



Engaged Scholarship in Gerontology: Frank Caro's Lifetime Contributions

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ABSTRACT

Dr. Francis G. Caro, retired Professor of Gerontology at the University of Massachusetts Boston, Co-editor (1996–2005) and Editor-in-Chief (2005–2016) of the *Journal of Aging and Social Policy*, passed away on October 2, 2020. Caro dedicated most of his nearly 60 years of academic and professional activity to gerontology and services for older adults. This article offers a review of his contributions in four central areas of gerontology: the strengthening of long-term services and supports through integration of home care services with other domains, the expansion of how productive aging was socially understood and economically valued, the importance of rigorous program evaluation and ongoing methodological innovation, and the significance of age-friendly cities and communities, both in the United States and internationally. This review of Caro's work highlights his integral role in helping to place several topics on the gerontological agenda that are still relevant today, establishing him as an important contributor to the field. He also exemplified productive aging and how scholarship can be theoretically rigorous but also applied in meaningful ways to make a difference in individual lives and within communities.

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Introduction

On October 2, 2020, Francis G. Caro, Ph.D. passed away unexpectedly. From his early position as research associate in the 1960s to beyond his official retirement as Professor of Gerontology at the University of Massachusetts Boston (UMB, henceforth) in 2008, Dr. Caro devoted his life to the study of sociology, aging and social policies. His research prioritized an applied gerontological perspective that focused on problem-solving within communities.

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An engaged scholar and citizen throughout his life, Caro left behind a solid record demonstrating his personal and professional dedication to gerontology and services for older adults.

This article memorializes his contribution through the review of his work in four issue areas that stood out prominently in his career: long-term services and supports, productive aging, evaluation and methodology, and age-friendly cities and communities. This review does not aim to comprehensively assess Caro's scholarly work. For example, his intellectual contributions made through his editorship of this journal, where his guidance to authors helped elevate the field of gerontology and advance research on public policy and aging, is not included here. Instead, the purpose of this review is to honor his legacy by highlighting Caro's seminal work in these four areas.

The participating authors are an international group of scholars who either met and worked with Dr. Caro or specialize in one of the four selected areas. They approached this task by reviewing a selected sample of Caro's works in their domain of expertise and identifying key themes that emerged. A narrative was then composed, including comments on the content of Caro's works, along with a contextualized appraisal of how these themes contributed to the field of gerontology.

Long-term services and supports

The first area where Caro made an important contribution to gerontology and social policy was in the developing field of long-term services and supports (LTSS, henceforth). His work articulated many of the issues that continue to motivate researchers currently working in this domain. Some of his work addressed the quality of nursing homes (Porell & Caro, 1998; Porell et al., 1998) which is an ongoing challenge in LTSS. What is notable, however, is his identification of key concerns arising out of the shift toward home- and community-based services (HCBS). Indeed, one of the earliest extant appearances of his name in a public document is in a 1971 report to the Special Committee on Aging of the U.S. Senate, entitled "Alternatives to Nursing Homes: A Proposal" (U.S. Special Committee on Aging, 1971), as part of the Brandeis team (where he was then an Associate Professor) that designed the proposal. This report argues against the needless and costly institutionalization of older and disabled people, recommending instead an efficient system of "Personal Care Organizations" (PCOs). As conceptualized in this report, such PCOs would receive capitated payments to manage a range of services in the community, including cash payments enabling people to hire their own workers. The report notes that this model was being put to the test in Worcester, Massachusetts, an effort in which Caro was also heavily involved. The Worcester model directly influenced other efforts to expand home and community-based services, such as the Wisconsin Partnership Project that remains

in operation to this day, and the influential Channeling Demonstration, which was a precursor to other managed LTSS models (Kemper et al., 1987; Weissert et al., 1988). Caro played a critical role in establishing and promoting the early expansion of such models.

This early work formed the basis of further efforts to establish effectiveness in home-based service models. One study, for example, provided a broad assessment of home care services in New York City (Caro, 1984) which at the time was a small, relatively new program serving only about 30,000 people. The final recommendations of this study will have current readers nodding in recognition due to their continuing relevance to the issues of today. While several of the recommendations have now become well-integrated into policy and practice, such as the need to create a firewall between eligibility determinations and client advocacy (due to the clear conflict of interest), others remain yet to be implemented.

Examples of these challenges, identified by Caro in the 1980s and which remain current issues in the field today, include the need to integrate home care services with other domains, such as medical care and housing, and to develop standards for home care, including sensitivity to cultural values and rubrics for program performance. Even now, reports continue to be written about the need for consistent data collection and reporting for HCBS and for better monitoring of quality (National Quality Forum, 2016; Office of the Inspector General, 2012). Similarly, the quest to integrate health and housing for older people continues to be a struggle. Roadblocks stem from low investment in senior housing as well as an inability to strategically address the healthcare needs of people who may share a living environment but whose healthcare costs are covered by multiple payers (Butler & Cabello, 2018; Spillman et al., 2017). This lack of integration of housing with services is a prime example of the many ways that the fragmented American healthcare system stymies efforts to improve older adults' quality of life.

One of Caro's keen interests focused on the role of the family in providing support. Early caregiver research devoted considerable attention to determining whether informal care substituted for or complemented formal, paid care. This question was motivated by concerns about the "moral hazard" posed by publicly provided services with the implication that family members might stop providing services if the public sector stepped in. This concern continues to be raised in the literature, even though the research has definitively established the complementary nature of such support (Bonsang, 2009; Chen et al., 2017; Muramatsu & Campbell, 2002). Caro's work helped to establish consensus on this issue (Caro & Blank, 1988a; Caro & Stern, 1996; Morris et al., 1998), but took the field further by outlining the range of factors that affect family caregiving, such as varied family relationships, the stress and burden associated with family caregiving, and housing issues. He also highlighted the

importance of respite for family caregivers (Caro & Blank, 1988b) as part of the range of necessary LTSS, asserting the “right of caregivers to some semblance of a normal life-style” (Caro, 1984).

This deeply humane approach to the needs of family caregivers is reflected in another area of his work in the LTSS domain: the concern for protecting the autonomy of older people in LTSS settings. He shared this concern with another recently passed giant in the field, Rosalie Kane. He coauthored an early paper on what he and his colleagues called self-direction: programs that enable people with LTSS needs to use Medicaid funds to purchase the supportive services they need, including hiring people to provide personal assistance services (Glickman et al., 1997), as well as a book chapter discussing the merits of “cash for care” programs (Morris et al., 1998).

Glickman et al. (1997) was notable in that it specifically addressed the issue of self-direction from the perspective of older people at a time when that movement was dominated by younger people with disabilities. This dominance inadvertently reinforced the ageist notion that older people simply were not interested in, or perhaps were incapable of, self-direction. Caro and coauthors countered this perception by providing evidence from participants in the Massachusetts Home Care Program about their experiences with directing care. Even earlier in his publishing career, Caro clearly states that maximization of choice and minimization of restrictions are key goals of LTSS for older people, alongside clinical outcomes such as maximizing physical functioning (Caro, 1981a). Caro proposed that “choice” be among the parameters used to assess home care quality.

Another strand of Caro’s work centered on developing methods for proving the value and ensuring the quality of home care services, which drew attention to the broad range of factors that influence the overall experience of people in need of supports. Caro repeatedly called for rigorous research on home care and for clarifying its objectives (Caro, 1981b), and it is here where his clear thinking is most evident. He asserted that the home care field should focus its goal in promoting how home care can make people’s lives better rather than highlighting the cost savings that come from reduced institutionalization of people in the community, which often result from unmet care needs in the home. “The home care field,” according to Caro, “may be more successful in capturing public imagination and public resources when it presents evidence of ‘improving lives’ than when it demonstrates that it ‘reduces unmet needs’” that can lead to nursing home placement (Caro, 2001). This conceptualization of the problem led Caro to develop ways to demonstrate the improvements that home care brings, by developing a “quality of circumstance” measure. This encompassed not just the extent to which a person’s ADL and IADL needs were supported, but also the broader range of circumstances that affect

their well-being (Caro, 1981a; Caro et al., 2001). The incorporation of such considerations into quality-of-life measures by other researchers demonstrates how influential, but ahead of its time, Caro's thinking was around this issue.

To this day, the LTSS field struggles with many of the issues that Caro raised throughout his career. One that stands out is the need to better integrate home care with both medical care and housing. This remains difficult, not only because the worlds of LTSS, medical care, and housing are siloed via financing and regulation, but also because each person exists within distinct clusters of relationships, making it difficult to reach them systematically and achieve economies of scale. This dispersal of responsibility for individuals across a broad range of invested parties – an array of health care providers, social service providers, and others – leads to challenges in coordination and service provision that the field still labors to address. Other enduring issues that Caro highlighted in his research include paying the direct care workforce adequately (Caro & Kaffenberger, 2001) and finding a way to measure and ensure the quality of home care, one of his most persistent concerns in this domain.

Productive aging

Productive aging was a priority of Caro's research and community engagement agenda. He not only expanded the knowledge base behind productive aging but collaborated to make it a salient issue for the general American public (Caro, 2009). For Caro, productive aging was an important and necessary innovation as clarified in this quote: "For societies that have created retirement systems that have had the effect of removing many elders prematurely from productive roles, emphasis on productive aging is a valuable correction" (Caro, 2009, p. 140). Borrowing a statement by Robert Butler, who coined the productive aging term in gerontology, Frank Caro mobilized, in many ways, the productive potential of older people in society (Butler & Gleason, 1985). Given Caro's formative role in the domain, it therefore comes as no surprise that the most recent literature on productive aging still quotes directly from some of the research work in which he was involved (Gonzales et al., 2020; Mergenthaler et al., 2019; Serrat & Villar, 2020).

During his career, in collaboration with many scholars, Caro tackled two main questions around productive aging: how society could draw more effectively on older (and near older) people to address community service needs, and how new opportunities for productive participation of older people (e.g., volunteering and providing long-term care) could be created. Moreover, Caro maintained an interest about the role that public policy plays in this issue. This is reflected in Caro's emphasis on how policies might be able to stimulate greater formal volunteering by older people in organizations (Morris & Caro, 1996). It is also reflected in his identification of social policy as one of the five

sectors in the conceptual model of productive aging later advanced alongside Dr. Scott Bass, his colleague and fellow leader in the developing field of gerontology (S. Bass & Caro, 2001).

Conceptualization

The early work of Caro and his colleagues in this domain conceptualized productive aging with the perspective of not only ongoing economic involvement in later life, but also societal valuable contributions. They called for continuing participation of older persons in the economic and public life of society regardless of age (Morris & Caro, 1995, p. 36), given that most persons tended to remain active, even at advanced ages (Burr et al., 2002, p. 88). This involved focusing on social “activities that can be counted, aggregated, and assigned some economic value” (Bass & Caro, 1991, as cited in O’Reilly & Caro, 1994, p. 41) rather than activities directed solely toward personal enrichment.

Coining an innovative definition to capture this combined economic and societal component of activity in later life, Caro and colleagues defined productive aging as “any activity by an older individual that contributes to producing goods or services, or develops the capacity to produce them (whether or not the individual is paid for this activity)” (Bass et al., 1993, p. 6). Activities that could be quantified in terms of economic value, but were also socially valued and demanded, became the axis of this productive aging concept. Thus, both economic and social contexts were deemed crucial to understand productive aging, and on this basis, working, volunteering, caring for grandchildren, and helping people with health conditions or impairments are considered examples of productive aging activities.

The sociological emphasis that Caro and his colleagues brought to productive aging added a whole new perspective to gerontology. Older people had to be seen not merely as individuals, but also as agents within the context of societal structures (Bass & Caro, 1996). This attention to the interaction between individual and social structures opened whole new areas of inquiry (e.g., pensions, housing, health care delivery), and highlighted the importance of societal norms in the study of older adults’ behavior and participation in productive aging activities. In a paper that constituted an important milestone, Bass and Caro (2001) presented a multifaceted and interactive conceptual model for this understanding of productive aging that included five sectors: situational, individual, environmental, social policy, and outcomes. The underlying premise of this model is that changes experienced in the first four sectors can influence and change the participation of older people in productive activities, which are captured in the fifth sector. These sectors embrace the range of influences that may enhance or reduce individual

participation in productive activities and can also serve as framework for those designing interventions to help promote and increase the engagement of older people in productive aging behaviors.

On the one hand, these sectors embrace the range of influences that may enhance or reduce individual participation in productive activities. On the other hand, they are areas around which interventions should be designed to increase productive aging behaviors.

Caro also expanded the study of productive aging to encompass the interplay between different groups of productive activities (called “sectors” or “clusters”) instead of approaching them separately (Bass & Caro, 1995). In principle, and after initial findings from the 1991 Commonwealth Fund Productive Aging Survey, Caro’s scholarship with his colleagues made it clear that older people could make significant contributions in more than one productive activity or sector. Therefore, it was only through a cross-sector approach that the actual scope of productive participation could be comprehended fully.

Motivation

Caro incorporated a wide variety of activities into his definition of productive aging, arguing that older people could interpret for themselves what was or was not deemed to be productive. Similarly, motivations for engaging in productive aging varied per individual. Thus, understanding the factors motivating older people to remain productively and healthily active became an important goal during the mid and late stages of Caro’s career as a gerontologist. Underlying many of Caro’s writings about productive aging is the belief that many more older people could be motivated to pursue such activities, highlighting his appreciation and respect of the potential of older people as significant contributors to society. Recent academic work on volunteering in later life draws on his work to emphasize the importance of attracting and supporting older volunteers from underrepresented demographic groups (Morrow-Howell et al., 2018), and understanding the factors that make productive aging available to all. Thus, Caro and colleagues’ research aimed to categorize productive aging behaviors into activity “clusters” (e.g., a combination of volunteering, employment, informal long-term care, and caring for grandchildren) and to analyze what motivated people to pursue them. With his colleagues, Caro committed to a twofold task: looking into the explanatory power of a single global activity motivation measure and trying to identify a modest set of distinct activity motivation dimensions that might explain engagement in specific activities or cut across various activities (Caro, Burr et al., 2009). Generally speaking, studies in which Caro was involved showed that motivations that were specific to activities tended to be more powerful in explaining activities than the general activity motivation measures.

At the same time, they were able to show that a narrow general activity motivation measure might be helpful in explaining participation in productive practices such as formal volunteering and paid employment.

The idea of “global activity motivation” (Caro, Burr et al., 2009, p. 5) was later introduced by Caro and colleagues as a measure useful to understand patterns of activity beyond the motivation for specific activities. Following this line of inquiry, Caro, Caspi et al. (2009) examined how various forms of productive activity might complement or interfere with one another, concluding that a global motivation to be active might help to explain participation in multiple activities at any one time or sequential productive activities (that is, switching from one activity to another). An example of this is retired teachers who continue to make contributions in schools as volunteers. In the end, both general and specific motivation pathways to productive aging activities were demonstrated to be useful for activity organizers in helping them to orient and encourage older people to successfully engage in such actions. This research strand on motivation and clustered activities, in which Caro was deeply involved, has been influential, for instance, in the study of pathways of productive activities in later careers (Van der Horst et al., 2017) and the analysis of outcomes from activity patterns in later life (Chen et al., 2019).

Barriers

Barriers to productive aging were another ongoing interest of Caro in this research domain as he considered general motivation and perceived barriers to both contribute to activity patterns of older persons in later life (Caro et al., 2008). Although he was careful to avoid painting productivity in old age as an obligation, he was interested in identifying and removing barriers for older people who want to be productive. Barriers to engaging in productive aging activities could be countered through the provision of opportunities and incentives to encourage productivity among older people. Furthermore, he supported the promotion of related frameworks, such as successful aging, healthy aging, and meaningful aging, to further offset a mindset of barriers to participate in productive activities

His landmark coedited book, *Achieving a Productive Aging Society* (Bass et al., 1993), provided an extensive list of barriers to productive aging. Included in this list was institutional ageism that could be experienced through age discrimination in employment or as intergenerational conflict. Another barrier identified in the edited book was the defective-institutions hypothesis where employment and volunteer options are so unattractive that people who are able choose to depart from jobs as early as they can and generally avoid extensive volunteer commitments. A third barrier example is the alternate preference hypothesis

which asserts that “many older people organize their lives around alternatives to the work ethic.” Several of these barriers to productive aging were to constitute the focus of Caro’s scholarly work for the rest of his career (Bass & Caro, 2001).

Volunteering

A committed volunteer himself, Caro paid considerable attention to volunteering as a productive aging activity. In Caro and Bass (1995), he raised some key questions, including how more older people could be attracted to volunteering through improved dissemination of information about good volunteer assignments, for example, and the removal of barriers, such as limited transportation access. In this work, Caro and Bass also considered ways that older volunteers could do more and different types of work through improved training as well as ways of sustaining continuity in volunteering. Given the potential of volunteering as productive activity, they concluded that “volunteers can make a major difference in community service initiatives” (Caro, 2009, p. 135).

As part of their research on volunteerism, Caro and Bass (1997) examined receptivity to volunteering in the postretirement period. They concluded that there was a window of opportunity for volunteer engagement in the few years immediately after people stopped working. As a result of this finding, they advised that “preretirement counseling should routinely include active efforts to place interested participants in volunteer assignments” (p. 438). Later research on volunteering by Caro and colleagues uncovered an apparently paradoxical association between informal caregiving and community service volunteering. It was found that those reporting more hours of informal care work were more likely not only to be volunteers compared to those not caregivers, but to also report more hours of volunteering compared to volunteers not also involved in informal caregiving activities (Burr et al., 2005). They concluded that “persons engaged in multiple social networks (caregiving and volunteering networks) have the most opportunity and motivation to engage in productive activity in later life” (p. S255).

Implications for practice

Although he delved into theoretical perspectives (Bass & Caro, 1996), barriers (O’Reilly & Caro, 1994), motivations, types and patterns of activities (Caro & Bass, 1992), resources involved, and other aspects of productive aging, this did not dampen Caro’s interest in applying his understanding of productive aging to real life practices aimed at maximizing older adult well-being. “Does one form of activity readily substitute for another? In other words, do all kinds of productive activity contribute equally to well-being? Does variety in activity matter? In other words, do older people maximize their well-being when they

engage in a variety of forms of activity?” (Caro et al., 2005, p. 3). Questions like these, along with other contributions discussed below on methodology and age-friendly cities, connected Caro’s scholarship on productive aging to practice in a way that embodies the concept of scholarship of application and engagement (Boyer, 1990).

Implications for practice and policy were a must in any paper led by Caro. For instance, when concluding a study of global motivation for participation in a range of productive aging activities, Caro et al. (2009, p. 204) pointed out that “older people who are intensely involved in paid employment, for example, may be successfully recruited to contribute to a volunteer cause in part because some of the motivation that drives their engagement with employment can be transferred to a volunteer cause.” Regarding policy implications, a good example of Caro’s practical stance was a recommendation for career centers to adapt to the needs of older workers, for example, by developing coordination and mature worker workshops aimed at to enhancing employment opportunities for older workers (Caro & Tull, 2009).

Another feature of Caro’s endeavors around practice was his efforts to integrate productive aging at the very institution where he was engaged as scholar. A good example of this was the Elder Leadership Project developed by Caro and Birchander at UMB’s Gerontology Institute. This project worked with a group of well-trained skilled older volunteers to make a substantial difference in the lives of people depending on community services. This was achieved mainly through supporting Councils on Aging in their efforts to assist frail older people in many communities in the Boston metro region.

Future research

Throughout his engaged scholarship, Caro paved the way for gerontological research on productive aging. In his writings he insisted on the need for significant investments to stimulate greater volunteering among older people (Morris & Caro, 1996), along with opening “possibilities for older volunteers to make more significant contributions” (p. 8). He advocated for evaluating the potential that civic participation and other forms of productive activity have in contributing to the overall well-being of all people, and in particular older people (Burr et al., 2002). He also argued that institutionalized ageism needed to be investigated as an obstacle to employment of older people (Bass & Caro, 1996).

According to Caro and his colleagues, more research was necessary on the preferences and obligations mediating older people’s response to competing productive aging opportunities. Possibilities for a productive aging ethos to be developed and embraced in the future (Caro, 2009) and more multi-country comparative research on elder volunteering were other avenues for research that Caro emphasized. Finally, given Caro’s great interest in activity

motivation, he also advocated comparing motivation for productive and non-productive activities and researching how this motivation, whether clustered or not, may interact with a global measure of activity motivation (Caro et al., 2009) across ethnic, income, educational, and regional boundaries (Caro et al., 2010). Some of these recommendations for future research asserted by Caro were already introduced in his earlier work with colleagues and are now being echoed in subsequent gerontological scholarship focused on productive aging (Principi et al., 2012; Shen, 2017).

Research methodology and program evaluation

Caro's profile as methodologist, and particularly his trajectory in program evaluation also deserve attention. A sociologist with expertise in evaluation research, he always wanted to identify and evaluate, in a systematic and controlled way, the impact of implemented projects. He examined the best ways to invest funds in community-based services as well as the effectiveness of this investment on delaying or reducing the demand for much more costly LTSS (such as nursing homes or assisted living facilities). Once results were in hand, Caro's typical next step was supporting decision-making and helping investors, politicians, and managers from private foundations to get the right funding for high quality public projects and services, often acting as a mediator among parties in the quest for solutions to problems.

His vast experience in project implementation made him aware of common problems when integrating project planning and evaluation. A case study published in the early 1970's clearly illustrated his approach (Caro, 1974). Robust evaluation designs were then rare for community programs, quasi-experimental evaluation was scarce, and internal and external validity were often an issue. Often programs were launched with much motivation and enthusiasm but little rigorous research. Caro knew well that the use of good evaluation designs maximized the generalizability of results and the replicability of projects. This idea guided his work from the beginning (Caro, 1971; Caro, 1980) and remained until later stages in his career. For instance, Caro and Gottlieb (2001) designed a quasi-experimental pre-test/posttest design to test the effects of a gerontological intervention. However, this paper's focus was not the typical presentation of results but the detailed description of obstacles that arose when carrying out the planned design. Rather, the purpose of this effort was to demonstrate that the combination of experimental evaluation design with service and program delivery could lead to further improvements in community programs and services in the future.

Methodological diversity

Caro's methodological background as a sociologist and gerontologist allowed him to draw on different research methodologies, including quantitative (e.g., Caro et al., 2010), qualitative (e.g., Stern & Caro, 2004) and mixed methods (e.g., Gottlieb & Caro, 2000). For instance, in the later years of his career, Caro's research shifted to include a focus on residential living experiences of older people. With some colleagues (Gottlieb et al., 2009), Caro conducted a qualitative study of community-residing older people in which he assessed parent and peer experiences with health and function challenges that influenced their residential preferences and decisions in later life. Furthermore, he continued to integrate this interest in residential choices of older people when working with colleagues to develop an innovative internet-based vignette method (Caro, Ho et al., 2009, 2012; Caro, Yee et al., 2012) that is presented in more detail below. To illustrate the wide range of methodological tools adopted by Dr. Caro in his gerontological scholarship, the remainder of this section will highlight two distinctive methodological approaches cultivated throughout his career.

Applied social research by older adults

In his several positions at UMB's Gerontology Institute over the years, Caro tried to develop innovative projects that had a positive impact on older people, especially the most vulnerable and poorest. One of his most important contributions was carrying out applied social research by trained older adults who were considered stakeholders, and whose concerns were considered in the design of the research (Bass & Caro, 1995). This particular emphasis was conducted in response to community needs using an action-research methodology, which involved consultation with community representatives and emphasized collaboration with affected citizens. Caro often designed courses that taught students, both younger and older graduates, how to conduct applied social research as a community problem-solving effort.

In 1980, the Frank J. Manning Certificate Program in Gerontology at UMB, a program traditionally targeting learners aged 60 year and older (Silverstein et al., 2005), adopted the action-research model when teaching students about social research methodology. This enabled students to get involved in research projects affecting older persons. Under the guidance of a researcher who trained them, these older students collaborated in the design of the research, helped to better formulate, and delimit the scope of the study, and even assisted the researcher to enrich his own knowledge of the topic. Thus, in addition to receiving theoretical classes, these students had to work outside the classroom for at least 20 hours, conducting interviews and keeping a field diary

with notes on the research. Typically, the researcher wrote a report with recommendations, which was submitted to the students for final analysis and reflection to refine or improve it.

An example of this type of research was the work by Schofield and Bass (1986) in collaboration with the Massachusetts Federation of Nursing Homes, consisting of interviews with 145 people who planned to place a family member to a nursing home. These relatives were questioned about their decision-making process in choosing the most appropriate nursing home and the difficulties they experienced. This report appraised nursing home quality, produced an up-to-date list of available nursing homes, and was used to introduce an increase in Medicaid contributions to cover expenses associated with nursing home stays. These older students proved to be very good interviewers, conducting rich and detailed interviews, perhaps because they themselves were intimately familiar with the social problems being investigated. Thus, it was proven that involvement of older adults in research contributes in various ways to the effectiveness of applied research in gerontology. For instance, older adults trained as interviewers were often highly successful in obtaining rich responses from older respondents (Bass & Caro, 1995).

Internet-based vignette experiments

In this context, vignettes are hypothetical situations presented to survey respondents to obtain their opinions about desirable or anticipated behavior. Peter Rossi had developed factorial survey design, an approach using vignettes (Rossi & Nock, 1982). Caro and his colleagues tested this method in gerontology using S Plus software for the first time to generate complex vignettes (Caro & Chen, 2004). Furthermore, they made it possible to innovatively use video and audio clips and the Internet to deliver information to and elicit summary judgments from older individuals regarding residential options (Caro et al., 2012). Caro and his colleagues explained their use of this innovative method in gerontology as follows: “the internet is used also to deliver information including vignette content to subjects through video and audio clips. Use of video and audio clips provides a means of engaging subjects more fully than is possible with written information alone” (Caro et al., 2009, p. 4).

For their research, Caro and colleagues created a “vignette scenario” using a framework in which a distinction was made among dimensions (social objects that can vary qualitatively and quantitatively), levels (specific values that a dimension may take), objects (units being judged that are described by a single level for each dimension), judgments (rating given by a respondent to an object), and the factorial object universe (the set of all unique objects formed by all possible combinations of one level from each of the dimensions). The method permits the study of the effects of both

vignette structures and respondent characteristics on choices selected in follow-up to being presented with various scenarios (Caro & Chen, 2004; Caro, Ho et al., 2012; Caro, Yee et al., 2012). Caro and coauthors implemented the use of vignettes in a variety of ways to better understand issues of intergenerational social relevance and how personal experiences with aging family members when they were younger were influential of an older person's own decision-making processes. This was largely applied in these studies to learn more about the views of older people when they had to decide about moving into a nursing home, a retirement community, or an assisted living facility when they could no longer live at home.

An example of how Caro and his colleagues implemented this new way of using vignettes can be found in the study by Caro et al. (2009) in which subjects watched and listened to a video clip with five substantive dimensions with different levels: functional status (3 levels), social networks (3 levels), current housing (2 levels), retirement community characteristics (2 levels), and financial considerations (4 levels). By using video clips of a man/woman with similar age but different appearances and status (a doctor or someone unknown) Caro and colleagues were able to determine whether the identity of the host would have an influence on respondents' judgments.

Furthermore, Caro et al. (2012) reported the results of a vignette experiment to contribute to an understanding of the basis upon which older people and their adult children made decisions about residential options. They used vignettes to depict situations, and study participants were asked to express their judgments or talk about the possible response behaviors. Each person was asked, in a random order of vignette presentation, about a situation in which they were to recommend to the depicted subject whether they should stay at home or go to live in a nursing home. Study participants were even asked to imagine themselves in the depicted person's circumstances and think about themselves. The children of older people were also asked to participate in the study. After responding to the vignette, participants were then asked to answer a questionnaire with sociodemographic information. Some examples of findings from these vignette studies showed that study participants with mobility problems and needs in activities of daily living, such as not being able to clean the house by him/herself, to climb stairs or drive, were more likely to recommend the option of living in a nursing home (in 30–40% of cases) in the vignette scenario, depending on whether the respondent was an older person or her children. In the case of older people who lived alone and did not have many friends in the neighborhood, the participant adult children were much more sensitive about social isolation than the older respondents. For adult children study participants, social isolation was as strong an indicator as functional loss for an older person needing more support.

Caro's enduring contributions to the development of this methodology can be seen in recent papers on experimental design methods (Eckerd et al., 2021; McInroy & Beer, 2021) and gerontology (Santos-Eggimann & Meylan, 2017), which reference Caro and his colleagues' use of vignettes.

Age-friendly cities and communities: the "grand finale"

When Caro retired from UMB in 2008, he became a living testament to the power of productive aging through his considerable volunteer work. At this time, he became advocate for the needs of the local aging population when he stepped into a leadership role in his own community. In 2011, Caro co-founded the Brookline Community Aging Network (BrooklineCAN, henceforth), a community volunteer organization located in Brookline, Massachusetts. BrooklineCAN advocates for neighborhood age-friendly initiatives and serves as a conduit of information to empower older people to remain active members of the community and to successfully age in place.

It was Caro's work in making his own community more age-friendly that enabled him to integrate his academic experience with his personal interest in his community during his retirement. Shortly after BrooklineCAN was launched, Caro organized a committee of local leaders in Brookline to pursue joining the World Health Organization's Global Network for Age-friendly Cities and Communities (or "the Network"). Established in 2010, the purpose of the Network is to connect like-minded cities, communities, and organizations worldwide to support efforts to promote local level action to nurture participation of older people and create community environments supportive of healthy and active aging (World Health Organization [WHO], n.d.). Caro recognized the importance and value of aligning his local community with this global initiative and worked collaboratively with local leaders in Brookline to apply to join the Network (Daly et al., 2012).

In 2012, Brookline, MA became the ninth municipality in the United States and the first community in New England to join the Network. In October 2021, the Network included 1,114 cities and communities in 44 countries and covered over 262 million people worldwide (WHO, n.d.). By joining the Network, the town of Brookline "committed to a comprehensive, multi-year effort to strengthen its age-friendly status" (BrooklineCAN, n.d.a). A Brookline Age-friendly City Committee, cochaired by Caro, was established to provide ongoing monitoring of projects and to outline future goals. Ruthann Dobek, Director of the Brookline Council on Aging/Brookline Senior Center and Caro's cochair, remarked,

Frank was significant in having Brookline be the first Age-Friendly City/Town in New England due to his extraordinary leadership and community organizing skills. He was able to gather the community together and focus on identifying needs and gaps in services and then formulating a plan with the town staff (R. Dobek, personal communication, May 4, 2021).

A few examples of successful age-friendly initiatives that have been enacted in Brookline include the establishment of a Pedestrian Advisory Committee, advocacy for more affordable and age-friendly housing options, publication of online guides that identify buildings with age-friendly features, and the development of a new age-friendly park (BrooklineCAN, n.d.a). Caro's efforts to formally align Brookline with the Network ensured that the town would remain committed to promoting age-friendly initiatives, even after his leadership ended. The work of the Brookline Age-friendly City Committee is ongoing with a new cochair that continues Caro's work. Goals include working alongside local business owners to establish age-friendly businesses and services, partnering with other community groups to increase public transportation options, and developing a community-wide response to support isolated older adults impacted by the COVID-19 pandemic (R. Dobek, personal communication, May 4, 2021).

Caro's active involvement in his local community on age-friendly initiatives guided his continued research and academic pursuits while retired. Caro sought to not only work locally, but also endeavored to inspire and educate globally on the topic of age-friendly cities and communities. While working to bring Brookline into the Network, he collaborated with several other gerontology colleagues internationally, including his former graduate student Kelly Fitzgerald, to publish in this research domain. In 2014, Caro co-edited, with Fitzgerald, a special issue of the *Journal of Aging & Social Policy* (JASP) titled "Age-friendly Cities and Communities Around the World" (Caro & Fitzgerald, 2014). This special issue brought together international perspectives on age-friendly communities and included an introduction coauthored by Fitzgerald and Caro (2014). Caro and Fitzgerald went on to co-edit and publish a book titled "International Perspectives on Age-Friendly Cities" in 2016. Building on the JASP special issue, the book included articles that examined the circumstances in which communities undertake age-friendly initiatives, public-private collaboration in age-friendly initiatives, collaboration across institutional sectors in age-friendly initiatives, policies that facilitate age-friendly developments, and the basis upon which age-friendly initiatives should be evaluated (Caro & Fitzgerald, 2016). Although Caro had officially retired from the academic world at this point, these publication projects also exemplified his commitment to former students and his skills as a mentor and teacher.

Caro's parallel work as he entered retirement, in academia and community engagement, enabled him to use his experiences acquired in both domains to support his work as a gerontologist and as a community leader, exemplifying once more his scholarship of engagement. His knowledge and experience as a gerontologist strengthened his leadership at BrooklineCAN and guided the organization's mission and vision.

A humble scholar, a giant legacy

Overall, Caro's trajectory as researcher comprised around 60 years of uninterrupted dedication to gerontology and social services. His goal, throughout his research career, had always been to contribute to the development of policies and services that provided maximum well-being to people and communities through specific projects based on robust analyses.

His advancement of how productive aging is understood and defined is an example of this goal. More than a decade ago, Caro wondered whether a productive aging movement would capture the imagination and enlist the energy of many older people (Caro, 2009). The extent to which this has become true has a lot to do with his determination to put productive aging and the well-being of older people on the agenda, making it a friendly, feasible, and accessible option for older people in his country and beyond. An example of this is his introduction of productive aging in Spain through a series of master seminars taught at the University of Granada.

Caro, however, was not just a committed scholar. Through Caro's combined academic and community-level work on the different topics covered in this paper, he has left a legacy that will inspire future gerontologists. During his retirement, Caro lived out what he had researched during his career. He seamlessly integrated his professional network, academic knowledge, and leadership skills with his retirement activity of community advocacy and service. As a result, Caro successfully and personally demonstrated active and productive aging in his own life, theoretical concepts he had extensively researched and helped to develop throughout his career. In addition, the groundwork he laid in Brookline to establish a municipality committed to age-friendly practices leaves a lasting legacy that will continue to positively influence the lives of older people long into the future.

Current researchers in gerontology are invited to follow the admirable example set by Caro and find an area of interest in which they can integrate their skills, expertise, and knowledge while working in a meaningful way that impacts the lives of older people locally, nationally or globally. To this end, they may find useful the following Caro's advice: "Get involved in community

affairs. Help to call attention to the good things your community has to offer. Advocate for feasible improvements. Work with like-minded people to multiply what you can accomplish” (BrooklineCAN, n.d.b).

Key points

- Caro anticipated key concerns stemming from the shift toward home- and community-based services.
- Caro was involved in broadening the definition of productive aging.
- Through his engaged scholarship, Caro fostered applied social research by older adults.
- Caro endeavored to inspire and educate globally on age-friendly cities and communities.
- Caro became an advocate in his community for the needs of the local aging population.

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