Uncertainty in Aging and Lifespan Research: Covid-19 as Catalyst for Addressing the Elephant in the Room
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ABSTRACT
Uncertainty is at the center of debates on how to best cope with the Covid-19 pandemic. In our exploration of the role of uncertainty in current aging and lifespan research, we build on an uncertainty regulation framework that includes both reduction and creation of uncertainty as viable self-regulatory processes. In particular, we propose that future time perspective, a key component in models of successful aging, should be reconceptualized in terms of uncertainty regulation. We argue that by proactively regulating the amount of uncertainty one is exposed to, individuals’ future time perspective can be altered. We show how extant research might be (re)interpreted based on these considerations and suggest directions for future research, challenging a number of implicit assumptions about how age and uncertainty are interlinked. We close with some practical implications for individuals and organizations for managing the Covid-19 crisis.

The Covid-19 pandemic has painfully exposed our global vulnerability. We are all called upon to cope with the ensuing uncertainties. It might be considered a particularly inappropriate time to discuss potential benefits of uncertainty. However, there is also much debate about what we can learn from this massive change in the way we live and work for a more positive future. We follow this reasoning and propose a model of uncertainty regulation, which includes mechanisms that reduce and create uncertainty. We use this as a basis for extending research and practice for successful aging. Notably, some age-related research has already exposed positive attitudes toward uncertainty by examining young children’s curiosity and desire to learn (e.g., Kidd & Hayden, 2015; Oudeyer & Smith, 2016) and older adults’ willingness to proactively approach new identities as part of their transition to retirement (e.g., Bordia, Read, & Bordia, 2020). There also appears to be a direct positive link between age and tolerance for uncertainty (Basevitz, Pushkar, Chaikelson, Conway, & Dalton, 2008; Laguerre & Barnes-Farrell, 2019).

We take these findings as inspiration into exploring the role of uncertainty in aging and lifespan research. Consistent with Griffin and Grote’s (in press) uncertainty regulation model, we consider that individuals may not always reduce uncertainty, but regulate uncertainty towards an optimal level, which contributes to fostering a more positive future time perspective as a crucial resource for successful aging. We aim to delineate new avenues for aging and lifespan research regarding uncertainty and to promote a fuller understanding of individuals’ uncertainty management, which is particularly relevant in difficult times, such as the current pandemic. Adopting such a fresh look at uncertainty may raise awareness for opportunities amidst the many personal, social, and economic threats.

In this commentary, we start with a brief introduction to Griffin and Grote’s (in press) uncertainty regulation model. We then discuss future time perspective as a key component of self-regulatory processes in aging and position it within an uncertainty regulation framework. We show how extant research that touches on the age–uncertainty relationship might be (re)interpreted based on this framework. We propose directions for future research, challenging a number of implicit assumptions about how age and uncertainty are interlinked. We close with a few practical considerations for individuals and organizations that are relevant for managing the Covid-19 crisis but that should also be applicable in happier times.

UNCERTAINTY REGULATION
Griffin and Grote (in press) postulate that individuals not only self-regulate their efforts to achieve certain goals at work but also regulate the amount of uncertainty they are exposed to in this process. They outline a work performance model in which individuals align their preferred level of endogenous uncertainty—that is, uncertainty over which individuals have immediate control—with the requirements for uncertainty management inherent in the task they are trying to accomplish. Griffin and Grote argue that the appraisal of uncertainty can create an aversive and/or a desirable state depending on individuals’...
predispositions and situational demands. Based in that appraisal, individuals reduce or increase uncertainty in a self-regulatory feedback loop. Whereas uncertainty reduction aims to (re)establish predictability and control, uncertainty creation is founded in the desire to enhance learning opportunities and to expand one’s vision of possible futures well beyond the currently known in an act of expansive agency.

In the Griffin and Grote’s model, a second self-regulatory loop is postulated through which individuals align the regulation of endogenous uncertainty with the requirements stemming from exogenous uncertainty. Exogenous uncertainty is largely determined by the broader environment, such as uncertainties at the macroeconomic level caused by the current pandemic. In the following, we focus on the self-regulatory cycles of managing endogenous uncertainty. Especially in relation to future time perspective, we see endogenous uncertainty regulation at the center of intradimensional processes linked to individuals’ aging experience. Toward the end of this commentary, we broaden our perspective and discuss how individuals’ uncertainty regulation may help in managing some of the exogenous challenges related to the Covid-19 crisis.

SELF-REGULATION AND THE ROLE OF FUTURE TIME PERSPECTIVE IN AGING AND LIFESPAN RESEARCH

Griffin and Grote (in press) developed their model of uncertainty regulation in line with the fundamental principles of self-regulation. Most theories in lifespan development, on which aging research is based, also build on self-regulation as the core process through which individuals plan and implement action in pursuit of valued goals, such as motivational theory of lifespan development (Heckhausen, Wrosch, & Schulz, 2010), theory of selection, optimization, and compensation (Baltes, 1997; Baltes & Baltes, 1990), and socioemotional selectivity theory (Carstensen, 1991, 2006; Carstensen, Isaacowitz, & Charles, 1999). Opportunities for self-determined goal striving and sufficient control and self-efficacy are key for successful personal development and aging. However, such opportunities and the capabilities to capitalize on them are assumed to dwindle across the life course, beginning in midlife with the proverbial midlife crisis (Heckhausen, 2001) and declining more rapidly in old age (Heckhausen et al., 2010). A variety of compensatory processes to cope with the loss of opportunities and primary control have been theorized, which center on individuals’ adaptive capacity and a shift from achievement goals to a search for emotionally rewarding experiences and larger meaning. For example, the motivational theory of lifespan development suggests an optimization in primary and secondary control strategies by means of adaptive goal engagement and disengagement (Heckhausen et al., 2010), where primary control aims at changing external conditions to better fit personal needs and interests and secondary control does the opposite, that is to change the self to better cope with external forces. The selection, optimization, and compensation model proposes the selection of goals, optimization of skills or resources, and the compensation of aging-related resource losses as coping strategy. Socioemotional selectivity theory emphasizes the emotional regulation with a focus on emotionally rewarding experiences and closer relationships in later age (Carstensen, 2006).

Much of this adaptation is assumed to hinge on individuals’ future time perspective (Carstensen, 1991, 2006; Carstensen et al., 1999), where a more open-ended future time perspective, which includes more opportunities and a longer timeframe, promotes successful lifespan development and aging (Henry, Zacher, & Desmette, 2017; Kooij, Kanfer, Betts, & Rudolph, 2018; Rudolph, Kooij, Rauvala, & Zacher, 2018). However, with progressing chronological age, individuals have persistently been found to perceive fewer opportunities and less remaining time for making use of those opportunities (Baltes, Wynne, Sirabian, Krenn, & de Lange, 2014; Rudolph et al., 2018; Weikamp & Góritz, 2015; Zacher & Frese, 2009). Besides age, studies have also found socioeconomic status, health, personality dimensions, and other dispositional characteristics such as self-efficacy, locus of control, and optimism, the experience of aging-related gains and losses, and the adoption of a growth mindset to influence future time perspective (Fasbender, Wöhrmann, Wang, & Klehe, 2019; Kooij et al., 2018; Rudolph et al., 2018; Weiss, Job, Mathias, Grah, & Freund, 2016). In addition to individual factors, contextual factors such as job autonomy and job complexity have been identified as antecedents (Rudolph et al., 2018). In the following, we propose that future time perspective is also influenced by individuals’ uncertainty regulation.

FUTURE TIME PERSPECTIVE IN AN UNCERTAINTY REGULATION FRAMEWORK

With its focus not only on remaining time per se but on the opportunities that may arise and could be taken advantage of, future time perspective seems a natural ally to uncertainty regulation. A longer future and more possibilities offered by that future imply more unpredictability and thereby more uncertainty. However, uncertainty to date has not been explicitly included in theories of how future time perspective affects lifespan development and aging.

We argue that by regulating the amount of uncertainty one is exposed to, future time perspective can be altered. This consideration complements prior research that has focused on the impact of experienced aging-related gains and losses on perceived future time perspective (Fasbender et al., 2019; Weiss et al., 2016). In Figure 1, we illustrate how, in addition to past experiences, an individual’s uncertainty regulation might influence future time perspective. In the center of Figure 1, key processes from Griffin and Grote’s (in press) model are depicted, where individuals strive to maintain a desired level of uncertainty by engaging in either opening or closing behaviors. Opening behaviors are proactive and future-oriented and generate uncertainty as opportunities for learning and exploration of entirely new goals, such as changing one’s occupation. In contrast, closing behaviors rely on existing knowledge and intend to exploit that knowledge, thereby also reducing uncertainty, for example, selecting a task one can do particularly well. By regulating the amount of experienced uncertainty, individuals can increase or reduce the perceived future opportunities and remaining time, that is, their future time perspective, in a recursive cycle.

Some similarities of the proposed processes to existing aging models and research are apparent. For example, Kooij, Zacher, Wang, and Heckhausen’s (in press) model of successful aging—defined as older workers’ ability and motivation to continue working—centers around proactive and adaptive processes of goal (dis)engagement. These processes are aimed at restoring person–environment fit after anticipated or experienced discrepancies between personal needs and abilities and environmental demands and resources. We suggest that
individuals may not only continue to strive for their goal in the face of adverse conditions, but occasionally may give up more routine goals in search of learning opportunities and expression of expansive agency. Over their careers, individuals may dynamically switch back and forth between exploiting existing skills and competencies and exploring new knowledge domains to achieve both optimal exposure to uncertainty and successful goal striving.

In the study by Laguerre and Barnes-Farrell (2019), future time perspective mediated the positive relationship between tolerance for uncertainty and motivation to continue working after retirement as well as financial risk tolerance. In Griffin and Grote’s model, tolerance for uncertainty is discussed as an individual predisposition that influences the level of desirable uncertainty, which in turn constitutes the set value for uncertainty regulation. Thus, Laguerre and Barnes-Farrell’s (2019) findings might be considered as tentative support for our proposition that future time perspective is shaped by and exerts its influence through processes of uncertainty regulation. In their study of entrepreneurial activity, Gielnik, Zacher, and Wang (2018) found that the relationship between opportunity identification and entrepreneurial intentions was weaker for employees with a more limited future time perspective. At the same time, prior entrepreneurial experience strengthened the relationship between entrepreneurial intentions and activity. Based on our theorizing, one might investigate whether entrepreneurial activity affects future time perspective via the experience of successfully regulating endogenous uncertainty, for instance having exploited existing personal networks to explore a new business sector.

We believe that these examples underscore the value of exploring the role of uncertainty regulation in the development and impact of future time perspective. By achieving a more balanced uncertainty regulation, which includes both the exploitation of existing knowledge and the deliberate encounter with and exploration of the unknown, the perception of future opportunities in one’s life may be promoted. In the final part of our commentary, we employ our proposed model to exemplarily reinterpret research that touches on the age–uncertainty relationship and discuss how researchers could further examine uncertainty regulation in relation to individuals’ future time perspective. We conclude with some practical considerations for managing the uncertainties, which ensue from the Covid-19 pandemic.

SCIENTIFIC AND PRACTICAL IMPLICATIONS

The Covid-19 pandemic has brought uncertainty to the fore which despite or possibly because of its omnipresence often remains implicit in psychology and management research. If it is explicitly addressed, it is usually treated as an aversive state individuals try to avoid (e.g., Cooper & Thatcher, 2010; Heckhausen, 2016; Hogg, 2007). An important first step we propose is to explicitly include uncertainty into the study designs used in lifespan and aging research and to approach the experience of uncertainty as something potentially positive as well. In support of this proposal, Dweck (2017) argues that individuals strive not for complete, but for optimal predictability concerning the relationships among events and among things in the world, as one basic need that drives development. Quite similar to Griffin and Grote (in press), Dweck (2017) postulates that complete predictability is not desirable because people are motivated to experience new and complex situations.

In our literature search for this commentary, we identified a number of studies where findings might be interpreted differently and possibly even more convincingly if an uncertainty regulation perspective were
used. For instance, meta-analytical evidence shows that job autonomy and complexity have positive effects on occupational future time perspective (Rudolph et al., 2018). The authors explain these results with the fact that these two job characteristics act as resources. However, one may also argue that job autonomy and complexity imply more uncertainty through the discretion they offer to the job holder. Along with this uncertainty, opportunities arise, for instance for competence development, learning, and exploration, leading also to a more general perception of occupational opportunities expressed in occupational future time perspective. Similarly, the finding that older employees experience less strain when confronted with role ambiguity may not (only) be explained by their greater reliance on crystallized abilities, which help them to manage uncertainty (Abbasi & Bordia, 2019), but also by their interest in capitalizing on the opportunities that arise from uncertainty. Such an interpretation receives some backing from the finding by Basevitz and colleagues (2008) that older adults generally are more tolerant of uncertainty and worry less, presumably due to their increased focus on and capability for emotion regulation (Scheibe, Spieler, & Kuba, 2016; Toomey & Rudolph, 2018). Ainsworth’s (2015) data on more and more successful older entrepreneurs may also be interpreted as an indicator of older adults being more willing to expose themselves to uncertainty.

Uncertainty regulation may be one of those processes that should be scrutinized in response to Heckhausen’s (2016) call to examine new constructs as sources of differences between more and less successful developmental paths. Future studies may examine whether age differences in uncertainty regulation or in preferred levels of uncertainty exist. Moreover, researchers may want to explore whether engaging in expansive agency to create uncertainty at different time points in life may be an effective strategy for successful aging. There might be more gain-oriented development in older age than accounted for in contemporary models of aging, based on opportunities generated by an openness to, and possibly active search for uncertainty. Gains may include primary and secondary control aimed at the maintenance of workability, but also an exploration of new routes to meaningful engagement in society. For instance, by building on the finding by Bordia and colleagues (2020) that openness to shed old identities and explore new ones was important for successful retirement transitions, interventions could be designed to get individuals to reflect on and possibly change their personal approach to managing uncertainty. Thereby, not only primary control of uncertainty could be strengthened, for instance through developing more tolerance for uncertainty, but also primary control, as individuals are enabled to more freely choose between reducing and increasing uncertainty for themselves. This may support individuals both in their daily life and during major transformations. Studying the impact of such interventions would also allow to better understand the relationships between uncertainty regulation, future time perspective, and successful aging.

IMMEDIATE IMPLICATIONS IN TIMES OF COVID-19

Although the Covid-19 pandemic has primarily led to societal and economic uncertainties that represent serious threats, these difficult times may also hold a promise. Specifically, they may allow for a future where individuals and societal actors become better equipped for regulating uncertainty in ways that balance the rewards of exploiting the known and exploring the opportunities offered by the unknown. As we have aimed to show, research on aging and lifespan development is well positioned to investigate this promise further. In addition, we want to point out some practical implications of our suggested new perspective on uncertainty, which are related to mastering the immediate challenges that Covid-19 has brought upon us.

Most fundamentally, a systematic reflection of the uncertainties caused by the pandemic and the threats and opportunities they imply is paramount so that individuals and organizational actors can develop a more measured approach to uncertainty management. Rather than proclaiming false certainties (e.g., there will be a vaccine within a year), as we experience daily by many politicians, we need an understanding of how Covid-19-related uncertainties might develop and how we can best brace ourselves to master and possibly even take advantage of them. This may sound harsh, but even job loss has been found to open new avenues for personal development (Zikic & Richardson, 2007). For some older workers, this experience turned out to be an opportunity to reflect upon their careers and engage in career exploration, opening avenues to alternative career paths such as self-employment. If, as prior research has shown, older individuals have more measured responses to uncertainty due to their superior emotion regulation, they may not only be better at coping with uncertainty related to themselves, but they can be valuable resources in their organizations by helping others to cope with Covid-19 induced uncertainties (Settersten et al., 2020).

Lastly, the proven resourcefulness of organizations and individuals in managing uncertainties during this crisis could be harnessed more broadly in a dialogue between employers and employees on more flexible and self-directed forms of working that lie at the heart of well-being at work across all ages.

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