Gerontology in Five Images

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Abstract

In his Kent Award lecture, Scott Bass called for a greater coherence of gerontology. This article proposes that the teaching of gerontology is one way to address the centrifugal tendencies of the field and economize its disciplinary sprawl. The instructional strategy is to concentrate attention to a limited number of focal visuals from which the exposition of gerontological knowledge can radiate out and to which it can circle back. The 5 images selected here synthesize numerous ideas about life course; senescence, development, and interventions in these processes; the long gestation of relative health and illness; the succession of cohorts and social change; and the question of preparing for and managing the uncertainties of adult life. The 5 pictures and charts show some common features, such as lifelong flows of time and a recurring arc-like shape that is used to depict them. A sixth image is suggested in order to counter the impression that aging is a process of diminishment. Most knowledge about aging is rooted in a core discipline, but the teaching of that knowledge beyond the discipline can integrate content in fruitful ways.

Key Words: Heterogeneity, Life course, Responsibility, Teaching

“The fox knows many things, but the hedgehog knows one big thing.” This is a fragment of ancient Greek poetry that can be literally taken to mean that the fox has many wiles for winning a contest, but the hedgehog, by rolling itself into a spiny ball, has but one very effective defense. The political philosopher Isaiah Berlin (1953) elaborated the poetic contrast in order to compare two characteristic styles of thinking. One orientation relates everything to a single, central vision, and the other moves on many levels, unrelated, without seeking to fit understanding to a unitary principle or system. Said Berlin, Dante was in the category of hedgehog, Shakespeare was a fox.

Scott Bass, in his Kent Award lecture that was published in these pages (2013), challenged gerontology to reverse the centrifugal tendencies of the field. It is true that gerontology is already a successful, multidisciplinary enterprise with a lot of vitality, but it could be more competitive for resources in higher education if it were more than “a segmented collection of ideas about aging from the perspective of different fields” (p. 541). Bass decidedly did not call for a “grand theory” of gerontology, but he did encourage an organized effort toward greater theoretical integration and clarity about basic concepts and core methods. More hedgehog, less fox.

Bass’s Gerontology Conceptual Project awaits another day, but his lecture raises the question whether it is possible to economize the disciplinary sprawl of gerontology. Greater coherence might be had with integrated theory, but it can also be attempted in teaching, which is the subject of this article. Can the many topics of gerontology flow into one another without the student first passing through a disciplinary door? Most knowledge about aging is potted in a discipline and needs that integrity, but the teaching of that knowledge beyond the discipline can connect and merge content in fruitful ways.

In this article, I set the task of encircling gerontological knowledge using five images. Using just a handful of pictures, figures, and charts as starting points, one can push quite far into the multidisciplinary subject matter of gerontology while still circling back to a single visual. The point of an image or display in any presentation is “to assist the thinking of...
producer and consumer alike” (Tuft, 2006, p. 9). For the teacher of gerontology, the task is to settle on an image out of which a good number of topics can radiate. For the student, the benefit is a piece of firm ground on which to stand as the material accumulates. My inspiration for this focal-display approach came from a lecture by Philippe de Montebello, the longtime director of the Metropolitan Museum of Art in New York (2008). Mr. de Montebello was someone who could load in any slide from the history of art, yet his lecture (about art museums) was remarkably sparing in the use of pictures, which only added to the power of his remarks about the artworks and the principles that they embody.

About the five images in this article, there are four initial observations. First, all but one show the entire life course. Gerontology is impossible now without whole-life explanatory frameworks. Talk about later life leads necessarily to talk about earlier life. Second, all five images depict or imply movement—flows of time from past to present or present to future, reinforcing the life-span sweep of a specialty that is nominally about later life. Third, the order in which the images appear is not necessary. Gerontology often begins in demography (the better to argue its urgency), or passes from micro to macro, or follows the order of that ungainly term: biopsychosocial. In this presentation, gerontology starts in the humanities, but it can start anywhere. Fourth, these five images were winnowed from the experience of teaching undergraduate, graduate, and professional students. These are exhibits to which students repeatedly refer when connecting one class topic with another. As another initial note, there are too many terms and concepts in the material that follows to annotate with citations, but all these ideas can readily be found in gerontology textbooks, handbooks, and reference works.

Can five images encompass gerontology? Of course not. But it is worth imagining how far things can go.

Life Course

The first image is representative of a genre of drawings called Lebenstreppe or “steps of life.” This kind of picture has been common in Western culture since at least the 16th century when it began to replace cycle diagrams as the depiction of life (Cole, 1992). One can find more steps-of-life prints with an online image search or involve an art librarian in lining them up. The illustration in Figure 1, “The Life and Age of Woman,” dates to 1835, but the type has appeared in every era of the last 500 years, including right up to the present, often now as parodies.

The particulars of any stair-step illustration are worth examining. Figure 1 shows an ascending and descending set of stairs, labeled with specific ages (1, 12, 18, 30, 50, 75, 90) and depictions of girls and women of that age. Invariably, the steps rise from the left, reach a peak (age 30 here), and run down to the right. One can notice the “developmental” depiction of bodily deportment and clothing and hair. Other Lebenstreppe examples of this scene can begin with the crib and end with the tomb, have more or fewer steps labeled with other ages, and show men instead, or even couples. The step scheme is ornamented with other inclusions, here the sun rising at life’s beginning and having set in the evening of life, with a clock about to strike noon at the apex. An hourglass is full and then runs out. There is a scene of religious instruction, banned by the injunction “The virtuous woman is a crown to her husband.” Features that are common to other illustrations of this type include—in left-right opposition—a tree leafing out versus bare branches, a sunny sky versus a stormy one, signs of the zodiac, religious milestones of life, and other symbols of time still commonly seen around New Year’s Eve.

This is much more than a picture of what life is. It shows what life ought to be and maps a normal sequence of roles. Hundreds of years of stair-step pictures have created impressions about aging (not to mention gender roles) and about aging’s consonance with natural cycles of daily and seasonal change, submission to religious ideals, and intergenerational transmission of values. Life has an enduring orderliness. In today’s gerontology class, students can enjoyably dissect the idealized “life course” of an image such as Figure 1, probably coming to conclusions about its inapplicability to the life course of today’s woman. Yet, if these stair-steps are out of date, what nevertheless has superseded them as pictures or metaphors of life proceeding toward maturity and old age?

Beyond serving as a straw man or foil for contemporary ideas about life, there is a wider instructional use for stair-steps. Strip away the details and one is left with an arc that traces an ascent, a peak, and a decline. Moreover, one is left with powerful developmental assumptions about life having stages or phases through which people inevitably progress. Is this arc—iconic now as a centuries-old deposit into culture—true? This provocative question can yield surprising answers if one is describing certain features of bodily structure or function; income, wealth, and consumption; power and authority; the size of the social convoy of family and friends; or decisional capacity. The question of age and creativity has been haunted by this arc since the 19th century. Is the arc a mere description, or is it a norm onto which we bend our views of life? Whereas the stair-steps are ubiquitous in the West, are there other cultural shapes or parabolas in use around the world that depict life in other ways? Once introduced, the arc can be a recurring guest at the discussion of many gerontological topics.

Senescence and Development

Figure 2 was designed expressly to generalize and extend thinking. The image (more arcs!) is a stylized representation of three dynamics that hypothetically occur across the human life span. Paul Baltes (1997) proposed these age-related tendencies as a biological and cultural “architecture” of life-span development in order to argue that future human development can be further maximized from its
present an incomplete state. The figure is a prologue to a longer theoretical statement, but it is valuable in itself because it distills three provocative ideas: the human biological design confers less fitness across age; culture can compensate; but culture’s power to do so weakens. As with the stair-steps, the curves in Baltes’ figure can ground a consideration of many topics.

The first panel is an invitation to review the biology of aging and the theory of evolutionary selection. This is essential knowledge for gerontologists because the theory explains why relatively good health in early life and problems later on are baked into the human condition. The young and the old do not have the health and fitness that they do because they are young and old, but because of evolutionary selection. We inherit a human genome that sets us up for reproduction because it “selects out” the conditions that would interfere with reproduction, but then the force of natural selection wanes, allowing the appearance of all the flaws that become progressively apparent across adulthood (Austad, 2009). This biological bed for the life course is an irreducible, corporeal fact that makes age-related physical degradation inevitable. But not exactly so. The “evolutionary neglect” of the period after reproduction means that senescence is variable and its pace and course can be affected in countless ways (Olshansky & Carnes, 2009). We will all succumb to biological aging, but not all the same way. And so here can appear the larger principle of heterogeneity, one of main tenets of the gerontology catechism to which all disciplines subscribe.

Compensation by culture (the second panel) is likewise an instructional point to which one can repeatedly return. By “culture” Baltes meant every sort of resource, knowledge, technology, and custom that human ingenuity can devise. Of those things that support effective functioning past our biological sell-by date, it is easy to think of medical and public health measures and assistive devices such as eyeglasses. Modern dentistry, for example, can keep one in a useful set of teeth indefinitely. Moving beyond medical

Figure 1. The life and age of woman: stages of woman’s life from the infancy to the brink of the grave, A. Alden, 1835. Library of Congress: http://www.loc.gov/pictures/item/2006686268/.
and individual-level interventions, there are cultural practices and social institutions that sustain functioning. For example, seniority principles can extend occupational careers by giving experienced workers roles that are less reliant on strength and stamina but that reward skill and organizational knowledge. Informal caregiving, a huge topic in gerontology, is a cultural compensation for senescence and it is typically motivated by the norms of filiality that suffuse all of the world’s major religions. Long lives are also sustained and made feasible by the large governmental arrangements for income security in later life. In all, the middle panel of Figure 2 can cue thoughts of everything from antihypertensives to welfare states.

The third panel hypothesizes progressively less efficacy for cultural resources in later life. According to Baltes, people still have the potential for development, but the scope of human plasticity narrows with age and interventions wane in power. His example for this panel is cognitive learning, the techniques for which may require modification to remain effective. We may likewise need to modify other forms of assistance, such as communication techniques, health advice, and drug regimens. The built environment can be pertinent here. Over half of older people reside in suburban housing, but such places lack many of the features, qualities, and services necessary to support the well-being of older persons (Frumkin, Frank, & Jackson, 2004). Traditional suburban design loses its efficacy when one cannot climb stairs, clear snow, mow the grass, or drive, leaving people isolated on islands of property that no longer fit their capacities. Optimizing places to live calls for all the creativity of architects, designers, and urban planners.

Figure 2 is an opportunity, therefore, to affirm every disciplinary effort toward the improvement of health and happiness across adulthood and into later life. Every field of knowledge can feel encouraged to do more. Having pondered the three panels of the figure, students might next go on to the rest of Baltes’ argument, encountering his “process model” of successful aging as the selection and pursuit of personally meaningful goals. That model, in turn, should be compared with more prominent “outcomes” or “criteria” models of successful aging (Katz & Calasanti, 2014). No matter the conception of success, a larger question to then consider is the extent to which these desirable states are a matter of individual will and control, or whether they are conditional on biological inheritance or the opportunity structure that one has had (see the left and middle panels of the figure). Are the culture and technology that support and enrich the life span equally available to everyone? This topic, the accumulation of advantage and disadvantage, is a subject that returns with the final image.

Long Latencies

Figure 3 appeared in a chapter by David Solomon (1999) on “aging-dependent” diseases. Aging-dependent diseases are so named because they stem, in part, from basic aging processes. The image should seem familiar: Simply invert it, and it shows the same downward-sloping lines as the right side of Figure 1 and the left side of Figure 2. This would seem to point to a gathering conclusion that aging expresses an accumulation of flaws, disability, and disease. And it does, but here we should tread carefully. Aware of the charge that too much about gerontology reinforces a “narrative of decline” (Gullette, 2004), it is important to emphasize that such trend lines do not begin to exhaust the experience or meaning of aging. At the same time, gerontology cannot be taught or studied without acknowledging the bodily reality—the corporeality—of physical aging.

Taking Figure 3 as drawn, the first idea is that aging-dependent diseases are emergent. These could be diseases that cause death (cancer) but also the nonfatal conditions that cause disability (arthritis). According to Solomon (1999, pp. 143–145), there is a basic aging process that predisposes to one or more of these diseases, contingent on genetic factors, environment, lifestyle, social context, physiological function, and bodily wear and tear. In their course of development, chronic diseases cross a “clinical threshold” to become apparent, but sometime before that they begin imperceptibly and then perhaps are only detectable.
by biochemical testing or microscopic analysis. The disease may have been underway for some time.

The progression toward greater severity is shown by three idealized lines: the average course (A), earlier appearance (B), and later appearance (C). Path D, as drawn, suggests some beneficial intervention (in behavior, in the environment) that delays the disease. The lesson is, first, about the heterogeneity of disease courses and, second, about the potential to deflect disease courses. The rerouting of path D is optimistic, but it is also possible that certain shocks could accelerate severity. With all this trending understood, it is next crucial to raise the possibility of comorbidity, of multiple diseases on multiple paths, perhaps interacting or even cascading.

Figure 3 can be read with a lot of hope. Chronic diseases have long latencies and with the proper preventive or protective measures, might never become clinically apparent. There is a lot of diversity in the way they develop, and their paths might be reset. (The principle of long latencies in fact generalizes to many life course phenomena.) At the population level, the positive redirection of disease courses points to the “compression of morbidity” as a health policy goal.

There is also a darker way to read Figure 3, and the interpretive risk is this: Everyone who is growing older harbors troubles that are lurking below the surface; everyone is potentially ill. On this point, students can review the antiaging industry that fans the anxieties of the not-yet-sick and sells regimens that promise to hold “that day” at bay. Yet even within mainstream medicine, there is a risk of colonizing earlier and earlier life with shadows of chronic illness. One such example is the new designation of “mild cognitive impairment” as a precursor to later dementia (George, Qualls, Camp, & Whitehouse, 2013). Taken on its face, Figure 3 draws possible illness trajectories, but it can invite critical reflection about the scientific and cultural construction of later life.

**Cohorts and Change**

The interpretive work that goes on around bodily aging is just as interesting as the facts of bodily aging. This is no less true of demography, where a torrent of numbers creates curiosity about what they all mean. The population pyramid in Figure 4 comes from demography, and it locates individual aging, the focus of the previous two images, in a societal context.

There is no shortage of instructional material in a population pyramid, which is a technique for picturing the age structure with a stack of bars that represent the size of each age group or age cohort from youngest to oldest. This array could be indeed pyramid shaped, but what is actually of interest are the deformations from the ideal shape. This display, Figure 4, comes from the Census publication, *Age and Sex Composition: 2010* (Howden & Meyer, 2010). It has the advantage of showing the age structure of the U.S. population for two time periods, 2000 and 2010. But students should have a chance to examine many pyramids: for different nations in different eras, for smaller regions, and for places where the last several decades have been particularly eventful. Any student with ties to another country will want to see that national pyramid.
All population pyramids narrow at the top, and this is a basis for exploring other, supplemental information about mortality and causes of death. The bars may be narrowing due to reduced survival, but some bars may have been narrower right from birth. The lopsided tip of the pyramid invites a discussion of women's longer survival, and why is that? Longevity means the extension of individual lives, but collective longevity also shapes a population's age distribution, and so we observe the high shoulders and squared-off pyramids of advanced economies. Regions of some pyramids bulge out and cinch in, sometimes quite dramatically (e.g., Russia), and this can lead us to search a population's history for the conditions and events that explain expansion and contraction in the size of successive cohorts. For example, if a pyramid constricts at the bottom, what prevailing conditions are reducing the births? (And do not miss the chance to discuss, in some nations, the lopsided distribution at birth of males relative to females.) Pyramids provide a vivid way to introduce the otherwise abstract ideas about age, period, and cohort effects on a population. In pyramids for smaller regions, migration may also shape the layers. Zooming out to appreciate the relative mass of citizens at young, middle, and older ages, this is a chance to address the larger implications of the distribution for jobs and the mix of consumer goods. Politically, students can be invited to imagine whether a particular pyramid suggests conflict or cooperation among cohorts, opposed or common interests.

Next, one can imagine the pyramid in motion, bars (cohorts really) rising up to the next level replacing others, as Figure 4 depicts between 2000 and 2010. What happens when a large cohort replaces smaller ones (e.g., the ascendant Baby Boom in Figure 4), or when smaller cohorts come to occupy a life stage that had been more populated? On this same theme, when a new cohort arrives at the same place in life but brings with it a wholly different historical

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experience (of family forms, of debt, of war, of technology), will social change occur? The visualization of these moving patterns leads directly to sociological theories about age stratification and cohort succession. And these conceptions, in turn, lead to an appreciation of the cultural labor that is involved in socializing, accommodating, and assigning this flow of people throughout their lives. At a glance, a population pyramid depicts the static whole, but it vibrates with references to history, social change, and the dynamics of the life span.

**Risk and Responsibility**

The bar graph in Figure 5 divides the U.S. older population by quintiles of income in 2010: the lowest income fifth across to the highest income fifth. Each bar, in turn, is divided by the share of income that comes from four major sources: Social Security, assets, pensions, and earnings. This chart is updated regularly and comes from *Older Americans 2012: Key Indicators of Well-Being*, a report generated by the Federal Interagency Forum on Aging-Related Statistics (2012). The report itself is a treasure chest of charts and supporting data for teaching gerontology. A lot of information tumbles out of Figure 5, but the one striking thing is the strong reliance on Social Security income in the three left-hand bars that contain three fifths of the older population. In the two right-hand bars, the distribution of income from the major sources is more even. Figure 5 is a single-year snapshot, but it raises thoughts about the lifetimes that generated these profiles; students will wonder about the quintile membership of every elder they know. The demographic composition of these quintiles (by age, sex, race, and ethnicity) is worth reviewing as a way to account for these outcomes.

Having seen the relative importance of the main income sources, one can drill down into each category: Social Security, pensions, assets, and earnings. There is statistical data galore about all of this—past, present, and projected for the future. There are also policy details to be grasped because almost all retirement income flows from large societal arrangements in the form of government programs and tax policy. Amid the data and details, some big concepts deserve to be highlighted. For Social Security, this is the principle of social insurance, a mechanism that pools the risk of income loss in order to provide financial protection for retirees but also for disabled workers and for the young children of deceased workers. (Medicare is also a social insurance program.) For pensions, the top concept is the comparison of two basic pension models—defined benefit and defined contribution—and how they manage risk (i.e., uncertainty) about continuous adult employment, investment returns, and longevity (O’Rand & Shuey, 2007). The Social Security and pension designs raise an even broader question: whether income provision for later life should be an individual/family (private) responsibility, or a collective (public) responsibility, or some mix of both. The question welcomes comparisons among various national models for organizing retirement income.

The prominence of earnings in Figure 5, at least at higher incomes, is a chance to consider matters of work and retirement. Retirement may be a goal of individuals because it is culturally scheduled (Figure 1), but it also accomplishes succession within work organizations and labor markets. On the subject of older workers, age discrimination would

### Figure 5

**Percentage distribution of sources of income for married couples and nonmarried persons age 65 and over, by income quintile, 2010**

![Chart](http://www.agingstats.gov/Main_Site/Data/Data_2012.aspx)

Percentage distribution of sources of income for married couples and nonmarried persons aged 65 and older, by income quintile, 2010.

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(O’Rand & Shuey, 2007)
be an appropriate topic here, as would debate about the ideal balance of work and leisure across all of adulthood. Assets and wealth, finally, imply a prior lifetime of decision making about savings and consumption. About these choices, there is the same question that was posed about successful aging: To what extent are these outcomes largely under individual control, or are they more likely determined by the structure of opportunity in which lives have been lived? Cumulative advantage theory can be introduced here to help frame the discussion about life course trajectories of well-being.

The cut points of the quintile bars (footnotes to Figure 5 in the original) are also illuminating. For example, 40% of all nonmarried persons had an income under $15,000 (under $33,000 for married couples). Facts of this sort can be important to any discussion of intergenerational fairness and burden in public spending, a topic that never leaves the headlines. Income data also illuminate issues around the kind of consumer market that elders might constitute and around the kind of expenditures that older Americans have, especially expenses for health care, housing, and long-term care.

Conclusion

This article is an exercise to propose that the teaching of gerontology can be more coherent when it concentrates attention on a limited number of focal images. The five images selected here synthesize numerous ideas about life course; senescence, development, and interventions in these processes; the long gestation of relative health and illness; the succession of cohorts and social change; and the question of preparing for and managing the uncertainties of adult life. I would not insist on these exact images—experienced instructors might favor others—but I would insist on the strategy of lingering with visuals of top-shelf concepts as a way to transcend the “segmented collection” of gerontological knowledge (Bass, 2013). While learning many new things, students can nonetheless perhaps call to mind a few big things.

There were also-rans for the five images in this article, for example, Francisco de Goya’s chalk drawing, “Aún aprendo” (I am still learning). One major area of gerontological content that was not adequately tucked into this scheme is family and social relationships and all that they mean for the conduct of life and for well-being. The ideal visual for this might be some sort of intergenerational or reunion photo. As a solution, students themselves could supply such photos along with stories about the group members that would illustrate the many complex dimensions of family ties and the social convoy.

If I were to add a sixth image to this set, I would do so in order to balance an impression that is left by the other five. The five all convey some sense of decline, diminishing, or narrowing—that aging is a matter of becoming less. As a counterweight, one can consider the image of a branching tree. Trees are already iconic, commonly used to symbolize life and lineage. In an essay on “Growing, Formative Change, and Aging,” Johannes Schroots (1988) suggested the metaphor of the branching tree as a way to represent the general process of within-individual change. Trees begin with a single straight trunk but then reach branching points and further branching points. Some limbs continue growing and some cease; some branches deflect other branches. The essential point is the increasing complexity of the structure over time. In an analogous way, the life course is a process of increasing differentiation and individuation. Life—whether biologically, psychologically, or socially—moves from the simple to the complex. The branching points or truncated limbs might be people’s own choices or situations that fate thrusts upon them. One important feature of this process is that patterns of continuity and discontinuity in the emergence of the whole are only apparent after more branching has occurred, that is, only in retrospect.

If, as the branching tree models it, aging is a matter of increasing individualization, then aging is a process of becoming more, not less. More experience accumulates relentlessly, the story never finishes, and it is only understood in review. The novelist Zora Neale Hurston had this exact idea of the branching tree for her character Janie Crawford: “Janie saw her life like a great tree in leaf with the things suffered, things enjoyed, things done and undone. Dawn and doom was in the branches.” (1937, p. 8). The tree image renders each of us as more unique, more ourselves with the passage of time. And the best thing about this image is that it is so available. One only needs to be outdoors and look up to prompt thoughts of growth, aging, agency, and fate.

References


