

Chapter 1

INTRODUCTION



Not only is it easy to lie with maps, it's essential. To portray meaningful relationships for a complex, three-dimensional world on a flat sheet of paper or a video screen, a map must distort reality. As a scale model, the map must use symbols that almost always are proportionally much bigger or thicker than the features they represent. To avoid hiding critical information in a fog of detail, the map must offer a selective, incomplete view of reality. There's no escape from the cartographic paradox: to present a useful and truthful picture, an accurate map must tell white lies.

Because most map users willingly tolerate white lies on maps, it's not difficult for maps also to tell more serious lies. Map users generally are a trusting lot: they understand the need to distort geometry and suppress features, and they believe the cartographer really does know where to draw the line, figuratively as well as literally. As with many things beyond their full understanding, they readily entrust map-making to a priesthood of technically competent designers and drafters working for government agencies and commercial firms. Yet cartographers are not licensed, and many map-makers competent in commercial art or the use of computer workstations have never studied cartography. Map users seldom, if ever, question these authorities, and they often fail to appreciate the map's power as a tool of deliberate falsification or subtle propaganda.

Because of personal computers and electronic publishing, map users can now easily lie to themselves—and be unaware of it. Before the personal computer, folk cartography consisted largely of hand-drawn maps giving directions. The direction giver had full control over pencil and paper and usually

had no difficulty transferring routes, landmarks, and other relevant recollections from mind to map. The computer allows programmers, marketing experts, and other anonymous middlemen without cartographic savvy to strongly influence the look of the map and gives modern-day folk maps the crisp type, uniform symbols, and verisimilitude of maps from the cartographic priesthood. Yet software developers commonly have made it easy for the lay cartographer to select an inappropriate projection or a misleading set of symbols. Because of advances in low-cost computer graphics, inadvertent yet serious cartographic lies can appear respectable and accurate.

The potential for cartographic mischief extends well beyond the deliberate suppression used by some cartographer-politicians and the electronic blunders made by the cartographically ignorant. If any single caveat can alert map users to their unhealthy but widespread naïveté, it is that *a single map is but one of an indefinitely large number of maps that might be produced for the same situation or from the same data*. The italics reflect an academic lifetime of browbeating undergraduates with this obvious but readily ignored warning. How easy it is to forget, and how revealing to recall, that map authors can experiment freely with features, measurements, area of coverage, and symbols and can pick the map that best presents their case or supports their unconscious bias. Map users must be aware that cartographic license is enormously broad.

The purpose of this book is to promote a healthy skepticism about maps, not to foster either cynicism or deliberate dishonesty. In showing how to lie with maps, I want to make readers aware that maps, like speeches and paintings, are authored collections of information and also are subject to distortions arising from ignorance, greed, ideological blindness, or malice.

Examining the misuses of maps also provides an interesting introduction to the nature of maps and their range of appropriate uses. Chapter 2 considers as potential sources of distortion the map's main elements: scale, projection, and symbolization. Chapter 3 further pursues the effects of scale by examining the various white lies cartographers justify as necessary generalization, and chapter 4 looks at common blunders resulting from the mapmaker's ignorance or oversight. Chapter 5 treats the seductive use of symbols in advertising maps, and chapter 6 explores exaggeration and sup-

pression in maps prepared for development plans and environmental impact statements. Chapters 7 and 8 examine distorted maps used by governments as political propaganda and as "disinformation" for military opponents. The next two chapters are particularly relevant to users of mapping software and electronic publishing: chapter 9 addresses distortion and self-deception in statistical maps made from census data and other quantitative information, and chapter 10 looks at how a careless or Machiavellian choice of colors can confuse or mislead the map viewer. Chapter 11 concludes by noting maps' dual and sometimes conflicting roles and by recommending a skeptical assessment of the map author's motives.

A book about how to lie with maps can be more useful than a book about how to lie with words. After all, everyone is familiar with verbal lies, nefarious as well as white, and is wary about how words can be manipulated. Our schools teach their pupils to be cautious consumers who read the fine print and between the lines, and the public has a guarded respect for advertising, law, marketing, politics, public relations, writing, and other occupations requiring skill in verbal manipulation. Yet education in the use of maps and diagrams is spotty and limited, and many otherwise educated people are graphically and cartographically illiterate. Maps, like numbers, are often arcane images accorded undue respect and credibility. This book's principal goal is to dispel this cartographic mystique and promote a more informed use of maps based upon an understanding and appreciation of their flexibility as a medium of communication.

The book's insights can be especially useful for those who might more effectively use maps in their work or as citizens fighting environmental deterioration or social ills. The informed skeptic becomes a perceptive map author, better able to describe locational characters and explain geographic relationships as well as better equipped to recognize and counter the self-serving arguments of biased or dishonest mapmakers.

Where a deep mistrust of maps reflects either ignorance of how maps work or a bad personal experience with maps, this book can help overcome an unhealthy skepticism called *cartophobia*. Maps need be no more threatening or less reliable than words, and rejecting or avoiding or ignoring maps is akin to the mindless fears of illiterates who regard books as

evil or dangerous. This book's revelations about how maps *must* be white lies but may *sometimes* become real lies should provide the same sort of reassuring knowledge that allows humans to control and exploit fire and electricity.

Chapter 2

ELEMENTS OF THE MAP



Maps have three basic attributes: scale, projection, and symbolization. Each element is a source of distortion. As a group, they describe the essence of the map's possibilities and limitations. No one can use maps or make maps safely and effectively without understanding map scales, map projections, and map symbols.

Scale

Most maps are smaller than the reality they represent, and map scales tell us how much smaller. Maps can state their scale in three ways: as a ratio, as a short sentence, and as a simple graph. Figure 2.1 shows some typical statements of map scale.

Ratio scales relate one unit of distance on the map to a specific distance on the ground. The units must be the same, so that a ratio of 1:10,000 means that a 1-inch line on the map represents a 10,000-inch stretch of road—or that 1 centimeter represents 10,000 centimeters or 1 foot stands for 10,000 feet. As long as they are the same, the units don't matter and need not be stated; the ratio scale is a dimensionless number. By convention, the part of the ratio to the left of the colon is always 1.

Some maps state the ratio scale as a fraction, but both forms have the same meaning. Whether the mapmaker uses 1:24,000 or $1/24,000$ is solely a matter of style.

Fractional statements help the user compare map scales. A scale of $1/10,000$ (or 1:10,000) is larger than a scale of $1/250,000$ (or 1:250,000) because $1/10,000$ is a larger fraction than $1/250,000$. Recall that small fractions have big denomi-

size, and amenities than the one with the second highest assessment. If the assessor has flagrantly been playing "soak the newcomer," your exhibits will send a clear message that you are fully prepared to embarrass the board unless they make an appropriate adjustment. If you use tact, most of time they will.

Although the tone of this chapter is cynical, the intent is to make you skeptical about how some people use maps, not cynical about maps in general. Understanding cartographic manipulation is important to being an informed citizen able to evaluate a wide range of proposals for altering the landscape and the environment. In viewing maps it is essential to remember that a particular view of reality (or a future reality) is not the only view and is not necessarily a good approximation of truth.

MAPS FOR POLITICAL PROPAGANDA



A good propagandist knows how to shape opinion by manipulating maps. Political persuasion often concerns territorial claims, nationalities, national pride, borders, strategic positions, conquests, attacks, troop movements, defenses, spheres of influence, regional inequality, and other geographic phenomena conveniently portrayed cartographically. The propagandist molds the map's message by emphasizing supporting features, suppressing contradictory information, and choosing provocative, dramatic symbols. People trust maps, and intriguing maps attract the eye as well as connote authority. Naive citizens willingly accept as truth maps based on a biased and sometimes fraudulent selection of facts.

Although all three manipulate opinion, the propagandist's goals differ from those of the advertiser and the real-estate developer. Both the advertiser and the political propagandist attempt to generate demand, but the advertiser sells a product or service, not an ideology. Both the advertiser and the propagandist attempt to lower public resistance or to improve a vague or tarnished image, but the advertiser's objectives are commercial and financial, whereas the propagandist's are diplomatic and military. Both the real-estate developer and the political propagandist seek approval or permission, but the developer is concerned with a much smaller territory, often uninhabited, and seldom acts unilaterally without official sanction. Although both the real-estate developer and the propagandist face opponents, the developer usually confronts groups of neighboring property owners, environmentalists, or historic preservationists, whereas the propagandist commonly confronts a vocal ethnic minority, another country, an alliance of countries, an opposing ideology, or a widely accepted

standard of right and wrong. Because propaganda maps are more likely to be global or continental rather than local, the political propagandist has a greater opportunity than either the advertiser or the real-estate developer to distort reality by manipulating the projection and framing of the map.

This chapter explores the map's varied and versatile role as an instrument of political propaganda. Its first section examines how maps function as political icons—symbols of power, authority, and national unity. Next the chapter looks at how map projections can inflate or diminish the area and relative importance of countries and regions, and how a map projection can itself become a rallying point for cartographically oppressed regions. A third section examines the manipulations of Nazi propagandists, who used maps to justify German expansion before World War II and to try to keep America neutral. A final section focuses on a few favorite symbols of the cartographic propagandist: the arrow, the bomb, the circle, and place-names.

Cartographic Icons Big and Small:

Maps as Symbols of Power and Nationhood

The map is the perfect symbol of the state. If your grand duchy or tribal area seems tired, run-down, and frayed at the edges, simply take a sheet of paper, plot some cities, roads, and physical features, draw a heavy, distinct boundary around as much territory as you dare claim, color it in, add a name—perhaps reinforced with the impressive prefix “Republic of”—and presto: you are now the leader of a new sovereign, autonomous country. Should anyone doubt it, merely point to the map. Not only is your new state on paper, it's on a map, so it must be real.

If this map-as-symbol-of-the-state concept seems farfetched, consider the national atlases England and France produced in the late sixteenth century. Elizabeth I of England commissioned Christopher Saxton to carry out a countrywide topographic survey of England and Wales and to publish the maps in an elaborate hand-colored atlas. In addition to providing information useful for governing her kingdom, the atlas bound together maps of the various English counties and asserted



FIGURE 7.1. Engravings reflect the iconic significance of maps and atlases as national symbols in Christopher Saxton's 1579 *Atlas of England and Wales* (left) and Maurice Bouguereau's 1594 *Le théâtre françois* (right).

their unity under Elizabeth's rule. Rich in symbolism, the atlas's frontispiece (fig. 7.1, left) was a heavily decorated engraving that identified the queen as a patron of geography and astronomy. A few decades later, Henry IV of France celebrated the recent reunification of his kingdom by commissioning bookseller Maurice Bouguereau to prepare a similarly detailed and decorated atlas. Like Saxton's atlas, *Le théâtre françois* includes an impressive engraving (fig. 7.1, right) proclaiming the glory of king and kingdom. In both atlases regional maps provided geographic detail and a single overview map of the entire country asserted national unity.

The spate of newly independent states formed after World War II revived the national atlas as a symbol of nationhood. Although a few countries in western Europe and North America had state-sponsored national atlases in the late nineteenth and early twentieth centuries, these served largely as reference works and symbols of scientific achievement. But between 1940 and 1980 the number of national atlases

increased from fewer than twenty to more than eighty, as former colonies turned to cartography as a tool of both economic development and political identity. In the service of the state, maps and atlases often play dual roles.

Perhaps the haste of new nations to assert their independence cartographically reflects the colonial powers' use of the map as an intellectual tool for legitimizing territorial conquest, economic exploitation, and cultural imperialism. Maps made it easy for European states to carve up Africa and other heathen lands, to lay claim to land and resources, and to ignore existing social and political structures. Knowledge is power, and crude explorers' maps made possible treaties between nations with conflicting claims. That maps drawn up by diplomats and generals became a political reality lends an unintended irony to the aphorism that the pen is mightier than the sword.

Nowhere is the map more a national symbol and an intellectual weapon than in disputes over territory. When nation A and nation B both claim territory C, they usually are at war cartographically as well. Nation A, which defeated nation B several decades ago and now holds territory C, has incorporated C into A on its maps. If A's maps identify C at all, they tend to mention it only when they label other provinces or subregions. If nation B was badly beaten, its maps might show C as a disputed territory. Unlike A's maps, B's maps always name C. If B feels better prepared for battle or believes internal turmoil has weakened A, B's maps might more boldly deny political reality by graphically annexing C.

Neutral countries tread a thin cartographic line by coloring or shading the disputed area to reflect A's occupation and perhaps including in smaller type a note recognizing B's claim. If A and B have different names for C, A's name appears, sometimes with B's name in parentheses. (Even when recapture by B is improbable, mapmakers like to hedge their bets.) Cartographic neutrality can be difficult, though, for customs officials of nation B sometimes embargo publications that accept as unquestioned A's sovereignty over C. If A's rule is secure, its censors can be more tolerant.

Consider, for example, the disputed state of Jammu and Kashmir, lying between India, Pakistan, and China. Both India and Pakistan claimed Kashmir, once a separate monarchy, and went to war over the area in August 1965. Figure 7.2, a U.S. State Department map, shows the cease-fire line of fall

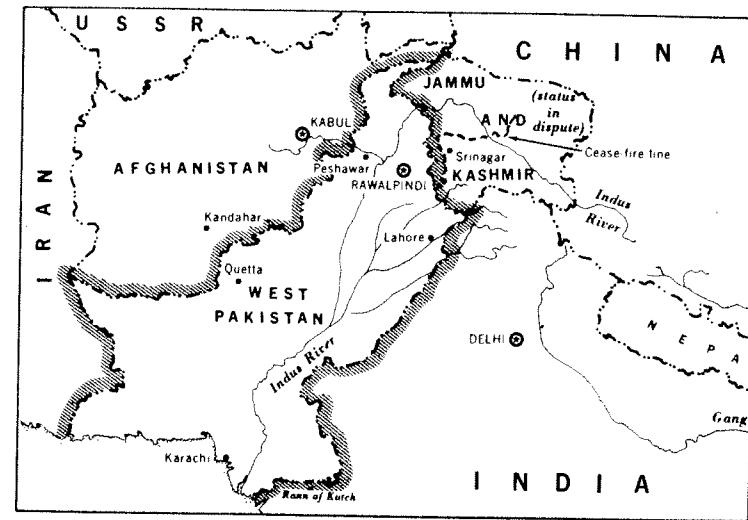


FIGURE 7.2. Disputed India-Pakistan boundary and the territory of Jammu and Kashmir, as portrayed in the 1965 *Area Handbook for Pakistan*, published by the U.S. government.

1965, which placed Pakistan in control of northwestern Kashmir and showed India in control of the southern portion. (China occupied a portion of northeastern Kashmir.) Nonetheless, Indian and Pakistani maps continued to deny political reality. A 1984 Pakistani government tourist map (fig. 7.3, lower), for instance, included Kashmir in Pakistan, whereas a map (fig. 7.3, upper) in an Indian government tourist brochure ceded the entire territory to India. American and British atlases attempted to resolve the dispute with notes identifying the area occupied by Pakistan and claimed by India, the area occupied by India and claimed by Pakistan, three areas occupied by China and claimed by both India and Pakistan, the area occupied by China and claimed by India, and the area occupied by India and claimed by China. And for years publishers found it difficult to export the same books on South Asian geography to both India and Pakistan.

Even tiny maps on postage stamps can broadcast political propaganda. Useful both on domestic mail to keep aspirations alive and on international mail to suggest national unity and determination, postage stamp maps afford a small but numerous means for asserting territorial claims. As shown in



FIGURE 7.3. Official government tourist maps show Kashmir as a part of India (above) and as a part of Pakistan (below). In reality, India controls the southern part of the state of Kashmir, Pakistan controls the northwestern part, and China controls three sections along the eastern margin.



FIGURE 7.4. Subtle and not-so-subtle cartographic propaganda on Argentinian postage stamps.

figure 7.4, Argentinian postage stamps have touted that nation's claims not only to the Falkland Islands and the British-held islands to their east but also to Antarctica. Like all official maps of Argentina, these postage stamps deny the legitimacy of British occupation with their Spanish label "Islas Malvinas." Postage stamps bearing maps are also useful propaganda tools for emergent nations and ambitious revolutionary movements.

Size, Sympathy, Threats, and Importance

Sometimes propaganda maps try to make a country or region look big and important, and sometimes they try to make it look small and threatened. In the former case, the map might support an appeal to fairness: the Third World is big, and therefore it deserves to consume a larger share of the world's resources, to exercise more control over international political bodies such as UNESCO (the United Nations Educational, Scientific, and Cultural Organization), and to receive greater respect and larger development grants from the more developed nations of the West and the Communist world. In the latter case, the map might dramatize the threat a large state or group of states poses for a smaller country. Figure 7.5, for instance, portrays a cartographic David-and-Goliath contest between tiny Israel and the massive territory of the nearby oil-rich Arab nations. Even though the map's geographic facts are accurate, a map comparing land area tells us nothing about Israel's advanced technology, keen military preparedness, and alliances with the United States and other Western powers.

Some map projections can help the propagandist by making small areas bigger and large areas bigger still. No projection has been as abused in the pursuit of size distortion as that devised by sixteenth-century atlas publisher and cartographer Gerardus Mercator. Designed specifically to aid navigators, the Mercator projection vastly enlarges poleward areas so that straight lines can serve as *loxodromes*, or *rhumb lines*—that is, lines of constant geographic direction. (If the navigator's compass shows true north rather than magnetic north, rhumb lines can be called lines of constant compass direction.) As figure 7.6 shows, the navigator finds the course by drawing a straight

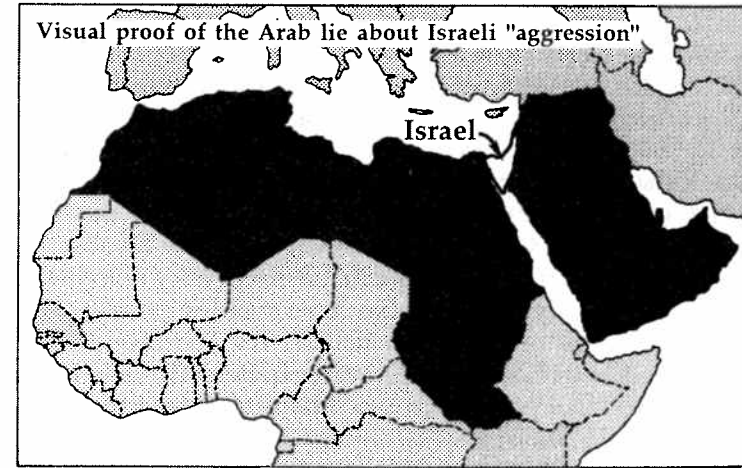


FIGURE 7.5. Map showing the encirclement of Israel by neighboring Arab nations, redrawn from a map published during the 1973 war by the Jewish National Fund of Canada.

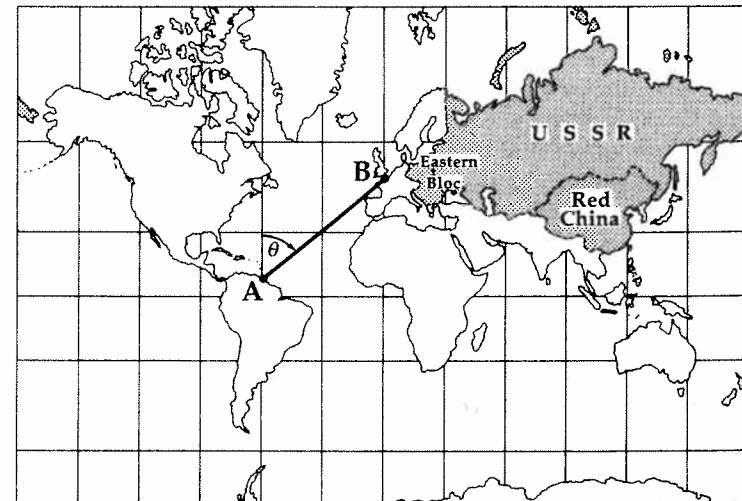


FIGURE 7.6. Mercator world map showing the bearing angle θ for a rhumb line from A to B and the areal exaggeration of Red China and in particular the USSR. Designed to aid navigators, the Mercator also has served political propagandists seeking to magnify the Communist threat.

line from origin A to destination B and then reading the angle θ from the meridian to the rhumb line. If one consistently follows this bearing from A, one will eventually reach B. For this convenience the navigator must sacrifice a shorter but less easily followed great-circle route and endure the areal distortion caused by the progressive increase poleward of north-south scale. In fact, the projection shows little of the area within the Arctic Circle and the Antarctic Circle because its poles are infinitely far from its equator. Ever wary of icebergs anyway, navigators for centuries have avoided polar waters and accepted as only a minor liability the Mercator projection's gross areal exaggeration. Yet for decades the John Birch Society and other political groups intimidated by Communist ideology and Stalinist atrocities have reveled in the Mercator's cartographic enhancement of the Soviet Union. Birch Society lecturers warning of the Red menace commonly shared the stage with a massive Mercator map of the world with China and Russia printed in a provocative, symbolically rich red.

Although equal-area map projections (as in figs. 2.5 and 2.6) have been available at least since 1772, when Johann Heinrich Lambert published his classic *Beiträge zum Gebrauche der Mathematik und deren Anwendung*, Mercator's projection provided the geographic framework for wall maps of the world in many nineteenth- and early twentieth-century classrooms, and more recently for sets of television news programs and backdrops of official briefing rooms. Perhaps distracted by concerns with navigation, exploration, and time zones, cartographically myopic educators and set designers presented a distorted world view that diminished the significance of tropical areas to the advantage of not only Canada and Siberia but western Europe and the United States as well. The English especially liked the way the Mercator flattered the British Empire with a central meridian through Greenwich and prominent far-flung colonies in Australia, Canada, and South Africa. Some British maps even gave the Empire an added plug by repeating Australia and New Zealand at both the left and right sides of the map.

Yet in the early 1970s this subtle and probably unwitting geopolitical propaganda served as a convenient straw man for German historian Arno Peters, who published a "new" world map based on an equal-area projection similar to one de-

scribed in 1855 by the Reverend James Gall, a Scottish clergyman. As figure 7.7 shows, the Gall-Peters projection gives tropical continents a mildly attenuated, stretched look, which probably explains why geographers and cartographers have adopted more plausible equal-area maps and why the basic texts on map projections Peters consulted had ignored Gall's contribution. Indeed, Lambert and other cartographers had developed numerous equal-area map projections, including many that distorted shape much less severely than does the Gall-Peters version.

But Dr. Peters knew how to work the crowd. A journalist-historian with a doctoral dissertation on political propaganda, Peters held a press conference to condemn the Mercator world view (as well as all nonrectangular projections) and to tout his own projection's "fidelity of area" and more accurate, "more egalitarian" representation of the globe. By calling attention to the Mercator's slighted portrayal of most Third World nations and blaming a stagnation in the development of cartography, Peters struck responsive chords at the World Council of Churches, the Lutheran Church of America, and various United Nations bodies. Religious and international development organizations welcomed Peters and his "new cartography," with the greater fairness and accuracy it promised. They also pub-

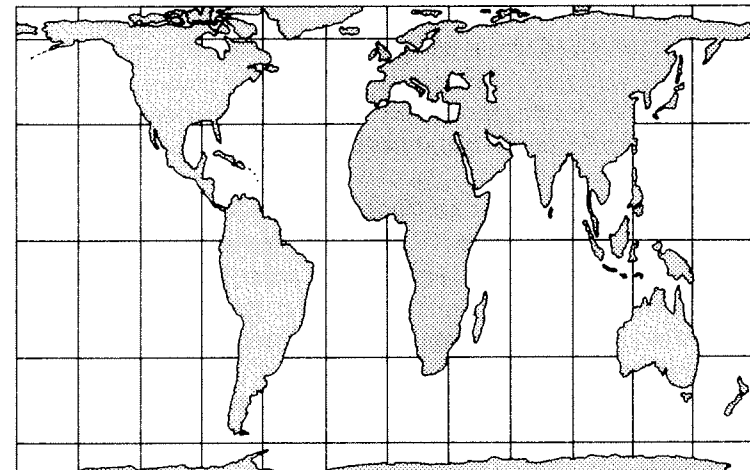


FIGURE 7.7. The Peters projection or, more accurately, the Gall-Peters projection.

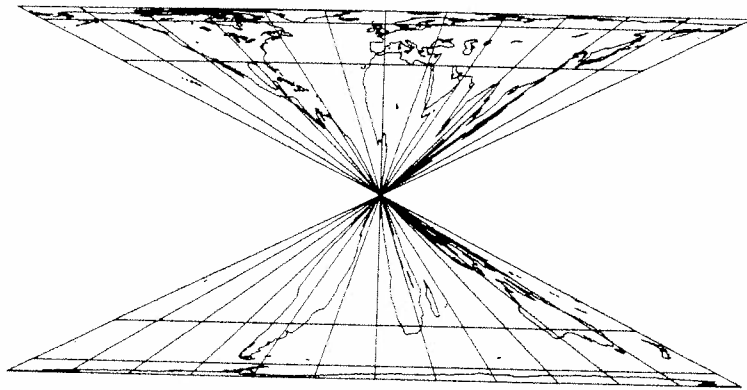


FIGURE 7.8. Like all equal-area projections, this hourglass equal-area map projection John Snyder devised as a joke has area fidelity but distorts shape.

lished large and small versions of the Peters projection, hung it on their walls, and used it in their press releases and publications. Perhaps because journalists also like to champion the oppressed and can't resist a good fight, the press repeated Peters's claims and reported the success of his bandwagon. Academic cartographers became both puzzled and enraged—puzzled that the media and such prominent, respected institutions could be so gullible and ignorant, and enraged that these groups not only so persistently repeated Peters's preposterous assertions but so obstinately refused to look at cartography's writings, accomplishments, and rich history.

Not all cartographers lacked a sense of humor. U.S. Geological Survey cartographic expert John Snyder, himself a developer of several useful as well as innovative map projections, offered yet another equal-area projection to underscore his cartographic colleagues' point that an equal-area map is not necessarily a good map. As shown in figure 7.8, Snyder's hourglass equal-area projection does what the Peters projection does and the Mercator doesn't—it preserves areal relationships. But it also demonstrates dramatically that areal fidelity does not mean shape fidelity.

Ironically, by succumbing to Peters's hype, UNESCO and other organizations sensitive to Third World problems loyally backed the wrong projection and missed an enormous propaganda opportunity. By accepting uncritically the rather dubious assumption that a map responsive to people should accurately represent land area, these groups not only demonstrated

a profound cartographic naïveté but also ignored a more humanistic type of map projection that actually makes some Third World populations appear justifiably enormous. How much more convincing their media blitz might have been had they supported a demographic base map, or area cartogram, similar to figure 2.10, on which the area of each country is scaled according to number of inhabitants. Indeed, an area cartogram would be more effective than the Peters projection in boosting the importance of China, India, and Indonesia and in revealing the less substantial populations of Canada, the United States, the Soviet Union, and other comparatively less crowded countries. But perhaps a more subtle internal need motivated leaders of UNESCO and the World Council of Churches, for the Peters projection is comparatively kinder to the low and moderate population densities of Africa, Latin America, and the Middle East—indeed, a cynic might note the influence of African diplomats in UNESCO and the inherent interest of the World Council of Churches in concentrated Christian missionary activity in Latin America and central Africa.

Propaganda Maps and History: In Search of Explanation and Justification

Although propaganda cartography is probably not much younger than the map itself, the Nazi ideologues who ruled Germany from 1933 to 1945 warrant special mention. No other group has exploited the map as an intellectual weapon so blatantly, so intensely, so persistently, and with such variety. Nazi propaganda addressed especially to the United States presented a selective and distorted version of history designed to increase sympathy for Germany, decrease support for Britain and France, and keep America out of World War II, at least until Axis forces had conquered Europe. The examples discussed in this section are from a weekly news magazine, *Facts in Review*, published in New York City during 1939, 1940, and 1941 by the German Library of Information.

The sympathy theme of Nazi cartopropaganda often recalled Germany's defeat in World War I—a humiliation followed by an economic depression that helped the National Socialists to power. Figure 7.9, which compared the German plight in

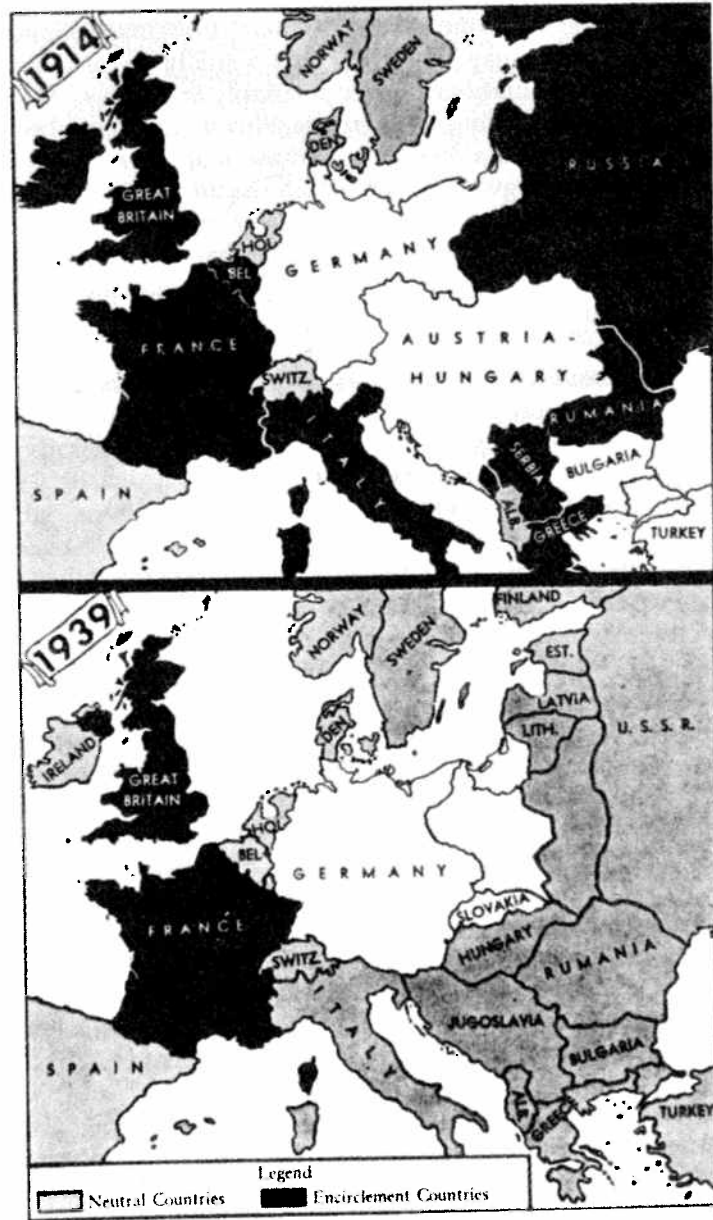


FIGURE 7.9. "Then and Now! 1914 and 1939" (*Facts in Review* 1, no. 17 [8 December 1939]: 1).

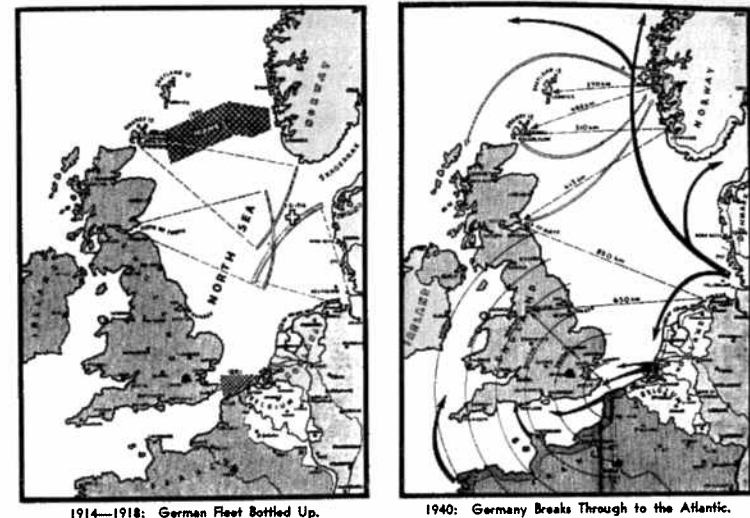


FIGURE 7.10. "The War in Maps" (*Facts in Review* 3, no. 16 [5 May 1941]: 250).

1914 with that of 1939, invoked a persistent anti-British theme. These two maps formed much of the front page of *Facts in Review* for 8 December 1939. A caption to the left of the 1914 map noted the encirclement that "provided the necessary basis for Britain's successful Hunger-blockade," whereas the caption for the 1939 map alluded to Britain's failed attempts to repeat the encirclement and proclaimed that "the path of industrial and economic cooperation to the East and the Southeast lies open!" Note, though, that the 1939 map conveniently groups Germany's main allies at the time, Mussolini's Italy and Stalin's Russia, with Switzerland and other "neutral countries."

In early 1941, another map attempted to explain and justify Germany's western advance against England into France, Belgium, and Holland by comparing Germany's strategic disadvantage in 1914 with the more favorable situation in 1940. Figure 7.10 contrasts the German navy "bottled up" by the British in the North Sea in 1914 through 1918 with the German navy that in 1940 had "[broken] through to the Atlantic." Hitler had not yet turned against Stalin, and the map's caption noted that whereas Germany had to fight on two, and later three, fronts in 1914, "Today no such danger exists. The British blockage is ineffective and, instead, the blockaders them-

selves are being blockaded." Arcs reinforce the blockade theme of the 1914–18 map, and bold arrows dramatize Germany's freer access to the Atlantic on the 1940 map.

Other Nazi maps attempted to divert sympathy from Britain. Captioned "A Study in Empires," the charts in figure 7.11 compare the 264,300 mi² on which Germany's 87 million inhabitants "must subsist" with the 13,320,854 mi² that Britain, with only 46 million people, "has acquired." How can little Germany be the aggressor nation? the left panel asks. In contrast, the right panel suggests a note of greed in Britain's conquest of 26 percent of the world's land area. The map's caption sounds a further chord of grievance by noting that the British Empire "includ[es] the former German colonies."

Facts in Review's editors also used maps to cast doubt on England's probity. In the issue of 30 November 1940, a story headlined "British Bombings—A Record of British Truthfulness" reported that on 24 November a British bomber apparently lost its way to Genoa and bombed Marseilles, France.

A STUDY IN EMPIRES

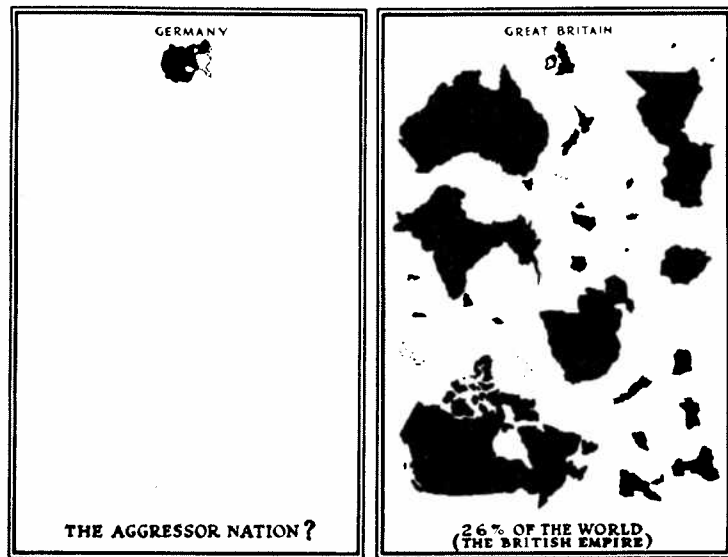


FIGURE 7.11. "A Study in Empires" (*Facts in Review* 2, no. 5 [5 February 1940]: 33).

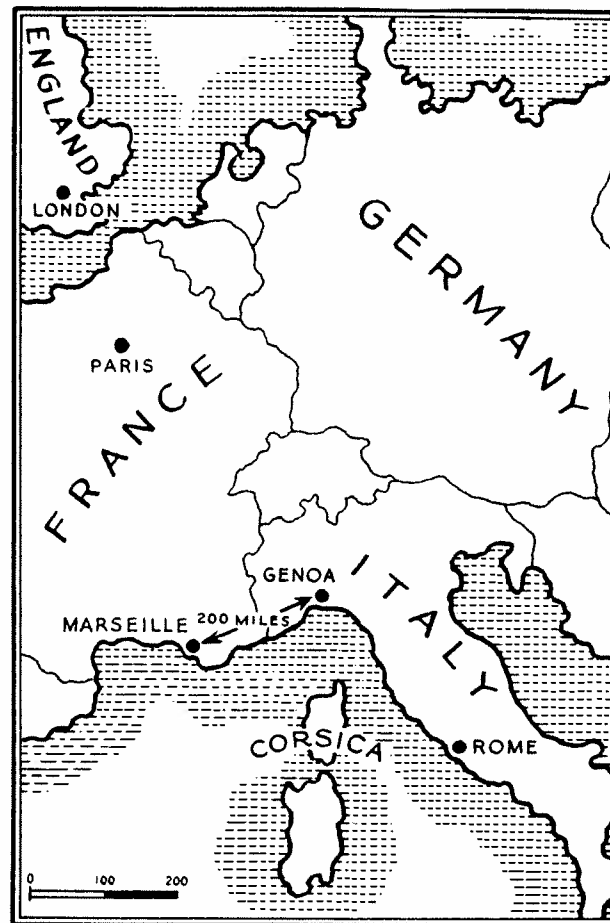


FIGURE 7.12. "Marseille 'Mistaken' for Genoa" (*Facts in Review* 2, no. 46 [30 November 1940]: 566).

Early British news reports not only had denied the bombing but had blamed the Germans. A map (fig. 7.12) located both cities, and its caption reeked with sarcasm: "Marseille was 'mistaken' for Italy's Genoa, more than 200 miles away!" The story developed a bumbling-British theme by noting the dropping of anti-Italian leaflets, casualties of six dead and twelve wounded ("These 18 persons were exclusively women"), the protests of the Vichy government, and England's

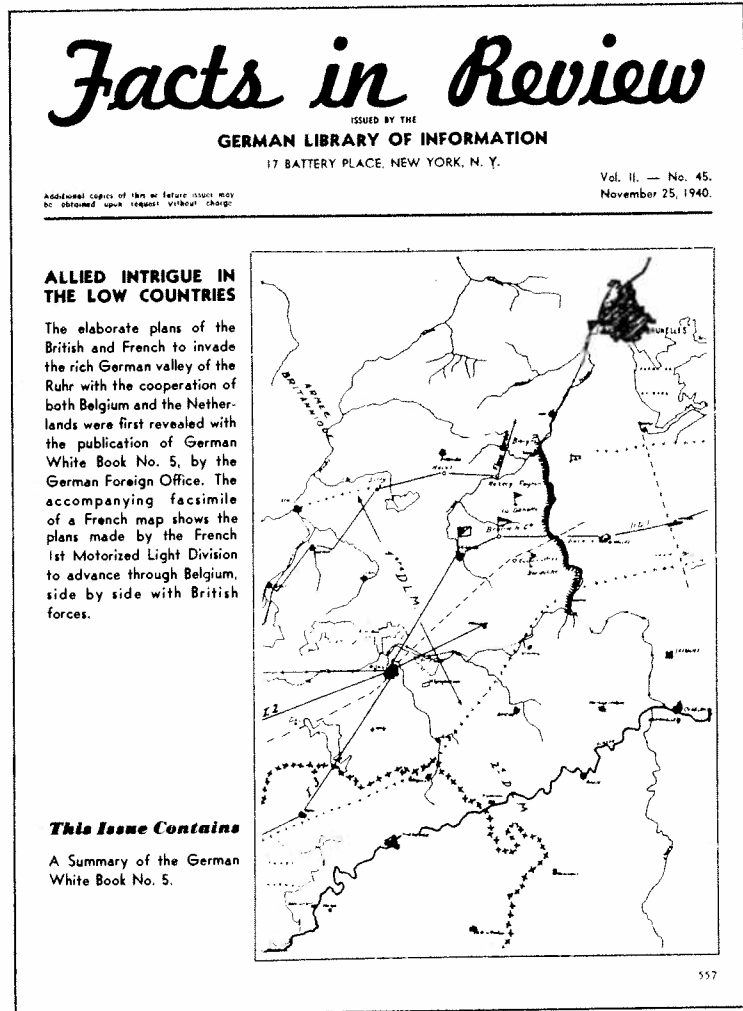


FIGURE 7.13. "Allied Intrigue in the Low Countries" (*Facts in Review* 2, no. 45 [25 November 1940]: 557).

"somewhat lame story that fog and inexperience caused the crew of the British plane to drop their bombs over this non-combatant city."

Nazi propagandists also used facsimile maps to prove their opponents' treachery and justify Germany's advancing western front. Nonskeptical Americans were thought likely to

accept the largely illegible, hand-labeled map (fig. 7.13) on the *Facts in Review* cover for 25 November 1940 as convincing evidence of British and French plans to "invade the rich German valley of the Ruhr with the cooperation of both Belgium and the Netherlands." Germany, the map implied, had merely done to them first what they had been plotting to do to her.

Another plot revealed in *Facts in Review* justified the partition of Poland among Germany and Russia. Captioned "Polish Delusions of Grandeur," figure 7.14 shows in bold black a much reduced German state. Offended and outraged, the editors revealed that "this map, published in the Posen newspaper, 'Dziennik Poznanski,' after the receipt of Chamberlain's 'blank check,' revived dreams of extending the Polish dominion to the Weser River." Although a newspaper map hardly constitutes official state policy, the map suggests to the politically naive that the 1939 invasion amply repaid the Poles for even daring to think of annexing German territory.

Useful for representing one's opponents as the bad guys, maps can also advertise oneself as the good guy. Accompanying a story headlined "Repatriation: Background for Peace,"



FIGURE 7.14. "Polish Delusions of Grandeur" (*Facts in Review* 2, no. 28 [8 July 1940]: 294).



FIGURE 7.15. "Repatriation: Background for Peace" (*Facts in Review* 1, no. 16 [30 November 1939]: 3).

figure 7.15 shows Germany the Peacemaker quietly reducing ethnic friction in the Baltic states by evacuating 80,000 to 120,000 Germans. As *Facts in Review* proudly observes, "Germany is not afraid to correct mistakes of geography and history." The map's pictorial symbols dramatize the repatriation by showing proud, brave, obedient Germans clutching their suitcases and lining up to board ships sent to "lead [these] lost Germans back home to the Reich." To the east in stark, depressing black looms the Soviet Union, and to the south in pure, hopeful white lies Germany.

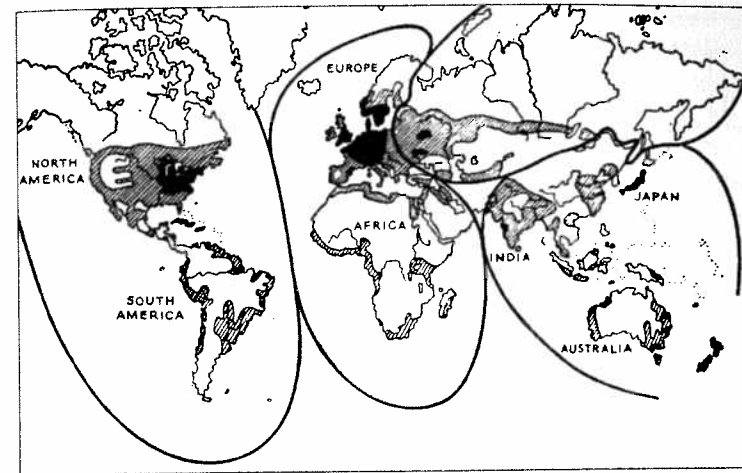


FIGURE 7.16. "Spheres of Influence" (*Facts in Review* 3, no. 13 [10 April 1941]: 182).

In trying to persuade the United States to remain neutral, Nazi cartographic propagandists flattered both isolationism and Monroe Doctrine militarism. Titled "Spheres of Influence," figure 7.16 uses bold lines to send a clear message to Americans: stay in your own hemisphere and out of Europe. Faintly resembling the lobes of Goode's interrupted projection (fig. 2.6), familiar to many students, the map also supported a geopolitical theater for Germany's Pacific ally, Japan. How successful the Nazi cartographic offensive might have been is moot, for the United States entered the war on the side of England after Japan attacked Pearl Harbor, Hawaii, on 8 December 1941.

Arrows, Circles, Place-Names, and Other Cartographic Assault Weapons

Few map symbols are as forceful and suggestive as the arrow. A bold, solid line might make the map viewer infer a well-defined, generally accepted border separating neighboring nations with homogeneous populations, but an arrow or a set of arrows can dramatize an attack across the border, exaggerate a concentration of troops, and perhaps even justify a "pre-emptive strike." As figure 7.17 demonstrates, arrow symbols

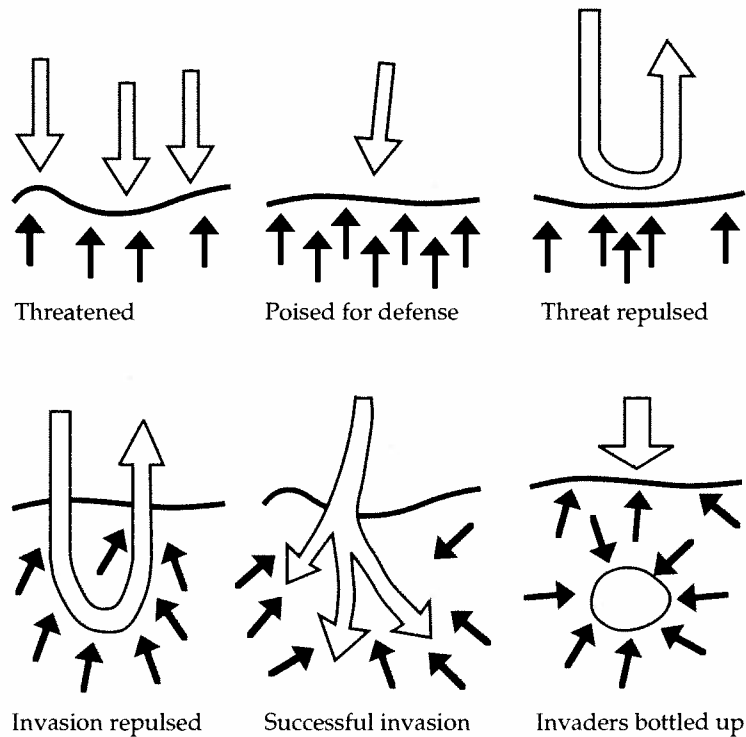


FIGURE 7.17. Arrow symbols portraying a variety of maneuvers and stalemates.

can vary in size, number, and arrangement to portray a range of military confrontations, from overwhelming threats and courageous standoffs to invasions with varying degrees of success. During World War II and the Korean War, many American newspapers used daily battlefield maps with forceful and suggestive arrows to give their readers a generalized blow-by-blow account of the Allied forces' victories and defeats. As figure 7.18 demonstrates, prominent arrows and black areas portraying captured territory could dramatize the threat of an advancing enemy.

A less abstract cousin of the arrow is the bomb or missile symbol. Everybody knows what it is and fears its referent. Lines of miniature missiles and stacks of ominous little red or black bombs readily impress map viewers with the comparative sizes of opposing arsenals. Orientation is also important:

bombs are stockpiled horizontally but dropped vertically, whereas missiles are stored upright but hurled horizontally. To justify an expanding defense budget, a propagandist might even stage a mininuclear attack, complete with a victorious response. Maps can even make nuclear war appear survivable.

The specter of nuclear warfare sends threatened nations and pacifists worldwide to the cartographic arsenal for an honored piece of geopolitical ordnance, the circle. Diplomats and military strategists have found the circle particularly useful in showing the striking zones of aircraft, and modern strategists find circles indispensable when discussing the range of guided missiles. Circles bring to the map a geometric



FIGURE 7.18. A 1950 Associated Press newspaper map uses black shading to mark the part of South Korea invaded by North Korean forces and arrows to portray troop movements.

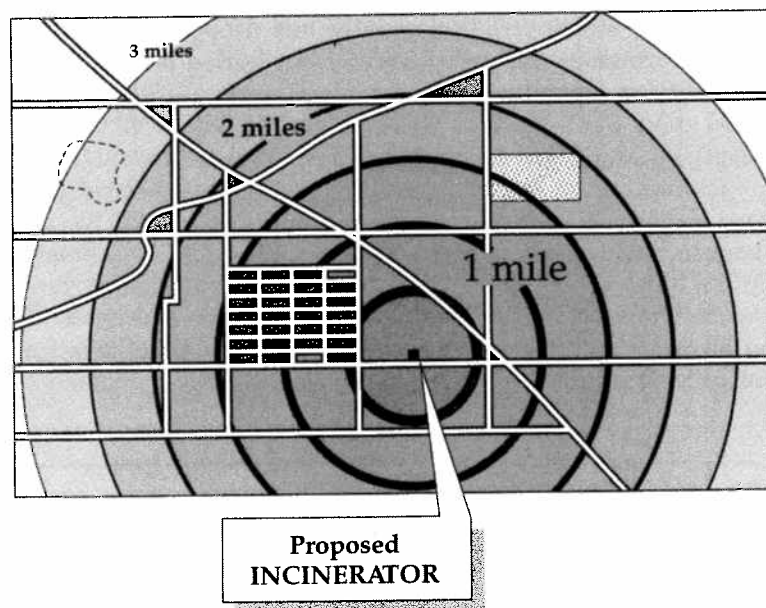


FIGURE 7.19. A local environmental protection group might seek to arouse citizen support with a propaganda map on which concentric circles have progressively more threatening labels closer to the site of a proposed incinerator.

purity easily mistaken for accuracy and authority. Yet on few small-scale maps do circles on the sphere remain circles in a two-dimensional plane. Even local environmental activists find circles useful, especially when arranged concentrically around the site of a proposed incinerator or nuclear power plant, and with ever larger, more threatening labels for closer circles, as in figure 7.19 (pl. 7).

Naming can be a powerful weapon of the cartographic propagandist. Place-names, or *toponyms*, not only make anonymous locations significant elements of the cultural landscape but also offer strong suggestions about a region's character and ethnic allegiance. Although many maps not intending a hint of propaganda might insult or befuddle local inhabitants by translating a toponym from one language to another (as

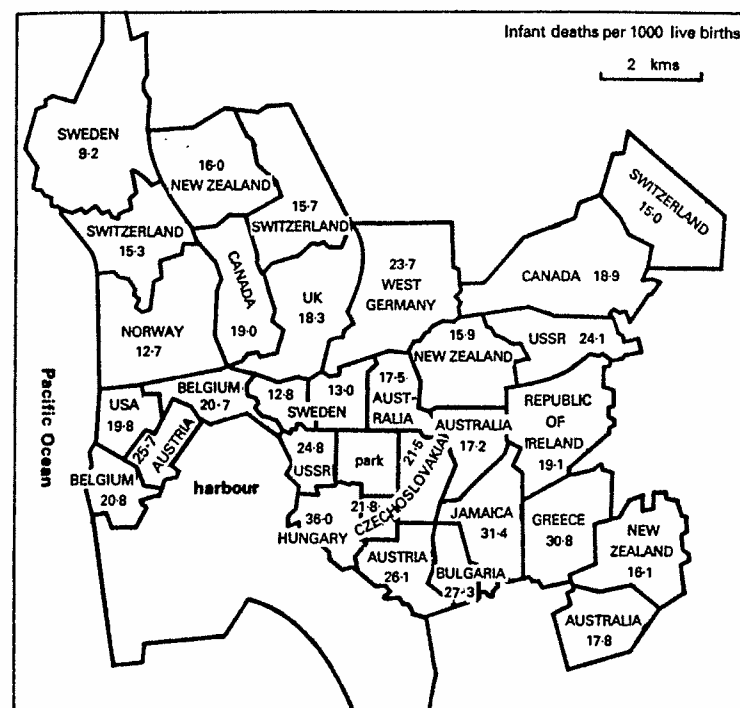


FIGURE 7.20. Dramatic map comparing infant mortality rates for parts of San Diego, California, with national rates of various countries.

from Trois Rivières to Three Rivers) or by attempting a phonetic transliteration from one language to another (as from Moskva to Moscow) and even from one alphabet to another (as in Peking or Beijing), skillful propagandists have often altered map viewers' impressions of multiethnic cultural landscapes by suppressing the toponymic influence of one group and inflating that of another.

Local social activists can also use the suggestive power of place-names to make a point cartographically. Figure 7.20, for instance, is an infant mortality map of San Diego, California, that strongly indicts intraurban inequalities in maternal and infant health care. As the map notes, some parts of the city are comparable to highly developed western European nations such as Sweden and Switzerland, whereas other neighborhoods are similar to Hungary or Jamaica. Figures

7.19 and 7.20 both demonstrate that cartographic propaganda can be an effective intellectual weapon against an unresponsive, biased, or corrupt local bureaucracy. Like guns and lacrosse sticks, maps can be good or bad, depending on who's holding them, who they're aimed at, how they're used, and why.

MAPS, DEFENSE, AND DISINFORMATION: FOOL THINE ENEMY



Compared with military maps, most propaganda maps are little more than cartoons. A good defense establishment knows how to guard its maps and their geographic details and yet at times to leak false information the enemy might think is true. Providing some accurate information is necessary, of course, if the "disinformation" is to be credible. An intellectual weapon in political propaganda, the map is a fundamental tactical weapon for military counterintelligence and covert diplomacy.

This chapter addresses how and why governments guard maps, hide geographic information, and sometimes even distribute deliberately falsified maps. The first section discusses the very real need for cartographic security, the second examines the now-admitted excesses of Soviet cartographers who deliberately doctored their maps, and the third section explores how governments sometimes mislead their own citizens by failing to include threats to a sound environment and other possible embarrassments.

Defense and a Secure Cartographic Database

No doubt about it: mapped information often must be guarded. If knowledge is power, an enemy's knowledge of your weaknesses and strengths is a threat. Maps can also betray your plans, as Giovanni Vigliotto discovered. In 1981 an Arizona jury found this fifty-three-year-old ladies' man guilty of fraud and bigamy. Giovanni, who claimed to have married more than 105 women over thirty-three years, invariably cut short the honeymoon by absconding with his victim's cash and jewelry. Had he not left behind an annotated map when

HOW to LIE
with MAPS

Second Edition

MARK MONMONIER

The University of Chicago Press
Chicago and London

MARK MONMONIER is professor of geography at Syracuse University. He is the author of *Maps, Distortion, and Meaning*; *Computer-Assisted Cartography*; *Technological Transition in Cartography*; *Maps with the News*; *Mapping It Out*; and *Drawing the Line*.

The University of Chicago Press, Chicago 60637
The University of Chicago Press, Ltd., London
© 1991, 1996 by The University of Chicago
All rights reserved. Second edition published 1996
Printed in the United States of America

02 01 00 99 98 97 96 1 2 3 4 5

ISBN: 0-226-53420-0 (cloth)
ISBN: 0-226-53421-9 (paper)

Library of Congress Cataloging-in-Publication Data

Monmonier, Mark S.

How to lie with maps / Mark Monmonier. — 2nd ed.

p. cm.

Includes bibliographical references and index.

1. Cartography. 2. Deception. I. Title.

G108.7.M66 1996

95-32199

526—dc20

CIP

Ⓢ The paper used in this publication meets the minimum requirements of the American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI Z39.48-1984.

For Marge and Jo

UNDERGRADUATE

MAY 7 1997

13572676 0954X

