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# The Older Person as Mediator between Technology and Environment: Toward the Role of “Technoguide”\*

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*Arthur B. Shostak, Drexel University*

“We shouldn’t be thinking of old people first in terms of social security and what they need, but as a matter of what old people can do for the rest of us.”

Marjorie Hunt  
26 April 1985, p. A-18,  
*New York Times*

Within the space of just over 100 years, since the victory of the North in the Civil War unleashed the full energy of a nationwide industrialization process, older Americans have played at least three major roles as mediators between technology and environment: cast initially as *skeptic detractors*, they were compelled from ‘41 to ‘47 to serve as *pro-change mentors*, and have ever since filled a valuable role as “*future shock*” *debunkers* (that is, as a cohort seemingly capable of adapting to “damn near anything!”).

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\*Prepared for the 1987 Annual Meeting of the Gerontological Society of America, Washington, D.C.

In this “think piece,” the history of role revision is explored, current gaps in role performance are assessed, and a future role—*technoguide*—is both explained and advocated.

### **History of Role Revision**

Even a cursory examination of the ages of Nobel Prize winners in the physical sciences over the decades makes plain the advanced years of most (though not all) such luminaries. Similarly, distinguished early American technologists like Bell, Edison, Westinghouse, and others, while middle-aged when first noticed by the public, earned authentic celebrity status only later, as gray-haired “wizards,” an imagery that firmly linked technological acumen with advanced years in the public’s mind. To be sure, daredevils and marvel workers, such as the youthful Wright brothers, seemed an exception to this rule. But, by and large, the race seemingly went to the oldest. A typical photogravure portrait of a leading technologist from 1800 through 1940 highlighted an individual rather far along in years.

Paradoxically, a related linkage evolved in just the opposite direction. As members of the general public aged, in contrast to the scientific wizards, they were thought to become less and less available to cheer this or that technological breakthrough—even when their cohort was the special beneficiary of a new gadget, process, or insight. Old-timers were linked, in the public’s mind, with hostility toward new-fangled items, and with a deep-reaching preference for the old ways, for the tried and true, and for the familiar, user-friendly artifacts represented by off-the-shelf hardware.

### **Impact of World War II**

Among its many impacts on standard ways of doing things, the war experience in the United States helped to alter the imagery of technological innovators and users alike. Under pressure to outproduce the extraordinary manufacturing system that the Third Reich directed from 1934 to 1944, the Allies revamped stodgy “standard operating procedure” and made unprecedented room for technological innovation.

This time, however, younger-than-ever inventors were welcomed, supported, and rewarded. New “soft” technologies, such as systems analysis, operations research, econometric research, survey research, and personnel relations, along with advances in more familiar technologies (steel fabrication, shipbuilding, radar, etc.) were pioneered by relatively young individuals—and

the team gathered for the Manhattan Project was far younger, on average, than any comparable task force in memory.

Similarly, in the war plants themselves, the absence of males aged 18 to 45 put a disproportionate responsibility on the shoulders of older workers (including some over 65, who declined to retire for patriotic reasons). Several types of new work force entrants—women (“Mabel the Welder” and “Rosie the Riveter”), handicapped adults, individuals of borderline intelligence and/or learning disabilities, individuals with only an agricultural background—looked to gray-haired plant and office employees for instruction, guidance, and role-modeling. Almost overnight a cohort of “seniors” became, by war-driven necessity, a resilient and even dynamic bloc of mentors.

### Post-War America

With the spread of Levittown-like tract developments in the 1950s, the modern era of the two-generation family overcame the traditional three generational model: a new age of “on-your-own” oldsters profoundly revamped intergenerational relations. Excluded by the physical design of Levitt homes from living with their adult children and their grandchildren, this cohort of oldsters were either left behind in gritty urban ethnic enclaves or took to the road themselves. First Florida, then Arizona, then California, and thereafter, the Sunbelt and Middle Atlantic States began to reap the rewards (and attendant stressors) of an unprecedented gray-hair migration.

Obligated now not by World War II productivity expectations, but by far more personal pressures to make the best of things, older Americans tackled the perplexities of such post-War technologies as TV, home laundries, mobile homes, cataract operations, total hip replacements, double mastectomies, open heart and bypass surgeries, and so on. Bolstered by agencies such as the Veterans Administration hospital system, American Association of Retired People (AARP) chapters from coast-to-coast, and the emergence, by the late 1980s, of over 2,400 retirement communities, the over-65 cohort “got with it”—rapidly and emphatically. For every oldster who shied from utilizing an automatic teller machine, two others joined a line of “yuppies” to bank in this fashion. While an unfortunate five percent were confined to institutional care, a contingency twice as large stayed zesty at retirement communities, while the vast majority kept their lifelong residence up-to-date with VCRs, phone service enhancements, “life line” warning systems, and other high-tech gadgets.

The point is not to exaggerate the pro-change dimension of post retirement life, but instead to urge overdue attention to the technological openness of the elderly, who have commonly been given far too little credit for this attribute.

An AARP telephone survey (1981-1983) of 1,308 adults confirmed the keen interest that older persons have in new technologies. Indeed, the former head of the Association's Institute of Lifetime Learning has boasted that "our research suggests older people are not far behind everyone else in the use of technology" (La Buda, 1984:17).

### Gaps in Role Performance

At the same time, however, the AARP noted with rue that new technological applications for the elderly are often poorly publicized and, therefore, little used. Particularly invisible, much to the regret of concerned parties, are such frontier innovations as a voice-activated robotic arm that can grasp things from nearby surfaces for bedridden persons, and a "Robot pet" that scuttles protectively up to a door at the sound of an intruder and attempts to frighten off the lawbreaker—while phoning the police (Englehardt, 1984:17-23).

In addition to those technologies that directly aid retirees are a number of gadgets and gimmicks through which retirees can aid others—and enjoy themselves at the same time. Typical is their ability to review new computer software now being used in major companies to help employees over 50 prepare for retirement. This software contains many basic (and hidden) assumptions about the spending needs and practices of those over 65, assumptions that gray-haired technoguides could help validate, or challenge and correct.

Similarly, retirees could assess and help improve our use of non-exhaustible fuel technologies, such as biomass, geothermal, photovoltaic, wave, wind, and wood. For, as the founder of the Gray Panthers, Maggie Kuhn, insists, her generation (those born in the early 1900s), having been part of more changes than any other, "are the ones who must be advocates for...safe, renewable sources of energy" (Kuhn, 1981:44).

Finally, given the leadership of Florida in clarifying desirable roles for retirees, it is vital that more and more seniors help politicians resolve the fate of America's first high-speed (250 mph) magnetic levitation train. Organizations of the elderly lobbied in 1985 on behalf of the state bill authorizing a Tampa-Orlando-Miami route, and a Florida oversight committee has explored awarding a franchise for a 1995 completion date.

However, with costs of Japanese and German hardware running about \$3 million per car and \$30 million per mile for track, Florida taxpayers have been understandably hesitant. (Hillkirk, 1985:4-B).

### **Technoguides: Toward the Development of a New Role**

As more and more older Americans learn how to achieve what gerontologists term "successful aging," or the ability to make transitions of normal aging in a constructive and graceful way, new roles are being claimed by these seniors. Retirees in the hundreds of thousands serve daily as volunteers in nursing homes, children's day-care centers, hospice programs, health fairs, part-time job location programs, and a wide array of other such opportunities.

While quite varied in content, objectives, and sponsorship, each of these new roles makes the most of the polished competence and special insider grasp of subtleties that mature "veterans" can uniquely bring to a focused task—whether it be the sensitive transmission of English language skills or the tricks of the trade entailed in keeping an overseas business enterprise alive (Thorp, 1985).

Another role which may soon be worthy of being added to this honor roll is that of volunteer service as a *technoguide*, an option that would maximize the contribution retirees could make to themselves and America in still another welcomed way. In this role, retirees could supplement their previous career knowledge with newly acquired skills in technology assessment: participants would help test, evaluate, and propose improvements in cutting-edge products of special relevance to the needs and wants of older Americans (Haber, 1986).

### **Background**

An ongoing study of life in a large, well-established, and well-managed Florida retirement community has revealed many missed (technological) opportunities. The condo apartments of the 23,000 residents, for example, are wired for emergency alarm systems that could rapidly summon police, fire, or medical aid, but the systems have never been installed. Few residents seem to care, or to be able to explain why the life-protecting infrastructure was installed in the first place.

Similarly, the condo apartments in this sunbelt development make no use whatsoever of active or passive solar technology. Instead, old-fashioned

reliance is placed on large, noisy, and expensive air-conditioners and fans, much as if nothing useful had been learned in the past twenty years about heat pumps, photovoltaics, hot-water assist systems, solar collectors, solar greenhouse space conditioning, or the dynamic like. Even most community pools, located every block or two, go without solar aid, though this is the most common (and economically advisable) use being made of this fast-developing technology elsewhere in the region.

Tours of other retirement communities around the country indicate the total absence of such venturesome, but promising technologies as:

*community fish tanks*, for raising edible fish, like Philippine carp and other species;

*community vegetable gardens*, for experiments with new seeds and aides to tillage yield;

*community bartering systems*, based on computer record keeping, and devoted to the swapping of desirable goods and services;

*community electronic bulletin boards*, based on home computer and modem use, and devoted to the rapid exchange and storage of valued messages;

*community hydroponics stations*, for raising vine-clinging vegetables year-round in a soil-less, chemical-and-water solution; and

*storefront studios*, for the video recording of oral histories by retirees.

### Technoguides: Role and Goals

An observation at this early point in the concept's formation is that retirees who chose to serve as *technoguides* would operate much like the staff of the 57-year-old Consumer's Union.

To begin with, they would purchase or lease cutting-edge technologies in the open market (home robots; year-round hydroponics stations; state-of-the-art heat pumps, solar panels, windmills, for example). They would then test their purchases in exacting ways, drawing on their pre-retirement career expertise, and advise older Americans and businesses alike about the merits and drawbacks of the items they had evaluated. Unlike CU, however, which focuses on conventional mass market products of an everyday variety, the technoguides would focus on the newest, latest, and the least tried-and-proven products, especially those of relevance primarily to older persons, and only thereafter, to society-at-large.

Technoguides would then finally recommend or advise against test items as they chose, taking care, however, to accompany negative assessments with clear guidance for the improvement of the futuristic product or service.

Certain club leaders, of course, would serve as assessors of technology, environmental impact, and social impact, striving to adapt key concepts, models, and methodologies of these fast improving fields to informed use by eager retirees (OTA, 1984).

Technoguides would seek to involve the largest possible number of their peers in the testing process—the better to help raise future-consciousness among older persons. Surveys and mini-usage tests could be conducted in small plazas where older persons congregate, as well as in senior centers and retirement village clubhouses. A network of technoguide clubs across the nation could coordinate their testing to use the same or similar surveys or mini-usage exercises, thereby upgrading the validity and usefulness of the findings (see Appendix 1 for model of a Technoguide Club).

Technoguide clubs could reach out to nearby community colleges and four-year universities for help with the more esoteric aspects of state-of-the-art items under review. Both students and faculty, intrigued by advances in home robotics, the “intelligent” electronic home, the basement (edible) fish culture option, and so on, might welcome a chance to collaborate with bright and energetic retirees, strong in available time and mature insights into product and service possibilities.

### Technoguide Implementation

Given the apparent absence of new technologies in retirement communities and the apparent interest of certain older people in such technologies, an unrealized opportunity would seem to exist to bring these two related matters together—for the good of the retirees in particular, and the benefit of the nation in general.

Models for implementation exist, albeit without the acclaim they merit. Typical of meritorious pioneering in this connection is the Cable TV committee of the AARP chapter in Bethesda, Maryland. Formed in 1984 in anticipation of the arrival of cable television in the community, the committee set out to create special cable programs of direct relevance to older persons. Committee members divided into areas of personal interest, with some pursuing the technical side of production, including camera work and editing, and others focusing on planning TV programs and writing scripts. All learned how to systematically assess and rigorously evaluate cable TV offerings, thereby enhancing their role as constructive TV critics and users, a major technoguide option for active retirees.

Other models exist in Florida, Missouri, and Vermont, where the states operate unique “barter” programs for senior volunteers (Kouri, 1984;



Thorp, 1985). In each case, state-operated computerized system maintains a registry of the names, skills, and interest of retirees who volunteer home-care services to their frail or disabled peers. These volunteers earn service credits that either they or their spouse can redeem later in return for free in-home services for themselves. Such a barter system, appropriately hailed as an overdue social invention, could be expanded in nature to include service rendered as a technoguide club member, which service might also qualify one for home-care or similarly precious services in the years to come.

A third model is available in the operation of Title V of the 1969 Older Americans Act (Kouri, 1884; Thorp, 1985). Better known as the Senior Community Service Employment Program, it provides part-time work for unemployed, low-income persons aged 55 or older by enabling them to perform useful and necessary jobs in their communities (over 65,000 older men and women in 1985 worked on Title V funds at day-care centers, hospitals, job placement offices, legal service offices, libraries, and senior centers). Eligibility for this popular and cost-effective program could be expanded to include retirees who work as full-fledged technoguides.

Still another model is available in the small, but growing number of computer user clubs run by and for seniors. Early in 1985, about 250,000 retirees were thought to have personal computers in their homes, and research has found that many actually enjoy programming, as well as word processing, database management, and the use of electronic spreadsheets. A typical users' club in Menlo Park, CA., requires prospective members to complete 12 of 24 lessons it offers, prizes the many new friendships members form among themselves, and boasts of new links forged by members with computer-using grandchildren. Above all, as demonstrated by Senior Net, with its 40 Learning Centers and more than 4,000 members, and as made clear by a leading computer magazine in 1984, "the new group of computer zealots are dispelling the myth that people stop functioning and lose their usefulness once they grow old" (CHIN, 1984:28).

Finally, the proposed technoguide clubs could draw implementation and operational lessons of merit from the long-standing example of consulting firms of retired executives who aid needy organizational clients for little or no fee. Typical is the Executive Service Corps of the Delaware Valley, a nonprofit organization that lines up retired business leaders as consultants for "do good" outfits unable to meet the fees asked by major consulting firms. Part of the National Executive Service Corps, which has independent affiliates from coast-to-coast, the ESC could help a technoguide club organize itself (and probably provide many new members, as well).

With the possible backing, then, of the largest association in America (the 33-million-member AARP), and with relevant advice available from Consumers Union, the Council of Better Business Bureaus of America, the National Executive Service Corps, and the U.S. Office of Technology Assessment, a 50-state network of technoguide clubs of future-shaping retirees beckons as both an achievable and a desirable prospect.

## **Summary**

From the onset of post-civil war industrialization until about 1940, the role of the older person as mediator between technology and environment was fairly clear and stable: older geniuses pushed innovations along, while older Americans generally grumbled about where the country was heading. The Second World War helped to make innovation the province of much younger scientists, even as it also required gray-haired workers to shape up, adopt new tools, and even help newcomers rapidly “get with it.” Similarly, post-War developments have given additional impetus to the utilization of new technologies by oldsters, and, as we rush toward the 21st century, the “baby-boomers” reaching 65 after 2010 are likely to prove the most technologically comfortable such cohort in American history (Dychtwald, 1989).

All the more reason, therefore, to urge the development of a new role—technoguide—for those retirees able and eager to bring years of field-tested knowledge to bear on the technology assessment tasks before us. Older persons have contributed much as mediators here before. Given the mind-boggling technological changes just ahead—including the impact of super conductivity, parallel-processing computers, hyperplanes, fusion energy, and the like—their services tomorrow could be of greater-than-ever value, provided these services are honed and organized by a corps of volunteer technoguides.

## Appendix 1

### *Technoguide Clubs:*

#### *Older American Possibility*

##### 1. *How many different ways could a TGC contribute?*

###### *Information Provision*

1. Convey needs of seniors to potential providers.
2. "Dream up" new products and services: call attention to fresh ideas.
3. Raise consciousness of retirees about potential products and services; increase cognitive grasp of futuristics.

###### *Public Policymaking*

1. Monitor proposed laws and regulations concerning new products and services relevant to the lives of seniors.
2. Help raise consciousness among policymakers of the interest of seniors in futuristics and technology assessment.
3. Offer testimony at local, state, and federal hearings concerning cutting-edge technology, technology assessment, and so on.

###### *Technology Transfer*

1. Promote serendipity in new uses of existing technology.
2. Promote serendipity in new uses of proposed technology.
3. Research obstacles to technology transfer where seniors are concerned.

###### *Corporate Guidance*

1. Give merit awards annually to companies with outstanding cutting-edge products and services.
2. Establish working ties with the "R & D" arm of major American corporations.
3. Seek the loan of executives and expertise to help guide the technology assessment process in TG clubs.

###### *Technology Assessment*

1. Help test the strengths and drawbacks of cutting-edge technology.
2. Help retirees learn the art of technology assessment.
3. Help retirees practice the art of technology assessment.

## 2) *What might a retiree get out of this?*

*New role option* - A retiree could take a Proactive “recareering” stance, and help shape the future—rather than just be passive and responsive.

A retiree could focus on the career or profession he/she has left, and help assess cutting-edge possibilities, thereby remaining influential in the course of a field to which they had given many decades of service.

Alternatively, a retiree could focus on an entirely new area, such as little-used edible plants for incorporation into the American diet, and thereby expand his/her horizons.

*New contracts* - A retiree could enjoy the company of self-selected enthusiasts for TG goals and methods, and make new, valuable friendships.

*Empowerment* - A retiree could enjoy the pleasure of experiencing real-time reactions and results from the “cooperative redesign” efforts of TG clubs across the country—individually or collectively.

*Personal Profit* - While by no means a major or highlighted prospect, the average TG club member may be pleased to learn early on about new investment prospects, both those likely to reward and to disappoint the use of venture capital.

*Inter-generational Ties* - A retiree could enjoy working with middle-age inventors, “R & D” types, and other promoters of cutting-edge items eager to get proactive feedback from TG clubs.

Similarly, a retiree could enjoy interactions with college students (undergraduates and graduates) deliberately “lent” as aides to local TG clubs by nearby colleges and universities with TA, technology transfer, and/or gerontology courses.

## 3) *Should the TG Clubs be sponsored?*

It may be possible to get the AARP, the Consumer Federation of America, the Ralph Nader Network, or the Consumers’ Union to accept the sponsorship of a nationwide chain of TG clubs.

This would secure experience, bona fides, and resources (funds, personnel, PR ties, clerical support, organizational infrastructure, etc.)

On the other hand, however, this might also entail the drawbacks of bias, controversy, reputation, etc., linked to the sponsor.

At this early point in the planning process, the optimum design would combine strict independence with an Advisory Council of a single representative each from relevant groups (AARP, OWL, Gray Panthers, etc.).

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