NEW YORK TIMES BESTSELLING AUTHOR

Yuval Noah Harari

illustrated by

Ricard Zaplana Ruiz





UNSTOPPABLE US

FROM THE AUTHOR OF THE BESTSELLING Sapiens

WHY THE WORLD ISN'T FAIR

VOL. 2





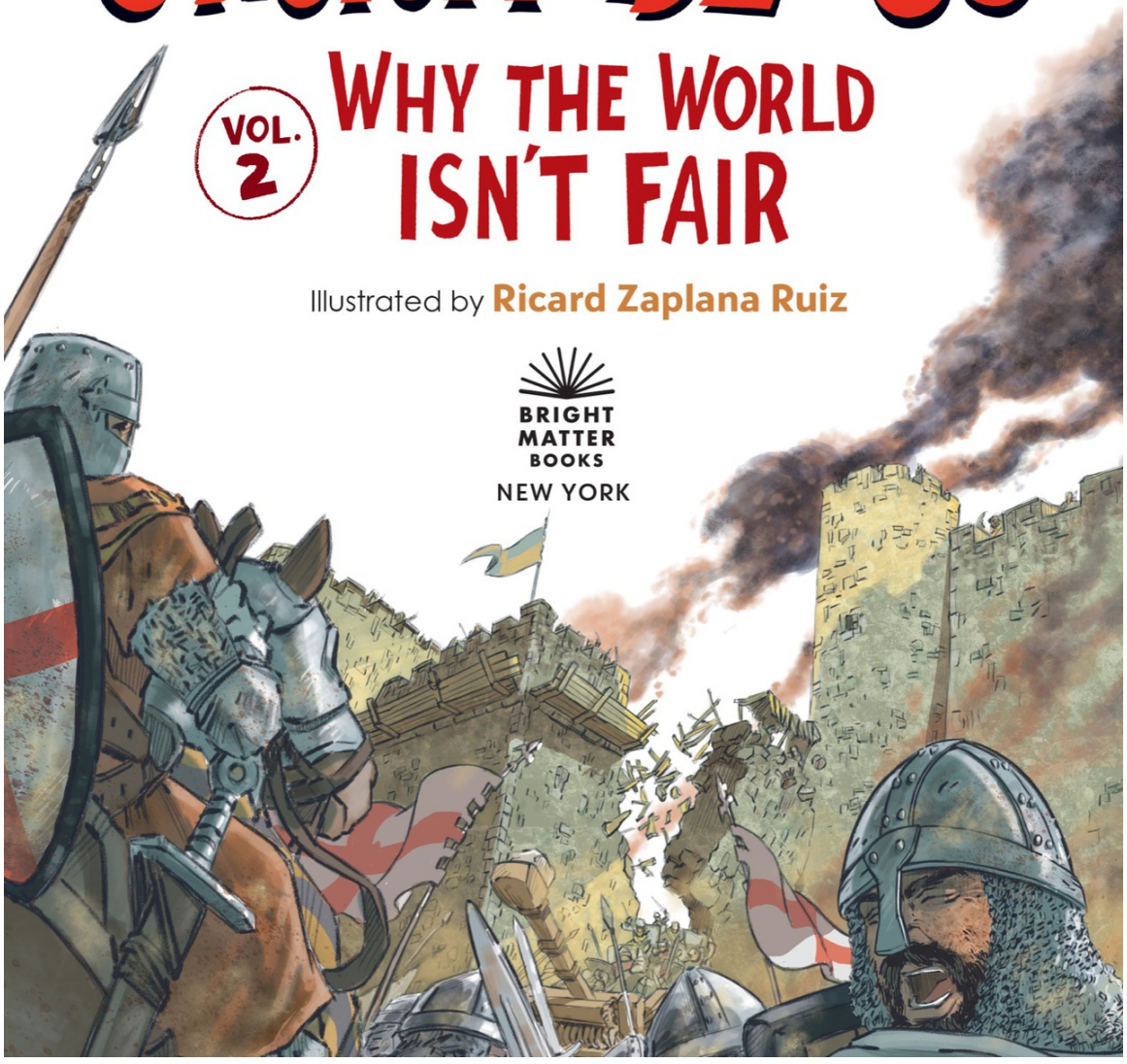
Yuval Noah Harari

UNSTOPPABLE US

VOL. 2

WHY THE WORLD ISN'T FAIR

Illustrated by Ricard Zaplana Ruiz



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To all beings—those gone, those living, and those still to come. Our ancestors made the world what it is. We can decide what the world will become.





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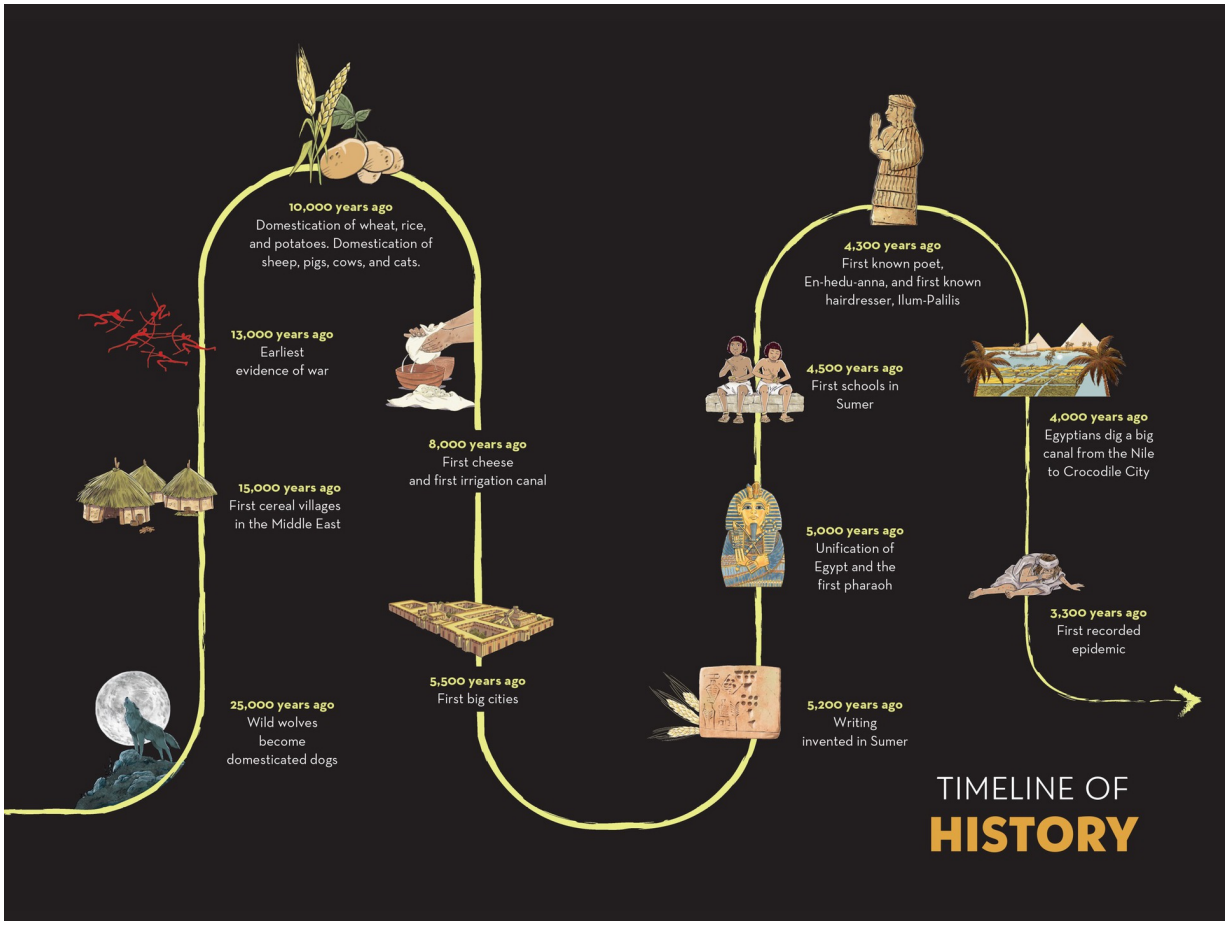
4: THE DREAMS OF DEAD PEOPLE

WORLD MAP OF HISTORY

ACKNOWLEDGMENTS

ABOUT THIS BOOK

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10,000 years ago
Domestication of wheat, rice, and potatoes. Domestication of sheep, pigs, cows, and cats.
13,000 years ago
Earliest evidence of war
8,000 years ago
First cheese and first irrigation canal
15,000 years ago
First cereal villages in the Middle East
5,500 years ago
First big cities
25,000 years ago
Wild wolves become domesticated dogs
4,300 years ago
First known poet, En-hedu-anna, and first known hairdresser, Ilum-Palilis
4,500 years ago
First schools in Sumer
4,000 years ago
Egyptians dig a big canal from the Nile to Crocodile City
5,000 years ago
Unification of Egypt and the first pharaoh
3,300 years ago
First recorded epidemic
5,200 years ago
Writing invented in Sumer
TIMELINE OF
HISTORY

UNSTOPPABLE US
VOLUME 2

A NOTE FROM THE AUTHOR

In the first volume of *Unstoppable Us,* we followed the adventures of humans from the time we were insignificant apes in the African savannah, terrified of cheetahs and hyenas, until humans became the most powerful animals on the planet, hunting down even the biggest bears and mammoths. In the second volume we explore how humans learned to control animals like dogs, chickens, and cows—and how some people also learned to control other people. Why did some humans get to be kings and queens while others had to clean their palaces and do their laundry for them? What are kings and palaces even for?

Human history is vast and fascinating. And that's why for thousands of years people have been trying to understand where we came from. We can learn about the lives of ancient people by studying what those people left behind—the ruins of ancient palaces, a broken pot, a bone of a long-dead skeleton, and even the notebooks of schoolchildren who lived long ago.

This book covers some events for which we have a lot of evidence—yes, even ancient notebooks! It also covers events for which we have little evidence. Scientists fill in the gaps using educated guesses. There are many things we don't know, and there are many things about which scientists disagree. This book is based on the latest findings, but our knowledge of the past is constantly evolving as we discover the remains of another ancient palace or another long-dead skeleton.

To present the latest scientific discoveries in a simple and fun way, this book sometimes uses fictional conversations between fictional characters. Obviously, these conversations never happened.

But the events they describe really took place, and these events have shaped the world in which we still live today.



IT'S NOT **FAIR!**

"It's not fair!" How many times have you heard that? Or said it yourself? Probably a lot.

Some people are incredibly rich. They live in mansions with swimming pools, fly around in private jets, and never wash any dishes or clean their room—because paid help does it for them. Other people are very poor. They live in huts without toilets, wait in the rain for the bus to come, and wash somebody else's dirty dishes.

Some people are extremely powerful. They make the rules, give lots of big speeches, and tell everyone what to do. Other people are far less powerful. They have to follow the rules, clap when the leader speaks, and do as they're told. Is that fair?

Kids are often asked, "What would you like to be when you grow up?" But in many countries all over the world, kids don't get to choose. You might want to be president, but if you're born to a poor family, the closest you are likely to get to the president's palace is if you are told to sweep the street in front of the gate.

Was it always like this? Were humans always divided into rich and poor, masters and servants?

Some people say that this is just the natural order of the world. Everywhere you look, the strong always rule, and the weak must obey. Movies and video games about the past are also full of kings and queens living in huge castles, ruling vast kingdoms, and giving orders to millions of others.

But in fact, originally there were no kings or kingdoms, certainly not ones with millions of inhabitants. Until about 10,000 years ago, humans lived in small bands and tribes, numbering a few thousand individuals at most.

Back then, there was often someone around who wanted to become chief and tell everybody what to do. But even the biggest chief didn't have much power. There just weren't enough people yet

to build huge castles and conquer vast kingdoms. And if a chief became too bossy and annoying, people could usually walk away and leave the bully behind.

Then something really strange happened 10,000 years ago, and it changed everything. Something gradually sucked power away from millions of humans and allowed a few ambitious people to rule over all the others.

What exactly happened 10,000 years ago, and how did it enable some people to control everybody else? Why did millions of people agree to obey a few leaders? And where did kings and kingdoms come from?

The answer to that is one of the strangest tales you'll ever hear.

And it's a true story.



1

EVERYTHING'S UNDER CONTROL

DON'T TELL ME
WHAT TO DO

Our story starts about 10,000 years ago, in the Middle East. People there, like people everywhere at the time, were hunter-gatherers. They hunted wild sheep, gazelles, rabbits, and ducks. They gathered wild wheat plants, onions, lentils, and figs. They fished along the seacoast and in the lakes and rivers, catching fish, crabs, and oysters.

Humans were already the most powerful animal around. But they didn't try to control anybody. They gathered plants but didn't tell them where to grow. They hunted animals but didn't tell them where to go.



Life wasn't always pleasant. There were still some dangerous creatures around, like snakes, and there were all kinds of disasters, from snowstorms to heat waves. Occasionally there were also brawls with the neighbors—all through history some people could have been nasty to one another.

Yet, most of the time, people had enough to eat, and a lot of free time to tell ghost stories, doze off in camp, or visit neighbors to celebrate some festival. **Wars were rare. Plagues were rare. And famines were rare.**

When the gazelles migrated somewhere else, or when there were no more ripe figs nearby, people just moved their camp to another place, following the gazelles and the figs.

THE PLANT THAT CHANGED **THE WORLD**



But in some special places, there was so much to eat that people rarely needed to move their camps. They could stay in the same place all year round. These special places were full of unique plants. The plants weren't big or beautiful, but they changed the entire world. **These plants were the cereals.**

You probably eat cereals every day. Wheat, barley, rice, maize, and millet are cereals. Bread, cookies, cakes, pasta, and noodles are made from cereals. Breakfast cereals are also made from cereals—the clue's in the name! But until about 10,000 years ago, humans seldom ate cereals.

Cereals weren't very common. Wheat, for example, didn't grow at all in America, China, or Australia. **Only some areas in the Middle East had wheat,** and even there, we're not talking entire wheat

fields. Some wheat plants grew on one hill, and others on another hill. So even in the Middle East, most bands hardly bothered with cereals…but some did.



We don't know exactly when or where some humans became particularly interested in cereals, but we can try to imagine it. Perhaps one day a girl from a band that roamed around looking for all kinds of plants and animals met a girl from another band that spent most of the time in just one place and gathered lots of wheat.

"Hello there," said the first girl. "They call me Wanda 'cause I like to wander around! What's your name?"

"People call me Wheaty 'cause I really like wheat!"

"Wheat? Pah…I don't bother picking that stuff. You can spend all day gathering wheat and still not have enough. And even if you do, the wheat grains are so hard. The one time I found a lot of wheat, I broke a tooth, got a terrible headache from all the chewing, and had a stomachache for three days!"



"You didn't do it right!" cried Wheaty. "**You can't just eat wheat grains like that!** You have to bring them back to camp, remove the tough outer shells, and grind them into tiny bits. Then you mix the grain powder with water, put it on a big flat stone by the fire—wait a

little—and you get yummy bread! Plus, no broken teeth, headaches, or stomachaches!"

"That's so much work!" gasped Wanda. "I'll stick to figs and fish."

"Well, it *is* difficult," agreed Wheaty. "But wheat has one really big advantage over figs and fish."

"What's so great about that dry little thing?"

"The thing is that unless you dry or smoke them very carefully, juicy figs and fish rot quickly. Ever tried eating a fish that's been lying around for three days?"



"Uhhh, disgusting!"

"You see? With grains it's a whole other story. **You can store them for months, no problem!** During harvest season, our band collects as much grain as we can and stores it in our camp. When we're not harvesting, we hunt and gather lots of other things like you do. We might pick figs or even manage to catch a gazelle. But sometimes there's nothing to hunt or pick."

"So you move to another valley, right?"

"No! We go back to camp, take some grain from storage, grind it, and make bread or porridge! If we gather enough grain in harvest season, we can stay in our camp all year!"

That's how some bands established permanent villages in the Middle East more than 10,000 years ago. **If they stored enough cereal grains, people didn't need to move much.** With time, it actually became more difficult to move because people accumulated all kinds of stuff in their villages. Most hunter-gatherers had few possessions, so if they decided to go, they just got up and walked. For the cereal people, it wasn't so easy.

"Tell me, Wanda, where do you sleep?" Wheaty might ask.

"Oh," explained Wanda. "When we set up camp, we clump together some reeds and branches, and we make a hut. It takes about an hour."



"Pfff…we no longer have just a camp," said Wheaty proudly. "We have a village! With houses! We gather stones, cut down tree trunks, make mud bricks, and build proper houses. We stay there all year, so it's worth the trouble. Especially during storms."

"Oh, I hate storms!" said Wanda. "Sometimes we find a cave to hide in, but usually we have to huddle together under a tree, wet and freezing, waiting for the storm to pass."

"Ha! I don't mind storms at all. I just listen to the rain tapping on the roof and the wind rattling the door, and I snuggle in my warm bed!"

“Wow! I’d love a house like that…. But what do you do when you want to move somewhere else? How do you move the house?”

“We don’t. **Why would we want to move?** We work so hard building our houses. And what about our grain? If we moved, we couldn’t carry the grain stores, could we?”

“I guess not,” agreed Wanda. “It’s hard enough carrying my little leather bag with my knives and needles.”

“You only have knives and needles? We have *so* many tools. There are flint sickles to harvest the grain, pestles and mortars to grind it, and even ovens to cook and bake food. **If we moved, we’d have to leave most of that behind.**”

“You sure have a lot of stuff.”

“Oh, there’s more,” replied Wheaty. “So much more! We keep all kinds of other things too. Like, just yesterday, I found this nice shiny stone, so I took it home. Another day our band hunted a deer with really huge antlers, so we hung the antlers on the wall. It looks nice! And we can hang all our coats and hats on it!”

“Hats? You mean you have more than one?”

“Sure. I have my old fox-tooth hat, and my new wolf-tail hat, and my bear-fur hat, and two nice straw hats with flowers!”

“**Why do you need so many hats?** You only have one head!”

Sometimes Wheaty and her band looked at all the things they had and were very pleased with themselves. But sometimes they weren’t so sure. “You know what,” the village grumbler said, “I don’t like this village anymore. It’s too crowded and dirty. And it is so noisy! Too many people around. And I’m tired of eating bread and porridge every day! I want figs and gazelle steak. And last night somebody had diarrhea just behind my house! Can you believe it?! Enough is enough! Let’s go somewhere else.”

“We get what you mean.” People nodded in agreement. “But what about all our stuff? And what about all the grain in the storerooms? We worked so hard to gather it! What if someday we cannot find figs or gazelles? Nah, let’s just stay here.”

A LAZY **IDEA**

Wheat grains are very small. So, every time Wheaty and other cereal people gathered wheat and carried it back to their village, some grains fell along the way and were lost. Do you get upset if you lose something like your smartphone? Probably. You might spend hours looking for it. But when our ancestors lost a few grains of wheat, they hardly noticed, and they certainly didn't bother looking for them. They didn't think it was important.

But actually, it was very important.

When you lose your smartphone, it doesn't grow into a smartphone tree. But when people lost grains of wheat, the grains grew into new wheat plants. That's why more and more wheat began growing along the trails people walked and around the sites where people lived.



This eventually gave some people a new idea. They liked having lots of grain in storage but were less keen on gathering it in the hills and carrying it back to the village. That was more difficult and more boring than fishing in the river or climbing trees to steal eggs. Besides, some years there was a drought and very little wheat grew. So the villagers looked for ways to make life easier—to have lots of grains without working too hard.

It was perhaps then that someone, maybe the laziest person in the village, came up with an extremely clever idea. “Wait, why do we have to go from hill to hill, gathering a few grains here and a few grains there? It would be so much easier if we could tell the wheat

where to grow. Did you notice how more wheat grows along the trails we use?"

"Yes," replied some of the others. "That's because you're a lazybones, and when you lose grain along the way, you don't bother picking it up!"

"But that's not a bad thing!" protested Lazy. "Doesn't it make life easier when wheat grows along our trails? We don't have to go out looking for it! So I was thinking, **maybe we can find a way to make the wheat grow just outside the village.**"

"How?"

"Wheat plants grow out of wheat grains, right? So, maybe instead of accidentally losing a few grains along the trails, we could deliberately scatter some around the village. Each grain will grow into a plant with ten grains. We'd have ten times more grain, and it would all be growing just outside the village instead of on some distant hill!"

"What a silly idea!" cried a man who really liked eating grain. "Throw away food instead of eating it? Who ever heard of such a thing!"

"We wouldn't be throwing it away," Lazy explained patiently. "We'd be investing it. Thanks to the grain we scatter today, we'll have much more food next year."

"It won't work," replied one wise old woman. "There are trees and bushes all around the village that would block the sunlight from the wheat. Also, trees have big roots, so they suck all the water and food from the ground. Wheat doesn't grow well in forests, you know, Lazy. If we scatter grain between the trees and bushes, it won't grow."

"But wait," intervened the shrewdest man in the village. "Why not first burn the trees and bushes, and then scatter the grain? Then the wheat won't have any competition. In a few months we'd have lots of wheat and wouldn't have to walk far to harvest it!"

Now this was a completely new idea. It meant telling wheat where to grow—and also telling trees and bushes where *not* to grow. **It meant trying to control other living things.**

Some people were upset and said that this was a bad idea. "People shouldn't tell something else how to live its life. Wheat doesn't tell us what to do, so why should we try to control wheat?"

But others liked the idea. “Why not?” they said. “Obviously, we shouldn’t go telling big deer or brave lions what to do. But wheat? It’s just a stupid little plant. We humans are much smarter.”

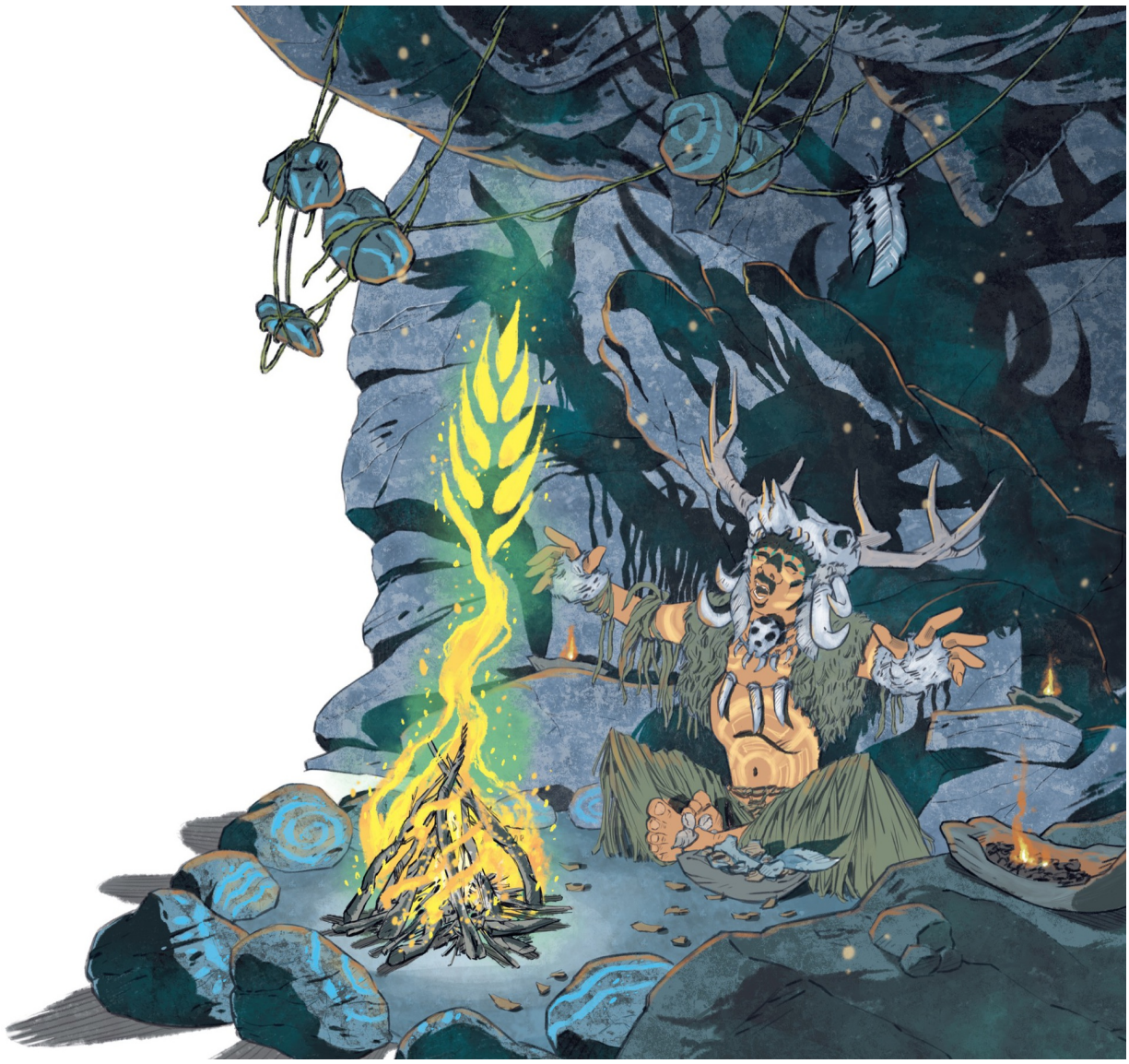
So they argued about it. And argued. And argued. And couldn’t decide what to do.



A BAD **FEELING**

Maybe they agreed to ask the spirits what they thought. Back in those days, people believed that the world was full of all kinds of spirits. They believed some spirits lived in caves, some in the sky, some on trees, and some in plants, like wheat. Before making a big decision, it was always good to talk with the spirits. That’s why one of the most important people around was the spirit expert. **Everyone believed the spirit expert could talk to the spirits,** ask them questions, and hear their answers.

The spirit expert went deep into a sacred cave and stayed there for seven days and nights, not eating anything, asking the spirits for advice. She finally came out and announced: “The wheat spirit came and told me we should not do it. **You want to start burning down trees and telling other creatures what to do?** That’s so creepy!” So they abandoned Lazy’s plan.



But after some more time—maybe after ninety-nine years—somebody in some other village came up with the same idea. Perhaps because there was a shortage of other things to eat or because they wanted to have a really big festival and needed lots of food for the guests. And again they argued and argued, until their spirit expert went into a cave. But this time, he came out and said: “The wheat spirit came and told me it was a wonderful idea for the smart humans to help poor little wheat. Wheat wouldn’t mind at all. Wheat would actually be very happy to have our help.”

Maybe the spirit expert really thought he had met the wheat spirit and heard all that. Maybe he was so hungry that he started

imagining things. Or maybe he didn't hear anything and just liked the idea. Anyway, the people got their answer. They burned down a nearby forest and **scattered wheat grains around the village.**

It worked. A few months later, there were many stalks of wheat growing very close to the village. Now almost everybody agreed that it was a very good idea…except one old woman who said she still thought humans had no business telling wheat where to grow. "I have a bad feeling about this. I think we're going to regret it."

But nobody listened to her.

ONE LITTLE **PROBLEM**

People in the village were happy with their new invention, and it even spread to other villages. But after some time—perhaps 199 years—the grumblers grumbled and the lazybones complained. "There's a problem," they said. "Scattering grain on the ground is so inefficient! Most of the grains don't even sprout because sparrows, squirrels, and ants eat them or because the sun's too strong. Are we doing this just to feed the squirrels?"

So everyone got together and came up with a new idea. "Surely we're clever enough to help poor little wheat some more. Instead of just throwing grain on the ground, **we could dig small holes and put grains INSIDE.** Then the sparrows, squirrels, and ants wouldn't find the grains, and the sun wouldn't be too hot for them."

"That would be much more efficient!" People clapped joyfully.

"Yes," agreed the spirit expert, noticing that most of the villagers liked the idea. "We humans should have more control over wheat. The spirits approve of that." Everyone was delighted that they would have even more grain.

The villagers started making holes in the ground and putting grain inside. And to be even more efficient, **they invented a special tool to help with this.** They attached a sharp stone to the end of a long

straight stick—they'd created the first hoe! And because hoes broke whenever they hit a rock, they removed all the rocks from the fields before they started hoeing. **It was backbreaking work, but it seemed to pay off.** After all the rock moving and hole digging, the grains were better protected from pests and the sun. Even more wheat grew around the village, and these new ideas spread to other villages, where they were copied.



DIGGING
DITCHES

But eventually—maybe after 999 years—some people started complaining. Perhaps their village was in a particularly dry area. "There's a problem," they said. "We work hard moving rocks, hoeing, and sowing—and still lots of the grains don't sprout! They're just not getting enough water. What's the point of all that work if the plants die of thirst?"

So everybody thought very hard about this. The smartest villagers scratched their heads until their hair fell out, and the spirit expert went to talk with all the spirits she knew. In the end, it was the village lazybones who said, "Well, we could be more efficient. After digging the holes and sowing the grains, we could water them a little.

We'll get amazing results! I mean, we can carry water in skins from the river."

People were a bit surprised—Lazybones was suggesting they do *more* work! But it sounded like a good idea, so they began carrying water to the wheat field.

This time it took just one year and three months for everyone to start complaining angrily. "We're tired of carrying water all day!" they shouted.

Lazybones shouted the loudest. "This isn't what I meant!" he cried. "It's way too much work. I'm never suggesting anything ever again!"

"Hmmm…," murmured the spirit expert. "I may have an idea…. Why don't we dig a ditch? **The water will flow to our fields by itself!** Digging the ditch will be a huge effort, but once it's done, nobody will ever have to carry water again!"

People were now trying to control a lot of different things: they told the wheat to grow in the fields, they told the trees and rocks to get out, they told the sparrows and squirrels to stay away, and they told the water to flow into the fields. And it worked. Even more wheat grew all around the village. Soon other villagers in the dry land were busy digging irrigation ditches.

There was just one problem. This time it was the clouds' fault.

CLOUD PROBLEMS

Some years the village had a very good time…tons of wheat grew all around and people had plenty to eat. **But some years were bad.** If a village girl met a girl from a wandering band, she could tell her a lot of hair-raising stories.

"Hello there," said the wandering girl. "They call me Sparrow 'cause I like to move around all the time. Who are you?"

"People call me Wheaty, after my great-great-grandmother. I live in the village."

“So, how’s life in the village?” asked Sparrow.

“Not so good. This year we had more wheat growing than ever before! It was amazing! But two months ago, I noticed a **little brown dot on one of the stalks.**”

“One brown dot?” wondered Sparrow. “That’s no big deal, is it?”

“Well,” answered Wheaty, “that’s what I thought. But a week later there were dots on lots of stalks. I told my parents, but they didn’t know what to do. Another week passed, and the dots had spread everywhere! Almost all our wheat died! Now we don’t have much to eat, so I thought I’d wander around and maybe find some mushrooms and fruit. I’m famished!”

“Does it happen a lot, that thing with the brown dots?”

“No,” explained Wheaty. “This is the first time. But there are other things. Three years ago, just when the wheat was almost ripe, I woke up in the morning to a very strange noise. Never heard anything like it! It was a terrible buzzing sound! I went outside, and you could hardly see the sun—there were **clouds of locusts swarming everywhere!** We tried to scare them away, shouting and clapping, but they just kept coming. They ate almost all our wheat. That was a really bad year!”



“That’s terrible!” gasped Sparrow.

“Well, it only happened that one time. At least I only saw it once. My grandpa says it happens about every twenty years. But Grandpa likes telling scary stories, so I don’t know if I believe him. Still, there’s something worse than brown dots and locusts, and that’s when the

clouds don't come. Then there's no rain, the river almost dries, and there's no water in the irrigation ditch. We run around with water buckets trying to get some water to the fields, but it's no good. Almost no wheat grows, and we have hardly anything to eat."

Villagers had a big problem: in good years, everybody ate well, but when diseases or locusts or droughts came, people starved, and they couldn't just move to another valley like the gatherers.

So they went to the spirit expert and asked him for advice. The spirit expert went into his cave for seven days, then another seven days, and another seven, and finally came out with an answer. When Wheaty next met Sparrow, she had big news to tell her….

A HOUSE FOR THE GODS

"We solved it!" Wheaty announced triumphantly.

"Solved what? Your problems with brown dots and locusts and rain clouds?"

"Exactly! Our spirit expert told us what to do!"

"Spirit expert?" Sparrow asked. "You mean the fellow who talks to plants and animals? We have one too! She mostly likes talking to porcupines."

"Porcupines? What are they good for? Our spirit expert talks with the spirits of the clouds and the river and the wheat. They're the ones that matter! Actually, he told us not to call them spirits anymore—it's insulting. We now call them gods. And he also told us to stop calling him spirit expert—it's a silly name. We should call him priest. I sometimes get into trouble because I forget."



“ ‘Priest’? I’ve never heard that word. But anyway, what was his big idea?”

“He said we should make a deal with the spirit— I mean, the gods of the rain clouds and the river and the wheat. We should build them a nice big house in the middle of the village and call it the temple. And we should bring them a gift every day, something like a loaf of bread or a duck. In return, they’ll keep away the brown dots and locusts, and they’ll make sure that the rain clouds always come and the river always has enough water.”

“And you did it?” asked Sparrow. “It sounds like a lot of hard work.”

“Well, we’re not afraid of work,” Wheaty answered proudly. “We’re afraid of the brown dots and locusts and droughts. So we did it! **We built a beautiful temple, and we bring gifts every day.**”

“And it works?”

“Sure it does! The gods protect us! For the last three years, the rain clouds have always come on time, and there have been no locusts!”

“So what are you doing here in the forest?” asked Sparrow.

“Erm…well…” Wheaty hesitated before admitting, “The brown dots came back.”

“So the priest guy fooled you.”

“No, no, no! Don’t talk like that!” cried Wheaty anxiously. “You’ll upset the gods, and things will be even worse! The priest explained everything to us: we got a little lazy last year and didn’t bring the gods enough presents. I am so ashamed. Maybe it was my fault! One day it was my turn to bring the gods a loaf of bread, and on the way to the temple, I nibbled just a little bit on the side. But the gods must have seen it, and now they’re punishing everyone because of

me! I feel terrible about it. So I came here to look for something to eat. I don't want my little brother to starve just because I was so greedy!"

"I'm not buying all this, Wheaty…. Are you absolutely sure the priest is telling the truth?"

"Yes! And he said the gods will forgive us. He even had a new message: The gods love our hard work, and they promise we'll always have enough food if we work really hard. He said **we should work harder than ever to grow more wheat during the good years** so we can have enough for the bad years too."

"Work harder?" Sparrow said, rolling her eyes a bit. "But what more can you do?"

"The priest said we should clear more fields around the village and dig more irrigation ditches. Then we should build **a really big house just for storing grain**—it's called a granary. We're planning to put it near the temple. In good years, we'll put all the extra grain in the granary, so there's enough to eat when there's a bad year. To make sure no lazybones use grain from the granary when we don't really need to, we'll lock the door and make sure it can only be opened if everyone agrees."



“I’m exhausted just listening to all this! Well, I hope you know what you’re doing. Good luck, Wheaty!”

People did what the priest suggested, and it worked, at least sometimes. The villagers had to work much harder than before, but they had more protection against bad years.

THE NIGHT **WATCH**

People were pleased with their new granary, and the village grew, until it was more like a town. But after some time—maybe after 1,099 years—a new problem appeared. There was so much grain in the granary that the **nearby tribes and villages started attacking the town to steal grain.** Why work hard for months and months when you can steal all the grain you need in one night?

The townspeople assembled in the temple and talked and talked and talked some more. Finally, they decided to build a wall around the town. They also decided that a couple of people would stay up every night to guard the wall. People were now working in the fields during the day, building the wall in their spare time, and staying up at night to do guard duty.



They also appointed the bravest man in the town to be their war chief and lead the guards. Most of the time this chief didn't do much: he loafed around, practicing with his bow and arrows, or he inspected the wall for holes and nagged people to plug them. But if another tribe came to steal their grain, everybody was very happy the chief was there. He knew what to do, and he was brave and strong.

CONTROL FREAKS

That's how some gatherers became farmers who hoed the land, sowed grain, dug ditches, and guarded granaries. Scientists call all this work *agriculture,* and they call the whole process of turning gatherers into farmers the **Agricultural Revolution.** It was one of the biggest revolutions in history.

This revolution changed the way humans lived. Instead of wandering around looking for wild figs, fish, and rabbits, they went to the field every day to dig and sow. But the Agricultural Revolution changed something even more important: **it changed the way humans felt about the world**—and about their place in it.

Before the Agricultural Revolution, humans didn't try to control much. They gathered wild fruits and hunted wild animals and occasionally burned a forest or dug a trap, but they only rarely told plants where to grow, or water where to flow, or rocks where to roll. After the Agricultural Revolution, **farmers became control freaks.** From the moment they woke up until the moment they went to sleep, people like Wheaty and her family were busy telling the world around them what to do.

BIG HORN AND BA BAAA

When you want more control, it's a bit like starting a fire—it starts small, but it can grow very big and spread all around. The Agricultural Revolution began when a few humans wanted to tell a few wheat plants where to grow. But eventually farmers were trying to control everything in sight.

“If we can tell wheat to grow in fields and water to flow in ditches,” these farmers thought, “perhaps we can also tell sheep, horses, and chickens what to do.”

Controlling animals was even more difficult than controlling wheat and water—wild sheep, horses, and chickens definitely didn’t want to obey humans! But people kept trying, and step by step, they managed to bring some animals under their command.

That’s something a farmer boy called Wolf might have told a gatherer boy called Squirrel when they met. Perhaps Squirrel was climbing a tree to pick nuts when he spotted the weirdest thing he ever saw in his life—Wolf walking along proudly with a stick in his hand, leading a whole herd of sheep!



“What’s going on?” cried Squirrel, opening his eyes wide in disbelief. “Are those sheep actually *following* you?”

“Of course they are,” said Wolf. “They’re our sheep.”

“What do you mean ‘our sheep’? How can that be? My band sometimes hunts sheep, but **they’re frightened of us.** They never let us near them. To be honest, I’m a little bit frightened of them too.”

“Frightened of *sheep*?” Wolf laughed.

“Well, yes,” replied Squirrel. “There’s this big ram with huge horns —we call him Big Horn—and he once rammed my grandfather so hard that Grampa still limps. There’s also this skinny little sheep that sometimes comes sniffing around our camp—she’s very curious! But if anyone tries to get near her, she runs like the wind. **We hardly**

ever manage to catch sheep, unless they are old or injured. And the bears and wolves usually get them first!"

"It's completely different with our sheep," explained Wolf.

"I can see! Where did your amazing sheep come from?"

"It all started in my grandmother's day," said Wolf. "Some of the villagers had a brilliant idea. They built a fence across a narrow gorge near the village and chased a herd of sheep into it. Then they blocked the other end, trapping the sheep in the gorge. No bears or wolves could get to them, but we could catch one any time we wanted meat!"

"That's very clever," said Squirrel, nodding. "But surely the poor sheep wanted to get out, didn't they? I know if I were a sheep, I wouldn't want to be stuck in a gorge all my life. I'd want to run free!"

"Well, yeah, I guess at first they didn't like it much. My grandma told me there was this big ram who was very strong and violent, and he sure didn't want to be stuck in the gorge. Whenever anyone came near, he would charge them with his big horns. He even rammed the fence and almost knocked it down, letting the whole herd out."



“Sounds like a sheep hero!” Squirrel cried admiringly.

“But not a hero to the hungry villagers. **The village chief killed him, and the villagers had a big feast.** They hung the ram’s skull on the temple wall. It happened long before I was born, but his skull is still there whenever I go to the temple.”

“Oh,” said Squirrel, looking a bit uneasy.

“Actually,” added Wolf, “my grandma also told me about a very intelligent, adventurous sheep who always tried to climb the steep slopes of the gorge. Because she was always running and jumping instead of munching grass, she was the skinniest sheep of all. My grandma liked her, and people called her Ba Baaa because she always made *ba baaa* sounds.”

“And what happened to Ba Baaa?” asked Squirrel.

“One day Ba Baaa found a path and managed to climb almost to the top of the slope, ba-baaaing at the other sheep to follow her and explore the world.”

“So they got away?”

“No. Someone saw what was happening and stopped them. The village chief was really annoyed with Ba Baaa. He said a sheep that’s always trying to escape and doesn’t have much meat on her bones is a waste of grass. So he killed her, the villagers had a small feast, and they hung her skull in the temple too.”

“Oh no! Poor Ba Baaa!” cried Squirrel.

“Yeah, I guess it was a shame. But it was a long time ago, before I was born. Most of the sheep are much easier to control now. We only keep the ones that aren’t too much trouble. And you know, **when the most obedient ram and the most unadventurous ewe had lambs, the lambs were like their parents** and were even easier to manage. That’s why we now sometimes let the sheep out of the gorge.”

“And they just come back?” marveled Squirrel.

“Well, not quite. They still don’t like it in the gorge. That’s where I come in—**I’m their shepherd.**” Wolf looked very proud of himself and raised his stick high. “I open the gate in the morning, I guard the sheep all day while they munch grass, and in the evening, I bring them back to the gorge and lock the gate. If a sheep doesn’t want to come back, I chase her and hit her with my stick until she follows me.”

FIFTY BILLION
CHICKENS

That’s how wild sheep became farm animals. Wild animals don’t like being controlled by humans, but humans kept only the most obedient animals, who produced even more obedient offspring. And after a few generations even a young boy like Wolf could control an entire herd of sheep by himself.

In much the same way, humans gained control over goats, cows, pigs, horses, donkeys, chickens, ducks, and a few other animals.

The world had never seen anything like it: **never before had one kind of animal succeeded in controlling another.** Sharks don't control fish, lions don't shepherd buffalo, and eagles don't keep sparrows in cages.

By controlling animals like sheep and horses, humans got a lot of power. Sheep, cows, and chickens provided humans with meat, milk, eggs, wool, leather, and feathers. Bulls, donkeys, and horses also supplied muscle power. Instead of going everywhere on foot, people started riding donkeys and forcing horses to pull carts. Instead of turning over the soil themselves, people yoked a big powerful bull to a plow, and in one day the bull could do more work than twenty people could in a week.

Because these animals were so important, people worked hard to protect them and breed them. With human help, **farm animals became the most common animals in the world.** Today, there are about 1.5 billion cows in the world, compared to fewer than half a million wild zebras. That's 3,000 cows for every zebra!

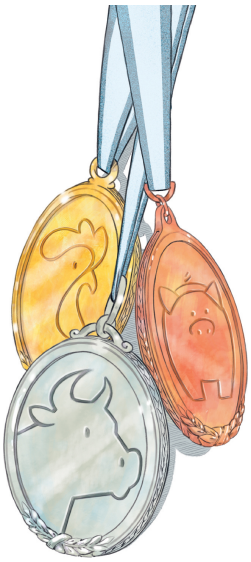
Every year humans raise more than 50 billion chickens. In contrast, there are fewer than a million storks in the world. There are 50,000 chickens for every stork. Actually, in many parts of the world, there are more chickens than all the other birds combined!

GOLD MEDAL
FOR MISERY

If you measure the success of an animal by its numbers, the Agricultural Revolution was a huge success for cows, sheep, pigs, and chickens. **But numbers don't tell the whole story.** If you held a contest to find the Most Miserable Animal That Ever Existed, the gold, silver, and bronze medals would probably be shared among cows, pigs, and chickens.

Wild chickens can live for ten years, and wild cows for twenty. But on farms, chickens and cows are slaughtered when they're still

young. The average chick lives just a month or two, while the average calf is killed before his third birthday.



Why? Because humans want to be efficient. If a calf reaches close to adult size when he's two, why keep feeding him for years? The farmer would waste a lot of food and effort without getting more meat in return. If you were a calf, you'd have to be very worried about growing up. When you're almost as tall as your mother, humans kill you and eat you.

Farmers allow animals to go on living only if they're useful for humans. So cows that produce milk, chickens that lay eggs, and bulls that pull plows are allowed to live for a few more years. But the price they pay is having a very hard life.

In the wild, bulls and cows wander freely over open prairies. But if domesticated bulls want to go on living, they must pull a plow or cart all day. Farmers sometimes cut a hole through bulls' noses, pass a rope through that hole, and control the bulls by tugging the rope. Farmers might also cut the bulls' horns, and whenever the bulls show any sign of rebellion, they are beaten. And at night, farmers lock the bulls in a small pen so they can't run away.

That's how domesticated bulls spend their entire lives, either pulling something or locked in a pen. When they're too tired to pull the plow or when they try to break away once too often, they're sent to the slaughterhouse.

In recent years, **machines have increasingly replaced bulls and other work animals in jobs like plowing fields.** But in places where bulls are still used to do the work, this is how they live.

THE UGLY SIDE
OF MILK

Milk has a dark side too. Have you ever wondered why humans drink milk from cows, sheep, and goats? It's a bit strange. Cats never drink mouse milk. Wolves don't drink antelope milk. Grizzly bears don't make cheese from elk milk.



For millions of years, humans didn't drink milk from other animals either. Human babies drank their mother's milk, but by the time they were four or five, they were weaned and never drank milk again. If you suggested to our gatherer ancestors that they should drink milk from a wild sheep, they'd think it was the most bizarre and disgusting thing they had ever heard.

Only after the Agricultural Revolution did humans start milking other animals. That's another thing that Wolf the shepherd might have explained to Squirrel the gatherer.

"What are you doing now?" Squirrel asked in amazement when he saw Wolf milking one of the sheep.

"Oh, I'm making lunch," answered Wolf. "Would you like to try some?"

"What? Sheep's milk? Gross!" cried Squirrel, almost puking in disgust.

"You know, in the old days, we villagers didn't drink milk either."

"Why would you ever change your mind?!"



“It was before I was born,” answered Wolf. “But Grandma told me the story. One year the brown dots came and destroyed all the wheat, and there was no porridge to give to the little babies. So one woman suggested they give the babies sheep’s milk. ’Cause, you know, babies drink milk.”

“Human babies drink *human* milk,” said Squirrel, “not sheep’s milk!”

“Yes, but milk is milk. Anyhow, people were so desperate to save their babies, they would try anything.”

“So what happened?” asked Squirrel.

“Some babies wouldn’t touch the sheep’s milk, and they died of hunger. Some drank the milk, got terrible stomachaches, and died from that. But a few babies managed to digest the milk, and they survived. My mother was one of those lucky babies. When she grew up and had me and my sisters, she often gave us sheep’s milk, and we liked it. She even figured out **all kinds of new stuff to make from the milk—we call it cheese and yogurt. I really like yogurt!**”



Just as wild sheep gradually evolved into domesticated sheep, humans gradually evolved to like dairy products. But not all humans. Even today, some people get horrible stomachaches if they drink sheep's milk or cow's milk. If you get a stomachache when you drink milk, maybe it means that your ancestor was Squirrel the gatherer, not Wolf the shepherd.

But when shepherds like Wolf started milking their sheep, cows, and goats, they faced a problem. Animals produce milk for one reason—to feed their own young. So to have sheep's milk,

shepherds first needed their sheep to give birth to lambs, but then they had to stop the lambs from drinking all the milk.

The solution was simple: when the lambs were born, most of them were slaughtered and eaten. The humans then milked the mother sheep. When her milk dried up, they brought a ram around and arranged for the sheep to get pregnant again.

This is still the basic method used by the dairy industry today. On many industrial farms, sheep, goats, and cows are almost always pregnant. **The young are separated from their mothers shortly after birth.** Most of them are killed, and their meat is sold as steaks and kebabs, while the mother is milked in order to fill milk cartons and make cheese and milkshakes. After about five years of constant pregnancies and milking, the mother is so exhausted that it's no longer worthwhile for the farmer to keep her alive, so she's killed too, and her meat is used to make burgers or sausages.

BFF

Many animals suffered as a result of the Agricultural Revolution, but a few did get lucky. Sure, sheep raised for meat and milk had a tough life. But sheep raised for wool were often left to wander freely over hills and valleys, with humans carefully protecting them from wolves. Once a year, the shepherds sheared the wool—and that was it. The sheep were free the rest of the time. These lucky sheep probably thought the Agricultural Revolution was a miracle.

Most horses worked hard all their lives, and when they could no longer work, they were killed and eaten. But **a few domesticated horses lived almost like emperors.** Especially if they belonged to an emperor! For example, the Roman emperor Caligula loved his horse Incitatus very much. Incitatus lived in a big house built just for him and had servants who made him breakfast, lunch, and dinner. He ate from a manger made of ivory, his collar was studded with precious stones, and he even had special clothes tailored just for him. There were rumors that Caligula planned to appoint Incitatus as a consul—

the highest position in the Roman government. But Caligula was murdered before he could do that.



And of course, there were cats and dogs. **Cats probably joined humans of their own initiative.** When humans built granaries, the grain attracted mice, rats, and sparrows. Cats came to eat the rodents and birds, and humans were very happy about it. So they allowed the cats to stay and made friends with them.

Dogs came even earlier, when humans were still gatherers and weren't even thinking about controlling plants or animals. **Back then, dogs weren't dogs yet–they were wolves.** Thousands of years before the Agricultural Revolution, some wolves noticed that humans could hunt even very big animals, like mammoths. These wolves started following the humans around. When humans hunted a mammoth, they usually couldn't take all the meat with them and left

a lot behind. The wolves waited patiently, and once the humans were out of sight, they had a feast.



A few brave wolves began following the humans back to their camps. The humans would sit around the fire, eating and joking and telling ghost stories, and the wolves watched them from the nearby forest. When the humans extinguished the fire and moved their camp, the wolves came to sniff around for leftovers.

To do all this, wolves had to watch humans carefully and understand their ways. They needed to know when humans were hungry or irritated—better stay away!—and when humans were relaxed—time to get close! Some wolves got quite good at understanding humans, and these wolves got more food. With time, these wolves became a bit more like dogs…but they weren't yet dogs. **They were middle-of-the-way wolfdogs.**

Humans saw that these wolfdogs were hanging around their camp, but as long as the wolfdogs knew their place and didn't do anything nasty like bite someone, they didn't mind. In fact, the humans discovered that wolfdogs could be quite helpful.



For example, in the middle of the night when all the humans were fast asleep, a big saber-toothed tiger might approach, looking for dinner. The saber-toothed tiger was very quiet—as cats usually are—so none of the humans heard him come. Everyone was snoring. But one of **the wolfdogs in the nearby forest sensed the danger and started barking.** The humans got up and drove the saber-toothed tiger away with stones and lit sticks—and they were very grateful to the wolfdogs!

Eventually some wolfdogs ventured out of the forest to sit with the humans near the campfire. We don't know exactly how it happened, but we can guess. Did you ever see a lost puppy on the street and ask your parents to take the puppy home? Something like that might have happened tens of thousands of years ago. A band of humans came across some lost wolfdog puppies and a compassionate kid wanted to help them.

"Look how cute they are!" said the kid. "And if we help them now, they'll grow up to be big powerful wolfdogs, and they'll be useful."



The puppies really were cute, with lots of fur and big sad eyes, so the adults agreed. They kept the puppies and fed them leftovers. At night the puppies slept curled up against the humans. It was nice sleeping with these warm furballs on cold nights!

As the puppies grew up, some of them became restless and dangerous, and they left to join the wild wolfdogs in the forest. **But the friendliest puppies liked the humans and stayed with the band.** They not only warned the humans whenever danger approached, but they also joined the hunts and helped catch rabbits and chase deer.

After some years, when the friendliest wolfdogs had a new generation of puppies, again the wilder ones left while the friendly ones stayed behind. So, with every generation, the wolfdogs became friendlier. They would wag their tail when their favorite human came along. They would sit by the fire and look at you while you ate, and push their noses very, very close, asking for a treat. The wolfdogs became dogs.

The fact that dogs joined humans such a long time ago explains one very interesting thing about them. Now, they aren't the smartest animals—chimpanzees, elephants, dolphins, and even pigs are much smarter than dogs. But when it comes to understanding how humans feel and what humans want, dogs are the best. Sometimes they're even better than humans! When you're sad, your teacher

might not notice, and your sister might ignore it. But your dog will know.

WHO WANTS TO **BE A FARMER?**

Today, many people keep dogs just because they love them. They don't eat their dogs, or milk them, or make them pull a plow. But dogs are unique—with most other animals, people kept them because they needed something from them. It wasn't about love; it was about control.

Controlling animals and plants made farmers far more powerful than before. But power isn't happiness, nor is it peace. Did you ever try to control somebody else—say, a puppy or a little brother? Not easy, right? You tell them one thing…and they do the exact opposite. You leave them alone for even a minute, and who knows what mischief they'll get up to! When you try to control others, you often make them seriously unhappy—and you often end up unhappy yourself. That's exactly what happened in the Agricultural Revolution.

The farmers thought that the things around them—wheat plants, water, and sheep—should do exactly as they were told. That demanded a lot of hard work from the farmers, and **eventually they found that they too were doing what somebody else told them to do.** They were more and more controlled by priests and chiefs.

It's no wonder, then, that at first only very few people wanted to be full-time farmers. Gatherers like Wanda, Sparrow, and Squirrel took a good look at this strange new lifestyle…and went straight back to the forest to look for blueberries and hunt rabbits! It's not that gatherers were against exploring new ways of life. Sometimes they also did a little farming, cultivating a few plants here, keeping a few animals there. But spending their whole life digging ditches and eating porridge was definitely not for them.

HOW AGRICULTURE **WON**

In the Middle East, only a handful of groups began to farm wheat and sheep full-time. Meanwhile, in China, a few other groups started farming millet and pigs. Elsewhere in the world—in India, America, and New Guinea—some humans gradually learned to control other plants and animals, including rice, maize, potatoes, sugarcane, chickens, and llamas.

Even so, **all over the world, most people preferred to go on hunting and gathering.**

But that didn't stop the Agricultural Revolution. Agriculture didn't need everybody to help it spread. If an area was home to a hundred groups of gatherers, maybe ninety-nine said no to agriculture. It was enough for just one group to say yes.

With all their hard work and their control of plants and animals, the farmers produced more and more grain, meat, and milk, which fed more and more children. A band of fifty gatherers needed an entire forest to get enough food. But if farmers burned down that forest and turned it into wheat fields or rice paddies, the same area could now feed ten villages of 100 people each.



The farmers burned more forests, built more villages, and drove the gatherers away. Sometimes the gatherers fought back and even destroyed a village or two. But over time, there were just too many farmers. How could 50 gatherers fight off 1,000 farmers? So the gatherers either had to join the farmers or run away. **And this happened everywhere in the world until there were almost no gatherers left.**

The farmers were the new leaders of the world. There was just one tiny problem…they weren't all that happy with their new way of life. Farmers worked hard because they had a plan. They thought that by digging ditches, sowing wheat, controlling sheep, and building walls, they would eventually create a perfect life—they would soon be able to take it easy and enjoy themselves. But their plan never worked. Why? Because of something called "unintended consequences."



2

OOPS, WE DIDN'T SEE THAT COMING

LET'S GATHER!

On day one, we will hike through a wild forest, climb trees, look for mushrooms, and set up camp on the riverbank.

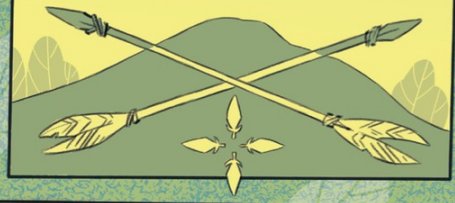




On day two, we will canoe down the river, learn how to fish, and build reed huts on the shore of a small lake.



On day three, we will climb a hill, collect flint stones, and learn how to make arrowheads and shoot bows.

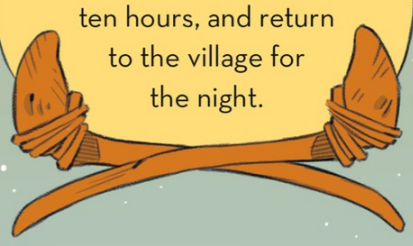


LET'S FARM!

On day one, we will get to the village, grind wheat grains for ten hours, and sleep in the village.



On day two, we will go to the nearby fields, dig little holes in the ground for ten hours, and return to the village for the night.



On day three, we will go to the fields, dig an irrigation ditch for ten hours, and return to the village.



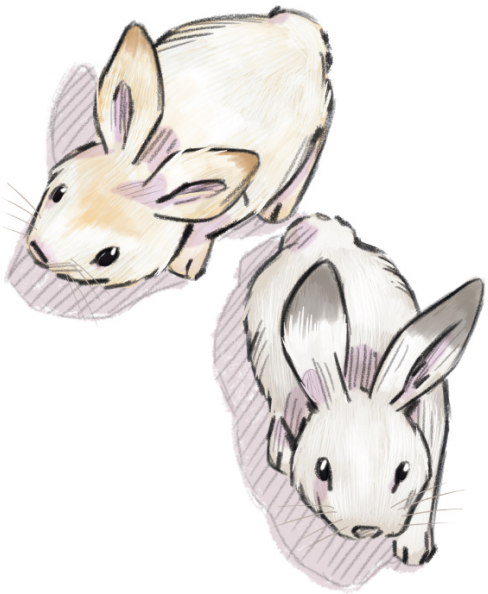
UNINTENDED
CONSEQUENCES

Imagine your parents want to take you on a family trip. They hand you a tourist brochure with two options: join a band of gatherers, or stay in a village with ancient farmers.

Which trip would you choose?

Seems like an easy choice, right? And yet our ancestors **stopped roaming freely through the forests and started toiling in the fields.** Why? Well, it's quite simple: they weren't given a brochure in advance. When they made the crucial choice, they didn't know what they were in for.

Do you sometimes plan something very carefully, but in the end, things happen in a completely different way? Like, say you have a pet rabbit called Bobo who you love very much. But you think Bobo might be lonely because he usually sits by himself in his cage nibbling on a carrot, so you decide to persuade your parents that Bobo needs a friend. You beg your parents, make all kinds of promises, and they eventually agree to get you a second rabbit—on the condition that you take really good care of them. Wonderful! Your plan worked!



You're very happy playing with your two rabbits, and they seem very fond of each other too. But after a while you notice that Bobo's friend is growing really big. And then, **one morning, there are five sweet baby rabbits in the cage.** At first, you like the cute little furballs. You now have seven rabbits! Wow!



But soon things get complicated. The baby rabbits keep growing and you need more cages. Somebody also needs to clean the cages and take away all the rabbit poop once a week. And of course, **all the rabbits need to eat.** Your parents say it was your idea and you have to take care of it. So you have to spend a couple of hours a week cleaning the cages—and a couple more hours earning money to buy more and more carrots. You wash your mom's car, walk your neighbor's dog, and water the plants for the couple down the street. And it works. But that's not what you signed up for! You just wanted a companion for poor Bobo! And what if one day there are even more little bunnies?



When you do one thing and it causes other, unexpected things to happen, those unexpected things are called **unintended consequences.** Your rabbit plan worked—but your life is now much more stressful because of the unintended consequences.

Something like this happened to our ancestors during the Agricultural Revolution. They had a big plan too: work harder and get a better life. But it didn't turn out exactly as they'd hoped. They definitely worked harder, but they didn't always get a better life. They got a lot of unintended consequences instead.

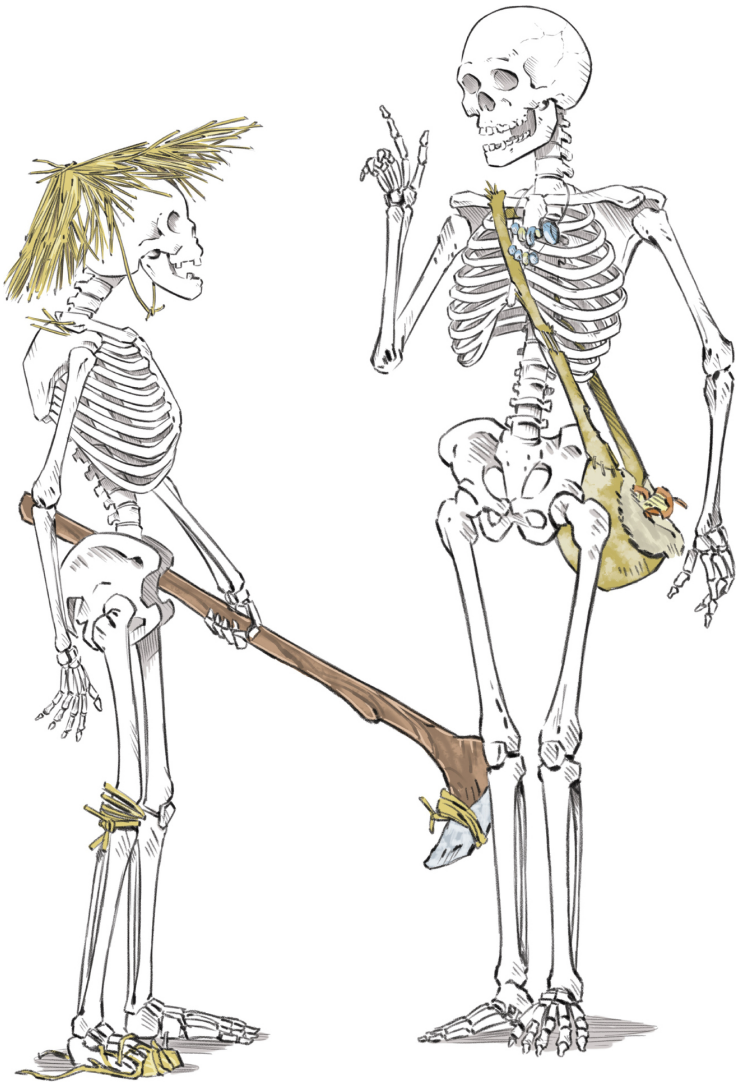
SKELETON **STORIES**

When archaeologists find the skeletons of ancient people, they can often see differences between gatherers and farmers. Gatherers' skeletons are usually taller, they have more teeth, and they show fewer signs of starvation and illness. Farmers' skeletons are usually shorter, many of their teeth are missing, and they show more **signs**

of famine and disease. Many have twisted spines, ruined knees, and damaged necks.

If a gatherer's skeleton met a farmer's skeleton, perhaps in some archaeologist's lab, their conversation might go like this:

"Hi, buddy," Gatherbone the gatherer skeleton would say. "What happened to your spine and knees? You and your farmer friends look terrible!"



"Well, **that's because we worked so hard!**" Farmskull, the farmer skeleton, would reply. "You try digging holes and ditches all day, and let's see how you look!"

"And how come you farmer skeletons have so many teeth missing?" asked Gatherbone. "And why are you so short?"

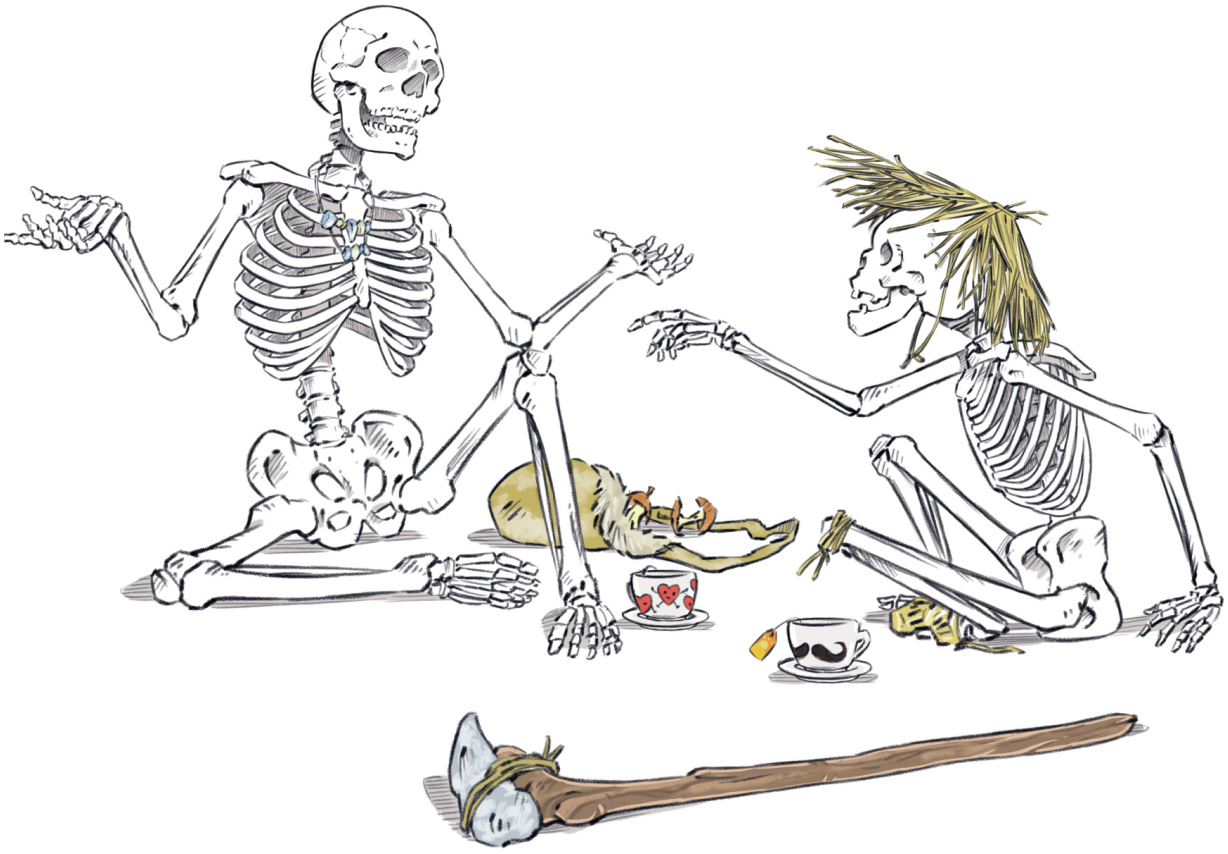
“That’s a long story.” Farmskull sighed. “Basically, we had a lousy diet. You gatherers spent your days gathering and hunting, so you ate all sorts of different stuff like—”

“Like nuts and turtles and mushrooms and rabbits and—”

“Okay, okay, don’t rub it in! You see, we farmers were **so busy all day** digging, sowing, grinding, and building walls that we didn’t have much time to pick nuts or hunt rabbits. On special days we killed a sheep and barbecued it, but we mostly ate just wheat bread, wheat porridge, and wheat gruel, maybe with a few peas or a bit of cheese.”

“Pfft, sounds boring.”

“You bet. And there’s more! I didn’t realize this when I was alive, but now that I’m a skeleton I know it wasn’t healthy eating only wheat every day. **Wheat doesn’t have all the minerals and vitamins humans need to build a strong body.** Plus, eating so much of it is really bad for our teeth. That’s why I only have two left!”



“Wow!” exclaimed Gatherbone. “Now I’m super glad I stuck to gathering! Look, I still have all my teeth. Except the one I broke when I fell from that pistachio tree. But surely all your hard work had *some* good effects. I always thought you at least produced heaps of wheat.”

“Sure we did!” Farmskull confirmed proudly.

“But, judging by your bones, you starved a lot. How come?”

“Apparently,” Farmskull lowered his voice, “it’s because of something called unintended consequences. I heard the archaeologists talking about it.”

“Ugh, that sounds scary!”

“It is! It’s when you make a plan, but things take a completely unexpected turn.”

“Okay…and what exactly happened?”

“It took me a while to figure it out, you know. But it comes down to this: we thought we’d always have enough to eat if we took good care of the wheat. That was our mistake.”

“Why? I mean, all the hard work and stuff isn’t my thing, but that seems like a good plan.”

“It does, right? But we overlooked a few things. The world is so complicated! We thought we were being clever, but we didn’t realize it was dangerous to rely on just a few sources of food. You gatherers could always find something to eat. If the nut trees were sick one year and there were hardly any nuts, you caught more turtles.”

“That’s right! And if the turtles had a bad year, we went fishing. No problem!”

“But it was different for us,” explained Farmskull, “because we placed all our bets on just a couple of plants and animals. If there was **a swarm of locusts, a drought, a flood, or some disease** in our flock, we didn’t have much else to eat. Sometimes even our granaries were empty, and people starved. It happened several times when I was a kid. I survived, but I didn’t grow very tall. That’s why I’m shorter than you.”

“Who would have thought!” Gatherbone sighed. “But wait, when your wheat ran out or your sheep died, why didn’t you just go to the forest to gather some berries and hunt some deer? The world’s full of food!”

“True, but you see, there were just too many of us. How many people were there in your band, Gatherbone?”

“Well, with my family and our friends, there were, I dunno, maybe thirty of us?”

“Thirty?!” sneered Farmskull, “That’s nothing. In our village, there were, like, three hundred. And including the neighboring villages, there were at least a thousand of us!”

“Oh…I see. So no, I guess you couldn’t just go to the forest. There weren’t enough berries and deer for that many people….”

CHILDREN OF THE WHEAT

The farmers had become trapped by their own success. They worked hard to grow more wheat, and **their villages kept growing, which seemed like a good thing.** But it also made it much harder for them to go back to living as gatherers when disaster struck their fields or flocks. You may wonder why, if they had an unhealthy diet and were more vulnerable to disasters, their villages grew in the first place. This is something that may well have occurred to Gatherbone the skeleton as he was digesting Farmskull’s story.

“Tell me,” Gatherbone said, thinking out loud, “how is it that my band had just thirty people in it, but your village, with all your toothaches and droughts, grew to three hundred?”

“That’s another long story,” replied Farmskull.

“I don’t mind,” said Gatherbone. “I’m a skeleton. It’s not like I have more urgent things to do.”

“Okay, then. I’ll explain. How many kids did you have during your life?”

“I had four, but one died young from a snakebite.”

“Sorry to hear that! But how come you had only four? Didn’t you want more?”

“More? Are you kidding? **We kept moving around, and we couldn’t carry lots of kids!** We gatherers waited at least until a child could walk long distances before having another one.”



“That makes sense,” said Farmskull.

“And plus,” Gatherbone added, “in their first three or four years, our kids mainly ate their mother’s milk. As long as a mother was breastfeeding, she usually didn’t get pregnant again. How was it with you farmers? How many kids did you have?”

“My wife and I had eight,” said Farmskull, gently resting his finger bones over where his heart once beat.

“Eight?!” Gatherbone’s jaw almost fell to the floor.

“That was normal. My sister had ten. You see, we were settled in a village, so we didn’t need to carry our children around. And babies switched early from their mother’s milk to wheat porridge and sheep’s milk, **so women often had a baby every year or two.**”

“But why did you want so many children?” asked Gatherbone, puzzled.

“We thought that having more children was a good idea because the more kids you had, the more help you got with all that farmwork and guard duty. And our priests and chiefs encouraged us to keep having more children—they wanted our group to be stronger than all the neighbors.”

“But where did you get enough food for so many kids?” Gatherbone wondered.

“In good years it was no problem. When we had a bumper harvest and the sheep were doing well, my children ate like chiefs!”

“And in bad years?” Gatherbone asked more quietly.

“I don’t like thinking about the bad years.” Farmskull sighed. “When the locusts came, or the brown dots came, or the clouds didn’t come, or the sheep died, there wasn’t enough porridge and milk for everyone. **A lot of kids died.** Only four of my eight children survived and had families of their own. Like I said,” he added sadly, “unintended consequences.”

DIARRHEA
DAYS

Lack of food wasn't the only thing that killed lots of farmer kids. Farmers didn't know it, but eating porridge and drinking sheep's milk instead of their mother's milk wasn't good for children's health.

Even worse, **infectious diseases spread easily in the dirty, overcrowded villages.** Bands of gatherers were mostly small and mobile, so even if somebody got sick, he couldn't infect many other people. Maybe he got sick with diarrhea and had to run behind some bush to relieve himself ten times a night. The next morning, the band hastily moved somewhere else.

But farmers lived in crowded villages and towns, and there were no toilets or sewage systems back then. So if somebody got sick with diarrhea, he often relieved himself in the middle of the village, or near the river people used for drinking and bathing. And the village couldn't just move the next morning, so lots of other people were exposed to the germs, and soon had diarrhea too.

Have you ever had diarrhea? Maybe you went to the doctor. You probably swallowed a couple of pills, and that was it. Early farmers didn't have pills like that. Someone who got diarrhea couldn't keep down any food or water, and sometimes they died from it.

And it wasn't just diarrhea. **New diseases appeared often and swept through the villages.** Where did all these new diseases come from?

They came from the farm animals. The villages weren't just full of people; there were also sheep, pigs, and chickens all crammed together alongside garbage heaps and piles of dung. Germs jumped from one animal to another, and from animals to humans. Nobody saw it coming—it was another unintended consequence of agriculture. These early villages and towns were a paradise for germs! A virus could make lots of chickens sick, then wipe out almost all the sheep, and finally jump to people and kill half the children.



If a farmer family had only a few children, like in the gatherer bands, they might all die of starvation or illness before they grew up. To be on the safe side, parents tried to have as many kids as possible. And to feed all these children, people cleared more fields and grew more wheat. They wanted to have even more children to help them do all this work. And these children also needed food…. You get the picture.

So a woman might have eight or even ten children. Half of them would probably die young from hunger and disease, but the rest grew up and had more children, who had more children. **Despite all the famines and diseases, the number of farmers kept growing,** and so did the number of fields and granaries, and tools and temples, and hats and houses.

MORE THINGS, **MORE WARS**

Did your parents ever bring home some new toy or gadget, and you and your siblings started fighting over it? “It’s mine!” “No, I saw it first!” “Mom, tell him it’s my turn now!”

In general, the more things we have, the more there is to fight about. Before the Agricultural Revolution, people had very little, so they rarely fought. Archaeologists have found **some evidence of wars between groups of ancient gatherers** but not much. But where there are signs of farming, such the remains of granaries, archaeologists often see many traces of war, like walls around the village or skeletons with arrowheads in their skulls.



That's another thing that Gatherbone and Farmskull could discuss as they waited idly in the archaeology lab.

"What's that thing in your skull?" Gatherbone might ask.

"An arrowhead," answered Farmskull.

"How the heck did it get there? Did you have a hunting accident? Once when me and my buddies were hunting mammoths—"

"A hunting accident?" Farmskull exclaimed, puffing up his ribcage. "I was wounded in a war!"



"What's a war?" Gatherbone wondered.

"It's when the neighboring tribe attacked our village and tried to kill us and take our sheep and our fields."

"Ah." Gatherbone nodded. "We had a few nasty neighbors too. But if they came to pick a fight, we could usually just walk away. What's the point of fighting them?"

"Easy for you to say!" Farmskull scowled. "You had hardly anything to lose! We had houses and fields and granaries and herds,

so there was a lot to fight for. If somebody tried to take our village, we couldn't just walk away. If we lost our fields and herds, we starved. We had to stay and fight."

Of course, not all farmers were violent. Some were very peaceful. But when violent farmers attacked peaceful ones, **either the violent farmers won or the peaceful farmers learned to fight**—so they became violent too. This meant that, over time, violence became common everywhere.

All these bad things—broken knees, missing teeth, infectious diseases, repeated famines, and arrows stuck in skulls—were unintended consequences of the Agricultural Revolution. Nobody wanted them. Nobody planned them. People didn't see them coming.

But the Agricultural Revolution didn't just affect people's *bodies* in unexpected ways. It did the same to their *minds.* Once they started farming, people began to think and feel differently. They began to think and feel a little like ants.

ANTS AND GRASSHOPPERS

Have you ever heard the story of the ant and the grasshopper? It goes like this:

> **In the warm days of summer, the grasshopper jumped merrily from place to place, eating plenty of tasty leaves and spending most of his time singing and dancing. *Tralali, tralala!***
>
> **Meanwhile, the ant was busy building a house and storing food. She carried seeds and grains ten times bigger than herself, and piled them inside her house.**

The ant worked so hard that the grasshopper got tired just watching her.

"Chill out, sister!" called the grasshopper. "Why don't you relax a little and enjoy life?" But the ant kept working and warned the grasshopper that he'd be sorry for being so lazy.

When winter came, all the plants froze and died. The ant sat in her cozy house and had plenty to eat. The poor hungry grasshopper came knocking at the door, begging for some food. But the ant wouldn't give him any. "You laughed at all my hard work in the summer—now let's see who has the last laugh!" And she shut the door in his face.

This story was made up by some farmers who wanted their kids to think about the future, the way ants do.

If you asked the average gatherer, they would tell you this was all nonsense. “You know, every spring the forests are full of grasshoppers, so obviously they made it through winter somehow, right? Sing and dance and stop worrying so much about tomorrow. It’ll be fine. If you keep your eyes open, you can always find juicy snails to eat, even in winter.”

Gatherers usually focused on what was happening right now. Of course, they sometimes made plans. They agreed with friends to get together on the night of the next full moon to sing and dance. They painted a bison on a cave wall so that their grandkids might see it. They caught lots of salmon and smoked them or gathered lots of wild hazelnuts and stashed them for later.

But there was a limit to how many nuts or smoked fish they could store because they didn’t control the nut trees or the wild fish. If they wanted 10,000 smoked fish, but only 1,000 salmon swam up the nearby river, there was not much the gatherers could do about that. So people couldn’t make too many plans. Their lives were full of surprises.

“Don’t plan too much,” most gatherers probably told their kids. “If you go to the forest planning to hunt a deer, you might miss the beehive hidden in the bushes. If you plan to find a beehive and get some honey, you might miss a bird’s nest with three yummy eggs. And if you’re determined to have an omelet for lunch and you focus on finding eggs, you might miss the bear coming to make lunch out of you. Pay attention to what’s happening right now, and don’t worry too much about what might happen later.”

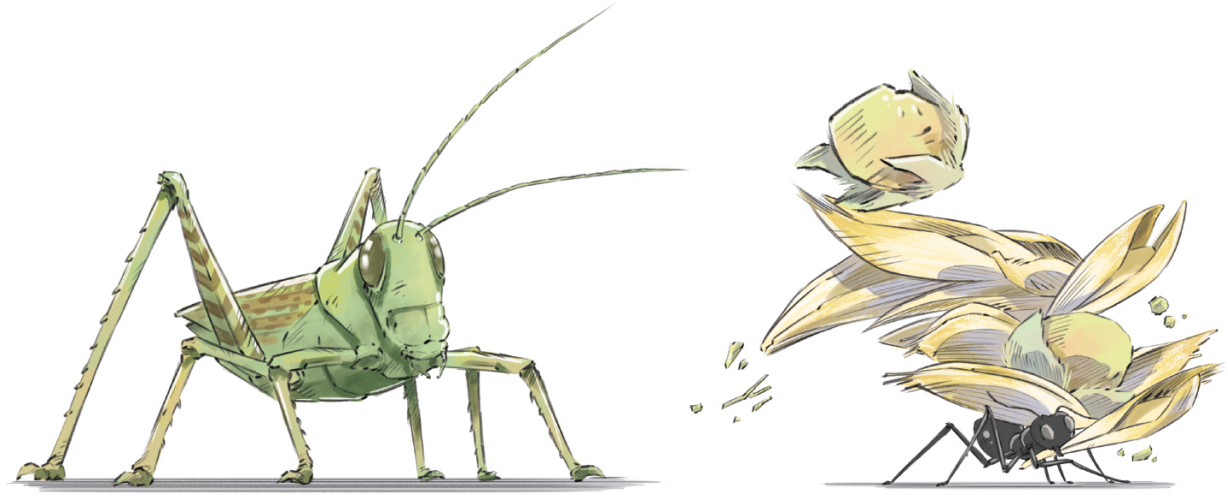
You might think all these surprises made gatherers very anxious, but they were actually quite relaxed. If you think about what makes you anxious, it’s rarely something that’s happening right that minute. You’re usually anxious because you’re thinking about something in the future, like a math test tomorrow or a dentist appointment next week. Sometimes if you focus only on what’s happening right now, it can help you be less anxious.

Farmers constantly worried about the next month and the next year. They were much more anxious than gatherers because they

had no choice—they always had to think about the future because they rarely ate what they found that day.

"If you want to eat bread," farmers told their kids, "you can't just go to the forest and find a bread tree. You have to clear a field, plow it, sow seeds, uproot the weeds, wait a couple of months, harvest the grain, thresh and winnow them carefully, grind them, make your dough, and finally, bake your bread. So you have to plan things a long time in advance. Just like the ant!"

To achieve this, farmers trained their kids in something called delaying gratification. To gratify a desire means to do what you want. You see something sweet, and two seconds later it's in your mouth—you gratified your desire for the treat. **Delaying gratification means waiting:** letting the treat stay where it is for a while, even if you really want to put it in your mouth right now.



10 PLAGUES OF

AGRICULTURE



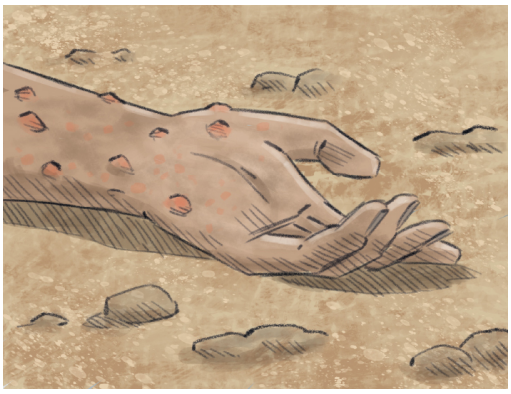
DROUGHT



FLOOD



ANIMAL DISEASE



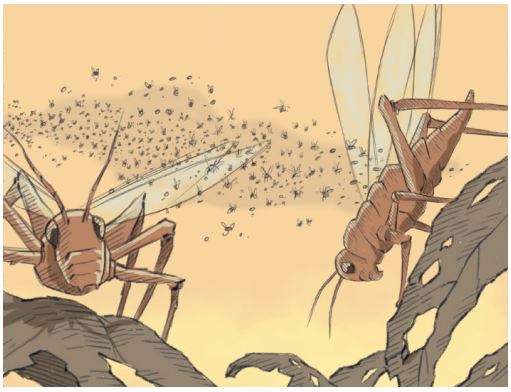
HUMAN DISEASE



UNBALANCED DIET



HARD WORK



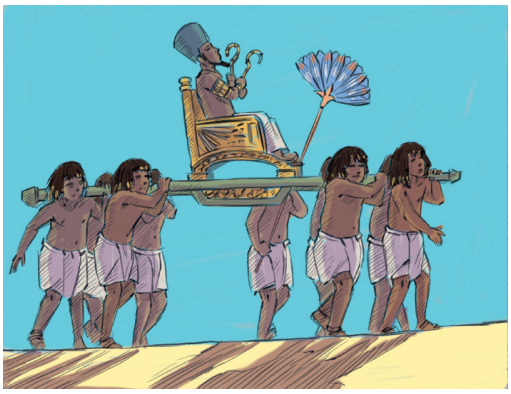
PESTS



PLANT DISEASE



WAR



SLAVERY

Most gatherers didn't think that delaying gratification was that important. If you walked across the savannah, found a fig tree, and decided to delay gratification by leaving the figs on the tree, you didn't get a prize for that. When you came back the next day, you might find the tree was bare—the bats and baboons ate everything while you were away. In those days, delaying gratification was for dummies.

Agriculture changed that. Once you owned a wheat field instead of going around the savannah, delaying gratification became the name of the game. Suppose it's been a bad year: your granary's almost out of grain and you're very hungry. What should you do? If you eat the last of the grain in your granary, you won't have any seeds for next year, and you and your family will starve to death. But if you keep some seeds aside even though you're hungry, you can sow them, work patiently, and hopefully next year you'll have enough to eat.

So farmers were different from gatherers, and not just in how they lived and what they ate. **They were also different in how they thought.** To be a farmer meant to constantly worry about the future and delay gratification in the present. That is still one of the most important things kids learn.

Do you sometimes feel that what you learn in school is completely pointless? That it has nothing to do with your life, your friends, your hobbies? You want to go play outside, but instead you have to sit in class and solve math problems. That's because you are being trained to become a kind of farmer. You learn to work hard and delay gratification because your parents are worried about your future.

They are worried that if you now play outside instead of solving math problems, you won't get a good score on your exams. And then you won't be accepted to a good college. And then you won't have a good job. And then you won't have a good salary. And then you won't be able to afford a good hospital when you are old. So sit down and do your math now in order to get good medical treatment when you are eighty.

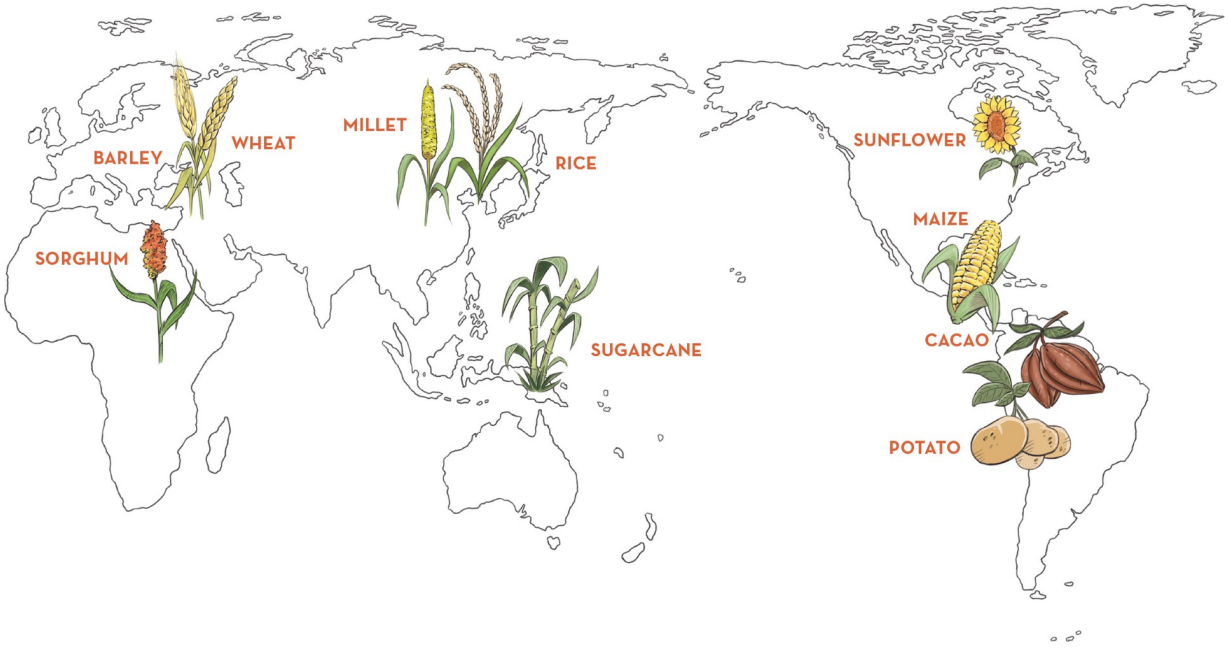
It isn't clear whether all this hard work and delayed gratification was really good for humans. But it was certainly **good for wheat and**

all the other plants that profited from the Agricultural Revolution.

THE PLANTS THAT CONQUERED THE WORLD

If you looked at planet Earth from space before the Agricultural Revolution, you would see small groups of humans roaming over hills and through forests, and you would also see a few stacks of wheat here and a bunch of rice plants there.

If you looked at our planet after the Agricultural Revolution spread around the world, you would see wheat and rice covering entire regions, along with **millions of humans, busy from dawn to dusk,** sowing, watering, and protecting these plants.



When humans first started farming, they thought they were very smart and could easily control plants like wheat and rice. But it seems humans were not as clever as they thought—in the end, it was the plants that controlled the humans.

You may wonder why they let it happen. Well, the humans didn't know it was happening. It took a long time to change from gatherers into farmers. The switch wasn't complete after a year or even fifty years. It may have taken 5,000 years. People didn't realize what was going on because **each generation lived almost exactly like their parents.** The only difference was that every once in a while—maybe after a century, maybe after a thousand years—somebody came up with a small improvement that was supposed to solve some immediate problem, the way inventing a hoe or digging an irrigation ditch or building a wall did.

Nobody imagined that by starting to dig holes in the ground, humans would end up with holes in their teeth, walls around their towns, and lots of worries on their minds.

A HAPPY ENDING?

Today, when people hear about all the hardships of the Agricultural Revolution, many point out that **in the end, things did get better.** Yes, the ancient farmers had lots of unexpected problems and a great deal to worry about, but most of us no longer live like ancient farmers.

Maybe you live in a nice house with lots of food in the refrigerator, an air conditioner that keeps the temperature just right, a shiny toilet with running water, a cabinet with all kinds of medicines, and a computer with loads of fun games to play. You wouldn't have all that if humans were still gathering mushrooms and hunting deer in the forest. So you probably think it was a good idea to start farming.

You can think like that because you don't have to work in the fields every day. Other people do it for you, or perhaps there's a machine doing it. Even if you live on a farm, many difficult jobs are probably done by a tractor or an automatic pump, and you can also rely on things like modern medicines and computers. So **you're not**

like the average farmer in an ancient village; you're more like a chief.

But what about Wheaty, Wolf, and Farmskull, who lived in small villages thousands of years ago? They spent much of their time hoeing, digging ditches…and worrying about the future. They often didn't have enough to eat, and they were always frightened that an epidemic might start, locusts might come, or other people might attack their village.

Would they have said, "Well, we don't care how difficult life is for us because thousands of years in the future kids will have plenty to eat and live in air-conditioned houses and play with their smartphones all day"?

Wheaty, Wolf, Farmskull, and their friends hoped that by doing a bit more hoeing or a bit more digging, their own lives would improve. But even though agriculture did solve some of the old problems, it created a host of unintended consequences and new problems. Farmers worried more than ever about diseases, about locusts and rain clouds, and about war.

And as villages grew into cities, and cities united into big kingdoms, **people also began worrying about some completely new and very strange things.** Complicated things that didn't exist in the wild forests but thrived in the cities. Dreaded things that made even the bravest people shake with fear. Things so complicated and scary that even today adults rarely talk to their kids about them.




3
THINGS THAT
SCARE
ADULTS

WORSE THAN **GHOSTS**

When adults are worried and kids ask why, adults often reply, "You'll understand when you're older." How often have you been told that? Apparently, there are some scary things in the world that kids can't understand.

That's a bit strange. After all, kids can see everything adults see and touch everything adults touch—so **what are these things that kids can't see or touch that scare adults so much?**



Many of these things didn't exist in the time of ancient gatherers. When a gatherer worried about something and her kid asked, "Mom, why are you so worried?" the gatherer rarely replied, "You'll understand when you grow up" because most things that made gatherers worried could be explained to their kids: "I'm worried because your sister is sick. I'm worried because there's a storm coming. I'm worried because we saw a lion prowling nearby."

Agriculture made life more complicated. When lots of people started living together, the villages and towns offered them protection from storms and lions, but this also created new worries—complicated ones! For example, one of the things that scare adults most is called taxes.

Children are afraid of ghosts and monsters. **Adults are scared of taxes.** If you wanted to play a practical joke on your parents, you might dress up as a ghost and go *"Wooo!"* in the middle of the night. Your parents would probably just laugh. But if you said, "Mom, while you were away this guy called and said he wanted to talk with you. I think he said he was from the tax authority or something…." Watch out! Your mother might become very scared indeed!

What exactly are taxes, and why are they so frightening? And why did adults develop fears they didn't have before? It has something to do with living in bigger places like cities and kingdoms and how that made life more complicated. You don't really have to grow up to understand these worries. But you do have to know a few things about how agriculture created the first cities and kingdoms.

LUGAL-BANDA AND
LUGAL-KINISHE-DUDU

When people started farming, they lived in small villages. One village had 60 people, another had 100, and the really big villages had perhaps 300. As farmers burned more forests, sowed more fields,

raised more sheep, and had more kids, some villages grew into towns with thousands of people.

The towns also grew bigger over time. In places such as the Middle East, India, China, and Mexico, cities with tens of thousands of people appeared. These cities often had strong walls, big temples, and a beautiful palace where a king lived. Some of the kings ruled not only one city but an entire kingdom, which included many towns and villages.



Where did these kings come from? Some of the priests and chiefs of old times became more and more powerful, until they were kings. In an ancient village or small town, when an important decision had to be made, all the people would meet, and everybody would say what they thought about the matter. People respected what the local priests and chiefs said but didn't always agree with them.

But in the big new cities, there were so many people that it was difficult for all of them to meet in one place and hear what each person had to say. **One of the first cities in the world was called Uruk.** It was on the banks of the Euphrates River, in the land of Sumer, which is now in southern Iraq. Some 50,000 people lived in Uruk…and it was difficult for 50,000 people to make decisions together.

For example, suppose a group of warriors from another Sumerian city—Lagash—came to steal grain and sheep from the fields around Uruk. What should the Urukians do? Should they stay safely inside the city, defend its walls, and allow the Lagashians to steal what they want? Should they go out to fight the Lagashians? Or should they try to make peace with the Lagashians, offering them some grain and sheep? If each one of the 50,000 Urukians took five minutes to put

forward their view, just listening to all these ideas would take 250,000 minutes, which adds up to 173 days! By the time everybody finished explaining and discussing their ideas, the Lagashians would have taken every grain of wheat and every last lamb in Uruk.

So when an important decision like this had to be made, the Urukians didn't let everybody speak. They chose a few wise people to lead them. These leaders met in a small council that could decide things quickly. But if these leaders quarreled and couldn't agree, they went to the big chief who led the warriors of Uruk in times of war, asked him what to do, and obeyed whatever he said. If that big chief made more and more decisions on his own, he might eventually become king.

We know the names of many kings of Uruk. They had names like Lugal-banda, Lugal-kisalsi, and Lugal-kinishe-dudu. The kings of neighboring Sumerian cities had similar names, like Lugal-sha-engur of Lagash and Lugal-zage-si of Umma. Why were they all called lugal-something? In the language of Sumer, *lu* meant "man" and *gal* meant "big." So *lugal* meant "big man."

NEFERIRKARE-KAKAI AND **TUTANKHAMEN**

The lugals thought they were the biggest men in the world. Lugal-zage-si of Umma even boasted that he ruled the entire world! That was nonsense. Most people in the world had never even heard of Sumer and all these lugals. Many people still lived in bands of gatherers or in small towns where everybody made all the decisions together and there was no lugal.

Other people lived in kingdoms that existed far from Sumer, each with its own "big man." More than 1,000 kilometers to the west of Sumer, there was a particularly big kingdom called Egypt, which was ruled by "big men" called pharaohs.



In their time, the pharaohs were the most powerful men in the world. Today, people remember just a few of them, and most have been completely forgotten. Have you ever heard of the pharaohs Neferkasokar, Shepseskaf, or Neferirkare-Kakai? No? They'd be very disappointed if they knew you'd never heard of them! They tried so hard to be famous.

Maybe you did hear about another pharaoh—Tutankhamen. He became the pharaoh when he was just eight years old. In Egypt, **even young boys could be king** if their father was the previous king. Tutankhamen didn't live long. He died when he was about eighteen. People remember him today not because he won a big war or built a big pyramid but because archaeologists managed to find his mummy, along with a bunch of treasure.

When pharaohs died, their bodies were carefully dried and preserved and turned into mummies. The pharaohs' mummies were then buried in tombs full of gold and jewels. Each pharaoh wanted to have the biggest, most magnificent tomb so people would remember him even after he was dead. But these tombs were so magnificent and filled with so many jewels that most were robbed by thieves long ago.

Tutankhamen didn't live long and didn't accomplish much, so when he died, he was given only a small tomb in a remote place that no other pharaoh wanted. The tomb raiders never found Tutankhamen's out-of-the-way tomb, and that's why the mummy and all the treasures were still there when modern archaeologists found it. **If you visit Egypt, you can see Tutankhamen's mummy.** Thousands of years after he died, Tutankhamen became famous all over the world, whereas nobody remembers Shepseskaf and Neferirkare-Kakai. Sometimes, to be famous, you just need a stroke of luck.

WHAT ARE KINGDOMS GOOD FOR?

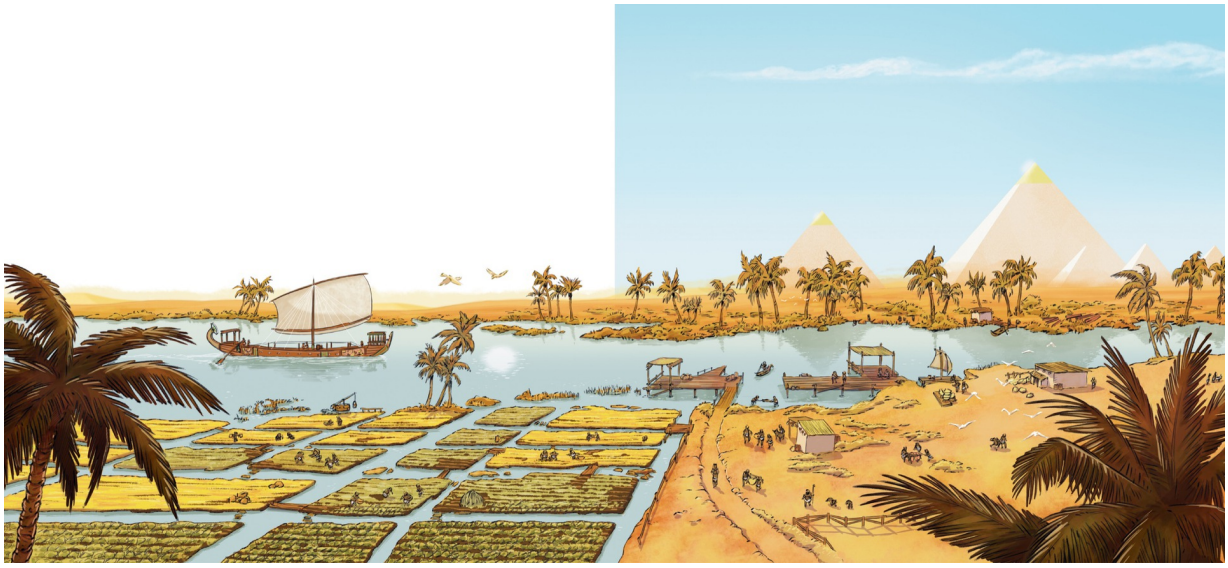
Egypt was a really big kingdom. It was located on the banks of the Nile River, and dozens of cities and hundreds of villages were built on the banks of that river. Five thousand years ago, at least one million people lived in Egypt. There were also lots of cows, pigs, ducks, and crocodiles. And they were all ruled by the mighty pharaoh.

Why did people create kingdoms as large as Egypt? Wouldn't it have been better for them to go on living in separate villages and towns without a big king bossing everyone around? Well, **large kingdoms were useful because they did things that independent villages and towns couldn't do.**

Take, for example, the many villages and towns that existed along the Nile before the rise of Egypt and its pharaohs. They all depended on the river: it provided water for their people, their cows, and their wheat fields. But it was an unpredictable friend that could easily turn into a deadly enemy. If there was too much rain, the river flooded the fields and houses, killing people, animals, and plants. If there was too little rain, the river didn't provide enough water to drink or farm with, wheat plants died of thirst, and **cows and people had**

nothing to eat. People watched the river anxiously, never sure how it would behave.

People thought of building dikes, canals, and reservoirs to stop the floods and store water for drought years. But because most villages and towns were small, they didn't have enough workers to build large dikes or dig huge reservoirs. Some chiefs and priests suggested that all the villages and towns work together on this project, but people didn't trust each other enough. Everybody wanted to get help for their own village, but few felt like helping some faraway village. So little was done, and everyone suffered from floods and droughts.



Things changed when the pharaohs united all the villages and towns into one big kingdom. **Now everyone could work together.** When the pharaoh commanded, "Build a huge wall!" people from all over Egypt came to build the wall. When he ordered, "Build a huge reservoir!" **everybody helped build the reservoir.** Now if a flood came, it didn't destroy the villages. If a drought came, everybody had enough water for their fields.

WELCOME TO
CROCODILE CITY!

One pharaoh, called Senusret, started a particularly big project. He ordered the Egyptians to dig a wide canal to link the Nile River to the Fayum Valley. At that time, **the Fayum Valley was a big swamp,** full of mosquitoes and crocodiles. Very few people lived there because there was too little food—and far too many crocodiles.

The Egyptians started digging. Tens of thousands of people from all over Egypt came and worked hard under the hot sun. They dug and dug and dug. Sometimes a mosquito bit them, but they kept digging. Sometimes a crocodile ate someone, but the others kept digging. There was so much work that Senusret died before they finished.

But the new pharaoh told people to go on digging. So they kept digging the canal, and they used all the earth they dug to build a lot of dikes and dams too.

Finally, they completed the work, and water from the Nile flowed into the Fayum Valley and turned it into a huge artificial lake. Now, whenever a dangerous flood came, **they diverted the water into the artificial lake,** so the flood didn't destroy their villages. And whenever there was drought, they allowed the water from the lake to flow back into the Nile, so the farmers could water their fields.

Instead of a swamp surrounded by desert, **Fayum was now full of fertile fields and villages.** They also built a new city. First they called it "the Place Where Lots of Digging Happened" but later changed it to Crocodile City.

And what happened to the crocodiles? Some of them died, and some had to go find a new swamp to live in. But some actually moved to the city. In the middle of Crocodile City, the **Egyptians built a big temple to a new god–the crocodile god Sobek.** Inside the temple lived a pet crocodile. When people saw him, they thought they were seeing the god Sobek.



Every day the priests in the temple gave the crocodile cows and pigs and ducks to eat. According to one ancient historian, they even put jeweled bracelets on his forelegs and gold earrings on his ears… though the crocodile probably didn't like this as much as he liked the meat. Did you ever try putting earrings on a crocodile? Not easy… don't try it at home!

WHO MAKES **HISTORY?**

Building dikes and canals was possible because the Egyptians lived in a big kingdom that could bring tens of thousands of workers together to build things. A big kingdom could achieve another

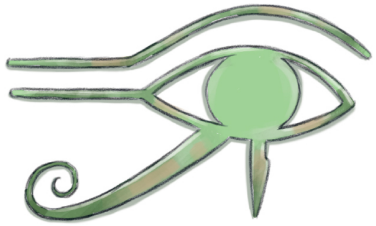
important thing: people could store a lot of food in large granaries and move food around in times of need.

If the wheat fields in Northern Egypt were destroyed by disease, grain could be sent there from Crocodile City. If locusts ate all the wheat around Crocodile City, food was shipped from southern Egypt. And if a famine hit the entire country, the pharaoh's big granaries had enough food for everyone, at least for a year or two.

Big kingdoms were also better at dealing with robbers and invaders. When an independent village was attacked, the village had only a few dozen people to defend it. Even if all the neighboring villages agreed to help, they could gather, at best, 1,000 farmers armed with hoes and sickles.

In contrast, when a village belonging to a big kingdom was attacked, the whole kingdom could send help. Instead of 1,000 farmers with hoes, the kingdom could send a professional army of 20,000 soldiers armed with swords and spears.

So living in a big kingdom had its advantages. But it was still a difficult life, and probably much harder than the life of gatherers like Wanda, Sparrow, and Squirrel before the Agricultural Revolution.



The Egyptians didn't know this—they didn't remember how gatherers lived. They didn't even remember the Agricultural Revolution. Most of them thought that humans had always lived as farmers. Yet the Egyptians did know that being a farmer was tough.

Ancient Egypt was the most powerful kingdom of its day, but all that power meant a lot of hard work for simple farmers. When you read history books about magnificent buildings like the pyramids and famous people like Tutankhamen, remember that most humans weren't pharaohs. **Most humans were ordinary farmers who worked hard every day.** The food they produced fed all the kings, soldiers, and priests (and pet crocodiles). So it's a bit unfair that

most history books talk so much about the kings, soldiers, and priests, and rarely mention the truly important people who kept all of them alive.

OWNING AND **OWING**

There were many advantages to having a large kingdom like ancient Egypt, but **controlling a big kingdom was a big headache.** The pharaoh had to organize so many people and so many things. And to do that, two very important questions needed answering: “Who owns what?” and “Who owes what?”



Owning something means that it belongs to you. **People can own all kinds of things:** houses, cars, clothes, laptops. Things that people own are called property. If you own a bar of chocolate, that chocolate is your property. Nobody can eat it without your permission. If somebody takes it without asking, that's stealing. In ancient Egypt, there was a lot of property: wheat fields, date palm groves, sheep, donkeys, carts, boats, houses, and palaces. There were also a million people in the kingdom. How did anyone know who owned what?

Suppose one farmer owned a date palm grove. What if another person entered the grove and started eating the dates? How would anyone know that it wasn't his property and he was a thief? So that's the question of **"who owns what?"**



The second big question was **"who owes what?"** Owing something means that you have to give some of your property to somebody else. Like when you have a bar of chocolate, but your parents tell you that you must give some of it to your sister. To keep the kingdom going, the pharaoh demanded that people give him a large part of their property. They had to give him some of the dates they grew, some of the sheep they raised, and a lot of the grain they produced. The grain was important. The pharaoh stored all that grain in his big granaries or used it to feed his soldiers and workers.

That's why everybody had to give so much of their grain to the pharaoh every year. **This is called taxes—the taxes that still worry adults even today.**

THE MAMMOTH **TAX**

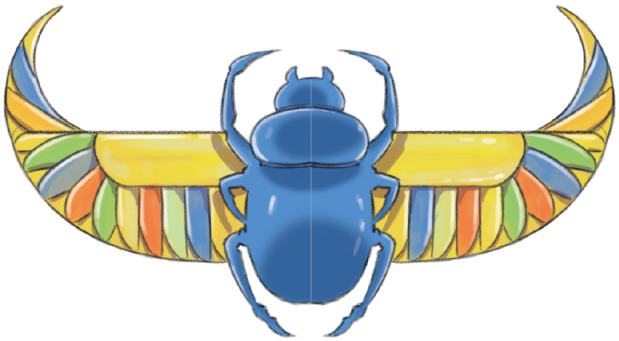
It may seem obvious to you that a human can own date palms, wheat fields, and herds of sheep, but this is actually a very strange thing. How could one being own another? **Bees don't own flowers, fleas don't own dogs, and cheetahs don't own zebras.**

Ancient gatherers also didn't own much, and what they did own was often shared. A gatherer band might claim that a particular forest belonged to them, but the idea that just one person could own the whole forest and prevent anyone else from entering it would have sounded ridiculous to them.

Or suppose some bully hunter pointed out a group of mammoths and exclaimed, "You see these mammoths? They are all mine! And if I graciously allow you to hunt a few, you must pay me a mammoth tax." This would have been utterly silly. After all, the mammoths could just go wherever they liked and didn't take orders from any human.

As agriculture spread around the world, people began controlling other beings, like wheat and sheep, so it was easier to think of these as property. In the first villages and towns, people often farmed together, so whatever they produced belonged to everyone. But sometimes people chose to work by themselves—and eat by themselves.

When a family worked hard to clear rocks from a field, sow wheat in it, and carefully water the plants, that family claimed the field was their property alone. Nobody could take any grain from that field without their permission. Some families owned ten fields—they were rich. Other families had only one small field, or none at all—they were poor.



MANY WAYS TO
INEQUALITY

There could be a thousand different reasons why some people had more than others. If several poor farmers met, they might each tell a different story about why they were poor while others were rich.

"My neighbors are so rich," said one farmer with envy. "They have ten fields, and I only have one!"

"Why is that?" inquired the others.

"Truth is, my neighbors worked away like ants for years, clearing and farming all those fields. I'm more of a grasshopper. I take it easy. I hope one day I'll be plowing my field and—*shazam!*—I'll discover a gold treasure! But unfortunately, it hasn't happened yet. Life's so unfair. How about you?"

"I once had ten wheat fields," declared the second farmer proudly. "But the brown dots came and spoiled my whole crop. My neighbor had ten fields too, but she sowed wheat on just five fields and sowed the others with barley. When the brown dots came, they destroyed all her wheat, but they didn't touch her barley!"

"So did she help you?"

"I asked her for help—my family had nothing to eat. But she was so greedy. She told me she'd only give me some barley flour if I gave her all my fields. I begged her not to be so cruel, and in the end, she said, 'Okay, okay. Stop whining. Give me just nine fields and keep

one for yourself.' What could I do? We were starving! So now she has nineteen fields, and I have just one."

"You two are lucky!" said a third farmer sadly. "In our village, every family once had ten fields. And we were all very diligent and smart—and generous too! We always took care to sow different crops in different fields, and if one family was hit by hard times, everybody else helped them out. But then enemies from beyond the mountains invaded our valley and conquered our village. They took all our fields and even our houses! We have nothing left!"

"So how do you survive?" asked the other two in alarm.

"The invaders told us we could stay in *their* village, and go on living in *their* houses, on the condition that we took care of *their* new fields for them. These bullies like owning lots of fields, but they don't like working in them."

A NEW KIND OF **PROPERTY**

So there were different ways in which poor people and rich people emerged. In Egypt, the richest person of all was the pharaoh. He had more fields than anybody else, and he never had to work in them. He just told other people what to do. **Everybody paid taxes to the pharaoh from what they grew in their own fields,** and in turn the pharaoh promised to protect them from floods, famines, and enemies.

What if a farmer didn't want to pay taxes? Well, the pharaoh would be very angry, and he would send his soldiers to that farmer's village. The soldiers wouldn't be there to help this time. They would knock on the farmer's door with their spears and roar, "You haven't paid your taxes! Pay us right now, or else…."

If the poor farmer couldn't pay what he owed, the soldiers took away his cows and his ducks and all the grain they could find. If that wasn't enough and the farmer still owed a really large amount of

grain, the soldiers could even take the farmer and his family and enslave them.

Enslaved individuals are humans who were free until somebody claimed them as their property. Slavery is one of the worst things humans ever invented. The idea that a human can be somebody's property is utterly shocking, but ancient farmers in places like Egypt were used to it. In their view, just as a human could own plants and animals, one human could own other humans.

In ancient kingdoms like Egypt, many humans were enslaved: Some were foreigners captured in war. Others were farmers who couldn't pay their taxes. Some were children who were born to poor parents. If the parents didn't have enough food for all their children, **they were forced to sell one child into slavery so they could buy food for their other children.**

Enslaved people had unimaginably difficult lives. If you met enslaved people from ancient times, they'd tell you horrible stories. "Nobody cares what I want," one might explain. "My master decides what clothes I wear and what haircut I have. He sometimes tells me to work all day without resting or eating, and I have to do it. I have to ask his permission if I want to go anywhere. And if I disobey him, he whips me."



“If that’s the worst of it,” another enslaved person comments, “consider yourself lucky. My master beats me even when I do everything he orders, just for the fun of it. The others say he even killed an enslaved person once. My master’s a district chief, so who’s going to punish someone that important just for killing an enslaved human?”

“What makes me really sad,” adds a very young enslaved person, “is that there’s no future for us. I’m only twelve, but I don’t think I’ll ever be free. I hope I’ll at least get married and have children someday, but I can’t even do that unless my master approves it.”

“Even if he approves it and you do have kids,” warns an enslaved woman with long white hair, “they’d be enslaved too. My friend had a child, and you know what the master did? When the child was ten,

he sold him to a merchant from a distant city, so my friend never saw her child again. It's been three years, and she still cries every night."

Nobody wanted to be enslaved. If you didn't pay your taxes—perhaps because your wheat had been eaten by locusts—you lived in dread that the pharaoh's soldiers would come and enslave you. When you went to bed at night, you didn't dream about scorpions or crocodiles—you had nightmares about taxes.

But **how did the pharaoh remember whether you'd paid?** There were a million people in Egypt, after all. If one of them didn't pay taxes, how could the pharaoh possibly keep track? And if soldiers came to the village to take away that person's cow or grain or children, how did they know whose property to take? How could the soldiers know who owned what and who owed what?

WHAT BRAINS CAN'T DO

For millions of years, whenever people needed to remember something, they stored the information in their brains. But when people tried to create big kingdoms, they discovered that their brains couldn't cope. **The brain is a wonderful thing, but it has its limits.**

First, there's a limit to how much the brain can remember, and when people tried to remember all the information needed to run really big kingdoms, they reached that limit. There was just too much. You can eas ily remember what stuff is yours and what belongs to your brother. If there are thirty kids in your classroom, you can remember where each one sits. But in a kingdom with a million wheat fields, nobody could remember who owned which field and who had paid taxes in any one year. And the kingdom couldn't function without this information.

Second, when somebody died, their brain died with them. So even if there was some genius who remembered all the details about all the wheat fields and all the taxes, what happened when that genius died?

Third, and most important, for millions of years the human brain had adapted to store only certain types of information. In order to survive, our gatherer ancestors had to remember many details about animals and plants. They had to remember that in autumn, you could gather nuts in the wood; in winter, it was best not to go into the cave in the mountain because a big scary bear lived there; and in spring, you could find beehives in the bushes near the river.

Gatherers also had to remember so much stuff about the few dozen people in their band. They needed to remember who was good at climbing trees and who was good at healing broken bones. If you fell from a tree, better ask help from the healer—not the climber. They needed to remember who was nice and who was grumpy. If they needed a favor, better ask the nice person!

So the human brain evolved to store information about animals, plants, and other humans. That's why you probably have no trouble remembering interesting things about animals and you know exactly who in your classroom is your friend…and who isn't.

But when people started building kingdoms, they suddenly had to remember a completely new kind of information—numbers. Do you like numbers? Do you like math? Some kids do—they are fascinated by the beauty and order of it. But some kids don't. Read them a story about animals, and they'll love it. Give them a book about a cool kid saving her friends from a bully, and they're interested. But they would never read math books for fun.

That's not just true of kids. A lot of adults don't like numbers very much either. **For millions of years, humans never had to deal with numbers.** No gatherer had to remember, say, how many figs there were on each fig tree on the savannah, so the human brain didn't adapt to remember numbers.

But when people started building big kingdoms, they suddenly had to remember oodles of numbers. How much land does each person own? How many cows do they have? How many ducks? And how much tax do they owe? All this added up to millions and millions of numbers. Who could remember them all?

MATH PROBLEMS

In fact, it's even more complicated than that. When it comes to collecting taxes, **it isn't fair if everybody pays exactly the same.** If one person is rich and owns ten wheat fields while another is poor and owns just one, should they both pay the same?

A lot of people today—and in the past too—think that the rich should pay more taxes. But how much more? And how do you know who's rich? In a small village, everybody knows who's rich and who's poor. But in a big kingdom, it's much harder to know. Suppose there were two people who lived in a remote village—let's call them Abu and Gida. The king had never met either of them, and he'd never been to their village. **How could he decide how much tax Abu and Gida should pay?**

So maybe the king said, "Abu has only one wheat field—he's poor and he should pay ten sacks of grain. Gida has ten wheat fields—she's rich and she should pay one hundred sacks."

But Gida complained: "Yes, I have ten fields, but they're tiny. Abu has one field, but it's huge—it's actually bigger than my ten fields put together. I shouldn't pay more taxes than him. That's not fair!"

The king agreed. "Okay, simply counting the number of fields was a bad idea. We have to calculate their actual size. Abu's one field covers an area of ten acres, while Gida's ten fields together cover an area of five acres. So Abu should pay one hundred sacks, and Gida should pay fifty. I hope I got the math right. All these numbers are giving me a headache."

Now Abu was very upset. "Not fair!" he cried. "Size doesn't matter. The quality of the land is far more important. My ten acres are on sandy land in the desert and hardly grow any wheat! Gida's five acres are on fertile soil right next to the river. It's like paradise there!"



So the king—whose headache was getting worse and worse—said, “Okay, okay, okay…I get it. The really important thing is to count how much wheat you actually produce. I will take half of that as tax. If at harvest time Abu harvests one hundred sacks of grain, he should pay fifty sacks, and if Gida harvests two hundred sacks, she should pay one hundred sacks—and that’s the end of it! I don’t want to hear another word from you, or I’ll feed you both to the crocodiles!”

That was a more reasonable solution. But it meant that somebody had to count how much each farmer produced. And they had to do it not just once but every year. Because maybe one year’s a good year and Abu produces 100 sacks of grain and pays 50 in tax, but the next year there’s a terrible drought and Abu produces only 40 sacks. If Abu is still expected to pay 50 sacks in taxes, his family will be sold into slavery or will starve.

So every year somebody had to come and ask every farmer in the kingdom how many sacks of wheat they harvested. And how many calves were born, and how many little ducklings hatched, and how many fish were caught in the river. **That’s an awful lot of numbers!**

And that’s only half of the problem. The king didn’t just need to know how much tax to take. He also needed to know how much grain he’d given to the workers who dug the canals and to the soldiers who protected the kingdom from invasion.

Suppose a soldier came and said, “Hey, King, I didn’t get my sack of grain this month. How do you expect me to fight on an empty stomach?” The king needed to know whether the soldier was telling the truth and should be given a sack or he was lying and just trying

to get extra food. So somebody needed to count all the sacks of grain that went out of the granaries.

That was even more numbers. Who could remember them all?

The king himself couldn't remember them. Even the high priest quickly lost count. But the kingdom couldn't function without remembering all the numbers.

RESCUED BY
CREATIVE GEEKS

That's why for a long time, even after people became farmers, it was difficult to set up big kingdoms and even more difficult to keep them running. In fairy tales, kingdoms are often threatened by giants, sorcerers, and dragons that breathe fire. In reality, a much more common threat to ancient kingdoms was that **nobody could remember all the numbers.**

Until finally some geeks found a way to do it.

These geeks didn't live in Egypt. Yes, Egypt was the first really big kingdom, but kingdoms appeared even earlier in Sumer. Ancient Sumer had hundreds of little villages and towns. Sometimes people tried to unite several towns and villages into a kingdom, but they got confused by all the numbers, and they forgot who owned what and who owed what.

And then, about 5,500 years ago, some geniuses in the city of Uruk discovered a clever way to remember numbers. These Uruk geeks understood that human brains aren't good at doing this. So instead of trying harder and harder to store all the numbers in their brains, **they invented a way to store them outside their brain!** This great invention made it possible to create the kingdom of Uruk and other Sumerian kingdoms, like Lagash…and also much bigger kingdoms, like Egypt.

Maybe you've already guessed how the Sumerians remembered numbers outside the brain.

They wrote them down—the Sumerians invented writing.



PLAYING
WITH MUD

Writing is a method of storing information outside the brain. The Sumerians used a little stick to write on soft clay tablets. Perhaps they were inspired by seeing birds leave their footprints on the wet riverbank. Perhaps it started when some Sumerian kids played with mud.

Next time you come home all muddy and your parents tell you to keep your clothes clean, you can tell them that playing with mud was probably one of the most important things anyone ever did.

At first, the Sumerians invented just **a few symbols for numbers, and a few more symbols for people, animals, tools, places, and dates.** By writing these symbols together on a clay tablet, they could easily remember that one person owned six goats and another owned ten. They could remember that one person paid 100 sacks of grain in tax this year, while another person hadn't paid taxes for the last three years, and now owed the king, Lugal-kinishe-dudu, 300 sacks of grain.

If the Sumerians' symbols mainly referred to numbers, people, animals, and grain, you may wonder how they wrote history books, science fiction, poetry, or philosophy. Well…they didn't. **They didn't invent writing to write poems.** They invented it to remember who owned what and who owed what.

SIGNED, **KUSHIM**

Have you ever wondered what the oldest text in the world is? If you think it's some sacred text full of ancient wisdom, you're in for a big disappointment. Our ancestors' earliest messages look like this:



This is a clay tablet written in the city of Uruk more than 5,000 years ago. It reads, "135,000 liters barley 37 months Kushim." What do you make of it?

It seems somebody called Kushim confirmed that a quantity of 135,000 liters of barley grain was received over a period of 37 months. Kushim may well have been the name of a particular individual—in which case **he is the first person in history who left his name to us!**

All the earlier names in history are modern inventions. The Neanderthals didn't call themselves Neanderthals. We don't know what they called themselves. Wanda, Squirrel, Wheaty, and Wolf aren't real people's names from the past—they're made-up names. But when Kushim's friends saw him in the streets of ancient Uruk, they probably shouted, "Hi, Kushim! What's up?"

It's very interesting that the first name in history that has reached us belonged to a geek who spent all day counting grain rather than a great conqueror, a poet, or a prophet. And the first texts in history contain no philosophical insights, no poetry, and no stories about kings and gods. **They're boring economic documents** recording property ownership and tax payments.

The fact that they're boring is the whole point. Nobody needed to write down the exciting things. People remembered them perfectly well in their brains. Writing was invented for the boring stuff.

THE POET AND THE **HAIRDRESSER**

Over time, as writing became more important, the Sumerians wanted to write down other things besides lists of property and taxes. So they invented more and more symbols. **Now they could write poems and history books and legends.**

Archaeologists call the Sumerian system of writing cuneiform. Thanks to cuneiform, we can now read not only lists of taxes from ancient Sumer but also poems. The first poet in history whose name is known to us was a woman called En-hedu-anna, who lived in Sumer about 4,250 years ago. Archaeologists have found forty-two of her poems.

In ancient times, En-hedu-anna was a famous poet, and her poems were widely copied. Scholars believe that even some passages in the Bible were inspired by En-hedu-anna's poems. Copy-and-paste has a long history.

We also know what En-hedu-anna looked like because archaeologists have identified a statue of her. The statue also depicted some of En-hedu-anna's servants and even her hairdresser, a guy called Ilum-Palilis. He's the first famous hairdresser in history!



News about the invention of writing spread far and wide, and when people in other places heard about it, they thought it was a brilliant idea. Some people, such as the Babylonians and Assyrians, copied the Sumerian system and began writing in cuneiform. Others took the basic idea but **developed their own unique writing systems.** That's what happened in Egypt.

Maybe the Egyptians thought cuneiform wasn't pretty. Maybe they were jealous that they hadn't invented it themselves and wanted to show the Sumerians that they could do better. Or maybe they just had a lot of fun playing around with new symbols. In any case, they came up with one of the most beautiful and complicated writing systems ever invented: hieroglyphs. And instead of writing with a stick on a clay tablet, they wrote with ink on a kind of paper. **They**

made their paper from the papyrus plant, which is where the word *paper* comes from.

While all this was happening in Sumer and Egypt, other systems of writing were invented thousands of kilometers away by people who didn't know anything about cuneiform or hieroglyphs. The Chinese invented their own writing system about 3,200 years ago, and another way of writing was created in Central America around 2,900 years ago.

In all these places, people wrote poems, legends, history books, and recipes. But all over the world, **the most important things people wrote were lists of property and taxes.** And these lists grew longer and longer. So a new problem appeared: How could you find the information you needed?

GOOGLE IT

When we store information in our brains, we can find it in a split second. There are millions and millions of things we keep in our brains, yet we can immediately remember the names of all our cousins, a moment later explain how to get from our house to school, and then list our favorite books and movies. We just need to think about the information we want and—*poof!*—there it is!

But how would you find information stored on clay tablets, ancient papyrus sheets, or pieces of paper? If you have twenty papers, it will take you a minute to go through them and find the one you need. What if you had 200,000 of them?

Suppose you lived in ancient Egypt, and soldiers came to your village to punish someone who didn't pay their taxes, but they took your grain by mistake. You wail that they've got the wrong person. You paid your taxes in full.

"Do you have any proof?" the soldiers ask.

"Erm…" You think hard. "Well, the tax collector wrote down my name and '100 sacks of grain' on a papyrus he was holding."

“Okay,” says one soldier. “Show us this papyrus, and we’ll give you your grain back. Until then, your sacks of grain are coming with us.”



What to do? Without the grain, your family might starve. You must get that papyrus. So you walk from your village to the big city, to a building called an archive, where the pharaoh keeps all the important papyruses.

You knock on the door of the archive, but the guard tells you to come back tomorrow. “There’s an inspection today, so the archive is closed.”

You come back the following day, and this time the guard says, “Today is a holiday. Everybody went to the temple of the crocodile god to celebrate.”

On the third day, the guard says, “Yes, you can come in, but the clerk in charge of tax records isn’t here. He ate so much roast duck at the temple of the crocodile god that he got a stomachache.”

On the fourth day, you finally get your chance to explain the situation, and you ask to see the document with your name on it. The clerk—who’s still feeling a bit sick—takes you to a big room with a sign over the door: TAXES. The clerk opens the door…and you open your eyes wide in despair. Inside the room, piled from floor to ceiling, there are thousands upon thousands of papyruses.

A spider has spun her web between two piles. A family of mice made their home at the bottom of another, covering the paper in poop. You notice a worm eating her way through a third pile—perhaps she’s eating away your name! How on earth are you supposed to find the document with your name on it before the worm gets it?

Clearly, just writing down information isn’t enough: people need to know how to *find* the information. That requires organizing archives and libraries, creating catalogues, and training clerks who know how to keep things in order and find the information in question.

Think about the internet: it's full of information. For instance, the internet has millions of web pages, images, and articles relating to hieroglyphs. **But all that information would be useless without something like the Google search engine.** Search engines don't create information, but they allow you to find information by hitting a button.

If you type "hieroglyphs" into the Google search engine, within a second you get millions of results, arranged in order of relevance. You can easily find encyclopedia entries, photos of ancient texts in hieroglyphs, and even videos that teach you how to write in hieroglyphs.

Suppose there were no search engines. You could still surf the internet. If you knew the address of any site you wanted to visit, you could type it in and get there in a split second. But if you didn't know, you would have to try addresses randomly and hope that one of them con-tained information about hieroglyphs…not very efficient. That's like going into **a room full of papyruses and trying to find your tax records by just picking scrolls at random.**

Ancient geeks in Sumer, Egypt, and China changed history by inventing writing, but they changed it even more by inventing methods to store and search information efficiently. These methods are called bureaucracy.

KING
WRITING-DESK

Bureaucracy, like taxes, is something that adults are scared of. They would rather spend a day with three ghosts and two monsters than an hour with one bureaucrat. The word *bureaucracy* comes from *bureau,* which is a writing desk. Bureaucracy means "to control people by using writing desks."

Imagine someone sitting at a desk full of drawers. The person takes a document from one drawer and another one from a second

drawer, then reads them carefully before writing a new document and putting it in a third drawer. That's a bureaucrat. **Lots of people know how to read and write, but bureaucrats also know which doc-uments go into which drawer.** That's their secret power. They can find stuff—and also make stuff disappear. That's how they control people.



Bureaucracy works like magic. In fairy tales, you read about sorcerers who can create or destroy entire villages by uttering a spell. Bureaucrats can create or destroy villages by moving paper around. An evil bureaucrat can make a village starve just by putting the paper with the village tax record in the wrong drawer. A good bureaucrat can rescue the village by finding the missing document or deleting the name of the village from the king's tax list. One stroke of the pen and a hundred people are saved.

Some people think that those in power rule everybody else with swords and guns. It's true that warriors with swords and guns are useful for conquering a kingdom. But when you want to rule the kingdom, you need bureaucrats sitting at their desks and moving documents around.

WHY SCHOOLS
HAVE EXAMS

Most big things in history were organized by bureaucrats. In ancient Egypt, it was the bureaucrats who organized the building of dikes that protected people from floods, the digging of reservoirs that protected people from droughts, and the shipments of grain that protected people from famine.

Most things are still organized by bureaucrats today. Without them, nobody could build roads and airports and hospitals. Even your school is organized by bureaucrats. They decide which kids go to the school, and which teachers teach each class. They pay the teachers their salaries at the end of every month. And have you ever wondered why you have to take exams? It's because the bureaucrats said so.

The bureaucrats don't read your exam answers. That's your teachers' job. But your teachers usually give you a score after each exam and another score at the end of the year, right? These scores are numbers. And the teachers send these numbers to the bureaucrats, who put them all in a drawer and use them to decide all sorts of things about you.

Suppose next year you want to go to a school for math geniuses or to a conservatory for musicians. Who decides whether you can? Some bureaucrat will take all the numbers about you from their drawer and—based on these numbers—decide whether to say yes or no. You may not know it yet, but **your future often depends on bureaucrats and the papers they keep in their drawers.**

So bureaucrats are very powerful people. They're the closest things we have to magicians and sorcerers. But how do you become a bureaucrat?

THE INVENTION OF SCHOOL

In ancient Sumer and Egypt, if you wanted to become a bureaucrat, you had to learn how to read, write, calculate, and search. And for that, you had to go to a school. The Sumerians and Egyptians created the first schools in history.

Archaeologists found an ancient Egyptian papyrus that told the story of a boy named Pepy who wasn't fond of school at all. He came from a rich family, and in ancient Egypt, **only rich kids went to school.** But Pepy didn't appreciate how lucky he was—he thought school was terribly boring. So Pepy's father, Khety, gave Pepy a little pep talk. Archaeologists today can read exactly what Khety said.

Khety wanted Pepy to realize that there were worse things in life than being bored, so he told him how a typical farmer lived. "A farmer constantly worries about his fields," Khety said. "He spends his days carrying water in buckets from the river. The heavy loads bend his shoulders and cover his neck with sores. In the morning he has to water his vegetable plot, in the afternoon his fruit trees, and in the evening his coriander field."

Then Khety explained that people who had no farm of their own had it even worse. "If you don't own any fields, you have to labor on someone else's farm. A typical farmhand is always in pain. He wears rags, his body smells bad, and he toils all day until his fingers are covered in blisters. Then the pharaoh's soldiers come and take the poor man to dig ditches and build dikes. And what is his reward? He soon falls sick and dies!"

Pepy got the message and went to school. **Boring is better than laboring.** It's easier to write what other people should do than to do it yourself. It's easier to push pencils than to dig ditches.

SKELETONS
RARELY LIE

Unlike Pepy, most children in ancient Egypt weren't given any choice. In a place called Amarna, archaeologists found **a cemetery with more than 100 skeletons.** Half of the people buried there were between the ages of seven and fifteen, and many of these skeletons had injuries to their spines, knees, and hands. Despite their young age, these people were probably construction workers. They seem to have been enslaved by a pharaoh called Akhenaten.



Akhenaten wanted to build himself a new capital city at Amarna, and he didn't want to wait long for his city to rise from the sands. So

his bureaucrats sent letters all over Egypt ordering workers to come to Amarna, and they made them labor extra fast. The workers quarried large stones and **dragged them for kilometers to build houses, palaces, and temples**—all under the burning desert sun, with lots of flies and lots of scorpions but lit-tle food.

Many of these workers were kids who were taken away from their families and never saw their parents again. When they died, a bureaucrat simply sent for more workers. They probably didn't even notify the parents that their children were dead.

Akhenaten's bureaucrats did many bad things, but of course, they didn't want to admit it. People never like thinking that they're bad. So the new city's palaces and temples were decorated with beautiful paintings showing granaries full of grain, tables overflowing with food, and musicians playing at one of the pharaoh's many banquets. Inscriptions written by learned men like Pepy praised the wonderful things the pharaoh did for his people and insisted that everybody was happy under the pharaoh's rule. These paintings and inscriptions told the story that the pharaoh wanted to hear…**but the skeletons in the cemetery tell us the truth.**

If you really want to know the truth, don't believe everything you read in a text or see in a picture. To get an honest opinion, it's always best to ask the skeletons. They rarely lie.



4

THE DREAMS OF DEAD PEOPLE

WOULD YOU CHANGE **THE RULES?**

If you were one of the enslaved people that built Akhenaten's city, what would you do?

You would probably want to stop working so hard in the middle of the desert and go back to your parents. But that was against the rules. **Those who were enslaved couldn't go anywhere without permission,** and nobody would give you permission to go home. You could break the rules, but that was very dangerous. If you tried to run away, one of the pharaoh's soldiers might catch you, beat you, and perhaps even kill you. Would you still try?



If you were one of the pharaoh's soldiers, and you saw someone who was enslaved trying to run away, what would you do?

Maybe you felt sorry for those who were enslaved and wished you could let them go home. You knew it was against the rules, but you weren't comfortable with this particular rule. You might think, "I could pretend I was asleep and didn't see anything."

But **falling asleep on guard duty was also against the rules.** You were frightened that if an important bureaucrat caught you, they would write to the pharaoh, telling him you fell asleep on your watch or deliberately allowed an enslaved person to escape. Then the pharaoh might be so angry he would in turn enslave you, or perhaps even kill you. On the other hand, if you followed the rules and caught the enslaved person, maybe the pharaoh would promote you to captain and raise your salary! Would you still let an enslaved person go?

If you were an important bureaucrat and you saw a soldier allowing someone who was enslaved to escape, what would you do?



Maybe you thought the soldier was kind, and you hoped he wouldn't be punished. But you knew it was against the rules, and you also knew it was your job to report rule-breaking. Again, you might think, "I could pretend I didn't notice or forgot."

But the rules said **it was a bureaucrat's job to notice everything** and write to the pharaoh about it. Also, the pharaoh had ordered you to complete the new city as quickly as possible. If enslaved people ran away, the building would never be complete. The pharaoh would be furious, and that would probably be the end of your career.

Besides, you knew that if people just stopped obeying the rules they didn't like, there was no knowing where that might end. A soldier who decides to ignore a rule and allow someone who is enslaved to escape might ignore a different rule next time; maybe they abandon the army in the middle of a battle or even sell state secrets to the enemy. So would you report the soldier to the pharaoh?

And what if you were the pharaoh—would you change the rules?

Maybe you thought slavery was bad and didn't like punishing disobedient people. But you were worried about what could happen if you suddenly changed the rules. **It took hundreds of years to create the kingdom of Egypt and make a million people cooperate effectively.** There was a reason for every rule.

Plus, if you suddenly changed the rules, people might not know what to do. They might refuse to pay their taxes. Soldiers might stop obeying orders. Nobody would build cities, dikes, and canals. The result could be total chaos! The whole kingdom could collapse! Thousands of people might die in wars, in floods, in famines. And all because you thought you were so smart.

Would you still change the rules? Even when rules are very unfair, it isn't always easy to change them.

THE WAY THE COOKIE CRUMBLES

It took a lot of people following a lot of rules to build kingdoms like ancient Egypt. It wasn't just enslaved people, soldiers, and bureaucrats who had to obey the rules—everybody followed rules like work hard, have lots of children, pay your taxes…and do whatever the king tells you. **When people followed the rules, there was order in the kingdom.** When people disobeyed the rules, there was chaos.

It wasn't easy to make everybody follow the rules, especially because many of them were unfair. The rules made some people

rich, while making other people poor. The rules said that rich boys went to school, rich girls stayed at home, and poor boys and girls toiled in the fields. **These differences between people had nothing to do with any law of nature.** It wasn't gravity that enslaved people or that banned girls from going to school. It was humans who invented these rules.

Suppose Pepy the schoolboy met a farm girl called Maat on the street.

"Where are you going?" asked Maat.

"I am going to school to learn to read and write," answered Pepy. "I'm going to be an important bureaucrat when I grow up!"

"Wow!" cried Maat. "I want to go to school and become an important bureaucrat too. But I have to go to the field instead—we're picking onions today. Why can't we swap places? I could go to school, and you could pick onions."

"Sorry," said Pepy, "but it's what the rules say. My father's a rich bureaucrat, so I get to go to school. Your parents are poor farmers, so you pick onions. And even if your parents were rich—you're a girl! You can't go to school! I have three sisters, and none of them goes to school."

"That's so unfair!" cried Maat. "Who invented these rules? Nobody ever asked me if I agreed to them."

"Don't blame me," said Pepy. "I'm only ten. I didn't make the rules either. It was like this when I got here. Like grown-ups always say: that's the way the cookie crumbles."

"Pffff." Maat snapped. "That cookie sure favored you!"



DON'T
TOUCH

In many places, the rules were even stricter than in Egypt. In ancient India, for example, there was a group of people called Dalits, who suffered from a lot of horrible rules. These rules forbade everyone else from making friends with Dalits, touching them, or even going near them.



The Dalits were forced to do jobs that were considered dirty in ancient India, such as cleaning and collecting garbage. These were actually important and difficult jobs, but the Dalits were paid very little for doing them, so they dressed in rags and didn't have much food. **Nobody wanted to live near them,** so they had to build their huts outside towns and villages.

Dalit kids didn't go to school and didn't learn to read or write. Other kids never invited them into their houses, never shared a meal with them, and never played with them.

So people really mistreated the Dalits. **But people had great respect for a different group**—the priests. These priests were called Brahmins. Brahmins were often rich and had nice clean clothes and good food. They had the best jobs, like serving in beautiful temples or writing how much tax everybody should pay. Their kids went to school—if they happened to be boys. These Brahmin boys thought they were better than everyone else, certainly better than Dalits. If a Dalit girl saw a Brahmin schoolboy on the street, she wouldn't have dared to even go near him, let alone ask him a question.

How did you become a Dalit? Simple: the rules said that if your parents were Dalit, you were Dalit too. Nobody asked, "What do you want to be when you grow up?" **It didn't matter what talents you had or what you wanted to do in life;** you were going to clean toilets and dress in rags.

But what if your mom was Dalit and your dad was something else—say, a Brahmin priest? Would you get to choose what you wanted to be? Well, that was never supposed to happen because another rule said that priests should never ever marry Dalits or have children with them.

So what happened if you were a Dalit kid and you fell in love with a priest's daughter? Tough luck. Nobody cared who you loved. You had to obey the rules.

WHO WANTS A **PRESENT?**

Why did people follow all these rules?

One way of convincing people to follow the rules was to give them rewards. If you do what your parents ask you, they might give you a cookie. But there is one big prob-lem with this method: there aren't enough rewards for everybody. If your parents had to give you a cookie every day before you did your homework, another one to get you to take out the garbage, and a third for chewing the first two with your mouth closed, they'd need tons of cookies!

And what about all the *bad* things you *don't* do? There are a million bad things you could do every day, but you don't. You don't pinch your little brother, you don't leave your socks in the living room, you don't break the TV. Should they give you a million cookies every day?

It was the same with the pharaohs in ancient Egypt. Suppose the pharaoh had to give a wheat field to every bureaucrat and soldier who did something right. **He'd run out of fields pretty quickly.**

No, giving people a reward every time they followed a rule could never work.

WHO GUARDS
THE GUARDS?

Another obvious way to make people follow rules was to punish those who broke them. This is how farmers controlled horses, cows, and bulls. They put them in cages, tied them with ropes, and beat them if they disobeyed.

Kings often did the same thing to the farmers. If a farmer stole a duck from a neighbor, the pharaoh sent soldiers to capture the thief. The soldiers tied up the thief and beat him or put him in prison. That sometimes worked well: other farmers saw what happened to the thief and thought twice before getting their hands on someone else's property!

But you can never control everyone with punishments. If you were the pharaoh, how would you even know that some farmer stole a duck? You couldn't watch everyone all the time—you lived in your fancy palace in the capital city, while they lived in mud huts in remote villages.

You could put a soldier in every mud hut to watch the people who lived there, but that would be very difficult. First, where would you get so many soldiers? And how could you be sure that the soldiers themselves weren't breaking the rules? Suppose your parents go somewhere and can't watch you. They can tell your big sister, "You stay here and watch things for us and make sure every-one follows the rules." But how can they be sure your big sister won't break the rules herself?

It's the same with soldiers. If the king put a soldier in every house to make sure people didn't steal ducks from their neighbors, should he also put a second soldier in every house to make sure the first one didn't steal any ducks? And who made sure the second soldier didn't do anything wrong?

This question has bothered wise people throughout history. They often asked themselves, "If we have guards to keep order, who will guard the guards?" They concluded that you can never ensure order with punishments alone.

THE SECRET OF **POWER**

The only way to keep order—in a house or in a kingdom—is to have lots of people who follow the rules all by themselves, without needing rewards or punishments. But why would they do that? Because they believe in the rules. That's the secret of every successful system: people obey the rules because they believe in them.

But what causes people to believe in the rules? More important, what causes even poor and enslaved people to believe in rules that make them so miserable?

The answer is stories! You may think there's nothing useful about telling stories, but it's actually the greatest power humans have. It's our secret superpower! By convincing people to believe in the rules, a good storyteller can do the work of a hundred soldiers far more efficiently.



Humans started relying on stories long before the rise of ancient Egypt, and even before the Agricultural Revolution. Tens of thousands of years ago, humans were already using stories to unite several bands into a tribe and establish rules that every tribe member followed. This is what made humans powerful and allowed them to overcome all the other animals.

Lions and wolves can sometimes cooperate but only in very small numbers. You could never get a thousand lions to work together on something because lions don't have stories. When a story inspired a thousand humans to cooperate and set up a tribe, that tribe was far more powerful than any pride of lions or pack of wolves. **A human tribe with a good story was the most powerful thing in the world.**

After the Agricultural Revolution, priests and chiefs used stories to convince people to work hard, build temples, and guard walls. As villages grew into cities and tribes grew into kingdoms, the stories also grew. Small tribes could manage with small stories, but to create a big kingdom you needed a big story.

Every big kingdom had its own big story, and that big story justified all the kingdom's rules. If people believed the story, they believed in the rules and followed them even though the rules made them miserable, and even though there were no soldiers to watch and punish them.

THE FEATHER AND
THE CROCODILE

Telling a kingdom's big story was a very important job. The king himself was busy ruling the country and couldn't spend all day telling stories. So he relied on a special group of storytellers, and these storytellers were the priests.

Priests in various kingdoms came up with all kinds of big stories. But the most popular was a story about the great gods who created the world and made all its rules. Priests throughout the world

told this story, although they told it a little differently in every kingdom. Pepy the Egyptian schoolboy probably heard one version of it in his school.

"Once upon a time," said Pepy's teacher, "there was absolutely nothing. Then the great gods created everything. They created the sun and the moon and the Nile River. They made the trees and the animals and the humans."

"Did they also make the spiders?" interrupted one kid who hated spiders.

"Yes, the spiders too. And don't speak without raising your hand first, or I'll cane you!"

"Sorry, sir."

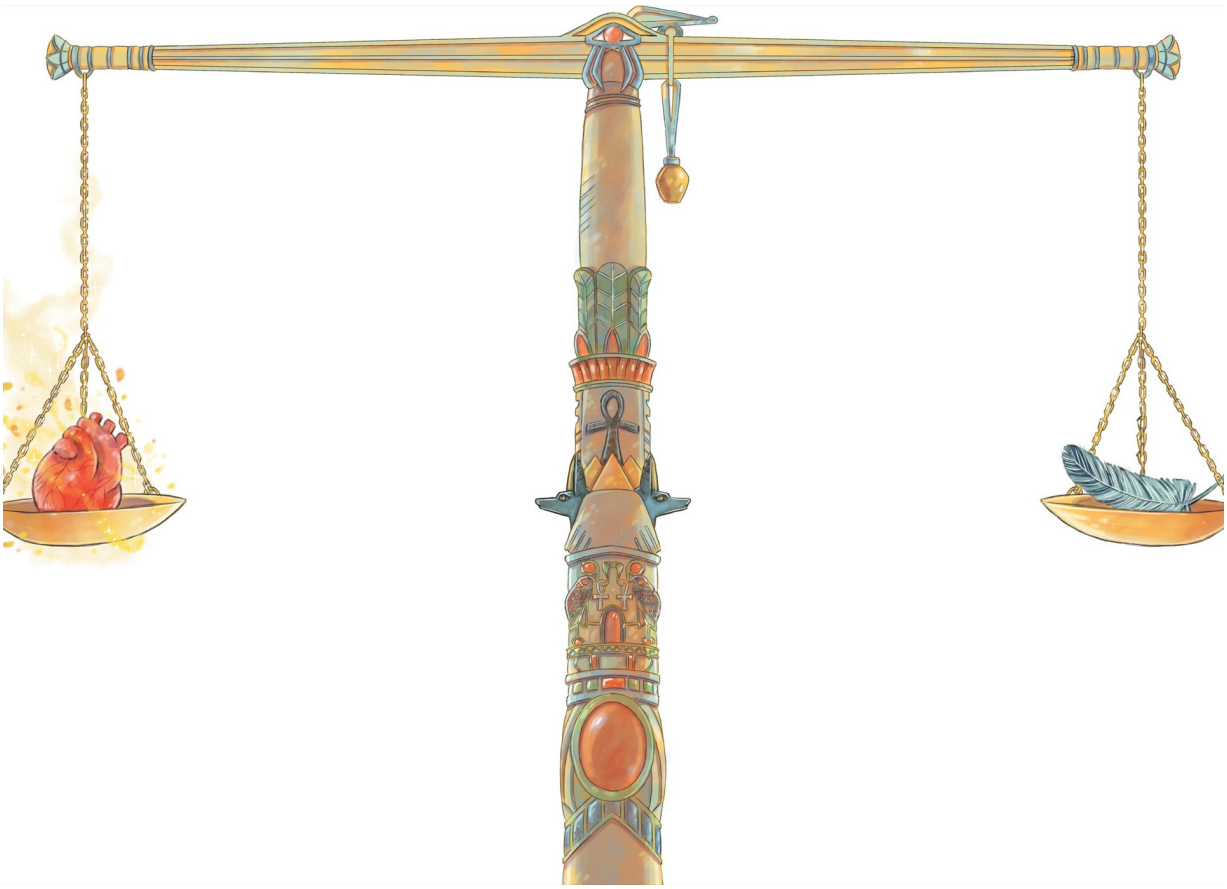
"Where was I? Yes, the great gods made everything. They made the farmers, the soldiers, the priests, and those who were enslaved, and appointed a wise pharaoh to lead the whole land. And they made the rules that everybody must obey. They told these rules to the most important people—the pharaoh and the priests. And then the pharaoh and the priests told the rules to everybody else, and even wrote the rules down in a book so that nobody would forget them."

The kid who was frightened of spiders raised his hand, but the teacher ignored him and continued: "**When people follow all the rules, the gods are happy and protect Egypt from floods,** droughts, famines, and enemies. If people disobey the rules, the gods become angry and punish Egypt with disasters."

"Like spiders?"

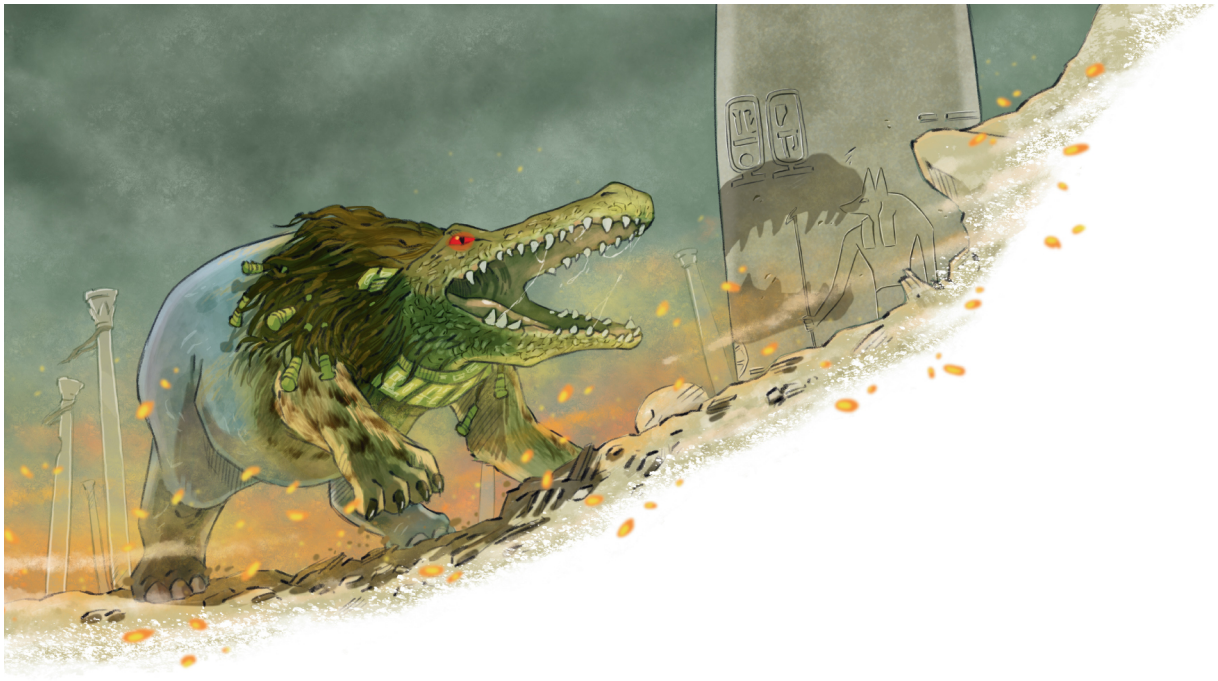
"No! One more word about spiders and you're gonna get it! Much bigger disasters, like floods and droughts. And the gods don't just reward and punish the whole of Egypt, but individual people too."

The teacher looked at the spider kid and said, "After you die, the gods take your heart and balance it against a feather. If you follow the rules all your life, your heart is lighter than the feather, and **the gods let you into a wonderful place called heaven**. But every time you break a rule—like by talking in class without raising your hand—your heart gets a little heavier. If your heart gets heavier than the feather, you're not allowed into heaven."



“So where do I go, then?” asked the spider kid timidly.

“Oh…,” the teacher said, lowering his voice, “in that case, a terrible demon eats you. The demon has a hippo’s back, a lion’s chest, and the head of a crocodile. It’s called the Eater of Hearts. If you broke too many rules during your life, the Eater of Hearts eats you, and you suffer in its fiery stomach for all eternity!”



The spider kid started crying, and Pepy and all the other pupils trembled in fear. The teacher told this story again and again, and every time the boys heard the story, they made a special effort to follow all the different rules—nobody wanted to be eaten by the crocodile demon.

This story about the gods and the feather and the crocodile demon was very important. **Without it, ancient people probably couldn't have created Egypt.** The story itself wasn't true: there was no crocodile demon who ate people after they died, and no god protected Egypt from floods, droughts, and famines. But if people believed the story and followed the rules, they would work hard and cooperate to build canals, dikes, and granaries. And this *did* protect them from floods, droughts, and famines.

EVERY STORY HAS
A SHADOW

Even though the big story wasn't true, believing in it kept the kingdom stable. However, the story also had a dark side. It justified all the unfair rules that made so many people miserable.

After hearing the story of the crocodile demon, Pepy would have far less patience for any complaints from Maat the farm girl. If she grumbled that Egypt's rules weren't fair, he would cut her short: "Be careful! Those rules were made by the great gods. Do you think the gods are unfair? Do you know what will happen to you if you break the rules? You'll be eaten by the crocodile demon! It's true—I heard it at school!"

"Oh no!" cried Maat, terrified.

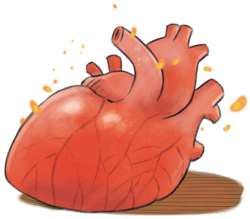
"But don't worry," Pepy comforted her. "The gods love you too. Yes, they made you a farm girl, but they gave you an important job to do: you grow the food that feeds everyone. If you follow the rules and do your job honestly, your heart will be lighter than a feather, and you'll get to spend eternity in heaven. That's a pretty good deal, don't you think?"

"That's not so bad," Maat agreed. "Okay, I better hurry, I don't want to be late—we're picking garlic today…."

That's how the story of the crocodile demon helped the Egyptians build their kingdom and made even poor Egyptians willingly follow the rules. Of course, not all poor people believed the story. But many did—after all, everybody around them seemed to believe it, including the most important people they knew.

THE GIANT'S MOUTH

Few people outside Egypt believed this story or had even heard about it. *A crocodile demon? Weighing your heart against a feather? What nonsense!* But **they had other stories instead.** For example, when a Brahmin priest in India wanted to justify Indian rules to Brahmin schoolboys, he told them a story about the gods and a giant.



"In the beginning," said the Brahmin priest, "there were no people in the world. Even the sun and moon didn't exist. There was just one giant called Purusha."

"Poor giant," said one boy. "It must have been very boring."

"Yes, it was very boring!" agreed the priest. "So, to make the world more interesting, the gods divided Purusha into many small parts. They created the sun from Purusha's eye, and the moon from Purusha's brain. They decided to make some people too and created one kind of people from Purusha's mouth. These people were very smart and good at talking and telling stories. Do you know who they were?"

"Yes!" the schoolboys all cried in unison. "It was us, the Brahmins!"

"That's right." The priest smiled. "And who did the gods create from Purusha's muscular arms?"

"The warriors!" chanted the schoolboys together.

"And from Purusha's thighs?"

"The merchants and farmers!"

“How smart you are! You know all the answers. And finally the gods took the giant’s feet—the lowest, dirtiest part of the body—and turned them into people too. Who were these people?”

“The servants!” said the schoolboys.

“Right!” The priest beamed, pleased that all the schoolboys remembered the story. “So different people were made from different parts of the giant’s body. And that’s why—**just as different parts of the body have different jobs**—different kinds of people also have different jobs. Every part of the body must do its own particular thing. If the feet say, ‘We’re fed up with walking. We want to do some talking instead!’ or the stomach says, ‘I’m tired of just digesting food all day. I want to see!’ what would happen to the body?”

The schoolboys thought about this for a moment. They weren’t sure. Was this a trick question? Finally, the smartest boy said, “The body would fall apart.”

“Exactly!” said the priest. “It’s the same with a kingdom. If all the farmers stop farming and start telling stories all day instead, or if the people who collect the garbage suddenly all become priests, the kingdom would collapse. So everybody should just do their job and be happy with it.”

The priest then told the schoolboys something even more important: “After you die, you’re born again as a baby. But your new life depends on how you behaved in your previous one. If you followed all the rules and did your job without complaining, then you’ll be reborn in a better place in your next life.”

“What, like a Brahmin?” The boys smiled.

“Yes, yes. Even if you were a servant, as long as you followed all the rules, you could be reborn as a rich Brahmin priest! On the other hand, if you break the rules, you could be reborn as a poor servant, even if previously you were a Brahmin.”

The boys stopped smiling. They didn’t like the idea of being servants one day.

“So you see,” concluded the priest, “everything is very fair. Rich and powerful people are just being rewarded for their good deeds in a past life. Poor servants are being punished for their bad deeds. And even servants have an excellent reason to follow all the rules. If they obey the rules in this life, they’ll get to be Brahmins in the next!”

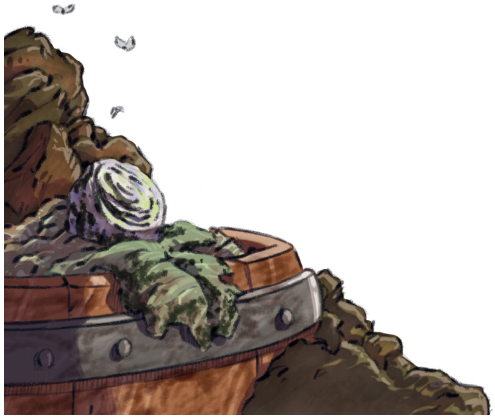
That's what the Brahmin priests told everyone. Not just the Brahmin schoolboys but also the warriors, farmers, servants, and Dalits, who were ranked even lower than the servants. So everyone—including at least some of the servants and Dalits—**believed that the rules were fair and should be obeyed.** Even today, many people around the world believe this story.



Are there stories that justify unfair rules in your country too?

THE MAGIC STINK

Some big stories did more than justify unfair rules—they actually made people feel disgust. Disgust is one of the most basic feelings; everybody feels it sometimes, even animals. You're usually disgusted by things that could make you sick, like rotten food or a splotch of vomit. But you don't know what's disgusting when you're born. **Little children learn disgust by putting all kinds of stuff in their mouths.** If something tastes bad or makes them sick, they avoid it later.



In some cases, you might be accidentally disgusted by good stuff. For example, if you ate a banana and later got a stomachache, your body might conclude that the banana caused the stomachache and start hating even the smell of bananas.

You don't learn what's disgusting just from bad tastes and stomachaches but also from your parents. If your parents

keep saying, “Don’t pick your nose and don’t eat your snot—it’s disgusting!” after the thousandth time, you start thinking it’s disgusting to eat your snot…and if your friend does it, you shout, “Gross! You’re so disgusting!”

Throughout history, adults also taught kids that certain people are disgusting. Rich parents would often tell their children, “Don’t play with the servant kids! They’re dirty and smelly and have all kinds of diseases. They’re disgusting!”

After hearing this a thousand times, the rich kids started to believe that servant kids were disgusting. And if they saw their little brother playing with the servant kids or sharing an apple with them, they would shout, “What are you doing? You’re so disgusting!”

But that wasn’t all. People also invented a new notion of being clean and beautiful. They described a magical beauty that can’t actually be seen—only the gods can see it. They called this purity. Pure people were beautiful in the eyes of the gods. And of course this meant there was also an opposite notion of being ugly, dirty, and smelly, a kind of magic stink that you can’t smell, but the gods sure can. They called this stink impurity. If you were impure, the great gods themselves thought you were disgusting.

You couldn’t see purity with your human eyes or smell impurity with your human nose. So how could you tell who was pure and who was impure? You just had to trust your parents and teachers, who trusted the priests, who were told by the gods.

Priests in ancient India told everyone, “Brahmins are pure, and Dalits are impure. If they mix, the Brahmins will become impure as well. When you hug someone covered in mud and dirt, you get dirty too. When you hug someone impure, some of that impurity sticks to you.”

People heard this so many times that they believed it. If a Brahmin saw a Dalit drink from a glass of water, the mere thought of drinking from that glass disgusted the Brahmin. Even if the Dalit took three showers, washed his whole body with soap, and dressed in new clean clothes, the Dalit was still considered impure. And the Brahmin was afraid that if the Dalit came near him, he might become impure too.

Similar stories were told in many other parts of the world, and not just in ancient times. In the modern United States, white people have believed for many years that Black people were impure, a source of pollution.

So, for a long time and until fairly recently, Black people were banned from eating in the same restaurants as white people, sleeping in the same hotels, or studying at the same schools. It was also against the law for Black people and white people to marry. If a Black boy asked a white girl to go on a date, white people became so angry they might kill him just for that. Luckily, most Americans today reject the awful story that Black people are impure, and when a Black boy and a white girl fall in love, they can get married and live together happily.

But many other similar awful stories are still told. Do you know of any stories in your country that say that some people are impure and smelly and dirty, and you shouldn't play with them or eat their food?

BOYS AND GIRLS

Not all countries had groups like the Dalits. But almost all countries had one group of people who suffered because of nasty stories about purity and impurity. This group made up half of the population. **This group, of course, is women.**

Priests and teachers in many places around the world said that women had this magical kind of stink that the gods didn't like. Priests claimed that this was why the gods wouldn't even talk to women. Only men, who were pure, could talk with the gods and tell people what the gods said.

This justified a lot of unfair rules about women, which have existed in many countries for thousands of years and continue in some countries even today. **Women were thought of as impure,** so they weren't allowed to be priests or to read holy books. The gods

would be disgusted if they did. For similar reasons, women couldn't study in school, they couldn't be judges, and they couldn't be rulers.

In some places, women couldn't even leave the house by themselves. If a girl wanted to go out, she needed her father or uncle or brother to go with her. If her brother said no, she had to stay at home.

So, if they couldn't be priests or rulers or even leave the house on their own, what were women supposed to do? They had to do whatever the men told them. In fact, in many places the rules said that women were the property of men!

At about the same time that animals like goats became property and some humans were enslaved, **women became property too.** In many kingdoms, the rules said that daughters were the property of their fathers and wives were the property of their husbands. If there was no father or husband around, a brother or uncle was considered the owner.

If a girl liked a boy, she wasn't allowed to go on a date with him. It wasn't up to her to decide who she wanted to date or marry. Her father or brother decided that.

And what if a boy liked a girl and wanted to marry her? Well, he didn't ask *her* on a date. No, he took *her father* on a date instead. He needed to convince her father to agree to the marriage, **because the father was seen as the girl's owner.** Getting married was like buying a car. If you want to buy a car, you don't need to convince the car—you need to convince the owner of the car.



And how did the boy convince the father to agree to the marriage? Maybe he promised the father things: "I'll give you ten goats for your daughter!" If the father agreed, it didn't matter how the girl felt about it—even if she didn't like the boy at all, she had to marry him.

Once she was married, she was no longer her father's property. She was now her husband's property. In many ancient languages, like Hebrew, **the word for "husband" is the same as the word for "owner."**

Since men were considered much more important than women, many parents preferred to have boys rather than girls. If there was a famine and parents didn't have enough food for their children, they sometimes gave the last crumbs of bread to their boys, while the girls starved.

SCARIER THAN
GHOSTS AND TAXES

These stories about purity and impurity weren't true at all. There's no such thing as a magic stink that gods can smell and humans can't. But the stories didn't need to be true to work. They just had to convince enough people to follow the rules.

And how did you make people believe in these stories? One important method was to tell the stories again and again. If you tell a story once, it's still just a story. If you tell it a thousand times, people think it must be the truth.

Adults usually believed in their kingdom's big story because they'd heard it so many times. What about the children, though? They didn't know any stories when they were born. That's why adults made a special effort to tell them the big story. In Egypt, kids heard about the Eater of Hearts again and again, while in India adults repeated the story about the giant Purusha.

The adults weren't deliberately lying to the children. In ancient Egypt, ancient India, and other kingdoms, adults honestly believed they were telling kids the truth. They believed the big stories because they'd heard them so many times since *they* were kids. And they believed them because there's one thing that adults find scarier than monsters and ghosts, taxes and bureaucrats. Adults are

terrified of the unknown. They often prefer telling weird stories to honestly admitting they don't know something.

SEEING THE **STORY**

So the adults kept telling the big stories. These stories comforted them, and the adults got very upset if anyone doubted their story. It made them feel very insecure.

Of course, just telling the story with words wasn't enough. If people were really going to believe it, **they had to see it actually work in their everyday lives.** For example, maybe Pepy and his father were walking along the street one day and an enslaved person dressed in rags walked toward them. Khety shoved them aside and snarled, "Get out of our way, you filthy fool!"

Later on, a priest dressed in white robes came toward them, and Khety politely greeted the priest with "Good morning, my honorable lord!"

Suddenly, Khety spotted a big golden chariot approaching with soldiers running alongside it. "Aha! The pharaoh's coming!" cried Khety. He grabbed Pepy's arm and they both jumped aside and sprawled on their stomachs. "Keep your head down," he whispered to Pepy, "and whatever happens, don't look up! Nobody should dare look the pharaoh in the face!"

By the time they got home, Pepy understood Egypt's story perfectly: the pharaoh on top, priests just below, his family in the middle, and those who were enslaved at the very bottom. It wasn't just words; he'd seen it with his own eyes.

YOUR RIGHT FOOT
FIRST

But there was one problem. Some of the most important parts of every story couldn't be seen or touched. Pepy and the other schoolkids never actually saw the crocodile demon. Brahmins and Dalits never met the giant Purusha in the street. As for the gods who created the world, people talked about them all the time, but **how could anyone know these gods really existed?**

To solve this problem, kings and priests organized rituals. In a ritual, you take something people can really see and touch, and make people believe that this is the same imaginary thing they heard about in the story. For example, suppose a priest told the people in his city about a great god who created the world and made all the rules. He couldn't show people the god, right? So how would they know he didn't invent the whole thing? Well, **the priest performed a ritual.**

The priest might put a beautiful statue of the god in a magnificent temple. Then he could say, "You can see the god if you come to the temple. But you must show respect. First, you must wash every part of your body—even behind your ears! Then you must put on your best clothes, and you must always bring the god a nice offering."

"Like what?" people asked.

"Like a cake. Or a goat. Or a cloak of fine cloth."



“Okay,” they said. “We’ll bring a cake.”

“Wait, that’s not all,” said the priest. “You must leave your shoes outside the temple and come in barefoot. And always enter with your right foot first! When you see the god, fall to your knees, bow down three times, and sing our special song. Then get up, take seven steps forward, fall to your knees again, and bow down seven times. Repeat this again and again. Remember: never walk more than seven steps forward. When you reach the god, you’re allowed to touch his feet, but never touch his hands or head! That’s forbidden!”



“Well,” said people, “that’s not easy. But it is worth doing all that to see the god. Can we talk to him?”

“Sure,” answered the priest. “When you’ve touched his feet, you can pray to him and ask him whatever you want, like to send rain or cure a disease. But when you leave, never ever turn your back on the god. You must walk backward to the entrance, fall to your knees and bow one last time, and then leave the building with your right foot first. Understood?”

All these complicated instructions made people feel that visiting the god was very special. They couldn’t do it every day, so maybe they only came on important occasions, like when somebody was

sick and they wanted the god's help or when a baby was born and they wanted to celebrate.

Little kids didn't understand all these rituals, and sometimes they made mistakes—like forgetting to clean behind their ears, entering with their left foot first, or giggling during the special song. But their parents scolded them every time so gradually they learned how important it was to get every part of the ritual right.

THE POWER OF **SORT OF**

You may wonder what the point of all that was. Obviously, the statue was just a piece of wood, perhaps covered with gold and silver. It wasn't all that different from other things made of wood like an ordinary chair. But you don't wash behind your ears and take off your shoes every time you sit down, and you don't sing songs to chairs, do you?

Repeating the ritual again and again made people convinced that the statue of the god wasn't like a chair at all; it was very, very special. They felt that **when they saw and touched the statue, they were sort of seeing and touching the god.**

So when somebody asked how they knew their god existed, they replied, "What do you mean? Just yesterday I visited him at the temple and had a long talk with him! He even granted my wish! I asked for rain, and look, it's raining!"

"Well, I went to the temple last week and asked for my son to be cured, but he's still sick!"

"Well, you probably did something wrong. Maybe you entered the temple with your left foot first?"

That's how rituals work. **They make people feel that one thing is sort of like another thing.** A piece of wood covered with gold is sort of like the god who created the whole universe.

FLAGS AND SHIRTS

You may think it's ridiculous to believe that a piece of wood in a temple was sort of a god, but you probably have rituals too—everybody does. It's easy to laugh at other people's rituals, but you'd be upset if a stranger laughed at yours.

Rituals help us believe in the big stories that hold societies together, and they're as important today as they were in ancient times. For example, people in many countries have very strong feelings about their country's flag. A country has something in common with a god—you can't see or touch it. Just as ancient people made statues to help everyone believe in their god, modern people make flags to help everyone believe in their country.



Every country has its own flag. Over the centuries, flags have taken many forms, but today they all look quite similar: they're mostly rectangular pieces of cloth with colored stripes, stars, and other shapes. Flags are made from ordinary cloth, just like shirts, but **people perform all sorts of rituals to make their flag feel special.** In some schools, people raise the flag every morning. Before the beginning of the first class, all the pupils assemble in the main courtyard, even if it's raining! They watch the flag go up, salute it, and perhaps sing it a song.

People fly their country's flag on important buildings like schools, police stations, and sports stadiums. Many people have a flag in front of their home too. When something important happens—like their national soccer team wins the World Cup—everybody waves the flag. When soldiers go to war, they often carry the flag with them. Many soldiers have died saving their flag from falling into the enemy's hands.

When you do things like this again and again, you start to feel that this piece of cloth really is special. People can look at a piece of colorful cloth and sort of see their country.

Most people also have personal rituals. For example, maybe you have a lucky shirt. It's made of the same fabric as all your other shirts, but this one's very special to you. You keep it in a particular drawer and hardly ever wear it. You save it for special occasions.

When you have a difficult math test, you take out your lucky shirt the night before. And when you put it on, you always have to put your right hand in first. If you start with your left hand by mistake, the whole thing's ruined! You always sing a little song as you put it on. And maybe you make sure it only gets washed on Sundays—if it was washed on any other day, some of its good luck would rub off.



Then you take your math test. If you get a good grade, you think, “Hey, the shirt worked! It really is powerful!” If you get a bad grade, you think, “Rats, I must have put my left hand in first by mistake, or I didn’t sing the little song right. Or maybe Dad did the laundry on Monday this time. I should have been more careful!”

If you do all these things again and again, that shirt becomes more than just a shirt. It feels very special. If somebody stole it or tore it, you’d be really upset.

THREE KINDS OF **THINGS**

Whether in ancient Egypt or in your country today, countries’ rules have often relied on rituals and stories. Without stories, no ancient kingdom or modern state could exist. In fact, the strangest thing is that kingdoms and states are stories themselves. Ancient Egypt was a story that Pepy and Khety and the pharaoh and the priests and

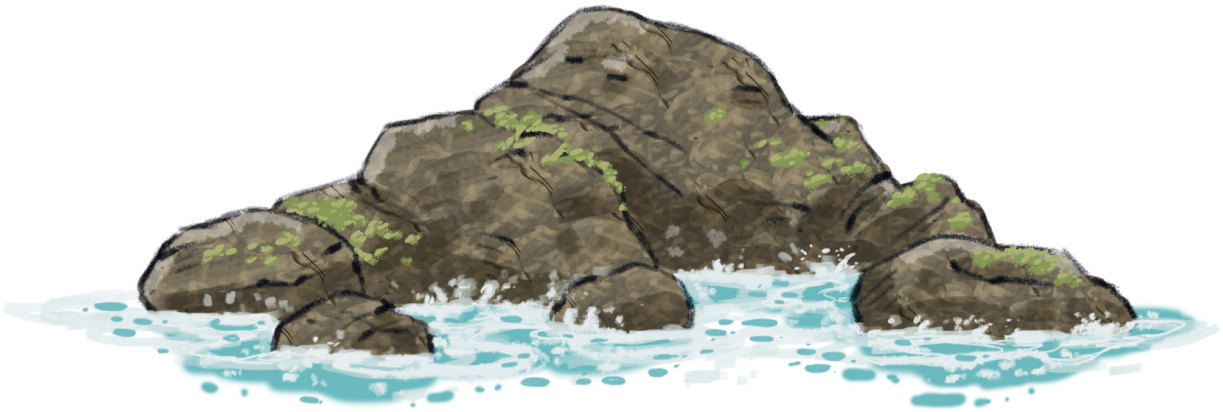
farmers all believed in. **Modern countries are stories too.** Your country is a story that you and your parents and friends and neighbors believe in.

It's hard to accept that countries are stories…but what else can they be?

There are three kinds of things in the world. Let's have a look at them to see what kind countries are.

First, **there are things that everybody can see, hear, or touch,** things like stones, rivers, and mountains. Kingdoms and countries aren't like them: you can't see, hear, or touch them. Think, for example, about a very powerful country today—say, the United States. You can't hear it. It doesn't make any sound. A cow goes moo, a dog goes woof…but what noise does the USA make?

You can't see or touch it either. You can see and touch the United States' flag, but that's just a piece of colorful cloth with thirteen stripes and fifty stars.



Some people might say the United States is the land where the country is. Obviously, you can see the land and hear the wind that blows over it and even take a swim in its rivers, like the mighty Mississippi. But the land isn't the United States. The North American continent was formed 200 million years ago. Humans settled it only some 15,000 years ago. And even after humans arrived, for thousands of years there was no United States. The land was home to numerous tribes like the Sioux and cities like Cahokia. The citizens of Cahokia sure saw the land, and heard the wind, and

swam in the Mississippi—but they never heard of a country called the United States.

The United States was created just 250 years ago…and in those days, the Mississippi area wasn't even part of it yet! Maybe in a century or two the United States will dis-appear, but the land will still be there, the wind will still blow, and the Mississippi will keep flowing for millions of years.

So the modern United States and ancient Egypt and all other countries aren't the kind of thing that everyone can see, hear, and touch, like land and rivers.

THINGS ONLY YOU
CAN FEEL

The second kind of thing in the world are **things *you* can feel but no one else can see or touch.** These things exist in your mind.

A good example of this is pain. When you stub your toe against a table and it hurts, only you feel that pain. The table doesn't feel it, and your father doesn't feel it. If you cry, "Ouch!" and your father comes to see what's wrong, you have to tell him, "My toe hurts!" He can't feel it himself. And if he takes you to the doctor, the doctor won't feel the pain either. She has to ask, "Does it still hurt?" You're the only one in the whole world who can feel the pain.



Dreams are another good example of something that exists in the mind: you're the only person who experiences your dream. If your sister sees you waving your arms in your sleep, how does she know if you're dreaming about swimming or flying or conducting an orchestra?

Some very small kids have an imaginary friend, someone only they can see and hear. Maybe your little sister has one; maybe she even gives him a name, like Gogo. She talks and plays with Gogo, but when she stops believing in him, he disappears because nobody else can see or hear him.

Ancient kingdoms and modern countries aren't like pain or dreams or an imaginary friend. Even if you stop believing in your country, it doesn't disappear, because millions of other people still believe in it.

SHARED
DREAMS

So what are countries? They're not something everybody can see and feel in the outside world, like the Mississippi River. And they're not something only one person can see and feel in their own mind, like a dream.

They're the third kind of thing: shared dreams—dreams that many people dream together. And these shared dreams are created by telling stories. You tell a story to a million people, and if they all believe it, they dream together.

If one person stops believing in one of these shared dreams, nothing much changes. But if millions of people stop believing it, the dream melts away.

Kingdoms and countries aren't the only examples of shared dreams. There are lots more, like gods and money. Yes, think about money: what is a dollar? You might think dollars are real, not a shared dream. After all, you can hold a dollar bill in your hands; you can see it, touch it, and even smell it. But it's just a printed piece of paper, so it shouldn't really have any value. When you are hungry, **you cannot bake bread from dollars.** When you are thirsty, you cannot squeeze a dollar for juice, right?



So how come when you go to the market and give this piece of paper to some salesperson, they're willing to give you back a sack of flour or a pineapple, which you can use to make bread and juice? Well, that's because there's a story that says that these pieces of paper are valuable. A dollar is sort of like a pineapple. **The story of money is one of the most important stories in the world.** Millions of people believe it, so these pieces of paper actually become valuable. You can use them to buy almost anything you want—from pineapples to spaceships.

If one fruit seller suddenly stopped believing in the dollar and wouldn't accept it as payment, that wouldn't matter much because millions of other people still believe in it. You could just go to the next store for your pineapple. But if everybody stopped believing in the story of the dollar, money would lose all its value. The pieces of

paper would still be there, but even a million dollars wouldn't be enough to buy a single pineapple. At best, you could use your million dollars as toilet paper!



VERY LONG
DREAMS

The fact that things like the dollar, the United States, and ancient Egypt are dreams doesn't mean they're not important. These shared dreams are some of the most important and powerful things in the world. Thanks to them, humans can work together to build cities, bridges, schools, and hospitals.

These dreams can last a very long time, thousands of years even. People die, but their dreams live on because their children and grandchildren keep dreaming the same dream. You could say **we're all living inside the dreams of dead people.** It's dead people from the past who first dreamed up the money we use, the countries we live in, and the gods we believe in. We could come up with new dreams too so one day, when we're dead, other people might go on living inside our dreams.

WHY DO PEOPLE **FIGHT WARS?**

All these dreams and stories can be extremely useful. If people didn't tell stories and dream things together, our world would be completely different: strangers wouldn't be able to cooperate, and humans would probably still be insignificant animals living on the African savannah. People in ancient kingdoms wouldn't have built dikes, reservoirs, and granaries, and today there would be no countries, no schools, and no hospitals. There would be no cars, no airplanes, and no computers.

But dreams and stories can also be very harmful. They often justify unfair rules, like the rules in some countries that say men are better than women or Brahmins are better than Dalits. Sometimes people believe a story so passionately that they go to war and kill millions of people because of it.

Have you ever wondered why there are so many wars in the world? Animals usually fight over food or territory. If, for example, some hungry chimps want to pick figs from a tree, and they find chimps from a neighboring band there, they might attack and kill them. Humans fight over food or territory, but those things are rarely the only reason they are fighting. **Many wars in history were fought over stories.**

About a thousand years ago, Christian priests in Europe told quite a terrifying story: they claimed that they'd received a message from the great Christian god. "God says he loves the city of Jerusalem more than any other city in the world," the priests explained. "And he's angry that this city is ruled by Muslims, not Christians. So he wants Christians to conquer the city of Jerusalem. God promises that if any Christian dies in this war, he will welcome them to heaven, where they will live in bliss forever."

Now, some people weren't sure about this strange story. "Wait a minute," said one old woman. "God created the whole world, right?"

"Of course," said the priests.

"And he can do anything he wants?"

“Yes.”

“And he wants Jerusalem?”

“Yes.”

“Then why doesn’t he just take it himself? Why does he need help from ordinary little humans?”

“Well, you see,” said the priests, “god’s actually being very clever: it’s a trick to help people get into heaven. God doesn’t really want Jerusalem; he wants to give people a way into heaven.”

“I don’t get it,” the woman persisted. “If god wants more people in heaven, who is stopping him? Why does he need this war? He can do anything he wants, so why doesn’t he just put everyone in heaven in the first place?”

The priests didn’t have a good answer to that, so they told the woman: “God’s very, very clever, and you can’t possibly understand him! You should stop asking difficult questions and just do as he says…or you’ll end up in hell.”

Unlike that woman, **most people believed what they were told,** and many of them went and tried to conquer Jerusalem. The war lasted many years, and millions of people died in it. And this terrible war, which was called the Crusades, was all because of a story.



BREAKING THE SPELL

The Crusades ended hundreds of years ago, and most Christians now find it hard to understand how their ancestors believed such a strange story and were willing to go to war because of it. In fact, they're ashamed that their ancestors did this.

No matter how powerful a story is and no matter how many people believe it, **we can eventually realize that it's just a story.** We may be trapped inside the dreams of dead people, but there is a way out.

Stories are tools. They can be very helpful, but if a particular story makes people miserable instead of helping them, why not change it?

So, whenever people tell us stories about important complicated things, we should remember to ask one key question: does anyone

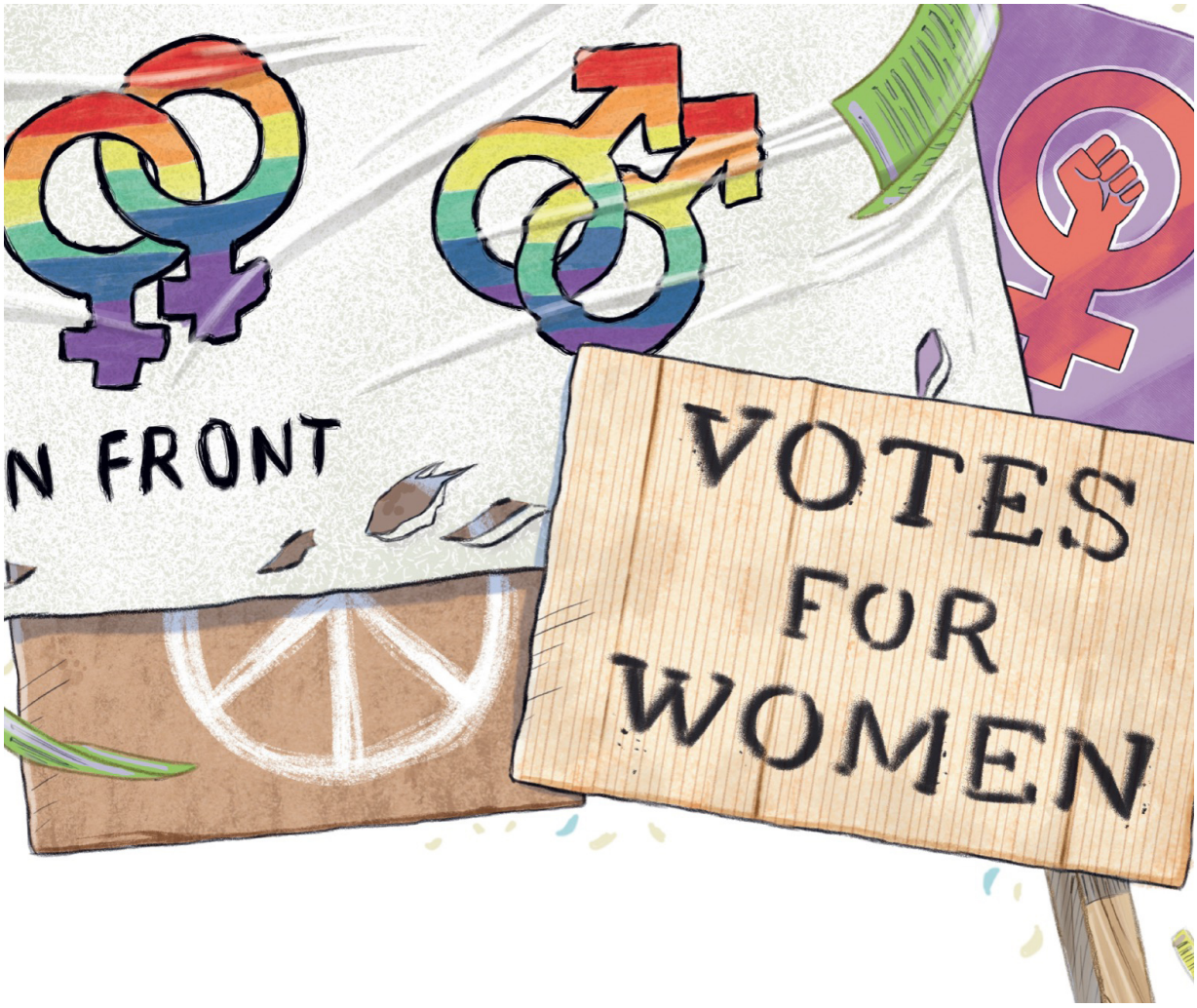
suffer because of this story? If we realize that a story is causing a lot of unnecessary suffering, maybe we should use our storytelling superpower to change that story.

Even stories that people believed for a very long time can be changed in just a few years. For instance, the same Christian priests who told the story that started the Crusades told another story about love. “God says that love between a boy and a girl is a wonderful thing. But if a boy falls in love with another boy, or a girl wants to marry another girl, god gets terribly angry. Boys should never have boyfriends, and girls should never have girlfriends! That’s disgusting!”

People believed this story for hundreds of years. They believed it so much that if they discovered that their child was gay, they might go mad with rage. Some parents would beat their children; some expelled them from home. And some even killed their kids **just because they fell in love with a person their parents didn’t think was the right kind of person.**

It was as if an evil sorcerer had cast a powerful spell over them. How else can we explain parents abandoning or killing their own kids? And it looked like that spell would never be broken.

But then a few brave people summoned up their story-telling superpower to resist the spell and question the old story: “If two men love one another or if one woman wants to marry another woman, what could possibly be wrong with that? They’re not hurting anyone. Even if there’s a great god above the clouds, surely he punishes people for bad things like cruelty, violence, and hatred. Why would a good god punish anybody for a good thing like love? It makes no sense.”



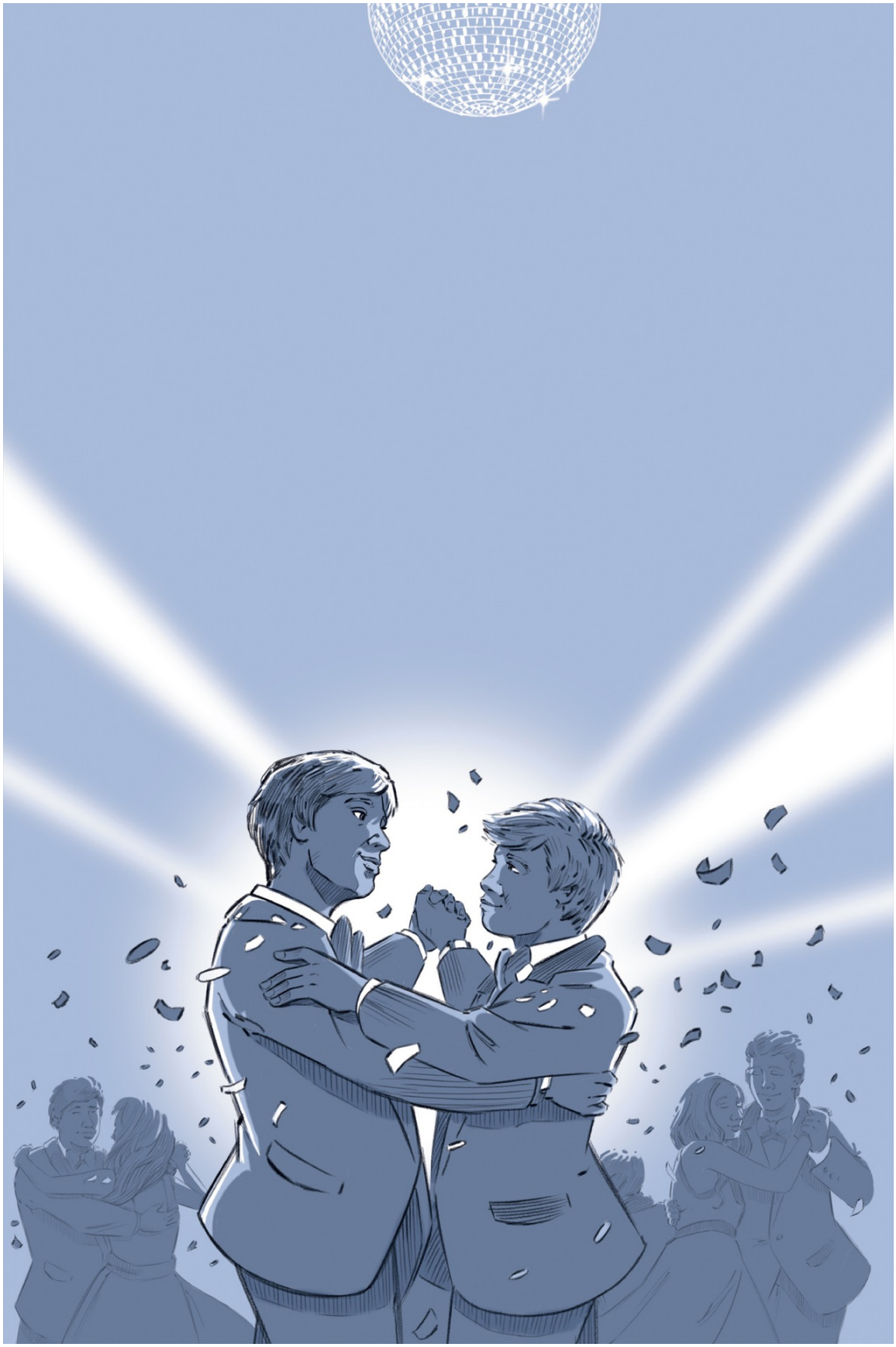
After centuries of people believing that being gay was bad, it took just a couple of decades to break the spell and change people's minds. Of course, it wasn't easy, and it required tremendous courage.

One person who helped break the spell was an American teenager called Aaron Fricke. He grew up in the small town of Cumberland, Rhode Island, where people believed that being gay was disgusting, impure, and evil. So Aaron couldn't tell anyone, not even his parents or sister, that he was gay. He was afraid he'd be alone his whole life.

Then he met a pupil at his school who was also gay, a boy called Paul. When the school organized its annual spring prom, Aaron did something extremely brave: he asked Paul to be his prom date.

Some kids bullied him because of this, and the school principal said Aaron couldn't bring Paul to the prom—so Aaron sued the principal in court. The judge ruled that Aaron and Paul had a right to attend prom just like any other couple.

This happened in 1980, and it was big news: it was covered on TV and radio and in newspapers, and people all over the United States talked about it. Today, in most parts of the United States, no journalists take an interest if two boys go on a date. Thanks to Aaron and people like him, it's just normal.



Some other countries, like Iran and Uganda, still punish gay people for who they love. In Russia, the government forbids kids to read stories about gay people like Aaron and Paul. So if you're a Russian kid, **you're actually not allowed to read this book!** But most countries that once banned boys from having boyfriends and girls from having girlfriends have now abolished these rules. In many countries—from Sweden to South Africa—two men can now get married and so can two women. People look back at what happened to Aaron and Paul and are amazed that almost everyone believed such a senseless and harmful story only a few decades ago.

THE STORY OF **WOMEN**

Perhaps the biggest story that has changed in recent years is the story about women. For thousands of years, people all over the world believed that women were inferior to men and could never be priests, teachers, or rulers. If a girl asked, "How do you know a woman can't do those things?" people replied, "Well, just look around. There are no women priests, teachers, or rulers, right? That proves that women are impure, stupid, and weak!"

"But that's ridiculous!" the girl retorted. "There are no women priests, teachers, and rulers **because women are not allowed** to do these things! If girls aren't even allowed to go to school, how can women ever become teachers?"

Unfortunately, that's how it was for thousands of years. Here and there a few women did manage to become teachers, priests, and even rulers—like Cleopatra in Egypt and Catherine the Great in Russia—**but they were rare exceptions.**

Even today, many religions still refuse to have any female priests, insisting that women are impure. But in most places, things eventually began to change, and girls now go to school just like boys. There are many women teachers, professors, and judges.

Some women became presidents and prime ministers and proved that **women can manage a country just as well as men.**

It took a lot of people all over the world doing a lot of brave things to change the story of women. One of them is Malala Yousafzai, who was born in 1997 in the town of Mingora, Pakistan. When she was eleven, her town was attacked by a fanatical group called the Taliban.



One of the Taliban's beliefs is that god created boys superior to girls and would be very angry if girls went to school. So the Taliban banned girls in Mingora from school, and they blew up more than 100 schools that accepted girls!

But Malala loved studying and decided to keep going to school even though it was dangerous for her. She also decided to speak out against the Taliban—she started writing a blog about her life and

later gave interviews to newspapers and even appeared on television. She said that girls should be allowed to go to school, and that no god would forbid girls to study—that was just a story invented by angry men. She said that girls are as good as boys, and **it would help everybody if they could be teachers and doctors.**

It was incredibly brave of Malala to do this. She was risking her life, but she kept telling people, "One child, one teacher, one book, and one pencil can change the world."

One day, when Malala was fifteen, a man stopped her school bus, walked up to her, pulled out a gun, and shot her in the head. People everywhere were shocked by this attack and hoped that Malala would recover. She became one of the most famous teenagers in the world. Over two million people in Pakistan signed a petition demanding that girls be allowed to go to school, and the Pakistani parliament later made it the law.

Malala recovered from her injury and started traveling around the world to help girls everywhere to get an education. She wrote a book about her life, which sold millions of copies. She was invited to meet the president of the United States and many other important leaders. She won a huge international prize called the Nobel Peace Prize when she was only seventeen—the youngest person ever to receive the prize.

Thanks to people like Malala, **almost all countries now accept that girls should go to school** just like boys. Even more important, it's now obvious that the old story about women wasn't true at all—it was utter nonsense. The big question is why so many people believed this ridiculous story for thousands of years.

KEEP YOUR EARS **OPEN**

Stories are the greatest human invention. We rule the world thanks to stories. They make us far more powerful than chimpanzees,

elephants, and dogs. But stories can also be our greatest enemy. If we forget they are our own creation, we might become their prisoners. **When millions of people believe a bad story, it's like being trapped in a nightmare and not being able to escape.** So humans have a big problem. If we blindly believe any story we're told, we might start doing terrible things, like shooting girls who want to go to school or killing millions of people in unnecessary wars. On the other hand, if we just stop believing all the stories, that wouldn't make a perfect world—it would be chaos.



There's no easy solution to this problem. As you grow up, you hear many stories, and an important part of growing up is learning which to keep, which to change, and which to abandon.

Kids have one big advantage over adults here: they haven't heard the stories as many times. If you hear the story about the crocodile demon or the dollar when you're ten, you might think,

“Really? No way! That’s just a weird story that adults believe.” By the time you’re fifty, you’ve heard it thousands of times and you’ve even told it to your own kids. It’s much harder to change your mind.

So, **if a bad story needs changing, it will probably be kids who do it.**

That means you have a big responsibility—and a great opportunity. And remember, if you’re not sure which stories need changing, you can ask that important question: does this story cause suffering?

If a story causes a great deal of suffering, be very careful about that story. Best of all, talk to someone who’s suffering because of it, and ask them to tell you *their* story. Then open your mind and your ears…and listen.

WHEN STORIES **MEET**

So now you know why the world isn’t always fair—and much more besides. You know why schools have exams, how playing with mud changed history forever, and why taxes scare adults. You know how dogs became our best friends, how **plans often don’t work as we expect,** and how some humans are a bit like ants while others are kind of like grasshoppers. You know how to listen to skeletons, who the first poet was, and what kind of crocodile wears a crown and gold earrings. You know how some humans became kings while others were forced into slavery. You know why people like Pharaoh Akhenaten got to tell a million humans what to do and why everybody else started obeying them.

You know that such unfair arrangements had something to do with plants and animals. For millions of years, **our ancestors lived in small groups and rarely tried to control anyone.** They gathered plants and hunted animals but didn’t tell plants and animals what to do. Nor did one human get to tell all the other humans what to do.

But in the last 10,000 years, humans have created larger and larger cities and kingdoms and become more and more bossy. They have learned how to control plants and animals, and some humans also learned how to control other humans.

And you know that it was all made possible by stories, which also became larger and more complicated. While small tribes could make do with small and simple stories, **big kingdoms needed big and complicated stories** about things like heart-eating demons, giants with moon-brains, and a magic stink that only gods can smell. People obeyed big kings like Akhenaten and followed all kinds of very unfair rules because of the stories they believed.

And those stories were different in every country. People in Egypt followed the Egyptian rules because they believed the Egyptian story. In India, they followed the Indian rules because they believed the Indian story. The Chinese had completely different rules and stories, and so did the Japanese.

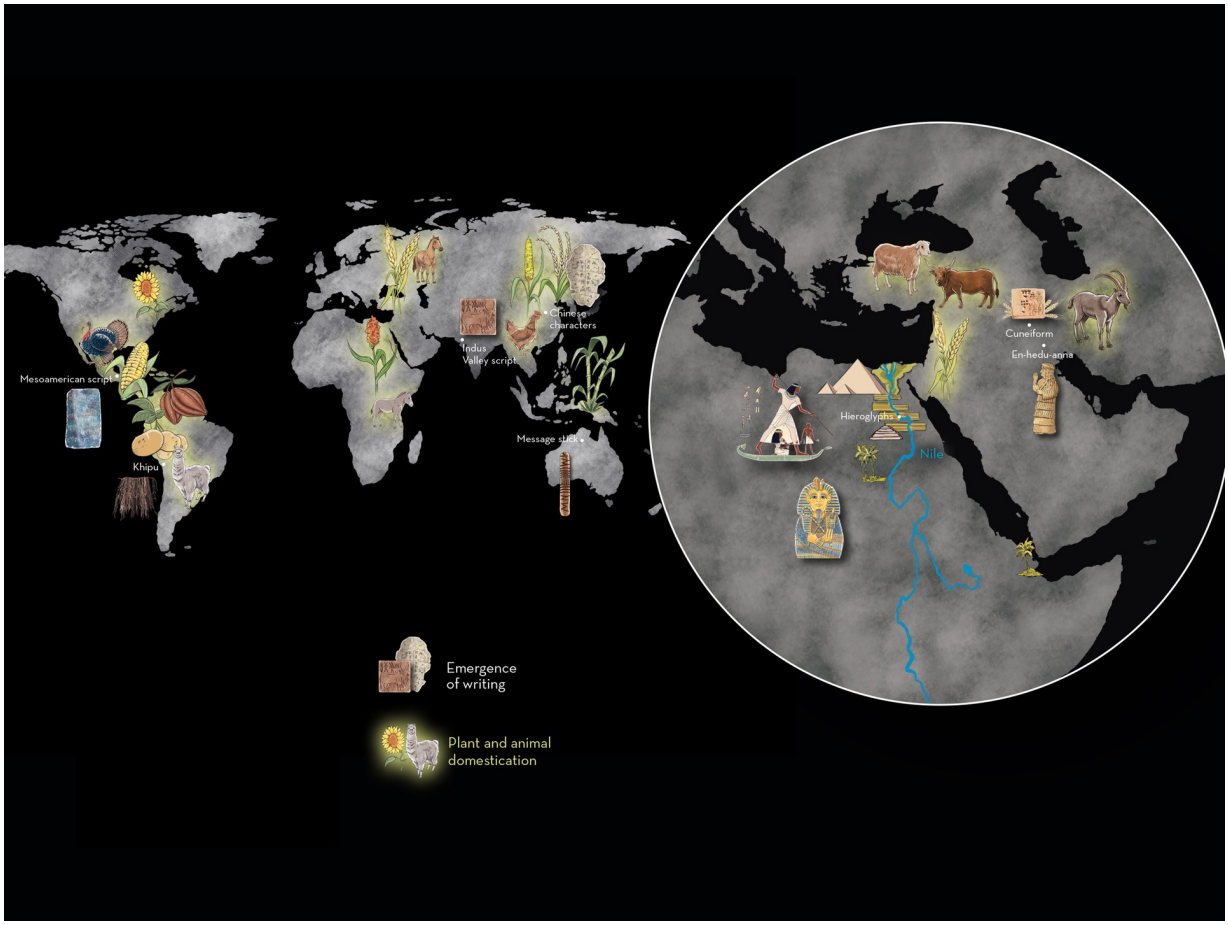


So what happened when an Egyptian met an Indian or a Chinese person met a Japanese person? **How did people from different places manage to agree on anything?** Did foreigners find some story they all believed? Or did they just fight all the time?

Today, you can travel almost anywhere in the world, and everywhere you go, many of the rules are the same. People everywhere play soccer according to the same rules. People everywhere can use money to buy pineapples. People everywhere stop at a red light. How did this happen? How did some stories and rules spread all over the planet?

Well, that's a whole other story.

WORLD MAP OF
HISTORY



ACKNOWLEDGMENTS

How many “parents” does a book have? You might guess the answer is one—the author—or maybe two, together with the illustrator. But in reality, it takes many, many people to bring a book to life, not just the names you see printed on the front cover.

So many people in so many places have worked hard on this book, doing lots of things that I couldn’t do and don’t even know how to do. Without their contributions, Unstoppable Us would not exist.

Some people had to check we got the facts right and spent months reading scientific papers about everything from ancient dogs to ancient gods. Others thought hard about the exact message of each sentence in the book: Is it really what we want readers to know about history? Could it perhaps be misinterpreted? Might it hurt somebody? And still others worked on the style: Is the sentence clear? Could it be made clearer? And don’t get me started on the illustrations. Some of the images in this book had to be drawn and colored ten times, until they were just right for the story.

So writing just one sentence or drawing just one illustration could involve lots of emails and phone calls and meetings. And somebody had to coordinate all those emails and phone calls and meetings. And then there were contracts to sign, and salaries to pay, and don’t forget the food—nobody can do anything unless they eat, right?

I want to thank everyone who helped create this book and “co-parented” it with me. I definitely couldn’t have done it without them, and acknowledging their contribution makes the world a tiny bit more fair.

Ricard Zaplana Ruiz drew all the beautiful illustrations that bring human history to life in this book.

Jonathan Beck championed this project from day one and helped realize it.

Susanne Stark and Sebastian Ullrich taught me how to see the world from the perspective of young people, and how to write more simply, more clearly, and more deeply than I thought I could. They meticulously read and reread every word and made sure that in our attempt to write an engaging and accessible story, we do not compromise on scientific accuracy.

Then there's our home team, Sapienship, whose creativity, professionalism, and diligence made this book possible—led by the brilliant CEO, Naama Avital. They are Naama Wartenburg, Ariel Retik, Nina Zivy, Jason Parry, Hanna Shapiro, Shay Abel, Daniel Taylor, Michael Zur, Jim Clarke, Zichan Wang, Corrine de Lacroix, Dor Shilton, Guangyu Chen, Nadav Neuman, Tristan Murff, Galiete Katzir, Anna Gontar, and Chen Avraham. Together with the additional support from Friederike Fleschenberg at C.H.Beck, the very talented copy editor Adriana Hunter, and the diversity consultant Slava Greenberg, each and every team member contributed to this project.

I would also like to thank my dear mother, Pnina; my sisters, Einat and Liat; and my nieces and nephews, Tomer, Noga, Matan, Romi, and Uri—I'm grateful for their love and support. And I will always treasure the kindness and joy of my late grandmother Fanny, who passed away at the age of 100, while I was writing this book series.

Lastly but most importantly, I'd like to thank my unstoppable husband, Itzik, who's been dreaming about creating this book for a very long time, who co-founded Sapienship with me to make this and other projects come true, and who has been my inspiration and loving companion throughout the twenty-first century.

—Yuval Noah Harari

Dedicated to Javier, Jorge, and Carlos, my brothers, and to Isabel and Francisco, my parents.

To all fellow Homo sapiens who share my profession, thank you for your knowledge and friendship.

To the team of professionals who make up Sapienship, thank you for your help and guidance through all the steps of the creative process.

And of course, to Yuval Noah Harari, for trusting my illustrations and letting them travel halfway around the world with his text.

—Ricard Zaplana Ruiz

ABOUT THIS BOOK

The great thing about science is that it keeps finding new things. Every year, scientists make new discoveries that change how we understand the world. In this book, we've tried to rely on the latest scientific knowledge, but even scientists disagree on some things. And there are parts of human history that might always remain a mystery. But wait! That doesn't mean everything's debatable. We can say for sure that there used to be many different kinds of humans on this planet. We know that the only remaining kind of human—our kind—learned how to control plants and animals, built cities and empires, and invented spaceships, atom bombs, and computers. These revolutions created the world you're living in right now. And maybe one day you'll discover something that will change how all humans understand the world….



Yuval Noah Harari is a historian and the bestselling author of *Sapiens: A Brief History of Humankind, Homo Deus: A Brief History of Tomorrow, 21 Lessons for the 21st Century, Sapiens: A Graphic History,* and *Unstoppable Us, Volume 1: How Humans Took Over the World.* His books have sold over 45 million copies in 65 languages.

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