

American Wasteland

How America Throws Away Nearly Half of Its Food
(and What We Can Do About It)

Jonathan
Bloom

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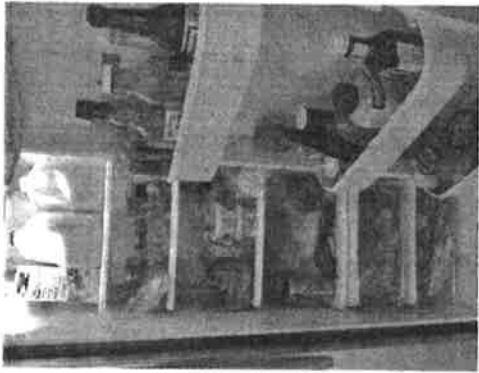
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TO EMILY,

*without whom this book would not exist
and the sun would not rise.*

TO BRUCE,

*without whom this book would have been finished sooner,
but for whom I count my lucky stars.*



A peek inside D. J. Waldow and Kristina Milan's refrigerator may look familiar to many of us.

PHOTO COURTESY OF D. J. WALDOW

chapter 8

Home Is Where the Waste Is

You ever have milk the day after the day? Scares the hell out of ya, doesn't it? The spoon is trembling as it comes out of the bowl. 'It's after the day! I'm takin' a big chance! I smelled it, you smelled it, what is it supposed to smell like? Smelled like milk to me!

—JERRY SEINFELD

The most remarkable thing about my mother is that for thirty years she served the family nothing but leftovers. The original meal has never been found.

—CALVIN TRILLIN

It was a typical Monday night on a quiet cul-de-sac in Durham, North Carolina. D. J. Waldow and his wife Kristina Milan had just finished a homemade dinner that each had helped prepare. What began with a baby spinach salad with feta, broccoli, and a homemade lemon-olive oil dressing concluded with a tangy Thai-style stir-fried chicken with basil atop jasmine rice. In between, they enjoyed a toasted Israeli couscous salad with mint, cucumber, and feta.

After dinner, Waldow, a thirty-three-year-old software-company executive, packed two lunch-sized containers of the night's chicken and rice and searched for a place to store them in the fridge. He combed through the crowded shelves, trying to clear an opening for tomorrow's lunch and the other leftovers from the meal. Meanwhile, Milan, thirty, a resident at UNC Hospitals, lamented that she'd had no other choice but to buy a large bunch of mint for the half-cup required in the couscous recipe. She held up the remainder of the bunch, an unpackaged collection of stems, held together with a twist. It could have supplied 5 cups. "We have a crapload of mint," Milan said. "We will not use all of that mint."

Waldow chimed in, frustrated at how parsley is sold. "You'll need a quarter of a cup and you have to get the biggest bundle of it," said Waldow. "I wish you could just get the amount you want."

While we talked about how hard it is to use up store-bought herbs before they go bad, Waldow began digging into the crisper drawer that doubles as an herb graveyard. He unearthed a collection of plastic herb containers, some robust, some wilted. And then Waldow pulled up an item concealed in a paper towel. Opening it up, he revealed a healthy collection of mint leaves. Waldow and Milan moaned in disbelief.

Sure, a bunch of mint is a relatively minor item. At \$2.29, it was not terribly expensive, but a closer look at Waldow and Milan's refrigerator showed that the

mint wasn't the only thing duplicated. It was a recurring problem as Waldow continued to look through the fridge. He discovered half of a red onion hiding in the butter drawer, which, much to Milan's consternation, Waldow had begun using for items other than butter—like their dog's ear medicine. Unfortunately, Waldow had just purchased another red onion. And the couple owned identical tubes of ground basil because Waldow bought a second without realizing they already had one.

To some extent, we all waste food in these ways. It seems innocuous, but the resulting costs accumulate for a family. And the environmental impact quickly mounts when multiplied by the 110 million American households.¹ Just as significant, though, is the mindset that home food-waste reveals.

Taking a Step Back

Waldow works in the same industry as my wife. I had come to know him a bit from a touch-football game and his prodigious Twitter feed. When I was looking for a representative, normal American couple to observe, he and his wife came to mind. I sought to interview them on their foodways because, in addition to being game to talk about their waste and letting me snoop around their fridge, they seemed perfectly regular. Although they may be a bit more gourmet than some—in fact, they subscribed to *Gourmet* (until it recently folded) and two other cooking magazines—they didn't dispute their normalness when I explained why I had essentially invited myself over for dinner.

Waldow and Milan, who knew about the thrust of this book beforehand, promised to behave exactly as they normally would while cooking and eating dinner.² They seemed to stay true to their word, or at least they weren't trying to cover up their waste.

The couple estimated that they spend \$300 to \$400 per month on groceries, but I'd guess it might be more. Waldow and Milan live comfortably, but not lavishly. They own their house and the requisite wall-mounted flat-screen television with digital cable. He has a Toyota Camry and she drives a Chevy Malibu. Like many Americans, they buy some of their food at Costco to save money, and Milan told me they can't afford as much organic or free-range foods as they'd like. They're certainly not extravagant people. When their fridge handle came

loose three years ago, they used Shoe GOO to reconnect it—a solution that held until I temporarily broke it.

Another Step Back—The Big Picture

Household food waste is subtle and pervasive. Domestic losses are so persistent, it's almost easier to list ways we don't waste food than vice versa. The Cornell University Food and Brand Lab found that 93 percent of those polled bought things they never use.³ Food is constantly going bad in our refrigerators, which serve as cleaner, colder trash bins. The situation in our freezers is similar, only with a slower, less smelly rate of decay. Waste is seldom, if ever, eliminated in the home.

It seems odd that we waste so much of our food despite the enhanced technology—in the form of refrigerators, freezers, vacuum sealers, green bags, and so on. Yet, these “aids” are part of the problem. We haven't had to worry about keeping food from going bad for so many generations that we don't think about it. We unload our hefty shopping haul into the refrigerator and freezer, then put it out of our minds. By the time we remember about a certain item, it's a smelly, gooey mess.

In a 2004 study, Timothy Jones found that household food waste represented \$43 billion in squandered groceries.⁴ A 1977 report to Congress by the comptroller general lends a less recent, more depressing look at the topic. Using the 1974 crop year, it put household food loss at 39 percent of the food produced for human consumption.⁵

The Garbage Project at the University of Arizona provides our best, longest-running study of home food-waste in modern America. From 1973 to 2005, the project employed student “garbologists” to pick through and categorize what Tucson residents discarded. They also conducted interviews to corroborate beliefs with practices. William Rathje ran the Garbage Project while an anthropology professor at the University of Arizona. In Rathje's 1992 book *Rubbish! The Archaeology of Garbage*, which discussed the project's conclusions, he wrote that “American families waste between 10 to 15 percent of the food they buy.” In a 2006 phone conversation, he told me that the Garbage Project found hard

(or mushy, as the case may be) evidence that 15 percent of the food entering homes is wasted. With either estimate, the costs of waste add up quickly. Using that higher, more recent estimate, and assuming that a family of four, shopping on what the USDA considers its low-cost plan, spends \$175 per week on groceries, we can determine that that's the equivalent of wasting \$26.25 every week, or \$1,365 per year.

Yet, Rathje said that that figure did not account for the food that his “garbologists” couldn't count—the stuff fed down the garbage disposals of Tucson. Rathje, now affiliated with the Stanford Archaeology Center, devised a formula to account for the household food that's liquefied and sent to wastewater treatment plants. In short, he found that we discard another 10 percent in this manner. Thus, 25 percent of what we bring into our homes we throw away. Using the USDA figures, that would mean that a family of four squanders \$43.75 per week and \$2,275 annually.

Rathje's garbage-disposal formula seems downright conservative after talking with Michael Keleman of disposal maker InSinkerator. He pointed me to a report by an InSinkerator engineer finding that in homes with a garbage disposal, 75 percent of the food waste generated is sent down the drain.⁶ Rathje's estimates don't seem too high in light of a recent study in the United Kingdom that found that Britons squandered one-third of the food entering their homes. And I have no reason to believe the British are more wasteful than Americans. In fact, I'm tempted to think the opposite is true. Limiting waste requires patience, effort, and food knowledge. While these used to be common American traits, that is less true today.

Home food-waste is universal. It does not break down neatly along economic lines—everyone wastes. In their 1987 study *Food Discard Practices of Householders*, Oregon State University professors Shirley Van Garde and Margy Woodburn concluded that “household income was not linearly related to the amount of discard.”⁷ Of the four income brackets in that study, people in the wealthiest group didn't throw away the most in any of the three categories. And, in fact, the lowest-income group discarded the most food that was “judged unsafe.” A decade earlier, the 1977 comptroller general's report had stated that “the biggest food wasters are middle-income families, not the very rich or very poor.”⁸ The

Garbage Project found roughly the same amount of food waste in the trash cans of the wealthy and the poor, but determined that more went down the garbage disposals in the affluent homes.

The only reliable indicator of food waste is age. Those who lived through World War II tend to squander less. Van Garde and Woodburn found that the study participants older than sixty-five wasted about half as much as those in the other three age groups. And half of that eldest cohort said that past food shortages or their mothers' discard practices were "the one most influential factor" in their "household's discard patterns."⁹ By contrast, Van Garde and Woodburn wrote, "the younger groups' perception of food as being disposable is probably also a large factor in their higher discard rates."

Our high standards cause much of our waste. We don't eat many items that are far from perfect, and we're even less likely to serve them to guests or our families. Van Garde and Woodburn showed householders three samples of iceberg lettuce. The first was pristine, the second had a slight browning on the base of an outer leaf, and the third had slight browning on the cut edges and outer leaves. They were all perfectly edible, but 40 percent of those queried said they'd only serve the first example in a sandwich. Sound familiar?

Out of Sight, Out of Mind

Sometimes we create our own trouble with our food. Even waste-obsessed folks like yours truly fall into seemingly obvious waste traps. For instance, losing track of an item. I recently bought a tub of hummus, a somewhat unusual purchase for us. After using it once, I put it back in the fridge on the bottom shelf. I'm sure you can see where this is going—it slowly got pushed backward, mostly by a large Tupperware container of leftovers. Because I don't usually eat hummus, I wasn't really looking for it. And because it wasn't in plain sight, I forgot about it. By the time I noticed the hummus, it had a thick layer of that pink mold on it that I don't mess with.

Clutter is another major cause of waste. Through messy or cramped pantries and fridges, much of our home food supply isn't visible. Losing sight of perishables means we end up not eating them and can even lead to duplicate purchases. That's certainly the case in the Waldow and Milan household. The

night I visited there, Milan, who does most of the family's shopping, thought that they had some frozen Costco chicken breasts remaining from a bulk purchase. Yet, when she got home, she didn't see any of the individually sealed, two-breast packets. That prompted a hurried run to a local grocer. Later that night, though, Waldow found the missing package, buried at the back of the freezer. That oversight didn't lead to any food waste—just an extra trip to the store—but it's instructive.

That same night, Waldow had meant to cook a bunch of asparagus that wasn't getting any younger, but forgot to because he didn't see it in the crisper drawer. As is the most common design, Waldow and Milan have a refrigerator with the freezer on top (called a "top-mount" in fridgespeak). Waldow told me he laments the design of his fridge, as he can't see items in the crisper drawer because it's so low. To really find out what's in it, you have to make the effort to reach down and open the drawer, often just enough of a nuisance.

This is the case even when the drawer is made of clear plastic. My refrigerator, a black Frigidaire that came with the house my wife and I bought, is also a top-mount. Since I use the fridge roughly ten times more than I use the freezer, this is less than ideal. I stand north of 6 feet, but the refrigerator portion of the machine ends just shy of four. Standing directly in front of it, I can't see any of the top shelf and only half of the second shelf, because it's too tight of an angle. The sightlines for the bottom shelf are fine, but the bottom crisper drawers often remain shrouded in condensation and mystery. Seeing all that's in the fridge requires some bending and squatting. And that's before the aforementioned problem of clutter is taken into account. Or aging, aching backs and knees and failing memories. While we could be better at reducing our "out of sights," our refrigerators sometimes don't give us the best chance of succeeding.

Having the refrigerator on top would seem like the obvious solution. So why, then, were top-mount refrigerators even created? Bernard Nagengast, an engineering consultant and a refrigeration historian, said that that layout stemmed from practicality. "The reason freezer/fridges were designed that way was because that's the way ice boxes were designed. Cool air falls," said Nagengast, a consultant to the American Society of Heating, Refrigerating and Air-Conditioning Engineers on historical issues. "They followed the same approach. All of the earlier refrigerators had the freezing unit on top."

During the 1960s, once fans entered the equation, the “cool air falls” thing became less important. “When they put the fans in, it didn’t matter where you put the freezer,” said Nagengast, indicating that we then had the ability to direct cold air in any direction. Shortly thereafter, bottom-mount designs started arriving in showrooms. Yet, today, having the freezer on top remains the norm, a vestige of early fridge design.

Refrigerator manufacturers have periodically tried to phase out fridge waste. In the 1950s, General Electric sold a fridge with lazy-Susan shelves to tackle the “out of sight” issue. Nagengast isn’t sure why that idea never caught on, and neither am I. Pull-out shelves are touted as one of today’s perks, but they’ve existed since the 1930s. And refrigeration engineers previously attempted to slow foods’ decay with biology. “There was a period of time—I’m not sure exactly when it was—when some manufacturers thought it was a good idea to put an ultraviolet light in the fridge to kill the bacteria to reduce food spoilage,” said Nagengast. Today, some high-end fridge makers, such as Sub-Zero, have brought back this technology that, in their marketing-speak, “scrubs the air.”¹⁰

To be clear, behavior, more than design, is at fault for most fridge food waste. Overcoming these visibility challenges shouldn’t be too difficult. And since we’re all different sizes, there’s never going to be a perfect refrigerator design. The important thing is to be aware of areas that are hard to see or reach. And if you’re buying a new fridge, consider what kind of unit best complements your height and habits.

We can take heart from knowing that we’re not alone in our fridge squandering. Even refrigeration experts like Nagengast have food wasting away in their refrigerators. “I do lose stuff in my fridge. You forget about it and pretty soon it’s nasty,” said Nagengast. “Sometimes there might be a cup of yogurt or cottage cheese that gets stuck way in the back. Or a leftover we forget about. I would say that that’s pretty much a universal problem.”

Stuffed

More than the design of their fridge, the sheer amount of food crammed in their fridge induces waste for Waldow and Milan. After dinner, Waldow opened the

(now) wobbly door to illustrate some of his points on their food habits. He indicated being pleased that he’d been able to clear out some items, but I couldn’t imagine it much more full. There was hardly room for the night’s leftovers.

To illustrate this volume of food, I later asked Waldow if he’d be kind enough to inventory their fridge for me. To my pleasant surprise, he agreed. After I interviewed them for this chapter, though, Waldow and Milan moved to Salt Lake City, where Milan is doing her residency. What follows is Waldow’s inventory of their refrigerator, in his words, after eight months in their new home:

Top Shelf

- ✓ 2 Nestlé Coffee Mates (quart-size)—one sugar-free, one fat-free
- ✓ Sugar-free apricot preserves
- ✓ Grated parmesan cheese
- ✓ 16 oz. box baking soda
- ✓ Chunk of butter (originally from a stick, in a side-dish container)
- ✓ Gallon of 1% milk (expiring in ten days)
- ✓ Tropicana no-pulp, calcium-fortified orange juice (purchased as part of a 3-pack from Costco, expired three days ago)
- ✓ Buttermilk (used for a few baking recipes, expired a few weeks ago)
- ✓ Random can of Fresca
- ✓ A bit of rancid sour cream (promptly tossed)
- ✓ Swiss chard, fennel/anise, celery root (to be used later today for a soup recipe)

2nd Shelf

- ✓ Whole-wheat English muffins (opened, with 4 of the original 6 remaining)
- ✓ 64 oz. (4 lbs.) plain yogurt (from Costco—we normally eat a few per month)
- ✓ Philadelphia Garden Vegetable Cream Cheese (1/3 less fat)
- ✓ More sour cream (this one is still good)
- ✓ Brick of parmesan cheese (to be used in recipe later today)

- ✓ 1 lb. organic spring mix salad (from Costco)
- ✓ 30 oz. tub of hummus (purchased at least six months ago from Costco)
- ✓ Heavy whipping cream (expired more than a month ago—tossed down drain. Yuck!)
- ✓ Unopened bag of whole-wheat English muffins
- ✓ 4 jars of homemade jams (made by Kristina)

3rd Shelf

- ✓ Smucker's jam
- ✓ 5 random beers (Three are nonalcoholic ones from about two months ago when Kristina's father was in town. I keep most of the beer in the second fridge in the basement.)
- ✓ Loaf of whole-wheat bread (part of a 2-pack from Costco)
- ✓ 2 lb., 14 oz. tub of natural, unsweetened applesauce (Costco?)
- ✓ Leftovers from last night's dinner (Spanish chicken with chorizo and chick-peas) in Tupperware
- ✓ Tub of dip mixed in a sour-cream container
- ✓ 2 hard-boiled eggs (in a bowl)
- ✓ Tub of gorgonzola cheese (old, but isn't it always old?)
- ✓ 36-count of "homemade" corn tortillas (really old, cracking—tossed!)
- ✓ 1 lb. of bacon (to be used in tonight's soup)
- ✓ Breast of leftover chicken (in a Ziploc bag, recently defrosted)
- ✓ ½ an onion (in a bowl covered with Saran wrap, three days old)
- ✓ ¼ loaf of whole-wheat bread (part of a 2-pack from Costco)

4th Shelf

- ✓ Homemade jar of pickled ginger (a few months old)
- ✓ Bag of Craisins (old, but used on salads every so often)
- ✓ Unsealed bag of dried apricots (old, but not sure they go bad—every time I clean out the fridge I try to toss them, but Kristina says no)
- ✓ Unopened bag of honey-wheat premium bagels
- ✓ Tub of chive and onion cream cheese
- ✓ Package of turkey cold cuts (second half of 2-pack from Costco)
- ✓ Bunch of cilantro (to be used in soup later that day)

- ✓ Container of baby arugula (5 oz.) (from Costco, to be used later today)
- ✓ 15 oz. tub of Brummel & Brown Spread, Made with Yogurt (which we often buy in 2-packs from Costco)
- ✓ Red onion
- ✓ 2.6-lb. block of feta cheese (normally don't buy that much but am using it in a recipe; also use it on salads)
- ✓ Bag of 20 carrots (some for soup, others to snack on and use in salads)
- ✓ 3 large English cucumbers (for soup)

Produce Drawer

- ✓ 2 bags of pre-cut celery, 2½ lbs. each (from Costco, one for soup, the other for snacks and salads)
- ✓ ½ of an old carrot
- ✓ Really old bag of green onions—tossed!
- ✓ Limp, old, wilted celery (forgot we had it—tossed!)
- ✓ 1 pear in a bag (still good!)
- ✓ 2 pretty old apples (decided not to throw them out)
- ✓ Old, browning broccoli—tossed!
- ✓ 2 oranges in a bag
- ✓ Old, wilted, bad cilantro—tossed
- ✓ 5 packages of random herbs: thyme (2), rosemary, mint, basil

"Other" Drawer

- ✓ Bag of half-eaten flatbread (light)
- ✓ Half a bag of uncooked flour tortillas
- ✓ Half-empty bag of multi-grain, 94 percent fat-free tortillas (low in carbs)
- ✓ Bag of pita-pockets (1 remaining)
- ✓ Bag of 30 corn tortillas (about 25 remaining)
- ✓ Bag of Mexican-style grated cheese with four cheeses (used mostly for quesadillas)
- ✓ Block of Norwegian cheese (half-eaten)
- ✓ Pack of string cheese (from Costco)
- ✓ One random serving of string cheese
- ✓ Jarlsberg Swiss (only a few pieces left, in a Ziploc bag)

- ✓ Monterey Jack cheese (in a Ziploc bag, expired)
- ✓ 40% reduced-fat Mozzarella cheese (nearly gone, also in Ziploc)
- ✓ Small block of Jarlsberg (in Ziploc, expired a few weeks ago)

Side Door—Top shelf

- ✓ Eggs (10 remaining)

Side Door—1st shelf

- ✓ 24 oz. bottle of Hunt's Ketchup
- ✓ 20 oz. bottle of Heinz Ketchup
- ✓ 14 oz. bottle of Heinz Reduced Sugar Ketchup
- ✓ 23 oz. bottle Frank's Red Hot Original Cayenne Pepper Sauce
- ✓ 17 oz. bottle Sriracha Hot Chili Sauce
- ✓ 2 oz. bottle of Tabasco
- ✓ 10 oz. bottle Carolina Pepper Sauce (at least ten months old)
- ✓ Bottle of Volker's Bakery "Smokin' Viablo" hot sauce (purchased at Salt Lake City Farmers Market the previous summer)
- ✓ 10 oz. bottle Low-Sodium Kikkoman Soy Sauce
- ✓ 15 oz. bottle of A1 Steak Sauce (Original)
- ✓ 10 oz. bottle of A1 Steak Sauce (Sweet Hickory)
- ✓ 10 oz. Lea & Perrins Original Worcestershire Sauce

Side Door—2nd shelf

- ✓ 16 oz. Newman's Own salad dressing
- ✓ 32 oz. Cardini's Caesar dressing (part of 2-pack from Costco)
- ✓ 8 oz. can of grated parmesan cheese
- ✓ 10 oz. Nalley Sweet Relish (likely purchased for a recipe, but not used since)
- ✓ 8 oz. Grey Poupon Dijon Mustard
- ✓ 16 oz. Mezzetta deli-sliced hot pepper rings
- ✓ 12 oz. bottle of Framboise Lambic

Side Door—3rd shelf

- ✓ Kretschmer Wheat Germ
- ✓ 32 oz. Kraft Mayonnaise with Olive Oil. (Good marketing. Looked interesting so I bought. Tastes like crap so I just tossed!)

- ✓ 8 oz. French's Classic Yellow Mustard
- ✓ 32 oz. Claussen Kosher Dill Pickle Halves
- ✓ 1 lb., 8 oz., Classico Tomato & Basil Pasta Sauce
- ✓ 17.5 oz. Sugar-Free Hershey's Syrup
- ✓ 22 oz. Best Foods Light Mayonnaise

Side Door—Bottom Shelf

- ✓ 16 oz. Wild Harvest Chunky Salsa (old, old, old)
- ✓ 1 lb. Krinos Tahini (a teaspoon was used for one recipe)
- ✓ Jar of homemade cranberry sauce
- ✓ 16 oz. Better Than Bouillon Chicken Base
- ✓ 8 oz. Better Than Bouillon Beef Base
- ✓ 8 oz. Better Than Bouillon Vegetable Base

Now that's a full fridge! Of course, Waldow and Milan certainly aren't alone in stuffing their fridge. Why do we do it? First, we're uncomfortable at the sight of anything approaching an empty fridge. And given that many of us have 20-plus cubic feet of fridge space to fill, once we do that, we're hard pressed to use all of our food before it goes bad. And that's if you remember what's in there. Or maybe it's just that we're able to keep more in it, so we do.

While I enjoy *New York Times* food writer Mark Bittman's no-frills approach to food, I wholeheartedly disagree with one piece of his advice in his book *Food Matters*. Under the heading "Sane Shopping," Bittman steered readers down a questionable path: "Make sure your refrigerator is full at all times, mostly with fruits and vegetables. Keep bowls of fruit (vegetables, too) on the kitchen counter or dining room table—they're gorgeous, after all, and if you live with them, you'll eat them." Unless, that is, you buy so much that you can't.

In Bittman's defense, the New York City kitchen is partly to blame here. In a separate column, Bittman referred to his "moderate-size refrigerator," and on the *Times*' "Well" blog, he even wrote, "I think a big refrigerator is not that helpful. Stuff that's in the refrigerator shouldn't be in there all that long anyway."¹¹ With that in mind, I'm guessing that his version of keeping the fridge full is quite different than it would be for someone with a Sub-Zero, or even a Frigidaire. For those of us with a cavernous or even an average fridge, this strategy is a recipe for waste.

How big are our fridges? In 1992, the average refrigerator volume was 19.6 cubic feet. By 2002, it was 28.6 cubic feet.¹² Big-box retailer Lowe's, on its website, lists 185 top-mount refrigerators for sale, only 10 of which had less than 15 cubic feet of space to fill.¹³ On a cultural note, I only realized just how large North American fridges are after living in New Zealand. Seinfeld was quite popular then, and I was surprised by the number of times I found myself in discussions with New Zealanders on the size of Jerry's fridge. While the appliance's heft wowed Kiwis, I'd never given it a second thought. The fridge just seemed normal. And it was, by our standards. When I later visited some homes in the United Kingdom and elsewhere in Europe, I was surprised to find what seemed to be glorified dorm fridges in many of the kitchens. (And that was in people's homes, not at the hotels.)

Bittman's goal is a noble one—encouraging readers to eat more fruits and vegetables. Yet, that can be accomplished without stuffing your fridge and having overflowing bowls of fruit sitting around. Waste need not be a cost of healthy eating. To avoid it, we just need to plan ahead a bit or shop more frequently. And avoid certain pitfalls in the store.

Shopping Beets Waste

D.J. Waldow had recently read an article in *Best Life* magazine about the healthy diet of a particular firefighter. Among other things, this fireman had recommended eating beets. That information was in the back of Waldow's mind the next time he went to the farmers market and, perhaps not surprisingly, he snapped up a fresh-looking bunch of beets. Two weeks later, the previously mundane, now somewhat exotic root vegetables were in the trash.

At first, Waldow forgot that he had the beets. He had planned to make them on the night I visited, but he only remembered that as he was looking through the fridge after dinner. Beets were hidden from view in the crisper drawer. He held them up and said, "I was gonna cook it tonight, but forgot. Now I'm gone 'til Friday and [Kristina] doesn't like beets. These are gonna go to waste." Yet, when he got back from his business trip, there was still plenty of time to eat them. The real problems were that he didn't have a plan for the beets and was reluctant to prepare them because he never had in the past. When I checked

back with Waldow a few weeks later, he had a new reason for not eating them: "I didn't want my first time making beets to be with ones that were kinda old and wouldn't taste great," Waldow said.

As Waldow admitted with a chuckle, these beets were not an anomaly. He tends to be a sensory shopper and likes going on the weekend so he has time to poke around. Milan said he often returns with in-season produce, such as asparagus, or shellfish, which they turn into appetizers. "I'll have a list, but I definitely make impulse purchases," Waldow said. "I'll come home with three bags and Kristina will say 'What'd you impulse buy this time?'"

Supermarkets are designed to separate us from our money by goading us into these whim purchases. Upon entering the store, we're usually shuttled through the produce department, with its sights, scents, and anticipated tastes. Kevin Kelley, the L.A.-based architect who designs supermarkets, noted that the produce section almost always comes first in the store, traditionally in "corner one" of stores oriented for counter-clockwise shopping. While this might maximize sales, it isn't the best for customers. We're prone to buy more than we need and some items may begin to break down while in our carts, both from the time unrefrigerated and the bumps from other groceries. Increasingly, the prepared-food sections—with their even harder-to-resist savory scents—are also near the front. I tend to view supermarket layouts as a challenge, and I see how closely I can stick to my shopping list.

Ever wonder why stores send you all the way to the back wall to pick up a gallon of milk? They're forcing you to navigate at least one aisle, passing hundreds of alluring items with bright packaging. Alicia Ross is a syndicated food columnist and the coauthor of *Cheap, Fast, Good!*, a book on maximizing food budgets. She stressed that our home food squandering often stems from poor shopping habits. "Sticking to that grocery list is crucial. It's that impulse buying that leads to waste," Ross warned. "That's food marketers' goal—to tempt you from your list."

Today's shoppers are up against years of studies and consumer research undertaken to prompt buying. Kelley told me that his company, Shook Kelley, has studied shopper psychology for seventeen years. He said that the people in and around the retail food business, his company included, pretty much know how to push our buttons. "I think you'd be shocked, terrified, and impressed

all at the same time if you knew how in-depth we studied impulse buying," said Kelley.

All supermarkets feature bright, cheery lighting; it's always sunny in the supermarket. There usually aren't many windows, so neither weather changes nor fading daylight can distract us from commerce. As with casinos, clocks are a rarity. And the music, whether it's subtle or cheery, is mood-enhancing. I recently found myself bopping along to a David Bowie song at Trader Joe's. I'm sure I spent more time there than I'd intended. I know I had some of the free coffee on offer and whatever sample item the store was pushing. And I probably bought a few extra items. Well, maybe one. "Environment affects behavior," Kelley said. "If you enjoy a place, you'll shop it slow, you'll engage in the product. The longer people stay in the store, the more they buy."

Those samples can be another way we essentially buy waste at the supermarket. Waldow said he purchases fresh bread occasionally when they have samples that he likes. The tactic is fine if you know you'll use it, but it can backfire. Often, there's a reason you haven't bought that item before. In addition to directly selling that product, there can be a more latent motive to distributing samples: to keep you in the store. Giving out food eliminates the "I'm hungry" and the "Mommy (or Daddy), I'm hungry" reasons for leaving. Samples keep you and/or your children happy. And happy people buy more food. More food that they might not use.

For every Waldow, who enjoys shopping, there's a Milan, who doesn't. That's why she makes a list—organized by section, no less—and stays true to it. "I try to get in and get out as fast as I can," Milan said. "I just would rather do other things with my time." Stores try to use samples to keep the Milans of the world in the store, buying things that are not on their lists.

In-store specials are another waste inducer. Amanda Hale, whom I observed and interviewed (along with her husband and four children, in Carrboro, North Carolina), admitted to being swayed by the enticing displays at a Super Target. She pointed to an unopened dessert pizza in her cupboard as an impulse buy. Yet, she noted that her husband, Mike, an infrequent shopper, was more prone to be tempted by in-store specials. Mike's children all remembered his legendary unpopular purchase of Seafood Flakes, which, thankfully, is not a breakfast cereal.

The displays at the end of each aisle, known as "end caps," are often the scene of such temptations, both in the items offered and the deals. And both adults and children are intended targets. On a recent trip to my regular supermarket, the end caps included a rainbow of Pringles cans, gallons of Lipton green and sweet tea, bottles of something called Flavor Splash Water, and a buy-one-get-one-free Lays Potato Chip display with accompanying Lays Dips. Stay strong, friends.

Goods bought just because they're on sale are often wasted. In that light, those supermarket bargains may be anything but. Just ask Benjamin Franklin. Although he lived before the era of 80,000-square-foot supermarkets and discount clubs, he didn't predate bargains. Nor did he mince words: "Nothing is cheap that we do not want," he advised.¹⁴

Delayed Waste and Unfamiliar Diets

As Waldow was looking through his fridge, he uncovered a couple of relics—two clear containers of pasta primavera that he and Kristina had concocted without a recipe. It was early June at the time, but the leftovers were well past the spring of their lives. They were ten days old.

Waldow walked over to the trash can and emptied the containers, which must have held two pounds of food. The problem: They didn't really like how the pasta tasted. After finishing dinner the night they made it, they still saved the leftovers, but Waldow wasn't sure why. "I knew we wouldn't eat that pasta," Waldow said. "We could barely finish what was on our plates."

I'd bet that an example of this kind of "delayed waste" now lurks in your refrigerator, whether it's dinner leftovers or an unusual purchase. You're likely to find it pushed toward the back or in some nook or cranny. Maybe it's something you didn't want to throw out immediately, as you guessed you'd find a use for it or have a change of heart. So in it went. Depending on the circumstance, waste-delaying is either a form of guilt-assuaging or an act of optimism. Milan guessed that both reasons applied with their pasta primavera: "When we cook something that's kind of so-so, we'll still put it in the fridge even though we know we won't eat it," she said.

I swear I kept a container of homemade walnut pesto in my fridge for at least six months. I didn't really like it, but I *wanted* to. And because it never seemed

to go bad, I didn't have the heart to throw it out. That pesto, like the pasta primavera, highlights a dietary truism: Unfamiliar foods cause more waste. For Rathje, this is the First Principle of Food Waste: "The more repetitive your diet, the less food you waste," he said.

Now, I can imagine many of you chafing at the thought of pursuing an especially monotonous diet. I don't mean to inhibit culinary exploration. Yet, if you're not the kind of person who'll find a recipe to use up an item, or who enjoys freelancing a bit, buying and cooking untried foods will likely lead to waste. Grabbing a chayote squash or a Buddha's hand because it looks cool can end badly. Whatever you decide, just know that there's a much greater chance that those whim purchases end up in the trash.

While this doctrine is bad news for foodies and the culinarily curious, it was one of the principles Rathje's student "garbologists" discovered after digging through household trash in Tucson. They noticed that this was especially true with baked goods. The Garbage Project found that homes seldom throw out any slices from the standard loaf of bread. Yet, families wasted 30 to 60 percent of specialty breads like hot dog and hamburger buns, muffins, biscuits, and bagels.¹⁵

What I call "recipe one-timers" are among the many forsaken foods in our cupboards and fridges. For example, half a can of coconut milk sits in mine as I write this.¹⁶ Waldow and Milan, who frequently make recipes from food magazines, often find themselves with some odd ingredients. As Waldow went through his refrigerator, he found plenty. There was the tube of anchovy paste that I did my best not to smell (he'd purchased it to make a Caesar salad when his mother was in town and hadn't used it since). One shelf of their refrigerator held red chili, green curry, and red curry pastes, all acquired for the same recipe, used once, and now two years past their expiration date. And while Milan said she still hoped to use the buttermilk—bought for a banana bread—to make pancakes, Waldow was doubtful.

For every item Waldow and Milan said they had repurposed, there were three or four that they hadn't. Much like the aforementioned mint, they had a largely untouched and withered package of sage, bought for a chicken with prosciutto dish. "You use it for one recipe and it just sits in the fridge," said Waldow. "I will attempt to use it, but . . ." His voice trailed off, and all three of us knew what would become of that sage.

Kitchen Smarts

Although we discussed Americans' faded foodways in Chapter 4, it's a subject worth reconsidering here. Bill Rathje relayed an interesting and likely apocryphal old wives' tale (pun intended—keep reading): A husband watched his new bride slice away both ends of the roast before putting it in the oven. When he asked her about it, she replied that her mother had always done so. The next time they visited the mother's house, they inquired about her trimming. As you might guess, the mother used to cut the roast so it would fit in her pan. While the story may have been contrived, it symbolizes our loss of food knowhow. That young woman, if she does, in fact, exist, probably has a pan that's twice the size of her mother's (ditto for her oven and kitchen). Yet, she has probably inherited only half of her mother's food knowledge.

While a larger portion of Americans are interested in cooking and food culture these days than, say, fifteen or twenty years ago, fewer know how long you can actually store items in the fridge. In their 1987 study, Shirley Van Garde and Margy Woodburn asked participants to evaluate roasted turkey slices. The participants were presented a container of the meat and asked the question, "This turkey has been stored in the refrigerator for four days. Would you become ill if you ate it today?" Surprisingly, 23 percent of the participants answered yes.¹⁷ Van Garde and Woodburn concluded, politely, that "confident, accurate estimations of food safety were not the norm among householders."

Diminished kitchen smarts mean that fewer Americans know that slightly sour milk is required in many recipes or that stale bread has a million uses (and at the very least can be made into bread crumbs). We're uncertain when foods have gone bad, and when we aren't sure, they're tossed. Unlike in baseball, when a tie goes to the runner, increasingly, close food calls go to the trash can. I once received a restaurant to-go box with a sticker that read, "When in doubt, throw it out." Thanks, guys.

Like manufacturers' expiration dates, the refrigerator shelf-lives listed by the USDA Food Safety and Inspection Service seem a tad cautious.¹⁸ For instance, they advise cooking chicken within one or two days of purchasing it. At that point, many packages have yet to reach their sell-by date.

When listing advice for millions, one can't err on the side of recklessness. That's why USDA estimates have to be cautious. And they also have to account

for a range of variables: the guy who leaves the food out too long after eating, the woman who doesn't use sealed containers, and the family whose refrigerator is a tad too warm. As a result, we get a generic three to four days for almost all kinds of leftovers, including pizza.¹⁹ Just three to four days? While I devour my pies long before the fourth day, that seems awfully careful. Heck, I've eaten pizza that's been left out overnight with no ill effects.

We should keep in mind that our foods will likely last longer than the USDA's near-worst-case scenarios. After all, the Food Product Dating USDA Web page noted that "'Use-by' dates usually refer to best quality and are not safety dates."²⁰ It's too bad the officials don't take their own advice. For sure, there is need for caution here. The line on when to discard food must be drawn somewhere. But it seems we're being advised to draw that line in an exceedingly safe way. This excessive caution has consequences. Just as there are ramifications to eating food that's too old, so are there repercussions for all of our waste.

Strategic Shopping

I've listed the main causes of household waste, but we could probably think of ways we waste food until the milk turns sour. The important question is what to do about it. Since home food loss begins at the supermarket, we'll start there. Our behavior before, during, and after shopping can doom us to waste food. And, as we've discussed, stores often encourage us to waste food. Yet, following these basic steps can prevent much of our food squandering:

Plan meals. Plotting your meals before hitting the store is a crucial step in reducing home food-waste. I recommend only planning dinner, as breakfast and lunch tend to be repetitive and less waste-inducing. Plus, that way you leave lunch open for leftovers! Even with dinners, be sure to build in a little wiggle room. If your life is anything like mine, you may want to leave a few nights per week open for when your plans change at the last moment, or for when it's time for a leftover smorgasbord.

You can jot menu ideas on a scrap of paper, a website, or call on a handheld device, whichever way works best for you. The important thing is not *how*, but *whether* you're planning meals before going shopping.

"Double up" on an ingredient. Finding two recipes that call for the same item can help you avoid that drawer of unused herbs and save you money. For example, two dishes that call for spinach will help prevent a wet green mess in your crisper drawer. One night's eggplant parmesan may lead to another's Asian stir fry with eggplant. Pulling off this maneuver is sort of like plunking down a Scrabble word that garners points both across and down. Double points if you can find two recipes that share two ingredients, and triple for three. But good luck finding two (edible) recipes that employ anchovy paste. (Although, with the Web at your disposal, even that may be possible.)

Take a quick inventory. Before making a grocery list or shopping, take stock of what you do and don't have. At the same time, it's a good chance to play store-keeper and be sure to rotate the older "stock" to the front of your fridge and shelves. Checking supplies will also force you to determine if you're missing any staples. There's nothing worse than returning from the market only to realize you now have two tubes of basil paste, and no eggs. The all-stars among us will keep a whiteboard list of perishables near or on the fridge that can be updated at this time.

You guessed it—make a list. When you plan your meals ahead of time, it forces you to make a grocery list. List-making usually means going through recipes to find what ingredients are needed. I've found that the actual process of writing everything down makes me more decisive. Delaying decisions until the supermarket can be dangerous, as there are already too many choices required there. And arriving with a solid list makes shopping quicker and less painful. It also keeps you from getting distracted or forgetting an item that may require an expetitive-laden return trip to the store.

Stick to the list. This requires remembering to take your list to the store, a feat I often fail to achieve. But mostly, it means avoiding impulse buys. Once you're in the supermarket, it's worth remembering that everything, from the layout to the lighting, is arranged to tempt you into whim purchases. Avoiding impulse buys is essential to reducing waste and saving money, because these purchases often aren't used. As you may have guessed, I've never been called a hedonist.

If you enjoy impulse buying, try coming back to that tempting item later to see if you really want it. After a few minutes, you'll likely have forgotten what it was you thought you needed so much.

Shop for produce last. The less time your fruits and veggies spend in your cart, the less wear and tear they'll experience, and the less time they'll go unrefrigerated. This tactic will also reduce impulse buys common to the produce section, because by the end of your shopping, you'll be ready to get the heck home.

Don't shop hungry. Going to the store on an empty stomach is a real no-no, as an active appetite can derail all shopping restraint. Food columnist and author Alicia Ross warns that this tactical mistake prompts impulse buys and, later, waste. "Don't go hungry—you'll buy everything because it all looks good," Ross said. "You're like Pavlov's dog wandering through the aisles. Often people buy more food than they could possibly consume before it goes bad." I often eat a granola bar before or even while I'm shopping.

Avoid tempting but useless deals. In the spirit of not buying food you can't use, it may not make sense to buy into the three-for-\$10 sale. The king of this scenario is the Buy One Get One Free, or BOGOF. While this promotion can help homes save money when it involves shelf-stable items, it ups the ante when they're perishable. For example, getting two containers of strawberries can save you money, but only if you use both before they grow soft or moldy. Splitting items with a friend or another family is one strategy for making use of BOGOF sales, as is using your freezer. Try to consider whether you'll actually use both items before jumping at a two-for-one. For example, one BOGOF purchase that never comes close to going for naught in my household: ice cream.

Beware of bulk. Buying in bulk can be as perilous as the BOGOF deals. But as with art, cholesterol, and witches, there are good and bad kinds. The massive bulk deals found at warehouse clubs can steer us to squander food; you can end up throwing away as much as you use. Although these large purchases can be a boon to big families, or event hosts, they are less so for a family of four—or for

a couple. Can you really go through a 3-pound tub of sour cream or cottage cheese before it turns green? And you'd probably have to open a hot dog stand to finish that 105-ounce mustard vat. Yet, the bulk food bins found at many healthier grocery stores represent a great opportunity to reduce waste. Customization is the key here. In these aisles, you can actually purchase less than you would with packaged goods.

Be realistic. It's best to shop for your actual habits, not your intended ones. Unless you're in the process of turning over a new leaf, "wishful thinking shopping" ultimately causes waste. If you get out of work at 7 P.M., having all the ingredients to make a mousakka probably isn't all that useful. More often than not, you'll end up eating out or ordering in. If this scenario sounds familiar, keep it in mind the next time you're in the supermarket. Then again, keep it in mind even if it doesn't sound familiar!

Avoid excessive prepared foods. Garbage Project researchers found that the more evidence of prepared foods they found in a home's garbage, the more wasted fresh food appeared in the same trash bag. If you buy a decent amount of prepared food, adjust your shopping to include fewer fresh items. Garbologists found that produce—excluding the peels and rinds—accounted for 35 to 40 percent of total edible food waste.²¹ Rathje attributed this to what he called the "Fast Lane Syndrome" caused by busier lives and busier parents. There are now more homes with two or more working parents than there are with one working parent and one parent at home.²² There's a disconnect between the reality of how we eat and how we wish we ate. "You know what's good for you when you go the store," said Rathje. "You buy fresh fruit, vegetables and meats and you know what your lifestyle is like and you buy a lot of prepared foods. So at the end of the week the prepared foods [packages] are in the trash and the head of lettuce is all gooey in the fridge."

Katy Wolk-Stanley, the Portland blogger who has given up buying new items, voiced Rathje's hypothetical scenario: "A couple years ago I used to be really bad about buying all this food, filling the fridge up and letting it go bad," said Wolk-Stanley. "When you're in the grocery store, you think we really should be eating all these healthy vegetables. . . . You put them in the drawer and then

by the time you look at them, they're rotten. Then I'd go back to the store and buy another head of lettuce."

Don't break the cold chain! It seems to go without saying, but it helps to bring perishables home from the store promptly. If that's not feasible, keeping a cooler or insulated bag in the car is a sound idea. When refrigerated items warm to 40 degrees Fahrenheit (or hot items cool to 140), they enter the bacteria "Danger Zone."²³ There, conditions are ideal for bacteria to frolic amongst your food (and reproduce). The time spent in this temperature range reduces the life span of food and, in extreme cases—say, a two-hour yoga class after shopping—ends it.

To give you an idea of temperature vulnerability: A 1992 UK study took temperature readings of groceries before and after the groceries left the refrigerated cases at the store to see what would happen after some time in a car. The products began at 4 to 20 degrees Celsius and finished, after an hour in the boot, er, trunk, at 18 to 38 degrees Celsius.²⁴ Now consider that the "Danger Zone" begins at 4 degrees Celsius. Plodding shoppers, consider yourselves warned! Also, keep in mind that larger items, such as whole turkeys, stay cold longer than smaller ones, such as sliced turkey breast. And the weather will help or hurt, accordingly.

Use it up. Should you find that meal planning doesn't fit your lifestyle, here's another approach: decide what to eat by seeing what you have. To help here, there are even two books by the same name: *The Use-It-Up Cookbook*. True to her title, Lois Carlson Willand advises that we use up the perishables in our refrigerator before going on our next shopping trip.²⁵ Willand wrote, "This may mean you change your basic meal-planning process from asking 'What would we like to eat today?' to 'What do we have on hand to eat today?'" If you can make that leap—and not everyone can or wants to—it will mean less shopping and less waste.

Finding a use for tomato paste motivated Catherine Kircho, a writer and consultant who had previously owned a catering company, to write her version of *The Use-It-Up Cookbook*. Her paste conundrum is the quintessential "recipe one-timer." Like Waldow's anchovy paste, these sauces, condiments, and pastes crowd our fridges. Yet, viewed in another light, they're an arsenal of ingredients.

Finding a recipe with that item in mind can help reduce the odds of throwing away a bottle or tube a year after using a solitary tablespoon.

Once We Get It Home

Store food sensibly. Since the door is the warmest part of the refrigerator, milk and the more perishable items are best stored elsewhere. Vegetables should go in the crisper drawers, where higher humidity levels help keep greens fresher longer. If you have a humidity setting, put it on high for the leafy greens; if you have two drawers, you can set one on high humidity and the other on low for nonleafy vegetables such as carrots and zucchini. And while some fruits and vegetables want to go in the fridge, some don't—tomatoes, for example, are better left out on the counter. For details on other types of veggies, consult your local greengrocer, the Internet, or Appendix B in the back of the book.

Keep food visible. This holds true for all foods, but mostly perishable ones in your fridge or freezer. Keeping refrigerators uncluttered always helps, as does using clear containers. Another strategy is to rotate the stock as supermarkets do by placing newer food in the back and pushing the older items to the front. Or create a priority eating shelf, as blogger Angela Barton did. On her blog, "My Year Without Spending," she described writing this command on the shelf: "Eat Me." Making a list of soon-to-go-bad items to keep them in mind is another useful strategy. Giving it a whimsical title, such as "Remember the Alamo," as my wife is wont to do, is optional.

Don't be a fridge filler. Provided you don't have more family members than fingers, filling your refrigerator with food will likely create waste. Having a smaller fridge is another caveat to this rule. Ample refrigerators are not the enemy. In fact, they can save food, by allowing us to fit that entire turkey carcass or stockpot of stew. The problem is what we often do when faced with so many chilled square feet.

Serve sensible portions. After getting food into our refrigerators and cooked, we can avoid great waste by doing something so seemingly obvious I'm almost

embarrassed to bring it up: dish out a reasonable amount of food. There's no need to pile it on, since those who want more can always ask for seconds (or serve themselves seconds, or thirds, for that matter).

Sensible portions are even more important if you're a believer in the "clean plate club." This is definitely delicate ground, but regardless of your take on the "clean plate" ethic, one must admit that serving reasonable portions will cut down on plate waste. Because, after all, the remains on people's plates are seldom saved (even though they can be).

American over-scooping does a real disservice to our waists and our waste. And I'm looking right at you, Grandma! I used the generic term there, but to get specific, my Grandma Abby exhibits another "waste-as-hospitality" behavior. She doesn't dish out heaping amounts, but is prone to pushing a second helping before the first is finished. It's her version of what William Rathje termed the "Good Provider Syndrome," where serving and buying too much food is done in the name of love. In my grandma's defense, who wouldn't want a second slice of kugel? Not even a "sliver!"

Save leftovers. Discarding leftovers not only means you're squandering the time and effort of cooking, but you're literally throwing away money in the value of that food. If you're going to save leftovers, be sure to refrigerate them promptly in an air-tight container (for most items).

Although I don't quite understand people who categorically deny the leftover, I'll agree that there are some items that don't do as well the next day. Dressed salads are a prime example. That's why I suggest not pouring dressing on the entire serving bowl when at home and ordering it on the side at restaurants. Fried foods tend to be worse in their second iteration, and seafood can be hit or miss. Yet, some items are even better the second or third day. The flavors and constituents of both meatloaf and chili, for example, fully blend in the refrigerator. And some items, such as guacamole, might not look great the day after, but scraping off a microscopic layer of oxidation reveals a flawless interior.

Germophobes won't like this, but, here goes: You might even consider saving food from your loved ones' plates. After all, they are your loved ones, right? Kissing isn't much different, germ-wise, than eating the food that that special some-

one's fork may or may not have touched. While those in the composting industry try call this stuff plate waste, I call it "Love Leftovers." Or lunch. Ah, semantics! Obviously, this formula changes if the person in question is sick.

One argument I often hear from people rationalizing their waste is that the item was "too small to save." As someone who grew up in a house where all food was saved, I'm not buying it. I can't say that my mom has thimble-sized Tupperware, but she definitely has the next size up. All food items have another use, if you want to find one. I also have a term for these smallish leftovers: "remainders."

Eat said leftovers! Once you've saved your leftovers, that's only half the battle. You have to eat them. If you're not sure whether a food item has gone bad, chances are it hasn't. When an item has gotten too old, you'll know by its smell, how it looks, or, in the worst case, that first bite. Foods lose their flavor and texture before they go bad, as Clemson University food-safety expert Angela Fraser reminded me. There are still bacteria dangers that won't be noticeable; that's not a result of age, but of mishandling in storage to allow too much time between 40 and 140 degrees Fahrenheit.

Chances are, you're underestimating how long items remain edible in your fridge. That's not surprising, because, as we discussed, our Department of Agriculture does the same. Although in their case it is intentional, based on the need for caution because of varying food-handling practices. For most people, though, this underestimating is just lack of knowledge. I'd like to point out here that I just ate a six-day-old meatball sub, and not only am I still here, it was pretty tasty. Of course, it was well wrapped and promptly refrigerated.

If you're simply not a leftover person, try packing them into your child's or spouse's lunch. Or they can always be used to create another meal. And if that doesn't work, try to prepare less next time. Halving a recipe or finding cookbooks geared toward one or two diners can help here.

Repurpose. Using up your leftovers does not have to mean eating the same meal for a second or third time. Sometimes there isn't even enough remaining for another meal, as with "remainders." These leftovers present opportunities to create or enhance any sandwich, salad, or other concoction. Improvising in your cooking with these remainders can become a food game-show-like experience.

Repurposing is a handy way of ensuring that foods are used. The classic example is making chicken salad from leftover chicken. And the extra hamburgers from the cookout can bring a smoky flavor to the ground beef role in a recipe. Mat Mandeltort, now a restaurant consultant at Technomic, ran a restaurant called Hearth Fare from 1996 to 2001. His advice for restaurateurs and homemakers: Incorporate a few "use-it-up" dishes into your repertoire. "If you have these three things on your menu, you never have waste: Soup, quiche, pizza."

Store leftovers based on your intentions. If you plan to take dinner leftovers for lunch, creating meal-size containers rather than one giant one is a sound strategy. Doing so that night removes a barrier from eating leftovers and helps non-morning people (my hand is raised) get out the door on time. In addition, smaller containers of a dish are better for food-safety reasons because they allow the food to cool down quicker. Just promise me you won't throw away a decent amount of rice merely because there isn't enough to create a third lunch-sized portion, as D. J. Waldow did the night I was observing his habits.

Make friends with your freezer. Freezing leftovers before they go bad is a great way to avoid waste. I like to think of it as throwing out a life preserver. A word of warning: The practice becomes quite addictive and soon you'll have a full freezer. This is a nice way of avoiding the unintended BOGOF waste. And it's nearly universal, as almost everything freezes well.

Leftover night—or week. Planning for a leftover or smorgasbord meal once or twice a week really cuts into your waste. Fridge Fillers the world over will immediately recognize the wisdom of Eating Down the Fridge. Steven Shaw, the cofounder and executive director of the eGullet Society for Culinary Letters and Arts, proposed the idea of not buying groceries for a week. By so doing, he converted a long-practiced strategy in home economy into a Web-shared experience. "Let's all skip a week of shopping. Let's declare national eat the stuff in our freezers and pantries week," Shaw wrote. And former *Washington Post* food writer Kim O'Donnell trumpeted the initiative by issuing a formal "Eating Down the Fridge" challenge on her *A Mighty Appetite* blog.

Regardless of whether participants can last the entire week, Eating Down the Fridge is a worthwhile exercise to see how much excess most of us keep in our refrigerators and pantries. It forces us to find uses for what we have, leaning on recipes and advice from family and friends while eating down your fridge. You'll learn how to get creative with leftovers, and gain insight into your own food habits.

Worst-Case Scenario

Inevitably, there will be some food that won't be used. If you absolutely, positively aren't going to eat a food item, try to keep it out of the regular waste stream, which usually brings a methane-emitting end in the landfill. Rerouting food to animals used to be easy and common when slop buckets were in vogue, or at least in use. Nowadays this will be difficult to pull off unless you have your own pigs, chickens, goats, rabbits, or some other creatures for whom food scraps make a healthy diet. Fido can enjoy the occasional table scrap, but it's probably not a good primary option for him.

Barring those animal ends, it's time to compost. Now, I believe in composting. It's a cheap, green solution for food waste that anyone with a few square feet of outdoor area can do. There are even indoor composting contraptions, such as the NatureMill or the Bokashi method, for those without that space. There are almost as many kinds of compost bins as there are types of foods wasted. The quirkiest is the Roly Pig, a colorful metal bin made to look like a hog, complete with ears and a snout that's lifted to insert food waste. Yet, no matter what kind of contraption we use, composting allows us to avoid the greenhouse gas emissions and produce a useful soil amendment that recycles the nutrients in food waste.

Composting is not something you facilitate as much as let happen. The leaves that fall in a forest eventually break down. Converting food and other organic materials into a nice soil requires a bit more work than simply leaving it alone, but not much more. At its core, you're preventing a pile of food waste from emulating a landfill. That is done by "turning" it to ensure exposure to oxygen; by keeping it from going anaerobic, you keep it from releasing methane. Simple.

In addition to the environmental benefits, composting gives us agricultural wannabes an excuse to use a pitchfork (to turn the pile).

For those unable or unwilling to compost, sending food down the garbage disposal is preferable to the trash. But just barely. Those items will likely be processed at a wastewater treatment facility, avoiding methane emissions. Yet, the environmental impact of dumping food down the disposal is still being debated—(although it's not quite the same hot-button issue as, say, the death penalty). Opponents think it harms the municipal pipes that transport the stuff. And then there's the water and energy usage needed to process the food waste along with other substances humans send down the drain. Until we learn otherwise, I see putting food down the disposal as only slightly better than tossing it in the regular trash.

Unaware of Waste

The first step in reducing home food-waste is admitting that there's a problem. That's always the first step to recovery, right? Though wasting food isn't a disease or an addiction, it tends to be invisible. Not only do folks not pay attention to their waste, they underestimate it. A 1980s study testing methodologies for measuring household food waste found that asking people to recall or approximate their waste "yielded unrealistically low estimates."²⁶ In fact, 50 percent of low-income participants in one method and 63 percent in another reported having no food waste.

Noticing our food waste can be a real challenge. Because, in addition to sending it *away*—via the trash or garbage disposal—we're taught not to think twice about it. Fortunately, once we do realize how much food we squander, it's a relatively easy habit to minimize.²⁷

Chances are, if you're reading this sentence, you've already begun paying closer attention to your food waste. And if so, good for you. If you haven't started, I bet you soon will. To fully grasp how much food is wasted in your home, I challenge you to keep a week's worth of your food waste. You can store it in the fridge or freezer so it doesn't smell. The important thing is to be able to look at your waste in its entirety to get a clear picture of how much loss occurs in your kitchen. If you want to wimp out, you can just keep a record of

the items you discard. In either case, though, be sure to include the plate waste you send down the disposal.

Once you've gathered your home's food waste, take a step back. In light of some of the factors raised here, think about why those items ended up not being used. How much of the waste could have been avoided? I'm willing to bet that half of your collection—the edible stuff, not the peels and shells—was preventable. That's why halving your future waste shouldn't be too hard. Mostly, it's about awareness and effort. And you've already got that first one licked.

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