CAMBRIDGE

Cambridge University Press
978-0-521-43582-6 - Successful Aging: Perspectives from the Behavioral Sciences
Edited by Paul B. Baltes and Margret M. Baltes
Excerpt
More information

1 Psychological perspectives on successful aging: The model of selective optimization with compensation

PAUL B. BALTES AND MARGRET M. BALTES

The purpose of this chapter is twofold. First, we review research on the nature of psychological aging in terms of seven propositions. Second, we present a psychological model for the study of successful aging that, we contend, is consistent with the propositional framework. The approach advanced is based on the premise that successful, individual development (including aging) is a process involving three components: selection, optimization, and compensation. How these components of adaption are realized depends on the specific personal and societal circumstances individuals face and produce as they age.

Introduction

Two scientific concepts have had a major impact on our thinking about successful aging: interindividual *variability* and intraindividual *plasticity* (M. Baltes & P. Baltes, 1982; P. Baltes & M. Baltes, 1980; P. Baltes & Schaie, 1976). Reflection on the theoretical and policy-related implications of both concepts has suggested to us that there is much opportunity for the continual optimization of human development (see also Brim & Kagan, 1980; Labouvie-Vief, 1981; Lerner, 1984). Over the years, we have begun to believe that systematic age-related shifts in the extent of variability and plasticity are cornerstones for a developmental theory of human adaptation. Initial evidence for this perspective is available in our first attempt to formulate an agenda for successful aging (P. Baltes & M. Baltes, 1980). After reviewing research on variability and plasticity, we laid the groundwork for a prototheory of successful aging as an adaptive process involving the components of selection, optimization, and

© Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-0-521-43582-6 - Successful Aging: Perspectives from the Behavioral Sciences
Edited by Paul B. Baltes and Margret M. Baltes
Excerpt
More information

compensation. The present chapter builds on this earlier effort and the contributions of others (Brim, 1988; Featherman, Smith, & Peterson, this volume) who have followed similar lines of reasoning and worked toward similar goals.

Because this is the opening chapter of this volume, we begin with some general introductory observations. In these observations, we comment first on the role of beliefs about old age. We suggest that optimism about old age influences research and personal action by directing it toward the search for positive aspects of aging. For this purpose, we invoke the Roman philosopher Cicero. Second, we comment on the general nature of criteria of successful aging and the question of subjective versus objective modes of assessment. Thereafter, we shift to the main focus of this chapter: the presentation of several propositions about the nature of aging and an exposition of one possible model of successful aging.

A precursor: Cicero's *De Senectute*

It was the Roman philosopher and statesman Cicero (106–43 B.C.) who produced perhaps the first powerful statement on the nature of good aging with his essay *De Senectute* (44 B.C./1979). Cicero wrote this essay in his early sixties to show that old age is not a phase of decline and loss. Instead, Cicero argued that old age, if approached properly, harbors many opportunities for positive change and productive functioning.

In our view, in *De Senectute* Cicero implicitly proceeds from the assumption that aging is a variable and plastic phenomenon and offers a persuasive demonstration of the power of the individual mind in constructing a positive image of old age and aging. Applying principles of stoicism (a school of philosophy that emphasized the virtues of the mind and argued that the body is often a negative force in achieving willful behavior), Cicero extols the potential strengths of old age for exactly the same reasons that others have viewed old age as a phase of loss and decline. Cicero contends, from a stoicist perspective, that in old age it is *finally* possible for the individual to focus on further development and enjoyment of the mind and not to be distracted by bodily needs and pleasures: "Nothing [is] more directly destructive to the dignity of man than the pursuit of bodily pleasure" (p. 82).

Cicero's essay is full of supporting arguments and creative observations about old age, many of which pass the test of modern psychological gerontology. Unfortunately, a few examples must suffice. In his philosophical journey toward the stoicist conclusion that old age offers the capstone experience of the human mind, Cicero refutes a number of expectations that cloud everyday views of old age. For example, Cicero

© Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-0-521-43582-6 - Successful Aging: Perspectives from the Behavioral Sciences
Edited by Paul B. Baltes and Margret M. Baltes
Excerpt
More information

introduces the distinction between "normal" and "sick" old age and argues that we should not confuse old age with illness. Illness is a condition that, for some people, is added on to old age. Furthermore, Cicero discusses various negative expectations about old age such as failing memory. If older persons had a failing memory, he queries, how could they reach the highest level of mindful performance? Cicero's rejoinder has two parts. First, he rejects memory loss as a general phenomenon and concludes that only those older persons who also suffer from a brain disease have memory deficits. Second, he emphasizes that memory loss is selective. Older persons forget only those facts and cognitive skills in which they are no longer interested and, therefore, do not care to practice in their everyday lives. Cicero's witty example speaks for itself: "Have you heard of an old man who forgot where he hid his treasure?"

As an effective human being and as a good practical philosopher, Cicero is highly confident about the value of his propositions on old age and about the advice he offers his young students. Using himself as an example for the effectiveness of his discourse on aging, Cicero reports having attained a new view on his own impending old age. Fears and anxieties about old age made way for new feelings of harmony and satisfaction. Surely Cicero's account of old age is optimistic, a psychological utopia based on the power of the human mind to design and control thoughts, feelings, and aspirations beyond the constraints of one's biology. However, utopias are powerful vehicles to help us think in ways that reality would not suggest to us: "Utopias have their value – nothing so wonderfully expands imaginative horizons of human potentialities" (Berlin, 1988, p. 16).

Cicero's essay provides an encouragement for efforts to explore the nature of successful aging. Even so, current efforts are unlikely to be fully consistent with Cicero's approach. In our own case, for instance, we will propose a model of successful aging that departs from Cicero's view in one very significant aspect: It does not ignore the biology of the aging body. Thus, although we adapt Cicero's optimism and stoicist belief in the power of the human mind and will (see also Langer, 1989, for a current version of this position), we propose a model in which the aging body, with its reduced reserves and increased vulnerability to illness, is part of the story.

The concept of successful aging

The concept of successful aging dates back several decades (e.g., Havighurst, 1963; Palmore, 1979; Williams & Wirths, 1965), although it has

© Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-0-521-43582-6 - Successful Aging: Perspectives from the Behavioral Sciences
Edited by Paul B. Baltes and Margret M. Baltes
Excerpt
More information

only recently been forcefully promoted as a guiding theme in gerontological research and as a challenge for the design of social policy (M. Baltes, 1987; Butt & Beiser, 1987; Rowe & Kahn, 1987; Ryff, 1982). The fact that the theme of successful aging has attracted much attention recently is due not only to the catchword-like qualities of the term itself and the importance of issues of aging in a modern world. It most likely also reflects a newfound optimism in the field of gerontology itself (e.g., P. Baltes, 1987; Birren & Bengtson, 1988; Labouvie-Vief, 1981; Langer, 1989; Lehr, 1987; Riley, 1983). For example, there is an increasing body of knowledge about untapped reserves of the elderly and their potential for change. Thus, a discussion about successful aging converges with the search for factors and conditions that help us to understand the potential of aging and, if desirable, to identify ways to modify the nature of human aging as it exists today. Whether in the long run the concept of successful aging will remain a scientifically viable topic is perhaps less significant than its power in identifying and organizing questions and research directions that reflect the current dynamics of the field.

At first glance, aging and success seem to represent a contradiction: Aging conjures a picture of loss, decline, and approaching death, whereas success connotes gains, winning the game, and a positive balance. Thus, the association of aging with success seems intellectually and emotionally a paradox. There is also the possible critique that the notion of successful aging may be a latent vestige of social Darwinism, a rampant competitive spirit, and one of the less desirable excesses of Western capitalist traditions. Even the last phase of life, critics can argue, is about to be captured by the view that success, defined by standards external to the individual, is a necessary part of the good life.

At second glance, however, the association of aging with success might indicate that the apparent contradiction is intended to provoke a probing analysis of the nature of old age as it exists today. We are asked not only to reflect upon but also to participate in the creation of aging, instead of passively experiencing it as a given reality that is "natural" only for the reason that it exists. In this sense, the concept of successful aging suggests a vigorous examination of what might in principle be possible. Moreover, a critical but constructive analysis of the concept may indeed serve to articulate the idea that forms and vehicles of "success" in old age may be different from those in earlier phases of life.

The problem of indicators

Defining the nature of success is elusive. Even in such areas as sports, for instance, consensus about the definition of success is difficult to achieve.

© Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-0-521-43582-6 - Successful Aging: Perspectives from the Behavioral Sciences
Edited by Paul B. Baltes and Margret M. Baltes
Excerpt
More information

In gerontology, length of life is most often proposed as the prototypical indicator of successful aging.

Which criteria?

To live as long as possible, to be the oldest living human, is a dream or desire that, to some, is a persuasive criterion of success. Yet, there is no need to call upon Darwin's often-used notion of "survival of the fittest" bestowing success upon a world-record holder for the number of years lived, because there is another side to this coin. The world-record holder in length of life will also have experienced many undesirable events. He or she also might be the one who has most often lost friends, most often stood at open graves, and perhaps most often endured illness. The first motto of the Gerontological Society of America illustrates this two-sided view. This motto in 1955 called for "adding life to years, not just more years to life."

As this example emphasizes, the search for indicators of successful aging is a complex endeavor. It is not possible to solve this problem without invoking values and without a systemic view. Quantitative and qualitative aspects of life need to be balanced. A first step toward identifying an all-encompassing definition of successful aging is to think in terms of multiple criteria. From such a *multicriteria approach*, the following characteristics frequently appear either as concurrent or as outcome criteria in the literature (Bengtson & Kuypers, 1985; Palmore, 1979; Rowe & Kahn, 1987; Ryff, 1982):

- length of life
- biological health
- mental health
- cognitive efficacy
- social competence and productivity
- personal control
- life satisfaction

Existing research on successful aging reflects this multicriteria approach, although a consensus on their interrelationship or relative importance has not been achieved. In general, it seems fair to conclude that the criteria mentioned exhibit a positive manifold. However, the positive interrelations are not of sufficient magnitude so that a single latent dimension is indicated. Moreover, at least in psychological gerontology, research has not yet reached a point where there is good "causal" evidence about predictor variables or about the role of risk and protective factors.

© Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-0-521-43582-6 - Successful Aging: Perspectives from the Behavioral Sciences
Edited by Paul B. Baltes and Margret M. Baltes
Excerpt
More information

Integrating subjective and objective criteria

In addition to the question of dimensionality and relative weight of the criteria, a further issue concerns the categorization of criteria along yet another dimension, namely, *subjective versus objective* indicators. In psychological and social science research, there is a preponderance of the use of subjective criteria such as measures of life satisfaction, self-concept, and self-esteem and, more recently, measures of perceived or personal control. This emphasis on subjective indicators reflects the assumption that a certain parallelism exists between the subjective and objective world and also the view that, for the social scientist, reality is in part socially and personally constructed. It also reflects the value judgment that the perceiving self ought to be the litmus test for the quality of life (Bengtson, Reedy, & Gordon, 1985; Schwartz, 1974).

The usefulness of subjective criteria is somewhat undermined, in our view, by the fact that the human psyche is extraordinarily plastic, adaptive, and able to compensate (see also Brim, 1988; Epstein, 1981; Filipp & Klauer, 1986; Greenwald, 1980; Markus & Wurf, 1987). By the use of various psychological mechanisms, humans are able to "successfully" adapt their subjective assessments to objectively quite diverse conditions. It is astonishing, for instance, how little difference has been found in life satisfaction between people who live in objectively adverse life conditions (such as during wartime or in prisons or slums) and those who live under normal or even superior life conditions.

Consequently, we submit that subjective indicators are possibly overweighted in typical definitions of successful aging. They are necessary but not sufficient conditions for an adequate definition of successful aging. Moreover, we contend that subjective assessments of well-being might even be misleading if used as the only indicators. For example, because of the mind's power to transform reality and in the extreme even to ignore it, the sole use of subjective indicators is likely to underestimate both the existence of behavioral and ecological deficiencies and the potential for further progress. Thus, for the planning of environments aimed at the optimization of individual development, it seems essential to supplement subjective criteria with objective ones.

The search for objective criteria for life quality seems to proceed generally along two avenues. The first is based on a *normative* definition of an ideal state. Such a normative definition describes developmental outcomes (such as mental health) and goals (life goals and patterns) that are used as a standard for success. Erikson's theory of lifelong personality development, with generativity and wisdom as the central themes of later life, is an example of such an approach (Erikson, Erikson, & Kivnick,

© Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-0-521-43582-6 - Successful Aging: Perspectives from the Behavioral Sciences
Edited by Paul B. Baltes and Margret M. Baltes
Excerpt
More information

1986; Ryff, 1984). Achieving generativity and wisdom, then, becomes the yardstick for successful aging. The fundamental objection to such models is that they start, as the label *normative* suggests, with the assumption of a highly standardized society. In addition, the standards chosen often reflect the priorities and values of the middle and upper classes. Successful aging should not be a phenomenon restricted to a given social class.

The second avenue leading toward a specification of objective measures of successful aging is based on the concept of *adaptivity* (or *behavioral plasticity*). This approach seems more general because it does not imply a single outcome, specific contents, or life goals. Rather, its focus is on the measurement of the efficacy of a system. Adaptivity or behavioral plasticity is a measure of potential and preparedness for dealing with a variety of demands (M. Baltes, 1987; P. Baltes, 1987; Coper, Jänicke, & Schulze, 1986; Shock, 1977). Illustrations of adaptivity in the psychological realm are the quality of one's memory and cognition and the quality of one's ability to cope with stressful events. Taken together, such measures are expected to yield indicators of the adaptive plasticity and potential of a person.

In summary, an encompassing definition of successful aging requires a value-based, systemic, and ecological perspective. Both subjective and objective indicators need to be considered within a given cultural context with its particular contents and ecological demands. However, both the objective aspects of medical, psychological, and social functioning and the subjective aspects of life quality and life meaning seem to form a Gordian knot that no one is prepared to untie at the present time. Our suggested solution is to use multiple subjective and objective criteria and to explicitly recognize individual and cultural variations.

A framework of propositions

In the following, seven propositions about the nature of human aging are presented from a psychological point of view. It is argued that a conception of successful aging needs to be placed into the context of this framework. Subsequently, we will derive one prototheoretical model of successful aging that in our view is consistent with this framework.

Proposition 1: There are major differences between normal, optimal, and sick (pathological) aging

The first proposition concerns the differentiation among normal, optimal, and sick aging (Cicero, 44 B.C./1979; Rowe & Kahn, 1987; Whitbourne, 1985). Normal aging refers to aging without biological or mental pathol-

© Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-0-521-43582-6 - Successful Aging: Perspectives from the Behavioral Sciences
Edited by Paul B. Baltes and Margret M. Baltes
Excerpt
More information

ogy. It thus concerns the aging process that is dominant within a society for persons who are not suffering from a manifest illness. Optimal aging refers to a kind of utopia, namely, aging under development-enhancing and age-friendly environmental conditions. Finally, sick or pathological aging characterizes an aging process determined by medical etiology and syndromes of illness. A classical example is dementia of the Alzheimer type.

This distinction among normal, optimal, and pathological aging is not unequivocal, but it is useful as a heuristic. Whether there is aging without pathology is an open question. Fries (this volume), for example, argues that it is possible, in principle, to either reduce or postpone the occurrence of chronic diseases such that the "natural and fixed" biological life span can run its course into old age before illness becomes overtly manifest. Death would end life before disease hampers daily living, similar to a clock that suddenly stops ticking without warning or any appearance of damage. Whether this futuristic propositon of Fries will become reality is not essential to the basic argument. The important point is that it is pathological incidents that primarily produce a qualitatively different organism in old age and not aging itself.

Proposition 2: There is much heterogeneity (variability) in aging

The second proposition is that aging is characterized by large interindividual variability in level, rate, and direction of change. Aging is a very individual and differential process with regard to mental, behavioral, and social outcome variables. There are 70-year-olds who look and think like 50-year-olds and vice versa.

Why is there so much variability in aging? Three sources seem to produce this effect. First, there are differences in genetic factors and environmental conditions that act cumulatively over ontogenetic time. For example, some genetic effects may be augmented over the life span, and there are also late-life genes (Plomin & Thompson, 1986). Second, there are individualizing effects resulting from the way each person influences his or her own life course (Brandtstädter, 1984; Brandtstädter, Krampen, & Heil, 1986; Lerner, 1984). Finally, and especially in the late decades of life, variability may increase because the course of normal aging can be modulated by a variety of different patterns of pathologies (Proposition 1).

The notion of interindividual variability or heterogeneity of aging receives much support from longitudinal studies on adulthood and old age (Maddox, 1987; Thomae, 1979, 1987). In our assessment, five longitudinal projects are of particular significance. Historically, the Kansas City

© Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-0-521-43582-6 - Successful Aging: Perspectives from the Behavioral Sciences
Edited by Paul B. Baltes and Margret M. Baltes
Excerpt
More information

Studies of Adult Life conducted by Havighurst, Henry, Neugarten, and associates opened the way for a differential perspective (Neugarten, 1968, 1987). Subsequently, the Duke Longitudinal Studies (Busse & Maddox, 1985; Maddox, 1987), the Baltimore Longitudinal Study on Aging (Costa & Andres, 1986; Shock et al., 1984), the Bonn Longitudinal Study of Aging (Lehr & Thomae, 1987; Thomae, 1979), and Schaie's Seattle Longitudinal Study of Intellectual Aging (Schaie, 1979, 1983) produced converging evidence. Each of these longitudinal studies documented that aging was not a general and uniform process. Instead, individuals were shown to age very differently.

Research on the sociology (Dannefer, 1984; Featherman, 1983; Maddox, 1987; Riley, 1985) and the biology of aging (Finch, 1988; Fries & Crapo, 1981; Rowe & Kahn, 1987) further strengthened the view that aging in Western societies is a highly heterogeneous process. A general perspective on aging evolved and took hold. This perspective stated that human biology and human culture set the "genotypic" stage for a remarkable degree of "phenotypic" individuality and variability.

Although large heterogeneity in old age is a widely accepted fact, nevertheless, there is disagreement about whether interindividual variability increases with age (Bornstein & Smircina, 1982). Aside from the empirical evidence in current data, there is a new theoretical issue associated with future changes in length of life. If more and more people approach their "maximum" biological life span, as Fries (1983) suggests, the unifying force of a common biological program of aging and dying may actually contribute to a reduction of interindividual variability in future cohorts of very old persons.

Proposition 3: There is much latent reserve

The concept of plasticity provides a conceptual foundation for this proposition and emerges in conjunction with another kind of longitudinal research, that is, gerontological intervention studies. When individuals were subjected to targeted interventions, whether in the area of self-care, social behavior, or perceived control or in the domain of cognitive functioning, evidence for a sizable amount of intraindividual plasticity was obtained. Studies repeatedly demonstrated that most old people, like young people, possess sizable reserves that can be activated via learning, exercise, or training. As a result, the focus has been on the concept of *reserve capacity*, a concept whose utility in clinical diagnosis was advanced, for example, as early as 1934 by Vygotsky (see Guthke, 1972, 1982; Roether, 1983; Schmidt, 1971).

In operant-experimental research on dependent versus independent

© Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-0-521-43582-6 - Successful Aging: Perspectives from the Behavioral Sciences
Edited by Paul B. Baltes and Margret M. Baltes
Excerpt
More information

behavior, for instance, many different types of dependent behavior have been examined (for reviews see M. Baltes & Barton, 1979; Mosher-Ashley, 1986–87; Wisocki, 1984). Using diverse reinforcement and stimulus control procedures, researchers have demonstrated substantial behavioral plasticity in the elderly. These laboratory-type findings support the possibility of behavioral optimization and corrective compensation in old age. The important role of environmental conditions in determining the emittance of either dependent or independent behavior has been validated by observational studies in the field (see M. Baltes, 1988; M. Baltes & Wahl, 1987). The findings appear to represent a dependence–support script: The social environment (the social partners) of the elderly reinforces dependent behavior and ignores independent behavior. Consequently, it is likely that the reserve capacities of older persons are not fully activated in their everyday lives.

Similar evidence for substantial reserve capacity also exists in the domain of cognitive functioning. Here, the data show that healthy elderly people in the age range between 60 and 80 benefit from practice (like younger adults do) and show an increase in performance on the specific abilities trained that is comparable in its magnitude to the aging decline found in untrained persons in longitudinal studies (P. Baltes & Lindenberger, 1988; Schaie & Willis, 1986). Moreover, it has been shown that a variety of cognitive interventions can be effective, even ones that involve a minimum amount of instruction and practice (Denney, 1984; Labouvie-Vief, 1985; Roether, 1986; Willis, 1987).

For example, when comparing the effects of tutor-guided and self-guided practice for fluid intelligence (this cluster of intellectual abilities shows consistent aging loss), P. Baltes, Sowarka, and Kliegl (1989) found that healthy older adults were able to generate, by themselves, levels of performance that hitherto were attributed to guided instruction by others (Figure 1.1). In addition, it has been shown that healthy old people are able to learn new cognitive skills, for instance, by becoming memory experts (Kliegl, J. Smith, & P. Baltes, 1989). Such findings suggest that for many older adults the mechanics of the cognitive system continue to function during old age in the same general way as they do during earlier phases of the life course. Thus, older adults are able to use their cognitive mechanics to acquire new forms of declarative and procedural knowledge.

The fact that older adults have the cognitive reserves to acquire new forms of factual and procedural knowledge is important because it suggests that cognitive aging does not only consist of the maintenance of past functioning. Based on the fact that *new learning* is possible, one can argue that older adults may continue to produce new forms of adaptive capacity

© Cambridge University Press www.cambridge.org