Crosses

Crosses breach Bandra’s paths. As signs of the large Catholic population in this Mumbai neighborhood, the crosses stand up to ten feet tall. They secure houses, garden grottoes, and alleyways. Some commemorate community leaders, on side streets and on main streets that used to be side streets. Many others are known as plague crosses. They were erected to ward off the plague during Bombay’s 1896 epidemic, a mass mortality that ultimately killed over 12 million people throughout India.¹ I counted six plague crosses within a one-block radius of my apartment building in Bandra. Changes in the city surrounding the crosses must accommodate them: men would de- and reconstitute them brick by brick when municipal crews widened the streets by a few meters. The crosses accommodate city life: a quick prayer, a kiss on the way to work, or a smoky stick of incense. On one of Bandra’s main seaside roads, Carter Road, stands a cross simply marked “1896” at its base. Painted with a thorny, flaming heart dripping blood into a chalice, it displays a stark red against the orange of its marigold garland necklace, which someone refreshed daily. The crosses take on gifts of fresh flowers even as the winds coming off the Arabian Sea fade their paint.

One morning, I noticed on my daily walk that the plague crosses had new across-the-street neighbors: metal signs, bright yellow and reflecting the sun, stuck into the ground every ten feet. The signs advertised
FIG. 1.1
Bandra plague cross

FIG. 1.2
Kaya Life cross
a weight-loss company. They instructed their audience to send a text message with the word “LIFE” to a phone number for more information on how one might learn “weight control.” Together, nineteen of these signs spanned the length of the waterfront promenade, insisting that too much food was a drain on life. A sentinel of bodily hazards had materialized again. These signs spoke of chronic disease.

Along with their older relatives across Carter Road, the newer crosses are straddling life and death in relation to disease. They interface bodies and the city. The plague crosses cement memories of residents felled by an infectious epidemic; the weight loss signs are part of a plan to forestall potential falls. Both are totems of events eventually called epidemics. Both mark out patterns of substances, environments, organisms, and illnesses. Death from infectious agents beckoned from the past on one side of the road, and life as fatness gestured from the other. Taken together they might seem like epidemiological bookends encapsulating a transition from communicable to noncommunicable diseases, from etiologies known to those contested, and from plagues of poverty to those of prosperity. But transitions are tricky. Given the richness of life that unfolded around them, the crosses demand a more porous field for understanding patterns of disease than any solid line drawn across the street could provide.

At the time of the plague outbreak in Bombay—and still today—the crosses denoted mass death. The poet B. F. Patell described these circumstances in 1896:

One only race immune stands out,  
Well known for high physique, no doubt,  
A race of healthy, stalwart men,  
Out of their shoes full five-feet-ten;  
Aloof from natives and their ways,  
Their cleanly habits worthy praise;  
Their diet rich as rich can be,  
Not “dal” and “bhat” with grains and “ghee,”  
But beef and mutton, fowl and fish,  
A pound helped out of every dish;  
Wine, whiskey and cigars to close,  
And nights of undisturbed repose;  
Their dwellings open to the sea,  
From all contamination free,
At Mal’bar Hill or Breach Candy;
Well-ordered homes of health and ease;
With “khidmatgars” [servants] and what you please;
The European race I mean,
Untouched who ‘scape Plague’s horrors clean.

Food manifested connections between wealth and health: Foods “rich as rich can be” eaten by the pound for the “European race” who escaped, and dal (lentils) and bhat (rice) for the “natives” left behind (Patell 1896). In Patell’s poem, as in this book, substances and environments set the terms of what can and cannot be absorbed to make life livable. Memory and marigolds, ghee and beef, fleas and fat: the city and its inhabitants are deeply permeable.

Absorption

Around the crosses, stories circulated about Indians in cities like Mumbai enjoying too much life, in the form of too much food, and becoming heavier and sicker as a result. In popular and scientific accounts, India was facing an epidemic of diseases of prosperity, especially obesity and type 2 diabetes. The country modeled global health paradigms that consider how the reduction of infectious, communicable diseases leaves bodies susceptible to modernity’s morbidities such as hypertension, coronary disease, type 2 diabetes, and obesity. Often “Westernization” or “transition” abridges this dynamic, suggesting a generalizable West-to-East flow of prosperity and pathology.3 These mediated illness explanations shared a coda of an urban “lifestyle” of alimentary indulgences and bodily sedentarism. Newspapers, television programs, and everyday conversations detailed the features of this dangerous pattern, usually as a face-off: between fatness as an older vernacular sign of wealth and newer aesthetic demands of thinness or between the harsh history and contemporary persistence of malnutrition and the spread of fast food in cities.

However hyperbolic or representative, these contrapuntal narratives posit that through food, some bodies have reached their limits of absorbing a changing world. Such narratives often contextualized the uptick in metabolic disorders amid India’s economic reforms of the early 1990s. This reiterated the idea that postliberalization India is a laboratory of a massive urban middle class—a place where the market anchors possible futures in terms of consumer aspirations and anxieties.4 Particular visions of meta-
bolic order and urban Indian sociality converged, each making the other intelligible. The underbelly of the urban Indian middle-class fantasy simply seemed too big for a healthy, long life. Consequently, overconsumption became a salient explanatory glue for understanding relations between the body, everyday substances like food, and environments like the city.

In this book, I consider how people make connections between food and urban life to explain that absorption is taking hold as the grounds for experiencing and making sense of chronic illness. “Absorb” has a conventional meaning of soaking up or drawing in. It also has a figurative meaning: to preoccupy or rivet, in both its Latin root and its current English meaning. Throughout the book, I mark vernacular expressions of what is being absorbed and how. Often, these expressions employ variations to root morphemes that convey the action of taking for oneself (in Hindi, le; in Marathi, ghe). My own use builds on these meanings, with an emphasis on absorption as a dynamic process. Hence, by absorption, I mean the possibility for bodies, substances, and environments to mingle, draw attention to each other, and even shift definitional parameters in the process. In this usage, discursive and material changes both precede and follow absorption. As fat appears and as blood sugars blossom, people register relations to substances somewhere and sometime between desire and ingestion, bodily systems and environmental exposures, subjectivities and city life, and guts and drugs. Absorptions between persons and substances call into question how and to what extent the self and the world mix. Absorption allows us to see how ordinary objects like foods make metabolic illness stable enough to be operational and intelligible. From this perspective, bodies and cities are permeable interfaces of active traffic. This traffic—full of stops, starts, and dead ends as much as it is full of movement—offers insight into the connective permeability that undergirds India’s rise in metabolic illnesses. A study of metabolic illness grounded in absorption, in contrast to one that assumes overconsumption as its starting point, can offer a thicker account of how people live through this phenomenon. I argue that attention to absorption can open up key questions in the context of chronic diseases connected to food: Who and what become the eater and the eaten? What is nutrition and what is poison? Who and what set the boundaries of inside and outside, delineating organism and environment?

Epidemiological and clinical studies suggest a varied landscape of prevalence and incidence of metabolic illness in India. For obesity, many researchers use proxy indicators such as the prevalence of type 2 diabetes
or the incidence of cardiovascular disease (IIPS 2007). India’s 2005–6 National Family Health Survey estimated obesity for the first time by calculating the body mass index for ever-married adults between 15 and 49. The survey listed the percentage of female respondents who were overweight or obese at 15 percent (29 percent of whom were urban residents) and male respondents who were overweight or obese at 12 percent (22 percent were urban residents). India is also noted to have the greatest number of diabetics globally, and ischemic heart disease leads as the nation’s killer. For type 2 diabetes, epidemiological studies in urban areas place prevalence rates between 8 percent and 20 percent; for the state of Maharashtra, 6 million people are said to be living with type 2 diabetes.\(^5\) It has been difficult to parse trends from these data and thus to quantify the problem.\(^6\) Current figures about eating patterns in India are similarly porous. Regional variations are vast, social class, caste, and gender inflect food consumption patterns and nutritional status in complex ways, and obesity has multifactorial interactions of risk and realization with diabetes and cardiovascular disease.\(^7\) Given the ambiguity of the numbers, the government of India has proposed testing blood sugar levels in a national surveillance effort.

In this space of calculated uncertainty, the relations I witnessed between persons, city spaces, desires, risks, and realizations of bodily states often hinged on matters of absorbing substances. My informants frequently began their stories about food/body/medicine connections from the starting place of the body’s porosity. Whether it was a clinician holding fast to the “calories in, calories out” model of dieting, a neighbor talking about how different qualities of food fully please or fall short of one’s hunger, or a biologist attesting to the idea that in utero exposures to environmental toxins materialize as diabetes later in life, these descriptions all posit concepts of shifting body/environment boundaries. Food and fat are the primary materials of concern in most of the stories in this book, but my use of absorption does not assume that once eaten, one thing converts unproblematically into another (i.e., fat into fat). As we will see, things eaten have travel companions in several complex nature-culture hybrids such as toxic chemicals, plastic shrink-wrap, diets, drugs, and surgeries. Agents of absorption could include persons incorporating food, food incorporating “healthy” qualities from food companies, or Mumbai’s streets incorporating new forms of alimentary politics. Being absorptive meant incorporating a range of elements that shuttled between the worlds inside and outside the body. An analytic of absorption understands a seemingly bounded body to be twisted inside out, because bodies already are.
Body/Environment Noodles

In Manuli, the area of Bandra where I conducted household research, the sea breeze puffs up the things left to dry on the beach under the watch of the plague crosses: laundry, boats from the morning’s venture, and hundreds of the local fish called bombil (Bombay duck) roped together and hung on wooden frames. The wind snakes its way into neighborhood family compounds, where groups of shacks and more permanent concrete structures gather under tin roofing. My research assistant Mary’s family compound was one of the oldest. Paying her a quick visit at home one morning before a day of interviews, I watched the wind rustle waist-high stacks of paper that lined her hallway. All of these papers were about food. Mary had accumulated recipes from cookbooks, women’s homemaking magazines, and newspapers over decades. She also had accumulated an archive of weight-loss diets in the carefully curated, crumbly sheaves.

I had seen many collections of things in households in the neighborhood, like books, figurines, photos of family members and pets, and souvenirs brought back from places in the Middle East where many of the adult men worked on oil rigs. Neatly arranged stacks of papers weren’t surprising in the accumulative sense. The surprise came in their means and ends as diets, an accumulation of ways to diminish. “You can borrow them,” Mary told me. “But don’t lose them. They’re part of my dowry.” She smiled at her own joke that the archive—and by extension, keeping slim—was her contribution to the household, the thing a wife brought to make married life livable. (In the years since that moment, if I want a recipe or ask about a diet plan, she still tells me to consult “her dowry.”) I took a peek at some of the diets, whose stacks paved a walkable path through domestic space. Yellowing newspaper clippings exclaimed the virtues of meals selected for low cholesterol, low sodium, high fiber, veg-only, fruit-only, or rice-only. Magazine pages torn from 1970s editions of the women’s magazine Femina extolled slimness and offered stepwise photo instructions to fancifully arrange sliced cucumbers to please the family and cut calories.

Mary pulled one sheet of paper out of a giant stack: a record of her visit to the neighborhood dietitian just down the street. It was the pregnancy weight from her first child that she had wanted to shed. She recalled stepping on the scale, free-listing her eating habits, and listening to the nutritionist dictate a diet plan that Mary scribbled down in a notebook. She showed me this record of regimen: she was to take in certain foods at certain times and to “burn it off” through regular exercise, all to restore the
order of a thinner body. Calories in, calories out, foods to start and foods to stop. My instinct was to jump to a question about efficacy. I was going to ask, “Did it work?” but a squeal of delight interrupted us. Mary turned her attention around the corner, where her toddler nephew sat glued to a small television as he watched cartoons under the watchful eye of his mother, Mary’s sister-in-law, Eliza. Eliza was getting ready to cook food for the small catering business she ran out of the house. She made money by catering tiffins (lunch box kits) for the growing number of young people (especially women) in the neighborhood who worked in call centers on the night shift, when eating happened at odd hours. Eliza fed newer forms of labor in the community, as people sat in front of computers under the watch not of crosses but of closed-circuit cameras.

A commercial for a new “healthy” whole wheat instant noodle had come on the television, provoking the nephew’s joy: “I am healthy with a round twist, and I slip down your mouth!” squeaked a child’s voice-over as noodles energetically swirled around in a bowl on the TV screen. The two women exchanged glances; Eliza remarked that it was impossible to tear her son away from these commercials, which magnetized his attention. Any time he saw these commercials, he would tell her that he wanted that food, now. The noodles danced in the bowl; we were supposed to imagine

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them dancing into our bodies. Of course we could—absorbing food is what bodies do. The papers in the hallway fluttered as Mary joined the boy on the floor and tuned in.

Metabolism and Metabolic Living

The scene in Mary’s house raises several questions: What is body and what is environment? Where does one end and the other begin? We might all have eaten the noodles, but how would our bodies register them differently? Who is feeding whom here, when a food company enters the picture? Bodies may share space and environments, but the complexity of the metabolism calls for a twist of these questions. Abiding ways to ask about inside/outside boundaries of body and world often rely upon the supposition that bodies in the same space are sharing the same world, made of up the same objects of concern. Yet the sciences and lived experiences of metabolism unseat that supposition. They demand a detailed look at the situated, absorptive interface of bodies and surroundings in which a condition like metabolic illness lodges inside a body. I call this visceral and thoroughly political interface metabolic living. Metabolic living is, as I define it, an actively ongoing process people endure to survive the porosity that all life entails. An anthropology of metabolic living attends to the practices of endurance in the face of absorption. To explore metabolic living is to explore the ways that people complicate and even dissipate boundaries across the skin and thus show how bodies and environments are mutually porous. Porosity requires work: work by persons who open up to or refuse materials like food, and work entailed in moving materials across uncertain boundaries. I investigate this work in a moment when the evidence it produces is both uncertain and prolific. In this context, the metabolism has accrued importance for understanding and expressing vitality and morbidity in urban South Asia and elsewhere.

To bioscientists, what the metabolism is currently is a matter of both historical and contemporary scientific debate that is being thoroughly re-scripted. Initially used to describe how food is digested and distributed as energy throughout the body, the metabolism is currently best understood as a set of physiological signals that regulate and produce energy, maintain cellular and organ function, and produce chains of changes that factor into states of disease, well-being, and the heritability of biological patterns. The metabolism is distributed, meaning that it is a highly complex biological system that in humans operates at multiple scales of proteins, cells, hormones,
tissue, organs, and neural connections. It distributes across forms of life, for the food we eat or do not eat is a product of the metabolic activity of plants and animals. One hears of metabolic rates, of metabolisms speeding up and slowing down, of “having” a metabolism. “Metabolic” can be an adjective to describe illness and disorder, although oddly and notably, “metabolic health” or “metabolic order” seems rarely invoked.

As clinicians and bioscientists alike consider conditions of relative health and sickness in terms of cascades of signals, the infinitive form “to metabolize” goes beyond the digestive system. It includes, for instance, how the body processes therapeutic drugs or how it experiences surges in neurotransmitters. Sensorial stimuli, food, and environmental toxins belong to the domain of the metabolic as well, prompting us to think of life’s risks in terms of exposure (see Landecker 2011). The domain of the metabolic bridges the organic and inorganic, the manufactured and the heritable, and the agential and the incidental. The metabolism, collective and collaborative, blurs the lines between discrete entities (Dupré and O’Malley 2013). All of these things the metabolism is and does show it to be curiously agentive. The metabolism is at once a concept, an embodied thing, a mode of diagnosis and therapy, and a social rubric—all subject to intense debate. And when the metabolism appears to be sick or disordered, it becomes a salient analytic category of somatic trouble. The contingencies between “the science” and “the social” of metabolism are historically particular, and they too are absorptive as new ideas about the domain of the metabolic emerge.

The metabolism has produced its own pattern of social theory. For example, Marx and Engels described the “metabolism between man and nature” to elaborate on the exchange between organism and environment and correspondingly how labor could connect man to relationships of exchange (Landecker 2013a, 2013b). Mid-twentieth-century cultural anthropologists questioned how a human metabolism reflected themes of energy, stimulus, and the circuit-like character of life force (cf. Fischer-Kowalski 1998; Bateson 2000: 409; Malinowski 1944: 91; White 1943; Harris 1978). In India, scholars of sociology and anthropology turned to collective metabolisms as a kind of political economy in order to explain the relationship between energetic forces and a world shifting toward modernity and prosperity. For contemporary anthropologists of medicine and healing in India, somatic self-analysis and the body’s possibilities for malfunction have appeared as metabolic phenomena insofar as they are about balance and regulation. The above notions of the metabolism are
highly varied in their analytic ends and means and range widely, from the literal to the metaphoric, in their application. What they have in common, how they open channels between the biological and the social, is that in all these ideas the metabolism prompts questions about the interface between bodies and the world. Metabolism has played out as an analytic in social science as a question of energy, but the conditions of exchange also are matters of permeability of organisms and their consequent capacity to change.

My understanding of metabolism and its inflection as theory has been fundamentally shaped by the work of the historian and sociologist of science Hannah Landecker. Her research offers a lucid account of the things metabolism is and promises to be, both historically and today, as science, medicine, and public health increasingly turn to it to understand not only metabolic disorders but also more general puzzles about how bodies and environments interrelate. Landecker argues that what the metabolism “is” is first and foremost a conceptual space. She shows that the metabolism is currently epochal as a form of bodily evidence because it encompasses the domains of the somatic and the substantive, inside and outside the skin: “Metabolism is a set—it does not consist in any one reaction, but is a cumulus of interlocking cycles. It is in cells and between cells, in organs and between organs. It is individual and communal. It is the interface between inside and outside, the space of conversion of one to another, of matter to energy, of substrate to waste, of synthesis and break down. A process-thing, it is always in time” (2013a: 193–94). Landecker explains that the metabolism hangs together as a concept of the past, present, and future as histories of science and philosophy move in and out of contact across geographic traditions and trends. I am interested in exploring how this concept can be a tool for ethnographic observation and a site of anthropological analysis.

Landecker’s research shows how biology and philosophy reckon with the inside-outside-ness of metabolism. As the concept moves through the labs and hands and thoughts of different biologists, biochemists, historians, and philosophers, the “real” metabolism—that is, the one that is aggravating us all in moments of hunger, satiety, and possible states of endocrinological damage—does not easily allow what counts as “the environment” to stay outside the body. In one example, Landecker discusses the work of a key figure in the history of metabolic science, Claude Bernard. Drawing on Bernard’s own reflections, she notes that for Bernard, “the animal’s ability to turn the environment into itself through nutrition is constitutive of
the argument that each organism, plant and animal, has the whole of life within it, and one is not ‘made’ to serve the other” (2013a: 204; emphasis in original). In this quote, Landecker offers a way to see how scientists have long called for a pause on the certainty that what is outside the skin actually stays there. The biological and philosophical work of Bernard and many other scientists and clinicians for over one hundred years now attests to the possible ways that the world outside the skin moves into and out of the body and effects changes. Landecker’s rendering of this history provokes complex questions: How do we turn the environment into ourselves? Under what circumstances does the body twist inside out?

I address these questions through anthropology attuned to absorption. If absorption is the condition of possibility for metabolic order and disorder, I aim to elaborate specific social conditions under which absorption intensifies and diminishes. These are circumstances in which people must accommodate a world filled with nourishing and depleting substances. They make such accommodations as they feed themselves, their families, or their clients, in the case of street food vendors or domestic workers or nutritionists. They also do so as they prescribe drugs for ingestion, in the case of doctors, or as they swallow drugs with varying levels of trust or satisfaction, in the case of patients. Metabolic living is an ethnographic heuristic about the viable and lethal interfaces of substances and somatic experience we all face as we work on the routes and compositions of substances that go in and out of a body. My approach foregrounds how people reflect on the life-giving and life-draining power of this work and how the metabolism is a complex biological, semiomaterial apparatus whose epistemologies are in flux. Landecker’s research on the history of biochemistry reveals that over time, a dynamism among chemical substances in the body became “specific to metabolic life.” I take a cue from this term for my anthropological research. My use of “metabolic living” relies on the word “metabolic” to point out the uncertain ideas and experiences emerging from the metabolism. I take seriously Landecker’s argument that metabolism embeds specific, often circular, and conflicting histories of science and philosophy. To signal the ethnographic work I want the concept to do, I include “living” in the term. This draws attention to my informants’ embodied additions to the metabolism’s conceptual history and to their assertions that how much absorption is truly livable is an open question.

Metabolic living bridges this book’s key questions: Who and what is “in charge of” metabolic illness, in India and elsewhere? Is it a person’s dampened willpower that makes her gain weight? Is it the deliciousness of fried
street foods? Is it ghar ka khana (“home food”), lovingly (perhaps) and laboriously (definitely) prepared by someone like Eliza? Do food companies have a hand in the potentials of metabolic disorder as they market instant noodles to Eliza’s son? Does the air in that room—Mumbai’s sea breezes laced with heavy metals—have a part in the story? What delineates the boundary between the actions of insulin in a given body and that person’s “adherence” to a doctor’s prescription? Generally, these questions are asked as questions of blame and responsibility, and medical anthropology has productively examined blame as a window onto sociocultural fault lines. Yet these are also questions about the relational power of absorption and, specifically, how material passages generate explanatory value as food, drugs, and diets anchor expressions of desire, fallibility, causality, blame, and resilience.

Much like the brain, the metabolism has come to stand for personal pathologies—a tendency of metabolic realism and somatic personification. That is, there is often a slippage between the stomach and personhood, such that it seems as if persons are their metabolisms, as opposed to having metabolisms. This iterative difference converges with a moment in contemporary bioscience that is heavily invested in complexities and plasticity (see Landecker 2007; Niewöhner 2011; Malabou 2008; Papadopoulos 2011; Rees 2010). Further, it converges with increasing attention to chronic disease / cardiometabolic disease in global health. Further still, it converges with India as an idealized site of possible analysis and explanation of global chronic disease patterns. When “being” conflates with “having” at the population scale, the metabolic can determine public health risk. Stomachs can reflect the well-being of populations. Bellies can toll the bells of longevity. Guts undo nations. In this framework, we can see how the collapse of being a metabolism and having a metabolism dovetails with obsessions about middle-class overconsumption in urban South Asia. Rather than rest on this collapse, I offer a different approach in order to trouble it. I show how people spotlight and disaggregate the patterns of substance, intent, and effect that biomedicine counts as metabolic in order to uphold the narrative that obesity and diabetes are a problem in India. Sometimes these patterns are open to rearrangement and a domain of open exchange and in other moments they appear to be a closed system. The book thus argues for attention to the absorptions of harm and care across political contours.

In its call for attention to permeability of bodies and environments, this book draws on an extensive literature in South Asian studies that
addresses questions of relative openness based on domains of the home and public space and across persons, communities, and families (see Daniel 1984; Fruzzetti and Ostor 1982). Food and commensality have been central to these studies (Marriott 1968). From its inception, scholarship on food and eating in South Asia has been concerned with substance, exchange, and propriety. For example, this can be seen in anthropologist McKim Marriott’s “cube” model of Hindu life paradigms that models possible arrangements between sentiments, temperatures, seasons, life cycle events, marriageability, and spatial arrangements of the home as they articulate with specific qualities of food (1989). In contemporary India, across faiths and communities, the exchange of food is most certainly still enacted in the name of social hierarchy, but it is also done in the name of market expansion, class and caste dynamics, and the edification of a health problem. Scholarship on food in South Asia offers a means to think differently about biomedicine’s assumed starting and ending points when it comes to metabolic illness. This literature also informs my analysis of what is constantly in play in my study of metabolic living in India: the persistence and continued history of malnutrition. Here I mean malnutrition in its general invocation as under- or inadequate nutrition. Often, though, physicians tell me that obesity is itself an issue of malnutrition, too—just one of overnutrition. This is a difficult claim to write about, because I want to capture that sentiment while being quite mindful of a question I encounter often: “Why study obesity in India, when there is so much malnutrition?” To be clear, this book does not attempt to dampen or deny the very real suffering that both under- and overnutrition cause. Indeed, obesity (in contrast to diabetes) has received little attention in medical anthropology based in India, not only because metabolic illness has been recognized as a recent epidemiological and cultural concern but also because of the lived realities of undernutrition and hunger.

This point also speaks to the broader representational and moral politics of an anthropology of biomedicine concerned with fatness and set in India. At present, a dichotomy between the fat, overfed rich person and the starving peasant structures most discourses surrounding obesity in India. For example, it is quite common to encounter a contrapuntal narrative of haves and have-nots, marked by their embodied conditions of obesity and malnutrition. The problem with this setup is that the liberal subject of choice—here, the overfed body hungry for ever more options—anchors the play of good/bad or better/worse. Instead of reifying that dichotomy and keeping obesity and malnutrition conceptually separate,
I use stories of absorption to question the kinds of global health and social evidence produced in the shuttling back and forth between poles of deprivation and excess. I ask how appeals to consumption may, however unintentionally, exaggerate the distance between these poles, because metabolic illness is a concern not only for India’s middle classes, although it has gained credibility through their bodies. There are significant concerns about obesity affecting poorer populations, in terms not of actual fatness but of the metabolic disorder that may not show up as extra kilos on the scale. Further, diabetes is understood to affect Indians across social strata. These concerns continue, rather than displace, the ways that malnutrition continues to work as a social and material fact. Metabolic disease in India becomes a curious site, where malnutrition gains explanation not only from the usual realm of economists and policymakers but also from physicians, bioscientists, and food companies.

As a result of this move there are truth effects, such that food consumption gains increased attention only when perceived as a precursor of certain bodily conditions. The cultural figures of the middle-class housewife binging on barfi and the malnourished child must be understood in a reticular perspective; that is, one of many little nets rather than a binary. Absorption offers one framework for a reticular perspective. In this framework, the pleasures and vicissitudes of “food,” “the body,” and “the environment” emerge sideways to consumption and thus decenter it as a disease’s only possible source of cause and consequence.

Methods for an Urban Environment

With an eye to the importance of location, one of my goals is to situate food and fat as a pattern constitutive of Mumbai as an urban environment. Doing so shows how specific body-city configurations connect science studies to area studies. In the case of metabolic illness, Mumbai-as-megacity often is mobilized to prove a public health hunch: a city that is too stressful and polluted for healthy life, even as it offers the culinary temptations of cosmopolitanism. Take, as an example, Carter Road’s culinary rhythms unfolding by the plague crosses: fruit juice in the morning, sugarcane juice midday, and ice cream and chaat (snacks) in the evening. Day and night, they witness the tides of the Arabian Sea, Mumbai’s porous milieu. My neighbors often pointed to the sea to remark on its receding coastline, ever-diminishing returns on fish, and ever-increasing concentrations of pollutants.
“The city” also materialized as crowded trains, disputes over living spaces, and hazardous roads that preventing walking and playing. My neighbors would tell me in one breath that only rich people got fat, that the neighborhood was not wealthy enough for obesity to be a problem, and that everyone in the neighborhood was dieting to lose weight. Men would slap each other’s bellies. Women would greet each other with observations of how much one had “reduced” or lost weight (or to me, when I returned to Mumbai after time in the United States, they would remark how much I had put on). Mumbai’s diversity added layers of richness to this problem but also dissolved difference in ways that made cultural moorings difficult to isolate. Religious, geographic, and linguistic communities would begin and end on one floor of an apartment building, in the building itself, or perhaps on a few city blocks: Goan Catholics here, Gujarati Muslims there, Marwari Hindus there. Of course, marriage matches went on, stereotypes persisted, and “regional” restaurants kept themselves in business with appeals to specific forms of culinary authenticity. But to conduct a project primarily about food in Mumbai required movements in and out of multiple communities and commitments. Thus, for readers interested in South Asia, in this book India and Mumbai appear in varying shades of uniformity and plurality, especially in biomedical settings that often demand homogenized bodies, symptoms, and treatments.

I conducted the research for this book in Mumbai from 2005 to 2012, in fieldwork periods ranging from two to eighteen months (the main research period was 2008/9). Fieldwork unfolded across three main subject domains. The first domain was everyday relations to food and health in a coastal, lower-middle-class neighborhood in Mumbai. This involved long-term, repeated observations and interviews with neighbors inside households and at neighborhood social occasions such as religious holidays and community events. The second domain concerned the diagnosis, treatment, and experiential narratives of metabolic illnesses—particularly obesity and diabetes—in two clinics in this neighborhood, one private and one embedded in a hospital. This second methodological arm involved interviews with and observations of nearly two hundred patients, eight nutritionists, and twenty physicians; data came from shadowing physicians in their clinical hours, up to five a day. If patients consented, I would then interview them at the clinic or at a place and time of their choosing; a typical interview lasted thirty minutes. My routes to metabolism did not include as many Ayurvedic consultative encounters as they did biomedical
ones, but I do draw on the insights of scholars who have closely examined the links between food and Ayurveda, Unani, and other modalities in the South Asian landscape of healing (see, e.g., Ecks 2014; Halliburton 2009; Langford 2002; Nichter 1981).

Moving from the neighborhood into clinical domains raised questions about how endocrinology and its applied clinical practice hinge on the absorptive contingencies of fats, proteins, and carbohydrates. Clinicians may determine obesity by means of body weight or the body mass index (explained further in chapter 1), but they also declare a person obese using definitions of adiposity (a measure of visceral body fat) and dyslipidemia (abnormal levels of lipids in the blood). The clinicians and patients I observed also navigate the terminological contingencies that crisscross obesity and type 2, or “adult onset,” diabetes, which is a condition of ineffective insulin usage in the body. One term is “prediabetic,” meaning that a person’s fasting glucose and/or glucose tolerance levels are between parameters of “normal” and “diabetic.” Another is “metabolic syndrome,” a concept introduced in the late 1980s to describe a bodily state in which one is at increased risk for type 2 diabetes mellitus and cardiovascular disease (see Reaven 1988). Adiposity and dyslipidemia are key measures of metabolic syndrome in a clinical setting, as is the measurement of HbA1c, which is glycated hemoglobin (hemoglobin that has glucose attached to it). Inflecting many of these measures and states is insulin, a hormone secreted by pancreatic cells called beta cells. Metabolizing and storing glucose is what insulin signals cells to do. Diabetes arises when insulin is not present at adequate levels in relation to blood glucose levels and/or when cells do not respond to insulin’s signaling actions. This latter state characterizes the dampened insulin response that is called “insulin resistance,” which is considered to be a hallmark of metabolic syndrome (see, e.g., Joshi and Parikh 2007; Johnson 2013). My clinical observations showed biochemistry and endocrinology to be domains of knowledge that scaled into solid disease categories that medical experts, neighborhood residents, and food companies could all use to diagnose, narrate a history, or identify a market niche. These categories had remarkable staying power, even as I witnessed people explode them.

The third domain of fieldwork concerned the commercialization of food, which involved observations and interviews with food company marketers, street food vendors, and produce and meat vendors, some in the neighborhood but also spread out across the city. During my time in Mumbai, several national regulations concerning nutrition labeling and
packaging changed, prompting meetings of specialists in food regulatory policies, food marketing, and food safety. These meetings allowed me to meet multiple individuals at once and then follow up individually in interviews. Yielding over thirty encounters, this methodological arm involved observing a day’s work of a vendor; for food marketers in companies, it involved attending isolated meetings and select interviews with workers and company staff. Additionally, I attended multiple medical conferences concerned with metabolic illnesses in Mumbai, New Delhi, and Chennai that gathered hundreds of Indian physicians and allied medical professionals. At these conferences, I used convenience sampling to build a broader network of physicians, surgeons, and nutritionists across India to interview, so that opinions on nutrition and metabolic disease would be transferable to populations beyond my immediate neighborhood and beyond Mumbai. Thus, my fieldwork sites coalesced across three broad scales of the city: Manuli’s home and street life, its nearby clinics, and more multisited spaces occupied by food companies, government nutritional regulators, and biomedical and public health conferences. I worked across these scales guided by the methodological maneuvers of Cohen (1998) and Rapp (1999), interested in the ways that “the clinical” or “the scientific” settles into forms of living.

I began my study in an area of Mumbai called Bandra; specifically, in an area of Bandra that is a small neighborhood I call Manuli. I first came to Manuli, a fishing village, or koliwada, because of my real estate broker, George. He had shown me all around Bandra, where I wanted to be based for research because of its demographic diversity, its large number of family-owned and chain restaurants, and its significant number of weight-loss and metabolic disease clinics. We came to Manuli, and I was fascinated by its architecture and histories. We walked down its main street, just opposite the shore, and came to the church, whose founding parishioners date to 1575, a period when the Portuguese Jesuit presence in the area was strong. George lived close to the church and grew up in the neighborhood. He showed me an available flat in a building just up the street. It was a good fit, and the landlord, Francis, was pleasant and easygoing, two qualities I came to value deeply since I would be living directly next door to him, his wife, and their two children. My bedroom window directly faced a small clearing between homes and apartment buildings. I later learned that this space was the site of the jubilant wedding scene in the film *Amar Akbar Anthony*, one of several Hindi films with Bandra as its backdrop. Fifty years ago, it had been used as an open space to dry freshly caught
fish. Now it was a makeshift garbage dump and passageway between the main road and the neighborhood’s snaking back alleys.

The government sold the land around the clearing to a private developer who flouted building codes and built slum-like temporary structures anywhere with open space. Another neighbor later explained that many of the hutment inhabitants were Muslims who came from neighborhoods torn apart by the Bombay riots in 1992, whereas this side of Bandra—Bandra West—had remained largely unscathed. However, despite the cosmopolitanism of the neighborhood (including its criminal underworld threads, in the form of brothels and illegal land sales), it was regarded mostly as a koliwada of “East Indians.” According to an ethnography of Mumbai’s East Indians written in 1967 by sociologist Elsie Baptista, the East Indians were Hindu converts to Catholicism during the sixteenth century; they thus first became known as “Portuguese Christians” (although, importantly, Baptista captures both the multiplicity of the community’s origin stories and how community members also reckon far earlier origins in the North Konkan region). Later, according to Baptista (1967: 25), the community adopted the name “East Indians” because “they wanted to impress upon the British Government of Bombay that they were the earliest Roman Catholic subjects of the British Crown in this part of India.”

Many of my informants identified as East Indian, but I also interviewed a number of Catholics who traced their origins to Goa. Many of the Hindus in the neighborhood I interviewed were Gujarati or from the interior of Maharashtra, but an equal number claimed Mumbai as their “family place” of origin.

To meet people, I joined a neighborhood yoga club, which practiced at 6:30 sharp every morning in a small seaside park. Friends there introduced me to several leaders in the church, beginning with Mr. Gomes, who had assumed the role of the church (and neighborhood) archivist. Because East Indians had been in Manuli so long, he explained, there were rich food traditions that deserved documentation. Mr. Gomes suggested that I pursue my interests in food and health by linking up with the church’s office workers. Another neighbor introduced me to the church social worker, Mary, whom he suggested could help me formulate a neighborhood survey of food consumption. In return, if I uncovered any “interesting” traditions or long-lost recipes in the course of the survey, I would share them, along with pictures of the foods, for a photo calendar the church was compiling as a fund-raiser.

A week later I walked down the street to the church to discuss this with Mary, who agreed to help with the survey. Assuaging my concern that we
would be talking only to Catholics, she promised that we would speak with Hindus and Muslims who also lived in Manuli. “Mary knows everyone,” an elderly woman in the church office assured me as she meticulously recorded the week’s offerings. Mary was more than a neighborhood social worker, a position she held as a volunteer on top of her regular work as the church office manager. She was a tireless advocate for the neighborhood’s residents of all faiths and the coordinator of Manuli’s chapter of a *mahila mandal* (women’s group). We agreed that I would accompany her on her “regular” work, which entailed listening to residents’ concerns on many issues: trash pickup, sewage line hookups, food ration prices, school uniform costs, noisy neighbors, and municipal politicking. I shadowed her on her rounds through alleyways and sea-facing footpaths, through pukka homes and makeshift hutments, as she listened to endless complaints. She took on the injuries of others: no food or water access, botched admission processes for a family’s child, claims to discrimination against Catholics. She connected residents to the proper channels for action, whether that entailed NGOs, the church, or the city government, or if immediate action was needed, she would directly phone the local corporator (municipal politician). In these visits and on their paths of redress, if the person we were visiting consented, I could ask my own questions.

Mary was a fixer and a fighter—she became my research assistant as well—such that she was generous enough to open some of her world to a foreign stranger even as she took on the heavy load of casework of the community’s domestic and public disputes. As a result, my inquiries about food and health were inextricable from the everyday political complaints that brought us into homes and from the daily domestic work, like food shopping and cooking for her family, that Mary still had to do amid all her other occupations. To grasp the imprint of the clinical was impossible without understanding the neighborhood as a critical site of analysis, and its residents as differentially emplaced in obligations to kin and other residents (Das 2014). My position in these encounters was as a neighbor, someone who moved in and out. “He lives just over there,” Mary would say as a means of introducing me to others; vague but close enough. This position, which I want neither to overexaggerate nor underplay, appears in my analysis throughout, such that I choose to use “neighbor” to describe my informants in the neighborhood.

Across my three domains of inquiry, I learned that food, whether as something eaten or something that triggered attention through its metabolites in a blood sample, was just one of many substances that infused
metabolic stories. The knotty rope connecting food and fat revealed other ways of weaving elements—stress, family relations, labor conditions—together in patterns. Attention to the absorption of these patterns challenges the inevitability of individuated consumption as the penultimate stop on the dead-end train to healthism and medicalization. As we will see, the biomedical does not and indeed cannot always script the punch line when it comes to food and fat. Biomedicine hardly has exclusive claims to matters of body weight in India. Certainly the usual suspects of weight-loss companies and health-advice columnists have stepped in to help amid obesity’s epidemic invocations. Even Baba Ramdev, a famous spiritual leader to many in India, offers *motapa ke liye yog*, yoga for obesity, accomplished through breath work and posture combinations illustrated in pamphlets and DVDs. Health science is often part of these appeals, but there are many other appeals in play, such as those to fair skin and sexuality. Other healing modalities also are on the table. Mumbai’s landscape of slimming clinics, Ayurvedic centers, and homeopathic stalls predates concerns about mass metabolic illness but now is differentially implicated in them. Inside and outside medicine, substances make patterns. These patterns help illustrate the possibilities and limits of medicalization as one of medical anthropology’s narrative tactics and make room for additional frameworks such as absorption.

Writing the Metabolic

Anthropological engagements with obesity and diabetes have most often been concerned with health outcomes or the aesthetic dimensions of fat, with narrative illness experiences, or with the ways that disease categories concentrate and flourish (see Edmonds 2010; Popenoe 2003; Kulick and Meneley 2005). These studies suggest the importance of the materiality of substances like fat and sugar, but I would like to tread carefully in writing about these substances only in terms of their medicalization. Medicalization too easily assumes that biomedicine itself consumes life’s pleasures (like food) and subjects them to the endgame of rationalization, measurement, cause-effect, and commodification. Again, we are back to an arrangement of power and agency in which persons are already patients, ready to avoid consuming objects that are already risks. By contrast, a focus on absorption points out actions of soaking in, working, and taking in stress and highlights the relational capacities of elements like pollutants, adulterants, sugars, and trans fats. Metabolic living means living
through lipid assays, fasting sugar levels, inches on the waist, kilos on the scale, BMI numbers, diet foods, and wedding foods. Specific materials and specific bodies are needed to make a phenomenon such as “metabolic illness in India” happen (see Thompson 2005). It is the problematic movements and the constant redefinitions of body and environment that guide what we know to be a problem and how that problem surfaces viscerally and in public culture.

This distributive dimension of the metabolism presents several puzzles for ethnographic theory, method, and writing. First: How to conceive and discuss something that is simultaneously internally and externally connected to the body? This problem features prominently in biomedicine, because the question of who can put the outside in is quite relevant to tactics of prescribing drugs and diets. One approach in medical anthropology, informed by science and technology studies, has been to think about how specific practices bring these divides into being. This kind of reasoning attests to the multiplicity and distribution of disease and names practices as central to understanding the many forms that disease can take. I certainly agree that it takes many objects to constitute, order, and disorder the metabolism. Scraps of diets moving in and out of homes, exchanges of food at festivals, and scales recording changing body weights surely have multiple incarnations. Just as disease categories must be understood as multiply enacted, we might engage substances as plural and relational, as more than simply the “missing masses” of objects that satisfy demands to add the nonhuman back into human stories (Latour 2005; see also Mol and Mesman 1996; Mann et al. 2011). Bodies also operate in the plural in the domain of metabolic life. Those who feed, eat, breathe, and labor do so often in nonindividuated arrangements with immediate and extended families, friends, and communities. That is, categories such as “patients,” “obesity,” “diabetes,” “food,” “drugs,” and “metabolic illness” materialize and overlap in lived experience, even as they fashion urban India as a site of mass illness in the imaginations and interventions of biomedicine and global health. This concern over distribution and plurality is as compelling to scientists as it is to those invested in cultural studies of science. With its focus on absorption, I contend that metabolic living is a framework that can accommodate such diversity.

Yet a challenge of positionality arises, for the very topic of food joins ethnographer and ethnographic subject in that, as humans, both are metabolic persons. So much of my research unfolded around moments of eating or talking about eating. Expressions about bodies and health sur-
faced over meals or between my requests for recipes or in sidebar conversations about food that punctuated daily rhythms of my informants like taking insulin.33 This is evident in the earlier vignette about the noodles. Whose visceral metabolism and whose analytical metabolism are at stake? I found that problems of metaphor and of possession overdetermined the field of thinking with and about metabolisms even while being able to do the research because I have one. Complex relations generate literal and metaphorical distributions of the metabolism. I pinpoint these distributions with Ed Cohen’s discussion (2009) of metaphor in mind: “Recognizing and appreciating the transformational force of metaphor, both within science and within the world, means considering how metaphor matters, not merely as an instrumental manipulation of the world but also as a new way of living in the world” (38). Many people I encountered, from fishmongers to physicians, attested to the constellation of metabolic illnesses. They recognized that fatness did not always mean sickness, that stress was as much a cofactor for the development of disease as was familial genetic inheritance, and that the time frames of the “chronic” in chronic disease varied widely (see Manderson 2010). Some named problems specifically as metabolic, while others, working more metaphorically, pinned down bodily speed, corporate greed, or failed willpower as the conditions for obesity’s possibility. People took care of their maladies, often guided by biomedicine, and so therapy in varying forms was an integral part of daily life.34 The critiques offered by my interlocutors offer ways of engaging differently with metabolisms and thus with bodies of all sizes and makeups.35 The metabolism at the center of these discussions, across observer and observed, is a distribution of conditions that expand and constrict a livable, bearable life.

Each of the chapters in this book elaborates such conditions. Chapter 1 asks: How does fat get into individual and collective bodies? This chapter is concerned with absorption between past and present times. It examines the feature of bodily plasticity by questioning the condition of “globesity,” the supposed west-to-east flow of capital and consumerist desires that sparked India’s collective weight gain. It maps historical and literary portraits of fatness in India and details how globesity presumes a national vulnerability through comparisons of bodies experiencing newfound prosperity. As claims of obesity’s emergence in India impelled physicians to change national guidelines for the body mass index, overnight millions of Indians were suddenly considered overweight. This generated a problem of matching metabolisms to persons over generations. Public health
policies and their biological rationales circulated popularly imagined oppositions of the cultural figures of the hungry, lower-caste rural person and the overfed middle-class urbanite. This subject became known in biomedical discourses and epigenetic science as “the thin-fat Indian”: the body that absorbs prosperity into its very constitution, even as that constitution increasingly marks the attrition of life and health through chronic disease. The figure of the thin-fat Indian is a sketch of how metabolism is temporal.

Chapter 2 is concerned with absorption between persons and urban space. Moving from the scales of globe and nation toward the scale of the street, it addresses how metabolism is spatial and how biomedical sciences and the science of urban politics overlap. The vada pav, Mumbai’s famous fried street food, connected biomedical concerns about the rising rate of obesity to violent local politics and multinational food company interests. In doing so, projects to claim and reform the vada pav define the grounds of the political life of an object beyond the act of its consumption. Using the concept of “gastropolitics,” I first describe how a local political party branded its own version of the food and then show how corporate franchises inspired by McDonald’s rendered the vada pav “safe” and “clean” through mechanized standardization. Rather than take the metabolism of fried food for granted, I de-emphasize its consumption and foreground the political circumstances that inform and animate it through observations and interviews at street-side vada pav stalls, at new corporations determined to standardize vada pav, and with nutritionists who condemn the vada pav as the source of Mumbai’s obesity problem.

Chapter 3 introduces another key concept of this book: the blur between food and drugs. It is concerned with absorption between persons and markets. It considers the feature of processing and explores the social lives of processed foods to examine relations crafted between forms of domesticity, market forces, and discourses of bodily threat. Metabolism in this chapter is commercially gendered, through the sciences of food processing and food adulteration. On one hand, because many packaged foods were snacks, physicians and nutritionists derided them for being unhealthy and causing weight gain. On the other hand, their aseptic packaging offered a “clean” alternative to foods tainted by seemingly ubiquitous food adulteration scandals, which housewives in Manuli attributed to “the nexus” of the urban underworld, corporations, and corrupt politicians. During the 1990s, advances in food packaging created means to “protect” foods but also enabled companies to fortify foods with “extra” nutritional additives
that could help prevent chronic disease. Packaged foods opened up new possibilities to keep families healthy while tightening relations between the home and the corporation. This raises questions about what it means to absorb food provided by an unfamiliar other.

Chapter 4 asks how metabolism is diagnosable and treatable through the sciences of diabetology, nutrition, and surgical amputation. It is concerned with absorption between persons and clinics. Ethnographically, it is anchored in the clinic and works through substances like calories, insulin, and blood sugars as sites of diagnosis and treatment. Morals of individual responsibility and addiction filter into ideas and practices surrounding obesity, and disease categories collapse weight gain into other pathologies along specific relational lines. For some clinicians, diets could shore up their patients’ sense of personal responsibility, with weight loss as a visceral reward for moral fortitude. There were limits to diets, however, as I discuss in the case of prescribing drugs and in the practice of limb amputation for diabetics.

Chapter 5 concludes the book by examining the extent to which metabolisms are renewable and even replaceable through the science of surgery. It is concerned with absorptions between the body and willpower. It considers what kinds of treatment for obesity are possible when drugs and diet fail. The chapter explores the phenomenon of metabolic surgery, in which surgeons attempt to reconfigure the inner organs, such as the stomach and intestine, to “adjust” the invisible force of the metabolism. Overweight people turned to metabolic surgery to free themselves from the perceived frailty of willpower to triumph over consumption, based on the belief that their body could no longer be further disciplined by diet. The surgery promises to cure metabolic disease by targeting the metabolism as a biomedically manageable proxy for the will.

In writing and thinking about the metabolism and metabolic illness, I often return to “Epidemics of the Will,” an essay in Eve Sedgwick’s book Tendencies (1993), partly, perhaps, because of my own professional trajectory in public health, beginning with HIV/AIDS work years before I became interested in anthropology or obesity, and certainly because of Sedgwick’s prescient sense of the demands an epidemic narrative selectively places on bodies and lives. In “Epidemics of the Will,” Sedgwick discusses addiction to substances such as food and alcohol. She notes that to study and write about the issue, one cannot locate analysis in either body or substance. Rather, Sedgwick suggests the importance of what she calls “some overarching abstraction” (131) between bodies and substances that is the locus
of a problem. In this book, the metabolism is indeed an abstraction, one often called forth as a metaphor. But it is also thoroughly material, a pattern of biochemistry, physiology, and habit.

I explore the narrative potential of the metabolism as a semiomaterial abstraction in the interludes between the chapters. The interludes recount scenes of people demonstrating absorption’s political terms and thus the terms of metabolic living: how food can be an object of desire and revulsion, how diets produce problems and possibilities, how food ration politics is a complex machine, how meat imprints bodies and the city, and how medication has its saving graces and its limits. Together, these scenes constitute an overarching abstraction that governs how bodies and substances pattern. The interludes are attempts to work through several challenges afoot in writing about the metabolism. One is the already mentioned tension between the material and the metaphorical. Another is the tenuous centrality of food to a given vignette. Given that this book proposes the need to think more expansively about connections between food, bodies, and environments, how might one write about food without over- or undermining its importance to people as they are, as food might change them, and as they change food? Like the numbered chapters, the interludes work through this question by narrating sites of absorption. Like a metabolism, the interludes are a set of signals.

These signals of the in-betweenness of substances, bodies, and environments demand careful handling. They need care in order to be meaningful for this book’s specific case study in India and to be meaningful for the configurations of substances, bodies, and environments elsewhere. The fact that bioscience and biomedicine are not clear on what the metabolism is registers in everyday ways for people in terms of what and how to eat or of how they flip between one diet and another and in terms of the city spaces that shelter food-body disconnects. The thing that is supposed to absorb the world is really not well known, and the degree to which it is known is constantly changing. As these changes unfold, their dynamic sciences and lived experiences open up spaces to ask about the fundamental condition of metabolic living: that people reckon constantly with absorption.