



# FOODPRINTS

THE STORY OF  
WHAT WE EAT

**PAULA AYER**



**annick press**  
toronto + new york + vancouver

# *For my parents – P.A.*

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Edited by Pam Roberston

Copyedited by Linda Pruessen

Proofread by Tanya Trafford

Cover and interior design by Natalie Olsen / Kisscut Design

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We acknowledge the support of the Canada Council for the Arts, the Ontario Arts Council, and the Government of Canada through the Canada Book Fund (CBF) for our publishing activities.



ONTARIO ARTS COUNCIL  
CONSEIL DES ARTS DE L'ONTARIO  
an Ontario government agency  
un organisme du gouvernement de l'Ontario

## **Cataloging in Publication**

Ayer, Paula, author

Foodprints : the story of what we eat / Paula Ayer.

Includes bibliographical references and index. Issued in print and electronic formats.

ISBN 978-1-55451-718-3 (pbk.).—ISBN 978-1-55451-719-0 (bound).—ISBN 978-1-55451-720-6 (html).

—ISBN 978-1-55451-721-3 (pdf)

1. Food—Juvenile literature. I. Title.

TX355.A93 2015

j641.3

C2014-905906-X

C2014-905907-8

## **Distributed in Canada by:**

Firefly Books Ltd.

50 Staples Avenue, Unit 1

Richmond Hill, ON L4B 0A7

## **Published in the U.S.A. by Annick Press (U.S.) Ltd.**

### **Distributed in the U.S.A. by:**

Firefly Books (U.S.) Inc.

P.O. Box 1338

Ellicott Station

Buffalo, NY 14205

Printed in China

Visit us at: [www.annickpress.com](http://www.annickpress.com)

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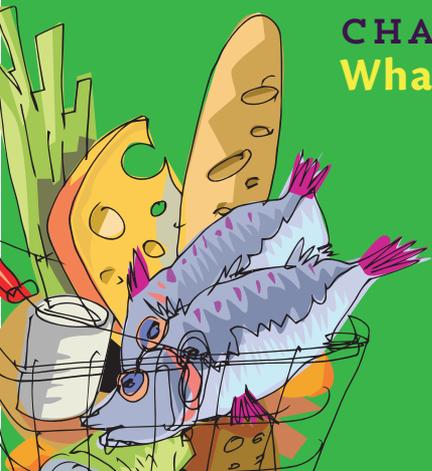
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# INTRODUCTION





**HAT DO YOU THINK OF** when you think about food?

Your dad's famous burgers, your mom's curry simmering on the stove, or your grandma's cookies baking in the oven? Maybe the pizza slice you're planning to grab after school, or the granola bar you shoved in your mouth between classes? With so many delicious choices when it comes to your next snack or meal, no wonder many of us wrestle with that all-important question: *What should I eat?*

It's easy to take food at face value. It's delicious, you're hungry, you eat it—The End. But if you look a little closer, everything on your plate tells a story. Every morsel of food came from somewhere, and went through a journey—often a fascinating one!—to get to you.

Sometimes those stories stretch back hundreds or thousands of years, to the first people who thought to bury a seed in the ground. The story of any food has many different authors: the farmers who grew the food, the scientists who tinkered with it, the workers who processed it, the companies that sold it, and the person—maybe you, or someone in your family—who cooked it. There are different chapters, sometimes spanning cultures and continents, and twists in the plot, either from decisions or accidents of fate. The food in your own kitchen tells stories about where your family comes from and where you live. If you read between the lines, it might tell you about how much money your family has to spend on food, your culture and traditions, and the things you value. And, of course, it tells you what your taste buds prefer, whether it's sushi or peanut butter sandwiches.

These days, we have more choice about what we eat than ever before. In fact, when it comes to food, you're likely more experienced than your parents. Back when they were kids, meat, potatoes, and veggies was a pretty





standard meal for many North Americans. Today, you'd be as likely to find pasta, tacos, or a stir-fry on the table. Things have changed outside of the home, too: in an average restaurant you can order meals from cultures around the world, and your local grocery store probably caters to all sorts of food preferences, from organic to gluten-free.

When you were younger, you didn't have to make so many choices about food. You ate what your parents gave you or, if you were lucky, whatever you could convince them to buy. But now that you're older, you're likely making some of your own decisions about what you eat, whether it's by adding to the family grocery list, buying snacks, deciding where to go for lunch with friends, or helping to prepare dinner. And as you get more involved, questions might come up, like: Where does my food come from? How was it made? Is what I'm eating going to make me feel good and keep me healthy? And, what convinced me to eat *this*, instead of something else?

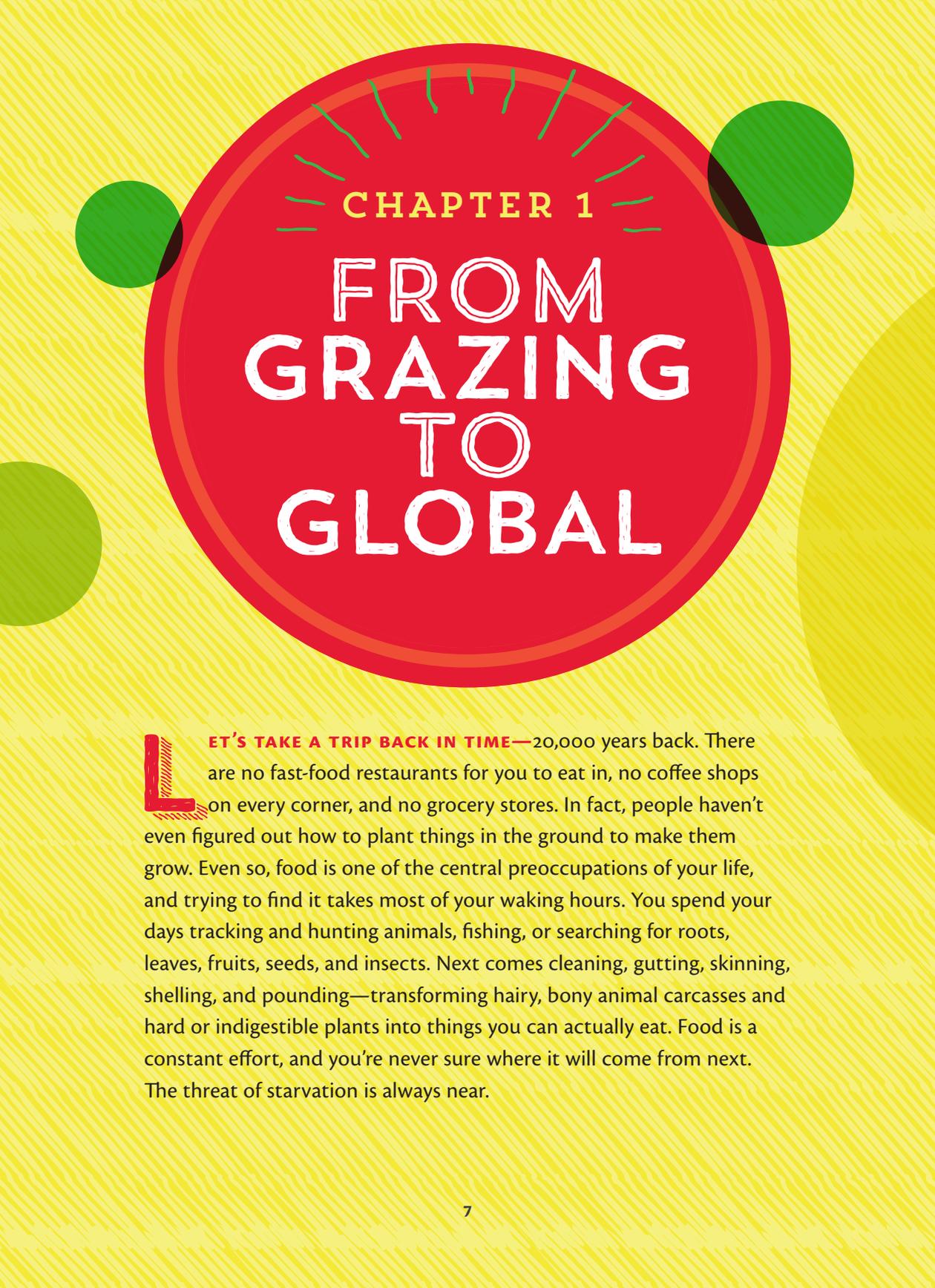
You can learn how to read the stories that food tells. You probably see all sorts of information about food, like ads for soft drinks, nutrition information in school, and Internet lists proclaiming the “best and worst” foods to eat. But the messages often contradict each other, and it can be hard to know which ones to trust. So, while this book won’t help you answer the question of what to eat, it *will* give you the tools to understand how to read your food: where it comes from, why it matters, and what you can do to make informed decisions about what ends up on your plate. Throughout the following chapters, we’ll look at:

- \* **how our modern, ultra-convenient food system evolved, and whether it lives up to its promises to make our lives better;**
- \* **the role of the big farms and factories where a lot of our food is produced;**
- \* **what it takes to be healthy, and how to figure out what nutrition advice you can trust;**
- \* **the weird science of food, and how people in lab coats are as important as farmers to the modern food system;**
- \* **how food is sold, and why advertisers crave teens’ attention; and**
- \* **how some people are trying to shape the future of food in positive ways, and what you can do to join in.**

There’s a huge world of food around you—a world that can be both exciting and confusing. But becoming a good “reader” of food is the first step toward making conscious choices. And you make those choices, whether you realize it or not, every time you sit down to eat.

First, we’ll start at the beginning ...





# CHAPTER 1

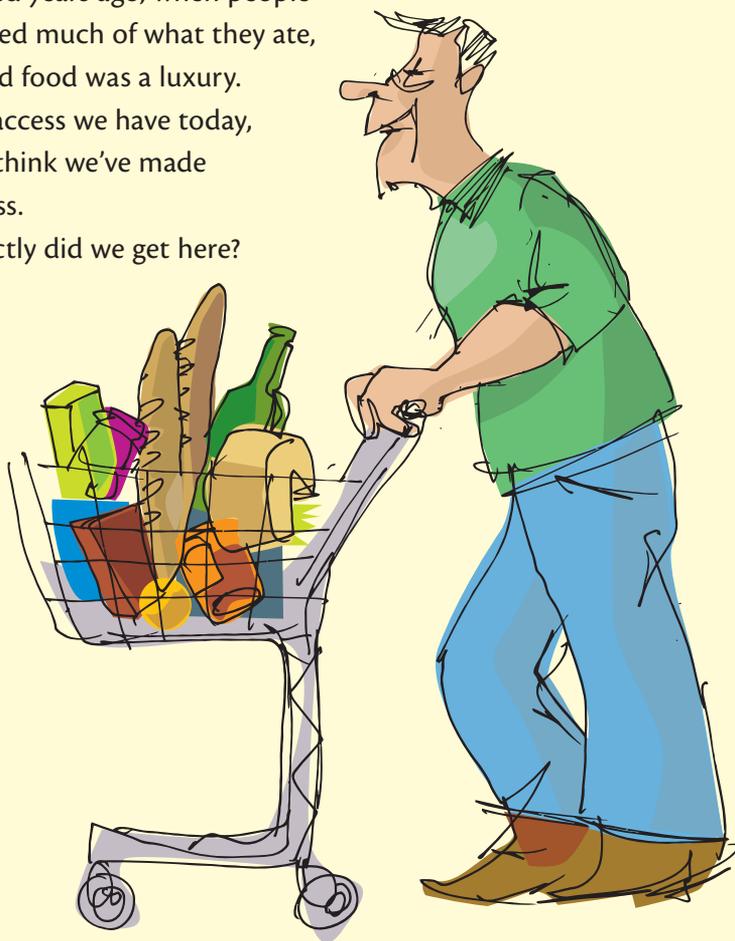
# FROM GRAZING TO GLOBAL

**L**ET'S TAKE A TRIP BACK IN TIME—20,000 years back. There are no fast-food restaurants for you to eat in, no coffee shops on every corner, and no grocery stores. In fact, people haven't even figured out how to plant things in the ground to make them grow. Even so, food is one of the central preoccupations of your life, and trying to find it takes most of your waking hours. You spend your days tracking and hunting animals, fishing, or searching for roots, leaves, fruits, seeds, and insects. Next comes cleaning, gutting, skinning, shelling, and pounding—transforming hairy, bony animal carcasses and hard or indigestible plants into things you can actually eat. Food is a constant effort, and you're never sure where it will come from next. The threat of starvation is always near.

Now imagine you're in a modern supermarket. Everywhere you turn there are piles of ripe fruits and vegetables, neatly wrapped cuts of meat, and colorful packages. There are foods that don't grow anywhere near where you live, and foods that were harvested many months earlier. Everything is cleaned, prepared, refined, packaged, and ready to eat. All you need to do is to swish your groceries past the scanner and pull out your wallet.

To someone from the distant past, the way we get our food today would seem miraculous. It would even surprise a time traveler from merely a hundred years ago, when people still grew or raised much of what they ate, and prepackaged food was a luxury. Given the easy access we have today, it's hard not to think we've made amazing progress.

So how exactly did we get here?

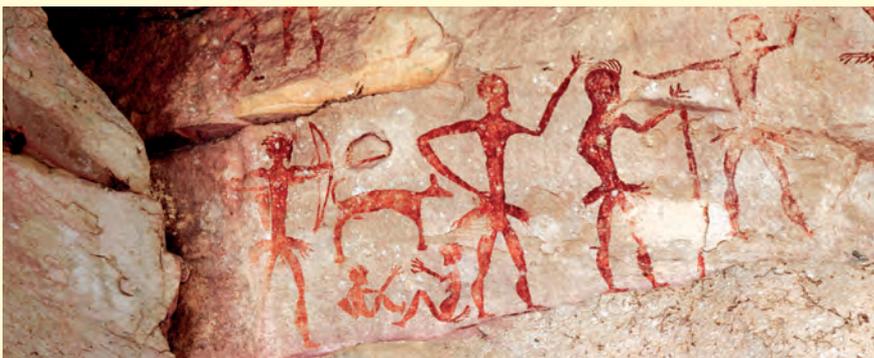


# THE CAVEMAN DIET

**H**UMANS ARE OMNIVORES NOW, meaning we can eat both plants and animals. But our ancestors—the pre-humans we descended from in Africa—were mainly vegetarian. Anthropologists can tell from their teeth that they ate fruits, nuts, leaves, bugs, and the occasional small bird, lizard, or mouse. They needed to gather fresh food almost constantly, since they had no way to preserve or store it.

Around 2 million years ago, our ancestors *Homo habilis* were eating some meat in addition to plants, consuming dead birds or mammals they happened to come across. Sometime around half a million years ago, *Homo erectus*—another ancestor—was hunting and killing animals like deer or rhinoceros. By the time we evolved into *Homo sapiens*, around 100,000 years ago, the pursuit of food took some of our ancestors out of Africa and around the globe, to Asia, Europe, Australia, and the Americas. By then, we had figured out how to start fires. Not only did this expand our menu—we could now eat cooked plant leaves, stems, or roots that were indigestible raw—but smoking meat with fire was probably the earliest way humans preserved food so it would stay free of bacteria for longer periods of time.

For several hundred thousand years humans existed like this—hunting animals, fishing, and foraging for whatever edible plants or fruits they could find. Then, around 12,000 years ago, things started to change in a big way.



What was on the Stone Age diet? A little bit of everything! Some of the stranger things our long-ago ancestors consumed: animal guts, tough grasses, papyrus (a reedy plant used to make paper), rhinoceroses, giant rats, and lizards the size of Komodo dragons.



## NOW WE'RE COOKING

Some scientists who study early humans believe that the invention of cooked food was a crucial step in our evolution. How? Well, if you're eating only raw food, you have to eat a *whole lot* of it for your body to function properly. Munching on raw celery, for example, actually uses slightly more energy chewing and digesting than it provides to your body as calories (which is why celery is sometimes called a "negative-calorie food"). One scientist has estimated that early humans who consumed only unprocessed, raw food would have had to spend over nine hours a day eating in order to fuel their brains' needs!

But cooking food acts as a sort of "pre-digestion," making it softer and easier for our bodies to absorb. So the theory is that once cooked foods became a larger part of our diet, the energy we previously spent gnawing on raw leaves and roots was redirected to making our brains bigger and smarter.



People who had hunted wild animals, like sheep, goats, and cattle, began to raise those animals instead. People who had gathered legumes and wild grains, like barley, rice, and wheat, eventually started planting seeds. And the more they learned about the process—what types of animals were easiest to raise, for example, and what types of grains, fruits, or vegetables were sweetest, biggest, or easiest to pick—the better at it they got.

It's natural that agriculture developed in places where food resources were plentiful enough that people could stay put for a while. That way, they could cultivate plants and animals as a backup plan for the times when there wasn't much to hunt or forage. Over the next few thousand years, agriculture spread to Europe, Asia, and parts of Africa, and separately developed in the Americas. The tribes of southwestern and eastern North America, for instance, domesticated crops like squash and corn as early as 11,000 years ago. But in many places, people still relied on hunting and foraging for food. As late as 1500 CE, there were still a large number of hunter-gatherer groups in the Americas, Australia, and parts of Africa and Asia.

In the centuries that followed, other advances in farming and food came along. Hoes and digging sticks were used to break the ground. Farmers used livestock to tread seeds into the dirt. People learned how to rotate crops to improve soil quality, used natural fertilizers like manure, and developed forms of irrigation for watering, all of which helped increase the amount of food they could produce. They also came up with better ways to store grain, like silo pits in the ground and storehouses called granaries, to keep it away from animals and to prevent it from getting moldy.



## THE ACCIDENTAL GRAIN

Can you imagine life with no bread, bagels, pasta, or cookies? Our ancient ancestors certainly could! When they wanted something delicious and comforting, they likely turned to a bowl of fern soup or a nice leg of wild boar. Then wheat was domesticated, one of the first crops to be cultivated by humans, and the rest is history.

Wheat may be a central ingredient in modern life, but that's more a result of chance than planning. Here's why: when wild wheat is ripe, its grains fall to the ground, allowing the following year's growth to seed itself. Domesticated wheat, however, stays on its stem. That makes it easier to harvest—but means it can't reproduce without human intervention. Scientists think the difference is the result of a random genetic mutation in wild wheat that happened right around the time people were starting to cultivate wheat. If early farmers hadn't been replanting the easier-to-pick mutant seeds, that strain would have died out. Instead, it became the basis for the wheat we eat today.

*Have you got the guts for agriculture? Through evolution, some groups of humans actually developed genetic differences that helped them digest starchy foods, like wheat and rice, or milk from cows and goats. So if you can eat a cheese sandwich without getting a stomachache, thank the ancient grain and dairy farmers in your family tree!*

