

IN THE WAKE of last year's US presidential election, a map was emailed among despondent Democrats. Instead of depicting the nation as a broad crimson carpet trimmed at either end with a narrow cerulean fringe, it resized each state according to its population, transforming the Republican heartland into a small, livid bud enveloped by a corolla of healthy blue petals. This was an example of consolation cartography, a representation of the United States of liberal dreams. Students of geography call this kind of graphic an 'area cartogram', and Mark Monmonier invokes them in his spirited polemic on the Mercator projection: such images, he writes, 'can make a strong ideological statement, especially if fairness to all people is more important than fairness to all acres'.

Most maps, of course, are concerned with acreage: we generally look to them to show its extent, and map-makers have usually been judged on how accurately they have done so. Frequently, a great deal is at stake, and this is what makes the history of cartography such a rewarding subject: it encompasses the history of science (astronomy, instrumentation, mathematics), the fine filiations of textual transmission and scholarship (collating sources has been the essential activity of geographers since antiquity), the parade of power politics since the Middle Ages (maps have played central roles in state formation and imperial projection), and the swashbuckling annals of exploration by sea and land. As the multiple volumes of *The History of Cartography*, edited by J.B. Harley and David Woodward, have shown in painstaking detail, the history of maps – their creation, use and abuse – is the history of a whole series of human efforts to comprehend and organise the physical and social worlds. Monmonier, who is the editor of the forthcoming volume on the 20th century (and who was a pioneer in the application of computers to mapping), is sympathetic to this expansive conception of maps and their historical meaning. But only up to a point. In this slim, contentious volume he wants to draw some boundaries: he is all in favour of sifting old maps for what they reveal about changing ideas of space and place, but believes that those who blame cartography for the global ills of economic inequality, social injustice and Western hegemony have gone too far.

In the late 1960s and early 1970s, Arno Peters, a crusading historian fired by egalitarian socialism, turned his attention to geography. He was soon denouncing what he took to be yet another outrageous and pervasive method for the European bourgeoisie to screw the dark-skinned people of the world while pontificating shamelessly about reason and science. What he objected to was the most common image of the world, familiar to schoolchildren, their parents and their parents before them: the Mercator map, brainchild of a Renaissance polymath known to his neighbours in Rupelmonde, Flanders, as Gerhard Cremer, and only later to the learned world as Gerhard Mercator. In 1569 Mercator printed a large multiple-sheet map that offered a clever solution to the old and fundamentally irresolvable problem of how best to draw

# Consolation Cartography

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RHUMB LINES AND MAP WARS:  
A SOCIAL HISTORY OF THE MERCATOR PROJECTION  
by Mark Monmonier.

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the surface of a spherical globe on a flat surface.

Some distortions are inevitable. Indeed, a large portion of the history of cartography concerns the compromises – from handy rules-of-thumb to analytic operations pushing the boundaries of spherical geometry – that enable a round world to stand as plainly as possible on a paper plane. The study of cartographic projections amounts to a formal elaboration of constraints and trade-offs: to get one region almost exactly right generally costs you elsewhere; preserving bearings will mess up, to some degree, distances and sizes. Mercator's technique involved a systematic stretching of the northern and southern regions of the globe as they were transferred onto the page, a distortion that increased with proximity to the poles. Mercator is responsible for that familiar conundrum of school geography: why on a wall map is Greenland larger than the continent of Africa, when on a globe it fits tidily in the Sahara?

Peters saw in such distortions the still unabashed sin of the hubristic, racist European 'world-view'. Here was a map that depicted Europe (and North America) in bloated grandeur, while giving short shrift to the tropics. True, the lower reaches of the southern hemisphere get the same treatment as the upper bits of the northern, but this hardly helped: the high southern latitudes (aside from Antarctica) are mostly water. Mercator's map put Europe on top and accorded it disproportionate prominence.

Putting aside the more extreme rhetoric of conspiracy and psychogeography (to which, to be fair, Peters never really submitted), the question remains whether a world atoning for the age of empire, and newly attuned to considering justice and fairness on a global scale, ought to continue to use Mercator's map. Peters answered emphatically that it should not, and offered an alternative 'Peters projection', which did away with Mercator's particular kind of stretching. Of course, Peters's map introduced distortions of its own (his continents have an El Greco-like, hollow-cheeked severity), but his creation had a virtue not shared by Mercator's: it is an 'equal area' projection, preserving relative size across its surface, and showing the continents in a form that permits their easy comparison. Here was a map fair to every acre and thus, it was argued, fair to all mankind. In the 1980s, a number of NGOs and international agencies, moved by this rhetoric, adopted Peters as their world map.

Who could object? In Monmonier's view, just about anyone who knew anything about cartography: Rhumb Lines and Map Wars is both a primer in the history and geometry of map projections and a complaint against those who tread Mercator underfoot. Few of them, Monmonier suspects, understand

the genius of the Mercator projection, or the very specific problem that it was engineered to solve. The progressive stretching of the northern and southern regions is, in effect, an embedded correction factor, a logarithmic scale built into the map, which converts a flat picture of the earth into a powerful analogue computer: on a Mercator map a navigator can plot a route with a straight edge, calculate the compass bearing of that route, sail that compass bearing, and end up (more or less) where the map says. For most routes on most other maps this trick will not work. Monmonier explains why, and traces the history of efforts to formalise and articulate the maths involved.

He acknowledges that the use of the Mercator projection as a general world map makes little sense. But, as he shows, geographers have been making this point themselves for nearly a century, and have produced dozens of alternative projections more suitable for textbooks, meteorology, artillery, coastal piloting and all the other things for which you might want a map or chart. A number of these are equal area maps, including one (the Gall Orthographic of 1855) which is nearly identical to the Peters projection. Peters could have discovered it independently, Monmonier believes, but only if he had been ignorant of pretty much all the scholarly literature on cartographic projection.

Finally, Monmonier levels his sights on the 'politics of representation' which sup-

port the notion that people suffer when their countries are represented at 89 per cent of their true size. Just what damage results? And how does that damage compare, say, with the damage done by the arms trade, by the freebooting extraction of resources, by import tariffs and agricultural subsidies? Do the citizens of the equatorial zones benefit from the dissemination of a new cartographic projection? Do they benefit as much as the publishers rushing to promote the new atlases? Besides, why was areal distortion considered to be a 'crime against humanity' in the first place? Cartograms which distort area, like the one that circulated among the Democrats, can be a powerful tool for those seeking novel and progressive views of the world. In Monmonier's view only an unthinking partisan of the Peters projection could confuse fairness to all acres with fairness to all people.

Monmonier has much to say about the 'power of maps', and covers a great deal of interesting ground, from the spider's web of medieval portolan charts to the mathematical armature of satellite cartography. At the same time, many readers may come away from *Rhumb Lines and Map Wars* with some sympathy for Peters, if only because of the relentlessness of Monmonier's sallies. What is not in doubt is that this book makes significant claims, none more important than the insistence that misunderstood technical features must be freed from accusations of ideological bias. Those who would question this separation of the technical from the ideological argue that such careful distinctions assist certain professionals in claiming that their activities transcend the gritty world of getting and spending, scheming and stealing. The argument has certain attractions. After all, putting aside its place in the empyrean realm of geometry, Mercator's map has lived most of its life in the real world of conquest and trade, and has marked out the territory for countless lamentable schemes. □

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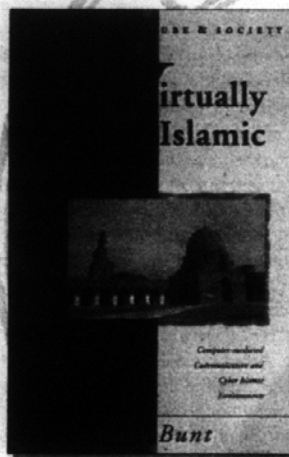
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