Selection, Optimization, and Compensation

The model of selection, optimization, and compensation (SOC) posits that these three fundamental processes of developmental regulation are essential for successful development and aging. Selection, optimization, and compensation are thought to advance the maximization of gains and minimization of losses associated with aging, thus promoting successful development and aging.

Basic assumptions underlying the SOC model

There are a number of basic assumptions underlying the use of the SOC model as a model of successful aging. Life-span psychology holds that development comprises developmental trajectories of growth (gains e.g., the acquisition of language) and decline (losses e.g., decline in health in old age). A person’s internal and external resources are, at each point of life, finite. Very broadly, resources can be defined as personal or environmental characteristics that support a person’s interaction with his or her environment.

There are age-related changes that occur in the availability and efficiency of resources. The ratio of gains to losses becomes less positive with age because resources are replenished less often and drawn upon more exhaustively with increasing age. This reduction in resources occurs because: (1) advantages of evolutionary selection decline across the life span; (2) the need for culture (i.e., in the Vygotskian tradition, a set of socially constructed behaviors, beliefs, and objects) increases across the life span; and (3) the efficacy of culture decreases across the life span—particularly in old age. Each of these points is discussed below.

Life expectancy has only fairly recently extended into old age. Because evolutionary selection benefits decrease with age, there is less effective genetic material, mechanisms, and expressions for developing or maintaining high levels of functioning. In addition, most modern cultures do not provide the same richness of opportunities to older persons as are provided to younger members of society. This is in spite of the fact that cultural opportunities are especially needed by older adults to compensate for biologically based decreases in functioning. Moreover, due to reduced resources, older adults can make lesser use of supportive environmental conditions. Because of these factors, the balance of growth and decline becomes less favorable with increasing age. Thus, in old age, individuals have to allocate more of their resources to the maintenance of functioning and providing resilience against losses, rather than into processes of growth.

The (pro)active role of the individual in successful aging. How do people efficiently use their resources to promote continued growth and the maintenance of functioning in the face of losses when approaching old age? People not only react to environmental demands, but they also shape their environment to fit their needs. One important way in which individuals play an
active role in their development is by choosing, committing to, and pursuing a set of goals (e.g., wanting to stay healthy). What kinds of goals a person selects is in part determined by sociocultural, biological, and phylogenetic factors. The lesser the influence stemming from these factors, the more degrees of freedom a person has to develop and choose his or her goals (and ways of pursuing them). In old age, there are fewer normative age-related expectations about the goals a person ought to pursue. This relative greater social freedom in old age gives more weight to goal selection and goal pursuit as processes of developmental regulation. On the other hand, old age is also characterized by diminishing resources that might limit the degree to which a person is able to shape the environment according to his or her goals. Thus, in old age it seems particularly crucial to wisely select the goal domains on which to focus one’s resources.

The model of selection, optimization, and compensation

In this light, then, it is not surprising that processes of goal selection and goal pursuit have a prominent place in models of successful aging. According to the SOC model, successful aging encompasses selection of functional domains on which to focus one’s resources, optimizing developmental potential (maximization of gains) and compensating for losses—thus ensuring the maintenance of functioning and a minimization of losses.

The SOC model constitutes a general model of development that defines universal processes of developmental regulation. These processes vary pheno-typically, depending on sociohistorical and cultural context, domain of functioning (e.g., social relations, cognitive functioning), as well as on the level of analysis (e.g., societal, group, or individual level). Taking an action-theoretical perspective, selection, optimization, and compensation refer to processes of setting, pursuing, and maintaining personal goals.

Selection. Selection refers to developing, elaborating, and committing to personal goals. Throughout the life span, biological, social, and individual opportunities and constraints specify a range of alternative domains of functioning. The number of options, usually exceeding the amount of internal and external resources available to an individual, need to be reduced by selecting a subset of these domains on which to focus one’s resources. This is particularly important in old age, a time in life when resources decline.

Selection directs development because personal goals guide and organize behavior. Successful goal selection requires individuals to develop and set goals in domains for which resources are available or can be attained, and that match a person’s needs and environmental demands.

The SOC model distinguishes between two kinds of selection, elective selection and loss-based selection. Both aspects of selection differ in their function. Elective selection refers to the delineation of goals in order to match a person’s needs and motives with the available or attainable resources. Elective selection aims at achieving higher levels of functioning. In contrast, loss-based selection is a response to the loss of previously available resources that are necessary to maintain functioning. Loss-based selection refers to changes in goals or the goal system, such as reconstructing one’s goal hierarchy by focusing on the most important goals, adapting standards, or replacing goals that are no longer achievable. This allows the individual to focus or redirect his or her efforts when resources used for the maintenance of
positive functioning or as a substitute for a functional loss (compensation) are either not available or would be invested at the expense of other, more promising goals.

Selection promotes successful aging in a number of ways. To feel committed to goals contributes to feeling that one’s life has a purpose. Furthermore, goals help organize behavior over time and across situations and guide attention and behavior. One of the central functions of selection is to focus the limited amount of available resources. In old and very old age, when resources become more constrained, selection becomes even more important. Empirical evidence shows that selecting a few life domains on which to focus is particularly adaptive for those older people whose resources are highly constrained.

**Optimization.** For achieving desired outcomes in selected domains, goal-relevant means need to be acquired, applied, and refined. The means that are best suited for achieving one’s goals vary according to the specific goal domain (e.g., family, sports), personal characteristics (e.g., age, gender), and the sociocultural context (e.g., institutional support systems). Prototypical instances of optimization are the investment of time and energy into the acquisition of goal-relevant means, modeling successful others, and the practice of goal-relevant skills.

In old age, optimization continues to be of great importance for successful development because engaging in growth-related goals has positive regulative functions. Trying to achieve growth-oriented goals is associated with a higher degree of self-efficacy and leads to positive emotions and enhanced well-being. In old age, when losses are prevalent, it might be of particular importance to sustain growth-related goals for promoting well-being, rather than focusing primarily on losses. The positive function of optimization in old age has also been empirically supported in the Berlin Aging Study. In this study, older people who reported to engage in optimization processes reported more positive emotions and higher satisfaction with aging.

**Compensation.** How do older people manage to maintain positive functioning in the face of health-related constraints and losses? The maintenance of positive functioning in the face of losses might be as important for successful aging as a sustained growth focus. One relevant strategy for the regulation of losses—loss-based selection—has already been discussed. Loss-based selection denotes the restructuring of one’s goal system, for example, by giving up unattainable goals and developing new ones. Developing new goals and investing in their optimization, however, can also deplete resources. Moreover, important personal goals might be central to a person’s well-being and not easily abandoned in the face of loss. In this case, it might be more adaptive to maintain one’s goal by acquiring new resources or activating unused internal or external resources for alternative means of pursuing goals. This process is referred to as compensation.

As previously discussed, the means that are best suited for maintaining a given level of functioning in the face of loss or decline depend on the domain of functioning. Compensation, in contrast to optimization, aims at countering or avoiding losses, rather than achieving positive states. Again, data from the Berlin Aging Study support the positive effect of compensation in old age—self-reported compensation was associated with subjective indicators of successful aging (i.e., emotional well-being, satisfaction with aging, and life satisfaction).
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See also Developmental Psychology; Developmental Tasks; Functional Ability; Life Span Development; Successful Aging.

BIBLIOGRAPHY


