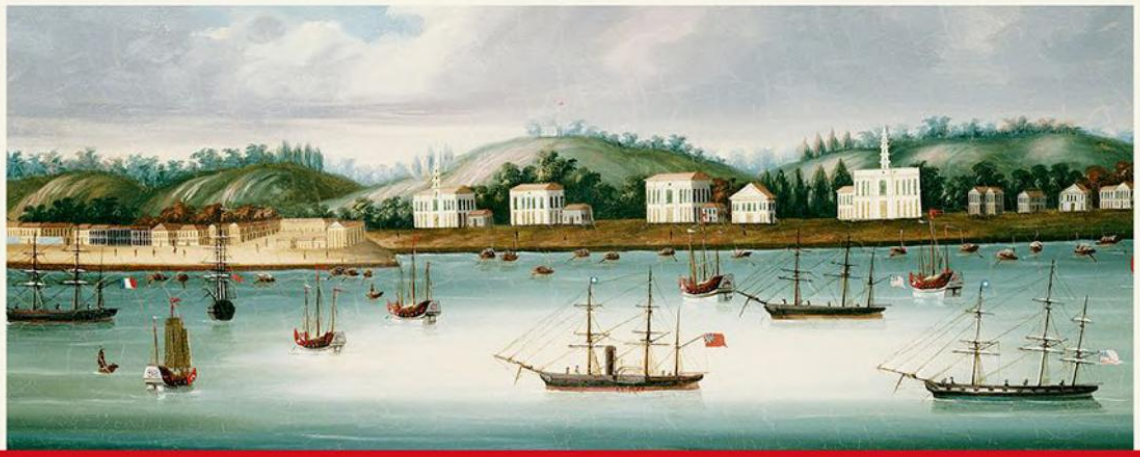

SINGAPORE

UNLIKELY POWER

JOHN CURTIS PERRY

Copyrighted material

Singapore

Unlikely Power

JOHN CURTIS PERRY

OXFORD
UNIVERSITY PRESS

Copyrighted material

OXFORD
UNIVERSITY PRESS

Oxford University Press is a department of the University of Oxford.
It furthers the University's objective of excellence in research, scholarship,
and education by publishing worldwide. Oxford is a registered trade mark of
Oxford University Press in the UK and certain other countries.

Published in the United States of America by Oxford University Press
198 Madison Avenue, New York, NY 10016, United States of America.

© Oxford University Press 2017

All rights reserved. No part of this publication may be reproduced,
stored in a retrieval system, or transmitted, in any form or by any means,
without the prior permission in writing of Oxford University Press,
or as expressly permitted by law, by license, or under terms agreed with
the appropriate reproduction rights organization. Inquiries concerning
reproduction outside the scope of the above should be sent to the
Rights Department, Oxford University Press, at the address above.

You must not circulate this work in any other form
and you must impose this same condition on any acquirer.

Library of Congress Cataloging-in-Publication Data

Names: Perry, John Curtis, author.
Title: Singapore : unlikely power / John Curtis Perry.
Description: New York, NY : Oxford University Press, [2017]
Identifiers: LCCN 2016022371 (print) | LCCN 2016027732 (ebook) |
ISBN 9780190469504 (hardcover : alk. paper) | ISBN 9780190469511 (E-book) |
ISBN 9780190469528 (E-book)
Subjects: LCSH: Singapore—Economic conditions. |
Singapore—Commerce—History. | Economic development—Singapore
—History. | Shipping—Singapore—History. | Harbors—Economic
aspects—Singapore—History. | Singapore—Politics and government. |
Authoritarianism—Singapore—History. | Social stability—Singapore
—History. | Crises—Singapore—History. | Social change—Singapore—History.
Classification: LCC HC445.8 .P46 2017 (print) | LCC HC445.8 (ebook) |
DDC 330.95957—dc23
LC record available at https://lccn.loc.gov/2016022371

9 8 7 6 5 4 3 2 1

Printed by Edwards Brothers Malloy, United States of America

Copyrighted material

Contents

Copyrighted material

Copyrighted material

Copyrighted material

Copyrighted material

List of Illustrations

Copyrighted material

Copyrighted material

Preface

As a long-time student of Pacific Asian civilizations, my interest in Singapore rises out of the distant depths of childhood, as a small boy remembering the pleasing tactile sensation of running my fingers across the satiny wooden surface of a small model boat, lacking its sail but with the stub of a mast. I liked carrying it around and embodied it with people sailing aboard who were, I imagined, somehow secreted in the solid space below the deck. My parents told me it was a *prau* (*proa, prahu*), a Malayan boat from the "Far East," a place vastly remote geographically and in any other way from my hometown of Maplewood, New Jersey.

In the 1930s, that town served as a bedroom of New York City, a conventional middle-class suburb, insular in experience and attitude, like much of America in those difficult years. While the Great Depression raged, the grownups tried to hide their anxieties from the children. Bankrupt companies were dismissing their workers. Itinerant homeless men, so-called tramps, often came to the kitchen door asking for a meal. With so many others, including people like us, clinging desperately to economic survival, the world beyond America seemed an alien irrelevance.

Ours was a pleasant ordinary house much like the others on a leafy ordinary small-town street. But inside it was different and that made me feel important. I had something my friends did not.

Copyrighted material

A tiger skin complete with head, bristling whiskers, and gleaming teeth, lay on the sun porch floor; an elephant-foot wastebasket fascinated the dog, who apparently found its scent still attractive although the foot had long before been separated from the elephant. Brass trays, opium pipes, ceremonial daggers, and batik cotton hangings of puppet faces with grossly elongated noses made their contributions to the décor, that last item being to a child both frightening and fascinating.

All were to be looked at, not played with. The little boat was the exception. These were relics of my parents' life in Southeast Asia during the early 1920s, providing high exoticism for the neighborhood. I grew up surrounded by these images and dinner table stories would often begin with "Out in the East." I would half hear tales about turbaned servants, rickshaws, and cobras appearing in unexpected places at my parents' rubber plantation bungalow. Or they would recount occasional visits to Singapore, the city whose most well-known hotel to foreign visitors was the Raffles. As late as 1922 it had plumbing, primitive by American standards, with commodes widely known as "thunder boxes" and huge ceramic jars filled with cold water. To the dismay of the staff and amusement of those who heard the story, one uninformed guest instead of scooping out the water and sluicing it over his body as was customary, climbed into the jar to bathe, reporting that he found it "cozy but tight."

A family excursion we enjoyed as children was a visit to the Newark Airport, about forty-five minutes away by car. Planes overhead were still enough of a rarity to make us rush outdoors to see them when we heard their engines thrumming above our house. We would go to Newark and hang on the airport fence to gape at the aircraft as they took off and landed. Where were they going, we wondered, and where had they been?

Pan American Airways was just then, in the later 1930s, beginning its seaplane route from California to China, making several island stops for refueling along the way in a weeklong journey across the Pacific. This was travel only for the few. Overwhelmingly, people still crossed the oceans on the surface as my parents had done fifteen years before, a westward journey to the "Far East" by train to California and then by ship to Hawai'i, Yokohama, Hong Kong, and on to Singapore, this was regarded as a once-in-a-lifetime adventure. Little could we then have imagined daily nineteen-hour non-stop flights to the other side of the globe on a far northern route from Newark to Singapore. That would have seemed to leap out of the pages of Jules Verne.

Copyrighted material

Today's traveler arriving in the city by air sees first a great aggregation of ships laid out in the harbor below, vividly illustrating the city's primary position among world seaports. In the soft freshness of tropical dawn, driving downtown along a parkway lined with flowering greenery, the many towers of the city gleam in their newness, reminding one how stunningly recent has been the global economic shift from Atlantic primacy to the Pacific as world center of explosive economic growth. In its wildly implausible story of survival, growth, and prosperity, Singapore exemplifies this great transformation and illustrates the power of the maritime world in making it happen.

Singapore is a survival tale of overcoming periodic, even life-threatening crises. Highly competent and ambitious leadership, fired by nervous anxiety and committed to success, has provided the program and pulse for what Singapore is today: an economic dynamo, a miracle of well-crafted institutional design achieved with remarkable speed.

But its success was never a given.

WHY SHOULD WE CARE?

Britons can assuage memories of World War II's catastrophic defeat in Singapore by recognizing the contributions of their imperial rule to independent Singapore's accomplishments; and although most Americans scarcely know where it is, we have substantial interests in Singapore, both monetary and military. We have twice as much money invested in that tiny place than in all of China. With these heavy corporate stakes, Americans not only have a big economic interest but also, having long ago replaced Britain as guardian of the global seas, we have a strong strategic interest in ensuring open passage through the straits.

Americans can be grateful that Singapore provides a strategic asset to the United States Navy, now that we no longer hold our great base at Subic Bay in the Philippines. Our fleet has found Singapore a receptive host where the largest American aircraft carriers can be accommodated, and where the navy stations several of its new littoral combat ships. Singapore thereby provides support for a forward American naval presence in Southeast Asia no longer available elsewhere. This carries special importance because of our proclaimed "Pivot to Asia."

As nation-states falter in efficiency, Singapore demonstrates that cities may be the salvation of humankind. That this city-state can thrive now

Copyrighted material

leads some to suggest that smallness could even be the wave of the future, that cities as global actors may become more important than nations, at least in some spheres, environmentalism being one example. Cities themselves have traditionally functioned as centers for generating ideas and turning out products. In America, large cities produce the great bulk of the national economy.

In May 1995, the then Singaporean minister George Yeo gave a prescient speech in Tokyo talking about the future of cities, suggesting "in the next century, the most relevant unit of economic production, social organization and knowledge generation will be the city or city-region,... a little like the situation in Europe before the era of nation-states," the time, he might have added, when maritime city-states like Venice, Genoa, or Amsterdam conspicuously flourished. Singapore now aggressively markets itself as a global city, aspiring to be more than a regional center for international commerce, perhaps even to become a world maritime capital, "the new London."

Although no utopia, the achievements of contemporary Singapore are inspiring. We can admire the courage with which it has faced and overcome adversity. Many criticize its authoritarianism yet accept the substantive accomplishments of its leaders in advancing human welfare, opening society to new opportunities and ideas while sheltering it from those perceived as threatening social harmony. But, as in that ancient city-state Athens, the government believes that the good of the community must supersede the interests of the individual. And many outsiders would now agree.

SINGAPORE'S PERIODIC CRISES

In its earliest years, seven centuries ago, Singapore faced threats to its survival from hostile neighbors and lost its importance as a significant seaport. When the British arrived in 1819, they first faced an environmental challenge, to hack out a tentative settlement at the lip of a stubborn and aggressive jungle, in a tropical environment that many of its settlers found both alien and hostile. Immediately the threat of stillbirth loomed.

London, for European geopolitical reasons, threatened to repudiate the founders, only belatedly giving approval to its new rapidly growing outpost of empire. A generation later when the British defeated China in the Opium War (1839–42) part of the booty was the barren island of Hong Kong, which

Copyrighted material

rapidly became a major British port. Singapore, hitherto touted as the "gateway to China," lost that role and feared it would then forfeit the China trade, the principal justification for its founding and its first great hope for prosperity.

At the turn of the nineteenth century, fluctuations of global commodity exchanges, notably the elastic demand for rubber, a principal re-export, illustrated Singapore's heavy dependence upon a world market beyond its control. And the trauma of destruction and brutal Japanese occupation in World War II again painfully showed Singapore its continuing vulnerability to forces from the outside world.

When independence abruptly and unexpectedly came, after a tumultuous and brief (1963–65) union with Malaysia, many thought the new nation could not survive. Unemployment soared. Disorder reigned. Strikes disrupted production. Rioters thronged the streets. Communism appealed to many, and Singapore faced a big aggressive neighbor in Indonesia.

With many to feed and few resources to do so, a fragile new political entity was challenged to create a stable economy and a sense of nationhood for a city diverse in race, religion, and language. Founding prime minister Lee Kuan Yew even called the idea of a modern maritime city-state a joke and national identity continues to challenge Singapore.

But ambitious for himself and for his country, Lee skillfully used the psychological impetus of freedom to animate the populace while gradually establishing political control, in part by using the mechanisms of authoritarian British colonial rule. Yet while economic growth began to generate jobs and diminish social tensions, by withdrawing its military presence in 1971, Britain struck a huge blow to Singapore's national security and the economy. Its bases had generated nearly one-fifth of GNP and employed one of ten Singaporean workers.

Today Singapore is the world's most trade-dependent nation, indicating its vulnerability to global economic forces beyond its control. A survivalist mentality, artfully orchestrated by the government, continues to drive educational achievement, military preparedness, attachment to thrift, search for a competitive economic niche, and the desire for a greater place in the global community.

Ambition and *anxiety* are the two words that best capture the effort. Singapore's leaders have consistently exploited anxiety to exhort the people to embrace rather than to reject the changes the leadership has sought and the tactics it employs. As former prime minister Goh Chok Tong stated,

Copyrighted material

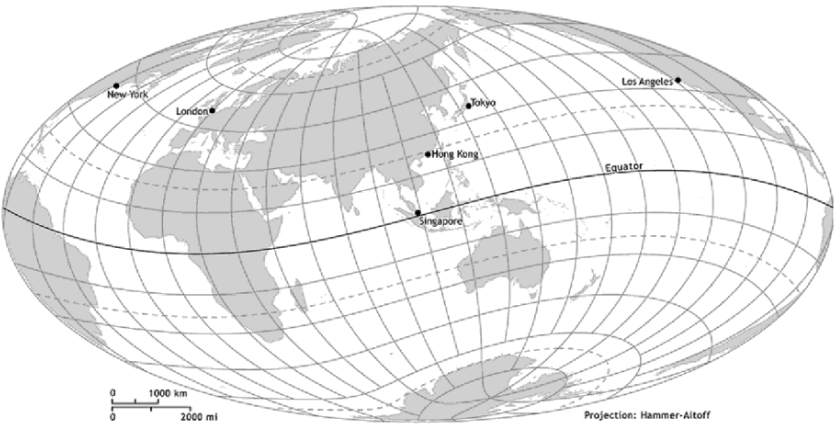

FIGURE P.1. Singapore in a global context. Map by Jonathan Gale and Patrick Florance, Tufts Geospatial Technology Services.

Singapore has "no certainty of future success and must stay united as a people, relevant and competitive while navigating a choppy sea."

HOW HAS IT HAPPENED?

In 2015 Singapore in one estimate ranked as sixth among cities in "economic power," exceeded only by New York, London, Tokyo, Hong Kong, and Paris. In the ease of doing business overall, the World Bank rates the city-state as globally number one, as does the *Economist*. Singapore's per capita GNP grew from $500 to $15,000 in thirty years. In 2014, in current US dollars that number was $55,150, a figure nearly a third more than that of the former mother country, Britain. And thanks to government tax credits for companies hiring low-wage workers, the number of workers looking for jobs is under 2 percent.

Singaporeans can even boast the world's highest average IQs. A recent study correlates intelligence with health. Countries unburdened by infectious diseases are found to have higher rates of intelligence than those who are ailing. Singapore, with relatively low disease rates, tops the global correlation list with the highest rate of intelligence based on comparative IQ scores.

Some American primary school teachers, aware that their students do not reach the best international standards, are giving attention to "Singapore math," an approach to numbers and quantitative concepts that has helped

Copyrighted material

put Singaporean students at or near the global top in that subject. And in science, among the world's advanced economies, only Finnish students score better than Singaporeans.

Education for performance has proven the ultimate key to achieving and sustaining a brilliant economic record. Singapore pays careful attention to basic literacy and numeracy. The desire to learn usually springs from the family and Chinese Singaporeans especially manifest this. Although committed to the English language, Singaporeans speak a second or even third tongue as well, an asset that Americans would find useful in an increasingly globalizing world.

Government service attracts the brightest and pays salaries equivalent to the private sector. Generous compensation and tough laws severely discourage corruption. Big money and special interests seem to play a relatively small role in Singaporean politics. The government handles its finances skillfully, setting an example of prudence and thrift, with the Central Provident Fund serving as a vehicle for enforced savings by workers and employers to provide people with housing and pensions, as well as giving the government a massive pool of capital for investment in infrastructure.

Without argument Singapore's leaders accept the consensus of the global scientific community on climate change. "Intelligent design" is not taught in the schools. Singaporeans can point out that, although their politics may be sensitive and subject to control, in matters like genetic research they face no ideological strictures—unlike their American colleagues.

Except for looking after its widespread economic interests, Singapore has a non-interventionist foreign policy. It has never been obliged to drain its resources in war. It maintains a small but well-trained and equipped military, based upon deterrence, allocating for it about one-quarter of government spending. Singapore can boast having Southeast Asia's most modern and combat capable air force, overcoming the smallness of the nation's air space by using foreign sites overseas for training purposes. Although women are exempt, Singapore has compulsory national military service. The government believes that this commitment contributes to a greater sense of community and nationhood as well as providing defense needs.

Singapore has propelled itself to distinction in the contemporary world and the world is taking increasing notice. Even more than a generation ago the *Financial Times* was calling Singapore a "Zurich of the East," influential far beyond its size. Many admire and some seek to emulate Singapore, viewing it as a model. Dubai observes its business practices; sometime

Copyrighted material

president of Georgia, Mikhail Saakashvili, touted an image of his country as "Switzerland with elements of Singapore." Panama, like Singapore a strategic maritime connector, likes to see itself as the future "Singapore of Central America." When China's notorious Bo Xilai was mayor of the northern seaport Dalian, with Singapore in mind, he said, he planted trees, fought pollution, and "rewarded people who reported rude taxi drivers."

A nervous Spaniard sees it as a place to put his savings or even to start a new life. The president of Rwanda says he wants to turn his country into the "Singapore of central Africa," although the differences are staggering. Rwanda is landlocked, lacks global ties, and its people are poorly educated. Beguiled less by its glittering infrastructure, accrued wealth, or test scores than by its politics of soft authoritarianism, China studies Singapore.

Even in the United States, an American real estate developer says he would like the shoreline of Flushing, New York, "to look like Singapore."

Timing is clearly one reason for the triumph. Contemporary Singapore had the good fortune to emerge during the past fifty years at the time of a great leap in world wealth, global economic integration, the breakdown of old oceanic empires with the release of the "animal energies" of many newly freed peoples, and technological advances specifically in the maritime world.

As well as being at the right time, being in the right place is another reason for success. It all begins with geography. Singapore's total area, only 241 square miles, is a mere fraction of Rhode Island. Traffic allowing, you can drive from one end of the country to another in less than an hour. The population now pushes over five million, a substantial number for a city but not for an entire country.

Singapore's small territorial size limits both its home market and its supply of human capital and fuels a sense of vulnerability. But smallness can also be advantageous. No large, backward, rural sector has handicapped a highly urbanized nation in its march to modernity.

Smallness allows short and dense lines of communication that can strengthen a community by smoothing organization and promoting consensus, a greater ease and efficiency in organizing people and what they do. Deng Xiaoping once said wistfully to Singapore's Lee Kuan Yew, "If I had only Shanghai to worry about.... But I have the whole of China!"

Singapore lacks any natural assets except a harbor located on one of the world's most strategic sea lanes, the Melaka (Malacca) Straits, connecting the Indian and Pacific oceans. Singapore commands the easternmost entry

Copyrighted material

to these straits. They form a vital part of the current global routes between Europe and East Asia, between the Pacific coast of the Americas and South Asia, and regionally between peninsular and archipelagic Southeast Asia. Singapore thus stands at an essential sea passage between two of the world's major ancient and influential centers of culture in east and south Asia, China and India, now two of the world's fastest-growing large economies.

By carrying nearly half of the world's annual seaborne trade, the Melaka Straits now exceed the English Channel for the title of the world's most strategic commercial waterway. If for any reason this passageway should be closed to traffic, the entire world economy would feel painful reverberations, most acutely oil-importing China, Korea, and Japan, but inevitably America too.

Singapore's presence on this major global saltwater trade route, plus its superb sheltered deepwater natural harbor, now transformed into a leading global seaport, offers major assets. Singapore's new sovereignty in 1965 happily coincided with revolutionary changes in how we exploit oceanic space.

Although no longer unique, the sea still provides a major medium for information flows; more than 90 percent of global Internet traffic now travels through undersea fiber-optic cables as does 90 percent of intercontinental cargo. The box and the bulk carrier, the standard-size steel container and the supership, have together caused transport costs to plummet. These changes stimulated an enormous surge of world seaborne trade within which contemporary Singapore made its rise into maritime eminence by skillfully exploiting these new instruments. Nimbly moving up the economic value chain from trade to manufacturing to services, this minute nation has created a unique global commercial presence, the only contemporary maritime city-state of consequence.

City	GDP (PPP)	GDP per cap.	Population
Tokyo	1,617	43,664	37,027,800
New York	1,403	69,915	20,073,930
London	836	57,157	14,620,400
Shanghai	594	24,065	24,683,400
Hong Kong	416	57,244	7,267,900
Singapore	366	66,864	5,472,700

[1] Billions of US$, rounded. Joseph Parilla et al., "Global Metro Monitor," Brookings (2014).

FIGURE P.2. Maritime cities of global significance by 2014[1]

Copyrighted material

The port handles a half billion tons of cargo yearly and was among the first in Asia to accept containers. It is also the world's top supplier of ship diesel, the major global "petro port" as a fueler of ships and mover of oil, and ranks alongside Houston and Rotterdam as a major oil refiner.

At home Singapore can dock giant merchant ships at piers close to warehouses and factories. Tides and currents scour the port's deep-water approaches and eliminate the need for dredging except immediately next to shoreside piers. Mountain ranges on both sides of the Melaka Straits shield that waterway from most adverse weather, and Singapore, unlike its commercial rivals on the China coast, Hong Kong and Shanghai, is free of the danger of typhoons, even today a dreaded peril to the mariner.

But location is not an actor; it is acted upon. Imaginative leadership, adept at organizing and managing people for economic growth and keeping them reasonably happy while doing so, has provided the impetus. Maritime life has made Singapore what it is. As Lee Kuan Yew put it, "without the harbor, we would not be half ourselves." How Singapore progressed by using the sea shows us the continuing importance of the maritime world as engine of the global economy.

A marriage of convenience between shrewd Chinese commercial entrepreneurship and stable British colonial governance spawned Singapore's vitality. This union launched the city's career as a colony and continues to nourish it today. And even though British rule has gone, that tradition of political solidity and authoritarian rule remains.

Singapore's sedulous cultivation of the human resource, with particular but not exclusive attention to leadership, has yielded "prudent management," often cited as the major reason for the nation's remarkable economic achievement. A highly educated, talented, and pragmatic elite focusing on specific needs—jobs, housing, mass transport, health, and education—has propelled Singapore into modernity. The ultimate key is human. Leaders or followers, Singapore's people provide its greatest asset.

Powerful individuals have played a vital role in this story. The assertive Sir Stamford Raffles, identified with the founding in 1819 of what he called "my colony," remains a household name in Singapore. Another was the long-time prime minister, recently deceased Lee Kuan Yew whose keen mind and razor tongue shaped a brilliant political career. Lee's reputation for sagacity, and readiness to offer advice, gave him the status of world statesman and elevated respect for his country.

Copyrighted material

More than any other single person, but greatly aided by several loyal and brilliant lieutenants, Lee was responsible for what Singapore is today. In a 1991 speech, he spoke to the human dynamic, and the way in which he addressed the matter illustrates nicely his authoritarian approach. "The quality of a people determines the outcome of a nation. It is how you select your people, how you train them, how you organize them, and ultimately how you manage them that makes the difference." The key word here is *manage*.

Critics are quick to point out the cost to freedom imposed by an authoritarian regime. Certainly less than the Japanese military occupation in World War II, but far more than the British colonial authority, the national government has initiated, guided, and directed the lives of its citizens. The perceived efficiency of Singapore's government gives a gloss to its recently softening authoritarianism and most of the people, pleased by rising living standards, have thus far acquiesced in strong government and given it their votes. Whether this will continue to be so remains to be seen, especially as those who did not experience the privations of the past, the way things were in 1965 when Singapore became independent, inevitably leave the scene.

The death of Lee Kuan Yew in March 2015 prompted global response, evoking wide appreciation for what he accomplished for his country, as well as drawing praise from dictators and would-be dictators who lauded the man and implicitly his steely governance, themselves craving Singapore's prosperity to justify their autocratic rule. And with his death, Singapore faces a new era and our story essentially stops.

Copyrighted material

Copyrighted material

Singapore

Copyrighted material

Copyrighted material

I

Origins

An equatorial jungle swamp provides an unpromising spawning ground for a world-class city. Before Singapore, no such global city emerged in the tropics. Nor has any since. Singapore Island is a mere dot within a vast Malay world that is as broad an ethnic category as its geography, sprawling across the nearby southernmost tip of the Eurasian mainland and the widely stretched Indonesian archipelago. Millennia ago, the few early inhabitants on the island and elsewhere along the Melaka Straits found its warm tropical waters home to teeming biological diversity, offering an array of foodstuffs within its coral reefs, sandy beaches, and tide pools, with streamlets and river estuaries feeding brackish lagoons, interspersed with mangrove swamps and mud flats. Here creeping tides and rhythmic currents interact with the pulsating vitality of wind, forever renewing a rich stream of marine life.

In the times before navigational aids, coastal boatmen would find alongshore mangroves twinkling at night with countless darting fireflies guiding them as they cautiously threaded their way through shallow waters dotted with sandbanks and islands demanding complex maneuvering where rock could suddenly shatter hull. Mangrove protectively roots the shoreline as we would learn during the great Indian Ocean tsunami of 2004. In that catastrophe, highly developed beachfront and coastal areas suffered

Copyrighted material

FIGURE 1.1. Singapore within Southeast Asia. Map by Jonathan Gale and Patrick Florance, Tufts Geospatial Technology Services.

Copyrighted material

much more than those places that had been relatively untouched by ax or bulldozer and still had their mangroves crowding the edge of the sea and anchoring the shores.

In earlier times, sailing the six-hundred-mile length of the Melaka (Malacca) Straits consumed about a month depending upon the character of the winds. Seasonal storms threatened mariners. The major weather events, the so-called Sumatras, sudden, brief, and violent squalls, with successions of thunderstorms, occur between March and November, bringing high winds and heavy rain. These were especially dangerous for small craft. Tropical downpours and buffeting winds made life sometimes uncomfortable for the early inhabitants but at least they never knew intense cold.

Unlike the South China Sea to the north and east, which challenged the seafarer with its storms, shoal waters, and submerged rocks and sandbars, the power of the monsoon can hardly be felt within the straits leading there, these waters being a place of birth and death for winds. In early times even crude and simple sailing craft could move with relative safety between strategically located Singapore Island and its neighboring Riau Archipelago where today's frequent speedy ferries whisk people to and fro between the startlingly different worlds of Indonesia and Singapore.

In the straits, the Pacific Asian monsoon meets its Indian Ocean counterpart, making a natural forum for stopover and refreshment, for interactions and exchanges, waiting for contrary winds to blow themselves out. In summer they blow north up the China seas; in winter to the south, simplifying the task of the navigator who did not need to concern himself with laborious maneuvering or tacking. As in the Indian Ocean, these predictable monsoonal flows were of immense importance until the age of sail ended in the nineteenth century. They encouraged traders to wait at the straits until the winds changed or customers arrived.

Along these equatorial shores, the climate promotes rapid and lush plant growth, challenging those who want to move anywhere on land. Dense vegetation makes such travel difficult, encouraging the use of river and sea as a way of getting around. Islands, being ringed by water, held special advantage because they increased these opportunities.

River estuaries provided havens, shelter from seaborne storms or pirate raids. Streams served the jungle interior as avenues to the sea. Superior water transport made possible the flow of freight as well as people. River boats reaching inland could carry wild honey, rattan, camphor, and resins

Copyrighted material

from the tropical forest to coastal markets where strand and beach offered seaweeds, coral, and turtle shells. These flows encouraged the rise of small ports, places for exchanges forming a plural and fluid world of which Singapore would become an expression.

Soils leached of their minerals by heavy tropical rainfall could support only small populations, unlike the richly fertile earths of India or China. The coasts of the Melaka Straits and the Indonesian archipelago fronted on no great plains to invite large-scale, long-lasting agricultural societies. Because the land could not sustain large populations, people, not land, became the single greatest resource of the region and the watery environment offered mobility.

In that maritime environment, one big state never existed for any length of time. The waxing and waning of relative influence between, say, typically land-centered agrarian Java and the commercial maritime settlements along the straits propelled the basic rhythms of history, with the maritime predominating.

Outsiders like the Tamil kingdoms of south Asia or central Asian nomadic Mongols not known for their maritime achievements made sporadic attacks on the region but effected no great changes there. Chinese and Arab traders, on the other hand, had a continuing presence and brought lasting cultural impact that would be concentrated in local port settlements. Splintered ephemeral polities were the norm; hence the high vulnerability of the region to European aggressors when they stormed into this Malay world via the sea routes, passing through the straits, craving direct access to the spices that only the tropics provided, and moving on to the China coast for its silks and porcelains.

SEA PEOPLE

Many of the various peoples living along the Melaka Straits whom we now identify as Malays were riverine forest folk who could tap inland jungle resources. Those alongshore were known as *Orang Laut*, literally "Sea People," a generic term applied to nomadic seafarers who found the space where land ends and sea begins to provide a good source of livelihood. They mastered it comfortably, and their seaside situation put them in place to build trade networks.

Copyrighted material

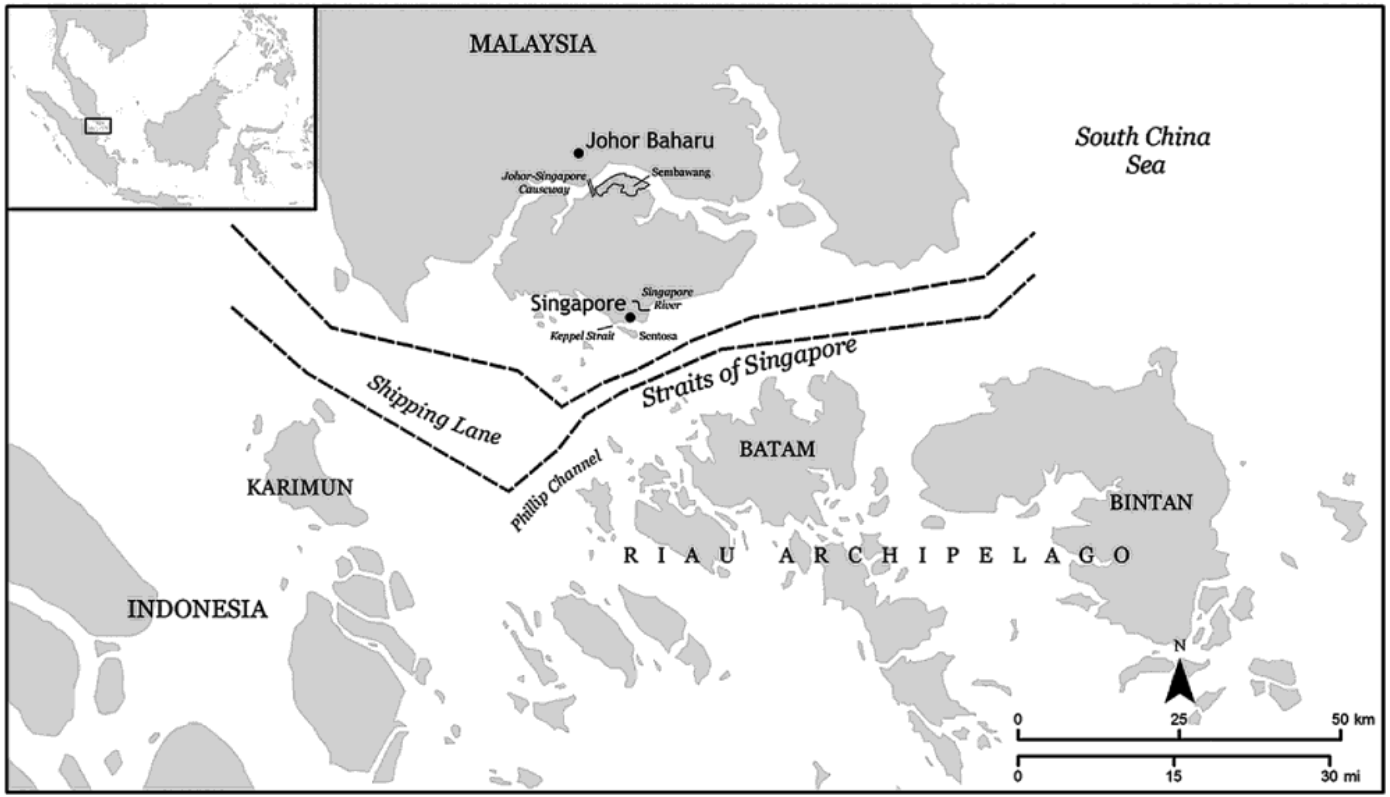

FIGURE 1.2. Singapore and its Straits. Map by Jonathan Gale and Patrick Florance, Tufts Geospatial Technology Services.

Copyrighted material

A millennium or longer ago, *Orang Laut* settled on Singapore Island and offshore in the nearby Riao–Lingga archipelagos, as well as at major river estuaries in the region along the straits and the South China Sea. On rocky shores and beaches they gathered turtle eggs, oysters, prawns, and other delicacies. They were sailors and fishers as well, and at sea they went after both top feeders like herring or mackerel and bottom feeders such as bream and mullet. Adroitly wielding an oar or reefing a sail, they knew currents, winds, and coastlines and built small but buoyant boats capably. Beamy so as to enable living space aboard, their vessels often served as their homes as well as vehicles for a nomadic life.

The *Orang Laut* boat and others of Southeast Asia sprang ultimately from the dugout tree trunk, whereas farther to the north, on the China coast, the raft was the ancestor. From these two primitive types would emerge vessels built up from planks: the Malay prau and the Chinese junk, both taking on a range of forms as they evolved over many generations of usage.

The prau, for example, literally "boat," is a generic term, covering a wide variety of Malay watercraft, from the simple sampan to the heavily rigged sailing ship. Speed and maneuverability distinguishes these vessels, and Europeans would first encounter them in the hands of pirates on the Indian Ocean. Some were double-hulled outriggers, with identically shaped stem and stern, carrying multiple triangular sails. One type, known for its elegant shape, struck the attentive eye of Commodore Matthew Perry when he stopped at Singapore on his way to Japan in March 1853. The commodore bought a wooden model that he would give to the New York Yacht Club.

Expert swimmers, as one admiring European observer puts it, *Orang Laut* dove "like fishes; perhaps, for half an hour they remain under water, when they again appear, 100 or 500 fathoms off. Men and women and even children are alike in this respect." They did not cultivate the land; but these early Singaporeans would find that selling offshore produce like sea slugs (*trepang*) and tortoise shells supplied a means for them to buy the rice, cloth, or iron tools they wanted but could not provide for themselves.

Their lives focused on harvesting food from the sea. In coastal regions, most of the animal protein humans consumed in those earlier times derived from the saltwater world. Shallow offshore waters and rocky beaches nourished a great abundance of shellfish: crab, shrimp, mussels, as well as edible seaweed. Although their fishing techniques were simple, the dexterity of the *Orang Laut* proved effective. They found that by lying or kneeling

Copyrighted material

on a flat board propelled by their feet, they could scoop up with their hands what they could not take with a spear, all the time keeping a wary eye out for crocodiles. Those fearsome creatures hunted by night; by day they could be seen, drowsily sunning themselves in marshy lagoons and tidal swamps, from a distance blending into the scene like a floating log or palm branch. Somnolent, yes, but ready in an instant to snag a hearty meal should the opportunity arise. They were known sometimes to knock a man out of his boat, drown him, take the corpse, and bury it in the mud until it had nicely seasoned to their taste.

Aside from skin problems, aggravated by constant exposure to saltwater, the *Orang Laut* enjoyed health that seemed remarkably robust to outsiders. Frequently in the water, fresh as well as salt, they maintained a personal hygiene much superior to that of the first Europeans to come to Southeast Asia. And they did not have the disadvantage of living in crowded, dirty, and disease-ridden cities as did Europeans at that time. Although they ate few vegetables, they consumed many fruits. Their diet had little meat, but contained ample protein-heavy seafood. Abundant spices could be added for flavor. And whereas the betel chewing they enjoyed may have stained teeth, it fought tooth decay.

Unlike modern fishers, the *Orang Laut* did not overfish. They took no by-catch. Modern life has swept away these old traditions, along with the *Orang Laut* themselves. But in the 1930s they were still to be seen in mangrove swamps of the remotest part of Singapore Island. Today they are gone from the island. Always small in numbers and scattered, they lacked any central authority figures and this made them vulnerable in their interactions with other more highly organized cultures.

In modern times the *Orang Laut* would often be dismissed as uncivilized, and Europeans tarred them with the brush of piracy, often unjustly. Not usually themselves initiators of piracy, because of their maritime skills they were more often apt to be recruited by those engaged in what Europeans were quick to condemn as crime. Piracy, as commonly practiced in the region, then carried no stigma among local people.

The sea raiders tended to come from the more sedentary Malay villages with people who had the capital and organizational skills to build and operate large vessels. In this fashion they were able to create a virtual "machine for piracy," and this became an important part of the vigorous Malay maritime tradition, even carrying an aura of prestige. Like Britain's Sir Francis Drake, successful Malay pirates gained kudos along with loot.

Copyrighted material

But there were also freelancers, pirates who began as smugglers, or often as fishers who applied their seafaring skills to bigger and more lucrative prey. Piracy was something that people could drift in and out of, depending on economic circumstances. Part-time occasional pirates were far more important overall than full-time ones; the number would generally rise at times of widespread poverty or local disorder, and decline when things improved. That remains the case today.

EARLIEST "SINGAPORE"

Scattered along the Melaka Straits a complex cast of people would meet, representing the sea life of Pacific East Asia, South Asia, and Southeast Asia. For much of history, these waters served as an important conduit for the flow of people, goods, and ideas. Today globally vital, the funnel-shaped straits, dividing mainland Southeast Asia from its archipelago, carry nearly one-half of the world's oceanic shipping. For most of their length they are too wide for one to see both shores simultaneously. But at the eastern end, where the Singapore Straits feed into the South China Sea, the shipping channel is less than one mile wide. There, near this strategic spot, the antecedent settlements of what we know today as Singapore sprang up.

Maritime Southeast Asia thrived as a world not of nations but of cosmopolitan centers of commercial exchanges. According to legend, an early visitor fleeing Java to today's Singapore Island landed on a sandy shore called Temasek and briefly spotted a strange animal with a black head and a red body, which he identified as a "lion." He declared that he would establish a city there and name it "Singapura," a name derived from Sanskrit meaning "lion city."

On that island, close to the narrowest part of the Melaka Straits, the trading town of Temasek/Singapura arose and then flourished in the fourteenth century at the mouth of a small river. We know rather little about the town's history. The sources are sparse, and myth requires sorting from history, but Malay oral accounts and archaeological findings tell us something. We know a lot more now than we did thirty years ago but this is still inadequate. Much remains conjecture.

No mere outpost, clearly the place played an active part in an international trade stream extending to Java and Thailand, stretching to India and China. In Singapore's history, Temasek is the first in a series of high-water

Copyrighted material

marks, when the city thrived because of its strategic location, the ability of its diverse population to generate exports, either their own or those of others, and their adaptability to the demands of changing international circumstances.

Archaeologists give us a sense of Temasek's physical features: a terraced hill overlooking the Singapore River with a palace, market, defenses, earthen rampart, and moat. The earthen wall represented a commitment to permanence. Not even royal palaces commanded permanent building materials. But we do have some baked brick and stone remnants from the late thirteenth and early fourteenth centuries suggesting Buddhist temples. Unfortunately, during the early British colonial era, much was destroyed in the rush for development. And therefore the legend could arise, and long lingered in the standard histories, that nothing had existed in Singapore until the British arrived in 1819.

Being a religious center as well as a commercial one, Temasek seems to fit into a pattern of the Malay port city, its wall being an exception. Religion reflected Indic impulses, not Chinese. The hilltop held cosmological significance, representing Mount Meru, known in both Indian Buddhist and Hindu tradition as a divine abode and metaphysical center of the universe. For creating this sacred place, the builders, because they lacked labor, used a natural landscape, not a constructed one such as at the great Angkor. They then carefully allotted the downward spaces, using walls and water to define them. Divinities commanded the top; artisans lived at a respectful distance on a lower level of the hill where they fashioned such objects as pottery, glassware, and fine jewelry.

Chinese people, perhaps the first Overseas Chinese community in Southeast Asia, lived there alongside local peoples instead of in their own separate neighborhood, illustrating the diversity of this maritime town, serving as useful intermediaries in the China trade, so important in the economy. Of Temasek they reported "the soil is poor and grain scarce."

The need to survive thus demanded trade. Coins show sophistication, and unearthed pieces of fine porcelain would indicate that people wanted high-quality ceramics not ones locally produced. Temasek thus took its place in the "ceramic route," a southern Eurasian maritime equivalent to the continental Silk Road. Heavy and delicate porcelain could travel in volume only by sea. In return for such prized Chinese goods, the town could feed the overseas market with a luxury item, hornbill casques, so-called yellow jade, a precious bird ivory that had the advantage of being something that the Chinese highly prized and was easier to carve than other ivories.

Copyrighted material

Nearby on the harbor, at what because of its rock formations would be called Dragon's Tooth Strait, lived a community of *Orang Laut* who followed a different lifestyle than those nearby on the hill. Although dismissed by the Chinese as unruly and piratical, they would usefully add marine products to the trade mix: tortoise shells, pearls, and coral because ivory alone could not sustain an economy. Temasek catered to customers nearby with a variety of more mundane items such as tin, cotton, and fragrant wood of less than the highest quality.

Two poles of power, Siam and Java-Sumatra, met in the straits where these Malay city-state ports like Temasek or Palembang on Sumatra enjoyed an autonomy deriving from the ability of their rulers to generate wealth through commerce, as does today's Singapore. Like today, the broader Asian economy largely determined what happened on Singapore Island. Local people were players in a game heavily determined by outsiders, principally Chinese and Indians, the two Eurasian super economies.

Caught between the Thai (Siamese) and the Javanese, the ruler of Temasek fled and the population followed. It had lasted only a century, yielding to the nearby port of Melaka, which benefited from cultivating a close relationship with the Chinese court. Temasek/Singapura declined as a trading state or as a political nerve center and ultimately the site was virtually abandoned. That was how the British would find it when they came early in the nineteenth century. But it continued to be important in Malayan history, figuring heavily in its mythology and remembered as the founding home of the dynasty that would flourish elsewhere in the region: successively in Melaka, Johor, and the nearby Riau Archipelago.

The name Singapura would in modern times return to take its current altered form and Temasek is now familiar in the world of international investment as a major sovereign wealth fund, a great pile of assets illustrating the economic success and financial prudence of contemporary Singapore. But the slim legacy of the former settlements on the island furnishes a grim reminder to the present of how completely the material glories of the past may be swept away, a faded memory retaining only a shadowy symbolic presence.

Thus before the intrusion of the European nation-states, along the Melaka Straits, a cosmopolitan Southeast Asian multicultural maritime community had prospered, with frontiers but without borders, ambitious for commercial success based upon trade flows, exploiting its key geographical location, yet ultimately depending upon the needs and desires of others,

Copyrighted material

both within its immediate region as well as giant centers of wealth, power, and culture lying beyond.

The aspiring global city we see today in Singapore has much in common with what flourished there in its earliest times some seven hundred years ago.

THE HINGE OF EURASIA

The fleeing rulers of Temasek found a new home in Melaka, almost exactly as far from today's Singapore as Albany is from Manhattan (127 miles). The name Melaka proved highly appropriate, deriving as it does from the Arabic meaning "meeting place" or "rendezvous." Its origins are hazy like those of its predecessors Temasek or Singapura being the stuff of legend, but early in the fifteenth century a Hindu kingdom emerged there, soon to become a Muslim sultanate, the faith brought in by itinerant merchants traveling from the west.

Melaka was not a new kind of settlement but was in the pattern of other Southeast Asian cosmopolitan maritime entrepôts, a place for trading. Here on the straits a tiny fishing community evolved into a hangout for those wanting a center to conduct commerce or to exploit a strategic position to exact fees from passing ships, and, more crudely, we might say a place to fence stolen goods.

Unlike most Southeast Asian trading towns, which placed themselves defensively upriver to discourage maritime marauders, Melaka sat boldly at the mouth of a muddy stream where moored vessels rolled gently in the current or rode offshore in a sheltered spot on an easily navigable approach where ships could find safe anchorage.

The city that arose there depended almost totally on trade even, with the exception of fish, needing to import its basic foods to fill the rice bowl as well as to provide most other sustenance. Its land, hacked out of dense jungle, was ill-suited to growing grain although fruit orchards flourished at hand. Fruit does not travel well, especially in a hot climate. If you wanted to eat it, you had to grow it. Melaka, with its back to untamed jungle, lacked continental hinterland and we have no indication that anyone was interested in clearing and farming land beyond the outskirts of town.

Without an easily accessible hinterland, trade furnished Melaka's life stream. Although not situated at the straits' narrowest point, the city could control a navigable passage through which much oceanic traffic passed. It lay

Copyrighted material

on the direct route between the Maluku islands (the Moluccas), the heart of Indonesian spice growing, and Alexandria, the Egyptian feeder port for Venice, the European distributor. Melaka would become the metropolis of the straits for more than a century, a flourishing maritime state presumably never as populous as Venice, but comparable to London at the time. Like other trading cities in the region, it was largely independent of any bigger territorial authority. Saltwater space formed its true sphere, "the axis of the realm."

At the peak of its power in the fifteenth century, Melaka made itself master of both sides of the straits and the islands within, but its empire was less a matter of territory than situation, its purpose being to protect trade streams and sources of manpower and foodstuffs.

For the city, the sea lanes supplied the basics of life: rice, salt, iron pots, cloth, as well as the luxury goods that so enticed those who could afford them. The port could derive considerable prosperity from the exchange of jungle produce with finished goods, both carried in and out by a flood of passing merchants who would often spend time in town while awaiting favorable winds.

Eastward, Melaka lay on a trade route to China, and in the other direction routes stretching across the Indian Ocean led to southwest Asia and the hearth of Islam. When Arab and Indian merchants carried the faith to Melaka, its rulers converted. The seaport emerged as a lively center for the practice, study, and diffusion of Islam and its culture, home of a new literary genre, Malay Islamic literature. Ties to Arabia became important. Thus we can perhaps say that this seaport generated knowledge as well as exchanged goods. But Melaka had internal political problems and failed to establish a cohesive elite or to cement the loyalties of its diverse population. Its vital life would thus be short, a cautionary tale for today's Singapore.

Mosque, palace, and bazaar dominated the Melaka cityscape of simple palm-thatched wooden buildings perched on the traditional Malay stilts. Because Malays did not commonly use brick or stone as building materials, Southeast Asian maritime cities differed physically from European ones. Theirs was an architecture of planned ephemerality.

People put up their houses cheaply and simply, with reed and bark; they could easily and quickly be taken down and reassembled elsewhere. Whole towns could be moved. Or, if destroyed by fire, which was not infrequent, they could be rapidly rebuilt. Control of people was more important than control of place, as the Europeans would ruefully learn after they arrived. They could occupy a place but fail to keep its people.

Copyrighted material

The cast of characters in Melaka at its peak illustrates the multiethnic, multicultural character of maritime life. Giving it color and pulse were Chinese, Javanese, Tagalogs, Persians, Tamils from South India, Gulf Arabs, Gujerati Indians from the far northwest of the subcontinent, and even a few of the great cosmopolitan traders, Armenians and Jews. In short, people from the whole of the Asian maritime littoral and beyond crowded the streets and bazaars of the city, all intent on doing business.

An early European visitor would call the straits, a place of cultural and commercial convergence, Asia's "gullet," and, mindful of its wide-ranging significance in the spice trade, declared "Whoever is lord of Malacca has his hand on the throat of Venice," the center for distributing spices to consumers throughout Europe. If Venice were the "hinge of Europe," so Melaka might have been described as the hinge of Eurasia.

A torrent of languages greeted the visitor; an early Portuguese traveler, who must have had an extraordinary ear, claimed that he could hear eighty-four tongues being spoken. Malay served as a lingua franca in Melaka and throughout the Southeast Asian maritime world as it would later in Singapore. The real key to Melaka's success was the people who came there and the commercial webs they spun, a seaport where each ethnic group came to have its occupational specialty. Persians dealt in gems and medicinal drugs. Gujerati Indians earned their reputation and sold their skills as mariners. Joining the local Malays, as early residents of the city, came the aggressive and wide-ranging seafaring Bugis, who sprang from the Indonesian archipelago farther east.

The Bugis would much later fetch up in modern Singapore where they would appear periodically in hundreds of boats, making the harbor a forest of mast and sail, bringing a year's worth of produce to barter. But the Bugis' specialty seems to have been violence. Too restless to be city builders, they were known as much for piracy as for trading. In colonial Singapore their name would become notorious because of the life on the street bearing their name. Now the relic of a rowdier era sanitized in a purer Singapore, until quite recently Bugis Street remained a hangout for drunken sailors, transvestites, and gawking tourists.

In Melaka, Malays composed the core of the population and, whereas the sultan and the elite engaged in commerce, common people chose not to be merchants; instead most of them made their living locally by fishing or labor, supplying the needs of the transient community. For the city's own needs, the sea lanes supplied the necessities of life as well as the luxury goods.

Copyrighted material

In contrast to European maritime city-states, Melaka was a responder, not an initiator, more actor following a text than playwright writing the script. And the performance life of the city lasted no more than a century. Today, because of silting and land reclamation, Melaka's ancient center no longer directly fronts the sea, and although the port city built a career more spectacular than that of Temasek, outside of museums not much remains today to remind the visitor of the excitements of this vibrant early modern international seaport.

THE CHINESE, THE SEA, AND SOUTHEAST ASIA

In this cosmopolitan but overwhelmingly Malay maritime world of the straits, how did modern Singapore become three-quarters Chinese and what does this mean? To begin to answer that question we can take a look at the motherland to see where the impetus came for the Chinese diaspora, a unique maritime-based mobile culture. This is one of the greatest and most consequential human overseas migrations in history, forming an engine for the flow of people, goods, and ideas, not simply to and from China but building a network of interconnected communities sprinkled throughout Southeast Asia, for which Singapore would function as a synapse, perceived as "the western junction of a Chinese commercial empire."

Most emigrating Chinese ended up in Southeast Asia on the edges of the South China Sea. The Chinese called the region Nanyang or "Southern Ocean," connoting both a saltwater space and its fringes. The concept was more commercial than political or geographical and applied to people, the ethnic Chinese of that region, as well as place. Leaving China, emigrants took their culture with them but usually abandoned their political attachments. Ultimately the diaspora would reach much farther than the Nanyang. Is there today anywhere in the world any major seaport city without its Chinatown?

The broken coast and many harbors of South China encouraged taking to the sea and spawned China's continuing, unauthorized, and largely unrecorded maritime history in which many foreigners also participated. In south Chinese coastal towns, Arabs, Persians, and Indians, sailors and merchants walked the waterfront.

The Chinese government, preoccupied with nomad incursions on land frontiers to the north and west, paid little heed to these seaborne foreigners along the coast, content for them to govern themselves. Nor were local

Copyrighted material

fishers, merchants, and pirates of interest, either to government officials or recorders of history at the capital. To the Chinese official grinding his ink and wielding his brush in Beijing, the imperial capital, the sea seemed both far away and a natural boundary, a great saltwater wall, useful only for keeping unwanted strangers away.

But local people readily leaped into maritime life, even to invest their skills and savings in overseas enterprise. Many Chinese would move to maritime Southeast Asia and become familiar figures along the Melaka Straits. Family ties and ancestor veneration tended to bind people to the homeland. Nonetheless many did leave China forever.

Before the European arrival at the turn of the sixteenth century, the Overseas Chinese had formed minute settlements sprinkled across the regional maritime world, one, as we saw, being on Singapore Island. Some of these people were only sojourners who would return home, hoping for a comfortable life thereafter on the money they had saved. Overseas they were looking for places with economic opportunity and political stability, where they could safely pursue their business interests.

To the trading routes and seaports of this Nanyang South Sea world, Chinese immigrants brought goods to trade and often by remaining there contributed skills to the human capital of the region. Farther afield, they taught mining techniques for gold and tin. They showed local farmers how better to raise rice or cultivate sugar cane, and they introduced new species such as soybeans, lichees, and cabbages to the local diet.

Chinese potters turned out huge ceramic storage jars that became everyday objects like those that would find their place in bathrooms. Chinese carpenters and cabinetmakers changed local habits by introducing new furniture: low tables and beds. And on the sea the Chinese applied their navigating skills, ferrying people and goods from place to place, even then providing the coastal shipping that they would in modern times dominate from Singapore.

Those who stayed often intermarried with local people. But many did not. The unassimilated ones governed themselves without supervision or protection from the home country, living in their own quarter in distinctive brick houses, keeping their own customs, enjoying their own foods, wearing their traditional cotton trousers and short jackets, burning incense to their own deities in their own temples, with the sea goddess, Mazu, patron saint of sailors a deity in common, familiar to many.

Outsiders tended to lump these Chinese together as members of one cultural group, and so they were, all from China's southeast coast. But to

Copyrighted material

themselves geographical subgroups were intensely important. They spoke mutually unintelligible dialects, so different as to be separate languages. If literate, they could find a common linguistic element in the written character, which people recognized and pronounced in their own dialect. But few could read.

In the daily lives of these Chinese, law was far less important than custom. Family formed the traditional core unit for constructing and running a business, and families sought to maintain control of what they owned. These practices tended to push talented individuals not coming from prosperous families to found their own firms. Since government careers in the Nanyang were closed, the best and brightest went into business, unlike the homeland where government service offered the most prized careers. In this overseas world of commerce many Chinese would become supremely successful and highly influential in the community.

Within the maritime world of the China Seas and the straits, the pattern of north/south commercial flows enriched Melaka, ideally situated to collect and redistribute these items, functioning as an entrepôt, an earlier version of what Singapore would become. And much of the enterprise lay in the hands of Chinese.

From the north would travel Chinese silk, raw, spun, or woven, and Japanese silver, with manufactures from both countries. Upscale traders carried fine Japanese swords, among the world's sharpest blades, able in well-schooled hands to slice a man in half from crown to groin in one blow. It was said that one could see only the dazzling flash of the blade, not the man wielding it. For the mass market, the Japanese invented the cheap folding paper fan and it became a popular item, especially for people sweltering in the heat of the tropics.

In turn, the south yielded what was known as "straits produce," taken from jungle and shore, fine items for the Chinese market only to be found in tropical climates: sandalwood, spices in addition to pepper, and gourmet foods such as nutritious seaweed, agar agar, or the trepang, known as *bêche de mer* or sea cucumber. Europeans would find that wormlike item "repulsive," and indeed its appearance is against it. But in Asia it has always been much appreciated for its rubbery texture and role as a flavor enhancer.

Connoisseurs also prized saucer-shaped swallows' nests coated with bird spittle. Intrepid harvesters would scale Southeast Asian seaside cliffs where the birds nested just before they had the opportunity to lay their eggs. The shiny texture of the nest has been compared to that of isinglass

Copyrighted material

but it is more brittle. Dissolving the nest in boiling water, the cook can make a nutritious and tasty soup relished by gourmets.

The junk furnished the vehicle for the Chinese overseas trading network, taking on an iconic identification with premodern maritime China. But the word is actually of Arabic or Malay origin, reflecting the influence of outsiders along the China coast where the ship type originated. Versatile vessels, junks carrying heavy cargo ventured out upon the open sea, but always chose if possible to hug the shoreline, taking advantage of seasonal winds, south in the winter, north in the summer.

The name "junk" would be applied to a wide range of vessels, large and small, which evolved over centuries of steady improvements. A familiar sight in the Melaka Straits and throughout Pacific Asian waters, these ships were sailing in some numbers until recent years. They were to be seen in commercial use moored in Singapore harbor as late as the eve of World War II.

More than a millennium ago, with the junk the Chinese had achieved a maritime technological complexity not equaled by Europeans until much later. Chinese mariners used rudders that could be raised or lowered to accommodate varying depths of water; they sailed ships with hulls of double-planked thickness and watertight bulkheads for compartmentalization. Fishers were the innovators there, wanting tanks to take their catch live to the market. Europeans did not build such compartmented ships until they began to use iron hulls in the nineteenth century.

Able to operate in rivers as well as on the open sea, brown water as well as blue, junks proved sturdy and versatile craft, joined together with nails, their timbers varnished with water-repellent tung oil, their sails slatted like Venetian blinds with bamboo battens; their sailors using compass and sounding lead. Characteristically the stern loomed higher than the bow. Whereas Europeans built their ships in the shape of a fish, bulging out from the bow and tapering to the stern, the Chinese built theirs in the shape of a water bird, swelling at the stern. Like today's giant oil tankers, the superstructure rose far aft, well behind ("abaft" in nautical lingo) any masts, leaving ample space forward for freight stowage.

From the great population reservoir in south China, junks bore passengers who intended to stay abroad, perhaps for a while, perhaps forever. These people did not bring high culture with them; most were the underprivileged at home looking for a better life abroad. But those who settled permanently would form a nucleus for the Chinese community in Singapore, joining earlier arrivals, who might have lived along the straits for generations.

Copyrighted material