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An Introduction to Capitalism and the Senses

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You've probably never heard of the food scientist Louise Slade, but you likely have eaten the soft ice cream, chewy cookies, and crisp potato chips that she developed during her twenty-five year career at two American companies, the General Foods Corporation and its later parent company, Kraft Foods, Inc. As noted in her obituary in the *New York Times*, Slade's research on the natural polymers in food led to innovations that insured every single Oreo-brand cookie is held to exacting standards, retaining its distinctive shape and texture through production, distribution, storage, and ultimately, dunking into a glass of milk. Together with her research and life partner, Harry Levine, Slade developed the new field of "food polymer science," which today is involved in the creation of seventy-five percent of all processed foods. Food polymer science focuses on standardizing everyday foods without sacrificing their structure, texture, or taste.[1]

Researchers like the late Louise Slade are among the countless scientists, marketers, and other experts who, over the course of the long twentieth century, built careers that forged relationships among science, technology, markets, and the human senses. Eager to make connections between academic science and American industry, these sensory specialists laid the foundation for the modern practice of exploiting the senses for commercial purposes. They created new fields of study such as food polymer science, psychophysics, and motivational research and incorporated sensory experience into existing practices such as branding, marketing, and industrial and interior design. Collectively, these little-known sensory experts built on the observations of the nineteenth-century political economists who acknowledged the intimate connection between the productive capacities of industrial capitalism and the

fundamental role of the senses in consumer experience. Perfume manufacturers had always relied on individuals with a strong sense of smell to detect subtle differences in aromas, but with the rise of advanced capitalism, a "nose" could become a "scent director" or a specialist in "olfactory branding."[2]

This collection is the first edited book to explore the sensory history of capitalism—the ways that seeing, hearing, tasting, smelling, and touching have shaped, and been shaped by, business enterprise from the turn of the twentieth century to our own time. From the stench of the stockyards to the saccharine sounds of Muzak, everyday sensory environments have been made and remade by capitalism, and as portals through which we take in knowledge of the world, the senses have been subject to manipulation, exploitation, and commodification. If, as Karl Marx contended in 1844, the senses have a history, then that history is intertwined with the development of capitalism, which has drawn on the embodied power of the senses and, in turn, influenced how sensory experience has changed over time.[3] This book draws on the innovative scholarship in the history of the senses and as well as established fields such as anthropology, business history, cultural history, and science studies to offer a new perspective on modern capitalism.

The seed for this volume was planted at a workshop organized by Ai Hisano at the Harvard Business School titled "Capitalism and the Senses" in June of 2017, and it was sown at an online conference of the same name sponsored by the Hagley Museum and Library in November of 2020 which attracted more than 200 participants.[4] The Hagley call for papers, issued the previous spring, solicited contributions on a range of related themes: the construction of knowledge about the senses; the creation of sensory standards and measurements for trade and commerce; the development of new forms of sensory labor; the rise of sensory manipulation in

the workplace; the impact of industrial research and innovative technologies on sensory products; the use of sensory appeals in marketing, advertising, packaging and selling; and the manipulation of commercial products to augment their sensory appeal. The conference call attracted proposals from academics in fields ranging from art history to hospitality management. Sixteen papers were selected for delivery at the one-day symposium. The program included presentations on the sensory life of an eighteenth-century craftsman, the nineteenth-century trans-Pacific tea trade, and interspecies relationships in early twentieth-century China. To give coherence to this volume, we have selected for publication a group of papers that focus on the American experience, with some reference to developments in Great Britain and continental Europe.[5] The result is a book offering an innovative blending the history of capitalism and the history of the senses.

Understanding the Senses

Historicizing the senses faces two great challenges: first, establishing that the senses *have* a history, and second, clarifying what *the senses* involve. On the face of it, the human sensorium might seem an incongruous or paradoxical historical subject, for the ways that we see, hear, touch, smell, and taste are so intimate and so fundamental to how we know the world that it would be easy to think them timeless—unchanging, hard-wired, and outside history—which is how thinkers from Aristotle to John Locke saw them. Since the nineteenth century, however, a range of writers have challenged this assumption, probing ways that sensory experience is, to a substantial degree, socially and culturally constructed and mutable over time. As early as 1844 Karl Marx wrote, "The *forming* of the five senses is a labor of the entire history of the world down to the present." In the twentieth century, Georg Simmel identified sensory overload as a

signature element of urban modernity in his now-classic reflection on daily life in the city, "The Metropolis and Mental Life" (1903). A quarter century later, Walter Benjamin likewise posited that sense experience was historically contingent in his landmark essay "The Work of Art in the Age of Mechanical Reproduction." Sensory perception, Benjamin suggested, was the dialectical outcome of biological constants and shifting historical circumstances. Shortly thereafter, the *Annales* historian Lucien Febvre proposed that exploring the alterity of affective and sensorial experience in earlier epochs could lead to new historical insights.[6]

Only in the 1980s did historical analysis of the senses get purchase, however, beginning with the work of Alain Corbin, whose pioneering study of smell, *The Foul and the Fragrant: Odor and the French Social Imagination* (1982 in French; English translation 1986), showed how judgments about pleasant and noxious scents changed from the eighteenth to the nineteenth century in relation to the dramatic restructuring of French society.[7] Since then, a growing number of historians, art historians, literary scholars, anthropologists, and others have become attuned to ways that historical conditions have shaped vision, hearing, and the other senses. In so doing, they have both expanded and honed the analytical and methodological toolkit available for studying and explaining how people's sensory apparatuses have shifted from one era to another and how such changes have been meaningful. They have shown, for example, how deeply ideas about health and illness have been intertwined with the senses—from the rise of auscultation in the nineteenth century (i.e., diagnostic listening to bodies through stethoscopes) to color and music therapy in the twentieth century. Other scholars have mapped how the senses have informed hierarchies of class and race (the lower classes and non-whites being associated with coarseness and dissonance, the upper classes and whiteness being linked to polish and refinement). They have tracked how the senses have been used to police social boundaries. They

have revealed how the senses have become sites of religious conflict and contestation. Together, these and other innovative studies have called attention to a previously overlooked facet of historical change.[8]

Arguably, there is something inherently interesting in denaturalizing the senses and puzzling over ways that people's sensory worldviews are historically contingent. How often did a medieval French peasant see the color purple? How frequently did an eighteenth-century English factory worker taste sweetness? But there is more at stake in this work than an antiquarian cataloguing of sensations. Rather, the thrust of this work has been to explore how and why the senses have *mattered* historically.[9] It has shown the ways in which ideas, debates, and conflicts connected to sensory perception and experience have been historically consequential—and by extension, they complicate and enrich what we know and think about the past and the present. In some cases, we may gain new perspectives on the threshold of perception of this or that sensory phenomenon, and the meanings associated with this awareness. In other cases, we come to understand how efforts to shape sensory experience (either one's own or that of others) have been drivers of historical change. In both, we gain a new understanding of ways that both discursive and behavioral practices related to the senses have reflected and inflected larger historical developments.

The second challenge in historicizing the senses is definitional and requires that we disentangle "the senses" from the welter of cognates derived from the Latin *sentire*, to feel—a number of which have incommensurable or contradictory meanings. Some of the kindred terms and phrases denote rationality, intelligibility, and consciousness (*make sense*, *come to one's senses*). By contrast, others signify physicality, corporeality, feeling, and emotion (*sensual*, *sentient*, *sentimental*). Further, some uses suggest reflexive or involuntary response (*sensation*),

while others entail discrimination or interpretation (*sensibility, "in one sense,…"*). Most of this language revolves around individuals (*intuitive sense)* but some has a clear social dimension (*common sense*). Notably, in the eighteenth century, *sensibility* connected the two, signaling, as Raymond Williams noted, "a personal appropriation of certain social qualities."[10]

Amid this jumble, we find *the senses*, a term designating something distinctly or inherently corporeal, an embodied means of perceiving the world, often in reference to what were once called the "sense organs." Since Aristotle, these have generally been understood in the West as a pentad—a five-way split of physiological affordances distributed across vision, hearing, smell, taste, and touch. In fact, the number five is neither universal nor fixed. Plato counted only four. (Aristotle added touch.) Many contemporary scientists and philosophers also include perception of temperature, pressure, balance, body position, and other phenomena as senses. By contrast, anthropologist Ian Ritchie has suggested that Hausa-language speakers in West Africa recognize principally two senses, sight and a complex of all non-visual senses. And yet another picture emerges when we look beyond humans, as many non-human animals have other faculties, such as perception of electricity or magnetic fields.[11]

Recognizing the number five as a construct, we have tried not to lean too hard on this convention. The book was not conceptualized (as many works in the field of sensory studies are) around what David Howes wryly referred to as the "pentarchy" of the five senses, and while some of the chapters that follow focus on specific senses, others cut across multiple faculties or are concerned with the senses in a more general way.[12] Together, these essays are less concerned with the significance of specific pathways than they are, as Mark S. R. Jenner put it, with "how sensory perception *worked* in particular historical settings." Or, put differently, they are interested in "explor[ing] the senses as a form of practice, which is both situated and

intersensorial."[13]

Understanding the senses as a form of practice, these essays present a direct challenge to the assumption that the senses are automatic, autonomous, and ahistorical. Doing so, this work may recall an influential article on the history of emotions by Monique Scheer. Emotions, she posits, are located in our bodies as well as our brains. They are at once physiological and cognitive phenomena—just as the senses are. And they are *historical* phenomena to the extent that our bodies are inseparable from the temporality of society. To explain this, Scheer draws on Pierre Bourdieu's theorizing of *habitus*—i.e., "schemes of perception, thought, and action"—extending his proposition that habitus is "embodied history, internalized as a second nature and so forgotten as history" to argue that emotions are most productively apprehended as a kind of practice or action, grounded in historically positioned bodies. This book approaches *its* subject in much the same way. If emotion is, as Scheer puts it, "something people *do*, not just *have,*" that doing always takes place, through bodies, in particular historical circumstances.[14] And so with the senses.

Understanding Capitalism and the Senses

Appreciation of the senses as an analytic category is a relatively recent development in scholarship on the history of capitalism and its related field of business history. Studies of capitalism are necessarily engaged with the writings of Karl Marx, both critiquing his limits and recognizing his insights. As a prescient observer of nineteenth-century industry and finance, his views on the unequal distribution of wealth and power among business owners and factory workers and his arguments about the evolving nature of capitalism became the basis for an enormous body of scholarship – focused above all on production. Following from this, for many

decades scholars of capitalism have tended to explore the relationships between economy and polity, labor and capital, and state and society far more than they have probed capitalism's cultural dimensions.

Marx himself believed that sensory experience was debased by capitalism but would ultimately be redeemed. On the production side, Marx saw a distinct sensory dimension of nineteenth-century factory labor: "Every sense organ is injured in an equal degree by artificial elevation of the temperature, by the dust-laden atmosphere, by the deafening noise, not to mention danger to life and limb among the thickly crowded machinery."[15] For the most part, however, capitalism degraded and suppressed sensory experience in Marx's estimation, not only for the proletariat but also for the bourgeoisie, who, he believed, regularly forwent sensual satisfaction in favor of ever greater capital accumulation. Conversely, following the utopian socialist Charles Fourier, Marx imagined sensory liberation as part of capitalism's transcendence. The abolition of private property, he wrote, would lead to "the complete *emancipation* of all human senses." As the "richness of man's essential being" unfolded, "the richness of . . . *human* sensibility (a musical ear, an eye for beauty of form—in short *senses* capable of human gratifications, senses confirming themselves as essential powers of *man*) [would be] either cultivated or brought into being."[16]

What Marx did not anticipate, however, was that before that apotheosis, the senses would become *more* important to capitalism, not less.[17] This was evident especially (but not exclusively) in the realm of consumption, to which he devoted far less attention than he did to production. Focused on "the factory and the stock market," David Howes has pointed out, "[Marx] neglected an equally salient development—the *presentation* of commodities in the department stores and world exhibitions that sprang up in the mid-nineteenth century."[18] By the

turn of the twentieth century, the cultural and economic value of goods was becoming increasingly linked to the ways that they were marketed, packaged, and displayed. In the decades that followed, what the senses meant for the circulation and accumulation of capital grew ever more pronounced. The result was, as this book shows, that over the twentieth century there developed a distinct capitalist *sensibility*—in the dual sense of a disposition (i.e., a general way of thinking or feeling), and a sensitivity or sensory responsiveness.

In this new era—the age of what Ai Hisano calls "aesthetic capitalism" in Chapter 1—producers paid unprecedented attention to the sensory appeal of the design and packaging of products and the means by which they were sold, and the control and manipulation of sensory experience came to bear on the operations of capital as never before. Manufacturers, marketers, and merchants understood that how goods looked, felt, and, in some cases, sounded, smelled, and tasted had a lot to do with whether or not a potential purchaser would buy them. At the turn of the century, when foodstuffs once purchased in bulk began to be sold pre-packaged, consumers who could no longer inspect, sniff, feel, and sample before buying had to be convinced of value and quality by other means. Thus, as Susan Strasser has shown, the visual appearance of packaging was not an afterthought; it was essential to many products' marketability. A label or carton was not an advertising medium, a 1913 advertising textbook stressed, it was "an integral part of the commodity itself."[19] Over the course of twentieth century, visual marketing grew to encompass everything from illustrated magazine advertisements and billboards to sky-writing and television commercials.

Breaking with the structuralist approach of pioneering business historian Alfred D. Chandler, a cohort of researchers concerned with other aspects of American enterprise took inspiration from social and cultural history and engaged with novel types of evidence to

understand these cultural processes linked to commerce.[20] One of the best known of these culturally oriented business historians, Roland Marchand, analyzed corporate imagery in his studies of modern advertising and public relations as a means to understanding how they disseminated myths and stereotypes.[21] In another corner of the academic universe, art historians in the emerging field of visual culture studies turned away from the canon of fine art—architecture, paintings, and sculpture by recognized masters—to consider American popular culture, including photography and advertising graphics. Patricia Johnston's analysis of objectification and sensuality in the advertising snaps of Edward Steichen, a fashion and fine-art photographer who did studio work for J. Walter Thompson of Madison Avenue in the interwar years, was a pioneering study of how modern enterprise manipulated visuality, female sexuality, sensual pleasure, and the senses for profit.[22]

The work of Marchand and Johnston on the visual and sensual dimensions of American business culture did not directly engage with the history of the senses but it overlapped with and helped to advance a dramatic shift in the study of capitalism and its business institutions. In the 1990s, the Chandlerian worldview was vigorously challenged anew by a younger generation of business historians, who, influenced by the rise of cultural history and cultural studies, pioneered a new approach to the study of commercial enterprise. This "cultural turn" in business history was informed by scholarship in a range of disciplines—anthropology, literature, African American studies, design history, gender studies, historical sociology, material culture studies, social history, visual culture studies, and others. The new generation explored topics untouched by the Chandler school and included subjects such women in business, African-American entrepreneurs, industrial design, consumer society, advertising, marketing, retailing, and small family firms.[23] One particular research thread, focused on enterprise and consumer culture,

highlighted the efforts of advertising creators, product designers, and marketing experts to "imagine" the needs of particular market segments, be it homemakers or children, and scrutinized business efforts to accommodate, shape, or manipulate their desires.[24] In her work on color, volume co-editor Regina Lee Blaszczyk showed how American enterprise, including the some of the firms deemed central by Chandler, purposefully developed business-to-business systems for selecting the colors and color combinations in product design that would stimulate a surefire emotional response in consumers.[25] Collectively, the new culturally informed business history, most rigorously theorized by Kenneth J. Lipartito, revealed how interdisciplinary thinking, combined with scrutiny of activities within the confines of the firm, the trade association, or the industry, could illuminate the internal operations of American capitalism.[26]

Visual presentation was not the only sensory aspect of twentieth-century consumer society, however. Consider the commodification of sound, for example. As volume co-editor David Suisman has shown elsewhere, in the United States the music churned out by what the *New York Times* in 1910 called the "popular song factories" of Tin Pan Alley was itself nothing if not a commercial product—made to make money through the sale of sheet music, the songs were literally advertisements for themselves. In the 1920s, commercial radio was born when broadcasters introduced aural advertising, including jingles, to their programming, so the adman's pitches now resounded in the intimate space of people's living rooms. Then there was the business of records, which "stockpiled" the labor of professional musicians in the grooves of sound recordings (as theorist Jacques Attali memorably put it). On the eve of the Great Depression, the phonograph industry enjoyed revenues of nearly $100 million a year. Taken together, these industries showed how, by the 1930s, "selling sounds" had become big business.[27]

In the sensibility of aesthetic capitalism, sensory experience ceased to be merely a byproduct—something that "just happened" to a consumer when a product was used—and instead became a conscious, sometimes explicit, part of the way that capitalism as a system worked. The senses are among "our best salesman," argued the industrial designers Roy Sheldon and Egmont Arens in their 1932 treatise *Consumer Engineering*. As its title suggests, their book expanded on the concept of "engineering" consumers, recently advanced by Earnest Elmo Calkins, one of the pioneers of modern advertising. A key aspect of his proposition, they explained, was factoring sensory experience into the design of goods, for considerations like shape, feel, and touch affected a product's ultimate commercial value. "After the eye," they wrote

> the hand is the first censor to pass upon acceptance [of a product], and if the hand's judgment is unfavorable, the most [visually] attractive object will not gain the popularity it deserves. [Conversely,] merchandise designed to be pleasing to the hand wins an approval that may never register [consciously] in the mind but which will determine additional purchases.

Thus, they exhorted to product designers, "*Make it snuggle in the palm*"—after which they extrapolated to hearing, tasting, smelling, and seeing. "Scrutiny of the other sensory systems in the light of the new psychology," they asserted, "would lead to similarly stimulating suggestions for the modern business man."[28]

As the essays in this volume demonstrate, numerous factors explain why this new sensate capitalism emerged when and as it did. Technology was a big part of the story. The capacity of scientists and engineers to isolate, measure, and, in some cases, synthesize specific sensory phenomena enabled manufacturers and merchants to fine-tune the appeal of their products—

some of which had been marketed for centuries, like perfumes and textiles, and others of which were wholly new, like Wrigley's chewing gum—to a far greater degree than had been possible in Marx's lifetime (he died in 1883). This sensory sea change, however, should not be understood as the result of technological determinism, for several other factors besides technology mattered just as much. First was the creation of a capital-dependent infrastructure capable of collecting, studying, and analyzing concrete information about consumer response. This included the establishment of dedicated research-and-development laboratories, whether as independent firms or as part of large chemical corporations, and stand-alone market research firms, such as Ernest Dichter's Institute for Motivational Research, to provide systematic feedback on all kinds of consumer attitudes and behavior. [29]

Second, the senses became important to capitalism when and as they did because of the specific ideological conditions in which heightened attention to sensorial response was manifest, making it seem like an organic extension of existing economic activity. If technological innovation produced new potentialities and infrastructure made possible standardized experimentation, both were underpinned by the intensified logic of rationalization in production and marketing in the late nineteenth century. Of course, some degree of sensorial attunement informed commercial exchange long before the rise of modern capitalism, especially in relation to foodstuffs and luxury goods. There is nothing particularly capitalistic about buyers valuing some sensory characteristics and denigrating others—e.g., avoiding goods that look spoiled or smell rancid. Yet around the turn of the twentieth century, every aspect of both manufacturing and selling goods was brought under the microscope of calculation.[30] One of the best known examples of this phenomenon lay in the rise of scientific management, which externalized the analysis of efficiency, abstracting the search for the "one best way" in every productive or

commercial process.[31] The same spirit animated aesthetic capitalism, in which sensory response came to be seen as an independent variable in consumer marketing, *not inherent in the goods but extrinsic and manipulable*. The new common sense, as it were, among manufacturers, marketers, and merchants—as well as among many scientists, engineers, consultants, bankers, accountants, and others—urged never-ending refinement in every aspect of business, including the pursuit of ever-cleverer ways to build or capture markets. If capitalism reified the imperatives of the market, increasingly elevating commercial relationships above all others, then commercializing the sensorium grounded that abstract impulse in the materiality of bodies. In that environment, seeing the senses—i.e., the channels through which bodies relate to the physical world they live in—as just another commercial relationship takes on a sheen of naturalness and inevitability.

In This Book

If there is a political economy of the senses, it has been manifest not only in marketing but at many points in the processes of production, distribution, and consumption. Accordingly, the twelve chapters in this edited volume explore how the trajectories of the history of capitalism and the history of the senses have intersected across a wide range of practices and effects. The volume is divided into four sections that move from the big picture to the telling details, beginning with an exploration of broad concepts and ending with meticulous analysis of the nuts and bolts of marketing. Focusing on subjects ranging from product design to measurements and standards, from supply chains to the practices of end-users, the individual chapters "flesh out" the corporeal, sensorial dimensions of making, selling, and buying across the modern cultural and economic landscape. Through this work, we come to appreciate capitalism not merely as a set of relationships governing where and how goods are made and circulated but also as a

phenomenon bearing on, and filtered through, sentient human bodies. In spaces as diverse as laboratories, department stores, feed lots, hotel rooms, and the hulls of 100,000-ton container ships, people who make, measure, move, and market commercial products have manipulated sensory experience for commercial gain. Through clinical testing, focus groups, product displays, meetings of trade associations, and other means, they have sought to rationalize, quantify, and commodify the sensorium.

Part I of the book, "Framing Capitalism and the Senses," raises broad theoretical questions. It begins in Chapter 1, "'Use Not Perfumery to Flavor Soup': The Science of the Senses in Aesthetic Capitalism," with Ai Hisano's contention that in the late nineteenth century a new kind of "aesthetic capitalism" emerged which made sensory judgment integral to business strategies, with far-reaching ramifications for the norms and expectations of ordinary people (i.e., consumers) in daily life. Hisano uses the sensory philosophy of Aristotle as a springboard for exploring how aesthetic, or sensory, judgement became an integral part of business strategies in consumer-product development among managerial firms at the center of the economy. By incorporating philosophical and historical studies of emotion and the senses into business history, she argues that the creation of aesthetic capitalism grew out of the translation of aesthetics and scientific investigation into industrial sensory science. Consequently, consumer-goods companies constructed a new kind of aesthetics, which became not only an industry standard in product design and marketing but also a social norm. Certain sensations became acceptable while others became disgusting. Consulting firms like Arthur D. Little, Inc., helped raise sensory awareness and enhance sensory experience by creating new sensations, but at a cost of diminishing more traditional, localized senses.

In Chapter 2, “Chasing Flavor: Sensory Science and the Sensitized Economy,” Ingemar Pettersson examines the emergence of food sensory science in the twentieth-century United States. He considers how scientists and engineers within and around the food industry attempted to turn the individual and elusive property of flavor into an object of scientific inquiry. Pettersson posits that the scientific objectification of flavor corresponded with the evolution of the economy and argues for two major changes that evolved in tandem: the senses and sensory impressions were “economized” and, concurrently, the economy was “sensitized.” The concept of the “economization of the senses” refers to the process by which industrialization transformed consumers’ understanding of flavor qualities and to the mechanisms involved in the standardization of sensory attributes. The concept of the “sensitization of the economy” refers to the process through which consumers and producers developed a greater awareness of the taste, tactile qualities, sounds, smells, and appearance of industrially produced goods.

Next in **“**Richer Sounds: Capitalism, Musical Instruments, and the Cold War Sonic Divide” (Chapter 3), Sven Kube looks at the impact of musical equipment from the capitalist West on the soundscapes of popular music in the Eastern Bloc during the Cold War. Specifically, he probes why pop, rock, and dance music from the United States, the United Kingdom, and continental Western Europe had such broad and powerful appeal in Communist countries and analyzes how amateur and popular musicians there sought to imitate the instruments and sounds from across the Iron Curtain. Kube argues that the sonic properties of Western popular music (associated with instruments such as Fender Guitars) made popular music a Cold War battleground distinct from lyrical themes and generic conventions. The result, he suggests, was that the *sound* of popular music from the capitalist countries penetrated deep into the aural

consciousness of Eastern Bloc nations and made Western popular music an audible signifier of capitalism.

Part II, "Resisting Rationalization," explores the elusiveness of the senses for those who have sought to harness their commercial potential and the refusal of the senses to conform to the logics of capital. In Chapter 4, "Altered States and Gustatory Taste: The Sensory Synergies of Whiskey Marketing in the Mid-Twentieth-Century United States." by Lisa Jacobson takes on the intoxicating effects of alcohol consumption—a subject that complicates both marketers' and consumers' efforts to pinpoint consumer preferences. Focusing on the postwar era, she draws on advertisements for alcoholic beverages and market studies conducted by Ernest Dichter's Institute for Motivational Research, a business-to-business consulting firm, to consider the interactive role between producers and consumers in the construction of knowledge about the sensory experience of drinking. The focus on alcoholic beverages allows Jacobson to consider a consumer product that stimulated all of the senses—sight, taste, touch, sound, and smell—while altering the user's state of mind and their sensory perceptions. She demonstrates how mid-century market researchers and advertisers became ever more inventive in the ways they blended messages about the pleasures of gustatory taste with more covert messages about the pleasures of altered states.

In "The Psychophysics of Taste and Smell: From Experimental Science to Commercial Tool," (Chapter 5), Ana María Ulloa probes the ambiguities and contradictions in the industrial measurement of sensory experience. Self-assured scientific pronouncements notwithstanding, connoisseurship, expertise, and judgment about the senses have never rested on firm ground, Ulloa argues, and the professionalization of taste experts cannot be disentangled from the variability and subjectivity inherent in their instruments and metrics. Drawing on extensive

ethnographic fieldwork at the Monell Chemical Senses Center, an independent research institute in Philadelphia, Ulloa explores the domain of commercial psychophysics to document how chemosensory scientists and flavorists manufacture a contested and unstable kind of sensory expertise.

David Suisman, a co-editor of this book, flips the script in Chapter 6, "Sky's the Limit: Capitalism, the Senses, and the Failure of Commercial Supersonic Aviation in the United States," which is concerned with the impact of ear-splitting, bone-rattling sonic booms in the development of an American supersonic transport (SST) in the 1960s and 1970s. Suisman's study turns our attention to sensory experience as an unwanted byproduct of commercial activity—i.e., what economists would call a negative externality. When the U.S. government and the American aviation industry sought to design and build a commercial airplane that would fly faster than the speed of sound, the sonic booms caused by supersonic flight proved so disruptive that they, along with other several other factors, forced Congress to abandon the project in the early 1970s. This chapter shows how industry leaders, government officials, scientists, engineers, and political activists each perceived the sonic boom issue through a different lens, and refracts the tensions that emerged over prioritizing different kinds of outcomes. If, in the preceding chapter, Ulloa the limits of scientists to produce standardized sensory outcomes, Suisman shows sensory experience as a different kind of challenge: as an *obstacle* to commercial development—not a practice to be manipulated but a problem to be suppressed or avoided.

The auditory dimensions of globalization are the subject of Chapter 7, "Sounding Maritime Metal: On Weathering Steel and Listening to Capitalism at Sea" by Nicholas Anderman. This author begins with a provocative question, "What does the global economy sound like, and how might we hear it?" The nuanced answer he develops emerges from his

listening to the "metallic sonorities" of a fully loaded French container ship as it slices through the northern Pacific Ocean at twenty knots, including both the creaking hull of the boat and the "social content" of the specific steel alloy from which such ships are made. He anchors this work in a reexamination of Max Weber's notion of the "iron cage of civilization," which, Anderson proposes, is better understood as a steel container and concludes with a proposition that attentiveness to the ways we think about sound may unlock doors to thinking outside of capitalism.

Part III, "Production," looks upstream at processes of engineering and design in two very different settings. In Chapter 8, "Making Human Trash Tasty: A History of Sweet Cattle Feed in the Progressive Era," Nicole Welk-Joerger examines the industrial engineering of the taste of animal feed, which underpins a substantial portion of the human food supply in the United States. She chronicles how the taste of sweetness has been used strategically by farmers and feed companies since the Progressive Era to induce dairy and meat cattle to eat as much as possible. Her detailed, stomach-churning findings reveal how the widespread practice of habituating cattle to eat "unnatural" products has transformed the American food supply. Humans have used their own sense of what constitutes a "good taste," including sweetness, to inform the investigation and development of livestock flavoring. These flavor additives, ranging from molasses to "candy apple" powder, have encouraged cattle to eat various materials to the benefit of different non-agricultural mass consumer industries.

The histories of design and of the senses are linked in Chapter 9 "Getting a Handle on It: Thomas Lamb, Mass Production, and Touch in Design History" by Grace Lees-Maffei in her study of a man widely known in creative circles as the pioneer of Universal Design. The chapter considers how Lamb engaged with the senses as he re-imagined the shapes of commonplace

consumer products like cups and teapots. Lamb's decision to use his own hands as a "standard" form of measurement risked universalizing his personal experience at the expense of potential users who were of different sizes, genders, or abilities. The essay raises important questions that link capitalism and the senses: How "universal" was Lamb's concept of Universal Design? How did he benefit from a design process that depended on touch as well as sight? What did he learn by engaging with haptic experience as he re-imagined everyday tableware and other prosaic objects? This paper is unique among the contributions in this collection for its engagement with design theory and its use of artifacts as evidence.

Finally, Part IV, "Marketplaces," considers sites, spaces, and conditions of contact between merchants, manufacturers, products, and consumers. In Chapter 10, "Fragrance and Fair Women: Perfumers and Consumers in Modern London," Jessica P. Clark, uses a single event—the "All-British Shopping Week" in London's West End in 1911—as a case study to interrogate the relationship between commercial modernity, capitalism, and smell in early-twentieth century Britain. Her essay considers how London retailers meshed ideas of national identity with exciting new sensory experiences to expand their sales in the domestic market during a peak period in British international expansion. The focus on perfumes allows for the analysis of exclusion and "othering" in the creation of a highly nationalistic smellscape by retailers and other economic actors. This study is distinctive for its deep analysis of historical texts about smells and for its use of that evidence to unpack the British experience of modernity.

The global textile and apparel business is a complex industry whose engagement of sensory marketing has not been considered in depth. In Chapter 11, co-editor "Sold on Softness: DuPont Synthetics and Sensory Experience," volume co-editor Regina Lee Blaszczyk homes in on the American textile business during the early to mid-twentieth century, a large industry

whose supply chain extended from the chemical companies who made the fibers to the retailers who sold the fashions. The chapter looks at the DuPont Company, a chemical manufacturer that ventured into fiber production in 1920 to become the dominant global player by 1970. Blaszczyk explores how DuPont, a science-based company, embraced psychological research on the senses as it tried to get a handle on the markets for man-made fibers in the interwar years and for the new synthetic fibers—nylon, polyester, acrylic, and spandex—in the postwar era. Here, we see how a Fortune 500 company known for its investment in science, technology, and management looked to develop its capacities in marketing, and how sensory analysis figured into that effort.

In Chapter 12, "Feminine Touches: The Sensory World of Hilton Hotels," Megan J. Elias focuses on "Lady Hilton," a promotional program created in 1965 by Hilton Hotels International as a marketing device to attract a new customer: the woman traveling on business. It places the Lady Hilton experiment within the context of the broader sensory landscape of the booming American hotel industry of the postwar era, considering how hotel managers orchestrated and navigated the smells, colors, textures, and tastes of commercial hospitality. Hilton's venture into sensory management involved a range of strategies, from the creation of enclosed rooms for cigarette smoking to the aesthetics of interior decorating and menu planning. Elias links the history of capitalism to the history of the senses by focusing on the marketing of a unique sensory package by Hilton, a major mid-twentieth century player in commercial hospitality.

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Taken together, the twelve chapters in this book offer us new purchase on the ways that people experienced twentieth-century capitalism through their bodies and the ways that corporeal experience has been socially, culturally, and economically constructed. If the senses are the channels through which we know and interact with the world, the work in this book shows the

degree to which such knowledge and interactions are historically situated, both shaped by and shaping the circumstances of particular times and places. Since the turn of the twentieth century, those circumstances have increasingly involved the economic valuation of sensory response. This collection, then, focuses our attention on the unprecedented ways the logic of the market has been brought to bear on the senses and on the wide range of social actors who have sought to control the pathways connecting us to the world for commercial ends. To date, however, bringing the senses under capitalism's yoke has been difficult to achieve. These essays are representative not only of a subtle but profoundly important shift in the design and selling of consumers goods, but also the obstacles in reducing the expansive poetry of the sensorium to the crude lexicon of the market.

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[1] Clay Risen, "Louise Slade, Scientist Who Studied the Molecules in Food, Dies at 74," *New York Times,* Nov. 1, 2021.

[2] Colleen Walsh, "What the Nose Knows," *Harvard Gazette*, Feb. 27, 2020, at news.harvard.edu/gazette (accessed Nov. 3, 2021).

[3] Karl Marx, *Economic and Philosophic Manuscripts of 1844*, quoted in Karl Marx and Friedrich Engels, *The Marx-Engels Reader*, ed. Robert C. Tucker, 2nd ed. (New York: Norton, 1978), 89.

[4] "Capitalism and the Senses," Harvard Business School, June 29, 2017, accessed April 20, 2022, https://www.hbs.edu/faculty/research/seminars-conferences/Pages/event.aspx?conf=2017-capitalism-and-the-senses; "2020 Fall Conference: Capitalism and the Senses," Hagley Museum

and Library, November 5 and 6, 2020, accessed April 20, 2022, https://www.hagley.org/research/conference/2020-fall-conference.

[5] We should note, however, that Chapters 6 and 11, by David Suisman and Regina Lee Blaszczyk, respectively, are not based on presentations from the conference.

[6] Marx, *Economic and Philosophic Manuscripts of 1844* (Moscow: Progress, 1959) (emphasis in original); Georg Simmel, "The Metropolis and Mental Life," in *Classic Essays on the Culture of Cities*, ed. Richard Sennett (Englewood Cliffs, NJ: Prentice-Hall, 1969), 47–60; Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," in *Illuminations*, ed. Hannah Arendt, trans. Harry Zohn (New York: Schocken, 1968), 217–51; Lucien Febvre, *The Problem of Unbelief in the Sixteenth Century, the Religion of Rabelais*, trans. Beatrice Gottlieb (Cambridge, Mass.: Harvard University Press, 1982 (1942)); 423-36; Lucien Febvre, "Psychologie et histoire," in *Encyclopédie française*, vol. 8, *La Vie mentale* (Paris: Société de gestion de l'Encyclopédie française, 1938); Lucien Febvre, "Comment reconstituer la vie affective d'autrefois? La sensibilité et l'histoire," *Annales d'histoire sociale* 3 (1941). Febvre's essays appeared in English in Lucien Febvre, *A New Kind of History: From the Writings of Febvre*, ed. Peter Burke, trans. K. Folca (New York: Harper & Row, 1973).

[7] Alain Corbin, *The Foul and the Fragrant: Odor and the French Social Imagination* (Cambridge, MA: Harvard University Press, 1986).

[8] Useful overviews of the history of the senses include David Howes and Constance Classen, *Ways of Sensing: Understanding the Senses In Society* (New York: Routledge, 2014); David Howes, ed., *Empire of the Senses: The Sensual Culture Reader*, Sensory Formations Series (Oxford: Berg, 2005); Mark M. Smith, *Sensing the Past: Seeing, Hearing, Smelling, Tasting, and Touching in History* (Berkeley: University of California Press, 2008); Robert Jütte, *A History of*

the Senses: From Antiquity to Cyberspace (Malden, Mass.: Polity, 2004).

[9] Alain Corbin, "A History and Anthropology of the Senses," in *Time, Desire and Horror: Towards a History of the Senses*, trans. Jean Birrell (Cambridge: Polity, 1995), 181–95.

[10] Raymond Williams, *Keywords: A Vocabulary of Culture and Society*, Rev. ed. (New York: Oxford University Press, 1983), 280-83, quotation at 281. See also; Febvre, "Sensibility and History: How to Reconstitute the Emotional Life of the Past," in *A New Kind of History*, 12–26; William Empson, *The Structure of Complex Words* (New York: New Directions, 1951), 250-310; Sophia Rosenfeld, *Common Sense: A Political History* (Cambridge, Mass.: Harvard University Press, 2011).

[11] Jütte, *A History of the Senses*, 35-42; Ian Ritchie, "Fusion of the Faculties: A Study of the Language of the Senses in Hausaland," in *The Varieties of Sensory Experience: A Sourcebook in the Anthropology of the Senses*, ed. David Howes (Toronto: University of Toronto Press, 1991), 194 and passim 192-202; Fiona Macpherson, "Taxonomising the Senses," *Philosophical Studies* 153, no. 1 (2011): 127.

[12] David Howes, "Historicizing Perception," in *Empire of the Senses: The Sensual Culture Reader*, ed. David Howes (Oxford: Berg, 2005), 56.

[13] Mark S. R. Jenner, "Follow Your Nose? Smell, Smelling, and Their Histories," *American Historical Review* 116, no. 2 (April 2011), 350.

[14] Monique Scheer, "Are Emotions a Kind of Practice (and Is That What Makes Them Have a History)? A Bourdieuian Approach to Understanding Emotion," *History and Theory* 51, no. 2 (May 2012): 193–220. quotations at 201 and 194.

[15] Karl Marx, *Capital* (New York: International Publishers, 1967), 1:425.

[16] Karl Marx, *The Economic and Philosophic Manuscripts of 1844*, quoted in David Howes,

"The Material Body of the Commodity: Sensing Marx," in *Sensual Relations: Engaging the Senses in Culture and Social Theory*, ed. David Howes (Ann Arbor: University of Michigan Press, 2003), 206-07. Emphasis in original.

[17] Howes, "The Material Body of the Commodity," 207-08.

[18] Howes, "The Material Body of the Commodity," 208.

[19] Susan Strasser, *Satisfaction Guaranteed: The Making of the American Mass Market* (New York: Pantheon Books, 1989), 29-57, quotation at 32.

[20] For a summary of this historiography, see Regina Lee Blaszczyk and Philip B. Scranton, eds., *Major Problems in American Business History: Documents and Essays* (Boston: Houghton Mifflin, 2006).

[21] Roland Marchand, *Advertising the American Dream*: Making Way for Modernity, 1920-1940 (Berkeley: University of California Press, 1984); idem, *Creating the* C*orporate Soul: The Rise of Public Relations and Corporate Imagery in American Big Business* (Berkeley: University of California Press, 2001).

[22] Patricia Johnston, *Real Fantasies: Edward Steichen's Advertising Photography* (Berkeley: University of California Press, 1997).

[23] Blaszczyk and Scranton, *Major Problems*.

[24] See, for example, Regina Lee Blaszczyk, *Imagining Consumers: Design and Innovation from Wedgwood to Corning* (Baltimore: Johns Hopkins University Press, 2000) and Lisa Jacobson, *Raising Consumers: Children and the American Mass Market in the Early Twentieth Century* (New York: Columbia University Press, 2004).

[25] Regina Lee Blaszczyk, *The Color Revolution* (Cambridge, MA: The MIT Press, 2012).

[26] Kenneth J. Lipartito, "Connecting the Cultural and the Material in Business History," *Enterprise and Society* 14, no. 4 (December 2013), 686-704, and idem, "Reassembling the Economic: New Departures in Historical Materialism," *American Historical Review* 121, no. 1 (February 2016), 101-39. Also useful are Per H. Hansen, "Business History: A Cultural and Narrative Approach," *Business History Review* 86, no. 4 (Winter 2012), 693-717, and Philip Scranton and Patrick Fridenson, *Reimagining Business History* (Baltimore: Johns Hopkins University Press, 2013).

[27] David Suisman, *Selling Sounds: The Commercial Revolution in American Music* (Cambridge, Mass.: Harvard University Press, 2009), 16 and passim; *New York Times*, September 18, 1910; Timothy D. Taylor, *The Sounds of Capitalism: Advertising, Music, and the Conquest of Culture* (Chicago: University of Chicago Press, 2012); Jacques Attali, *Noise: The Political Economy of Music*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1985), 53.

[28] Roy Sheldon and Egmont Arens, *Consumer Engineering: A New Technique for Prosperity, Getting and Spending* (1932; New York: Arno Press, 1976), 100-02; the authors emphasized "make it snuggle in the palm" by using the phrase as a sub-heading within the chapter on 101. See also Howes, "The Material Body of the Commodity," 211.

[29] The Ernest Dichter collection is open for research at the Hagley Library; the finding aid is available at https://findingaids.hagley.org/repositories/3/resources/1071. The market research report portion of the collection is available in the digital database published by Adam Mathews, *American Consumer Culture: Market Research and American Business*. A Hagley conference devoted to assessing Dichter's influence generated the edited collection, *The Rise of Marketing and Market Research*, eds. Harmut Berghoff, Philip Scranton, and Uwe Spiekermann (New York: Palgrave Macmillan, 2012).

[30] On the importance of calculation, see Max Weber, *The Protestant Ethic and the Spirit of Capitalism*, trans. Talcott Parsons (New York: Charles Scribner's Sons, 1958), 17-27.

[31] On scientific management, see Frederick Winslow Taylor, *The Principles of Scientific Management* (New York: Harper & Brothers, 1911); Robert Kanigel, *The One Best Way: Frederick Winslow Taylor and the Enigma of Efficiency* (Cambridge, Mass.: The MIT Press, 2005).