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Van Duren, 'A History of Knowledge' Europe Reaches Out

AT THE BEGINNING of the Christian era the population of the world totaled about 300 million people. In 1500 it was still only about 400 million, distributed roughly as follows:

China, Japan, and Korea	130 million
Europe (including Russia)	100 million
Indian subcontinent	70 million
Southeast Asia and Indonesia	40 million
Central and western Asia	25 million
Africa	20 million
The Americas	15 million

Between 1500 and 1800 world population more than doubled, and it doubled again by 1900, to about 1.6 billion. By 1960 it had doubled once more, and it will have doubled again by the year 2000, when there will be between six and seven billion human beings on the planet.

The spread of new agricultural discoveries and techniques around the world was the primary cause of the population doubling between 1500 and 1800. Because so much more food had become available, many more people could exist. In 1500 less than a quarter of the world's cultivable land had been placed under the plow. The remainder was inhabited by hunters and gatherers, nomadic pastoralists, or hand cultivators, such as the Inca. Those primitive methods proved much less efficient than plow cultivation. Furthermore, population was limited by recurrent famines brought on by the failure of native crops and the refusal of peoples to eat strange foods even if they should become available.

After 1500, the onset of a world economy was marked by the spread of domesticated animals and food plants. Cattle, sheep, and horses were introduced into the New World, where they eventually flourished. Wheat,

originating in the Near East, spread first throughout Asia and then spanned the globe. This staple was soon joined by bananas, yams, rice, and sugar cane, all from Asia, and by maize, potatoes, tomatoes, and many other foods from the Americas.

Something like a hundred thousand years were needed to bring the world's population to the level of four hundred million reached by the year 1500. During the five years from 1995 to 2000 the number of human inhabitants of the globe will increase by more than that number. More than just a change in agricultural practices is involved in the present explosive growth in population. But the explosion began to gather strength around 1500, which makes that period a watershed in human history.

Mongol Empires

Today, Mongolia is the sixth largest country in Asia but one of the most sparsely inhabited, with a population of fewer than two million persons. A bare, windswept region of desert and grassland, Mongolia has never been able to support many people. But those it has produced have had a major effect on the rest of the world.

We have seen how, in the third century AD, the Hsiung-nu, or Huns, broke through the Great Wall of China and initiated a movement of peoples that led, two hundred years later, to the destruction of the Roman empire. After that time Mongolia remained quiet for a millennium; that is, the Chinese kept the fire burning low by a combination of military force and diplomacy. However, at the beginning of the thirteenth century a new wave of fierce and ruthless horsemen burst out of Mongolia and soon created the largest empire that the world has ever seen.

The names of the Mongol leaders are among the most famous in history. Genghis Khan (1167-1227) unified the Mongol tribes by 1206 and during the next twenty years conquered northern China and all of Asia west to the Caucasus. The Great Khan Ogedei (d. 1241) completed the conquest of China and Korea and planned the western campaign that carried the Mongols on the way to the Adriatic. In April 1241, Ogedei's Mongol hordes routed armies of Poles, Germans, and Hungarians at Legnitz and Mohi, within easy distance of Vienna. Only the death of Ogedei in December of that year saved Europe from these new barbarians.

Kublai Khan (1215-1294) founded the Yuan dynasty, and, as the first Chinese emperor of his line, reunited China for the first time since the fall of the T'angs, in 907. Finally, Timur (1336-1405), who because of his large leg was called Timur Lang, or Tamerlane, with unexampled barbarity conquered a vast empire that ranged from southern Russia to

paign to persuade some powerful Portuguese or Spaniard to sponsor his plan to sail westward to India and Cathay. His certainty was such that many were interested; they believed that a man so lacking in doubts must be right.

Columbus did not conceal from his backers that his certainty was not based on the ordinary foundations. Neither reason nor mathematics nor even maps underlay his decision to sail westward, he told King Ferdinand and Queen Isabella in 1502. His conviction came from certain passages in the Bible, for example, Isaiah 11:10-12 and II Esdras 3:18. These fanciful geographical sources were persuasive for the financial backers of those times, as they would not be today.

After years of negotiations, Columbus was finally permitted to make his proposal to the Spanish king and queen in 1490. They were stunned by his demands, which were extravagant, not to say scandalous. No explorer had ever asked to be made a noble, with his titles to remain in his family forever, and to receive a 10 percent permanent commission on all transactions that should occur in his domain. He was turned down, whereupon he left the Spanish court early in 1492, headed for France and England. Before he got far, friends at court persuaded Ferdinand and Isabella to recall him, and all his requests were met.

Columbus was an active not a passive genius, and his energy and sense of his own mission stood him in good stead as he oversaw the purchase and fitting out of his three vessels. He was greatly aided by his friend Martín Alonso Pinzón, who sailed on the *Pinta* and to whom more credit is owing for the whole enterprise than Columbus was ever willing to allow. The expedition was ready in a shorter time than anyone thought possible, and the *Santa Maria*, the *Pinta*, and the *Niña* left Palos, half an hour before sunrise, on August 3, 1492.

Columbus's crew had been hastily assembled and was as ignorant and superstitious as any group of seamen in those times. Columbus understood he faced a daunting task in having the men sail westward through an empty ocean day after day, week after week. At the same time, he wished to keep both his course and the distances sailed each day concealed from his crew, for fear that they might sell his secrets to other adventurers. This conflict led to contradictions, which are only partly resolved by a comparison of his official account of the voyage and his private journal. Further confusions were introduced by his shockingly bad measurements of the height of the North Star, which led to wide miscalculations of his ships' position at any given time.

In the end, how could he fail to find America if he only managed to keep going? South, Central, and North America, after all, form an impassable, 8,700-mile-long barrier all the way from about 57° south latitude to about 70° north latitude. To miss both continents and the land bridge connect-

Columbus

The trade remained more complicated than the Portuguese liked, for Indian middlemen now ate up much of its profits. Could a way be found to the East Indies, the ultimate source of the spices, so that the fabulously valuable products could be bought direct from those who grew them, creating a monopoly of trade and profits? Muslim pirates infested the Indian Ocean. Hence, Portuguese and Spanish explorers began to dream of a westward route that might avoid all competition.

Christopher Columbus (1451-1506) realized the dream. Italy claims him as a native son, and indeed he was born on her soil, in Genoa, but in every other respect he was not Italian. He may have been the child of Spanish-Jewish parents exiled by the Inquisition. Whatever his descent, he arrived in Portugal on August 13, 1476, swimming ashore from a burning ship. This mythical appearance on the world scene was typical of the man, and he took it to be prophetic of his future greatness.

Columbus was surely brilliant. He was also probably mad. His brilliance was manifest in many ways. An excellent navigator and a capable, experienced seaman, he plotted a route to the "Indies" that was correct in every way, except that he made a number of miscalculations, based partly on ignorance and partly on the monomania that led him to believe true whatever he wanted to be true. His navigational skill, combined with his monomania, resulted in his absolutely certain belief that "India" (if not "Cathay," that is, China) lay about 3,900 miles west of the Canaries. That is not where India is, or China, but it is almost precisely where the Americas are found. Was this brilliance, madness, or fool luck?

Columbus's monomaniacal certainty that he was right about the things that were most important to him brought him much success, as well as tragic failure and loss. Within two years of his swim to shore he had persuaded a leading family of Portugal to permit him to marry one of their most eligible young women. Columbus thereupon began his long cam-

Pay close attention!
to Van Doren's exploration of Columbus's description.
look for the 3 G's
and note his Explorer's Act

ting them, a ship sailing westward would have to swing south around Cape Horn or north through the nearly permanent ice sheet of the Arctic Circle. Neither would happen to Columbus. Thus, on the wings of his own mad certainty and geographical inevitability he discovered America, sighting land for the first time on October 12, 1492. It was a lovely little island, one of the Bahamas, which he named San Salvador. It is now called Guanahani.

The marvelous irony is that Columbus never knew he had discovered a new world. In all he made four voyages to the West Indies, but he persisted in believing that he was in the East Indies, that Japan and China were nearby, that India was just over the horizon. He was certain of that. The Bible had told him so. But what did his error matter, except for Columbus's personal life? Others, after him, soon discovered where they actually were, and wherever they were there was much that was wonderful and strange, with gold and silver to be had for almost no trouble. There were also tobacco and cotton to carry back to Europe. They would change life in the Old World even more than gold.

Columbus's personal life turned out to be an abject failure despite his astounding success as a greatly mistaken but even more greatly fortunate navigator. A magnificent seaman, he was an abysmal administrator. Ferdinand and Isabella soon saw this. They had made him promises, and they never ceased to be generous and affectionate toward this strange, mad, wonderful man who had made them almost as famous as he was. But they could not endure his autocratic assurance that he was the king of the Western World, and they merely the Spanish viceroys.

In 1500, during Columbus's third sojourn, they sent an ambassador plenipotentiary to Santo Domingo, on Española, Columbus's name for the island that is now divided between Haiti and the Dominican Republic. Months of bitter negotiations ensued, but Columbus, who really was only a viceroy, could not win them, and he was finally arrested and returned to Spain in shackles. The queen ordered that he be released and that he appear before her. When he did so, this great man fell to his knees and burst into tears.

There is a sense in which Columbus did not discover America, for European fishermen had known about the existence of uncharted land in the Western Ocean for centuries before he ever got there. It had been in their interest to keep America secret, and they had done so since the Icelandic voyages of the tenth century, and perhaps for centuries prior to that. It was in Columbus's interest to make America public, to proclaim it to the world, even if he did not know it was America. He was even more successful at revealing the secret than the fisherman had been at keeping it. And once the secret was out, the world was never the same.

Sailing Around the World

The discovery of America by Christopher Columbus is probably the single greatest addition to human knowledge ever made by one man. But there was still much to know. Columbus had insisted that the earth was round, and that by sailing westward a sailor would eventually come back home. But was this really true? No one could be sure until someone had done it. And the West Indies, it had to be admitted, were not the East Indies. Rich and interesting as the new lands were, they were not the Spice Islands which Europeans had dreamed of gaining direct access to for so long.

The Portuguese navigator Ferdinand Magellan (c.1480-1521) was chosen by the Spaniards to resolve the problem. He was to seek a southwest route to the East Indies, around the tip of South America. Could a way be found?

“Survey says . . .
Yes!”

~~reductions. Two ships reached the Moluccas. Only one returned to Spain, under the command of Juan Sebastián Elcano, a Basque navigator who had been Magellan's second in command. His ship, the *Vittoria*, limped home, leaking at every seam, but she was laden with spices, and she had sailed around the world. Elcano was rewarded with an augmentation to his coat of arms, a globe with the inscription *Primum circumdixi me*: "You were the first to encircle me."~~

The Birth of World Trade

All of the oceans were now proved to be connected, and no reasonable person could ever think again that the earth was anything but round. Since the oceans were open in every direction, they were theoretically free for all ships to sail around the world. But the passage through Magellan's narrow strait, possible only during the months of December through April (the southern summer), was difficult at best, and it could be guarded. For a century Spain and Portugal managed, by force and guile, to maintain a monopoly of the southern trade route between West and East. Frustrated, the English, French, and Dutch began to search for a northern route that would be free of harassment by Spanish and Portuguese men-of-war. The result was another surprise, the discovery of the continent of North America, whose vast potential riches were soon realized by all of Europe. And thus a new kind of trade was born that ultimately would bring the whole world together into one economic entity, no matter how many separate political units it might hold.

Within a century this trade no longer dealt primarily in luxury goods. Large profits were to be made in the bulk shipment of mundane things like cloth, sugar, and rum. It was a far cry from the old overland trade in small amounts of valuable spices and drugs that could be carried on a camel's back. No one complained about the change, for the riches to be gained were incomparably greater. Besides, the trade routes—sea routes—could be controlled by Europeans from one end to the other. No middlemen were needed, Arab or otherwise.

Soon, other bulky cargoes began to be carried, like tobacco and rice and even, in the nineteenth century, granite and ice, which started as ballast but ended up making the fortunes of New England captains. Shiploads of cheap Chinese porcelains were also brought from the Orient to America and Europe. These goods helped to define Western taste for generations.

In this new world sugar and slavery became inextricably linked. Prior to 1500 the world's sweet tooth had had to be satisfied by honey and by a few rare sweetmeats from exotic sources in the East. First the Spanish, then the English, established sugar plantations in the Caribbean islands and Central America. Portuguese adventurers founded their own sugar

plantations in Brazil. Sugar became as plentiful as salt, and as profitable. But labor was always short in these plantations. The work was hard and killed men. Native populations, sparse to begin with, had been further reduced by the European onslaught, which brought not only cruel weapons but also strange diseases against which the natives did not possess immunity. The solution was African slavery. For three centuries, African slaves were the most valuable of all cargoes, even if only half of those shipped on vessels leaving the coast of West Africa ever reached the Americas alive. If any objected to this trade in human beings, Aristotle's doctrine of natural slavery could always be invoked to justify it. And who was more "naturally" a slave than a man or woman whose skin was black? Few questioned the "logic" of this argument until the nineteenth century.

Trade in Ideas = Cultural Diffusion

The ships that plied the oceans of the world during the three centuries after 1492 carried invisible cargoes in addition to the bulk cargoes that were visible to all. These were knowledge and ideas, together with religious beliefs, and they flowed in both directions, from West to East and from East to West. And in the interchange, ideas were transformed.

Gunpowder, invented in China around 1000 AD, is a good example of the change. The Chinese used gunpowder primarily to make fireworks and for other peaceful purposes. Arab mercenaries, obtaining gunpowder from the Chinese, made the first guns. The Europeans perfected them. More, they studied the art of using guns and cannon with a unique intensity. By 1500, European military strategy, both on sea and land, was based on the concept of acquiring and maintaining superior firepower. And to this day, in the West, the superiority of firepower over manpower and tactics has persisted as the central idea of military thinking.

Since Western military leaders have always agreed on the priority of this principle, almost all wars among Western powers have been won by the side possessing superiority in weapons and ammunition. Sometimes the weaker side has been able to put up a good fight, as for example in the American Civil War, when the South, lacking the foundries of the North and thus the capability of producing comparable armaments, made up for their disadvantage for close to four years with superior tactics. One must assume that the men, considered objectively, were equal, since brothers often fought on opposite sides in that war. Eventually, the greater weight of guns and armor that could be brought to bear by the North won the war, thus confirming the age-old prejudice.

Only in the twentieth century has the prejudice been successfully countered. In the Vietnam War, for example, the United States, possess-

ing overwhelming superiority in firepower, was defeated by an army of irregulars armed with rifles and grenades instead of bombs and fireships, and whose men rode bicycles along jungle trails instead of tanks, which could only follow the roads. As a consequence, that war could turn out to be one of the most important in history, not only for its political reverberations but also because it may force a change in the way military men think.

However, it must be noted that this obvious lesson did not bring about a change in the thought of Soviet strategists, who, only a few years after the end of the Vietnam War, found themselves embroiled in a similar conflict in Afghanistan. Like the American generals in Vietnam, the Soviet generals in Afghanistan believed they could not fail to win because of their heavier tanks and their larger projectiles. They, too, were defeated.

The belief in the advantage of possessing superior firepower is not just a prejudice, of course. Other things being equal, the side having the bigger, faster-firing guns will almost always win. (The same went for the side having the sharper swords and the better armor, or the better arrows and the stronger horses, in another age.) And for centuries following that remarkable time when Europe reached out and discovered the rest of the world, other things *were* equal. Soldiers of the East were no better or worse than those of the West. Nor were the tactics of either side notably superior. Thus the fact that the West continued to possess the bigger guns meant that it almost always won its battles with Eastern foes.

In other words, Vasco da Gama's action in 1502 was not an accident. When he brutally set fire to an Arab ship with his heavier guns, he assured his victorious side a monopoly of trade. Such actions, and such consequences, were commonplace. Thus a myth grew up that the West was "irresistible." Since both East and West came to believe it, the myth was the most powerful of all weapons in the West's arsenal.

It could only be countered by another myth. The Europeans who visited China and India found both countries so vast that for a long time they could not grasp their complexity. The secrets of power, particularly in China, evaded Westerners. They could not understand why knowledge of a two-thousand-year-old text should confer supreme power on some old man and cause him to be obeyed as a representative of an emperor whom no European ever met. Thus Europeans did not know who ruled in China and how he, she, or they ruled, and since they could do business without this knowledge, Westerners did not seek to learn it. The myth of the "mysterious" East was born during those first meetings between East and West, and it persisted for many generations. And their presumed mystery was the only protection Easterners had against the big guns of the West. There were two things that the West thought they knew about the East.

First, the East lacked any respectable religion, which meant any monotheistic religion. Second, the East was incredibly rich. We will return to the matter of the "riches of the East" in a moment.

In trying to persuade Ferdinand and Isabella to support his venture, Columbus had always emphasized two points above all others. There was gold to be had for the taking in the New World. In return, Christianity could and should be brought to the natives, innocent pagans as they undoubtedly were. The promise of gold did not fall on deaf ears, although the king and queen, being truly pious, may have reacted even more strongly to the idea of helping to spread the gospel over the newly discovered lands.

Unfortunately for the reputation of Christianity in the East, that religion had just begun to split into warring factions when Columbus discovered the New World. Ferdinand and Isabella, for example, were certain that it was Roman Catholic Christianity that would benefit the innocent natives and bring them to salvation, if necessary at the point of a gun. A century later, in North America, the English and the Dutch brought Protestant divines to convert the Indians. The natives usually converted, for the firepower of the Europeans was irresistible. But the new converts watched in amazement as the apostles of peace fought each other over questions of doctrine that the innocent natives could not understand.

Apart from salvation, did the natives benefit from their new religion? Certainly yes. If it had not been for the missionaries who accompanied the soldiers and the traders, the natives would have fared even worse than they did. They did not fare well, for the missionaries were usually comparatively powerless. But they were not wholly without power, and more than once they were able to insist on better treatment of native peoples than they would otherwise have received.

Today, the countries that make up the Third World are generally perceived as extremely poor. During the first centuries after 1500 the same countries were generally perceived as enormously rich. Has their economic situation changed so radically? Relative to the West it has changed somewhat, but not enough to explain the change in perspective, which is owing to our having greater understanding today of wealth and poverty than our forefathers possessed.

The European sailors, soldiers, and merchants who first visited the East were too unsophisticated politically to realize that the East seemed rich because only a few persons among a great many possessed all of the wealth. Europeans did not even recognize the poverty in which most Easterners lived. Nor did they understand that this abject poverty was created by birth, maintained by custom, and mandated by law.

One reason they did not comprehend the poverty of the East was the extremes of wealth and poverty at home, from some of the same causes.

But in most European countries more mobility existed between economic classes, and besides, even as early as the middle of the sixteenth century, there were already ideas abroad about social and economic equality that colored everything Europeans thought. Those ideas did not exist in the East until Westerners began to export them to the rest of the world at the beginning of the nineteenth century after the French Revolution, which is to say three hundred years after Columbus discovered America.

In the end it would be ideas that dominated the trade between West and East. But no one knew this at the time.

Homage to Columbus

Try to imagine the world into which Columbus was born in 1451. Suppose you were a European, of any country. What would the world have looked like to you?

In the first place, it would not have looked round. The mathematical idea of a round earth goes all the way back to the ancient Greeks, but it was an abstraction for most people everywhere. (Sailors, who could see a ship disappear over the horizon, knew at least that the sea was not flat.)

The roundness of the earth is not an abstraction for us. We are quite certain that if we decide to travel around the globe, in any direction—east, west, north, south—we will sooner or later return to where we started. If we follow established routes, it need not take long at all, three or four days at the most. Furthermore, we know that, within the limits of political calm or turmoil, we will be just as safe anywhere on earth as we are at home. That is, we are certain that there are no monsters or other mystical barriers that would hinder us from circumnavigating the globe.

The world would not have looked round to you in 1450 because your mind, unless you were a genius like Columbus, could not have conceived it as round, which is to say, as we conceive it. Columbus changed the picture of the world that is in everybody's head. No one else who ever lived has done that so thoroughly.

Those were all great men, those explorers, those discoverers. Prince Henry the Navigator. Bartolomeu Dias. Vasco de Gama. Ferdinand Magellan. And so many others. They all took chances that stagger the mind. Most of them never returned home to enjoy the fruits of their great discoveries. Of the two hundred and seventy men who accompanied Magellan on his five ships when he left Spain in 1519, only eighteen returned two years later. A few had deserted, but most had died of starvation, illness, or wounds. The chance of surviving one of those early voyages, breathtaking in their scope and daring, was much slimmer than the dangers faced by Neil Armstrong when he went to the moon in 1969. And yet in the harbors of Spain and Portugal in the early years of the

sixteenth century, and later in the English, French, and Dutch ports as well, the steady stream of ships that departed those places never lacked for sailors to man them and for captains to lead them.

They were not rash. Like Neil Armstrong and the other astronauts, they were convinced that they were supported by the best technological support available in the world. In other words, they believed they had the best chance possible. They went anyway, often marrying and fathering a child before they departed so that their names might survive, if not their physical being, and they seldom failed to write their wills. They went despite their fears, for nothing could stop them from going.

Why did they go? For many, the promise of great wealth, real or imagined, was enough to draw them from their homes and down to the sea in ships. For those who went after the first great discoveries had been made, the pursuit of wealth may often have been the greatest lure. But I do not think it was so for the discoverers themselves. And certainly it was not so for Columbus.

Brilliant as he may have been, and mad as well, Christopher Columbus was one of the most remarkable men who ever lived. He never turned aside from the opportunity of wealth, but wealth was not what he sought, what he was willing to give his life for. What he sought was eternal fame, for he knew, as perhaps no one else realized in his time, that the discovery of a new world would bring him that.

The overweening desire for honor or fame was called by the poet John Milton "that last infirmity of noble mind." The phrase is often misunderstood. Milton meant that of all the motives that drive men, there is only one that is greater than the desire for fame and honor. That is the wish for salvation, for Christian blessedness. The desire for fame possesses a high purity that is only exceeded by what the saints want or know. Columbus was not a saint, God knows; he was much too great a sinner for that. But if there are secular saints, men and women who possess a purity of heart and will that is just short of the saintly and the divine, then Columbus was one of those.