

Electric Moms and Quad Drivers

Do-It-Yourself Access at Home in Postwar America

In 1958 a young mother named Ida Brinkman reflected on her life after contracting polio. Five years had passed since she had become paralyzed, she told the readers of the *Toomeyville Junior Gazette*, a newsletter for polio survivors. After two years in rehabilitation at the Toomey Pavilion in Ohio, she had been eager to return to her husband and three children, though “secretly frightened” about her home life now that she used an iron lung at night, a “chest shell” respirator during the day, and a wheelchair to get around.¹ But the news she delivered to her readers was overall good: “This is beginning to sound pretty grim,” she wrote, “when really it hasn’t been at all.” At home, she reported, her husband, Johnny, had taken up shopping duties, while her three children helped keep house and prepared their own breakfasts. A cartoon accompanying the article showed Ida in a wheelchair, a tube at the center of her chest connecting her to an electric respirator, as her small daughter gazed at her quizzically: “Bonnie gets acquainted with her Electric Mom,” read the caption. “To my glee,” Ida reported, “she accepted me.”²

Ida Brinkman’s life as an “Electric Mom” extended beyond the plug-in respirator that drew her chest muscles up and down. She listed a number of tools she and her husband had selected and, in many cases, customized to support a busy and active life at home. Johnny had constructed a new, flat aluminum connector for the hose of her respirator, making the breathing apparatus less bulky. The electric Hoyer lift that Ida used to get into and out of bed included “a new wrinkle added to it ala hubby [*sic*]”: he had fashioned a shorter hook that could be used to help her into the car, effectively making two lifts out of one. Ida’s father had built a wooden ramp that was “especially practical for steep declines.” She had purchased an extended cord and headset for the telephone, and, in case of “urgent s.o.s.” while alone with her children, she had set up an



Figure 3.1. “Horizontal Editor” Ida Brinkman, photograph, from “Happy Birthday,” *Toomey J Gazette*, Fall–Winter 1959.

“alarm box which can be set off by a flick of a foot.”³ In a later issue of the *Toomey J Gazette*, as the magazine came to be known, Ida appeared in a photograph (figure 3.1) propped up in bed, reaching past the customized respirator tube to type with a specially made mouthstick—probably a simple dowel with a sharpened tip—clenched between her teeth.⁴ The photo caught Ida in action, not passively lying in bed or merely displaying her disability for the camera, as was the convention of many popularly circulated images of disabled people in this time. Surrounded by her collection of medical, homemade, and standard consumer technologies, Ida was poised to write for herself and connect to others as a contributor and editor for the *Gazette*.

Ida Brinkman was among a growing number of people with significant physical impairments, such as those resulting from spinal cord injury, cerebral palsy, or the polio virus, who created new forms of access in the spaces and communities of postwar America.⁵ The elaborate training routines and assistive devices that specialists like Dr. Howard Rusk introduced in the 1940s and 1950s were not sufficient to allow a person to operate easily in the world of mass-produced technologies and standardized spaces. While many local governments adopted *ANSI 117.1*, the accessible building standard developed by the American National Standards Institute in 1961, systematic change to the physical environ-

ment was very slow. Ramps and curb cuts remained the exception, not the rule, well into the 1970s.⁶ In their homes, disabled people created forms of access that were more elaborate and idiosyncratic than the architectural standards that eventually governed public places. These were highly personalized interventions, reflecting the individual needs and ambitions of disabled people and their families, rather than the prescriptive intentions of “self-help aids” and standardized building ramps.

People who customized technologies to improve their and their family members’ living environments approached the problem of access as tinkerers rather than specialists seeking standards and formulas. Their accounts highlighted three main arenas of technological work. First, many adapted specialized medical equipment. Finding devices that were comfortable and functional often proved difficult, and as a result people would learn to repair and reconfigure equipment at home. Second, they altered their own houses in projects ranging from altering floor plans to choosing drawer pulls. Their self-made devices and home modifications were often cobbled together from store-bought elements and adapted to accommodate individual bodies and tastes. Finally, they found ways to enter inaccessible public places, whether by forcing their way past street-level barriers or avoiding these barriers in an automobile.

To make headway into the inaccessible environments of postwar America, disabled people took a “do-it-yourself” approach to physical access not unlike other creative work performed in American households of the time, but their alterations hold different, and varying, cultural meaning when compared to those carried out by nondisabled peers. The projects document a particular relationship between disabled people and consumer culture: one in which mass-produced, standard designs were both barriers and solutions. The stairs, passageways, appliances, and fittings of typical American houses were constant reminders of a world built without consideration of disability, but altering these spaces and products to work provided a means of access to material experiences of mainstream American culture. These disabled tinkerers and inventors are part of a long history of consumers who have reconfigured modern technologies for their own needs, from rural farmers who used early automobile motors to power appliances in their houses to indigenous groups who appropriated tourists’ video cameras to tell their own stories of cultural endangerment.⁷ To an extent, these disabled

do-it-yourselfers created a resistant form of consumer culture when they made everyday products work for themselves. And yet, narratives such as Ida Brinkman's convey delight and adventurousness that link her with other middle-class consumers in postwar America. Their work affirmed the significance of consuming things in the making of American identity in the late twentieth century, and presaged the disability rights movement's arguments for material change as a priority.

In her writing on the "Consumers' Republic" of postwar America, Elizabeth Cohen describes consuming as a primary activity of American citizenship in the mid- to late-twentieth century. With unprecedented government investment in the consumer economy, the single-family, suburban house and its close proximity to shopping, in particular, came to represent the success of American democracy.⁸ Even as politics shifted in the 1960s, Americans held on to the idea that consumer choices could be forms of self-expression, and that the variety and availability of consumer goods represented a distinctly American privilege. Civil rights and consumer advocacy movements, Cohen argues, also operated on the assumption that consumer goods and services could and should play a part in realizing their social agendas.⁹

In their engagement with consumer culture as a means to creating access, do-it-yourselfers provide a precedent for the later political movement and its emphasis on design change in public spaces. They mark a subculture that valued what Aimi Hamraie calls "crip technoscience," or disabled people's access-knowledge that often revealed dimensions of design not addressed in official research contexts such as rehabilitation.¹⁰ These efforts also highlight contradictions in the task of assigning political meaning to consumerism. These technological interventions, particularly as they pertained to kitchens and cars, often perpetuated the idea of the "typical" American nuclear family with husband, wife, children, and a sense of economic mobility. In this sense they also embedded their access-knowledge into the normative social prescriptions of postwar America.

Constructing White, Middle-Class Disability

The community publications that documented home technologies used and created by disabled people reflect the demographics of those who

were able to live at home in midcentury America, create their own forms of access, and share them through photography and correspondence. The contributors to these magazines tended to be white and relatively middle-class, and the majority of articles were written by and about people living in single-family houses, in suburban or small-town settings, with some form of support in daily life from family members or, more rarely, hired attendants. The publications also tended to focus on members of two specific groups within the entire population of people with disabilities: veterans and people who had become disabled by polio. These two groups also dominated mainstream media- and government-issued accounts of disability in the postwar era. As the previous chapters describe, the U.S. government funneled significant resources into helping disabled veterans transition into civilian life, promising that they, like nondisabled servicemembers, would share in the prosperity of postwar life.¹¹ Likewise, during and after the peak polio epidemic of 1937–1955—a period when more than 415,000 cases of the virus were reported, declining only after Jonas Salk’s discovery of a vaccine—polio became central to a new public discourse on charity and public health.¹²

The midcentury polio epidemic dramatically altered perceptions of disability in the United States by providing an image of innocence associated with white middle-class childhood. “Polios,” as those who had contracted the virus were often called, were primarily depicted as young children who had become the “victims” of an illness widely known as “infantile paralysis” despite being most severe for people who were exposed in their teenaged or adult years.¹³ The disease was believed to disproportionately affect white, Western and Northern communities of the United States, where modern sanitation reduced the chances that children would develop immunities through exposure in infancy, and where geographic mobility increased the spread of the virus. This assessment, which goes unquestioned in many medical histories of the virus, is difficult to prove given that polio diagnosis and treatment occurred in a segregated society.¹⁴ As early as the 1930s, African American physicians began to challenge perceptions of the disease as one only affecting white and relatively affluent children.¹⁵ Still, this perception remained, and resulted in a cultural response to the disease that highlighted the potential effects of disability on young, promising middle-class lives. Those who had disabilities due to polio were, like disabled veterans,

portrayed as most deserving of rehabilitation and, ultimately, reintegration into society.¹⁶

Polio, like other diseases, is an individual medical experience that takes on social meaning through media depictions and institutional approaches: in the postwar United States, polio was depicted as a white children's disease, and responses often centered on class- and race-associated contexts such as suburbia. In media coverage and publicity campaigns by the National Foundation for Infantile Paralysis (also known as the March of Dimes), polio survivors were almost invariably white, well-cared-for children, smiling as they posed with crutches and braces or out from the top of a full-body "iron lung" respirator.¹⁷ In a typical image, a 1950 March of Dimes poster shows a group of children playing on a pickup truck with the slogan "Back with the Gang" (figure 3.2). The image of the children in action visually minimizes the presence of disability, as one has to look closely even to see that one boy wears leg braces, and nothing in his actions suggests he is in pain or paralyzed. While the children play outdoors, they are not in a public park, but on what appears to be private property rather than the parks or swimming pools where parents were discouraged from taking children for fear of contagion. The truck evokes rural life and a separation from the unhealthy, contagious spaces of the city and intermingled classes and races. The innocence of these children is also a contrast to families who might not have access to such private spaces, and whose protection was not guaranteed in polio care and recovery.

The race and class associations of polio are also a subtext in the domestic work that disabled people documented in community periodicals. The *Toomey J Gazette*, a sometimes-annual, sometimes-quarterly magazine that began with 125 mimeographed copies in 1958, grew to a circulation of 2,000 after its first year, and more than 10,000 within a decade.¹⁸ The *Gazette* was a work of feminized community service, boasting an all-female editorial board of "three horizontal respos"—women paralyzed by polio—and two nondisabled "vertical volunteers" whom these women had met at the Toomey Pavilion rehabilitation center. All were "volunteers" in that the publication was an unpaid project that was produced in the women's homes. Even as the readership expanded beyond the hospital's alumni, the editors continued to assume a common experience of rehabilitation treatment among their readers. They used a

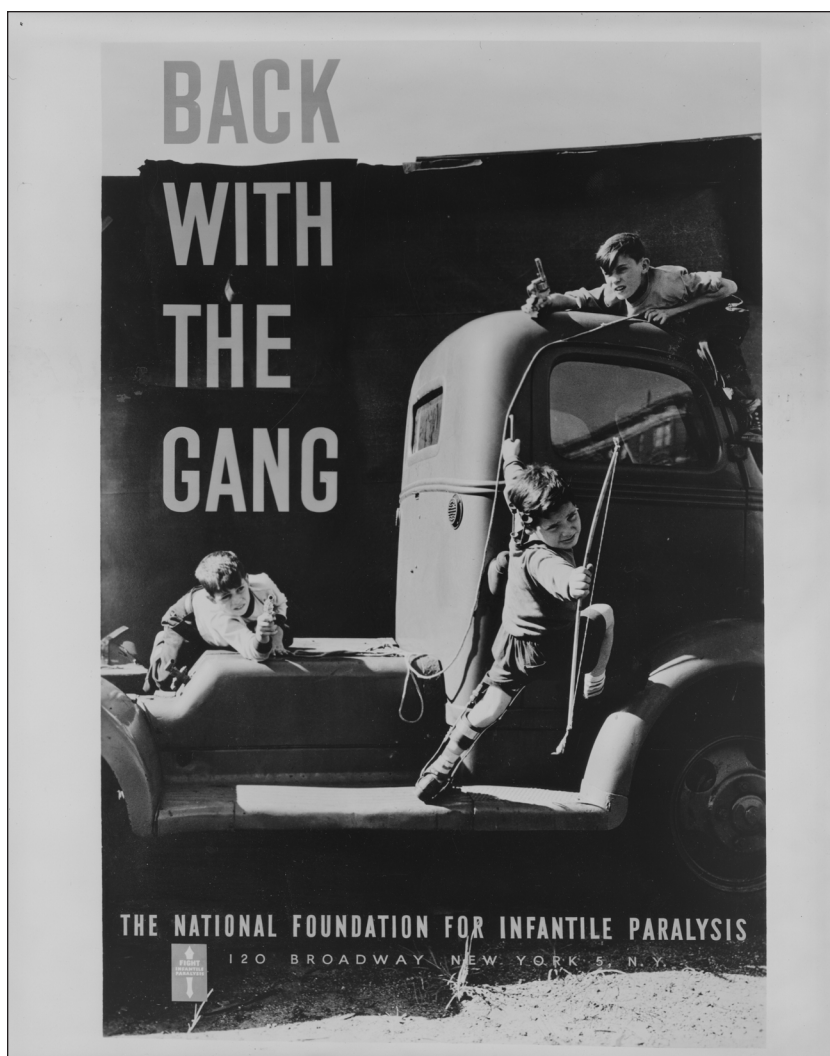


Figure 3.2. Helen Leavitt, poster for the National Foundation for Infantile Paralysis, 1950. The large block text “Back with the Gang” is printed over an image of three young children playing on a 1930s-style pickup truck. The boy in the foreground of the picture, hanging off the side of the truck, wears braces on one leg. March of Dimes.

form of shorthand borrowed from the hospital to address their readers: “respos,” referring to those whose polio had affected their respiratory system, “quads” (quadriplegics), and “paras” (paraplegics) were all terms that frequently appeared in articles. This conversational tone implied a set of shared experiences among editors and readers, and drew upon the language of caretaking at the rehabilitation center. In the third issue, editor Sue Williams wrote that the board was “particularly interested in having this reach respiratory polios who have had little contact with others like themselves. We have all met such individuals who have been tucked away in their homes for years, thinking that they are one of a kind, and that no one has lived a fate quite like theirs.”¹⁹ This concern over isolated people “tucked away in their homes” suggests the simultaneous role of disabled peer and caregiver that Williams took on within the periodical.

As many as three-quarters of the articles in a given issue of the *Gazette* addressed technological issues, from user reports on assistive devices in the regular “Equipment” column, to an eclectic mix of do-it-yourself and imagined products under the headings of “Oddments and Endments” and “Brainstorms.” Although this publication provides the most extensive store of amateur technological reports, other periodicals targeted toward physically disabled readers also addressed these activities. In the Paralyzed Veterans of America’s *Paraplegia News*, first published in 1951, a different population shared suggestions on such things as new automatic and remote-control appliances, preferred commercial and homemade solutions for wheelchair ramps, and customized, hand-controlled cars.²⁰ Additional personal documents, memoirs, and oral histories of the generation that survived the peak epidemic of polio fill out the picture of a population that managed daily activities through technological adaptation.²¹

These periodicals and their coverage of technological work indicate the complex intertwining of race and gender in shaping disability experience. Contributors described their aspirations to a certain model of midcentury American life: living in single-family homes, driving automobiles, and using the appliances and conveniences of middle-class comfort. These activities were linked not only to the recovery of individual physical function, but to social identity in a highly gendered, racially segregated society. If markers of a “normal” middle-class Ameri-

can life were hard-won for those whose families could provide personal care and economic support, they were entirely out of reach for those who lacked these resources. Class, race, age, and gender all affected the chances one would be seen as worthy or capable of rehabilitation. In the eleven-year run of the *Gazette*, there were only three photographs of identifiably nonwhite people. All were men who appear to be African American, and all were described as living in residential institutions, reflecting the disproportionate number of poor and nonwhite persons among the institutionalized population.²²

As Henri-Jacques Stiker observed, modern rehabilitation approaches tended to reinforce existing categories of respectability and acceptance.²³ For each group considered viable for rehabilitation, there remained those considered incapable or unworthy of “return” to mainstream society. To be a white, middle-class veteran or polio survivor in the 1950s was to be in a place of privilege, but also of pressure. As patients, these individuals were encouraged to learn to operate in the mainstream world. At sites like Rusk’s institute or the many polio-specific treatment centers funded by the March of Dimes, rehabilitation entailed learning to drive, walking with canes and crutches, and preparing for mainstream employment and education. As they used technologies to improve their access and mobility within the postwar household and to participate in consumer culture, disabled people also received clear messages from rehabilitation authorities about the need for independence, conventional gender roles, and other marks of “normal” life. For a population often physically and socially excluded from mainstream society, enactments of familiar activities such as shopping, housework, and cultivation of hobbies took on new meaning as a way of attaining this ideal life.

While the work documented in the *Gazette* foreshadowed political activism for access, claiming a place in postwar homelife was depicted as a private act. Even if these hands-on projects fostered an emergent sense of belonging in the public world of midcentury consumer culture, the writers did not explicitly connect this technical activity with notions of identity or solidarity beyond their individual households. Many of the leaders of the disability rights movement that emerged in the 1960s and 1970s had grown up in middle-class households like those depicted in the *Toomey J Gazette*. Some even appeared

in its pages. When they began to organize in the 1960s, disability rights activists drew on their own experiences of personal effort and technological adaptation in formulating an agenda of access on a larger scale. They, too, often framed access in terms of individual concerns in housing and home life, but they also combined these personal concerns with a sharp attention to the structural power dynamics embedded in social and medical services.

Technology from Hospital to Home

For many people who became disabled in the 1940s to the 1960s, the trials of finding useful and usable technologies began in the hospital. Doctors, insurance companies, and medical administrators had enormous power in choosing the medical equipment patients would use throughout their lives. Members of the medical establishment often ignored or dismissed patient input, assuming that whatever medical supply companies or research programs had produced was good enough. The difficulties disabled people encountered in acquiring, fitting, and using assistive technologies introduced them to life on the margins of consumer culture. For many, experiences negotiating with and circumventing the medical equipment system instilled a sense that available products and technologies were just a starting point, and that suitable, comfortable, appealing tools might require intervention.

In rehabilitation, people recovering from disease or injury learned to use adaptive and assistive technologies that many of them would keep for the rest of their lives. Patients with partial or even complete lower-body paralysis wore steel braces to support and straighten their legs, and were strapped into corsets to force their spines straight.²⁴ When acute cases of polio caused paralysis in the chest cavity (or “respiratory” polio), patients battled the peak of symptoms in an “iron lung” respirator, a full-body-sized tube with bellows-like air pressure mechanisms that forced the lungs to expand and contract. Rehabilitation doctors and therapists encouraged “weaning” from it, but many people continued to use the iron lung either full-time or for limited periods each day, particularly while sleeping. Respiratory polio came with a vari-

ety of other accessories, including the “chest shell” respirator that Ida Brinkman used, which was less powerful than an iron lung but wearable in a sitting position; rocking beds, which used a seesaw motion to force air in and out of the lungs through gravity; and standing beds, to which patients were strapped in order to stretch their legs into a vertical position.²⁵

Polio rehabilitation was a site of technological research in itself, given a steady flow of funding from the March of Dimes and cultural pressure to return patients to “normal” and “independent” lives. Specialists pursued aggressive technological approaches to push even those with significant impairments to walk, stand, eat, and dress without assistance.²⁶ Rancho Los Amigos Hospital, Los Angeles County’s long-term care facility, gradually changed from a county “poor farm” to a respected research facility and rehabilitation center over the course of the 1930s and 1940s, due in part to the increased demand for polio care. In the 1950s, Rancho Los Amigos opened a dedicated polio ward, staffed with specialists recruited from other leading polio hospitals, and a facility to house more than two hundred patients.²⁷ The hospital’s orthotics department developed devices such as the “Rancho feeder,” a series of metal struts and braces that propped up a paralyzed or weakened arm at face level, allowing a person to swivel the hand back and forth to feed themselves.²⁸ The department also developed a version of this arm support that used an “artificial muscle” or “CO₂ muscle,” an air-pressure-operated electrical system that allowed the patient to maneuver the swivel-arm through outside power, including switches operated by the toes or teeth.²⁹ Patients were often fitted with multiple devices, with functional braces pinned to their sides or attached to armatures on their wheelchairs and used in combination to support, straighten, and guide their bodies. These devices were part of a vision of “total rehabilitation,” in which hospital administrators insisted that even the most severely impaired patients could gain independence in daily tasks such as walking, eating, and dressing.

The elaborate technical fittings prescribed at centers like Rancho Los Amigos proved difficult to use in the long term. The “trough and swivel” mechanism of the “feeder” arm required, according to one technical review, “care in both initial setup and regular maintenance by clinicians

and caregivers,” and could easily become disconnected with a bump against a chair or doorframe.³⁰ Patients too affirmed that the rigid instructions of specialists did not always work for them. Richard Daggett, a patient at Rancho in the early 1950s, recalled that the hospital had “set ideas” for how patients could feed themselves, but that he learned a different technique on his own.³¹ Likewise, Paul Longmore, a disability historian who stayed at Rancho for a period of fourteen months starting when he was eight years old, remembered resisting the use of the “swivel feeder” on his left arm, where he lacked muscle movement in his shoulder. As Longmore recalled,

I said, “My left arm’s completely paralyzed, my hand’s paralyzed.” “We’ll put a prosthetic hook under that hand” [they said], and they ran a wire up my arm and down my side so that I could open and close the hook with my left foot. And I said, “Well, I don’t have any shoulder muscles that work in my left shoulder. I won’t be able to control it at all.” So sure enough, when I had that thing on, I couldn’t control it so it would swing that hook right in front of me and block my right hand, so I couldn’t use my right hand either. So, you know, I tried it for a few times, and then my mother and I agreed that this was useless. Well, that got us labeled as uncooperative and resistant.³²

Longmore’s statement describes the tension inherent in the rehabilitation process. These resources and technological devices were intended to help children with polio go “back with the gang” by rejoining society with bodies and motions that resembled a nondisabled state. These rigid rules and standards of “independence,” however, constrained disabled people from making their own choices—including the choice to use personal attendants or family help in these daily tasks.

If rehabilitation specialists were at times unresponsive to patient preferences, manufacturers of medical equipment all but ignored them. Though the number of Americans using assistive technologies was significant—one survey conducted in the late 1950s counted just under a million Americans who used wheelchairs, arm or leg braces, or artificial limbs³³—producers made few direct appeals to users.³⁴ In a time when American consumers had access to an ever-widening array of choices in hardware, grocery, and department stores, medical equipment remained

firmly separate from the mass market. Not surprisingly, medical professionals and equipment suppliers were quick to assert that patients needed their help and guidance in selecting these devices. In a survey conducted in New York in the mid-1970s, doctors, prosthetists, and orthotists all agreed that “consumers [should] avoid the risks of shopping on their own in all instances.”³⁵ Even as they consulted with professionals, patients found that communicating their own needs could be difficult. In her memoir of a childhood after polio, Mary Grimley Mason remembered that a tight new brace “felt as if a hundred little fingers were pinching me up and down my legs,” and that the brace maker adjusted it only reluctantly, mumbling that she “was probably just not used to them.”³⁶

Even if patients did order their own equipment, the limited range of products offered did not serve the variety of users’ bodies. Wheelchairs came in three sizes (adult, junior, and child, with the occasional addition of “adult narrow”), and braces in only small and large versions that needed to be adjusted by specialists.³⁷ Wheelchair companies produced many types of metal goods, of which hospital supplies were just one category: for example, the Colson Corporation, one of the largest wheelchair makers of the 1940s and 1950s, manufactured carts and casters, and, as an offshoot, wheeled chairs. Its catalogs included tens of pages of industrial wheels and carts before one or two with wheelchairs. Descriptions were brief, with listings simply declaring “sturdy construction” or touting easily replaceable, smooth-running “ball-bearing wheels.”³⁸ The images in Colson’s catalog showed wheelchairs in hospital settings, not in homes or in public. These trade materials communicated the message that these were medical, not consumer, products, and that people who used wheelchairs did not fit easily into the home or public environment.

Among the four largest wheelchair companies of the postwar decades, only one—Everest & Jennings—took a consumer-focused approach.³⁹ The company, founded in 1932, was a partnership between an engineer (Jennings) and a businessman (Everest), whose legs had been paralyzed in a mining accident.⁴⁰ The pair found success after patenting a wheelchair that could fold into the trunk of a car—itself a statement of a disabled user’s ambitions to use the everyday American technology of the automobile.⁴¹ Everest & Jennings advertised in disability-community

publications in the 1950s, showing its chairs as equipment for people who lived active lives at home and in public. The headline of one advertisement promised that the folding model would “bring independence to the handicapped,” a phrasing that highlights the benefits to the user.⁴² The advertisement showed a woman talking on the telephone, in a home setting, not a hospital; another advertised the chair as flexible for varied terrain, as it “rolls over carpet edges and small obstructions inside or outdoors.”⁴³ By the 1970s, Everest & Jennings came under criticism for abusing its hold on the wheelchair market, producing few innovations and neglecting customer service.⁴⁴ This dominance may have been the result of its successful marketing strategies in the postwar years. As the only wheelchair company to advertise in the pages of *Valor* and *Paraplegia News* in the 1950s, Everest & Jennings was able to claim a large segment of wheelchair users as its customers.

While doctors and other medical professionals mediated access to wheelchair and hospital equipment producers, a small number of retailers offered specialized products directly to disabled consumers. The New York-based retailer Fascole advertised in a number of disability-community publications, touting its “shopping center for the Physically Disabled” with a “treasury of intimate personal items and self-help devices.”⁴⁵ Entrepreneurs operating on an even smaller scale sent announcements to the classified “Market Place” page of the *Toomey J Gazette*, available only to disabled advertisers. One contributor, who identified himself as “post-polio,” set up business as a third-party dealer for wheelchairs, cushions, and intercoms, and offered a machine shop for custom work as well.⁴⁶ The work of mail-order and custom production was a difficult one, given competition from large manufacturers and suppliers. One entrepreneur reported in the *Gazette* on the mail-order business he and his physical therapist had started for “rehabilitation equipment—grab bars and all sorts of other helpful gadgets.” Unfortunately, the writer noted, the competition with “large-well-financed outfits that published catalogs and were able to engage in real publicity jobs” had proved too stiff for the independent dealers, and, he lamented, “the returns were quite disappointing . . . well, our dream of a personal yacht for each of us has faded!”⁴⁷ These small, community-based efforts stood out as exceptions to a commercial culture that rarely addressed individual users directly.

Constructing a Life at Home

Much of the technology use described in the *Gazette* resembled familiar activities for middle-class consumers of this period. Whether sewing their own slipcovers and curtains, installing cabinets in their kitchens, or soldering and welding in their garages, American homeowners performed a variety of creative and skilled work to maintain and improve their houses, furnishings, and automobiles; supplying this market was itself an emerging consumer sector.⁴⁸ Do-it-yourself activities allowed men and women of the 1950s and 1960s to express individual taste and style within the mass-produced consumer culture of postwar America.⁴⁹ Despite a shared sense of excitement over clever and useful adaptations, however, for disabled people, these projects carried high stakes. Eating, dressing, bathing, and getting around the house provided a sense of personal independence, particularly for those who, like Ida Brinkman and her fellow “respos,” required family or attendant help in many basic activities. Further, performing these activities with as little help as possible meant avoiding being perceived as “homebound,” “invalids,” or “shut-ins,” or having to live in an institution. If suburbanites who built on to their subdivision houses and accessorized their cars did so to distinguish themselves as tasteful or creative, disabled people did the same work to fit in, to prove their worthiness of inclusion in a society where many considered incapable or unworthy of rehabilitation were shut out.

For households with a physically disabled family member, the house itself often presented a technical challenge. Small, single-family houses were common in many American communities, from urban neighborhoods built in the 1920s and 1930s for a new industrial working class to rapidly expanding suburban Levittowns and other planned neighborhoods of quickly constructed single-family houses constructed on America’s former rural landscape.⁵⁰ The efficient, modestly scaled Levittown Cape Cod house, first built on Long Island in 1947, included doorways of 28 to 29 inches and hallways not much wider.⁵¹ Standard-sized wheelchairs, which typically measured 25 to 29 inches in width, not to mention iron lungs and rocking beds, fit awkwardly into these spaces.⁵² Contributors to the *Toomey J Gazette* reported experiments working with narrow hallways and door frames, such as cutting a hidden swinging door into a wall with wallpaper to camouflage.⁵³ Readers

wrote in with descriptions of improvised “wheelchair narrowers”—contraptions that consisted of wire hangers or a belt looped around the handles to draw a chair inward by an inch or two to fit through these passageways.⁵⁴

As they renovated their houses, families sought to balance practical concerns of disabled and nondisabled inhabitants. One couple sent the *Toomey J Gazette* photographs of a clever ramp built by the husband for his wife (figure 3.3).⁵⁵ The long ramp hugged one side of the house, leading to a side door, with a trapdoor in the middle to allow ambulatory members of the household to use an existing flight of stairs. Inside houses, barriers built into the layout were even more difficult to remedy. In some cases, families had to move or conduct extensive renovations to accommodate a disabled relative. Ed Roberts, later a prominent figure in the disability rights movement, was almost completely paralyzed from the neck down after his teenage case of polio. His family moved to a new house after he returned from the hospital to accommodate his hospital-sized bed; still, the only room large enough was the dining room.⁵⁶ Given the extent of Roberts’s disabilities, it was easier to gather family around the bed than to move Ed to a wheelchair, a process that involved strapping him into a corset and then to the back of the chair—especially considering that the wheelchair could not be easily used beyond the threshold of the house in an era with few curb cuts or wheelchair ramps in public.⁵⁷

Over the weeks and years following rehabilitation, disabled people continued making adjustments to their everyday environments. Women who took on homemaking roles after polio or other paralyzing conditions became consumer product testers, vetting new gadgets and materials from the standpoint of their own physical needs. The 1968 issue of the *Gazette* featured an eleven-page section entitled “Homemaking” with forty readers’ suggestions on arranging kitchens, doing laundry and cleaning, and cooking from wheelchairs or with limited manual strength or dexterity.⁵⁸ Their notes describe everyday life in households where floor plans, furniture, and appliances posed obstacles. Readers wrote of practices such as filling a pot on a stove one cup at a time, as the height of the standard stove made it difficult for a wheelchair user to carry a full pot from sink to stovetop. With outlets at the back of countertops, hard to reach from a wheelchair or with limited arm strength,

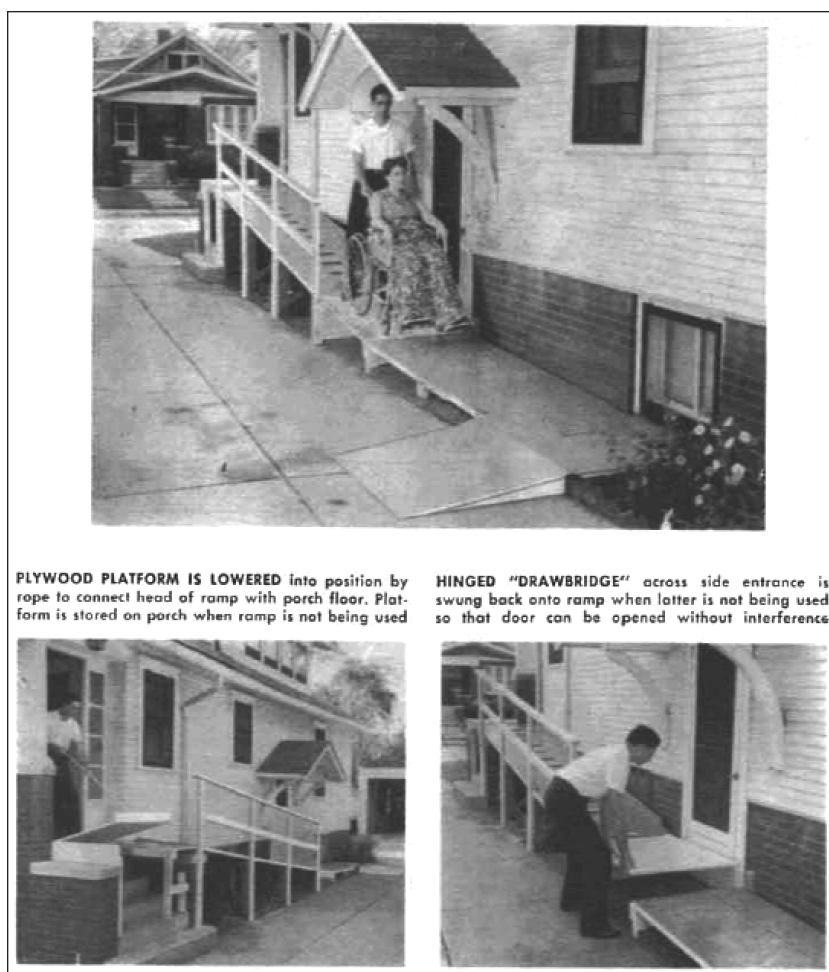


Figure 3.3. Layout with three photographs showing a home wheelchair ramp; a man demonstrates the ramp's trapdoor opening and closing. From "Equipment," *Toomey J Gazette*, Spring 1961, 11. Post-Polio Health International.

they connected extension cords to bring appliances closer. Other contributors described the challenge of using small drawer handles and stiff faucet heads with shaky or paralyzed hands. "I walk my fingers around the sink to the water faucet," wrote one; another used "a long wooden spoon with four nails in the bowl section" to twist the small handles (figure 3.4).⁵⁹ Some wrapped rubber bands around "small slick knobs"

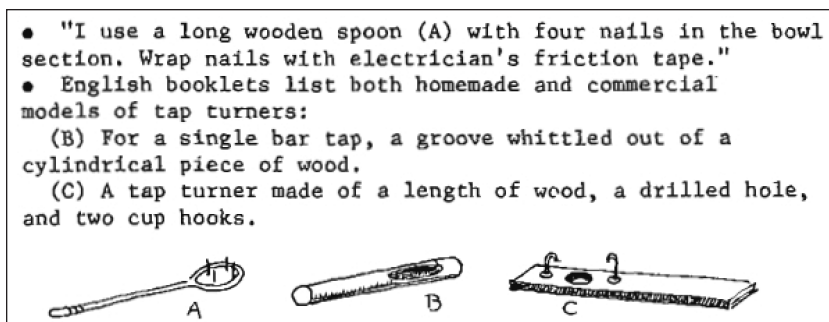


Figure 3.4. Drawings of three faucet turners with descriptions of how they are made from wooden spoons, a cylindrical piece of wood, and a length of wood with a drilled hole and cup hooks. From "Homemaking," *Toomey J Gazette*, 1968, 18. Post-Polio Health International.

for better grip, while one contributor, perhaps frustrated with various experiments, suggested that "if you are unable to use the hardware on drawers and cabinets, just skip it and fasten on inexpensive towel racks for easy pulling."⁶⁰

In the pages of the *Toomey J Gazette*, contributors balanced frustration with the constraints of mass-market products and furnishings with delight in finding the right tools for a given job. Contributors advised careful selection, suggesting that fellow readers "think about weight as opposed to ease of handling. . . . Handles are quite different on knives. Very individual decision is needed here."⁶¹ This individual decision making, based on one's relative strength and coordination, as well as personal taste, engaged disabled people in an intensive form of shopping. The *Gazette's* self-identified "homemakers," who were mostly women but also included some single men and husbands, took careful note of brand names, noting specific models of automatic can openers, electric knives, and mixers they found most promising for persons with limited hand strength. For those who fumbled with glass and ceramic dishware, new plastics offered more than just colorful or airtight storage: "Bless Tupper Ware [*sic*]," wrote one contributor. "You can drop it and it doesn't fly open and spill contents."⁶²

The *Gazette's* special "Homemaking" section had much in common with mainstream domestic literature. The section featured a two-page

drawing of ways of arranging kitchen equipment, with crisp outlines of pegboard storage, lazy Susans, and pull-out shelves to hold efficient, organized rows of pots and pans, dishes, jars, and bottles. The outlines of dishware and familiar appliances recall the graphics of midcentury consumer magazines, which often showed products floating in space or tidily arranged in ideal kitchens.⁶³ The “Homemaking” spread and other reader-contributed household tips were reminiscent, for example, of “Hints from Heloise.” Nationally syndicated after 1961, Heloise Cruse’s domestic advice column published submissions by readers, with tips and shortcuts for using everyday items, such as looping a soda-can tab over a hanger to store a belt with its matching outfit; keeping out-of-season clothes in empty suitcases to maximize storage space; and setting plywood atop rubber bands to provide a “rolling platform” for a stand mixer that would eliminate “lifting or tugging.”⁶⁴ Heloise rewarded her readers with occasional comments like “What a smart cooky [*sic*] you are!” and “That’s a really sneaky one. And it works like a charm.” Heloise even included a few hints from women with disabilities, such as an eighty-eight-year-old reader whose daughter altered a hanging shoe bag to make pockets for her walker, and a female amputee who shared a hint for attaching a cleaning brush to a cutting board for one-handed vegetable scrubbing.⁶⁵

Although their needs were more specific than those of homemakers concerned about storage space or matching belts, contributors to the *Toomey J Gazette* showed similar excitement over the world of consumer products. A page from the 1960 *Toomey J Gazette* (figure 3.5) featured sixteen different designs for homemade mouthsticks in a cheery, sunburst layout.⁶⁶ People with limited use of their arms and hands used these sticks, assembled from various available materials, to type, write, dial the telephone, and do other small tasks using their mouths for leverage. The mouthsticks incorporated synthetic materials and novelties newly available for affordable consumption in postwar America.⁶⁷ Most were made of simple dowels or pens, with rubber erasers or eye-dropper tips to provide a soft surface to be gripped between the teeth. Some incorporated more novel materials, such as the rubber heel of a doll’s shoe, a cigarette holder, and a spring-loaded clamp that could be operated with the tongue. In the illustration, these simple implements radiated from a sweetly outlined mouth. One stick with a paintbrush attachment

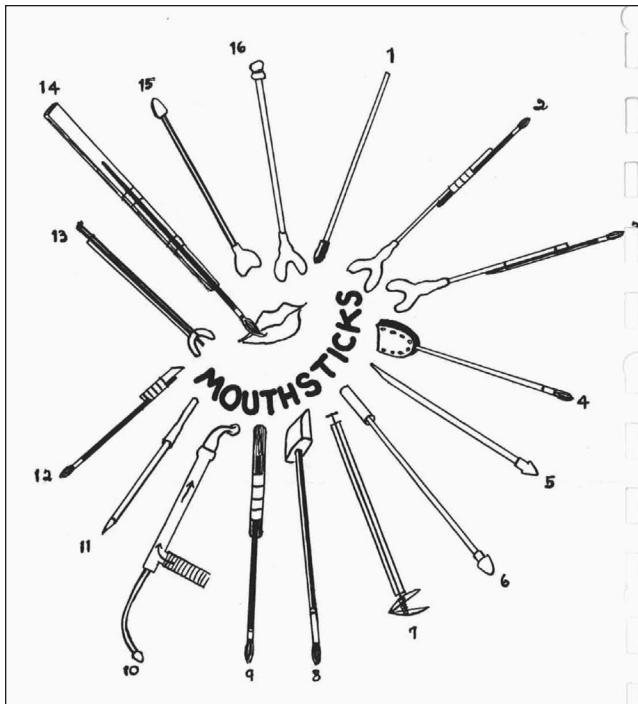


Figure 3.5. Drawing of an array of mouthsticks radiating out from a drawing of lips. “Mouthsticks,” *Toomey J Gazette*, Spring 1960, 8. Post-Polio Health International.

pointed inward, completing the illustration and suggesting the action of mouthstick painting, a common hobby taught in rehabilitation centers and often celebrated in the *Gazette*.⁶⁸ The illustration of these different options and the cheery mouth at the center took a cue from the visual culture of the 1950s: we can imagine a similar layout in an advertisement or magazine editorial showing kitchen utensils or lipsticks. In these collections of readers’ inventions, the *Gazette* translated some of the light, joyous appeal of midcentury consumer culture into the world of highly specific and personal assistive equipment.

Disabled people’s interactions with the world of products and spaces reinforced their difference from the mainstream—and yet, in these intra-community documents, they presented technical adaptation as part of

familiar, expected activities of household life, akin to the housework or home decoration discussed in women's home magazines of the time. Articles such as the "Homemaking" feature depicted the tasks of finding and customizing consumer goods as components of conventional postwar home life, including style-conscious shopping and clever use of available tools.

Access on the Road

In a final category of adaptation, automobiles provided another area of creative technological work through which disabled people participated in the public life of postwar America as individual consumers. Although disabled people living at home could create a modicum of access within their own houses, they could do little to change the abundance of street-level barriers in American cities and towns. According to one polio survivor who recalled returning from rehabilitation in the 1950s, home alterations to facilitate wheelchair use were "enough to help, but not enough to get me accustomed to living in any sort of specially constructed world" given pervasive barriers beyond the household.⁶⁹ Nonetheless, in this era before ramps and curb cuts, wheelchair users did find ways to get around in their communities, albeit with great difficulty and unpredictability. Some told of wheeling down driveways to avoid curbs, entering traffic until they reached the next block and then the next driveway.⁷⁰ Others relied on friends, family, or passing strangers to help them get over curbs and up front steps, which could be an uncomfortable or even frightening experience.⁷¹ Portable ramps—both commercially manufactured and homemade—were used to traverse a small number of steps, although most required the help of a companion or helpful stranger.⁷² Some industrious inventors devised more complicated devices, such as the "outdoor elevator" that Vince La Michle described in a 1959 article in the *Toomey J Gazette*. Powered by a 1/6 horsepower motor, the elevator raised or lowered at one inch per second and, according to La Michle, was "certainly easier than a ramp."⁷³ Whether rudimentary or complex, these devices provided ways to enter the inaccessible public environments of postwar America.

In the *Toomey J Gazette* and the *Paraplegia News*, one of the most-discussed tools for accessing the public world was not a piece of medical equipment, but one of the iconic technologies of the twentieth century: the automobile. Historians of American car culture have described “automobility” as the way the personally driven motor vehicle became linked with a sense of freedom and independence.⁷⁴ For disabled drivers and passengers, automobility had an extra layer of meaning, as it offered a chance to move freely past barriers such as steps and curbs. In pursuit of what the *Toomey J Gazette* called “quad driving,” disabled people became auto enthusiasts and used available accessories and technological options to achieve their own form of automobility.⁷⁵

The first devices that allowed people to drive with limited or no use of their legs were developed in the 1930s to target an elite audience. De Soto developed a custom car for President Franklin Delano Roosevelt in 1933, in which not only steering but also acceleration and braking were controlled by hand.⁷⁶ In the following year, the *Polio Chronicle*, the in-house magazine of Warm Springs, the polio rehabilitation center that Roosevelt bought in 1926, extolled the promise of several new, patented hand controls to let “the President and other polios become their own chauffeurs.”⁷⁷ Despite the enthusiasm at Warm Springs, the hand controls of the 1930s and 1940s were difficult and dangerous to operate. Driving a manual-transmission car entirely by hand meant juggling the levers for brake, clutch, and accelerator, not to mention the steering wheel. Inventors devised several approaches to dual clutch-brake hand control, including buttons and switches allowing the driver to use the same handle to depress the clutch alone, or the clutch and brake at the same time.

The greatest technological improvement for disabled drivers was not a new hand control, but the automatic transmission. Automakers introduced a few models with automatic transmissions in the early 1930s; they became widely available in the 1940s.⁷⁸ This new technology coincided with a new demand for cars for disabled people, particularly disabled veterans who could request a subsidy for hand-operated and other customized cars (see chapter 1). This subsidy made cars and driving a distinct component of veterans’ culture, with models and accessories discussed in a special “Hand Controlled” column in the *Paraplegia News*. The column’s author, Joe Jordan, wrote of the special connection

veterans had to cars, noting that “there is very little controversy and possibly near unanimous agreement that ‘mobility,’ our effort to get around once again, rates a high and very special place among [veterans’] problems.”⁷⁹ As Jordan noted, however, not all available vehicles worked well for the needs of disabled drivers. Even with an automatic transmission, drivers had to vet the specific configurations available, since many name-brand “drives” still required some clutch-shifting by foot.⁸⁰ Jordan noted, for example, that the Oldsmobile Hydramatic, which had a clutchless shift mounted on the steering column, was widely used among veterans more than a decade after its introduction.⁸¹

In the pages of the *Toomey J Gazette*, disabled people and their families showed off a broad variety of customized cars that went far beyond commercially available models with hand controls and automatic transmissions. Fred Taberlet’s “Para-car” (figure 3.6), described in a 1968 *Gazette* article, was a Citroen 2 with the top and back completely cut off to make room for an elevating floor. Accompanying photos featured Taberlet lifting himself, wheelchair and all, into the driver’s position, eliminating the need to climb into the driver’s seat and stow a wheelchair, as required in a standard car equipped with hand controls.⁸² The customized vehicle had not one but two sets of hand controls, so that he could rotate completely and drive the car forward or backwards, keeping him from having to crane his neck to see while driving in reverse. Fellow *Gazette* contributors showed off other creative approaches to driving.

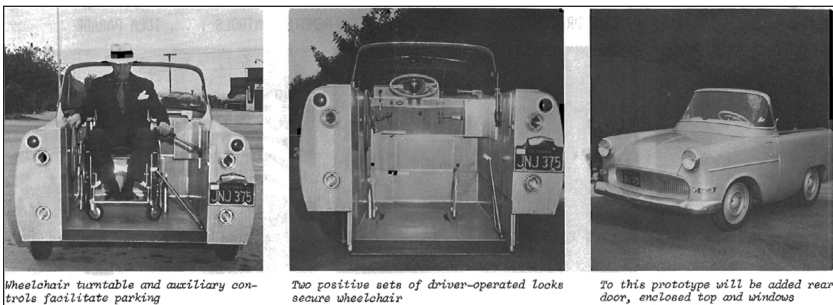


Figure 3.6. Three photographs showing Fred Taberlet’s “Para-car,” a Citroen 2 with the top and back removed for wheelchair access. In the first photograph, Taberlet, dressed in a dark-colored suit and white hat, demonstrates the car’s usability from his wheelchair. “Equipment,” *Toomey J Gazette*, 1968, 54. Post-Polio Health International.

One British reader displayed a pair of leather gloves that helped him grip the hand controls. For those with more coordination in their legs and feet than upper extremities, an American entrepreneur developed “a kind of ski boot attachment” that could be used to operate a steering wheel by foot.⁸³

“Quad driving” was for passengers as well. For people whose impairments meant that they would never drive themselves, riding in a car was a way to move about within and beyond their communities without being strapped into a wheelchair, let alone contending with steps, curbs, and the stares of other people. “Electric Mom” Ida Brinkman named drive-in movies as a favorite activity of her family, and showed off a special headrest she used in the family car.⁸⁴ Other families went to dramatic lengths to include their disabled relatives in car travel. More modest—and more legal—than Fred Taberlet’s Citroen convertible, but no less inventive, were the alterations the Ray family made to their family car so they could travel with their daughter Susan and her reclining wheelchair and respirator. Susan’s father, Cecil, a Baptist minister (and “mechanical whiz,” according to his wife), removed both front and back seats on the passenger side of their 1955 Ford station wagon and installed a smooth platform for her recliner. He moved the post between doors and re-hinged the rear door, making a double-wide entrance for Susan in her chair. The Rays traveled with a small homemade trailer with compartments for extra respiratory equipment and doors on both sides for easy access. The family reported traveling in this car from their home in San Antonio, Texas, to the Southern Baptist Convention in Miami, Florida, and national parks including the Smoky Mountains, Yellowstone, Mesa Verde, Arches National Monument, and the Grand Tetons.⁸⁵

The accessories disabled drivers used linked them to other drivers’ groups and specialty auto workers. Local mechanics who installed specialty equipment for disabled drivers had experience customizing cars for other uses, such as hot-rodding or camping. In some cases, modifications made for other purposes proved to be useful for disabled drivers as well. For example, many catalogs and articles suggested installing a knob for the steering wheel to aid driving with a prosthetic or a single hand.⁸⁶ These knobs were not exclusive to the community of disabled drivers, but were available as options from major car manufacturers throughout the 1940s and 1950s. Though they ostensibly offered a more secure grip

for any driver, they were known colloquially as “necker’s knobs” for one-handed drivers who kept one arm around their dates.⁸⁷ Modifications made for disabled drivers also relate to those made by fellow tinkerers who altered sedans, station wagons, and buses for long travel. As Roger White has explored, in the days before the commercial introduction of “recreational vehicles,” car owners made motor homes by removing back seats to make room for beds, hanging curtains for privacy, and installing shelves to hold amenities like camp stoves and washtubs.⁸⁸

People who altered familiar technologies to work for their own disabled bodies shared much with their nondisabled counterparts. As with household technologies, customized cars took on different meaning for a population for whom everyday mobility could be difficult or impossible. “Quad driving” provided access to a kind of mobility that disabled people could not experience on the sidewalks of their hometowns. It also allowed disabled drivers to participate in the American hobbies of picking out, tinkering with, and finding adventure in automobiles. In the pages of *Paraplegia News*, veterans shared insights on how to make the best of their special access to subsidized cars, while the tinkerers of the *Toomey J Gazette* seemed to revel in the design variations of home-adapted cars. This creative work was both normative and extraordinary.

Technology and Rights

The technological efforts that disabled people made to “fit in” to the spaces of postwar life were a form of self-preservation in a society that presented few options for disabled people to live independently. When Ida Brinkman confessed to *Toomey J Gazette* readers that she had been “secretly frightened” about her return home, she voiced a feeling many readers and writers of the *Gazette* surely felt. The insecurity with which disabled people lived—particularly those whose injuries or impairments meant they needed daily assistance—should not be underestimated. The specter of being sent to—perhaps forced into—an institution hovered over many, especially those who were poor or whose disabilities resulted from injuries or diseases not supported by charities such as the March of Dimes. People who returned home from rehabilitation were hardly exempt from these worries. In less optimistic narratives than those of the *Toomey J Gazette*, some polio memoirists reported

isolation and mistreatment in their home lives, with parents or spouses leaving them in bed for days, withholding help in bathing or eating, or subjecting them to emotional and physical abuse.⁸⁹ Even those who, like Brinkman, had families willing and able to support them had to wonder what would happen if family members died or could no longer assist them. Starting with the “daily life” training they received in hospitals, people with disabilities were given strong messages that they needed to show continual progress and a good attitude, lest they be labeled “bitter” or “uncooperative.”⁹⁰ While they expressed excitement about creative work on their kitchens, cars, and houses, these technical tasks were also a constant reminder that if they wanted to fit in to the world of their nondisabled peers and family, the burden was on them to figure out how to do it. Whether they performed this technological work themselves or with the help of family members, adapting to the inaccessible built environment remained a private affair.

In the eleven-year run of the *Toomey J Gazette*, there were only small hints at a sense of political identity or consciousness in this community publication. In a 1959 editorial, Sue Williams warned readers of the *Gazette* of the need to turn public attention to polio cases into long-term, sustained support. “The ‘iron lung story’ that has been told about each of us was a heart-wringer and a purse-opener,” she wrote, suggesting experience with charitable campaigns and the mainstream media.⁹¹ “Now that we cease to be a sensation in this way, there is quiet un-newsworthy work for us to do,” she continued. Four years after the discovery of a vaccine, these “polios” were aware that their time in the spotlight was coming to an end. The *Gazette* documented a practical means of survival in an inaccessible society, but Williams seemed to suggest that it might also provide a way of building political agency.

Disabled people’s engagement with technology and consumer culture in the 1950s and 1960s suggests an alternate origin for accessible design than the expert-driven work of rehabilitation specialists. Unlike the earliest accessibility regulations and guidelines developed in the same period, the adaptive work of these consumer-tinkerers informed a personalized and imaginative form of design. In the rights movement that emerged in the decades following this period, advocates for access drew on experiential disability knowledge and a sharp rebuke of medical

authority in defining the lives of disabled people. While their political orientation was much different from the largely domestic focus of the *Gazette* and other disability media of the 1950s and 1960s, they produced a form of access that also retained the spirit of local knowledge and do-it-yourself technical work.