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Valerie Chang Greer · Linda S. Edelman *Editors*

Age-Friendly Ecosystems

Environments for Equitable Aging by Design

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For our elders—our parents, grandparents, aunts and uncles who model aging well—and for the next generation who follow in this journey; and for Isla.

Foreword

Whether referred to as age-friendly city (WHO 2007), livable community (e.g., Oberlink 2008), or age-friendly community (Lui et al. 2009), the early part of this twenty-first century has been characterized by growing advocacy for making "environments and systems within localities more supportive of long and healthy lives" (Greenfield and Buffel 2022: 1). Diaz Moore, Scharlach and Greenfield (2018) recognize that age-friendly community initiatives (AFCIs) get defined differently, but generally are collaborative, interdisciplinary or interprofessional efforts to change the physical setting—such as initiatives like visitability (Pynoos et al. 2010) and complete streets (LaPlante and McCann 2008)—or policy to enhance independence or mobility of older individuals (Golant 2015), or to provide supportive programs within naturally occurring retirement communities, such as the Villages concept (Village to Village 2015). They go on to advocate for a place-based approach to understanding and creating age-friendly communities, with place understood as a core concept from environmental gerontology that integrates people, program and the physical setting (Diaz Moore 2014).

Terry Fulmer, president of the John A. Hartford Foundation, suggests a reframing of age-friendly communities as "eco-systems" (this volume), which here has been conceptualized as involving rethinking of neighborhoods, campuses and health systems. The twentieth-century manifestation of these places was informed by shared paradigmatic assumptions such as: subsequent generational growth, unlimited natural resources, functional differentiation and medicine being more focused on cure than care (Diaz Moore in press). Yet we now find ourselves at a tipping point with age-related communities not proving sustainable, subsequent generations now shrinking, and a climate crisis unrelentingly drawer closer.

Aging in the Twenty-First Century Intermountain West

Nowhere is this more evident than in Utah and the Intermountain West, where we see climate impacts on our air quality and water scarcity and our approach to urbanization typified by twentieth-century suburbanization strategies that now strain the resilience of our ecology. Given this confluence, it should not be surprising that Phoenix, one of the fastest growing metropolises in America, recently announced a development moratorium (Healy 2023). Similar conversations have begun in Utah as well, highlighted by a dropping water level in the Great Salt Lake exposing toxic arsenic-laced dust that becomes airborne and threatens the populous Salt Lake Valley (Osborne 2023). A warming planet is also increasing air pollution arising from wildfires, another negative impact on cardiopulmonary health. Additionally, the confluence of our mountainous terrain and prevailing weather patterns creates moments of inversion where GHG emissions are trapped in the valley atmosphere and are associated with lost school/workdays and increased hospital admissions (Errigo et al. 2020).

The drop in Great Salt Lake levels is indicative of over-usage of water occurring during the current drought in the region. While some conservation methods have been enacted, the region's projected growth will place 7 of 11 water basins into high or very high stress criticality levels (Khatri et al. 2018). Interestingly, climate models suggest an overall increase in precipitation, but that precipitation is likely to come in fewer but more substantial rain/snow events, likely leading to reduced effectiveness in conservation of those water resources and more run-off resulting in increased flooding, as we have seen already occurring in California over the past few years.

Whether air quality or water scarcity, these issues will only be exacerbated by the fact that Utah is one of the fastest growing states in the nation. More people place demands for more housing, and a recent study already suggests the housing supply is short by thousands of units and already places over 40,000 low-income renters at risk for housing instability due to rapidly increasing rent and home prices (Wood and Becker 2023). This is particularly true for older adults on fixed incomes, where increases in rent and/or property taxes exceed any potential cost of living increase. It is staggering to consider that people aged 65 and older are the fastest growing demographic group experiencing homelessness (Culhane et al. 2019). Not surprisingly, this skews significantly toward underrepresented groups (Kushel 2020). One can only imagine that with the impending fiscal challenges associated with both Medicare and Social Security facing insolvency over the next decade, a fundamental reconsideration of age-friendly communities is incumbent.

Age-Friendly Communities as Ecosystems

This is why the following volume is brilliant in both its timeliness as well as its bold rethinking of age-friendly communities as ecosystems, or more specifically, resilient ecosystems. Fulmer and Huang (this volume) articulate five sectors as part of age-friendly ecosystems: public health, health systems, cities and communities, employers and universities. As an ecosystem, these five sectors need to work synergistically to foster collective resilience, requiring adaptive capacity of the ecosystem to respond to threats and dangers and recover quickly. The global COVID scare of the early 2020s reflects this interdependency. Public health determined a course of action including limiting social contact to limit transmission, including shutting down the economy. The health system was overrun as demonstrated by tent hospitals and medical ships being brought to large urban areas. Cities and communities became ghost towns, with significant economic damage to hospitality industries. Employers wrestled with how to keep their businesses operating, and advantages skewed to professional services with their digital access and capabilities, and away from manual labor-dependent industries. Finally, universities were called upon to research and provide care, along with their educational mission, while facing all of the above challenges. All of this arising from one virus. In short, the system proved not particularly agile to adapt, and, because of this, we are still recovering across numerous sectors. On reflection, my strong inference suggests all sectors, but particularly behavioral public health, rested their response on the reasonable person theory: that when provided information, people will do the reasonable thing. That proved not to be the case, and studies document excess deaths resulting from COVID-19, including differential rates in excess deaths associated with political affiliation. Who would have thought?

Age-Friendly Health Systems

This volume simplifies the Fulmer and Huang framework of age-friendly ecosystems to health systems (by collapsing public health and health systems together), universities and neighborhoods. Fulmer and Huang offer a "5 Cs Framework" for age-friendly public health systems: connecting and convening, coordinating, collecting (and disseminating) data, communicating, complementing (and supplementing). Connecting and convening suggests the importance of integrated actions to address emerging threats or problems and leads naturally to the need to coordinate such efforts. Collecting data and communicating not only the data but analyses and resulting prioritizations and receiving regular feedback are essential. Finally, complementing suggests the need for supportive efforts across multiple domains and multiple actions to drive a result.

In terms of age-friendly health care, the World Health Organization has identified three principles: information, education, communication and training of staff;

healthcare management systems adapting to the special needs of aging adults; and the physical environment reflecting universal design principles. In response to the first principle, Fulmer and Huang briefly mention the 4 Ms: what Matters: Medication (age-friendly medications and dosing); Mentation, engaging practices focused on dementia, delirium and depression; and Mobility, a focus on safe, physical functional ability. These practices are shared in a toolkit available from the Institute for Healthcare Improvement (2019). Unfortunately, recent studies suggest a lack of awareness and implementation of these practices in primary, secondary and tertiary care (Tavares et al. 2021). This reflects that age-friendly health systems remain in the pre-paradigmatic stage, and reinforces the timeliness of this volume.

Age-Friendly Neighborhoods

Hong (this volume) presents a chapter emphasizing the importance of the voices of older persons in shaping the design of age-friendly neighborhoods. The chapter provides an easily digestible overview of the challenges and opportunities for age-friendly neighborhoods. Challenges may be summarized as the lack of available accessible, affordable housing. Housing is often inaccessible in a couple of dimensions: (1) in terms of those meeting universal design guidelines for physical accessibility; and (2) inaccessibility to needed services or amenities, such as groceries, healthcare or parks. These concerns are then often exacerbated by financial considerations with more affordable housing located in more remote geographic locations. In fact, Hong raises a critical consideration for the Intermountain West, that the challenge paradigm for achieving age-friendly communities may well lay in our rural communities, and particularly those whose majority populations are indigenous.

Concerns such as these are the subject of the insightful chapter by Greer and Edelman that makes clear that underlying the notion of age-friendly is the question: "Age-friendly for whom?" This chapter offers a brilliant take that age-friendly ecosystems, like all ecosystems, become more supportive and resilient when they are inclusive of and responsive to diversity. While ecosystems from a biological perspective consider abiotic and biotic dimensions, human landscapes need to add the cultural dimension as well (Ndubisi 2002). In our push for generalizability, many principles overlook the criticality of ecological validity: how actions really work and are perceived in the lived world. Here, Greer and Edelman adopt the imageable phrase "place-based disparities," as inclusive of both the bundled hypotheses found in the "zip code paradigm" and the assertion by Wallace (2021) that the greatest challenges for older adults do not stem from biological, but rather social and political processes. It is not surprising that in earlier work, Wallace and colleagues brilliantly intersected spatial and racial injustice (Caldwell et al. 2016), a point echoed here.

What I find intriguing is that Greer and Edelman appear to point a way forward, with an orientation to become more place-based in our approach to age-friendly ecosystems. In their words, "It is fundamentally important to consider the plethora of social axes that combine with physical environments and personal identities to

create health outcomes over the life-course" (Greer and Edelman, this volume). This call reminds me of the Ecological Framework of Place (Diaz Moore 2014), which suggested four key themes to connecting environmental gerontology with developmental science theory: (1) the integration of levels of organization within the socioecological system, (2) social embeddedness, (3) temporality and (4) human agency. These themes undergird their desire for "longitudinal and cross-national studies that account for the temporal characteristics of place" (Greer and Edelman, this volume).

Age-Friendly Campuses

The Age-Friendly University (AFU) initiative discussed by Montepare and colleagues (this volume) snaps into focus the challenges identified by other volume contributors. Here, it is actually quite logical that institutions of higher education—often sharing goals of access and inclusion—operating in a demographic reality that their core constituency is now shrinking should of course be leaning into age-inclusive practices and markets. Yet, we see the pervasive impact of historic institutionalism to resist the ten principles for an age-friendly university. Almost all the chapters discuss the potent force of ageism in our socio-political decision-making, but here, Montepare and colleagues raise the critical issue of reframing, in general, and the Reframing Aging Initiative specifically. As I read through this volume, the importance of understanding that the fundamental structure of our demographics is forever changed and that we no longer will have population pyramids, but simply population towers, proves essential. As opposed to an ever-shrinking demographic, older adults constitute as much of society as minors; in fact, by 2034 there will be more US citizens 65+ than 18 and under (US Census 2023).

This demographic reality provides a societal imperative for universities to truly embrace the notion of age-inclusiveness. The ten principles for an Age-Friendly University (AFU) are a wonderful beginning and raise significant opportunities for institutions of higher education to further their mission by broadening their sense of inclusion. How may (must?) universities capitalize on and optimize the longevity dividend? In a very concrete way, principle 9, to engage actively with the university's own retired community, is to maximize the axiom at most universities "when you are a (mascot), you are a (mascot) for life." This portends reconsideration of the business model of education and raises the potential for educational savings accounts for life-long learning to perhaps membership or subscription models. Additionally, residential campuses may do well to consider shaping community life and residential models for older adults; so-called university-based retirement communities (UBRC), as advocated for by Montepare and colleagues (2019) elsewhere. For such UBRCs to be successful, Smith and colleagues (2014) identified seven criteria: (1) proximity, to enable mental stimulation, physical activation and familiarity; (2) bi-directional programming; (3) continuing-care component, to further safety and continuity; (4) a financial link, to do the same; (5) minimum 10 percent alumni, to