

In the junk yard, pieces appeared
like rusted treasures in the tall grass.


A tractor fan. Some pipe.

And bearings and bolts that required every muscle to remove.

“*Tonga!*” he’d shout to the birds and spiders,
holding up his prize.

But as William dragged his metals home,
people called out,

“This boy is *misala*. Only crazy people play with trash!”



After many weeks, William arranged his pieces in the dirt:
a broken bicycle, rusted bottle caps, and plastic pipe,
even a small generator that powered a headlight on a bike.



For three days, he bolted, banged, and tinkered
while chickens squawked and dogs barked
and neighbors shook their heads, saying,
"What's *misala* doing now?"





His cousin Geoffrey and best friend Gilbert soon appeared.


"*Muli bwanji*," they greeted. "Can we help with electric wind?"

"Grab your pangas and follow me," he said, and took them into the forest.

Together, they swung their sharp blades into the trunks of blue gum trees, then hammered them together to make the tower.



Standing atop, William shouted,
"Bring it up!"
while the boys tugged and heaved.
A crowd gathered below and gazed at this strange machine
that now leaned and wobbled like a clumsy giraffe.
Some giggled, others teased, but William waited for the wind.



Like always, it came,

first a breeze, then a gusting gale.

The tower swayed and the blades spun round.

With sore hands once slowed by hunger and darkness
William connected wires to a small bulb, which flickered at first,
then surged as bright as the sun.



"Tonga!" he shouted. "I have made electric wind!"

“Wachitabwino!” a man yelled. “Well done!”

As the doubters clapped and cheered,

William knew he had just begun.

Light could not fill empty bellies,

but another windmill could soak the dry ground,

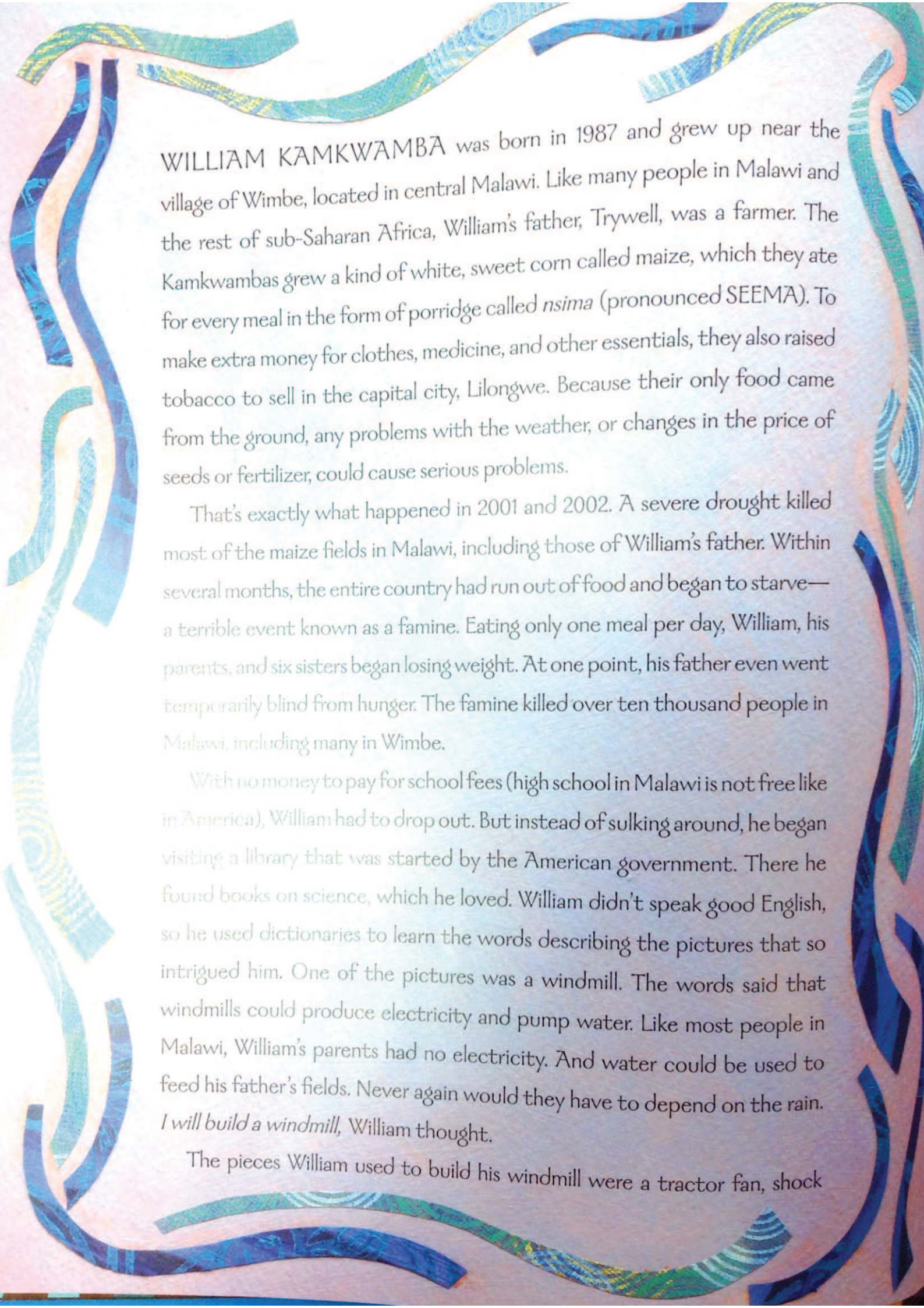
creating food where once there was none.

Magetsisa mphepo—electric wind—can feed my country, William thought.



And that was the strongest magic of all.





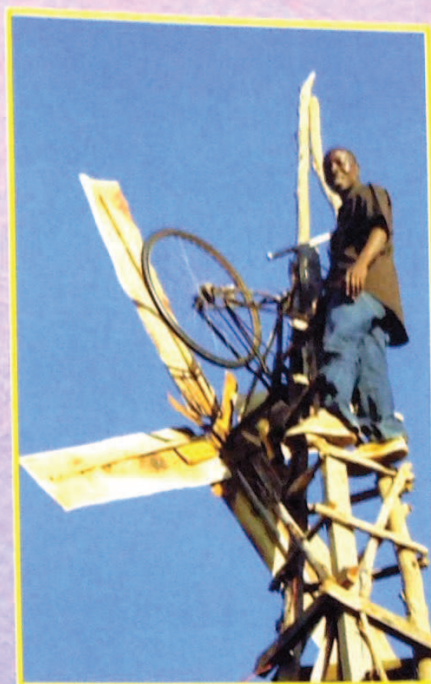
WILLIAM KAMKWAMBA was born in 1987 and grew up near the village of Wimbe, located in central Malawi. Like many people in Malawi and the rest of sub-Saharan Africa, William's father, Trywell, was a farmer. The Kamkwambas grew a kind of white, sweet corn called maize, which they ate for every meal in the form of porridge called *nsima* (pronounced SEEMA). To make extra money for clothes, medicine, and other essentials, they also raised tobacco to sell in the capital city, Lilongwe. Because their only food came from the ground, any problems with the weather, or changes in the price of seeds or fertilizer, could cause serious problems.

That's exactly what happened in 2001 and 2002. A severe drought killed most of the maize fields in Malawi, including those of William's father. Within several months, the entire country had run out of food and began to starve—a terrible event known as a famine. Eating only one meal per day, William, his parents, and six sisters began losing weight. At one point, his father even went temporarily blind from hunger. The famine killed over ten thousand people in Malawi, including many in Wimbe.

With no money to pay for school fees (high school in Malawi is not free like in America), William had to drop out. But instead of sulking around, he began visiting a library that was started by the American government. There he found books on science, which he loved. William didn't speak good English, so he used dictionaries to learn the words describing the pictures that so intrigued him. One of the pictures was a windmill. The words said that windmills could produce electricity and pump water. Like most people in Malawi, William's parents had no electricity. And water could be used to feed his father's fields. Never again would they have to depend on the rain. *I will build a windmill*, William thought.

The pieces William used to build his windmill were a tractor fan, shock

absorber, and the frame of a broken bicycle missing a wheel. For blades, he melted plastic pipe over a fire and flattened them, then carved their shape with a saw. For a generator, he used a dynamo, which is a tiny bottle-shaped device that produces electricity by turning magnets inside a coil of wire, something called electromagnetism. When the wind blew, the blades acted like pedals and spun the tire, which turned the coils inside the dynamo and produced a current. A wire from the dynamo reached down to William's room and powered a small lightbulb. He was fourteen years old.



William Kamkwamba atop his windmill, June 2007

Eventually, William used his windmill to charge a car battery, allowing him to power four lightbulbs in his parents' house. But his dream of pumping water wasn't achieved until several years later when he built his "Green Machine," which pulled water from a small well near his home and fed his mother's garden, allowing her to grow vegetables year-round. In 2007, William was discovered by some journalists and invited to speak at the TED conference in Tanzania. He'd never been in an airplane, or even seen the Internet. Many people were moved by his story and donated money to help send him back to school, and eventually, install a solar-powered water pump that irrigated his father's fields, forever protecting them from hunger. William is now a student at Dartmouth College in Hanover, New Hampshire. He is studying to be an engineer and plans to return to Malawi to work on renewable energy for electricity and pumping water in villages.