Postscript

Miraculous Plastic's Retrograde Sublime

High-Tech Trash: Glitch, Noise, and Aesthetic Failure analyzes how artists and theorists have placed glitch, error, and noise at the center of their scholarly and creative practices, and second, how this allows for critical reflection on a broader ethos and aesthetic of breakdown. The many case studies and chapters in the book also analyze glitch, noise, error, and failure as an emergent visual rhetoric in media art and culture. Before closing, however, there is one last meaningful heap of high-tech trash to discuss, this time from a more distant historical perspective. That is, how strategies of planned obsolescence have shaped the social and political birth and afterlife of plastic. Given plastic's status as an older media (relative to digital technology), it offers a more comprehensive view of the broad trajectory from new to old (dead) media, which, in turn, can then be used to shed comparatively light on commodity production and material consumption in the information age.

I. DISPOSABLES

Marie Kondo, author of the best-selling book *The Life-Changing Magic of Tidying Up* (2017), is celebrated for her pioneering minimalism and decluttering trends. Kondo preaches a "ruthless" tidiness and a merciless "purge all." Her dream is to "organize the world," Taffy Brodesser-Akner reports for the *New York Times Magazine*.[1] Kondo's ethos comes across as an appropriate refusal of consumer excesses and yet, her practice also seems to endorse models of planned obsolescence, by virtue of encouraging people to throw things out. It would be incorrect to scapegoat Kondo as a driving force behind consumer waste, but it is undeniable that her ethos of radical discard contributes to the growing cycles of waste in

consumer culture. Writing for *Esquire*, David Sax further critiques her fashionable brand of de-cluttering as catering to virtual fantasies longing for the "power to make a big chunk of our possessions just disappear."[2] The mythology appeals to many of us, six million in fact, who purchased Kondo's book. As Sax notes, the trend is merely the latest instantiation of a long-standing cultural dream for pure, noise-free worlds, transcendent of dirt and matter.

Planned Obsolescence

Of course, Kondo is not single-handedly responsible for perpetuating such fantasies. Strategies to efficiently get rid of stuff date back to the seventeenth century's introduction of planned obsolescence, a managerial strategy implemented in order to preemptively curtail the expected lifespan of a consumer object and promote its early replacement. The technique was first developed to encourage the unnecessary consumption and "wearing-out" of new commodities.[3] "Fashion," Nicholas Barbon wrote in his 1690 *Discourse on Trade,* "is a great Promoter of Trade, because it occasions the Expence of Cloaths, before the Old ones are worn out: It is the Spirit and Life of Trade; It makes a Circulation . . . to all sorts of Commodities; keeps the great Body of Trade in Motion; . . . as if [man] lived in a perpetual Spring."[4] Barbon had in mind raw materials, buildings, and anything else that would support "the great Advantage and Profit that Trade brings to a Nation."[5]

Over three centuries later, planned obsolescence has become a formal strategy in a number of commercial industries. In the 1920s, it was leveraged to help end the Great Depression in North America by promoting recurrent patterns of use and consumption. The approach is reiterated in American real-estate broker Bernard London's 1932 diatribe *Ending the Depression through Planned Obsolescence*. In some ways, London's pamphlet accurately voices the concerns of a society of production slowly segueing into a culture of consumption. The "essential economic problem," he argues, "has become one of organizing buyers rather than of stimulating producers." London also proposed the formation of a "government agency" to oversee and determine the legal lifespan of each manufactured object. He proposed that consumers who disobeyed such "law[s]" by keeping old stuff around, "using their old cars, their old tires, their old radios and their old clothing much longer than statisticians had expected," should be taxed for such continued use of what was legally considered "dead." In his view, criminality and the failure to keep up with cycles of consumption could be conflated as one and the same. The failure to buy was the failure to be a good citizen. One should feel obligated, in this view, to support the nation's industry through needless consumption. And while we do not have rigid laws restricting the use of objects, we do have the pressures of social convention and "conspicuous consumption," as Thorstein Veblen theorized it, to make us acutely aware when our clothing, gadgets, and other objects are embarrassingly out of fashion.[6]

A second benchmark in the development of planned obsolescence occurred in the postwar era. Around 1954, designer and tastemaker Brooks Stevens encouraged consumers to "own something a little newer, a little better, a little sooner than is necessary."[7] Marketing consultant Victor Lebow likewise advocated rapid waste. In a 1955 issue of the *Journal of Retailing,* Lebow argued that in order to keep businesses and retailers afloat, "We require not only 'forced draft' consumption," but also, "expensive consumption . . . We need things consumed, burned up, worn out, replaced, and discarded at an ever increasing pace."[8] His overarching goal was to "make consumption [a] way of life," and ensure consumers could find "spiritual satisfactions . . . in consumption." Nothing in the world is more terrifying than the proposition that "corporations have a soul," Gilles Deleuze asserted in 1990,[9] but the notion that superfluous shopping is the source of national pride, let alone our spiritual destiny, takes the cake.

When the ancient Greeks proposed a rigorous pursuit of the "good life," the acquisition of things and stuff could not be further from what they had in mind. And still, we have made a culture of consumption synonymous with "bettering" one's self, family, and country at large. Spiritual or not, it is what we do and work for. Micah White concurs. In pursuit of the "good life," he writes, we "constantly replace the objects in our daily life," which in turn, keep "us locked into our overworked, over stimulated and under paid daily grind. We work to buy things that are built to die so that we must work to buy more things that will break."[10] From Veblen's 1899 critique of conspicuous consumption to Barbara Kruger's 1987 work *Untitled (I shop therefore I am),* artists and scholars have excoriated excessive consumption, yet the belly of the beast expands with each new consumer report.[11]

E-Tech Obsolescence

In electronics, planned obsolescence has resulted in unfathomable quantities of e-waste, as discussed in chapters 6 and 7. Speaking for the United Nations University (UNU), International Telecommunication Union (ITU), and International Solid Waste Association (ISWA), Cornelis Baldé et al. define e-waste as "electrical and electronic equipment (EEE) and its parts that have been discarded by its owner as waste without the intent of re-use."[12] The problem is not merely the growing quantities of e-waste, however, but the fact that many electronic products are developed with *the key aim of failing faster* (thus ensuring more accelerated replacement). A key example, as noted in the Introduction, is Apple's attempt to slow down the speed of its iPhone to enhance sales of newer models. Furthermore, Apple's iPods, iPhones, and iPads are now manufactured with no serviceable parts inside, including their batteries. The devices are often glued together, making discarding them and buying a new model a user's only option.

Apple's obsolescence strategy is further enhanced by the company's decisions to use cheap, short-lived materials. The lithium-polymer batteries in many Apple devices die after only three years of use. Preemptive consumption is also promoted

from the retail end by devising marketing strategies that make "new" models with relatively the same features as the older ones. The average lifespan of computers in developed countries dropped from six years in 1997 to just two years in 2005.[13] With 44.7 million metric tons of e-waste generated in 2016, the UNU reported in 2017 that we can expect to foresee a 17 percent increase to 52.2 million metric tons of e-waste by 2021.[14] If we thought the manufacturing and information industries grew at a rapid rate, they pale in comparison to the unfathomable acceleration of e-waste accumulation, "the fastest growing part of the world's domestic waste stream."[15] Darren Blum of Pentagram Design remarks, "We joke that we design landfills."[16]

Further attention to the afterlife of retired high-tech objects is required. As an offshoot of media archaeology, zombie media provides one such method. Like the works analyzed in the previous chapters, zombie media submits that media never die, but, after being discarded or deemed obsolete, they assume afterlives in the media environment.[17] From a zombie media perspective, what comes to matter most in digital environments is the stuff we don't see (see chapters 6 and 7). Accordingly, this Postscript continues and completes the book's study of error-ridden and seemingly "dead," valueless digital media with an archaeology of plastic, a much older, but once just as magical new media. Beginning with a brief history of the early twentieth-century origins of plastic as a utopian substance, I follow it through its afterlife in this century, contaminating the world's oceans and killing marine mammals and sea life. One day, electronic media will also become old and dead. Awareness of what has and is happening with dead plastic may in turn help reroute the seemingly sad destiny of our quickly dying electronics.

II. MIRACULOUS PLASTIC!

> *Plastics . . . A Way to a Better More Carefree Life.*
> —"THIS YEAR REDISCOVER PLASTICS," *HOUSE BEAUTIFUL,* 1947

Plastic, Roland Barthes wrote circa 1954, is "the first magical substance that consents to be prosaic."[18] Indeed, many of the conveniences and major feats of modern culture would not exist without it. Found in such diverse objects as toothbrushes, water bottles, doorknobs, chewing gum, cellophane, electronic and computer parts, acrylic paint, vinyl, Formica, and the pervasive polyurethane plastic bags once received every time we bought anything, plastic has become so universal, we fail to recognize just how radically it has reconfigured the everyday. Plastics have also had enormous medical and technological benefits, insulating electronic wires to allow electricity to flow quickly and safely, making blood transfusions safe and common through vinyl blood bags, and transforming dentistry's use of hard rubber plates with lightweight plastic ones. Plastics are flexible, easy to produce, versatile, and few modern or natural substances can compete with them in all of these

areas at once. Plastics were developed over the twentieth century into an extended family of amazing objects with thousands of different uses and applications. They were hailed from the start as a modern panacea; a man-made alchemical wizardry transforming nature through rational chemistry. And yet, it is no secret that in recent years, plastic has come under the gun of environmental, biological, and health concerns. Let us now consider how this turn of events came about.

The fashion for plastic evolved with the bourgeoisie in the second half of the nineteenth century.[19] By 1880, George Eastman was manufacturing photographic film from celluloid, developed by John Wesley Hyatt in 1870. By 1909, the New York–based chemist Leo Baekeland was using heat and compression to mix carbolic acid (phenol) with formaldehyde, producing the insoluble, non-conductive material called "Bakelite." Bakelite could be molded into almost any desired shape or form and henceforth newer, cheaper plastic facsimiles began replacing rare materials like ivory (used in billiard balls), tortoiseshell (used in hairbrushes), diamonds, silk, and furs.[20] Unlike many organic and pre-synthetic materials, plastics are stable, transformable, easy to work with, and capable of being mass-produced with economic benefit.

When the United States blazed a trail through the golden era of entrepreneurship in the early twentieth century, plastics were there to fulfill the ambitious dreams and visions of the zeitgeist.[21] Plastic was the most conducive "vehicle to express men's soaring imagination," Thelma Newman writes, "strongly reflect[ing] its own era."[22] The pivotal role of plastic in the construction of Hollywood glamour in the 1920s and 1930s is unsurprising. Used in film stock and on film sets, plastic products provided a repertoire of new materials and metaphors in mirrors, shiny surfaces, lighting effects, smoke screens, and synthetic auras. Plastic glamour was disposable glamour, as Judith Brown puts it, delivering its media fix quickly and easily.[23] The military also requisitioned the production of new plastic items at the outset of World War II, to replace metal and rubber items like standard-issue GI combs, mortar fuses, parachutes, turrets used on planes for gunners, and bugles.[24] Earl Tupper, inventor of Tupperware, argues that though plastics had proven themselves during the war, "like all young vets returning from the war," they did not yet have "civilian adult experience."[25]

Postwar Prosaic Shine

If landscape photography celebrated the feats of industrial modernism in the early twentieth century (chapter 7), with plastic, this heyday arrived in the 1940s. People were so enthralled with plastic, "cellophane" was designated the "third most beautiful [word] in English language, after mother and memory."[26] Plastic was by and large celebrated as the pinnacle of change and innovation, even though contenders had already begun to emerge.

In the late 1950s and early 1960s, plastic became feasible in art making and a significant number of visual artists gravitated to it.[27] Water-soluble acrylic paints

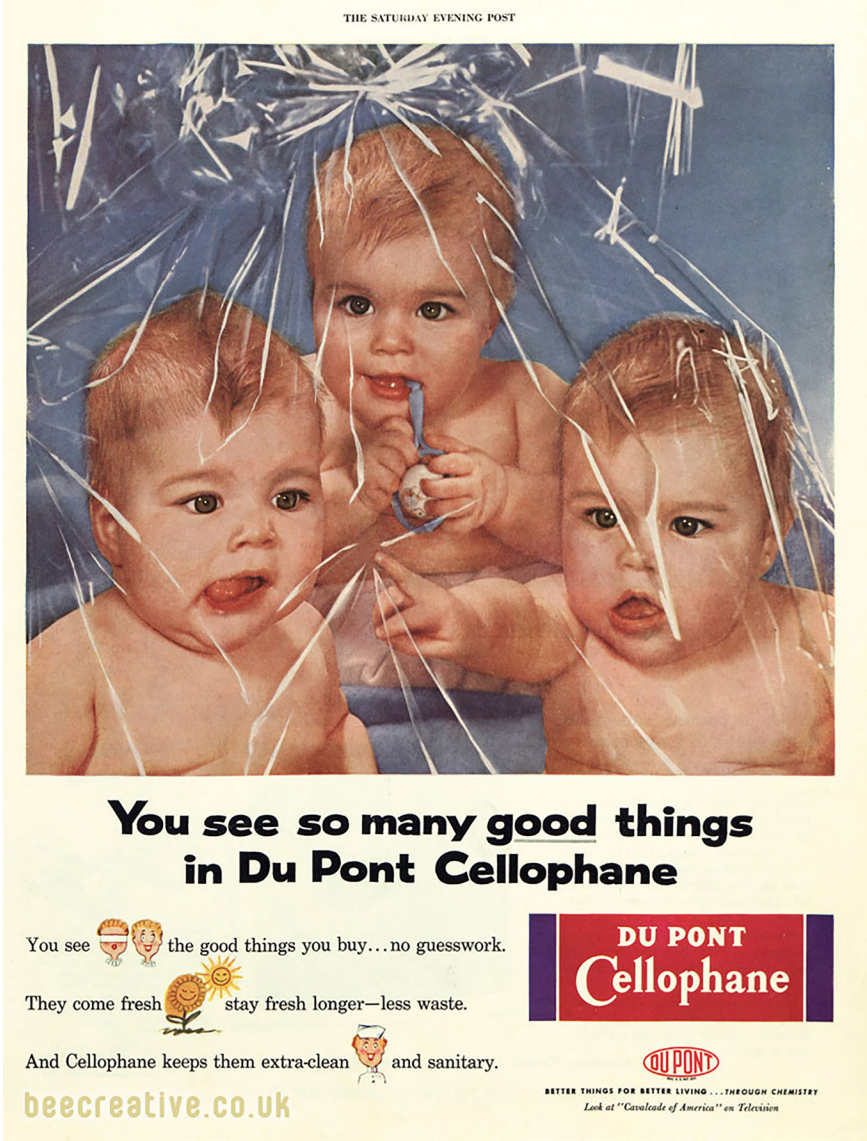

FIGURE 43. DuPont advertisement, *Saturday Evening Post,* ca. 1947. Cellophane is marketed as safe and miraculous, even for children!

(also derived from plastic by-products) appeared on the commercial market in 1955, making possible the thin and definitive edges in many ways definitive of modern art. Genres like op art would not have been possible using longer-to-cure or less controllable oil paints.[28] The new genre tended to a slick, shiny aesthetic,

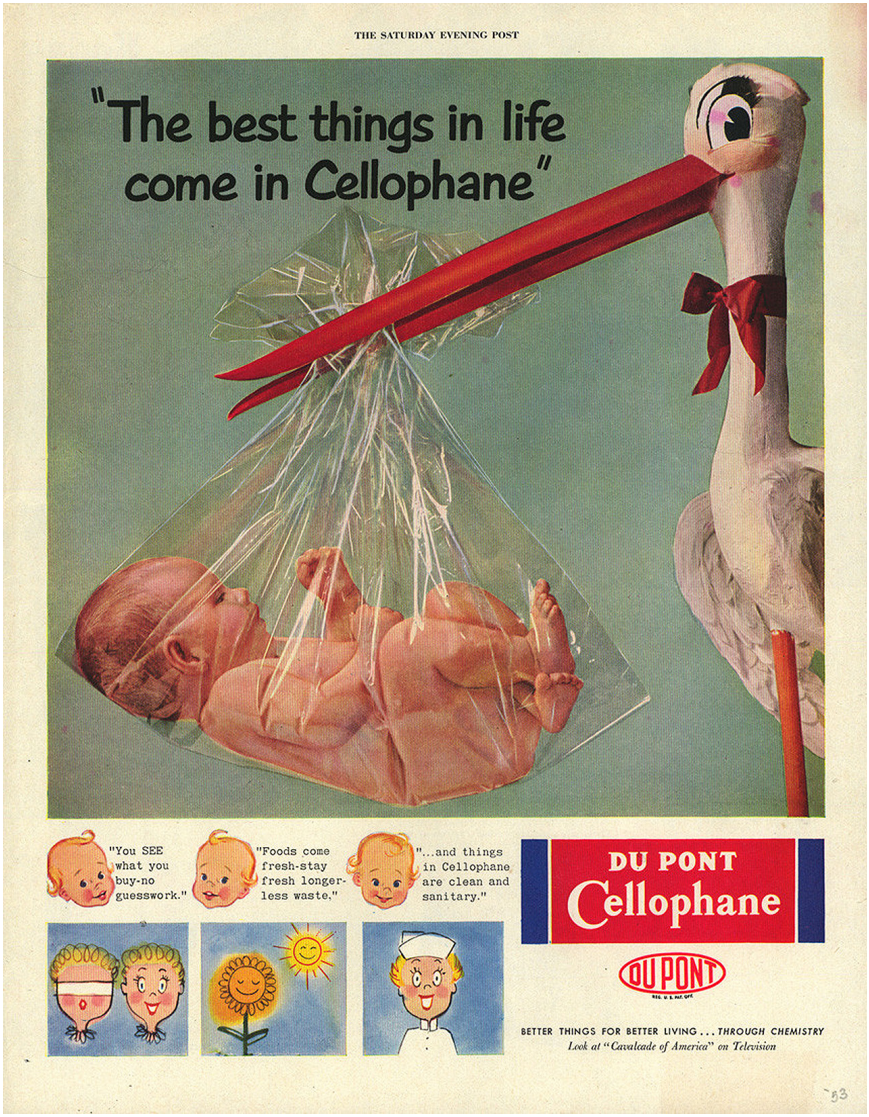

FIGURE 44. DuPont advertisement, *Saturday Evening Post,* ca. 1947.

foreshadowing the cool, clean styles of postwar pop.[29] Meanwhile, Thelma Newman's *Metamorphosis of a Human* (1961) and *Surrogate Mother* (ca. 1961) depicted another side of plastic. Less machinelike in form, her work explored the manifold possibilities for the shape-shifting new medium to simulate amorphous glass and crystal. Other artists turned to plastic to draw on unexplored possibilities

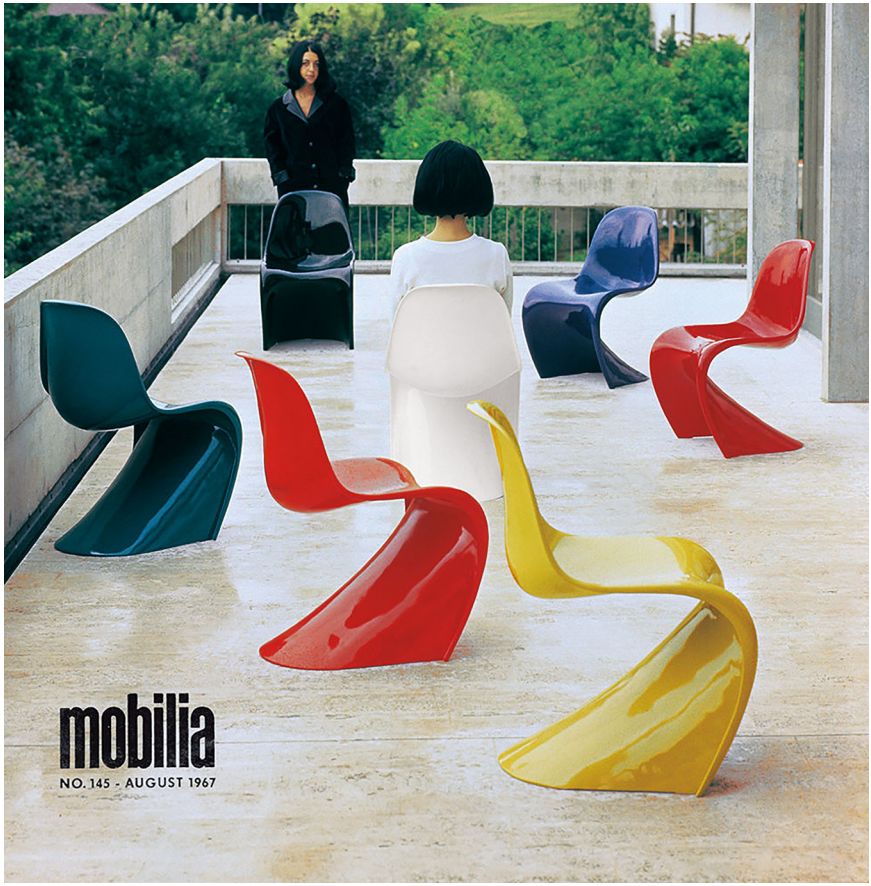

FIGURE 45. Cover of *Mobilia* no. 145 (August 1967). Verner Panton / Louis Schnakenburg, Copenhagen, plastic chairs. The more plastic, the more modern.

with the new repertoire of synthetic multi-polymers, fiberglass, polyester, cellulose, and the use of deep glaze effects accomplished by spraying polyurethane.[30]

Museums of modern art responded with major exhibitions devoted to plastic, highlighting the then fashionable tensions between art and industry. For younger architects, designers, and artists, plastics had become a future-forward medium, popping up in sleek designs for living spaces, inspired in part by the space race. Colored plastic pneumatics carved a space for itself as an aesthetic medium of the future-now. From Buckminster Fuller-esque plastic dome habitats to space suits and helmets, plastic was the midcentury new medium de rigueur.

And yet, as indicated above, not everyone jumped on the celebratory plastic bandwagon. In his *New York Times* review of the 1966 Whitney annual exhibition,

Hilton Kramer simultaneously trashed and lauded the present "condition of sculpture in this country." On the one hand, he found "youth in the saddle [full of] energies and aspirations that are cheerfully and militantly in pursuit of a new modes of sensibility." On the other hand, he was appalled by the "superficial glitter of oversized plastic toys and ersatz geometric monuments passing for serious sculptural statements."[31] A similar ambivalence colors his 1968 review of the Museum of Contemporary Crafts' *Plastic as Plastic* exhibition.[32] Faced with a slew of plastic accessories, architectural components, industrial designs, kitchenware, clothes, jewelry, and sundry items, Kramer questions whether the exhibition was even, "strictly speaking, an art exhibition." Had art become the forearm of commerce? (*Had it ever not been?*) Plastics introduced a "Faustian freedom," Kramer concludes, the "answer to an artist's dream," but only if the artist was willing to pay the high price of "sharing the mechanism of creation with technical processes not always susceptible to the artist's will."[33]

Concerns about plastic grew beyond the art world. When industry began producing "schlocky kinds of things"[34] like pink flamingos for lawns, or DuPont's synthetic leather in the 1960s, plastic lost its cutting edge. Links were made to environmental and health hazards. Once hailed as a miracle development in vinyl blood bags, a 1970s experiment revealed rat livers wrapped in plastic had developed tumors. Other researchers observed that chemicals from the vinyl blood bags (called DEHP plasticizers) leached into the fluids taken into the rat bodies—and so too in the medical patients who had received treatment with the plastic bags.[35] Further investigations revealed people who had not even been medical patients retained trace levels of plasticizers (for example, by using plastic hoses in the garden). It was concluded at the time that these levels were "not harmful." Plastics were "fine for human health," except under "very, very particular and rare circumstances."[36] By the late 1960s, viewing plastic as a utopian substance had become a joke, as illustrated in a punch line in one scene of Mike Nichols's film *The Graduate* (1967). Playing the young Benjamin Braddock, Dustin Hoffman is told by an elder at a cocktail party, "I just want to say one word to you. Just one word . . . Plastic . . . There's a great future in plastics." In the film, this advice is framed as odd, spoken by an "old" person out of touch with culture's growing awareness of plastic's dark side.[37]

Plastic's Retrograde Sublime

Controversy about toxins, environmental damage, disease, and death related to plastic continues, but there is enough evidence to merit concern. The Toxic Substances Control Act (TSCA), passed by the U.S. Congress in 1976 and administered by the U.S. Environmental Protection Agency (EPA), ostensibly regulates the chemical industry, but it treats chemicals as safe until proven dangerous. Moreover, because manufacturers in the United States do not have to volunteer information about chemical development, the EPA is left without much-needed

information.[38] One current problematic plastic is polyethylene terephthalate (PET), used in soda and water bottles. Studies show PET leaches a compound that stimulates and alters estrogenic activity, though specific impacts on health remain inconclusive.[39] Another controversial plastic is bisphenol A (BPA), used in numerous consumer products including medical supplies, safety equipment, audiovisual parts, and food packaging. Meanwhile, levels of plastic production accelerate at alarming rates. Over the past sixty years, the use of plastic has increased almost twentyfold, with an annual production reaching 280 million tons in 2011.[40] In 2008, a million plastic bags were being used every minute, the United States alone went through a hundred billion plastic shopping bags annually.[41] Recently there has been raised awareness of such plastic bags, and in particular, the question of where all this plastic goes.

Garbage Patch Plastic

Many plastics do not biodegrade (polyurethane takes a thousand years to break down) and their toxic debris contaminate the earth's soil and water, harming ocean life among other things. An area of the Pacific Ocean strewn with floating plastic called the Great Garbage Patch is twice the size of Texas. According to Laura Parker writing for *National Geographic* in 2018, "18 billion pounds of plastic waste [continue to] flow into the oceans every year."[42] Ocean life and marine vertebrae, including birds, dolphins, fish, and turtles, often misinterpret colorful plastic debris (lighters, toothbrushes) as food or prey. Prolonged or repeated ingestion can result in obstruction and malfunction of the digestive track and/or entanglement in plastics (called "ghost nests"). Both cause starvation and eventual death. Each year, approximately a billion seabirds and mammals die from eating plastic bags, a horrifying outcome that screams for attention.[43]

Chris Jordan's *Midway: Message from the Gyre* project began in 2009. It focuses on Midway Atoll, a cluster of islands in the Great Garbage Patch more than two thousand miles from the nearest continent. *Midway* documents how the plastic detritus of consumer culture surfaces here inside the stomachs of thousands of dead baby albatrosses. Parents feed their baby chicks lethal quantities of plastic, having mistaken the floating trash for food while foraging.[44] To record these activities, activists like Jordan collect digested plastic parts found on the beach, and in one case, he laid them out on the sand according to color and consumer class. As a photographic document, their variegated, synthetic hues create a bizarre tension between graphic order and environmental breakdown.

Before closing, I cite two last noteworthy zombie media projects. The first of these, according to Jennifer Gabrys, is an anonymously created "humanoid" sculpture representing the average amount of high-tech trash the average British citizen would generate over a lifetime. Built in London in 2005, and intended to "loom seven meters above the River Thames," the structure weighed in at three tons and incorporated 550 appliances and devices, including "refrigerators and computer

FIGURE 46. Chris Jordan, *Midway: Message from the Gyre* (2009). Birds mistake colored plastic for food and feed it to their chicks. Video still. Courtesy of Chris Jordan.

mice, mobile phones and microwave ovens, computer monitors and washing machines."[45] A second example is Canadian artist Kelly Jazvac's *Plastiglomerat*. This piece involved the artist traveling to Kamilo Beach in southern Hawaii with geologist Patricia Corcoran to study a series of new composite formations, consisting of "molten plastic debris and beach sediment, including sand, wood, and rock," and sometimes, "fishing nets, piping, bottle caps, and rubber tires." Her team termed the new species, "plastiglomerates," invoking the way they were born from "molten" plastic or other man-made materials binding with a "basalt flow" from nearby volcanic activity. The "time span" of the plastiglomerates, they argue, mark the "time span" of "human interaction with Earth's biophysical system."[46] Works by Zoe Beloff, Paul DeMarinis, Masaki Fujihata, Benjamin Gaulon, Garnet Hertz, Perry Hoberman, Aleksander Kolkowski, David Link, Bernie Lubell, Julien Maire, Catherine Russell, and Gebhard Sengmüller likewise draw on zombie media and media archaeology methods. By reviving obsolete or marginalized forms, these artists explore multiple nonlinear temporalities. The aesthetic of failure is rendered on the surface of their work, as a crucial reminder of the past we continue to create in the present.

. . .

As glitch, noise, error, and trash continue to accumulate in culture and society, so too do creative appropriation practices in relation to them. The chapters of this book have discussed these strategies in a number of twentieth- and twenty-first-century contexts. In media studies, this has resulted in the growth of "media archaeology," defined in the Introduction. As media archaeology grows in intellectual, artistic, and academic breadth, it does so alongside industrial design trends towards more disposable, miniaturized "black boxes," which, of course, do not appear on the shelf as literal black boxes but as translucent, multicolored plastic ones. The work of media archaeology and critical aesthetic theory is to shed light on the darker sides of these multicolored forms, whether in the environment or as glitch and noise, disturbing myths of transparency undergirding computational culture.

A future generation of artists can still take heed from László Moholy-Nagy, who argued three-quarters of a century ago that artists "working with plastics inevitably have to take up scientific studies or else wait decades until knowledge about plastics becomes commonplace."[47] The same goes for silicon, precious metals, and the e-waste contaminating rural areas in places many privileged, First World consumers will never see or travel to. We no longer have to wait decades though, because, as this postscript and the last two chapters have shown, the baleful effects of our high-tech trash are already all too evident.

In closing, I briefly turn to Alexander Galloway's 2013 essay "The Poverty of Philosophy: Realism and Post-Fordism," in which he invokes Catherine Malabou's inquiry into the current stakes of human consciousness, given capitalism's prevailing expansions. His proposal, by way of Malabou, is *plasticity:* reworking the problematic conflation of contemporary "ontological systems and the structure of the most highly evolved technologies of post-Fordist capitalism."[48] Or, in Malabou's terms, finding new "flexible" ways to separate received accounts of life and being from those prefabricated and "molded" by the contemporary "spirit of capitalism." We must form ourselves anew, she argues, "be able to fold oneself, to take the fold, not to give it."[49] Granted Malabou and Galloway do not have actual consumer plastic in mind, their metaphors nonetheless invoke the malleable essence of the substance. In the context of this book, their proposals for existential plasticity could, in turn, allow for a future human-machine ontology that also defies sublimation to ideologies of transparency and efficiency so dear to current intellectual fashions in Western culture and the high-tech industries. May the brilliant colors of dead plastic and defunct pixels become a life lesson.