Aging, Climate Change, and Legacy Thinking

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Climate change is a complex, long-term public health challenge. Older people are especially susceptible to certain climate change impacts, such as heat waves.

We suggest that older people may be a resource for addressing climate change because of their concern for legacy—for leaving behind values, attitudes, and an intact world to their children and grandchildren. We review the theoretical basis for "legacy thinking" among older people. We offer suggestions for research on this phenomenon, and for action to strengthen the sense of legacy.

At a time when older populations are growing, understanding and promoting legacy thinking may offer an important strategy for addressing climate change. (*Am J Public Health*. Published online ahead of print June 14, 2012: e1–e4. doi:10.2105/AJPH.2012.300663)

CLIMATE CHANGE IS A "SUPER wicked problem."[1,2] This is true not only because of highly complex interdependencies, uncertainties, and conflicting stakeholder interests, but also because the problems, solutions, costs, and benefits extend over a long time frame—well beyond the lives of those now addressing the problem—and there is a need for immediate action. The meaning of this long time frame and its implications for problem solving may vary over the course of a life span. This is an important observation in an aging society—one in which more and more citizens belong to older age groups. Do attitudes toward climate change vary with age? In particular, might changes associated with aging represent an opportunity for the growing older population to be a positive force for addressing climate change?

These questions are increasingly significant. As the population ages, older people represent a growing share of the consuming and voting public. They exert an impact through behavioral and purchasing choices.[3] They vote in high numbers.[4] Their attitudes toward climate change matter.

Older people might care about climate change for one or more reasons related to their age. First, they are especially vulnerable to several of the health impacts of climate change, such as heat waves, diminished air quality, and the disruptions of extreme weather events.[5,6] Second, as they age, people may take on political or social views that condition their attitudes toward climate change. Third, older people may feel a sense of legacy—a concern for the well-being of those who will come after them.[7,8]

The political and social views of older people, and how these may affect attitudes toward climate change, defy easy characterization. One common conception holds that older people become increasingly conservative, as epitomized by the famous maxim that "Any man who is under 30, and is not a liberal, has no heart; and any man who is over 30, and is not a conservative, has no brains." The prototypical "greedy geezer" is viewed as curmudgeonly and selfish.[9] (A Google search on "spending the kids' inheritance" yields more than 2.3 million hits.)

An alternative conception suggests that older people are generous and altruistic, and concerned about leaving the world a better place. This is exemplified by high rates of volunteerism[10,11] and the offers of elderly Japanese engineers to enter the disabled Fukushima nuclear plant in 2011 despite the risk.[12] Both views hold that values change in a predictable way with age.

Still another narrative holds that older people, for the most part, carry their core values across their life spans, suggesting the persistent impact of cohort effects reflecting earlier life events. Some in today's 65-year-old and older voting population are from the "GI Generation" (born between 1901 and 1924) or what Glen Elder has called "Children of the Great Depression."[13] Others are members of the so-called "Silent Generation" (born between 1930 and 1945). For these subgroups, voting behavior can be liberal or conservative, depending on issues. The first of the baby boomers, who turned 65 in 2010, were 24 at the time of the first Earth Day; this may prove to affect the environmental values of this group of elder persons during coming decades.

There is evidence to support each of these views. For example, studies of voting patterns across many decades show both a tendency for each birth cohort to vote according to characteristic patterns, and a tendency to vote more conservatively with advancing age.[14] It is notable that older voters do not consistently vote in ways that directly reflect their own interests.[15]

With regard to climate change, studies of the knowledge and attitudes of older Americans have yielded mixed results. In one survey,[16] respondents older than 60 years were slightly more likely than younger respondents to report that they had given a lot of thought to global warming, considered it important to them personally, and were worried about it. However, older respondents were no more likely than were younger ones to believe that global warming is happening, and no more likely to report that their friends were taking action to reduce global warming. In fact, they were more doubtful about global warming, both about the strength of scientific consensus and about a causative human role. (The disparity between older adults' worries about global warming and their lack of certitude that it is happening is difficult to explain.)

In another survey,[17] older respondents were substantially less likely to believe that the earth is

warming, that global warming is a serious problem, or that human activity had played a causal role than were younger respondents, suggesting disengagement, skepticism, or both. In the Cornell National Social Survey of 792 adults older than 55 years, not specifically focused on climate change, 83% reported that they "would do what is right for the environment no matter the cost," and 96% reported that they "think we should maintain the environment for future generations."[18] However, only 12% reported being members of environmental organizations, and only 15% reported engaging in volunteer activities related to the environment.[18] This may suggest a disconnect between attitudes and behaviors, a common finding in survey research on environmental issues. Alternatively, respondents may express their environmental commitments through personal choices, such as reducing energy use or purchasing green products, rather than through group activities.

Two age-related attributes that could potentially support taking an active stance on climate change are wisdom and the sense of responsibility to leave a positive legacy. *Wisdom* has been defined as

> the application of successful intelligence and creativity as mediated by values toward the achievement of a common good through a balance among (a) intrapersonal, (b) interpersonal, and (c) extrapersonal interests, over (a) short and (b) long terms, in order to achieve a balance among (a) adaptation to existing environments, (b) shaping of existing environments, and (c) selection of new environments.[19(p152)]

Many cultures revere older people for their wisdom and judgment. Although an elusive concept,[20] wisdom is seen as an attribute acquired at older ages, based on a lifetime of experience, honed judgment, equanimity, and beneficence, with a valuation of both subjective and objective knowledge.

Evidence suggests that the effects of aging on cognition are variable. Improvements in practical skills and in metacognitive abilities such as integrating cognitive, interpersonal, and emotional thinking, may coexist with declines in concentration, processing speed, abstract reasoning, flexibility, and memory.[21,22] Recent findings suggest that older people are more likely than are younger people to change attitudes in light of new information[23] and are more able to adopt the perspectives of younger people than younger people are able to adopt perspectives of the old.[24] Presented with cultural and economic disputes over resources, older people generate more even-handed and acceptable solutions than do their younger counterparts.[25] Importantly, wisdom is not only an individual attribute; it is also a social attribute that reflects collaborative learning and collective insight.[26] If wisdom does come with age, it might inform sound judgments on long-term challenges such as climate change.

What about the *sense of legacy*? In the words of two gerontologists,

> Few of us are comfortable with the idea that we live, we die, and that is it. We want to believe that there is a purpose in life and that we will make a mark of some kind, perhaps only in the memories of our descendants, but a mark nonetheless. We were here; we thought; we loved; we created. This is the fertile ground from which the desire for legacy sprouts.[27(p328)]

A sense of legacy may be defined as the impulse to care for those who come after. In psychological terms, this corresponds to the seventh of eight developmental stages described by Erik Erikson, in particular the concept of *generativity*, with its emphasis on building stability, perpetuating culture, and transmitting values through the family.[28] As described by Kotre,[29] generativity consists of several dimensions: biological (reproduction), parental (nurturing), technical (teaching), and cultural (storytelling, transmitting meaning and values). Recent work suggests that generativity may be a strategy for health promotion among older adults.[7,30,31] Legacy, similarly, has been conceptualized as including biology (such as genes and risk factors), material goods (such as heirlooms), and values (social, personal, and cultural).[27]

For contemporary elders, legacy thinking might include consideration of long-term threats such as climate change. The experience of having lived many years may permit an appreciation of long time frames for impact, imparting a better ability to value and invest in the long haul.[32] Cultivating that sense of legacy, in turn, might encourage policies and practices that help reduce greenhouse gas emissions and adapt to climate change—reduced energy use in homes, less carbon-intensive travel,[33] eating less carbon-intensive diets,[34] and so on. This was exemplified by The Elders, a group of world leaders convened by Nelson Mandela, which in 2009 called for international action on climate change, citing the importance of transgenerational responsibility (http://www.theelders.org/article/elders-enlist-their-grandchildrens-help-climate-change). Legacy thinking might also entail responsibility to shape attitude and behavior change at the level of family and community. Given the positive characteristics associated with getting older that could provide leadership in addressing and solving long-term complex threats such as climate change, how do we turn to older adults for help? How might legacy thinking be more widely cultivated?

First, public discussion about duties to future generations should be encouraged. This notion has received some attention in moral philosophy[35–39] and law,[40–42] and has been applied to climate change and sustainability.[43–45] Intergenerational responsibility is a staple of religious discourse about the need for "creation care," or stewardship of the earth (see Evangelical Environmental Network at http://www.creationcare.org).[46–48] But the notion of intergenerational equity, when it has reached popular discourse, has focused principally on whether retirees are claiming more than a fair share of current resources. A broader discussion of the notion of legacy, focused on the obligations of the present to future generations, might help advance climate policy, and older people may be uniquely positioned to participate. Models of this discourse include The Elders, perspectives advanced by the MacArthur-funded Network for an Aging Society (http://www.agingsocietynetwork.org), and the AARP's new Green Blog (http://blog.aarp.org/2012/01/10/a-healthy-environment-and-healthy-aging). One vehicle for this discussion, we propose, is an expanded concept of the "ethical will," a document in which older adults explicitly reflect on the lessons and values they wish to bequeath to future generations.[49]

Second, careful rethinking of conventional economic approaches to discounting is needed. Discount rates imply profound value judgments about

intergenerational equity,[50–52] with higher discount rates implicitly devaluing current investments in sustainability for future generations. This concept was actively debated in the wake of the 2007 Stern Review on the Economics of Climate Change.[53–57] While economic efficiency dominates much current analysis, a commitment to legacy might be expressed in economic terms as reduced discount rates.

Third, empirical research is justified to characterize the attitudes of older people toward climate change, sustainability, and legacy, and to learn what factors may promote legacy thinking. Moody has suggested that appealing to self-interest (ironically), focusing one's children or grandchildren rather than on distant generations, and active involvement in environmental activities, might all be ways to promote support for environmental values, and for climate change action, among older people.[8,58] Successful appeals for attitude change among elders and others will likely be based on some combination of self-interest (broadly construed) and altruism. For example, installing energy-conserving devices or home insulation can be justified both to "save you money" and "to help the environment," in the same way that charitable giving is justified both as "doing good" and for "getting a tax deduction." The self-interest motive is more complicated than often assumed, operating both individually and collectively, and at different scales; helping one's local community appeals to a socially embodied sense of "self" that differs from the more remote gratification that comes from "helping the planet." The key research question is: Where are the appropriate levers for incremental attitude change?

Fourth, communication about climate change, designed for and directed to older people, may be effective in raising awareness and in addressing the knowledge gaps revealed in survey research. Although increasing attention has been devoted to effective climate change communication,[59,60] little of this has focused specifically on older audiences. Effective messages may call for protecting our grandchildren by hedging bets and addressing climate change, because waiting for definitive evidence could be too late. Building both self- and collective efficacy, and offering practical steps for individuals and groups to have an impact on climate change, are critical.

Fifth, opportunities for environmental volunteerism, in effective and generative roles, could build social capital for elders, provide an opportunity for physical activity, reduce stress, and offer other benefits.[61,62] Volunteerism has shown such benefits among older adults in other arenas, such as in Baltimore's Experience Corps; the probability of continued participation rises when participants can see that their work has an impact.[7,63] In addition to benefits for participants and their communities, environmental volunteerism may help form attitudes that support environmental stewardship and legacy thinking.[58,64] This notion deserves research, and if substantiated, opportunities for environmental volunteerism may yield a wide range of benefits.

Sixth, opportunities for intergenerational dialogue could be pursued. Such dialogue is practiced in an organized way by some indigenous peoples as an explicit way of transmitting learned wisdom. In direct exchanges between thoughtful youngsters and tribal elders, young people could discuss their hopes and fears about the future with elders. Such exchanges might not only transmit wisdom to young people, but also promote legacy thinking among elders.

Climate change threatens the health, well-being, and prosperity of people now alive, and increasing impacts are projected in coming decades. The same is true for other global changes, such as biodiversity loss and disruptions of nutrient cycles.[65] In an aging society, older people form an important subpopulation that will particularly suffer from these global changes, that is concerned about the adverse impacts for their grandchildren, and whose engagement may help address long-term, large-scale challenges. Building a sense of legacy, based on a sense of responsibility to future generations, offers substantial promise for advancing this goal. ■

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Contributors

H. Frumkin conceptualized the article and wrote the first draft. L. Fried and R. Moody provided substantial content input and helped write subsequent drafts.

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