

# Challenges to developmental regulation across the life course: What are they and which individual differences matter?

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## Abstract

We discuss the major processes involved in individuals' motivation and self-regulation of goal striving throughout the life course. While much is regulated based on the biological and societal scaffolding of lifespan development, certain challenges for motivation and self-regulation are more substantial and need to be managed by the individual, providing opportunities for researchers for testing the limits of individual capacities in developmental regulation. These challenging circumstances include major changes in age-graded opportunities for goal pursuit, uncertain or obfuscated opportunities, and major unexpected losses of control. Under such challenging circumstances, the consequences of individual differences in motivational self-regulation, such as optimism, action vs. state orientation, and goal-disengagement capacity are enhanced and may contribute to adaptive patterns of developmental regulation.

## Keywords

agency, life goals, motivation

In this article, we outline research opportunities regarding individual differences associated with developmental regulation. We start out by discussing the conceptual framework in the Motivational Theory of Lifespan Development, which proposes that the life course is a structured action field for individual agents, and specifies how individuals can take an active part in shaping their development. We then describe a set of highly challenging settings, which put individuals' developmental regulation to the test. Finally, we identify a few major individual difference variables, which can be expected to strongly influence individuals' capacities to regulate their own development.

## Developmental regulation in a structured life course

The regulation of development across the life course is a joint product of the biology of maturation and aging, the societal structuring of the life course, and the individual's agency in adopting, pursuing, and letting go of personal goals for development (Baltes, Cornelius, & Nesselroade, 1979; Brandtstädter, 1998; Heckhausen, 1999; Neugarten, Moore, & Lowe, 1968). Our Motivational Theory of Lifespan Development (MTL) proposes that a substantial portion of developmental change and continuity is highly structured by biological maturation (e.g., learning how to walk) and aging (e.g., menopause) and by social context (e.g., entering school, retirement) (Heckhausen & Schulz, 1995; Heckhausen, Wrosch, & Schulz, 2010; Schulz & Heckhausen, 1996). People "run on tracks" when they are in school, college, for much of their careers and family life, following the institutional pressures and incentives and the social norms of their developmental ecology, at home and in the workplace. During these times, people can easily determine what is expected of them (e.g., apply themselves in school), what the major opportunities are to pursue important life goals (e.g., start a family

in early adulthood), and when these opportunities will decline and disappear (e.g., child-bearing when approaching menopause).

Nevertheless, even when strong institutional or normative scaffolding to development-related behavior is present, individuals cannot attain much without engaging with the appropriate goals for the respective developmental tasks of their age group (Heckhausen, 1999; Heckhausen et al., 2010). Only if they make these developmental tasks their personal goals, can they fulfill their developmental potential at that point in time. For example, just encountering opportunities for entering college in a given developmental ecology (e.g., a high-school graduate in a middle-class American family) is in itself not sufficient to get the individual on the path for completing a college education. The individual has to make an active choice for the respective developmental goal of attaining a certain educational degree, volitionally commit to it, and persist in goal pursuit (apply for colleges, select and move to a campus, study actively each semester) until the goal is attained. This process of *goal engagement* requires the activation of certain control strategies of primary control (i.e., invest time and effort into goal pursuit) and typically also selective secondary control (i.e., enhancing volitional commitment to a goal) to maintain the focus on the goal in spite of challenges and distractions (Heckhausen, 1999; Wrosch & Heckhausen, 1999). Consider, for example, a young adult who is striving for a career promotion. To successfully accomplish this goal, the person may need to invest more time and effort into work

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(i.e., selective primary control), imagine the positive consequences and pride that would come with achieving the promotion (i.e., selective secondary control), and seek advice from more advanced colleagues on effective strategies to foster career success (i.e., compensatory primary control).

As the individual moves along the age axis, the capacity for primary control in most domains of life will change. Achieving progress with former goal pursuits (e.g., obtaining a graduate degree) can become less likely or accessible, while opportunities for new goal pursuits become available. The individual should adapt to these changes in opportunity structures by disengaging from obsolete goals and engaging with new productive goals (Heckhausen & Schulz, 1993; Wrosch, Scheier, Miller, Schulz, & Carver, 2003). In contrast to the motivational mind-set of goal engagement, *goal disengagement* requires compensatory secondary control, which encompasses deactivating motivational commitment and effort investment in the obsolete goal. Compensatory secondary control also incorporates self-protective strategies, such as certain causal attribution (avoiding self-blame), the focus on successes in other domains, and downward social comparisons with others who are worse off. In the context of declining opportunities for goal pursuits and related failure experiences, individuals may need to use self-protective strategies to maintain their emotional and motivational resources for future action (Heckhausen et al., 2010). Note that some problem- and emotion-focused coping tactics conceptually overlap with goal engagement (e.g., active coping) and goal disengagement (e.g., self-blame or positive reframing) control strategies (Carver et al., 1989). Different from coping dimensions, control strategies do not only refer to the management of problems and stress, but are also instrumental in the long-term planning, monitoring, and achievement of goals (Heckhausen et al., 2010).

Whether goal engagement or goal disengagement ultimately is adaptive, depends on whether a selection of specific goals reasonably reflect the individual's opportunities and resources in a given social ecology (Haase, Heckhausen, & Wrosch, 2013). Oftentimes, individuals will not have to embark on a conscious analysis of available goal opportunities and their time perspective (short-lived or long-term goal), because societal institutions (e.g., vocational school, college, career tracks in a company) will scaffold their goal selection and engagement. However, there are some, and with a globalized economy increasingly prevalent, circumstances in individuals' life courses which render careful planning and considering short and long-term implications of a goal commitment a necessity. Individuals in those contexts need to utilize optimization heuristics for goal choice, which take into account the currently available and future changes of opportunities for goal pursuit, the long-term implications of a given goal engagement for other domains of life, and the advantages of maintaining some fall-back options, in case the preferred path does not work out (for a more comprehensive discussion of optimization processes, see Heckhausen et al., 2010).

### *When is developmental regulation challenging?*

Developmental regulation is challenging during major changes in age-graded opportunities for goal pursuit, when opportunity structures are weak or obfuscated, when the individual encounters a substantial loss of control or a major crisis in an important life domain. It is during these challenging phases of life that individuals' capacities for developmental regulation are put to the test and virtually

stretched to their limits. It is during these times that individual differences in a set of specific capacities of self-regulation make the greatest difference for developmental outcomes. In the following section, we discuss a set of circumstances in the life course, which put an individual's regulatory capacity to the test. These challenging life-course circumstances may represent most useful settings for researchers to discover pathways to successful development.

### *Major changes in age-graded opportunities for goal pursuit*

There are a number of major life-course transitions, which comprise substantial changes (for better or worse) in opportunities to successfully pursue important life goals. An example is the transition to adulthood, which comes with new opportunities and challenges to pursue higher education, enter a career, achieve financial independence from parents, establish long-term romantic partnerships and found a family (Buchmann, 1989; Modell, 1989). The transition to adulthood requires the individual to identify opportunities, adopt or create personal goals utilizing these opportunities, and robustly engage with these newly accessible personal goals. Self-regulatory capacities related to these challenges for goal selection and goal engagement are key to mastering this transition, and individuals who possess the necessary and relevant capacities are thus likely to achieve optimal developmental outcomes (e.g. Haase, Heckhausen, & Köller, 2008; Heckhausen & Chang, 2009; Heckhausen, Chang, Greenberger, & Chen, 2013; Shane, Heckhausen, Lessard, Chen, & Greenberger, 2012; Tomasik, Hardy, Haase, & Heckhausen, 2009).

An important concept in the context of major changes to opportunities for goal attainment is the notion of a developmental deadline (Heckhausen, Wrosch, & Fleeson, 2001; Wrosch & Heckhausen, 1999). Developmental deadlines reflect normative and often anticipated major declines in the attainability of a goal, such as the decline in fertility during the late thirties and forties in a woman's life, a phenomenon aptly labeled the "biological clock." When approaching a developmental deadline, to be most adaptive, individuals should increase their goal striving, so as to attain the goal before goal-related opportunities decline too much. However, if they have passed the deadline without attaining the goal, the major self-regulatory challenge is to switch from enhanced goal engagement for meeting the deadline to abrupt goal disengagement once it has become clear that the goal will not be reached in time.

Our research shows that while most people are able to move from goal engagement to disengagement, people differ in the extent to which they truly disengage from a long-held life goal to have a child, and in terms of changing the orientation of their implicit, non-consciously controlled processing of goal relevant information (Heckhausen et al., 2001). Analogous studies were conducted regarding the goal for forming a close romantic partnership at different times during the adult life course (Wrosch & Heckhausen, 1999). Late midlife adults were much better off if they disengaged from the goal of forming a long-term romantic relationship after a painful break-up than young adults. Young adults improved their well-being over time if they stuck with trying to find a romantic partner after experiencing a break-up. Generally, these studies showed that individual differences in opportunity-congruent switching from goal engagement to disengagement are significantly associated with developmental outcomes of psychological well-being and mental health (see review in Heckhausen et al., 2010).

### *Uncertain or obfuscated opportunities for goal pursuit*

The opportunities for goal pursuit are not always transparent and people sometimes have difficulties determining whether it is worth becoming engaged with a certain goal or not. Particularly with regard to career goals, there is a wide variety of circumstances rendering the success of goal setting and goal engagement more or less uncertain. Economic globalization has increased the challenges individuals face when planning their future careers. In their multi-country research program on the consequences of globalization processes, Blossfeld and colleagues have shown decreasing transparency and predictability of long-term consequences of individual decisions, increasing erosion of social security, and increasing asymmetry in power relations between employers and employees as major consequences of economic globalization (Blossfeld et al., 2007; Buchholz et al., 2009).

These changes have severe consequences for young adults just entering the workforce, women, and older adults leaving the workforce. For example, the hardest hit by an increasing lack of transparency and greater uncertainty about one's life-course trajectory were younger adults (Blossfeld, Klijzing, Mills, & Kurz, 2005). They had to manage their lives with lower income, part-time, or short-term jobs, often without benefits (health insurance, social security, retirement benefits). It is important to note that the mental health consequences of such "underemployment" (Dooley, 2003) are related to a loss of self-esteem, increases in depression (Dooley, Prause, & Ham-Rowbottom, 2000), and even severe physical health consequences problems (e.g., lower birth weight for babies born to mothers experiencing a switch to such inferior forms of employment during their pregnancy; Dooley & Prause, 2005). Another disproportionately affected group were women at midlife (Blossfeld & Hofmeister, 2006), particularly those who had interrupted their careers to raise their children. In contrast, men at midlife, and particularly those with high vocational or professional qualifications, seem to be relatively better protected from unemployment and hardship in most countries (Blossfeld, Mills, & Bernardi, 2006). Finally, adults in late midlife were also disadvantaged by the consequences of globalization processes, as qualifications and skills become more rapidly outdated. Under such rapidly changing conditions, individuals need keen and frequent updating of optimization processes to adjust their goal choice to the newly arising and vanishing opportunities.

Even when opportunities should be clear, they are not always equally transparent and accessible for everyone. A lower socioeconomic status and an associated lack of education may reduce the likelihood that individuals recognize available opportunities for making progress with developmental projects or overcoming goal-related problems. Individuals who are the first in their family to attend college, for instance, often do not embrace opportunities for graduate and professional education because they lack information (e.g., Bui, 2002). Thus, even under circumstances involving sufficient opportunities for goal attainment, under-privileged socio-economic background can curtail the opportunities individuals perceive for their future and thus prevent them from selecting and pursuing attainable goals.

### *Major unexpected losses of control*

A highly challenging circumstance evolves when the individual suffers a major loss of control in a key area of functioning. This can be the case, for example, if the individual develops a progressive

and disabling disease. Under these circumstances, it is essential to determine which opportunities for control striving are still available, and which have become futile. Accordingly, the individual needs to disengage from options that are no longer viable (e.g., achieve uncompromised health after the diagnosis of a chronic, incurable disease) to be able to focus selectively on the control options that are still available (e.g., learn to use technical aids to compensate for the functional loss). We developed a Lines-of-Defense model for managing this type of challenge, which specifies a set of lines of defense, ranging from achieving uncompromised health, over utilizing other people's help, to accepting disability and giving up activities of daily living (Heckhausen, Wrosch, & Schulz, 2013). These lines of defense should help the individual to mobilize and orchestrate their motivational resources, and engage in control strategies aimed at defending this line until further erosion of functional capacity forces them to retreat behind the next line of defense.

Another aspect of the challenges, posed by major losses of control in one life domain, is the necessity to re-order one's priorities of goal strivings. If one domain of life is in crisis due to a loss of control (e.g., one's child is diagnosed with severe illness, one loses one's employment; Wrosch, Amir, & Miller, 2011), the individual needs to selectively focus on the domain affected by the crisis. This implies that the individual has to temporarily disengage from active goal pursuit in other domains of control striving. Once the crisis is mastered, the individual needs to re-engage with those other domains to avoid falling too much behind.

### **Individual differences in adaptive control striving**

As proposed by the Motivational Theory of Lifespan Development and shown in numerous studies (see review in Heckhausen et al., 2010), long-term patterns of successful development are partly determined by an individual's use of control strategies in close correspondence to changing opportunities for achieving desired outcomes (e.g., an age-related increase in secondary control striving; Heckhausen & Schulz, 1993, 1995). Research examining this assumption not only supported the notion that individuals adjust their control strategies to changes in opportunities, but also demonstrated reliable individual differences in the use of control strategies among individuals who confront similar opportunities for goal attainment (Heckhausen et al., 2010). This implies that although individuals generally use control strategies in accordance with goal-related opportunities and constraints, some of them are more successful in achieving this task than others. Moreover, such individual differences in the use of adaptive control strategies are significantly associated with important developmental outcomes, such as subjective well-being and physical health (Heckhausen et al., 2001; Wrosch & Heckhausen, 1999; Wrosch, Schulz, Miller, Lupien, & Dunne, 2007).

We think that it would be important to uncover the variables that can explain the observed variability in individuals' opportunity-adjusted use of control strategies. Such an approach may result in an improved understanding of the mechanisms that amplify successful (and unsuccessful) adjustment to developmental challenges. Thus, it may further contribute to the optimization of developmental regulation processes in the population. However, there is a paucity of research examining factors that distinguish individuals who engage in adaptive (i.e., opportunity-congruent) control striving

from those who use control strategies in a less effective way. Here we focus on a few variables that could either support, or compromise, an opportunity-adjusted use of control strategies. These variables are related to broader individual differences in goal-relevant aspects of motivation and self-regulation, such as optimism, action versus state orientation, or goal disengagement capacities (Kuhl, 1981; Scheier & Carver, 1985; Wrosch et al., 2003). This list is not exhaustive, but it may represent a productive starting point for a better understanding of the processes involved in adaptive developmental regulation.

### Dispositional optimism

Differences in the extent to which individuals expect positive versus negative outcomes to occur across different areas of life (i.e., dispositional optimism; Scheier & Carver, 1985) have been implicated widely in the self-regulation of behavior (Carver & Scheier, 2014; Segerstrom, Taylor, Kemeny, & Fahey, 1998). Numerous studies have demonstrated that optimism protects subjective well-being and physical health by fostering persistence and problem-focused coping in the context of potentially controllable challenges (for a review, see Rasmussen, Wrosch, Scheier, & Carver, 2006). Thus, although optimism has rarely been investigated in the context of control striving, the observed link between optimism and active coping makes it likely that optimism could also support the use of goal engagement strategies. In this regard, optimism could foster effective goal engagement particularly in volitional phases of action regulation, for example, when individuals encounter difficulties in the pursuit of important goals. This may be the case because adaptive motivational processes in other phases of action regulation (e.g., goal selection) require unbiased and realistic mind-sets, and optimistic outcome expectancies could contribute in such circumstances to the choice of unrealistic goals and jeopardize long-term developmental outcomes. However, the vast majority of research has demonstrated adaptive consequences of dispositional optimism (Carver & Scheier, 2014), which may support the assumption that optimism explains variability in goal engagement strategies primarily when individuals experience challenges in the pursuit of desired goals (i.e., volitional action regulation).

### Action versus state orientation

This individual difference variable is directly associated with an individual's orientation towards personal goals. While action-oriented individuals can effectively regulate their behavior, thoughts and emotion to implement goal pursuits, state-oriented individuals are unable to do so, get stuck in currently experienced emotions, cognitions and behaviors, and thus are unable to engage or disengage with goals as appropriate (Beckmann & Kuhl, 1984; Kuhl, 1981). For example, action compared to state orientation has also been associated with systematic biases in information-processing associated with transforming an intention into actual performance (suppressing competing alternatives, Beckmann & Kuhl, 1984). Similar to dispositional optimism, action (versus state) orientation may thus also support the use of goal engagement strategies in volitional phases of action regulation. As compared to their state-oriented counterparts, action-orientated individuals may engage more readily in control strategies aimed at achieving desired goals. Similarly, if they encounter difficulties in the pursuit of important goals, action (as compared to state) oriented

individuals may be faster and more successful at using control strategies that are conducive to overcoming problems in the pursuit of personal goals.

### Goal disengagement capacities

Goal disengagement capacities refer to individuals' general tendencies to withdraw effort and commitment from the pursuit of unattainable goals across different domains (for a review, see Wrosch, Scheier, & Miller, 2013). These capacities typically increase from adolescence to old age, which could imply that goal disengagement capacities develop as a skill that improves over time as people confront and manage different unattainable goals (Wrosch & Miller, 2009). Goal disengagement capacities could explain variability in adaptive control striving in different ways. First, they are likely to determine the extent to which individuals abandon specific unattainable goals. For example, goal disengagement capacities may facilitate the use of compensatory secondary control strategies when individuals pass a development deadline and are left with a goal that has become obsolete (e.g., childbearing after menopause; Heckhausen et al., 2001). In addition, goal disengagement capacities may be instrumental in directing time and energy to the management of severe, but potentially controllable, stressors (e.g., caregiving or having a severe disease; Wrosch et al., 2011; Wrosch & Sabiston, 2013). Such a process may occur because the successful regulation of severe challenges often requires an individual to abandon other and more peripheral goals (e.g., career or leisure goals) in order to maximize resources and energy for addressing pressing demands. Preliminary support for this possibility has been reported in a study of breast cancer survivors, in which goal disengagement capacities predicted increases in well-being over time by eliciting necessary and adaptive life-style changes (e.g., less sedentary behaviors) among survivors who were able to engage in new goals (Wrosch & Sabiston, 2013). Thus, goal disengagement capacities may not only influence the use of control strategies that support the abandonment of specific unattainable goals, but they may also help to reallocate resources and foster goal engagement processes aimed at overcoming controllable challenges.

### Conclusions

The Motivational Theory of Lifespan Development conceptualizes developmental regulation as a joint product of biological change, societal structure and institutions, and individual agency. While many developmental processes are strongly scaffolded by society and biology, other circumstances provide formidable challenges to the individual agent. Such challenges include major changes in age-graded opportunities for goal pursuit, uncertain or obfuscated opportunities, and major unexpected losses of control. Such challenging circumstances put the individual to the test and reveal the potential influence of broader individual differences with strong implications for motivational self-regulation. We discussed a set of individual difference variables, which we deem highly relevant in this context, namely optimism, action versus state orientation, and goal disengagement capacity. These individual differences may be particularly consequential for developmental regulation because they are strongly associated with an individual's capacity to goal-engage (e.g., optimism, action/state orientation), to disengage from a goal (i.e., disengagement capacity, action/state orientation), and



to switch between phases of goal selection, goal engagement, and goal disengagement (action/state orientation, disengagement capacity).

We hope that our discussion of major challenges to motivational self-regulation in the life course, and the individual differences potentially involved in the adaptive mastery of such challenges will provide new ideas to researchers who are interested in testing the limits and thus revealing the inner workings of individuals' developmental regulation. Ultimately, such discovery will also inform interventions to assist those with inferior adaptation to grow their self-regulatory skills and achieve better adaptation to the regulatory challenges throughout the life course.

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