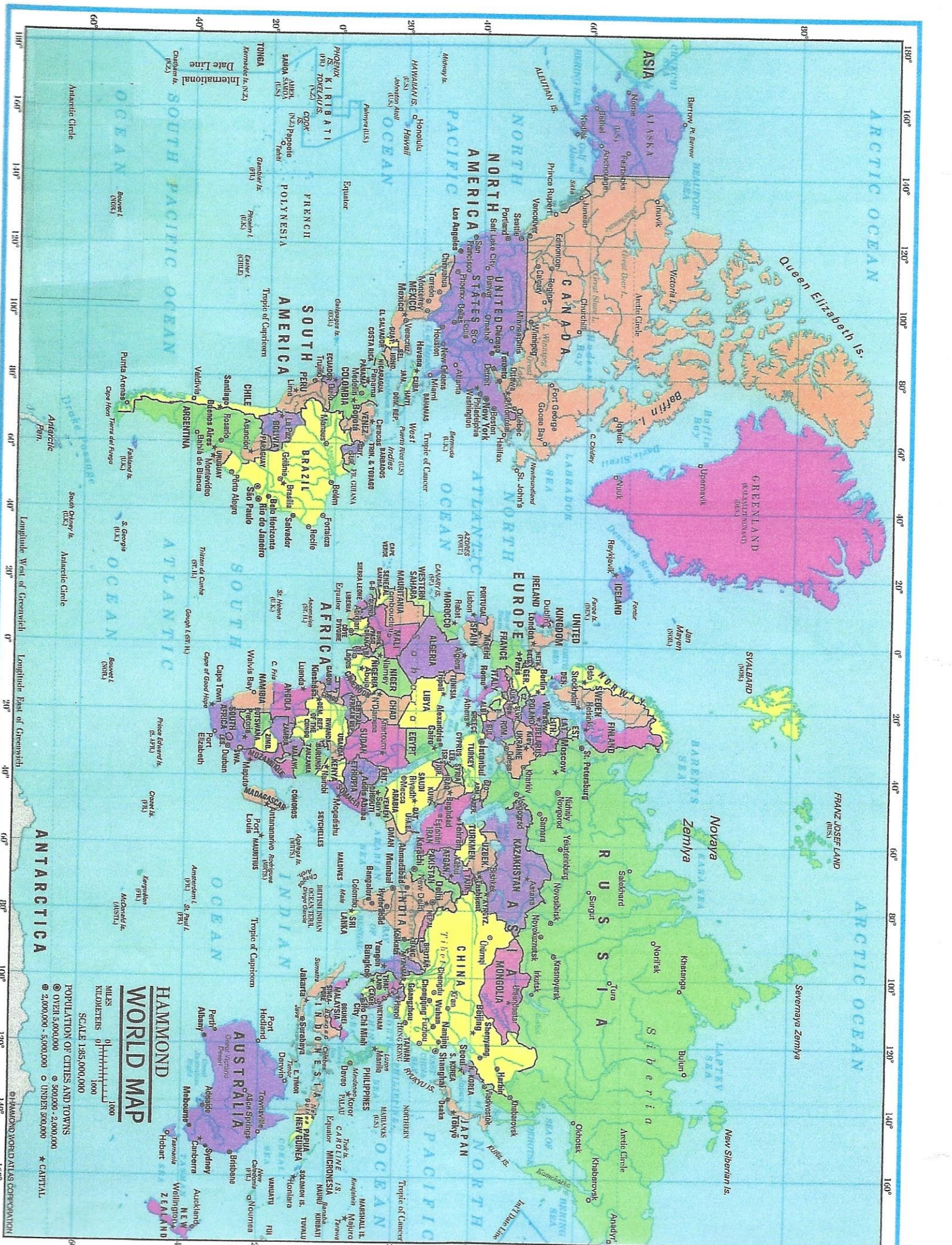


World Map Appendix

- Page 1 Rand McNally Cosmopolitan world map
- Page 2 Hammond world map
- Page 3 Rand McNally Cosmopolitan world map version 2
- Page 4 The Greenland problem on all Mercator projection maps
- Page 5 Africa—Would you Believe about Mercator projection maps by ODT Maps
- Page 6 Mapism by Marshall, J.
- Page 7 Winkel-Tripel projection map used by National Geographic
- Page 8 Hobo-Dyer projection Upside Down map used by ODT Maps
- Page 9 Peters projection Map distributed by ODT Maps
- Page 10 Important Characteristics of the Peters projection map

HARD McNALLY & Co.
INDEXED
ATLAS OF THE WORLD
NEW YORK
ON MANHATTAN PROJECTION





HAMMOND WORLD MAP

SCALE 1:250,000,000
 MILES 0 1000 2000
 KILOMETERS 0 1000 2000

POPULATION OF CITIES AND TOWNS
 ● OVER 3,000,000 ○ 500,000 - 2,000,000
 ● 2,000,000 - 5,000,000 ○ UNDER 500,000
 * CAPITAL

© HAMMOND WORLD ATLAS CORPORATION

The Greenland Problem

The Mercator projection creates increasing distortions of size as you move away from the equator. As you get closer to the poles the distortion becomes severe. Cartographers refer to the inability to compare size on a Mercator projection as "the Greenland Problem." Greenland appears to be the same size as Africa, yet Africa's land mass is actually fourteen times larger (see figure below right). Because the Mercator distorts size so much at the poles it is common to crop Antarctica off the map. This practice results in the Northern Hemisphere appearing much larger than it really is. Typically, the cropping technique results in a map showing the equator about 60% of the way down the map, diminishing the size and importance of the developing countries.

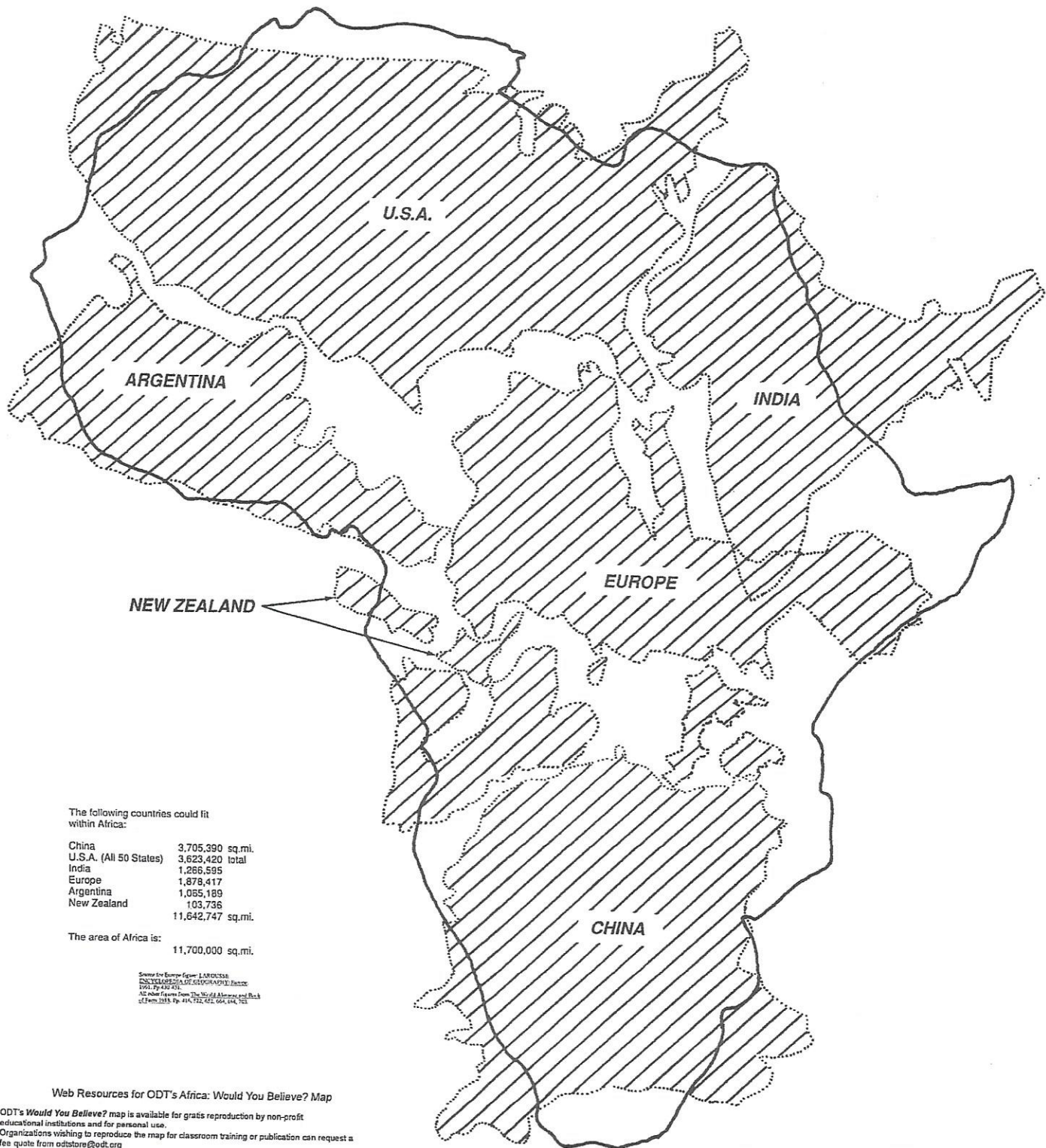
Greenland: 0.8 million sq. miles



Africa: 11.6 million sq. miles

This was convenient, psychologically and practically, through the eras of colonial domination when most of the world powers were European. It suited them to maintain an image of the world with Europe at the center and looking much larger than it really was. Was this conscious or deliberate? Probably not, as most map users probably never realized the Eurocentric bias inherent in their world view. When there are so many other projections to choose from, why is it that today the Mercator projection is still such a widely recognized image used to represent the globe? The answer may be simply convention or habit. The inertia of habit is a powerful force.

AFRICA - WOULD YOU BELIEVE?



The following countries could fit within Africa:

China	3,705,390 sq.mi.
U.S.A. (All 50 States)	3,623,420 total
India	1,266,595
Europe	1,878,417
Argentina	1,065,189
New Zealand	103,736
	11,642,747 sq.mi.

The area of Africa is:
11,700,000 sq.mi.

Source: *World Atlas*, 1991, p. 439-441.
© 1991, by World Atlas, Inc.
© 1991, by World Atlas, Inc.
© 1991, by World Atlas, Inc.

Web Resources for ODT's Africa: Would You Believe? Map

ODT's *Would You Believe?* map is available for gratis reproduction by non-profit educational institutions and for personal use. Organizations wishing to reproduce the map for classroom training or publication can request a fee quote from odtstore@odt.org

ODTmaps.com is the publisher of a number of Equal Area (ie area accurate) world maps available at www.odtmaps.com/equal-area-maps.74.0.0.1.htm

ODT also produced a 30-minute documentary DVD "Arno Peters: Radical Map, Remarkable Man" - the story of how Arno Peters came to create his controversial world map.

The DVD is at: www.odtmaps.com/detail.asp_Q_product_id_E_APeters-DVD

and an introductory DVD explaining various map projections is called "Many Ways to See the World" and is at: www.odtmaps.com/detail.asp_Q_product_id_E_MWS-DVD

Explore a variety of alternative & innovative world maps at www.ODTmaps.com

For free Teacher Resources go to our home page and explore BEHIND THE MAPS and the FREE MAPS & MORE sections (on the left hand toolbar under PRODUCT INFO).

Other variations of this image are available in color from Boston University (BU), *The Economist*, and from Kai Krause.

The BU African Studies map is at: www.bu.edu/africa/outreach/ardang/ It comes with a complete curriculum guide, most of which is online as a free download at www.bu.edu/africa/outreach/resources/curriculum/curriculum-guide/

Kai Krause developed a version which is copyright-free on David McCandless' web site: www.informationbeautiful.net/2010/the-true-size-of-africa/

Later *The Economist* printed Krause's version with revisions of their own...

www.economist.com/blogs/dailychart/2010/11/cartography Following that British cartographer Ken Field created an adaption and also wrote this article: www.ingentaconnect.com/content/maney/caj/2010/00000047/00000004/art00001



Mapism

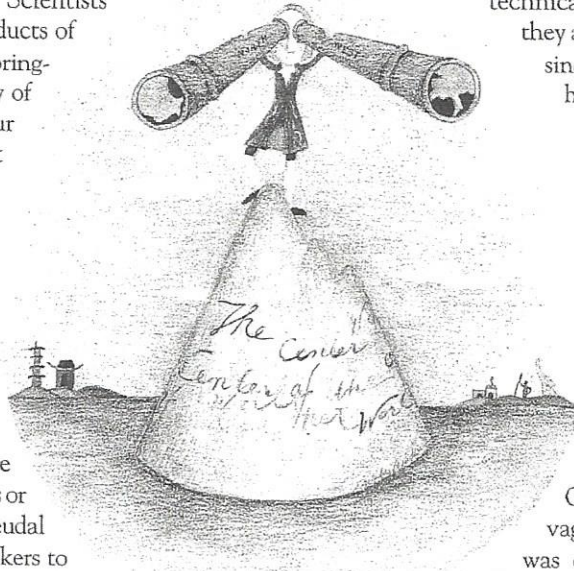
Our concept of the world is dependent on our frame of reference. Scientists contend that we are products of our environment. Our familial upbringing, city of residence, and country of origin contribute greatly to our world view. With this in mind, let us consider the subject of maps.

Almost all of the world's best-known cartographers have come from the Northern and Western Hemispheres. Does this affect the outcome of their work? Yes.

Of course, it is human nature to present one's country, city, or region in the best possible light. Throughout history people have attempted to portray their countries or areas of jurisdiction as superior: Feudal kings and queens required mapmakers to present their territory as favorably as possible. The Chinese call their country *Choong Guah*, or Middle Kingdom, because they considered themselves to be at the center of the world. Arabs and Israelis still vigorously dispute their representation on maps.

Regardless of race or culture, human beings are often self-centered, and our egocentric attitudes impact how our countries and hometowns are presented on maps. And even if they could be objective, world maps could never be completely accurate, for it is impossible to precisely portray the spherical earth on a flat surface. Indeed, the Mercator projection — a milestone for its time — presents Greenland as almost the same size as Africa. But it is our blind acceptance of these distortions — along with the other biases inherent in mapmaking — that lead to a form of discrimination and ethnocentricity that I call mapism.

Mapism is a frame of reference that comes from seeing a warped view of the world so many times that we grow to believe the deception. Instead of viewing our planet objectively (like an astronaut from space), we become swayed by maps that exaggerate the size of our section of the Northern Hemisphere. Before long, North America and Europe take on undue importance in people's world view. Moreover, mapism does not just exaggerate the Northern Hemisphere at the expense of the Southern Hemisphere. Because of the enlarged latitudinal lines in the extreme Northern Hemisphere, Europe (including Russia) and North America are given pre-eminence when compared to the rest of the world.



Although the Middle East and China are technically in the Northern Hemisphere, they are much closer to the Equator and, since they are non-Western countries, have often been lumped together with the "Third World." In fact, the Third World should actually be called the Two-thirds World in terms of land area, population, etc. But we have all heard the term Third World so often that we accept its negative connotation without question.

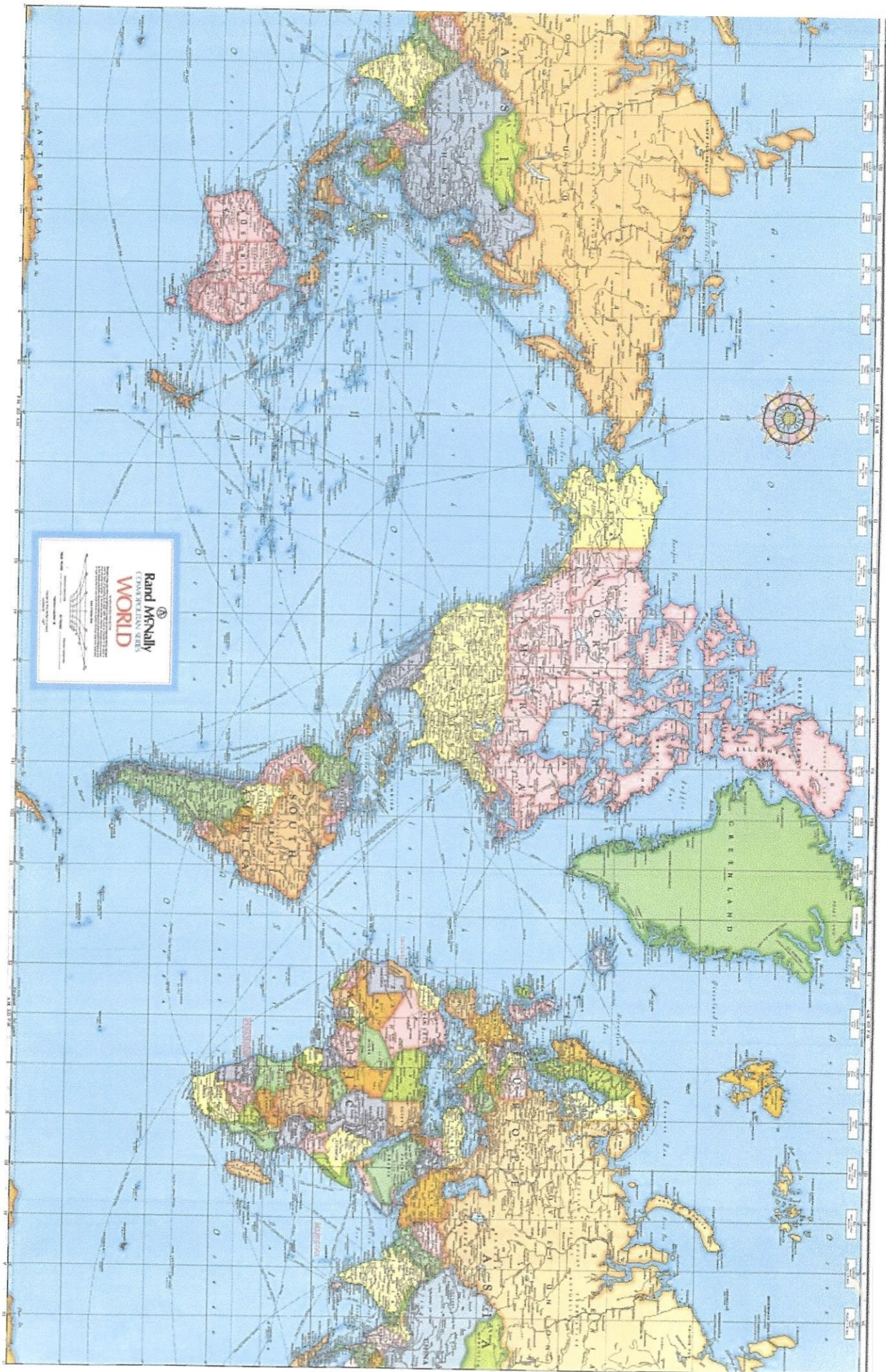
Like racism and sexism, mapism has far-reaching ramifications. For instance, few Westerners know much about the Crusades. Most of us only have a vague feeling that something tragic was done to Muslims by Europeans.

Because of the mapist (and racist) idea that Europe is more important than the Middle East, the effects of the Crusades — which Muslims consider abominable — have never been fully dealt with within the Western conscience.

South America is a significantly larger continent than Mercator's projection makes it out to be. China has about one-quarter of the world's population, but it appears smaller than Greenland on some maps. Africa — nearly four times as large as the continental United States — seems almost irrelevant compared to this enlarged Greenland.

Slavery continued for as long as it did due to racism. But could mapism have also contributed to its lengthy duration? Appalling things were done by the British and other governments to China during the nineteenth and early-twentieth centuries. The Opium Wars, and all that went with them, created a deep-seated anti-Western sentiment that persists to this day in Beijing. However, most Westerners have little knowledge of this period of recent history. Did mapism help to decrease China's importance and exclude these events from Western history books?

Once we recognize that mapism exists, I believe we should no longer, in good conscience, publish and resell maps that distort the world and diminish non-Western peoples. I do not have a simple solution to the problem of mapism, no perfect way to accurately portray the round world on flat paper. But I encourage all who read this to reexamine your perspectives and consider how cultural biases have influenced our world view.



Rand McNally
CHICAGO, ILL.
WORLD

THE WORLD POLITICAL

NATIONAL
GEOGRAPHIC

WESTERN HEMISPHERE

EASTERN HEMISPHERE



Legend for the map, including symbols for:

- Capital cities
- Other cities
- International boundaries
- State/provincial boundaries
- Water bodies
- Coastlines
- Latitude and longitude lines

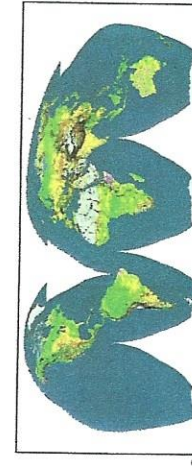
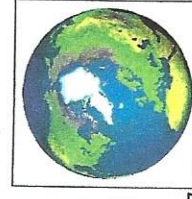
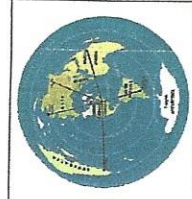
Legend for the map, including symbols for:

- Capital cities
- Other cities
- International boundaries
- State/provincial boundaries
- Water bodies
- Coastlines
- Latitude and longitude lines

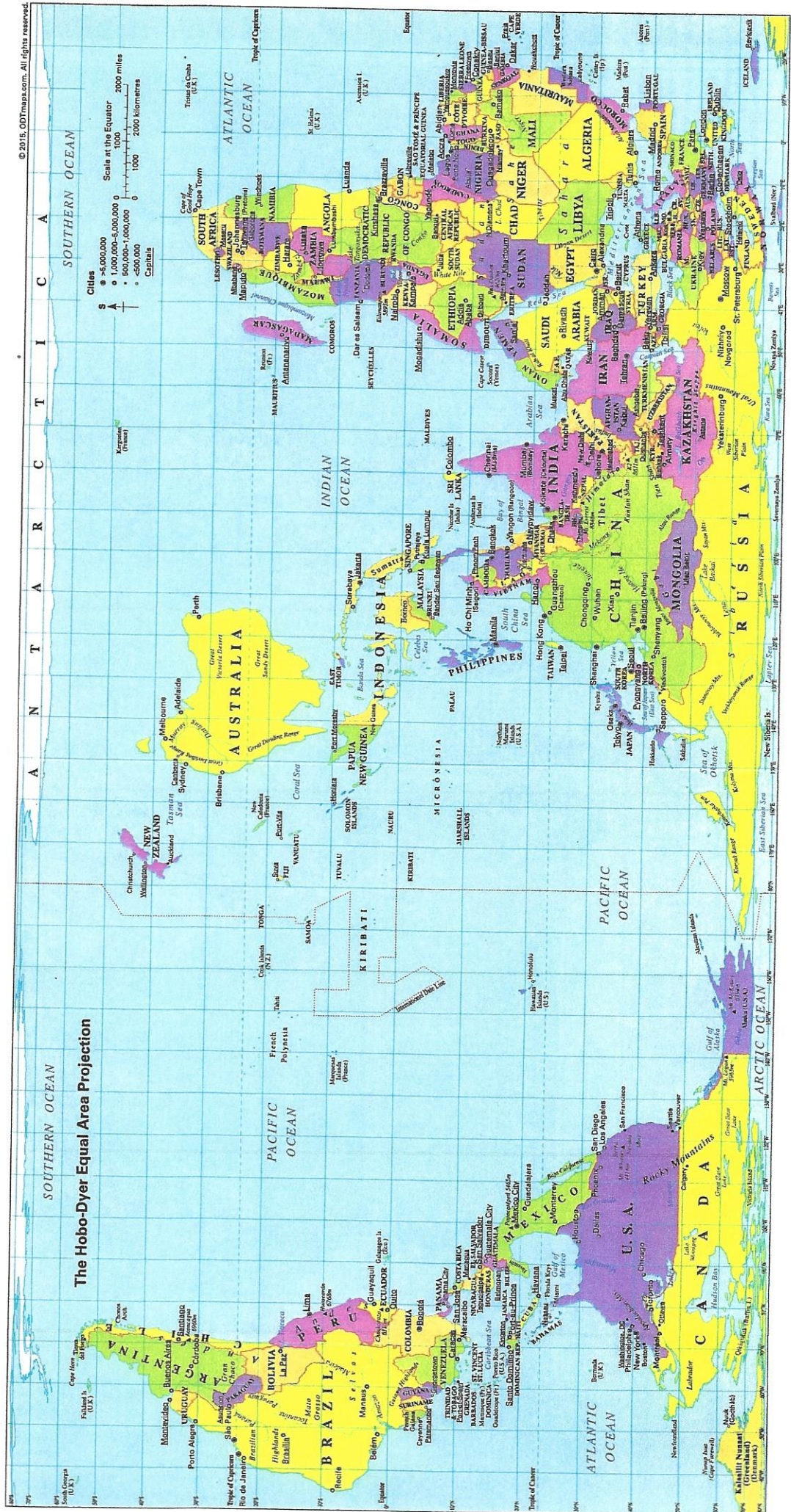


Take the quiz! Compare country size.
 Which of the images on both sides of this map are "area accurate?"
 How is the Hobo-Dyer projection below different from the one on the reverse side? Answers and details about all the images are at www.ODTmaps.com/free_maps/ and click on the Hobo-Dyer map.

- (5) Van Sant's Gaeosphere.
- (6) Guelke's Toronto-centered projection,
- (7) the Oxford Globe, and
- (8) Goode's Homolosine



ODTmaps.com
 800-736-1293
 E-mail: odtstore@odt.org
 Fax: 413-549-3503
 Box 134, Amherst, MA 01004
 ISBN 978-1-931057-42-4



Peters Projection Map: A different world view



Important Characteristics of the Peters Map



- Fairness to All Peoples
- In the complex and interdependent world in which nations now live, the people of the world deserve and need an accurate portrayal of the world.
- The Peters Map is the map for our day.

World mission and aid-giving agencies use the Peters map because it serves to represent the developing countries at their true proportion. The Peters map has been widely adopted elsewhere, but remains a curiosity in the United States. Why is this? Among related factors are these: (1) our resistance to join the rest of the world on the metric system (even the British have changed from inches and fahrenheit to centimeters and celsius), (2) national surveys showing U.S. schoolchildren have among the lowest levels of geography awareness of all developed nations, and (3) many professional cartographers have resented the "politicization" of their field. Arno Peters was one of the first to assert that maps are unavoidably political.