For over two decades, Kinko's capitalized on our collective desire to seize the possibilities of the copy machine—a machine that would prove as appealing and essential to executives and bureaucrats as it would to anarchists and artists—and it did so all day and all night long. Named after company founder Paul Orfalea's kinky hair, Kinko's was established in 1970 at the back of a burger joint just off the University of California campus in Santa Barbara.[1] Despite the seemingly poor choice in company name and location, Orfalea was on to something—the growing demand for public access to copy machines. In the early days, Kinko's was a campus-based enterprise guided by a legendary startup philosophy. When the cramped premises became overcrowded, Orfalea would wheel his Xerox machine out onto the street. When he needed to increase his cash flow, he hawked office supplies door to door in college dormitories.[2] But Orfalea recognized that the demand for copying was much greater than the reach of the UC campus in Santa Barbara. Without funds to franchise, he formed partnerships with other young entrepreneurs, and soon the hippies and surfers he recruited were scouting potential Kinko's locations up and down the west coast, reportedly sleeping in Volkswagen buses along the way.[3] By the mid 1990s, Orfalea's strategic speculating at a Santa Barbara burger joint and haphazard partnerships with his enterprising peers had mushroomed into over 700 Kinko's outlets across the United States with an estimated billion dollars a year in sales.

In the 1990s, at least officially, the company claimed to be in the business of transforming the concept of office itself. One advertising campaign maintained that Kinko's was turning "office" from a noun into a verb: "More and more the office defines a state of activity rather than a place. Instead of adapting our lives to it, the office is becoming what we want it to be and what we need it to be."[4] But anyone who spent time hanging out at a Kinko's in its heyday (before most of us could easily scan, copy, fax, or email documents from home) knows that only a small percentage of

the clientele were the type of people who frequent offices. At its height of popularity, Kinko's outlets in urban centers across North America were catchbasins for writers, artists, anarchists, punks, insomniacs, graduate students, DIY bookmakers, zinesters, obsessive-compulsive hobbyists, scam artists, people living on the street, and people just living on the edge. Whether you were promoting a new band or publishing a pamphlet on DIY gynecology or faking up ID for an underage friend, Kinko's was the place to be. It is just such a scene that *New York Times* reporter Julia Szabo sought to capture in a 1994 article that ran under the headline "Copy Shop Stitches the Urban Crazy Quilt." Focusing on a 24-hour Kinko's located on Madison Avenue at 34th Street, she observed, "While the upholstery may be strictly gray, there's nothing uniform about the clientele. Spotted over a week or so were these typical patrons: A Tomkins Square Park anarchist, who is a squatter from Avenue C, designing a poster. Two staffers from *Mirabella* magazine's art department having a future cover sized. A pierced club kid designing invitations to an event at the Pyramid. Three Yeshiva University students copying class notes." Later in the same article, Szabo cites conceptual artist Kerri Scharlin, at the time a rising New York art star. Scharlin confesses that she frequently collects fliers out of the Kinko's dumpster "to use in her work," but also emphasizes that Kinko's is about more than copies: "When you stand in line to pay and you look over your shoulder to see what the next guy was doing, 9 out of 10 times it's interesting."[5] Despite its corporate branding and uniformed employees, in the 1990s the eccentricity of Kinko's was not limited to the clientele. In keeping with its roots, the company was still profit-sharing.[6] At its five Manhattan locations, it was also still offering unique and homey touches, from free coffee to the company of house cats (Nick, with a mane the color of toner, resided at the midtown location).[7] So Kinko's was doing more than turning "office" into a verb—it was providing the space and equipment needed to turn an administrative task (copying) into

art and anarchy and a social practice. You could go to Kinko's to copy your resume or make a print run of your zine or just hang out with other people into books, art, and politics, even if it was 3:00 a.m. Hence Szabo's suggestion that Kinko's is "the forum in Marshall McLuhan's global village."[8] There is little doubt that in the two decades or so preceding the arrival of the web, copy centers like Kinko's played an integral role in our experience of public culture and the production of nonlocalized networks and communities.

The historical period with which this book is concerned more or less parallels the rise and fall of Orfalea's copy center enterprise.[9] In short, it is concerned with a roughly three-decade-long period from the early 1970s, when xerographic copying became increasingly accessible to the public, to the late 1990s, when xerographic copy machines started to be displaced by a range of digital platforms—many designed to carry out analogous functions—and copy machines themselves were redesigned as digital machines. It is important to bear in mind, however, that long before the first Kinko's outlet opened and xerography became increasingly accessible outside the workplace, copy machines were already restructuring our everyday lives on numerous levels. After all, while the term "copy machine" is often assumed to refer to xerographic copiers, prior to the introduction of xerography there were a number of attempts to develop copy machines using different methods.

Although office-based printing devices were already common in the early nineteenth century—typically taking the form of letter copying presses and roller copying presses—the copy machine obsession did not fully take hold until the late nineteenth century. Between 1870 and 1910, a wide range of copy machines were introduced to the market both in Europe and North America. Among other machines over this four-decade period, patents were awarded for the Papyrograph (1874), Electric Pen (1875), Cyclostyle (1881), Mimeograph (1889), Rapid Duplicator (1887), Recitgraph (1906), Photostat (1907), Ditto Machine (1910), and Spirit

Duplicator (1923). Relying on either stencil-based or photographic methods, all of these copy machines required a master document, involved some type of messy, toxic, and time-consuming chemical process, and could only produce a limited number of copies from a single master. Nevertheless, an 1877 article in the *Daily Alta California* reported that the Papyrograph, first patented in Europe by Eugenio de Zuccato and later patented in the United States, "offers to business a cheap and expeditious method of producing certain classes of circulars."[10] While papyrography's pitch to consumers was similar to the pitch Haloid would adopt to market their new xerographic method some seventy years later, the method was remarkably different. In the case of papyrography, "Prepared paper is eaten through where touched with a special chemical ink, and is thus converted into a manuscript stencil plate, so that when laid upon white paper and pressed under a cushion containing ink, an exact copy of the writing on the prepared paper is taken."[11] In other words, one must produce a stencil before one begins the process of creating copies. For decades, copy machines would rely on iterations of the same onerous process. Edison's Electric Pen also relied on a stencil-based method. The Electric Pen, also one of the first consumer products to adopt an electric motor, was designed to drive a small needle up and down a pen shaft as one wrote. The user was then left with a stencil, which in turn could be placed in a press where ink was forced through the stencil's holes, leaving the writer with a copy of the original document.[12]

While enthusiasm for Edison's Electric Pen was short-lived, the concept would soon be retooled both as an electric tattooing needle and, more significantly, as the technology underpinning the Mimeograph. After purchasing Edison's patent, A. B. Dick refined the process by developing a machine that used Edison's stencil method in conjunction with a machine capable of turning out a higher volume of copies at a greater rate. In the twentieth century, stencil-based methods of duplication continued to dominate the

copy machine market, even following the introduction of xerographic copiers. For example, the Ditto Machine or Spirit Duplicator—a name inspired by the "spirits" or solvents used to transfer ink from the machine's master copy to paper—remained popular in schools until the 1970s. Indeed, anyone who started school before 1980 will likely still recall their teachers' purple fingers—an unavoidable hazard of turning out copies on a ditto machine. But these machines did more than stain fingers. The isopropanol and methanol contained in the machine's solvents are now considered highly toxic substances and associated with various health conditions.[13] Photo-based methods of document reproduction, such as Kodak's Photostat method and Haloid's Rectigraph method, which the company manufactured prior to and simultaneously with the release of its first xerographic copy machines, also relied on messy and toxic solutions. Unlike mimeography and related processes, however, which were relatively inexpensive and thus persisted (e.g., in schools), photo-based methods of document reproduction were quickly replaced by xerography, which offered a more cost-effective way to reproduce documents without the use of messy chemical solutions.

Xerographic copy machines were not the only copy machines that had a widespread impact on twentieth-century life. In fact, mimeography, which deserves its own book-length study, was adopted in ways that overlap those of xerography. Beyond its popularity in offices, schools, and other public institutions, mimeography was used to produce everything from science fiction fanzines to poetry chapbooks. Unlike xerography, however, mimeography remained a somewhat onerous process and one with notable limitations. With xerography, the difference between making a print run of 20 and 5,000 is negligible. As long as you don't run out of paper or toner, the process is the same. With mimeography, stencils could only be used to produce a limited number of copies, making larger print runs difficult. In addition, since xerography eliminated

the need for a master copy, the types of materials that could be produced on xerographic copy machines was also ultimately much more diverse and included a greater range of materials that might otherwise have been subject to censorship. In short, despite the two reproduction methods' obvious affinities, mimeography and xerography are marked by distinctly different processes, temporalities, and possibilities. Throughout this book, unless otherwise indicated, "copy machines" refer to xerographic copy machines.

In what follows, I offer a brief history of xerographic copy machines and some of their eclectic predecessors. I am less concerned with a linear narrative of the copy machine's evolution than with how it impacted knowledge and cultural production, eventually opening new possibilities for the dissemination of art and writing while simultaneously laying the groundwork for the development of new communities of practice and resistance. Neither confined by a single temporal, disciplinary, or methodological framework nor committed to investigating a specific set of documents or artifacts, in what follows I mine eclectic textual, visual, and material archives with the aim of locating the copy machine in time and space and in competing histories of ideas, art, and activism.

THE INVENTION OF XEROGRAPHY

As Elizabeth Eisenstein observes in the introduction to *The Printing Revolution in Early Modern Europe*, although historians are "indebted to Gutenberg's invention [since] print enters their work from start to finish," they have paid little attention to histories of print and print culture in their research.[14] While much has changed since the publication of Eisenstein's study on the history of movable type, which laid the foundations for important work in the history of books and publishing, a similar observation could be made of a more recent generation of scholars' relationship to

xerography. Although most researchers have spent a substantial amount of time using and fixing copy machines at some point in their career, few have considered the machine's epistemological, aesthetic, political, and social impacts in their research. Indeed, beyond some early technical manuals on xerography, a few more recent studies on the copy machine's eccentric inventor Chester Carlson and the Haloid Company and Xerox Corporation, and some fleeting references to copy machines in cultural studies on subjects ranging from copying to doubles, few researchers have taken up the subject of the copy machine at all.[15] Even when xerography appears to be the focus (e.g., Jean Baudrillard's obscure pamphlet *Xerography and Infinity*), the copy machine frequently remains absent.[16] Whether one looks to the history of technology, of media, or of publishing, copy machines, which have proven integral to the reproduction and circulation of scholarship for more than half a century, receive little or no attention.

The neglect may be akin to the earlier neglect of print—a case of simply failing to notice what is beneath our noses. But the comparison ignores the differences between these two modes of reproduction. While few researchers have ever engaged in the meticulous work of setting type, most by necessity have spent more time than they care to remember using copy machines. If print culture, as McLuhan suggests, had the effect of numbing our senses—of relegating "sensual complexity to the background"[17]—xerography woke our senses back up. Making a photocopy, after all, can be a profoundly physical act. It can force you to get down on your knees or to contort your body into awkward positions (to retrieve jammed pieces of paper) and to do all this in public places ranging from mail rooms to libraries to copy centers. If you're not careful, you can throw out your back or burn your hands making a photocopy. Before digital copiers became common, such incidents might even have left you temporarily marked in streaks of toner. If that's not enough, reading a photocopied document can prove just as

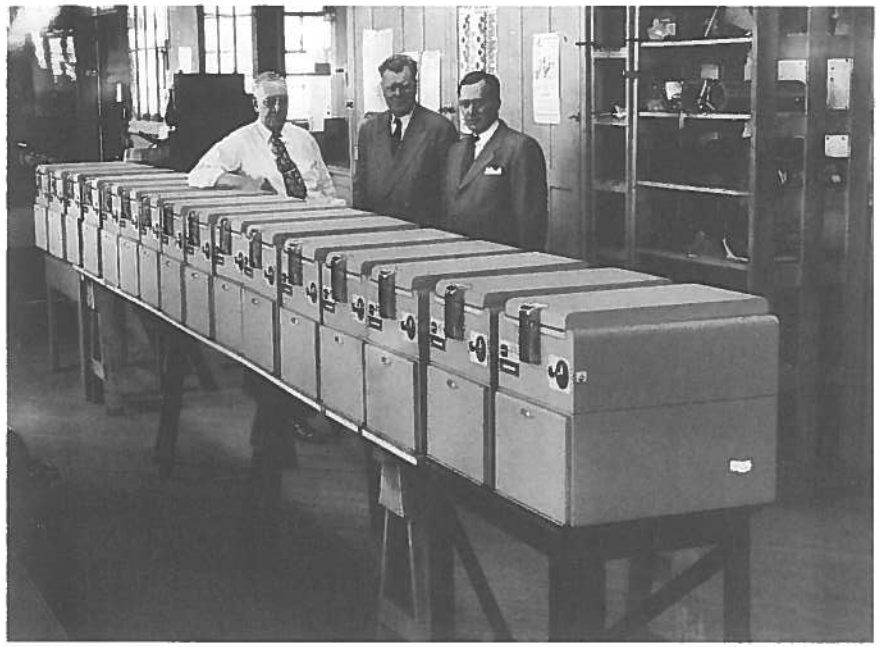

FIGURE I.1 First commercial Xerox copier production at Haloid-Rectigraph, March 20, 1950 (from Chester Carlson's scrapbook collection). Image reproduced with permission from New York Public Library Archives and Manuscripts Division.

demanding. Copies of copies of copies offer none of the ease of reading associated with traditional printing methods. Over time, copy machines pixilate and warp type, forcing the eye out of its print-culture-induced trance.[18] In McLuhan's lexicon, even if photocopies begin as a "hot medium," the process of copying copies cools them down. In short, the pixilation and distortion of a text or image as it is copied and recopied requires readers to become increasingly active in the reading process.[19] Only rarely are we unaware of the fact that we are looking at a photocopied text or image. Photocopies are marked by the machines that reproduce them. In essence, we recognize photocopies as documents and, more specifically, as documents produced by copy machines.[20]

The picture of the copy machine offered here is one of a great mechanical beast—a necessary companion and one to wrestle with. The copy machine as menace, both demonized and personified, is a recurring trope in office-based humor. A 2007 television commercial for Double A Paper featured a copy machine, transformed into a robot, descending from an office building to wreak havoc on pedestrians. The robot is eventually tamed by a female office worker who feeds the enraged machine a stack of Double A Paper—a move that transforms the "King Kong robot" back into a normal copy machine. In a 2010 sequel, another office worker unleashes her expert karate moves on a jammed copy machine, which again transforms into a giant robot and takes revenge in the form of a violent attack on the terrified worker. In the office-related comic strip *Dilbert*, copy machines have been depicted as harboring everything from repairperson-eating colonies of "paper trolls" to poltergeists intent on possessing office workers. Yet despite the popular depiction of copy machines as formidable beasts, the history of the copy machine is populated by a cast of much more innocuous characters. To be precise, it is a history of feathers, lint, dust, and powder.

Much attention is paid to such minutiae in the 1965 publication *Xerography and Related Processes*, which opens with a short

FIGURE I.2 A still from Double A Paper's popular copy-machine-robot advertisement campaign. Image reproduced with permission from Double A Paper (www.DoubleApaper.com).

essay by Chester Carlson. Carlson explains that although xerography has only become widespread since the 1950s, its history stretches back to antiquity. Reading Carlson's essay, one quickly realizes that this lone inventor was not only driven by a desire to find an efficient way to reproduce documents on ordinary paper but also by a desire to copy and perfect earlier inventors' experiments in electrostatic recording. As Carlson remarks, "*Thales of Miletus, circa* 600 B.C., observed that amber which had been rubbed with silk was able to attract small feathers, bits of straw, and lint." Likewise, he observes that Plato "mentions 'the wonderful attracting power of the amber and the Heraclean stone'."[21] His debt, however, is to the pioneers in his field, including William Gilbert, Queen Elizabeth I's physician, who invented the first electrostatic sensing device, the "Versorium," and the late eighteenth-century physicist Georg Christoph Lichtenberg who invented the first electrostatic recording process.[22] In contrast to xerography, however, these early discoveries were only capable of producing the most ephemeral of images. Exposed to a gust of wind, the so-called "Lichtenberg figures," starlike patterns made of charged particles of dust and powder, vanished.[23] Nineteenth-century inventor P. T. Riess's aptly named "breath figures," produced by applying electric charges to coins on a glass plate, removing the coins and then breathing on the glass, were just as fleeting.[24]

Although neither Lichtenberg's celestial figures nor Riess's breath figures held much potential to rival nineteenth- and twentieth-century forms of reproduction, such as photography, building on these experiments Carlson recognized the possibility in principle of perfecting a method of reproduction based on electrostatics. Drawing on personal funds and largely working out of the kitchen of his apartment in Queens, New York, he set out to perfect a method of dry printing that would avoid both the mess and cumbersome equipment associated with photographic-based methods of reproduction and the invariable damage to original

documents that occurred with "wet methods." It was only through much trial and error and eventually with the vital assistance of physicist Otto Kornei, a recently arrived Austrian immigrant, that Carlson produced what is considered to be the first xerographic copy in October 1938. The blurry, black and white reproduction, which appropriately identifies the time and place of Carlson's invention ("10.-22.-38 ASTORIA"), was produced using a method that extended earlier experiments in electromagnetic recording. As Carlson explains, on this historic occasion his assistant printed the time and place in India ink on a glass microscope slide, darkened their makeshift laboratory, then rubbed a sulfur surface with a handkerchief to apply an electrostatic charge, laid the slide on the sulfur surface, and finally placed the combined glass and charged surface under an incandescent lamp for a few seconds. After removing the slide, Carlson and Kornei sprinkled lycopodium powder on the sulfur surface and in Carlson's own words, "By gently blowing on the surface a near-perfect duplicate in powder of the notation which had been printed on the glass slide" appeared.[25]

Between Carlson's initial discovery of electrophotography, a process that would only later be renamed xerography (a coinage from the Greek words *xeros*—dry—and *graphein*—to write), and the launch of the first Xerox copy machines in the late 1940s, his process would undergo a series of improvements. By the time the Haloid Company, which would eventually rename itself Xerox Corporation, started to pitch its "revolutionary, dry, direct positive xerography process" to thrifty executives, copy machine operators were no longer whipping handkerchiefs out of their pockets or blowing powder across charged plates. The process, at least theoretically, had been simplified to enable people to "photocopy anything" with ease, speed, and at a fraction of the cost of existing reproduction methods. Indeed, the company went to great lengths to emphasize both the simplicity and ingenuity of this new method. A press release issued by the Haloid Company on

October 22, 1948, stresses that with xerography, "Chemical solutions, fumes, negatives and sensitized papers are eliminated."[26] The same list is repeated in Haloid's early advertisements for their new dry method: "No negatives, no chemical solutions, no sensitized papers are required."[27]

In the late 1940s and early 1950s, the potential applications for xerography appeared to stretch across media and sectors. A Haloid Company brochure from 1949 lists the following as among the process's "present and future applications":

1. Copying of letters and other typewritten or handwritten materials, documents, plans, charts, line drawings, etc. on ordinary papers for offices, factories, libraries, through a camera or by contact printing.
2. Making master plates for the graphic arts—lithography—photo-engraving—printing.
3. Printing or duplicating with powder instead of ink.
4. Transferring of designs, lettering, printing, trade marks, etc. to ceramics, porcelain, glassware, metal, wood, etc.
5. Printing on cloth and fabrics.
6. Semi-micro photography.
7. Recording dial readings, scale weights, electrical meters, etc.
8. Making templates.
9. Recording X-rays, spectrographs—other scientific and technical uses.
10. Direct continuous tone photography.[28]

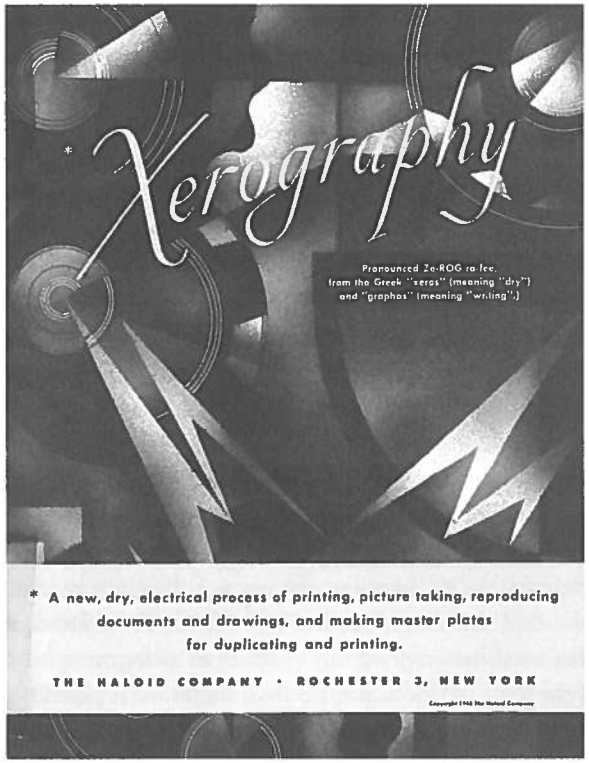

FIGURE 1.3 Cover of first Haloid literature on xerography, dated November 1949. Image reproduced with permission from New York Public Library Archives and Manuscripts Division.

In the early years of xerography, the process was pitched to potential consumers not only as a process that would reduce or eliminate the mess and time associated with traditional printing methods and facilitate printing on a wide range of surfaces, but also as a process that promised a compact and potentially portable means of reproducing and circulating documents. Given their reputation as clunky rather than compact, more likely to be associated with the production of waste than the compression of data, this may come as a surprise. The machine's early history, however, suggests that it was invested in the compression, portability, speed, and real-time transmission of data that would revolutionize communications in the late twentieth century.

In the 1940s, copy machines were comparatively compact, often occupying less space than the copy machines that would become fixtures in offices, schools, libraries, and copy shops later in the century. That the copy machine's compactness and potential portability were considered early selling points likely reflects the fact that in the 1940s and 1950s, Haloid did not necessarily see established printing methods as xerography's only or even primary competition. Rather than focus on replacing printing methods, the company appeared intent on revolutionizing photography itself. In an October 22, 1948, press release, a supervisor of graphic arts at Haloid's Battelle Memorial Institute offered the following prediction: "When fully developed, the entire process can be incorporated into a portable xerocamera. With such a camera, the picture taker can snap the shutter and in a few seconds pull out a finished xeroprint. If he doesn't like the picture, he can discard it and try again, using the same xeroplate."[29] This projection presumably reflects the fact that the early development of the copy machine ran parallel to the development of instant cameras. Instant film was introduced by Edward Land in 1947, and his Land Camera, commonly acknowledged to be the first instant camera, appeared

the following year.[30] Here it is also important to bear in mind that before Haloid got into the business of copy machines, the Haloid Photographic Company was a major supplier of photographic paper and equipment.

Besides being a potential rival to existing photography methods, xerography was also considered integral to enhancing existing methods of data compression. From the 1940s onward, Haloid was engaged in developing xerographic applications that effectively combined Carlson's dry method of printing with existing methods of data compression, such as microfilm. A 1962 article in *Graphic Arts Progress* notes that "Xerography has been credited with giving new life to microfilm" by facilitating the rapid and inexpensive reproduction of documents stored on microfilm.[31] In essence, xerography was a way to "download" the compressed data already available on microfilm and related formats—an application that would transform microfilm from a form of archival storage to a technology with increased potential to be used in the circulation of information. Finally and perhaps most notably, xerography would eventually be used to create the first practical means of transmitting documents instantly (or nearly instantly) across spatial boundaries. With the introduction of the Xerox Long Distance Xerography System (LDX) in 1964, xerography—by then already recognized as a compressor of time in document reproduction—showed its potential to compress space as well by enabling documents to be transmitted across long distances in a matter of minutes. A 1966 article in the *Saturday Review* predicted that xerographic technologies would play a pivotal role in achieving "a primary goal of information storage and retrieval—to make all printed information instantly available in the home, laboratory or office, direct from a central storage place." As the article explains, "Xerox has made it possible to produce facsimile copies of books quickly and easily. Its possible future linkage to television

for copying pictures off the screen already is being discussed by leaders in electronics—and these pictures may well be the pages of books (or magazines and newspapers) carried from central libraries on microfilm."[32]

As suggested above, xerography in the mid twentieth century carried the promise of all the advancements that would transform communication technologies in the late twentieth century. It promised consumers the opportunity to reproduce texts and images quickly and inexpensively in a portable format, to make enlarged copies of data stored in compressed formats, and eventually to transmit texts and images across vast distances in a matter of minutes. Beyond revolutionizing printing by enabling one to photocopy anything on a wide range of surfaces in myriad contexts, then, xerography anticipated the mobile, high-speed, real-time forms of communication that would be taken for granted by the end of the century. As Lisa Gitelman emphasizes, for this reason xerography, unlike letterpress or the near-print technologies of the 1930s, remains "entangled with digital processes," a condition that makes it both ubiquitous and difficult to grapple with.[33]

Of course, early copy machines were ultimately not much different from the machines we would come to rely on and despise in the late twentieth century. They were prone to breakdowns; Xerox sales staff often brought several machines to trade shows, banking on the fact that if they had three machines on hand, at least one would still be working during their demonstrations.[34] More serious were the small fires that frequently erupted as a result of paper jams, forcing demonstrators to arm themselves with fire extinguishers.[35] Xerography, in a sense, held all the promise of future digital technologies while remaining mired in the dilemmas and dangers associated with industrial-era machines.

Copy machines nevertheless flourished. Throughout the 1950s and 1960s, Haloid Company's and eventually Xerox Corporation's

stock rose as competitors sought to duplicate the dry-writing process the company had had the foresight to invest in when others were still turning Carlson away.[36] Curiously, however, Haloid never sought to own the key word for the process but simply the applications they developed using the process. Early on, the company made a conscious decision to let "xerography" remain in the public domain. Despite the common perception that "xerography" is a proprietary eponym, this more general term was never trademarked. As Haloid's vice-president in charge of sales explained in a 1952 article:

> Three years ago we took over laboratory development of a new process we believe will revolutionize present office methods of producing multiple copies of original documents. Simultaneously, we coined a new word to describe the promising process: "xerography." Today that word, "xerography," is listed in a standard English dictionary, and the patented process identified by the brand name XeroX, is now used in 25% of the nation's top businesses. One of our first marketing decisions was to resist the natural impulse to copyright the term xerography. We threw it into the public domain—not without a wistful sigh or two—and coined another one, XeroX, to describe our own adaptation of the process. This decision has repaid us many times over in the form of publicity.[37]

In essence, without necessarily endorsing what now might be understood as an open-source approach to technological development, in the late 1940s Haloid's marketing department recognized the potential benefits of supporting rather than prohibiting xerography's widest possible use and circulation. In the process, the company gained both free publicity and the benefit of being able to easily track xerography's surprising adaptations and innovations by users, which the company could in turn exploit.

Notwithstanding xerography's recognized potential to be used across sectors in surprising ways and Xerox's innovative approach to marketing, like Kinko's—the company that would eventually play a major role in expanding public access to copy machines—there was a notable disconnect between the Xerox machine's advertised and actual uses. Xerox ultimately sought to sell its copy machines as machines designed to save companies time and money, but this was by no means why copy machines achieved the cultural status they did in the late twentieth century.

There is at least some reason to believe that Carlson, if not Haloid, recognized the potential of xerography's other—even otherworldly—applications. By the 1960s, Carlson had long finished toiling away in his makeshift kitchen laboratory and had started to dream up more esoteric applications for xerography. Despite his training in both law and science, xerography's inventor was surprisingly open to what later observers might categorize as "new age" phenomena. So as profits rolled in from his patent, he turned his attention to funding various philanthropic causes, including an extrasensory perception laboratory at Duke University and various programs run by the American Society for Psychical Research (a pseudo-scientific organization established in the late nineteenth century to investigate topics ranging from telepathy to clairvoyance to psychokinesis).[38] Carlson was doing more than supporting other researchers' investigations of the paranormal. As if intent on applying his knowledge of electrostatic reproduction beyond the realm of printing, in the early 1960s he started to contemplate an "electrodynamic theory of life." Although biographer David Owen downplays Carlson's interests in the paranormal (notably attributing them to his wife), Hillel Schwartz observes that in the years leading up to his death, he "seemed to be making the xerographic principles of light, conductivity, charge, and imprint into a hypothesis of a higher-order life."[39]

More broadly, despite its banal origins as a time- and money-saving office technology, the history of the copy machine has been deeply shaped by its users' imaginations. As David A. Ensminger speculates, Carlson—who was open not only to the possibility of psychic phenomena but also to some of the most radical causes of his era, including desegregation—may have anticipated and even welcomed what eventually became of his machine. That Carlson supported schools, integrated housing, relief agencies, pacifist causes, and refused to own a car is cited as evidence by Ensminger that "the democratic potential of the Xerox machine, or xerography itself, can thus be seen as an extension of the creator's desire to see a more diverse, integrated, and participatory American culture."[40] While it is impossible to know for certain whether Carlson anticipated, let alone would have welcomed, his machine being deployed by future generations as a tool for creation, subversion, and resistance, copy machines—as discussed throughout this book—have been deployed both in and against the grain of their original intentions since their inception.

ADJUSTED MARGINS

At the center of this book is a single and somewhat audacious argument: that copy machines had a profound impact on how the margins were constructed and experienced in the late twentieth century. To be clear, however, it is not without reservation that I evoke the concept of the margin—a concept as useful as it is beholden to the theoretical and political investments of another era.

References to the margin (and margins) dominated both postmodern theorizing and identitarian politics in the final quarter of the twentieth century. In the 1980s and early 1990s, the margin was evoked in the name of undergrounds and diasporas, subcultures and subalterns. While it was sometimes used to refer to

actual places (e.g., refugee claimant hotels, suburban mosques, and cruising spots for gay men), the margin was also synonymous with more abstract forms of alterity and displacement. Along the way, the margin became bloated with contradictory and conflicting meanings and investments. Postmodernists declared that the margin no longer held as the center had already collapsed. Meanwhile, proponents of identity politics continued to shore up the margin as a strategic vantage point from which to fire critiques at the "center," a location that allegedly was home to those theorists announcing the margin's dissolution. The margin paradoxically became synonymous with infinite potentiality and absolute lack. Jacques Derrida emphasized the signifying effects of the margin—always already an "inexhaustible reserve."[41] For many feminist and postcolonial theorists, however, the margin was understood to be part of a whole yet outside the locus of power—in other words, anything but an inexhaustible reserve.[42] For all these reasons, calling up the margin remains a somewhat perilous endeavor. Over the course of the 1980s and 1990s, the margin accumulated an excessive amount of theoretical and political baggage from which it has not yet recovered. Simply put, the margin is a trope that suffers from oversignification. Nevertheless, since the beginning of this project, the title *Adjusted Margin* has stuck. As anyone who has used a copy machine knows, adjusting the margin is one of the many features modern copy machines offer. Typically, one adjusts the margin to avoid losing text along the edges of a document. However, that is not the only connotation at work in the title of this book. The margin is also evoked here as an abstract concept (e.g., a potentiality), a state (e.g., being outside the center), and in reference to actual geographies (e.g., marginal spaces and communities within and beyond the city's limits). "Adjusted margin" points, then, to a series of repeated gestures—an application we use on copy machines—and to a way of thinking, a political stance, and sometimes also to spaces we traverse in our everyday life.

Chapter 1 examines the rapid migration of copy machines from office technology to creative medium. Despite the skepticism expressed by some writers and publishers at the time, by the 1960s there was considerable optimism about the far-reaching impact of xerography, not simply as a means to reproduce documents but also as a means to create entirely new types of images and texts. Borrowing the concept of "generative systems" from artist and educator Sonia Landy Sheridan, who was optimistic enough to start a new graduate program at the School of the Art Institute of Chicago that centered largely on the use and modification of copy machines and other "generative systems," this chapter focuses on xerography's early impact on cultural production.

Chapter 2 begins with a consideration of xerography's complex and contradictory place in both judicial and national imaginaries. The copy shop has historically been a space where we have been free to violate the law, rarely if ever facing prosecution for our crimes—a place where that law is regularly articulated, even posted on the wall, but rarely enacted. For this very reason, however, the copy shop and more generally xerographic technologies have also at times been constructed as potential threats to public safety and even to state security (e.g., as tools that might be used to counterfeit travel documents). With specific reference to a post-9/11 raid on a Toronto copy shop during a Canadian-initiated antiterrorist operation, this chapter considers how copy shops and xerographic technologies have at times been adopted as targets during political and racialized panics, despite the fact that they have long been used to support administrative and bureaucratic mandates that heighten the surveillance and control of populations. These judicial-political contradictions, I argue, bring xerography's real and imagined possibilities (including its imagined threats) into relief while highlighting the extent to which xerography both consolidated and weakened the nationalisms that arose with earlier printing technologies.

Moving from the urban copy shop into the street, where photocopied materials are salient markers of the urban landscape, chapter 3 examines the role xerography played in the mediation of publics and counterpublics. Focusing specifically on New York's downtown art scene and punk scenes in the 1970s to 1990s, this chapter begins by exploring how xerography changed both what cities looked like in the late twentieth century and how we experienced them day to day. This chapter considers how the renewed interest in cities, and specifically in downtowns in the early 1990s, not only curtailed street art, such as graffiti, but in some cities across North America led to severe restrictions or even bans being placed on postering. Consideration is given both to the ideologies and the assumptions underpinning attempts to outlaw public postering and the often absurd reasons for targeting photocopied posters in particular. In the final section of this chapter, I examine how xerography, especially through forms such as mail art and zines, resulted in a gradual but by no means insignificant deterritorialization of urban spaces in the decade or so preceding the arrival of the web. Xerography, I argue, not only changed our experience of publics, counterpublics, and cities but also served as a precursor to contemporary social media platforms.

In chapter 4, I examine the copy machine's role in two interconnected political movements that emerged in the 1980s: AIDS activism and queer rights. Drawing on archival research as well as interviews with activists and artists engaged in ACT UP and queer artist and activist collectives, this chapter explores how a generation of artists and activists, informed both by the tactics of second-wave feminism and the aesthetics of punk, deployed the copy machine as an essential tool in local and global political battles while simultaneously elevating the copy machine's gritty, DIY aesthetic in international art markets. Specific attention is paid to how xerography was surreptitiously used by artists and activists

to divert resources from the private sector into the fight against AIDS and into queer rights activism long before either cause had received mainstream recognition or support.

In the final chapter I turn my attention to the status of copy machines in our post-xerographic era, focusing specifically on how copy machines—or more precisely their digital descendants—continue to be used and on the more persistent currency of the xerox aesthetic. This chapter begins, however, by examining the somewhat sad fate of xerographic copy machines. With specific reference to the collection of more than two hundred copy machines that once comprised the Museum für Fotokopie in Germany but now sits in a storage facility at the Deutsches Technikmuseum (uncataloged and with few prospects of ever being displayed again), I consider the fate of xerographic copy machines. In contrast to many other old technologies, I maintain that, once their utility wanes, these machines have little use value, even among collectors. Nevertheless, as this chapter further explores, the "xerox effect," a term most often used to describe the distinctive aesthetic associated with xerography, persists. Using the Occupy movement as a central example, this chapter concludes by suggesting that although we are already in a post-xerographic era, xerography, at least its aesthetic, lives on as signifier of a particular attitude, politics, and style.

Although I am concerned with the role copy machines have played on a wide range of fronts and maintain throughout this book that most North American cities and social movements would have taken remarkably different forms without the rapid spread of xerography in the mid twentieth century,[43] this book does not insist that copy machines are responsible for the making of publics and counterpublics in this period. If copy machines and their gritty output of posters, flyers, and zines helped to define and spread movements intent on bolstering the rights of people on the margins, it

was largely against, not with, the grain of the machine's original intentions. The liberatory and subversive histories of the copy machine presented in this book are marked by people inscribing their own desires onto a machine designed to turn out clones, not esoterics, eccentrics, or revolutionaries. By positing the copy machine as an integral part of the late twentieth-century aesthetic and social movements that restructured the margins, my intention is not to imply that copy machines were hardwired for aesthetic, social, and political transformation, but rather to highlight some of the surprising ways in which this cost- and time-saving office technology ended up accompanying us along the way.

FROM CONTROL REVOLUTION TO AGE OF GENERATIVE SYSTEMS

ADJUSTED MARGIN

XEROGRAPHY ART