

Supplement Article: Motivation and Healthy Aging

Motivation and Healthy Aging: A Heuristic Model

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The twenty-first century is witnessing an unparalleled historical increase in longevity worldwide and particularly in Western, industrialized countries (e.g., Oeppen & Vaupel, 2002; United Nations, 2019). Moreover, despite wealth-related disparities, people generally do not only live longer, but they also live more years in better physical health than at earlier historical times (Harper, 2019). Accordingly, a majority of older adults maintains high levels of functioning in their everyday lives. However, on average, aging remains related to declines in physical and mental health, with a sharp increase in the number of health-related problems in old and particularly in very old age (Barnett et al., 2012), and an increase in chronic multimorbidity (Koné Pefoyo et al., 2015). Based on the biopsychosocial understanding of health, it is not necessarily the physical health alone that defines if

people are healthy. Given that many older people are able to maintain a high level of everyday functioning despite illnesses, the World Health Organization (WHO) proposed a definition of “healthy aging” that takes the specific situation of older people into account, namely as “The process of developing and maintaining the functional ability that enables well-being in older age” (“World report on aging and health,” WHO, 2015, p. 28), where functional ability denotes the “attributes that enable people to be and to do what they have reason to value” (p. 28). Thus, if we want to understand “healthy aging,” we need to understand what it is that people “have reason to value” into very old age, and how they can attain and maintain these valued aspects of their lives.

In this article, we present our position that these questions are best answered with the theoretical constructs and

approaches provided by motivation science. Motivation science investigates what it is that people desire and dislike or even fear, how these desires, dislikes, and fears are transformed into goals, how people go about pursuing these goals successfully or disengage from them if necessary, and how these processes change over time. In short, we maintain that motivation is the royal road to understanding healthy aging. In this article, we attempt to lay the foundations of a motivational model of healthy aging (see Figure 1).

Each of the components of the model has been examined in relation to their development across adulthood and into old age and will be addressed briefly below as well as in the individual articles in this supplement. However, they have not yet been considered jointly, thus neglecting the importance of their complex interactions when investigating healthy aging. Such a joint consideration poses a formidable challenge both theoretically and empirically. This article and the contributions to this supplement provide a first step in this direction by reviewing the state of the existing research, and by pointing to the central questions that need to be addressed for a better understanding of healthy aging from a motivational perspective. In the remainder of this article, we will briefly introduce the central constructs of the model and with this set the scene for the individual articles in the supplement.

A Heuristic Model of Motivation and Healthy Aging

We place goals at the center of the model, given that from our perspective, the goals people set and pursue are of crucial importance to understanding how they pursue, achieve, and maintain what they “have reason to value,” one of the core aspects of the WHO’s definition of healthy aging. Goals are dynamic constructs that develop and change

over time, for example as wishes, desires, and preferences change, or as people adapt their aspirations to currently available resources or opportunities, and present demands or constraints.

In the next circle, we place the *processes* by which goals “come to life” and exert their influence on people’s lives, namely goal setting, goal pursuit, and goal disengagement. Understanding healthy aging hinges on understanding how these processes allow a person “to be and do what they have reason to value” throughout adulthood and into old age, considering the constraints and opportunities associated with aging (e.g., J. Heckhausen et al., 2019). There are individual differences in the extent to which older adults perceive, and expect constraints that limit their abilities to bring about desired outcomes, and these expectancies have implications for health and well-being (Lachman et al., 2011).

Lastly, the outer circles represent the contexts and environments in which people are situated. The processes of goal setting, goal pursuit, and goal disengagement can only be understood in interaction with the opportunities and constraints provided by the social, cultural, organizational, technological, and physical context in which a person lives and their life history as well the current place in the life course.

Goals

Goals are cognitive representations of desired (or disliked or even feared) states that are approached (or avoided) through action. The goal concept is central to motivation science as research attests to the important function of goals for motivating action, for providing direction and meaning, as well as for contributing to subjective well-being (e.g., Fishbach & Ferguson, 2007; Hennecke & Brandstätter, 2017). Goals can be described on various dimensions such as, among others, approach–avoidance (e.g., Elliot, 2008; Hennecke, 2019), concrete–abstract (Carver & Scheier, 1998), intrinsic–extrinsic (e.g., Kruglanski et al., 2018; Ryan & Deci, 2017), orientation towards growth, maintenance, or the avoidance of loss (e.g., Staudinger et al., 1995), goal focus on the means or ends (Freund et al., 2019), or thematic content of achievement, power, or affiliation (McClelland et al., 1989). Some of these dimensions have been theoretically related and empirically shown to contribute to subjective well-being in old age, thereby underscoring the importance of goals for healthy aging (Freund et al., 2019).

While concrete goals are highly functional as they guide behavior in a given situation (e.g., by suggesting concrete actions), highly abstract goals provide direction and meaning (e.g., by orchestrating and integrating all kinds of diverse behaviors with respect to an overarching theme; Klinger, 1977; Little, 1989). Values have a similar function as higher-order goals; they denote beliefs of what is of central importance in life (Schwartz, 2012). They operate on the level of groups, institutions, societies, or cultures, and

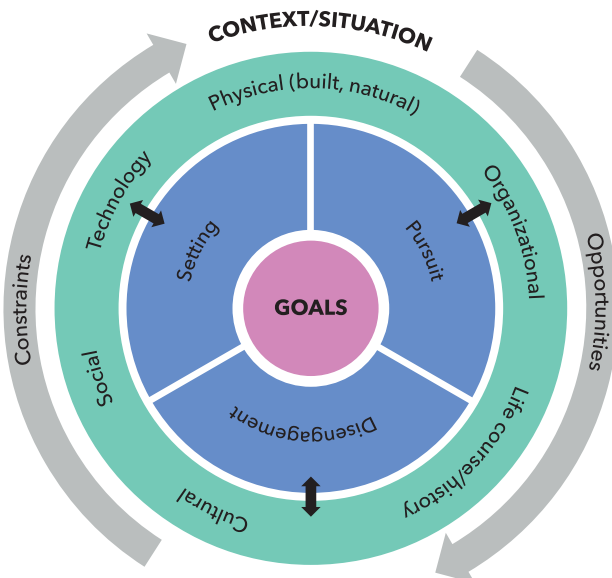


Figure 1. Heuristic model of motivation and healthy aging.

provide standards and constraints to the development of individual values (Schwartz, 2012). Values go beyond specific situations and actions, but rather serve as standards that guide the selection of more specific goals and actions. Values change with age. For instance, in a cross-sectional analysis of age differences in values in a large U.S. American sample drawn from the World Values Survey, Ritter and Freund (2014) found that of the 10 values Schwartz (2012) considers to be universal, the importance of values that are self-oriented (e.g., hedonism) decreased with age, while the importance of values reflecting a social orientation (e.g., benevolence) increased. As proposed by Mayr and Freund (2020), the increase in benevolence in older adulthood might be related to healthy aging by providing a venue to connect with others and contribute to society at large beyond raising a family or being part of the workforce. Thus, values contribute to healthy aging by pointing individuals to what is most important to them (i.e., thematic content) and guiding the selection of more concrete goals and actions.

We put forth that because of their dynamic nature, goals allow people to continue being and doing what they value in the face of changing demands and opportunities that come with aging. More specifically, the extent to which people can turn their values, wishes, fantasies, and preferences into binding goals in the face of developmental gains and losses likely contributes to their healthy aging as it will guide their selection and shaping of social and proximal environmental contexts as well as their behavior across time and situations into the direction of being and doing “what they have reason to value” (e.g., Oettingen et al., 2001).

Goals undergo age-related changes to adapt to changing opportunities and constraints (J. Heckhausen, 1999). For instance, a person who values achievement (i.e., to master challenges and attain a high standard of performance) may find it easy to set challenging work-related goals in young adulthood and middle age. However, after retirement, this person might replace the work-related goals with other, challenging goals such as helping low-income families in their community (cf. the concept of loss-based selection; Freund & Baltes, 2002). Another way of continuing “to be and do what one has reason to value” in the face of age-related constraints is to reduce the level of one’s aspirations and adapt it to what is still attainable (e.g., Brandtstädter & Rothermund, 2002; J. Heckhausen et al., 2019). People commit to goals they experience as valuable and attainable (e.g., Atkinson, 1957; Vroom, 1964), so the challenge for healthy aging is to find this “sweet spot” where value and attainability intersect.

Goal Setting, Pursuit, and Disengagement

How do older adults set goals that allow them to be and do what they “have reason to value” (WHO, 2015, 2020), and that adapt to the changes in the available internal and external resources that accompany aging

(Baltes et al., 2006) but at the same time optimize their potential? According to the model of action phases by H. Heckhausen and Gollwitzer (1987), the phases of goal setting and goal pursuit are accompanied by distinct motivational and volitional states that are reflected in specific cognitive orientations (mind-sets). For instance, during the process of goal setting (i.e., the predecisional phase), people weigh the short- and long-term pros and cons of different goals as well as their attainability, while they focus on the positive aspects after having committed to a goal and start pursuing it (H. Heckhausen & Gollwitzer, 1987). This well-researched model (Brandtstädter & Frank, 2002; Gollwitzer, 2012) demonstrates the usefulness of distinguishing between these different phases. Several models of healthy aging build on this distinction but have widened their scope by including processes of goal disengagement. These models have mainly investigated age-related changes in goal setting, goal pursuit, and goal disengagement (Brandtstädter & Rothermund, 2002; Freund & Baltes, 2002; J. Heckhausen et al., 2019). Despite their differences, these models converge in demonstrating that each of these goal phases undergoes age-related changes and contributes—or undermines—healthy aging. Thus, our comprehensive motivational model emphasizes that both theoretical and empirical research into healthy aging profits from recognizing the different processes involved in goal setting, goal pursuit, and goal disengagement.

Context/Situation

The contexts and situations in which people find themselves are defined by multiple aspects. In our perspective, their most important aspects concern social, technological, physical (including built and natural environment), organizational, historical, and cultural characteristics. Together, these aspects determine the extent to which people find opportunities and face constraints to being able to be and do what they value (Lawton, 1980).

Note that the definition of opportunities and constraints depends on the interplay between subjective factors (e.g., a person’s goals, their self-concept), on the one hand, and the more objective contextual and situational affordances and limitations (e.g., lack of public transport) on the other. For example, the life event of having a seriously ill spouse who needs to be cared for may entail aspects that some people may see as constraints (e.g., to one’s own mobility) and other aspects that some people may see as opportunities (e.g., for providing one’s life with meaning).

While the concept of context refers to all psychologically meaningful aspects outside the person (Lewin, 1935), the *situation* refers to those aspects of the context that are perceived by the person at the very moment, aspects of the immediate “here and now” that a person experiences. These situational aspects tend to be more variable than the more stable characteristics of the context, and thereby contribute to variability within persons as they have to

constantly adapt to them behaviorally, cognitively, emotionally, and motivationally. The necessity to adapt to situational changes (corresponding to what Lawton [1980] called “environmental press”) likely contributes to building and maintaining a broad behavioral repertoire that enables people to cope with a variety of challenges (corresponding to what Lawton called “competence”). Importantly, people not only react to situational changes, but they also proactively bring them about so as to better fit with their goals well into very old age. In this perspective, healthy aging is a process resulting from the transactional relationship between a person with their individual resources, skills, and goals on the one hand and their context on the other (Lawton, 1980).

Cultural context

A person’s cultural context encompasses a variety of aspects. These may range from cultural values, norms, and stereotypes to cultural knowledge and beliefs, education, arts, customs, and laws (e.g., Markus & Kitayama, 2010). With regard to aging, an important aspect of a given culture likely lies in its views on aging and the extent to which a society discriminates against older adults (Kornadt & Rothermund, 2015). Whereas structural ageism constrains older adults’ participation in society, a society with positive views on aging may promote their social inclusion. In addition, the extent to which adults internalize a culture’s positive or negative views on aging is an additional source of constraints or opportunities to their being able to be and do what they value (Levy, 2009). In the same vein, participating in cultural, social, or educational activities offers ample opportunity for being physically and mentally active (e.g., Klusmann & Kornadt, 2020).

Social context

With social context, we refer to a person’s social relationships. This includes close relationships between an individual and their spouse, family, and friends, but also weaker social ties with colleagues at work, acquaintances, and neighbors. Both the quantity as well as the quality of social relationships contribute to a person’s health and well-being, and this is true across the life span (Antonucci et al., 2019). Whereas social support can serve as a resource and positively impact health (Berkman et al., 2000; Uchino, 2006), low-quality social ties and autonomy-restricting social control can have negative or ambivalent effects on people’s health and well-being (Lewis & Rook, 1999; Walen & Lachman, 2000). Moreover, it seems that especially in old age, adults face a higher risk of experiencing social isolation and loneliness (Luhmann & Hawkey, 2016) with clear implications for their health (e.g., Cacioppo & Cacioppo, 2014).

Technology

Lastly, as an increasingly important aspect of context, information technology has now entered many aspects of people’s lives, from how they form and maintain social

relationships using social media to robotic devices that enable older adults to remain mobile, independent, and safe (Hülür & MacDonald, 2020; Schulz et al., 2015). One of the topics related to technology that likely will gain in importance in future research is the role of the tracking and documentation of one’s own health status and physical activity in everyday life (Martin et al., 2018). Tracking devices are one way to monitor and motivate oneself to become engaged in a healthy lifestyle: one of the most frequently cited reasons for mobile health tracking is its expected positive effect on health behavior and well-being (Higgins, 2016). Given that technology has the potential to compensate for impairments (e.g., hearing aids), it provides new opportunities for older adults to maintain a desired level of functional ability. In fact, older adults might profit particularly from innovative approaches, such as mobile physical activity tracking for individual health promotion and prophylaxis, as physical activity contributes to healthier aging processes. At the same time, older adults may be unwilling to adopt new technologies because they might not be easy to learn, or because of skeptical attitudes about their benefits (Pew Research Center, 2014). This might contribute to a digital divide along the lines of age. Thus, again, technology is a context that provides both opportunities and constraints for healthy aging.

Physical (built, natural) environment

One aspect of a person’s context is their physical environment. This includes more or less intentionally designed aspects such as the built environment (e.g., infrastructure, buildings), but also natural (e.g., topography, climate) aspects. Clearly, the physical environment has important implications for the types of opportunities and constraints that people experience. For example, in geographical areas experiencing icy winters, older adults might not leave their house in the winter season for fear of falling. Opportunities may, for example, be provided by nearby facilities or natural landscapes for physical exercise (e.g., a swimming pool or lake) or accessible public transport systems that make social participation easier (Alsnih & Hensher, 2003). Conversely, being located far away from infrastructure in the built environment may constrain possibilities for physically active travel (Ewing, 2005).

Organizational context

Across a person’s active work life, work organizations represent an impactful context, but their influence may well extend beyond retirement. For instance, organizations shape people’s self-concepts and personalities in an enduring way (Roberts, 2006; Scollon & Diener, 2006). Moreover, after retirement, older adults may still seek out organizations, be it as customers in the economy, patients in the health care system, or volunteers in social organizations. Organizational contexts, too, provide opportunities (e.g., for learning, building social networks, getting advice or cure) and constraints (e.g., organizational regulations,

work requirements and times) for people to do “what they have reason to value.” The organizational context extends beyond retirement also in the sense that an individual’s occupational history is related to their cognitive (Shimamura et al., 1995) and motivational aging (Forstmeier & Maercker, 2008).

Life course/historical context

Older adults can look back on a rich life history including life events, transitions, and experiences in domains like education, family, work, and health. Many of these may be normative in the sense of applying to most adults (e.g., retirement; Baltes et al., 1980). Others, and potentially an increasing number (Wrosch & Freund, 2001) of life events may be nonnormative and pose challenges to individuals that they share with only a limited number of other adults (e.g., accidents, divorce; Baltes et al., 1980). Moreover, historical time shapes what life events and transitions are normative in a given society and when these should normally occur (e.g., whether one should get married or when to retire; Freund, 2020). Life events, especially nonnormative ones, vary across individuals and thereby contribute to heterogeneity in development. Accordingly, one’s life course and the events, transitions, and experiences that shape it provide both opportunities and constraints (e.g., marriage).

Taken together, the model of motivation and healthy aging depicted in Figure 1 places goals at its center, as we maintain that goals and goal-related processes (goal setting, pursuit, and disengagement) are paramount for understanding how aging individuals manage their lives in a way that they attain and maintain “what they have reason to value” (WHO, 2020). Goals are embedded in cultural, social, technological, physical, and organizational contexts, as well as a person’s place in the life course; are shaped by these contexts via goal setting, pursuit, and disengagement; and, in turn, shape these contexts, that offer opportunities as well as constraints for goal attainment.

Brief Overview of the Articles in the Present Supplement

This supplement comprises nine articles addressing one or more components of the motivational model of healthy aging (Figure 1) by reviewing the pertinent research and highlighting open research questions aiming to advance the field of motivation and healthy aging

Targeting goals, the central construct of our model of motivation and healthy aging, J. Heckhausen and colleagues (2021) focus on the dynamics of the interactions between physical, social, and environmental changes, sequentially organized cycles of goal-focused motivational processes, as well as the modifications in content, orientation, and composition of goals that allow functional ability stabilization across old age. In contrast to most of the conceptual work on the WHO healthy aging model (2020) that has addressed intrinsic capacities, functional ability, or environments, the

paper “Goal changes and healthy aging” identifies opportunities from addressing the underresearched dynamics of goal changes across adulthood and into old age as key elements of healthy aging. The paper also outlines intervention approaches to facilitate goal achievement.

Zooming in on social goals, Isaacowitz and colleagues (2021) discuss age-dependent changes in personal goals representing a social orientation, such as increased prioritization of social-emotional goals, increased prosociality/altruistic motives, generativity, and ego-transcendence. The authors make a strong case for a “prosocial shift” associated with aging by presenting empirical evidence from self-report, behavioral, and functional neuroimaging data. According to the authors, interventions to promote prosocial goals seem to be one of the most promising venues to foster healthy aging.

Moving to the second circle of the healthy aging model (Figure 1), Hennecke and colleagues’ (2021) article “The self-regulation of healthy aging: Goal-related processes in three domains” explains how the processes of goal setting, pursuit, and goal disengagement can help older adults to manage age-related changes in social ties, health, and retirement from work. The authors discuss specific opportunities and challenges associated with these changes, as well as consequences of the overarching challenges and/or opportunities that come with the increased availability of daily time, the long autobiographical past, and the limited future time perspective in old age in these three domains.

In their paper, “Effort mobilization and healthy aging,” Hess and colleagues (2021) focus on effort mobilization as *the* basic process of active goal pursuit. They discuss how effort mobilization may vary as a function of physical, psychological, and social changes experienced by a person across adulthood. More concretely, they consider changes in cardiovascular and neural mechanisms associated with aging that may influence effort mobilization and, ultimately, the health and well-being of older adults. Regarding practical issues, the authors distinguish between factors that can be modified and those that are difficult to change. Relating to the modifiable factors, they identify ways to optimize effort mobilization in support of healthy aging, such as changing personal goals, revising subjective beliefs, or (re)structuring the context/situation.

Zacher and colleagues (2021) focus on “Motivation and healthy aging at work,” an important organizational context. They discuss current theoretical models and the empirical evidence on the role of work for motivation, health, and well-being across adulthood in the light of the WHO’s definition of healthy aging as the “process of developing and maintaining the functional ability that enables well-being in older age” (WHO, 2015, p. 28). They furthermore propose directions for future research in line with that definition as well as interventions with a focus on work environments that rely on nudges and the promotion of person-environment fit or individual strategies of goal engagement, goal revision, and goal disengagement

to support people's motivation for healthy aging in the work context.

Turning to the context of social relations, Charles and colleagues (2021) build their article "Leveraging daily social experience to motivate healthy aging" on the well-established finding that the social environment is one of the most pervasive external influences on health and well-being, across the entire life span, and particularly in old age. Charles and colleagues (2021) focus on research that uses naturalistic within-person paradigms linking daily social experiences to emotional, cognitive, and physical well-being. As an example of how to capitalize on the social environment–person interactions for intervening in older people's daily lives to promote motivation for healthy aging, the authors discuss the development of microlevel, just-in-time-adaptive interventions.

Another context facet encompassing social, cultural, and organizational aspects is reflected in age discrimination. Rothermund and colleagues (2021) elaborate in the contribution entitled "Age discrimination in the context of motivation and healthy aging" how age discrimination can reduce older adults' motivation and impair their health. In turn, high motivation and good health may also help older adults to cope with age discrimination. The authors propose ways to reduce age discrimination and, thereby, increase aging adults' motivation and promote healthy aging.

Wahl and colleagues' (2021) article "Healthy aging relevant goals: The role of person–context co-construction" describes processes connecting the inner, goal-related circles and the outer context circle of the model by discussing how individuals coconstruct their health goals in interaction with the context they are experiencing. Furthermore, the authors argue that models of healthy aging would benefit from a more comprehensive conceptualization of context as well as a better differentiation of how contexts contribute to the construction of health goals in different phases of old age.

Finally, addressing interventions for fostering healthy aging, Klusmann and colleagues (2021) apply theories of behavior change specifically to the question of how to target motivation in older adulthood. Using the central constructs of the heuristic model presented in Figure 1, they show how beliefs and attitudes can be harnessed as determinants of goals that, in turn, are functionally related to healthy aging. They propose to use the established effects of if–then planning and mental contrasting, as well as nudging and boosting for scalable healthy aging interventions.

Taken together, the collection of papers in this supplement illustrates the central role of motivation for healthy aging, and the fruitfulness of the heuristic model of motivation and healthy aging for both basic and applied research. It is our hope that it inspires both strands of research and, with this, ultimately will make a contribution to addressing the question how people can age healthily and fulfill their potential well into old and very old age.

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Conflict of Interest

None declared.

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