DISSERTATION | DOCTORAL THESIS

Titel | Title

Navigating Social Life Through the Lens of Aging: The Role of Subjective Views of Aging in Social Functioning

verfasst von | submitted by

Mag.rer.nat. Christina Ristl

angestrebter akademischer Grad | in partial fulfilment of the requirements for the degree of

Doktorin der Philosophie (Dr.phil.)

Wien | Vienna, 2026

Studienkennzahl lt. Studienblatt | Degree programme code as it appears on the student record sheet:	UA 796 310 298
Dissertationsgebiet lt. Studienblatt | Field of study as it appears on the student record sheet:	Psychologie
Betreut von | Supervisor:	Univ.-Prof. Dr. Jana Nikitin

Content

Acknowledgements

Diese Dissertation entstand nicht allein,
viele Menschen gingen diesen Weg mit mir ein.

Mein erster Dank gilt Jana Nikitin,
Mentorin mit Weitblick, Klarheit und Sinn.
Du hast mir vertraut und Raum gegeben,
Wissenschaft offen und eigenständig zu leben.
Beim Kaffee, oft nur wir zwei,
wurden Gedanken klar und Blockaden frei.
Als erste im Team kam ich hier an,
nun lass ich andere Dissertanten ran.
Die nächste Station, die ist nicht weit,
ein anderes Department – das Kaffeehaus bleibt.

Selma, danke für deinen klaren Blick,
für Struktur im Chaos und wissenschaftliches Geschick.
Und dafür, dass die Konferenz mit mehr Spaß verlief,
weil ein geteiltes Zimmer mehr Freude verhieß.

Ohne meine Familie wäre dies nicht geschehn,
denn diese Arbeit braucht mehr als nur Denken und Verstehn.
Robin, mein Rückhalt bei Tag und bei Nacht,
hat diese Dissertation erst möglich gemacht.
Mit viel Geduld, für Statistik und Fragen,
hast du die Höhen und Tiefen mitgetragen.

Meinen Eltern und Schwiegereltern ist der Dank groß,
für Zeit, Unterstützung, eure Hilfe war famos.
Jakob und Felix, ihr habt mich gelehrt,
dass Freude im Leben zur Arbeit gehört.

Kollegen und Koautoren gilt auch meine Dankbarkeit,
für Unterstützung und Austausch während dieser Zeit.
Für geteilte Daten und offenen Geist,
für Kollegialität, die Zusammenarbeit heißt.

Was bleibt, ist der Dank euch allen– ganz klar,
für Menschen, die da waren, Jahr für Jahr.

Wien, 22.1.2026

Extended Abstract

Social functioning is a central domain of adult development and shows systematic changes across the lifespan. At the same time, individuals of the same chronological age differ markedly in how they engage with and experience social life. Across three complementary empirical studies, this cumulative dissertation examines the association between subjective views of aging (sVoA) and social functioning across adulthood. Drawing on Stereotype Embodiment Theory and the Differential Investment of Resources model, sVoA are conceptualized as an individual characteristic that organizes social motivation, social investment, and the evaluation of social interactions.

Study 1 examined social goals as motivational correlates of social behavior in everyday life and found that greater awareness of age-related gains was associated with stronger social approach goals, whereas greater awareness of age-related losses was associated with stronger social avoidance goals, in a sample of 117 adults aged 18–85 years (M = 40.62, SD = 16.95), aboce and beyond chronological age.

Study 2 followed 459 adults (baseline age 30–80 years, M = 54.22, SD = 13.80) over a 10-year period across three measurement waves and showed that increases in domain-specific future self-views of aging prospectively predicted greater engagement in social activities with family and friends, whereas social activities did not predict changes in future self-views.

Study 3 used a daily diary design to examine within-person associations between daily awareness of age-related gains and losses and the perceived valence of social interactions in 109 adults aged 50–85 years (M = 62.98, SD = 9.30). On days characterized by higher-than-usual age-related gains, individuals reported also more positive social interactions, whereas days with higher-than-usual age-related losses were also marked by fewer positive and more negative interactions. Moreover, elevated age-related losses predicted increased interaction negativity on the following day but not vice versa.

Taken together, the findings demonstrate that subjective views of aging are systematically related to multiple facets of social functioning across adulthood. Across the examined time scales, changes in sVoA consistently preceded changes in social functioning than the reverse pattern. These results position subjective views of aging as a psychologically consequential orientation for understanding how individuals regulate and experience their social lives across adulthood.

Zusammenfassung

Soziales Erleben und Verhalten sind zentrale Bereiche der Entwicklung im Erwachsenenalter und unterliegen über die Lebensspanne hinweg systematischen Veränderungen. Zugleich unterscheiden sich Menschen gleichen chronologischen Alters deutlich in der Gestaltung und im Erleben ihrer sozialen Beziehungen. Diese kumulative Dissertation untersucht den Zusammenhang zwischen subjektiven Altersbildern und dem sozialen Erleben und Verhalten. Basierend auf der Stereotype Embodiment Theory und dem Differential Investment of Resources Model werden subjektive Altersbilder dabei als individuelle Charakteristik verstanden, die soziale Motivation, soziales Verhalten und soziale Bewertungen strukturieren.

Die vorliegende kumulative Dissertation untersucht diese Zusammenhänge anhand von drei empirischen Studien. Studie 1 untersuchte im Alltag von 117 Erwachsenen im Alter von 18 bis 85 Jahren (M = 40.62, SD = 16.95) den Zusammenhang zwischen wahrgenommenen altersbezogenen Gewinnen und Verlusten sowie sozialen Annäherungs- und Vermeidungszielen. Die Ergebnisse zeigten, dass wahrgenommene Gewinne mit stärkeren sozialen Annäherungszielen verbunden waren, während wahrgenommene Verluste mit stärkeren sozialen Vermeidungszielen einhergingen, unabhängig von ihrem chronologischen Alter.

Studie 2 untersuchte bei 459 Erwachsenen im Alter von 30 bis 80 Jahren (M = 54.22, SD = 13.80) langfristige Zusammenhänge (10 Jahre; drei Messzeitpunkte) zwischen domänenspezifischen Erwartungen an das eigene Alter („Wenn ich alt bin …“) und sozialen Aktivitäten. Es zeigte sich, dass Veränderungen der Alterserwartungen die selbst berichtete Stundenanzahl an Aktivitäten mit Freunden und Familie vorhersagten, während Veränderungen sozialer Aktivitäten die Erwartungen an das eigene Alter nicht beeinflussten.

Studie 3 untersuchte das Erleben sozialer Interaktionen in einer Tagebuchstudie mit 109 Erwachsenen im Alter von 50 bis 85 Jahren (M = 62.98, SD = 9.30). Es zeigte sich, dass an Tagen mit höher wahrgenommenen altersbezogenen Gewinnen auch positivere soziale Interaktionen berichtet wurden. An Tagen mit stärker wahrgenommenen altersbezogenen Verlusten berichteten die Teilnehmenden weniger positive und häufiger negative soziale Interaktionen. Zudem sagten altersbezogene Verluste eine erhöhte Negativität sozialer Interaktionen am folgenden Tag vorher.

Insgesamt verdeutlichen die Ergebnisse, dass subjektive Altersbilder systematisch mit dem sozialen Erleben und Verhalten verknüpft sind und eine bedeutsame psychologische Orientierung darstellen, die soziale Entwicklungsprozesse über die Lebensspanne hinweg prägen.

Chapter 1 - Introduction

We do not age by surprise but live in a world in which reaching old age has become the most likely outcome of a life course. Globally, humanity has gained an extraordinary number of years: between 1951 and 2019, average life expectancy at birth increased from about 45 to 72 years—an average gain of 26 years within just a few decades (Heuveline, 2022). Aging, is therefore no longer an abstract future, so that women in Austria who celebrate their 60th birthday in 2026 can expect, on average, another 25 years of life; for men, the figure is around 22 additional years (Statistics Austria, 2026).

Most people prefer a long life—but only if it is also a good one (Karppinen et al., 2016; Lang et al., 2007). This simple preference has guided decades of research on successful aging, which seeks to understand what allows people not only to live longer, but to live well as they grow older. One of the most influential approaches is the MacArthur model of successful aging (Rowe & Kahn, 2015). It proposes three core pillars, one of which is engagement with life—the extent to which people remain involved in social relationships and meaningful activities and continue to participate in the world around them.

Engagement with life is deeply rooted in fundamental human motivation. People seek love and connection naturally. That simple observation captures a central driver of human development: the need to belong. Humans are fundamentally and pervasively motivated to form enduring bonds marked by closeness, acceptance, and mutual concern (Baumeister & Leary, 1995). Rooted in this motivation, social relationships constitute a central condition of psychological functioning and human development across the life span.

Accordingly, sustained engagement with social life in later adulthood is widely considered a cornerstone of successful aging. A large body of research links higher levels of social engagement to better physical and cognitive functioning, more favourable health outcomes, greater psychological well-being, and reduced mortality risk (Bourassa et al., 2017; Douglas et al., 2017; Holt-Lunstad et al., 2010; Shor & Roelfs, 2015). These benefits appear cumulative over time and may be particularly pronounced among older adults facing economic or social disadvantage (Monteiro et al., 2024).

How individuals navigate their social lives changes in systematic ways across adulthood. With increasing age, social relationships are often reorganized toward greater selectivity and emotional significance, a process that is associated with characteristic socioemotional

strengths, such as higher relationship quality and more effective regulation of social experiences, alongside distinct vulnerabilities, including heightened sensitivity to loss, conflict, or social disruption (Birditt, 2014; Carstensen, 2021; Charles, 2010; Rook & Charles, 2017). At the same time, research consistently demonstrates substantial interindividual variability in these age-related patterns. Individuals of the same chronological age differ markedly in their social goals, the quality of their everyday social experiences, and their levels of social engagement (Huxhold et al., 2022; Wrzus et al., 2013). Chronological age alone therefore provides only a limited account of social development in later life. A more comprehensive understanding of social aging requires identifying the psychological factors that shape how individuals' approach, experience, and sustain social engagement across adulthood.

In this dissertation, the personal aspect of subjective views of aging (sVoA) - individuals' expectations, beliefs, and evaluations regarding their own aging (Shrira et al., 2022) – are investigated as psychological factor that may shape how people navigate their social life across adulthood.

1.1 Outline of the Dissertation

This dissertation is organized as follows. **Chapter 2** presents the theoretical framework of the dissertation. It first introduces social functioning as a core domain of adult development and outlines key motivational, behavioural, and experiential components of social functioning across adulthood. Building on this foundation, the chapter introduces the Differential Investment of Resources (DIRe) model as an integrative framework to structure social investment processes. Next, Chapter 2 introduces subjective views of aging, outlines their core properties, and reviews theoretical accounts—most prominently the Stereotype Embodiment Theory—as well as evidence on reciprocal pathways between subjective views of aging and developmental outcomes. The chapter concludes with a synthesis of theory and empirical findings on subjective views of aging in the social domain, thereby establishing the conceptual foundation for the dissertation's research questions.

Chapter 3 specifies the contribution of the dissertation and outlines the dissertation aims. It further provides a synopsis of the three empirical studies and clarifies how the studies operationalize the theoretical framework across complementary levels and time scales.

Chapters 4 to 6 present the three empirical manuscripts that constitute the cumulative dissertation.

Chapter 7 concludes with an integrative General Discussion that synthesizes the findings across studies, situates them within the broader literature, and derives implications for future research and practice.

1.2 Empirical Articles Included in the Cumulative Dissertation

Ristl, C., Korlat, S., Rupprecht, F. S., Burgstaller, A., & Nikitin, J. (2025). Self-perceptions of aging and social goals. *Psychology and Aging*, *40*(4), 413–420. https://doi.org/10.1037/pag0000881

Ristl, C., Korlat, S., Rupprecht, F. S., de Paula Couto, C.M., Rothermund, K., Nikitin, J. (revision). Future Self-Views of Aging and Social Activities: Domain-Specific Bidirectional Links Across Adulthood, *Psychology and Aging*

Ristl, C., Kraiger, L., Korlat, S., Martiny, S., & Nikitin, J. (submitted). *Day-to-day associations between social interaction valence and awareness of age-related change*.

Chapter 2 - Theoretical Framework

2.1 Social Functioning Across Adulthood

Social functioning is a core domain of adult development across the life span (Rowe & Kahn, 2015). Although there is no single unified definition of social functioning, the concept generally refers to how individuals maintain social ties, enact social roles, and remain engaged in social contexts that provide support, meaning, and opportunities for contribution (Flechsenhar et al., 2022; Huxhold et al., 2022; Madrigal et al., 2021). In this sense, social functioning captures not only the structural aspects of social life, such as network size or frequency of contact, but also the motivational, behavioural, and experiential processes through which social relationships are initiated, sustained, and evaluated.

A defining feature of social functioning is its dual nature as both a resource and a potential source of strain (e.g. Birditt, 2014; Rook & Charles, 2017). On the one hand, social relationships are among the most robust predictors of physical health, cognitive functioning, psychological well-being, and longevity (Bourassa et al., 2017; Douglas et al., 2017; Holt-Lunstad et al., 2015; Shor & Roelfs, 2015). On the other hand, social interactions can be demanding, conflictual, or disappointing, and negative social exchanges often exert stronger and more enduring effects than positive ones (Rook, 2001; Rook & Charles, 2017). Consequently, understanding social functioning requires moving beyond simple indicators of social integration toward a process-oriented perspective that captures how individuals' approach, invest in, and experience their social worlds over the lifespan.

Importantly, social functioning is inherently embedded in everyday life. Daily interactions, routine social encounters, and momentary evaluations of social experiences accumulate over time and shape longer-term trajectories of social engagement and well-being (Bernstein et al., 2018; Zhaoyang et al., 2019). These micro-level processes provide the immediate context in which broader developmental patterns emerge, making social functioning a particularly suitable domain for linking long-term development with short-term dynamics.

Normative Patterns and Heterogeneity in Social Aging

Across adulthood, social relationships undergo systematic reorganization. With increasing age, individuals tend to narrow their social networks, prioritizing emotionally close and meaningful ties while reducing contact with more peripheral partners (Laura L Carstensen et al., 1999; Carstensen, 2021; Wrzus et al., 2013). This pattern is often accompanied by

improvements in relationship quality, greater emotional closeness, and more effective regulation of social experiences (Birditt, 2014; Charles, 2010; Luong & Charles, 2014). Such changes are frequently interpreted as adaptive responses to shifting goals, resources, and life circumstances.

At the same time, social aging is characterized by pronounced heterogeneity. Individuals of the same chronological age differ substantially in their social goals, levels of engagement, and everyday social experiences (Fiori et al., 2007; Huxhold et al., 2022). Some older adults remain highly socially active and embedded in diverse networks, whereas others experience shrinking opportunities, loneliness, or heightened sensitivity to social loss (Monteiro et al., 2024; Ng et al., 2021). These differences cannot be fully explained by age alone and point to the importance of psychological and contextual factors that shape how social lives are navigated.

Moreover, age-related changes in social functioning are not uniformly positive. Later life is often marked by increased exposure to social loss, role transitions, and health-related constraints, which can disrupt established social patterns and increase vulnerability to loneliness or social disconnection (Fingerman et al., 2020; Zhou et al., 2025). Thus, social aging involves a dynamic interplay of strengths and vulnerabilities, underscoring the need for theoretical frameworks that can accommodate both adaptive regulation and potential risk (Charles, 2010; Huxhold et al., 2022)

Motivational Foundations of Social Functioning

Motivation plays a central role in shaping social functioning across adulthood. A foundational assumption shared across theories is that humans are fundamentally motivated to form and maintain close social bonds (Baumeister & Leary, 1995). However, the goals that guide social behaviour—and the criteria by which social interactions are evaluated—change systematically over the life span.

Socioemotional Selectivity Theory (SST) provides a prominent account of these motivational (Laura L Carstensen et al., 1999; Carstensen, 2006, 2021). According to SST, perceived time horizons influence goal priorities: when time is perceived as open-ended, individuals prioritize knowledge acquisition and future-oriented goals; when time is perceived as limited, emotionally meaningful goals become more salient. Applied to social functioning, this framework explains why older adults tend to invest more selectively in emotionally close

relationships and disengage from less meaningful social ties (Nikitin et al., 2024; Rolison & Lamarche, 2023).

Complementary perspectives emphasize age-related changes in emotion regulation and reactivity within social contexts. Research shows that older adults often exhibit reduced affective reactivity to interpersonal tensions and greater proficiency in regulating negative emotions during social encounters (Birditt et al., 2005, S. 200; Charles, 2010). At the same time, these strengths coexist with heightened sensitivity to certain stressors, particularly those involving loss, conflict, or threat to valued relationships (Rook & Charles, 2017).

Everyday Social Experience: Quality, Valence, and Regulation

An essential component of social functioning is the subjective evaluation of everyday social interactions. Research consistently demonstrates that positive and negative social exchanges have asymmetric effects, with negative interactions exerting stronger and more persistent influence on affective and cognitive processes (Baumeister et al., 2001; Rook, 2001). This asymmetry is reflected in attentional and interpretive biases, whereby emotionally salient or threatening social cues capture attention more readily than neutral or positive ones (Carretié, 2014).

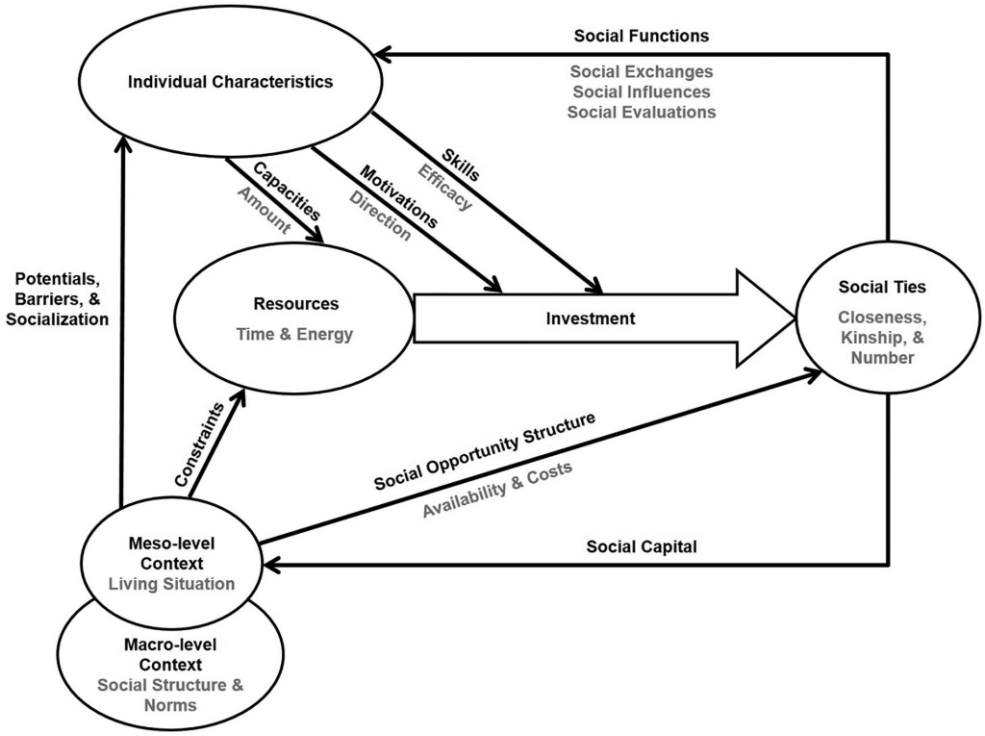
Daily diary and ecological momentary assessment studies highlight how these evaluative processes unfold in real time: Negative social encounters are associated with heightened stress reactivity, prolonged negative affect, and downstream consequences for sleep, physical symptoms, and cognitive performance (Huo et al., 2021; Zhaoyang et al., 2019; Zhu & Neupert, 2021). Conversely, positive interactions can buffer stress and promote well-being, although their protective effects often depend on context and individual differences (Nikitin et al., 2024; Rook & Charles, 2017).

From a regulatory perspective, everyday social experiences are shaped by both bottom-up processes, such as automatic attention to emotionally salient cues, and top-down processes, including emotion regulation and meaning-making (Carretié, 2014; Charles, 2010). These processes determine not only how social encounters are perceived in the moment but also how they are remembered and integrated into broader narratives about one’s social life.

2.2 The Differential Investment of Resources (DIRe) Model

This Dissertation draws on The Differential Investment of Resources (DIRe) model to organize components of social functioning across life (Huxhold et al., 2022). The DIRe model offers a comprehensive framework for understanding social functioning as a dynamic process of resource allocation across adulthood. At its core, the model conceptualizes social development as the outcome of selective investments of limited resources—such as time, energy, and emotional capacity—into social relationships. An overview of the Differential Investment of Resources (DIRe) model is provided in Figure 1.

Figure 1 *Differential Investment in Resources Model (DIRe Model).*



Note. Reprinted from *Rethinking Social Relationships in Adulthood: The Differential Investment of Resources Model*, by O. Huxhold, K. L. Fiori, & T. D. Windsor, 2022, *Personality and Social Psychology Review, 26*(1), pp. 57–82. Copyright © 2022 by Sage Publications. Reprinted with permission.

Core Assumptions

Maintaining relationships, participating in social activities, and navigating interpersonal dynamics require sustained investment, and individuals differ markedly in both their capacity

and willingness to incur these costs. Consequently, social functioning reflects not only preferences or opportunities, but strategic trade-offs under conditions of limited resources. From this perspective, age-related changes in social life are not simply the result of declining capacities or shifting preferences, but of adaptive reallocations of social investment in response to changing constraints and goals (Huxhold et al., 2022).

Importantly, the DIRe model conceptualizes social development as a continuous process across adulthood. It accommodates both stability and change in social relationships and explicitly allows for heterogeneity in social trajectories. Individuals may maintain, intensify, or disengage from social roles depending on how investments align with available resources and perceived returns. This emphasis on investment decisions provides a unifying lens for understanding why individuals with similar social environments may nevertheless show markedly different patterns of social engagement and experience.

Determinants of Social Investment

The DIRe model specifies several interrelated determinants that shape social investment decisions. These include motivational orientations (e.g., social goals and priorities), capacities (e.g., physical health, cognitive resources, subjective energy), skills (e.g., social competence, emotion regulation), and opportunity structures (e.g., availability of social partners, institutional contexts, role obligations) (Huxhold et al., 2022). Crucially, these determinants do not operate in isolation. High motivation may not translate into engagement when capacities are constrained; conversely, ample opportunities may remain unused in the absence of motivation or perceived value.

Within this framework, motivational processes play a central role in directing social investment. They determine not only whether individuals seek social contact, but also which relationships are prioritized, and which social roles are sustained. These motivational orientations are shaped by broader developmental processes, including changes in goals, expectations, and interpretations of social experiences across adulthood (Buijs et al., 2023; Carstensen, 2021; Laura L. Carstensen et al., 1999; Charles, 2010; Heckhausen et al., 2010)

Social Functions as Outcomes of Investment

Social investment decisions give rise to multiple social functions, which constitute the core outcomes of social functioning within the DIRe model. These functions include social exchanges (e.g., support, companionship, conflict), social influence (e.g., normative

expectations, role-related demands), and social evaluation (e.g., perceived belonging, satisfaction, or strain) (Huxhold et al., 2022). Importantly, these outcomes capture not only what individuals do socially, but also how social interactions are experienced and interpreted.

This distinction between behaviour and experience is critical. Engagement in social activities does not necessarily translate into positive social experience, and similar levels of social contact may be evaluated very differently depending on individual expectations and interpretations. By explicitly incorporating social evaluation as an outcome, the DIRe model accommodates the possibility that identical social investments can yield divergent experiential consequences across individuals.

Importantly, the Differential Investment of Resources model is not an aging model per se. Rather, it provides a general framework for understanding how individuals allocate limited social resources across adulthood. Age-related processes enter the model indirectly, insofar as they shape capacities, opportunity structures, and motivational orientations. The DIRe model therefore offers a lifespan perspective on social development without being restricted to later life or age-specific mechanisms (Huxhold et al., 2022).

Summary: Social Functioning as a Multi-Level Developmental Process

Taken together, social functioning emerges as a multi-level developmental process encompassing among others motivation, behaviour, and experience. Age-related changes in social life reflect both normative patterns of reorganization and substantial interindividual variability, shaped by motivational priorities, resource constraints, and contextual opportunities. The DIRe model provides an integrative framework for understanding how these elements jointly influence social development across adulthood.

At the same time, the framework leaves open a critical question: why individuals with similar resources and opportunities differ so markedly in how they approach, experience, and sustain social engagement. Addressing this question requires attention to psychological factors that shape expectations, interpretations, and investment decisions in social life. In the following sections, subjective views of aging are introduced as such a factor, offering a lens through which the heterogeneity of social functioning across adulthood can be more fully understood.

2.3 Subjective Views of Aging

Subjective views of aging (sVoA) are increasingly recognized as important psychological predictors of developmental outcomes in adulthood, given their associations with a wide

range of outcomes in later life and, consequently, successful aging (Sabatini et al., 2024; Tully-Wilson et al., 2021; Westerhof et al., 2023). They encompass individuals' expectations, beliefs, and evaluations regarding their own aging (self-perceptions of aging) as well as general views of aging and older adults (age stereotypes) (Kornadt et al., 2020; Wurm et al., 2017). While early research primarily focused on physical and cognitive functioning, growing evidence indicates that sVoA are also systematically related to social outcomes, including social involvement, social networks, and loneliness (Bu et al., 2024; Cai et al., 2024; Cohn-Schwartz et al., 2022; Hu & Li, 2022; Menkin et al., 2020; Schwartz et al., 2020).

A defining feature of sVoA is their multidimensional and multidirectional structure (Diehl & Wahl, 2024; Kornadt et al., 2020). Multidirectionality refers to the coexistence of age-related gains and losses, which are conceptually distinct rather than opposite ends of a single continuum. Individuals may simultaneously associate aging with growth and decline. Multidimensionality, in turn, implies that these gain- and loss-related perceptions can differ across life domains, such as health, cognition, social relationships, or family roles. For example, aging may be linked to anticipated social gains, such as closer family ties or a meaningful grandparent role, while at the same time evoking concerns about declining friendships or increasing health constraints. Accordingly, sVoA do not reflect a single global evaluation of aging but comprise differentiated, domain-specific representations of age-related change that can coexist within the same individual (Kornadt et al., 2015, 2017, 2020; Kornadt & Rothermund, 2012).

Beyond their structure, sVoA are also multifunctional, as the same views of aging may simultaneously serve adaptive and maladaptive functions, depending on the outcome, domain, time frame, and contextual conditions (Kornadt et al., 2020). For instance, interpreting social or health-related losses as an inherent part of aging may provide emotional comfort and reduce distress in the face of loneliness or adverse health events, while at the same time undermining motivation to actively change the situation. The adaptivity of sVoA must therefore be understood as context- and outcome-specific, rather than as inherently positive or negative (Kornadt et al., 2020).

Moreover, sVoA are characterized by a combination of relative stability and situational sensitivity. On the one hand, they show substantial between-person stability over longer time spans, reflecting enduring self-related representations shaped by prior experiences and cultural narratives (Cohn-Schwartz & Gerstorf, 2022; Diehl & Wahl, 2024). On the other hand, they can exhibit meaningful within-person variation when age becomes salient in specific

contexts or experiences (Neupert & Bellingtier, 2022; Windsor et al., 2024). This trait–state nature implies that sVoA are neither fixed traits nor fleeting states, but relatively stable orientations that can be activated and reinforced in everyday life.

Importantly, although sVoA may co-vary with affective experiences, they are conceptually distinct from momentary emotions or evaluations(Neupert & Bellingtier, 2022). Rather than reflecting transient affective states, sVoA capture self-related knowledge and expectations about aging that provide a broader interpretive framework for everyday experiences (Diehl et al., 2021; Neupert & Bellingtier, 2022).

Beyond their structural properties, sVoA also differ in their degree of awareness (Levy, 2009; Diehl et al., 2021). Some aspects of subjective aging are consciously accessible and can be explicitly reported, whereas others may operate more implicitly and influence perception and behaviour without deliberate reflection. This distinction is important for understanding why sVoA can shape everyday experience even in situations in which aging is not explicitly in focus.

In aging research, sVoA function as an umbrella term that integrates several related yet conceptually distinct constructs, which can broadly be divided into culturally shared age stereotypes (general views of aging) and self-referential aging views, also referred to as personal views of aging or self-perceptions of aging (Shrira et al., 2022). The present dissertation focuses on personal views of aging. Personal views of aging include for example awareness of age-related change (AARC; Diehl & Wahl, 2010), subjective age (felt age) (Kastenbaum et al., 1972), future self-views of aging (Kornadt et al., 2015; Kornadt & Rothermund, 2011, 2012), and attitudes toward one's own aging (Lawton, 1975). Although these constructs differ in temporal focus, level of abstraction, and methodological implementation (Neupert & Bellingtier, 2022), they share the core assumption that aging is psychologically construed and evaluated, rather than merely experienced as a biological process. In the present dissertation, awareness of age-related change and future self-views of aging are the focal indicators of sVoA and are therefore described in greater detail below.

Awareness of Age-related Change

Awareness of age-related change refers to "*all those experiences that make a person aware that his or her behaviour, level of performance, or ways of experiencing life have changed as a consequence of having grown older*" (Diehl & Wahl, 2010, p. 340). Within this framework, AARC represents a proximal, experience-based manifestation of subjective views of

aging, capturing how age-related beliefs and expectations are instantiated in concrete everyday experiences across multiple life domains (Diehl & Wahl, 2010; Diehl et al., 2021). Importantly, AARC reflects an evaluative and attributional process rather than objective age-related change per se. Individuals become aware of changes in their everyday functioning and explicitly attribute these changes to aging, appraising them as age-related gains or losses irrespective of their factual accuracy (Diehl et al., 2021).

Age-related gains and losses constitute distinct and partially independent dimensions, allowing individuals to experience growth and decline concurrently across different domains of life. Conceptually, AARC occupies an intermediate level between relatively broad and stable subjective views of aging and momentary affective states, rendering it particularly well suited for examining how subjective views of aging are enacted, updated, and reinforced in daily experience (e.g. Neupert & Bellingtier, 2017, 2022; Windsor et al., 2024). In this sense, AARC functions as a subjective psychological filter through which age-related changes are noticed, interpreted, and given meaning in everyday life.

Future Self-views of Aging

Future self-views of aging (FSV) refer to individuals' expectations and anticipations regarding their future development as they grow older (Kornadt et al., 2015; Kornadt & Rothermund, 2011, 2012). FSV translate societal age-stereotypes into personalized expectations that begin to guide behaviour long before old age is reached (Kornadt & Rothermund, 2012; Voss et al., 2017). These domain-specific future-oriented views capture beliefs about what aging will mean for one's abilities, roles, and opportunities. In line with Markus and Nurius' (1986) concept of possible selves, they organize attention, shape goal representations, and guide behaviour toward or away from anticipated outcomes. As such, future self-views of aging provide a cognitive frame for evaluating whether future-oriented engagements—particularly in the social domain—are perceived as worthwhile and attainable. Unlike retrospective or present-focused views of aging such as awareness of age-related change (AARC), FSV are explicitly future-oriented and motivational.

2.3.1 Stereotype Embodiment Theory: From Cultural Age Stereotypes to Self-Perceptions of Aging

General views of aging (age stereotypes) and personal views of aging are closely related. The Stereotype Embodiment Theory (SET; Levy, 2009) provides a central theoretical framework for explaining how culturally shared age stereotypes become internalized and

psychologically consequential across the adult life span. According to SET, age stereotypes are acquired early in life through cultural transmission and are repeatedly reinforced through socialization, media exposure, and everyday social interactions. As long as old age is perceived as a distant life stage, these stereotypes remain primarily directed toward others. With increasing age, aging becomes a self-relevant category and previously held age stereotypes are gradually incorporated into the self-concept as self-perceptions of aging. Once internalized, these self-perceptions exert their influence by shaping expectations, guiding interpretations of experience, and biasing behaviour in stereotype-consistent ways (Levy, 2009).

SET specifies three pathways through which internalized age stereotypes and resulting self-perceptions of aging influence developmental outcomes: a psychological, a behavioural, and a physiological pathway (Levy, 2009). The psychological pathway refers to stereotype-driven expectations, appraisals, and interpretive processes that shape how age-related experiences are perceived and evaluated. The behavioural pathway describes how these expectations influence motivation, self-regulation, and action selection, thereby shaping engagement or withdrawal from age-relevant activities. The physiological pathway captures downstream effects on stress reactivity and bodily functioning. Importantly, these pathways are not mutually exclusive but are assumed to operate in parallel and to reinforce each other over time.

Building on Levy's theoretical formulation, Wurm et al. (2017) systematically extended SET to the study of self-perceptions of aging and health, providing an integrative synthesis of empirical findings across experimental, longitudinal, and observational studies. Their work clarifies how the psychological and behavioural pathways of SET translate into self-regulatory processes that shape long-term developmental outcomes. In this framework, self-perceptions of aging influence behaviour by shaping expectations about what is possible or worthwhile, and they influence experience by biasing the interpretation of age-related change in line with these expectations.

Scholars argue that SETs underlying mechanisms may also be theoretically transferable to the social domain (e.g. Pikhartova et al., 2016; Schwartz et al., 2020). The core assumption that age-related beliefs shape expectations, motivation, and interpretation may provide a direct conceptual link to social functioning. In the social domain, stereotype-consistent expectations may guide social goal selection, influence decisions about social investment, and bias the evaluation of everyday social interactions (Cohn-Schwartz et al., 2022; Hu & Li, 2022;

Menkin et al., 2017; Schwartz et al., 2020). Thus, the psychological and behavioural pathways specified by SET offer a theoretical basis for this dissertation.

SET primarily conceptualizes the influence of age stereotypes and self-perceptions of aging as operating from beliefs to outcomes. There is also work that examines the conditions under which experiences and outcomes may, in turn, shape subjective views of aging (Diehl et al., 2021; Kornadt et al., 2017; Rothermund et al., 2021; Rothermund & Brandtstädter, 2003). These bidirectional processes are addressed in the following section, which builds on SET while extending it to account for feedback mechanisms between subjective views of aging and developmental outcomes.

2.3.2 Reciprocal Pathways Between Experience and Subjective Views of Aging

Theoretically, subjective views of aging (sVoA) are often situated within transactional or reciprocal frameworks, which allow for the possibility that sVoA may function both as antecedents of developmental outcomes and as potential outcomes of age-related experiences themselves (Diehl et al., 2021; Kornadt et al., 2017; Rothermund et al., 2021; Rothermund & Brandtstädter, 2003). Across adulthood, aging increasingly becomes a self-relevant frame of reference through which personal experiences are interpreted, evaluated, and integrated into the self-concept (Kornadt et al., 2015, 2020). From this perspective, experiences in domains such as health, cognition, or social life may not only be shaped by pre-existing views of aging but may, under certain conditions, also contribute to their modification over time.

Importantly, it is not assumed that everyday experiences automatically update sVoA (Diehl et al., 2021; Rothermund et al., 2021). Rather, feedback processes are conceptualized as conditional. A central condition emphasized in the literature is age attribution. Within the framework of awareness of age-related change (AARC), experiences are assumed to influence subjective views of aging only if they are explicitly interpreted as age-related and incorporated into the aging self (Diehl et al., 2014, 2021; Diehl & Wahl, 2010). In other words, change per se is insufficient; experiences must be construed as ‘changes because of age’ to become relevant for subjective aging.

This attributional perspective is supported by empirical work on age-related attributions. Rothermund and Brandtstädter (2003) examined competing assumptions regarding the relation between age stereotypes and self-views, including contamination, comparison, and externalization hypotheses, and provided evidence that age-related beliefs can shape self-views over time rather than merely reflect them. Extending this line of work, Rothermund et al.

(2021) demonstrated that experienced changes are more likely to be attributed to aging when their valence corresponds to existing views of aging, a process described as a correspondence principle.

Empirical studies have examined bidirectional associations between subjective views of aging (sVoA) and developmental outcomes in the domains of health, well-being, social relations, and cognition, however, bidirectionality was not consistently observed, especially in the social domain (Cohn-Schwartz et al., 2022; Fang et al., 2024; Joshanloo, 2025; Rippon & Steptoe, 2018; Sabatini et al., 2024; Schwartz et al., 2020; Seidler & Wolff, 2017; Spuling et al., 2013). This pattern suggests that sVoA may operate in multifaceted ways and highlights the need for more differentiated conceptualizations and empirical examinations.

Two factors are repeatedly highlighted as key moderators of reciprocal effects. First, time scale appears to be critical (Cohn-Schwartz & Gerstorf, 2022; Neupert & Bellingtier, 2022). Integrative accounts emphasize that feedback processes are more likely to emerge over longer time horizons, during which experiences accumulate and become relevant for self-definition, than over shorter time frames that primarily capture situational fluctuations. Second, level of abstraction matters. Broad, identity-relevant outcomes are more likely to feed back into subjective views of aging than momentary or context-specific experiences that lack clear age-diagnostic meaning (Diehl et al., 2021).

Taken together, existing theory and empirical evidence converge on a nuanced conclusion: bidirectional pathways between subjective views of aging and developmental outcomes are likely possible but conditional on attribution processes, the temporal scale of assessment, and the extent to which experiences are interpreted as informative about one's own aging (Diehl et al., 2021; Rothermund et al., 2021). This pattern provides an important conceptual backdrop for the examination of social outcomes. The following section therefore turns to the role of subjective views of aging in social functioning and reviews the empirical evidence in this domain.

2.4 Subjective Views of Aging and Social Functioning

Social functioning constitutes a particularly informative domain for examining the developmental relevance of subjective views of aging (sVoA). Social experiences are frequent, emotionally salient, and socially evaluative, and they provide ongoing feedback about competence, social value, and role fulfillment (Diehl et al., 2021; Huxhold et al., 2022). At the same time, social interactions are often ambiguous in meaning and interpretation, leaving

considerable room for subjective appraisal (Connidis & McMullin, 2002; Fingerman et al., 2004). This combination renders social functioning a domain in which sVoA are theoretically expected to shape how individuals approach social situations, invest in relationships, and evaluate everyday social encounters.

Building on the Stereotype Embodiment Theory (SET; Levy, 2009) and subsequent integrative accounts (Wurm et al., 2017), associations between sVoA and social functioning can be organized along two primary pathways. Through a psychological pathway, sVoA shape age-related expectations and appraisals that guide how social situations are interpreted and evaluated. Through a behavioural pathway, sVoA influence social motivation, goal selection, and investment decisions. Although social contexts may also constitute potential sources of feedback to sVoA, existing theory and evidence suggest that such reciprocal effects are conditional rather than universal, as discussed in the preceding section.

Psychological Pathway: sVoA and the Evaluation of Social Experiences

Through the psychological pathway, sVoA are assumed to function as interpretive lenses that guide the appraisal of social experiences. Social interactions are rarely unambiguous; behaviours such as offering help, giving advice, or providing feedback can be experienced as supportive, neutral, or patronizing depending on the perceiver's expectations and self-concept. Internalized views of aging provide a framework through which such ambiguity is resolved (Levy, 2009; Wurm et al., 2017).

Experimental research supports this appraisal-based mechanism. Cheng (2016, 2020) demonstrated that negative age stereotypes bias the interpretation of social feedback and reduce satisfaction with received support, even when objective levels of support remain constant. These findings indicate that age-related expectations can systematically shape the subjective meaning attributed to social interactions. Translated to self-perceptions of aging, individuals who anticipate age-related losses in competence or social value may be particularly sensitive to cues of rejection or devaluation, whereas those holding more positive views may interpret the same cues as caring or affirming (Amir et al., 2005).

Consistent with this perspective, observational and longitudinal studies show that sVoA are associated with broader evaluations of social well-being. More negative self-perceptions of aging are linked to higher loneliness and poorer perceived social functioning, whereas more positive views are associated with more favourable social evaluations (Cai et al., 2024; Hu & Li, 2022; Pikhartova et al., 2016). Importantly, these associations persist after accounting

for objective indicators of social contact, suggesting that sVoA influence not only *whether* social interactions occur but *how* they are experienced. Daily-life research further underscores the relevance of this pathway, showing that negative social encounters have disproportionate effects on affective states and stress reactivity (Rook, 2001; Rook & Charles, 2017; Zhaoyang et al., 2019). Given their role in shaping expectations and appraisal processes, sVoA are well positioned to organize the valence of everyday social experience.

Behavioural Pathway: sVoA and Social Motivation and Engagement

Beyond shaping social appraisals, sVoA are theorized to influence social functioning through a behavioural pathway that operates via motivation, goal selection, and investment decisions (Levy, 2009; Wurm et al., 2017). Views about one's own aging trajectory inform expectations about future social opportunities, anticipated rewards, and perceived costs of engagement. These expectations guide decisions about whether to seek social contact, maintain existing relationships, or withdraw from social roles.

Empirical findings provide support for this pathway. Menkin et al. (2017) showed that positive expectations regarding aging were associated with the development of new friendships and greater perceived social support over time. Similarly, Schwartz et al. (2020) reported that more positive personal views of aging predicted greater engagement in both informal and formal social roles, such as volunteering and providing support to others. Studies focusing on leisure and social participation suggest that negative attitudes toward aging and negative future-related self-views predict reduced engagement, particularly during life transitions such as retirement (Bu et al., 2024; De Paula Couto et al., 2022).

Together, these findings suggest that sVoA shape the direction and intensity of social investment. Individuals who envision their future selves as socially active, valued, and connected may be more likely to pursue approach-oriented social goals and sustain engagement in relationships and social roles. Conversely, those who anticipate social isolation or diminished social value may expect rejection or reduced reward, leading to avoidance or disengagement. This behavioural pathway aligns with broader motivational theories of social behaviour across adulthood (Heckhausen et al., 2010; Nikitin & Schoch, 2021) and positions sVoA as psychologically meaningful antecedents of social functioning.

Social Contexts and Empirical Heterogeneity in the Social Domain

Studies examining bidirectional pathways between sVoA and social functioning (combined in one statistical model) are not uniform. Some studies report bidirectional associations for specific constructs and outcomes (Bu et al., 2024; Cohn-Schwartz et al., 2022). For example, Bu et al. (2024) documented reciprocal lagged associations between leisure engagement and self-perceptions of aging. And a study by Cohn-Schwartz et al. (2022) showed that adults who had younger social network members, both kin and non-kin, had better self-perceptions of aging three years later, and positive self-perceptions of aging at baseline also predicted a higher number of younger non-kin and older non-kin relationships over time. In contrast, a study by Schwartz et al. (2020) showed that self-perceptions of aging predicted subsequent levels of informal and formal social activities, whereas reverse paths from activities to sVoA were only supported for informal activities.

Conceptual syntheses suggest that inconsistencies likely reflect differences in the level of abstraction of social outcomes, the time scale of assessment, and the extent to which social experiences are perceived as relevant to one's own aging (Cohn-Schwartz & Gerstorf, 2021; Schwartz et al., 2020; Diehl et al., 2021; Rothermund et al., 2021).

Summary and Research Gap

Taken together, existing theory and empirical evidence indicate that sVoA are meaningfully linked to social functioning through psychological and behavioural pathways, while feedback effects from social contexts to sVoA appear to be conditional and heterogeneous (Bu et al., 2024; Cohn-Schwartz et al., 2022; Schwartz et al., 2020). Prior research has often examined global indicators of social outcomes, or focused on between-person differences, leaving important questions about daily processes, domain specificity, and within-person dynamics unresolved. These gaps motivate a more differentiated investigation of how sVoA relate to social motivation, social behaviour, and the evaluation of everyday social interactions across adulthood.

Chapter 3 – The Present Dissertation

3.1 Aims of the Dissertation

Building on the theoretical framework outlined above and the empirical evidence regarding associations between subjective views of aging and social functioning, the present dissertation aims to advance understanding of how sVoA are linked to social functioning across adulthood. Integrating insights from Stereotype Embodiment Theory (Levy, 2009) and the Differential Investment of Resources (DIRe) model (Huxhold et al., 2022), the dissertation conceptualizes sVoA as an individual characteristic that shapes social motivation, social investment, and the evaluation of social exchanges, while also assuming reciprocal associations. Figure 2 provides an overview of selected components of the Differential Investment of Resources (DIRe) model as adapted for the present dissertation.

Against this background, the dissertation pursues the following aims:

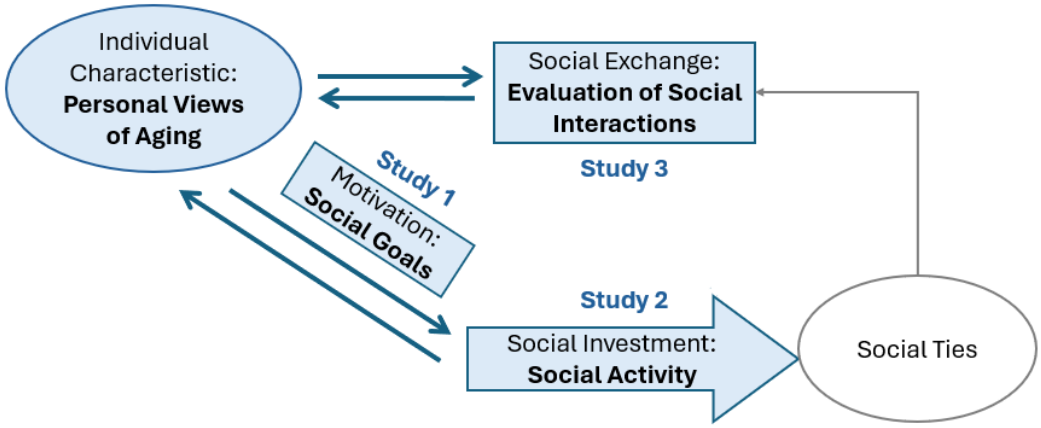
1. **To examine how subjective views of aging are associated with social functioning**, focusing on social goals, the evaluation of social interactions, and social activities.
2. **To investigate intraindividual dynamics between subjective views of aging and social functioning**, by testing whether within-person changes in sVoA are accompanied by corresponding changes in social functioning, and whether changes in social functioning, in turn, relate to changes in sVoA.

3.2 Synopsis of the Dissertation

This cumulative dissertation comprises three empirical studies that operationalize the theoretical framework of the dissertation across complementary levels of social functioning. Guided by the Stereotype Embodiment Theory (Levy, 2009) and the Differential Investment of Resources model (DIRe; Huxhold et al., 2022), the studies examine subjective views of aging at motivational, behavioural, and experiential levels using distinct methodological approaches and time scales.

Figure 2

Adapted Excerpt of the DIRe Model for the Present Dissertation



Note. This figure shows an adapted excerpt of the DIRe model focusing on the component's *individual characteristics*, *motivation*, *investment*, *social ties*, and *social exchange*. Blue elements indicate components examined in the present dissertation, whereas grey elements were not investigated. Bidirectional arrows illustrate the bidirectional study design.

Study 1 (Social Goals) focuses on the motivational facet of social functioning by linking subjective views of aging—operationalized as awareness of age-related gains and losses—to daily social approach and avoidance goals. By examining between-person differences in everyday social goal orientations, this study provides the conceptual starting point of the dissertation, elucidating how subjective views of aging may shape motivational tendencies that guide social engagement in daily life.

Ristl, C., Korlat, S., Rupprecht, F. S., Burgstaller, A., & Nikitin, J. (2025). Self-perceptions of aging and social goals. *Psychology and Aging*, *40*(4), 413–420. https://doi.org/10.1037/pag0000881

Building on these motivational processes, **Study 2 (Social Activities)** addresses the behavioural facet of social functioning by examining domain-specific bidirectional associations between future self-views of aging and informal and formal social activities over a ten-year period. Using a longitudinal design that separates stable between-person differences from within-person change, this study extends Study 1 by testing whether age-related expectations translate into sustained patterns of social investment across adulthood, and whether social participation, in turn, relates to changes in future-oriented views of aging.

Ristl, C., Korlat, S., Rupprecht, F. S., de Paula Couto, C.M., Rothermund, K., Nikitin, J. (revision). Future Self-Views of Aging and Social Activities: Domain-Specific Bidirectional Links Across Adulthood, *Psychology and Aging*

Finally, **Study 3 (Social Evaluation)** shifts the focus to the experiential facet of social functioning by examining intraindividual dynamics in daily life. Using a daily diary design, this study investigates whether within-person fluctuations in awareness of age-related gains and losses co-occur with corresponding changes in the perceived positivity and negativity of daily social interactions. By testing associations in both directions at the within-person level, this study complements Studies 1 and 2 by capturing how subjective views of aging are reflected in, and potentially shaped by, the momentary evaluation of everyday social experiences.

Ristl, C., Kraiger, L., Korlat, S., Martiny, S., & Nikitin, J. (submitted). *Day-to-day associations between social interaction valence and awareness of age-related change*.

Publications

Chapter 4 - Subjective Views of Aging and Social Goals in Daily Life

---

The subsequent article has been published as follows:

Ristl, C., Korlat, S., Rupprecht, F. S., Burgstaller, A., & Nikitin, J. (2025). Self-perceptions of aging and social goals. Psychology and Aging, 40(4), 413–420. https://doi.org/10.1037/pag0000881

The supplementary material is included in the appendix.

AMERICAN PSYCHOLOGICAL ASSOCIATION

Psychology and Aging

ISSN: 0882-7974

2025, Vol. 40, No. 4, 413–420
https://doi.org/10.1037/pag0000881

BRIEF REPORT

Self-Perceptions of Aging and Social Goals

Christina Ristl, Selma Korlat, Fiona S. Rupprecht, Alexandra Burgstaller, and Jana Nikitin
Department of Developmental and Educational Psychology, University of Vienna

Existing research shows a clear link between the way people experience the aging process (i.e., self-perceptions of aging) and their health, cognitive abilities, and well-being. In contrast, there is little research on the association between self-perceptions of aging and social functioning. This study examines the relationship between awareness of age-related gains and losses as two facets of self-perceptions of aging and social approach and avoidance goals. Social approach goals (i.e., goals that focus on positive, desirable social outcomes) and social avoidance goals (i.e., goals that focus on negative, undesirable social outcomes) play a fundamental role in shaping individuals' social experiences and behaviors. We hypothesize that awareness of age-related gains is associated with social approach goals, whereas awareness of age-related losses is associated with social avoidance goals. In an experience sampling study with $N = 117$ participants aged 18–85 years ($M = 40.4$, $SD = 17.1$), we examined interindividual differences in participants' awareness of age-related gains and losses and how these relate to social goals. We focused on social goals in everyday social situations (aggregated state) and as individual dispositions (trait). As hypothesized, awareness of age-related gains was positively associated with social approach (but not avoidance) goals, while awareness of age-related losses was positively associated with social avoidance (but not approach) goals. These associations largely persisted even after controlling for age. These findings suggest that perceptions of age-related gains and losses are important factors in how people navigate their social lives.

Public Significance Statement
The study found that people who acknowledge the positive aspects of aging are more likely to seek positive outcomes in social situations, while perceptions of age-related losses are associated with avoidance of negative outcomes. These results illustrate how the perception of aging might influence an individual's social behavior.

Keywords: approach goals, avoidance goals, social motivation, awareness of age-related gains and losses, older adulthood

Supplemental materials: https://doi.org/10.1037/pag0000881.supp

This article was published Online First January 23, 2025.
Patrick L. Hill served as action editor.
Christina Ristl https://orcid.org/0000-0001-9277-7009
Selma Korlat https://orcid.org/0000-0001-5719-5222
Fiona S. Rupprecht https://orcid.org/0000-0002-3547-0497
Jana Nikitin https://orcid.org/0000-0003-1642-154X

The data that support the findings of this study are available from the corresponding author, Christina Ristl, upon request. The results reported in this article were presented at the biennial congress of the German Psychological Society, 2024, in Vienna.

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The authors gratefully acknowledge funding from the Swiss National Science Foundation, Grant 100019_159399 (awarded to Jana Nikitin), and the University of Zurich Foundation, Grant STWF-16_019 (awarded to Jana Nikitin). This research was funded in whole, or in part, by the Swiss National Science Foundation (Grant 100019_159399). For the purpose of open access, the author has applied a CC BY public copyright license to any Author Accepted Manuscript version arising from this submission.

Christina Ristl played a lead role in conceptualization, formal analysis, and writing–original draft and a supporting role in project administration. Selma Korlat played an equal role in writing–review and editing. Fiona S. Rupprecht played a lead role in data curation and a supporting role in investigation, project administration, and writing–review and editing. Alexandra Burgstaller played a supporting role in data curation. Jana Nikitin played a lead role in conceptualization, funding acquisition, methodology, project administration, and supervision and an equal role in writing–review and editing.

Correspondence concerning this article should be addressed to Christina Ristl, Department of Developmental and Educational Psychology, University of Vienna, Liebiggasse 5, 1010 Vienna, Austria. Email: christina.ristl@univie.ac.at

Self-perceptions of aging encompass individuals' perceptions, expectations, attitudes, and experiences in relation to their own aging process (Diehl & Wahl, 2024). Numerous experimental and longitudinal studies investigated the impact of self-perceptions of aging on individuals' health, cognitive functioning, longevity, and well-being (for meta-analyses, see Lamont et al., 2015; Tully-Wilson et al., 2021; Velaithan et al., 2024; Westerhof et al., 2014). More positive self-perceptions of aging are hereby considered a crucial psychological resource for successful adult development (Diehl & Wahl, 2024; Sabatini et al., 2024). Less is known about the role that self-perceptions of aging play in social functioning. This is the focus of the present study. Specifically, we examine the role of *awareness of age-related gains and losses*—two core facets of self-perceptions of aging (Diehl et al., 2014; Diehl & Wahl, 2010)—in *social approach goals* (i.e., goals aimed at pursuing positive, desired social outcomes such as love and social integration) and *social avoidance goals* (i.e., goals aimed at avoiding negative, undesired social outcomes such as conflict and social isolation; Mehrabian, 1970; Nikitin & Schoch, 2021). There is substantial evidence that social approach and avoidance goals play a pivotal role in social functioning: Pursuit of social approach goals is associated with positive social outcomes (such as active social behavior) and high subjective well-being; in contrast, pursuit of social avoidance goals is associated with negative social outcomes (such as withdrawal from social life) and low subjective well-being (Gable et al., 2006; Kuster et al., 2017; Nikitin et al., 2019; Nikitin & Freund, 2017, 2019b). This study explores the role of awareness of age-related gains and losses as resources for social approach and avoidance goals.

Research on lifespan development emphasizes that although people experience both developmental gains and developmental losses throughout their lives (P. Baltes, 1987; Heckhausen et al., 1989), the balance between gains and losses shifts due to an increase in perceived losses (Kaspar et al., 2023; Sabatini, Rupprecht, et al., 2023). This shift comes along with changes in people's goals (Freund, 2024; Steverink et al., 1998): Younger adults, who experience relatively more developmental gains, pursue more growth-oriented goals (approaching positive outcomes); older adults, who experience relatively more developmental losses, pursue more avoidance-oriented goals (maintaining the status quo and avoiding negative outcomes). Nikitin and Freund (2019a) provided evidence supporting similar age differences in social goals. In their study, older adults reported higher levels of social avoidance (but not approach) goals compared to young adults. This finding mirrors the tendency that developmental gains remain relatively stable across adulthood, whereas developmental losses increase (Freund, 2024; Kaspar et al., 2023).

Approach and avoidance goals are determined by different levels of goal-relevant resources (Ebner et al., 2006; Schnelle et al., 2010). Specifically, individuals with greater resources are more likely to pursue approach goals, while individuals with fewer resources are more likely to pursue avoidance goals. This also applies to the social domain: Bromberg (2018) showed in two studies that the manipulation of available goal-relevant social resources (such as social competence) predicts social approach goals. Conversely, the sense of limited social resources led to more social avoidance goals. In addition, individuals who perceived abundant social resources had greater expectations of achieving their social goals, which in turn predicted more social approach goals and fewer social avoidance goals. It is assumed that resources foster a sense of mastery and competence, enhancing the expectation of success and influencing goal striving (Bromberg, 2018; Ebner et al., 2006; Schnelle et al., 2010).

Building on this research, we propose that age itself is not the primary determinant of changes in goal striving. Instead, changes in resources associated with aging, such as physical, cognitive, and social capacities, play a crucial role in shaping individuals' goals and motivations. How individuals perceive and interpret the aging process influences their goals, highlighting the importance of subjective perceptions in shaping social goals. The awareness of age-related change (AARC) reflects changes in goal-relevant resources and thus influences goal striving. AARC encompasses "all those experiences that make a person aware that [their] behavior, level of performance, or ways of experiencing [their] life have changed as a consequence of having grown older" (Diehl & Wahl, 2010, p. 340). The concept captures the perception of age-related gains and losses in five behavioral domains, where aging experiences are predominantly encountered: physical functioning, cognitive functioning, interpersonal relations, social–cognitive and social–emotional functioning, and lifestyle and engagement (Diehl et al., 2014). These developmental gains and losses are thought to shape people's goals, as they encompass perceived resources (developmental opportunities) or lack of them (developmental constraints; Diehl et al., 2014; Dutt et al., 2018; Wilton-Harding & Windsor, 2022).

Supporting this argumentation, previous cross-sectional studies found that AARC-gains are associated with goal flexibility and goal engagement, whereas AARC-losses are linked to less goal flexibility (Dutt et al., 2018; Wilton-Harding & Windsor, 2022). Less is known about the role of AARC-gains and -losses for goals in the social domain. There is some evidence that AARC-gains and -losses are associated with social outcomes. For example, AARC-gains are associated with social life events such as the initiation of a new romantic relationship or separation from the partner (Rupprecht et al., 2022), and AARC-losses are associated with social media use (Sabatini, Wilton-Harding, et al., 2023). Focusing on social motivation, a study by Rahn et al. (2021) found that perceiving aging as increasing losses was related to social avoidance motivation. Building on these initial findings, this study investigates AARC-gains and -losses as predictors of social approach and avoidance goals. We hypothesize that (1) AARC-gains are associated with social approach goals, while (2) AARC-losses are associated with social avoidance goals, as both orientations operate based on distinct motivational systems: social approach motivation is exclusively linked to the appetitive system, and social avoidance motivation is exclusively linked to the aversive system (for a summary, see Nikitin & Schoch, 2021). In addition, we investigate social approach and avoidance goals as disposition and in everyday life as previous studies have shown that striving for social approach and avoidance goals contain both trait and state components (Gable & Berkman, 2008).

The Present Study

The hypotheses were tested in an experience sampling study. AARC-gains and -losses were assessed at baseline and considered as traits as previous studies have shown their relative stability (with 9% within-person variance for AARC-gains and 8% for AARC-losses; e.g., Neupert & Bellingtier, 2017). Social approach and

avoidance goals were assessed both at baseline (trait) and during daily assessments (state). The baseline assessment provided a retrospective measure where participants reported their typical social goals. Additionally, the daily assessments captured social goals as they occur in the moment, offering a prospective measure. Together, both outcome measures contribute to a holistic understanding of social approach and avoidance goals. Because we assume that it is not age per se that drives differences in social goals but the perception of age-related changes, we also test whether the predicted associations persist after controlling for age. Our findings will illustrate which aspects of awareness of age-related resources predict social goals, providing insight into how perceptions of aging shape social behavior (Nikitin & Freund, 2010, 2019a).

Method

Transparency and Openness

The data analysis was performed with R 4.4.1 (R Core Team, 2023) using the R package lm-beta (Behrendt, 2023), misty (Yanagida, 2020), foreign (R Core Team, 2024), correlation (Makowski et al., 2020, 2022), and psych (Revelle, 2017). All scales supporting the findings of this study are available in Supplemental Table S3, study materials including data and R-syntax are available from the corresponding author upon request. The study was not preregistered.

Participants

Participants were part of the "Quality of Daily Life" experience sampling study (Nikitin et al., 2022, Study 2), in which the daily life experiences of $N = 117$ individuals aged 18–85 years ($M = 40.62$ years, $SD = 16.95$) were investigated. The study design received an approval from the institutional review board committee of the Faculty of Arts and Social Sciences of the University of Zurich (dated July 25, 2017). Data collection took place between October 2021 and January 2022. Participants were recruited through a variety of channels, including outreach to university students, their families, and acquaintances, as well as postings on relevant online forums and social media platforms. The sample consisted of 68% females and 32% males, mainly from Austria (77%), followed by Germany (20%), and Switzerland (3%). Additionally, 57% of participants had a university degree, which exceeds the national average (Statistics Austria, 2024). In terms of relationship status, 26% were married, 37% were unmarried but in a long-term relationship, 27% were single, 4% were widowed, 3% were divorced, and 3% were in an open relationship.

Procedure

After completing a baseline questionnaire (online), daily assessments were conducted with our open-source experience sampling app ESM-Quest (Goetz et al., 2024). The baseline questionnaire collected demographic information (e.g., age, gender, family status, and education), AARC (Diehl & Wahl, 2010; Kaspar et al., 2019), as well as the pursuit of social approach and avoidance goals as a trait (Elliot et al., 2006). For 7 consecutive days, participants received six randomized signals in 2-hr intervals (between 8 a.m. and 8 p.m.) and were instructed to describe their current situation in terms of activity, context, and goals. The participants completed a total of 2,970 entries, ranging from 2 to 42 entries per participant ($M = 25.38$, $SD = 12.33$, $Mdn = 31$), and 15% completed 40 entries or more in total. Only situations in which at least one other person was present were selected for the present analysis (i.e., social situations). All participants experienced at least one social situation, ranging from 1 to 39 per participant ($M = 15.19$, $SD = 9.10$) on 1–7 days ($M = 5.32$, $SD = 1.85$). A total of 1,777 social situations were included in the analysis.

Measures

Trait Social Approach and Avoidance Goals

A German version of the Friendship Goals Questionnaire (Elliot et al., 2006) was used to assess social approach and avoidance goals as traits with four items each. We adapted the items for social relationships in general, for example, "I try to enhance the bonding and intimacy in my social relationships" (approach goal) and "I try to avoid disagreements and conflict in my social relationships" (avoidance goal). Participants used a rating scale from 1 (*not at all*) to 7 (*very much*) to express their agreement. We calculated mean values for social approach goals ($M = 5.72$, $SD = 1.31$, $\alpha = .96$) and social avoidance goals ($M = 4.87$, $SD = 1.36$, $\alpha = .78$).

State Social Approach and Avoidance Goals

To assess social approach and avoidance goals in everyday life, we used two single-item measures developed by Nikitin and Freund (2018). Participants were asked to indicate their agreement with the questions "Did you want to achieve something positive in the situation?" and "Did you want to avoid something negative in the situation?" Both questions were rated on a scale from 1 (*not at all*) to 5 (*very much*). State social approach goals had a mean score of $M = 3.71$ (between-individual $SD = 0.53$, within-individual $SD = 0.93$). State social avoidance goals had a mean score of $M = 2.70$ (between-individual $SD = 0.88$, within-individual $SD = 1.12$). The intraclass correlation (ICC) for state social approach goals was ICC = 0.245, indicating that approximately 24.5% of the total variance in state social approach goals is attributable to between-person differences. For state social avoidance goals, the ICC was ICC = 0.383, meaning that 38.3% of the variance in social avoidance goals is due to differences between individuals.

AARC-Gains and -Losses

The 10-item short form of the AARC Scale (Kaspar et al., 2019) was used to assess participants' subjective perception of aging at baseline. The AARC-Short Form captures perceived age-related gains and losses for a broad age range in the domains of health and physical functioning, cognitive functioning, interpersonal relations, social–cognitive functioning, social–emotional functioning, and lifestyle and engagement (Kaspar et al., 2023). In each domain, there is one item focused on losses and one item focused on gains. Each question begins with the phrase "With my increasing age, I realize that" followed by statements of the respective domain, for example, "I appreciate relationships and people much more" (interpersonal relations, gains) or "my mental capacity is declining" (cognitive functioning, losses). Respondents used a rating scale from 1 (*not at all*) to 7 (*very much*) to express their agreement. The AARC-gains and AARC-losses subscales were derived from the mean of their respective five items. AARC-gains had a mean score of $M = 5.32$ ($SD = 0.84$, $\alpha = .58$). AARC-losses had a mean score of $M = 2.91$ ($SD = 1.26$, $\alpha = .75$).

Age as Covariate

Because we assume that it is not age per se that drives differences in social goals, but the perception of age-related changes, age was included as a covariate in the statistical models.

Data Analysis

We used separate regression models to examine how each of the outcomes (social approach goals as trait; social avoidance goals as trait) related to the predictors AARC-gains and AARC-losses. Model 1 included AARC-gains and AARC-losses as predictors. Model 2 included in addition age (grand-mean centered) as a covariate.

We used multiple linear regression analyses to investigate how AARC-gains and AARC-losses relate to situational social approach and avoidance goals in everyday life. Aggregated situational social approach and avoidance goals for each participant were used as outcome variables, given that all predictors in our model are between-individual variables, while only everyday situational social approach and avoidance goals are nested within participants.

As an alternative analytical approach, we considered linear mixed-effects models including a random intercept for participants. However, while these models address the same estimation goal, they require the additional model assumption that the within-subject correlation structure is correctly represented by the chosen random effects. Consequently, we considered the linear model for the aggregated outcome variables to be a more robust primary analytical approach. For sensitivity analysis, we fitted linear mixed models, which produced highly similar results and led to identical conclusions as the multiple linear regression model. These analyses are detailed in Supplemental Table S1.

An a priori power analysis was conducted using G*Power, Version 3.1.9.7 (Faul et al., 2007, 2009), to determine the minimum sample size required to test the study hypothesis, which is provided in Supplemental Table S2.

Results

Bivariate correlations among the study variables are presented in Table 1. Social approach goals and avoidance goals correlated moderately at the trait and aggregated state levels but social approach goals as trait did not correlate with social approach goals as state. The same is true for social avoidance goals. AARC-losses were positively related to the aggregated situational avoidance goals and the trait avoidance goals, but unrelated to approach goals. AARC-gains were positively related to the aggregated situational approach goals and trait approach goals, but unrelated to avoidance goals. Chronological age showed a negative association with trait approach goals and a positive association with aggregated situational approach goals, aggregated situational avoidance goals, and AARC-losses.

AARC-Gains and -Losses and Social Approach and Avoidance Goals (Trait)

First, we examined the relationship between AARC-gains and AARC-losses with social approach goals as a trait (see Table 1). As predicted, AARC-gains, but not AARC-losses, were significantly associated with higher scores in approach goals, accounting for 26% of the variance. This association remained significant after controlling for age. Age was negatively associated with approach goals. Conversely, AARC-losses, but not AARC-gains, significantly predicted avoidance goals, accounting for 4% of the variance. Higher scores of AARC-losses were significantly associated with higher levels of avoidance goals, also after controlling for age. Age did not predict avoidance goals.

AARC-Gains and -Losses and Aggregated Social Approach and Avoidance Goals (State)

Second, we examined the relationship between AARC-gains and AARC-losses with the aggregated state social approach and avoidance goals as outcome (see Table 2). Higher levels of AARC-gains, but not AARC-losses, predicted higher levels of aggregated situational social approach goals (R^2 = 5%). This relationship remained significant after controlling for age (R^2 = 11%). Age was positively associated with aggregated situational approach goals. Regarding avoidance goals, higher levels of AARC-losses, but not AARC-gains, predicted higher levels of aggregated situational avoidance goals and explained 3% of the variance. However, this association turned out to be nonsignificant when controlling for age. Interestingly, both age and AARC-losses were significant

Table 1
Bivariate Correlations of the Study Variables

Variable	1	2	3	4	5	6	7	8	9
1. Social approach goals (trait)	—	.24*	−.03	−.03	.51**	−.14	−.24*		
2. Social avoidance goals (trait)		—	.03	.20*	.00	.24*	−.09		
3. Aggregated social approach goals (state)			—	.45**	.25**	−.01	.28**		
4. Aggregated social avoidance goals (state)				—	.12	.19*	.20*		
5. AARC-gains					—	−.01	.08		
6. AARC-losses						—	.25**		
7. Age							—		
8. Social approach goals (state)								—	
9. Social avoidance goals (state)								.27**	—

Note. Correlations are based on n = 117 participants. Aggregated social approach goals (state) and aggregated social avoidance goals (state) are based on n = 1,777 social situations nested within the 117 participants. Social approach goals (state) and social avoidance goals (state) are within-person variables measured in everyday life social situations. Within-group correlations are shown in the lower triangle, and between-group correlations are shown in the upper triangle. AARC = awareness of age-related change.
* $p < .05$ (two-tailed). ** $p < .01$ (two-tailed).

Table 2

Multiple Linear Regression Analysis: AARC-Gains and AARC-Losses as Predictors of Social Approach and Avoidance Goals (State, Trait)

	Social approach goal (trait)			Social avoidance goal (trait)		
Variable	Estimate (*SE*)	β	*p*	Estimate (*SE*)	β	*p*
Model 1						
Intercept	**2.313** (0.646)		**<.001**	**4.148** (0.823)		**<.001**
AARC-gains	**0.713** (0.112)	0.506	**.002**	−0.001 (0.143)	−0.001	.994
AARC-losses	−0.133 (0.079)	−0.134	.095	**0.265** (0.101)	0.240	**.009**
Adjusted R^2	0.26			0.04		
F	21.68 (2, 114)		**<.001**	3.48 (2, 114)		**.034**
Model 2						
Intercept	**1.928** (0.630)		**.002**	**3.884** (0.830)		**<.001**
AARC-gains	**0.744** (0.108)	0.528	**<.001**	0.020 (0.142)	0.013	.887
AARC-losses	−0.068 (0.078)	−0.069	.387	**0.310** (0.103)	0.280	**.003**
Age	**−0.019** (0.006)	−0.264	**.001**	−0.013 (0.007)	−0.162	.085
Adjusted R^2	0.32			0.06		
F	19.47 (3, 113)		**<.001**	3.37 (3, 113)		**.021**
	Aggregated social approach goal (state)			Aggregated social avoidance goal (state)		
Variable	Estimate (*SE*)	β	*p*	Estimate (*SE*)	β	*p*
Model 1						
Intercept	**2.743** (0.381)		**<.001**	**1.571** (0.581)		**.008**
AARC-gains	**0.183** (0.066)	0.250	**.007**	0.133 (0.101)	0.120	.190
AARC-losses	−0.002 (0.046)	−0.004	.961	**0.151** (0.071)	0.194	**.036**
Adjusted R^2	0.05			0.03		
F	3.82 (2, 114)		**.025**	3.10 (2, 114)		**.049**
Model 2						
Intercept	**2.957** (0.373)		**<.001**	**1.754** (0.587)		**.003**
AARC-gains	**0.165** (0.064)	0.227	**.011**	0.118 (0.100)	0.11	.242
AARC-losses	−0.038 (0.046)	−0.074	.387	0.121 (0.073)	0.155	.100
Age	**0.011** (0.003)	0.280	**.002**	0.009 (0.005)	0.158	.095
Adjusted R^2	0.11			0.04		
F	5.93 (3, 113)		**<.001**	2.81 (3, 113)		**.032**

Note. Degrees of freedom for the *F* value are reported in parentheses. Significant parameters ($p < .05$) are printed in bold. The analysis is based on $n = 1{,}777$ social situations nested within $n = 117$ participants. Age was grand-mean centered. Multiple regression analysis for AARC-gains, AARC-losses, and covariate age on dispositional social approach goals and social avoidance goals (trait) and aggregated everyday social approach goals and aggregated everyday social avoidance goals (state) as outcome. *SE* = standard error of regression coefficients in parentheses; β = standardized regression coefficient (slope); AARC = awareness of age-related change.

predictors of aggregated situational avoidance goals in models with only one predictor.

Discussion

The perception of one's own aging process is recognized as an essential psychological resource for successful adult development (Diehl & Wahl, 2024; Sabatini et al., 2024). However, the effects on social functioning—an important component of successful aging—are less understood. To address this gap, this study examined awareness of age-related gains and losses as predictors of social approach and avoidance goals, as these goal orientations are known antecedents of social behavior and well-being (Kuster et al., 2017; Nikitin et al., 2019; Nikitin & Freund, 2017, 2019a, 2019b). The study has two important findings: (a) awareness of age-related gains, not losses, is significantly associated with social approach goals, as a trait and in everyday social situations; and (b) awareness of age-related losses, not gains, is significantly associated with social avoidance goals, as a trait and in everyday social situations. These findings are consistent with theories of lifespan development that assume that age-related gains and losses reflect available resources or lack thereof and therefore influence people's goals (Diehl et al., 2014; Freund, 2024; Steverink et al., 2001).

Notably, awareness of age-related gains explained more variance in social goals than awareness of age-related losses. Furthermore, the association between awareness of age-related gains and social approach goals remained significant even after controlling for age. Conversely, the relationship between awareness of age-related losses and social avoidance goals remained significant only at the trait (not aggregated state) level when age was controlled for. These results suggest that available resources (age-related gains) play a more important role in driving social goals across the adult lifespan than the perception of limited resources (age-related losses). This view is consistent with recent discussions on the role of goals for healthy aging (Freund et al., 2021) stating that goals aimed at personal gains can be particularly influential, as opposed to goals focused on loss avoidance (Heckhausen et al., 2021). However, there is also evidence that age-related losses have a higher predictive power than gains when it comes to goal regulation strategies (Dutt et al., 2018). Discrepancies between studies may stem from different

study populations: In the "third age," older adults often retain sufficient resources or can compensate for losses, allowing gains to shape goal striving. In the "fourth age," marked by vulnerability and noncompensable losses, limited resources increasingly constrain goal-directed behavior (M. Baltes, 1998). However, future research is needed to determine when and under what conditions age-related gains and losses influence motivational factors.

Regarding age differences in social approach and avoidance goals, our results showed that older adults reported lower levels of trait approach goals but higher levels of approach goals across everyday social situations. This discrepancy could be due to older adults becoming more selective and valuing meaningful social interactions more in their daily lives (Carstensen et al., 1999; Nikitin et al., 2024). Positive, meaningful social interactions are associated with social approach goals, which may lead older adults to report more social approach goals in their daily social interactions, although they generally tend to report more avoidance goals (Nikitin et al., 2014). Moreover, it is possible that older adults are more often involved in close social contexts (e.g., with family members) in daily situations rather than in peripheral situations (Fingerman, 2009; Wrzus et al., 2013). Previous studies have shown that people tend to pursue more social approach goals in close relationships than in peripheral ones (Nikitin & Freund, 2019a). However, this study shows that approach and avoidance goals are flexible and not rigidly associated with age.

As demonstrated in prior studies (Nikitin & Freund, 2010, 2019a), we found a moderate correlation between social approach and avoidance goals at both the trait and state levels. This suggests that, although these motives are distinct, they serve as complementary drivers of the broader social affiliation goal. Especially in close relationships, individuals strive for positive social experiences while simultaneously seeking to avoid negative outcomes (Nikitin & Freund, 2019a). Accordingly, the interaction of approach and avoidance motives can also predict engaged behavior and positive emotional outcomes in specific social contexts (Nikitin & Freund, 2010).

Note that we assessed social approach and avoidance goals differently at the trait and state levels, which may explain the lack of correlation; however, these findings also align with previous research, which indicates only weak associations between state and trait assessments (e.g., Finnigan & Vazire, 2018). For trait assessment, we focused on approach and avoidance relationship goals. As an aggregated state, we examined the general tendency to approach positive aspects and avoid negative aspects in social situations. This state-level assessment had a broader focus than the relationship-specific one. Despite this difference, both measures yielded comparable results with regard to AARCs. Previous research has shown that the mere presence of others can influence people's goals (e.g., English et al., 2017; Srivastava et al., 2009). Therefore, our broader state measure offered valuable insights for a more ecological understanding of social approach and avoidance goals in everyday life. The consistent results of this study highlight the robust relationship of self-perceptions of aging on social goals.

A limitation of this study is the inability to make causal interpretations. It is possible that individuals who pursue more social approach goals also perceive more age-related gains, as social approach goals are linked to positive outcomes such as engaging in social events. The reversed causality may also apply to individuals with avoidance goals, for whom negative outcomes might reinforce perceptions of age-related losses (Nikitin et al., 2019; Nikitin & Freund, 2018). Despite these limitations, our study clearly indicates a link between self-perceptions of aging and social goals. Future research may focus on the long-term consequences of this link, such as successful social development and successful aging.

References

Baltes, M. (1998). The psychology of the oldest-old: The fourth age. *Current Opinion in Psychiatry*, *11*(4), 411–415. https://doi.org/10.1097/00001504-199807000-00009

Baltes, P. (1987). Theoretical propositions of life-span developmental psychology: On the dynamics between growth and decline. *Developmental Psychology*, *23*(5), 611–626. https://doi.org/10.1037/0012-1649.23.5.611

Behrendt, S. (2023). *lm.beta: Add standardized regression coefficients to linear-model-objects* (Version R package Version 1.7-2) [Computer software]. https://CRAN.R-project.org/package=lm.beta

Bromberg, C. W. (2018). *The impact of goal-relevant resources on social goal adoption*. University of California.

Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously. A theory of socioemotional selectivity. *American Psychologist*, *54*(3), 165–181. https://doi.org/10.1037/0003-066X.54.3.165

Diehl, M., Wahl, H. W., Barrett, A. E., Brothers, A. F., Miche, M., Montepare, J. M., Westerhof, G. J., & Wurm, S. (2014). Awareness of aging: Theoretical considerations on an emerging concept. *Developmental Review*, *34*(2), 93–113. https://doi.org/10.1016/j.dr.2014.01.001

Diehl, M., & Wahl, H.-W. (2010). Awareness of age-related change: Examination of a (mostly) unexplored concept. *Journals of Gerontology: Series B*, *65B*(3), 340–350. https://doi.org/10.1093/geronb/gbp110

Diehl, M., & Wahl, H.-W. (2024). Self-perceptions of aging: A conceptual and empirical overview. *Current Opinion in Psychology*, *55*, Article 101741. https://doi.org/10.1016/j.copsyc.2023.101741

Dutt, A. J., Gabrian, M., & Wahl, H.-W. (2018). Developmental regulation and awareness of age-related change: A (mostly) unexplored connection. *The Journals of Gerontology: Series B*, *73*(6), 934–943. https://doi.org/10.1093/geronb/gbw084

Ebner, N. C., Freund, A. M., & Baltes, P. B. (2006). Developmental changes in personal goal orientation from young to late adulthood: From striving for gains to maintenance and prevention of losses. *Psychology and Aging*, *21*(4), 664–678. https://doi.org/10.1037/0882-7974.21.4.664

Elliot, A. J., Gable, S. L., & Mapes, R. R. (2006). Approach and avoidance motivation in the social domain. *Personality and Social Psychology Bulletin*, *32*(3), 378–391. https://doi.org/10.1177/0146167205282153

English, T., Lee, I. A., John, O. P., & Gross, J. J. (2017). Emotion regulation strategy selection in daily life: The role of social context and goals. *Motivation and Emotion*, *41*(2), 230–242. https://doi.org/10.1007/s11031-016-9597-z

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149–1160. https://doi.org/10.3758/BRM.41.4.1149

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191. https://doi.org/10.3758/BF03193146

Fingerman, K. L. (2009). Consequential strangers and peripheral ties: The importance of unimportant relationships. *Journal of Family Theory & Review*, *1*(2), 69–86. https://doi.org/10.1111/j.1756-2589.2009.00010.x

Finnigan, K. M., & Vazire, S. (2018). The incremental validity of average state self-reports over global self-reports of personality. *Journal of Personality and Social Psychology*, *115*(2), 321–337. https://doi.org/10.1037/pspp0000136

Freund, A. M. (2024). Goals in old age: What we want when we are old and why it matters. *Current Opinion in Psychology*, *57*, Article 101803. https://doi.org/10.1016/j.copsyc.2024.101803

Freund, A. M., Hennecke, M., Brandstätter, V., Martin, M., Boker, S. M., Charles, S. T., Fishbach, A., Hess, T. M., Heckhausen, J., Gow, A. J., Isaacowitz, D. M., Klusmann, V., Lachman, M. E., Mayr, U., Oettingen, G., Robert, P., Röcke, C., Rothermund, K., Scholz, U., … Zadeh, R. S. (2021). Motivation and healthy aging: A heuristic model. *The Journals of Gerontology: Series B*, *76*(Suppl. 2), S97–S104. https://doi.org/10.1093/geronb/gbab128

Gable, S. L., & Berkman, E. T. (2008). Making connections and avoiding loneliness: Approach and avoidance social motives and goals. In A. J. Elliot (Ed.), *Handbook of approach and avoidance motivation* (pp. 203–216). Psychology Press.

Gable, S. L., Gonzaga, G. C., & Strachman, A. (2006). Will you be there for me when things go right? Supportive responses to positive event disclosures. *Journal of Personality and Social Psychology*, *91*(5), 904–917. https://doi.org/10.1037/0022-3514.91.5.904

Goetz, T., Steiner, W., Graf, E., Stempfer, L., Ristl, C., Rupprecht, F. S., Donath, J. L., Botes, E., & Nikitin, J. (2024). Assessing psychological variables on mobile devices: An introduction to the experience sampling app ESM-Quest. *Frontiers in Psychology*, *14*, Article 1271422. https://doi.org/10.3389/fpsyg.2023.1271422

Heckhausen, J., Brandstätter, V., Fishbach, A., Freund, A. M., Lachman, M. E., & Robert, P. (2021). Goal changes and healthy aging. *The Journals of Gerontology: Series B*, *76*(Suppl. 2), S105–S114. https://doi.org/10.1093/geronb/gbab038

Heckhausen, J., Dixon, R. A., & Baltes, P. B. (1989). Gains and losses in development throughout adulthood as perceived by different adult age groups. *Developmental Psychology*, *25*(1), 109–121. https://doi.org/10.1037/0012-1649.25.1.109

Kaspar, R., Gabrian, M., Brothers, A., Wahl, H.-W., & Diehl, M. (2019). Measuring awareness of age-related change: Development of a 10-item short form for use in large-scale surveys. *The Gerontologist*, *59*(3), e130–e140. https://doi.org/10.1093/geront/gnx213

Kaspar, R., Schilling, O. K., Diehl, M., Gerstorf, D., Rupprecht, F. S., Sabatini, S., & Wahl, H.-W. (2023). Differences in self-perceptions of aging across the adult lifespan: The sample case of awareness of age-related gains and losses. *Psychology and Aging*, *38*(8), 824–836. https://doi.org/10.1037/pag0000783

Kuster, M., Backes, S., Brandstätter, V., Nussbeck, F. W., Bradbury, T. N., Sutter-Stickel, D., & Bodenmann, G. (2017). Approach-avoidance goals and relationship problems, communication of stress, and dyadic coping in couples. *Motivation and Emotion*, *41*(5), 576–590. https://doi.org/10.1007/s11031-017-9629-3

Lamont, R. A., Swift, H. J., & Abrams, D. (2015). A review and meta-analysis of age-based stereotype threat: Negative stereotypes, not facts, do the damage. *Psychology and Aging*, *30*(1), 180–193. https://doi.org/10.1037/a0038586

Makowski, D., Ben-Shachar, M., Patil, I., & Lüdecke, D. (2020). Methods and algorithms for correlation analysis in R. *Journal of Open Source Software*, *5*(51), Article 2306. https://doi.org/10.21105/joss.02306

Makowski, D., Wiernik, B. M., Patil, I., Lüdecke, D., & Ben-Shachar, M. S. (2022). *correlation: Methods for correlation analysis* (Version R package Version 0.8.5) [Computer software]. https://CRAN.R-project.org/package=correlation

Mehrabian, A. (1970). The development and validation of measures of affiliative tendency and sensitivity to rejection. *Educational and Psychological Measurement*, *30*(2), 417–428. https://doi.org/10.1177/001316447003000226

Neupert, S. D., & Bellingtier, J. A. (2017). Aging attitudes and daily awareness of age-related change interact to predict negative affect. *The Gerontologist*, *57*(suppl_2), S187–S192. https://doi.org/10.1093/geront/gnx055

Nikitin, J., & Freund, A. M. (2010). When wanting and fearing go together: The effect of co-occurring social approach and avoidance motivation on behavior, affect, and cognition. *European Journal of Social Psychology*, *40*(5), 783–804. https://doi.org/10.1002/ejsp.650

Nikitin, J., & Freund, A. M. (2017). Social motives predict loneliness during a developmental transition. *Swiss Journal of Psychology*, *76*(4), 145–153. https://doi.org/10.1024/1421-0185/a000201

Nikitin, J., & Freund, A. M. (2018). Feeling loved and integrated or lonely and rejected in everyday life: The role of age and social motivation. *Developmental Psychology*, *54*(6), 1186–1198. https://doi.org/10.1037/dev0000502

Nikitin, J., & Freund, A. M. (2019a). Individual differences in habitual social goals and daily well–being: The role of age and relationship closeness. *European Journal of Personality*, *33*(3), 337–358. https://doi.org/10.1002/per.2190

Nikitin, J., & Freund, A. M. (2019b). Who cares? Effects of social approach and avoidance motivation on responsiveness to others. *Personality and Social Psychology Bulletin*, *45*(2), 182–195. https://doi.org/10.1177/0146167218781335

Nikitin, J., Gong, X., Schoch, S., & Freund, A. M. (2019). Social motives, attributions and expectations as predictors of the decision to participate in a speed-dating event. *Motivation and Emotion*, *43*(4), 610–624. https://doi.org/10.1007/s11031-019-09762-0

Nikitin, J., Luchetti, M., Alimanovic, N., Rupprecht, F. S., & Sutin, A. R. (2024). Are social interactions perceived as more meaningful in older adulthood? *Psychology and Aging*, *39*(6), 599–607. https://doi.org/10.1037/pag0000827

Nikitin, J., Rupprecht, F. S., & Ristl, C. (2022). Experiences of solitude in adulthood and old age: The role of autonomy. *International Journal of Behavioral Development*, *46*(6), 510–519. https://doi.org/10.1177/01650254221117498

Nikitin, J., & Schoch, S. (2021). Social approach and avoidance motivations. In R. J. Coplan, J. C. Bowker, & L. J. Nelson (Eds.), *The handbook of solitude: Psychological perspectives on social isolation, social withdrawal, and being alone* (2nd ed., pp. 193–208). Wiley Blackwell. https://doi.org/10.1002/9781119576457.ch14

Nikitin, J., Schoch, S., & Freund, A. M. (2014). The role of age and motivation for the experience of social acceptance and rejection. *Developmental Psychology*, *50*(7), 1943–1950. https://doi.org/10.1037/a0036979

R Core Team. (2023). *R: A language and environment for statistical computing* [Computer software]. R Foundation for Statistical Computing. https://www.R-project.org/

R Core Team. (2024). *foreign: Read Data Stored by "Minitab", "S", "SAS", "SPSS", "Stata", "Systat", "Weka", "dBase", …* (Version R package Version 0.8-87) [Computer software]. https://CRAN.R-project.org/package=foreign

Rahn, G., Martiny, S. E., & Nikitin, J. (2021). Feeling out of place: Internalized age stereotypes are associated with older employees' sense of belonging and social motivation. *Work, Aging and Retirement*, *7*(1), 61–77. https://doi.org/10.1093/workar/waaa005

Revelle, W. (2017). *psych: Procedures for psychological, psychometric, and personality research* (Version R package Version 1.7.8). Northwestern University. https://CRAN.R-project.org/package=psych

Rupprecht, F. S., Sabatini, S., Diehl, M., Gerstorf, D., Kaspar, R., Schilling, O. K., & Wahl, H.-W. (2022). Awareness of age-related change in the context of major life events. *Frontiers in Psychiatry*, *13*, Article 954048. https://doi.org/10.3389/fpsyt.2022.954048

Sabatini, S., Rupprecht, F., Kaspar, R., Klusmann, V., Kornadt, A., Nikitin, J., Schönstein, A., Stephan, Y., Wettstein, M., Wurm, S., Diehl, M., & Wahl, H.-W. (2024). Successful aging and subjective aging: Toward a framework to research a neglected connection. *The Gerontologist*. Advance online publication. https://doi.org/10.1093/geront/gnae051

Sabatini, S., Rupprecht, F. S., Diehl, M., Wahl, H.-W., Kaspar, R., Schilling, O. K., & Gerstorf, D. (2023). Levels of awareness of age-related gains and

losses throughout adulthood and their developmental correlates. *Psychology and Aging*, *38*(8), 837–853. https://doi.org/10.1037/pag0000784

Sabatini, S., Wilton-Harding, B., Ballard, C., Brooker, H., Corbett, A., Hampshire, A., & Windsor, T. D. (2023). Bidirectional associations of awareness of age-related change and attitudes toward own aging with social media use. *The Journals of Gerontology: Series B*, *78*(8), 1349–1359. https://doi.org/10.1093/geronb/gbad070

Schnelle, J., Brandstätter, V., & Knöpfel, A. (2010). The adoption of approach versus avoidance goals: The role of goal-relevant resources. *Motivation and Emotion*, *34*(3), 215–229. https://doi.org/10.1007/s11031-010-9173-x

Snijders, T. A. (2005). Power and sample size in multilevel modeling. In B. S. Everitt & D. C. Howell (Eds.), *Encyclopedia of statistics in behavioral science* (Vol. 3, pp. 1570–1573). Wiley. https://www.stats.ox.ac.uk/~snijders/PowerSampleSizeMultilevel.pdf

Srivastava, S., Tamir, M., McGonigal, K. M., John, O. P., & Gross, J. J. (2009). The social costs of emotional suppression: A prospective study of the transition to college. *Journal of Personality and Social Psychology*, *96*(4), 883. https://doi.org/10.1037/a0014755

Statistics Austria. (2024). *Education in figures 2022/23 – key indicators and analyses*. https://www.statistik.at/en/services/tools/services/publikationen/detail/1878

Steverink, N., Lindenberg, S., & Ormel, J. (1998). Towards understanding successful ageing: Patterned change in resources and goals. *Ageing and Society*, *18*(4), 441–467. https://doi.org/10.1017/S0144686X98007004

Steverink, N., Westerhof, G. J., Bode, C., & Dittmann-Kohli, F. (2001). The personal experience of aging, individual resources, and subjective well-being. *Journals of Gerontology: Series B Psychological Sciences and Social Sciences*, *56*(6), P364–P373. https://doi.org/10.1093/geronb/56.6.P364

Tully-Wilson, C., Bojack, R., Millear, P. M., Stallman, H. M., Allen, A., & Mason, J. (2021). Self-perceptions of aging: A systematic review of longitudinal studies. *Psychology and Aging*, *36*(7), 773–789. https://doi.org/10.1037/pag0000638

Velaithan, V., Tan, M.-M., Yu, T.-F., Liem, A., Teh, P.-L., & Su, T. T. (2024). The Association of self-perception of aging and quality of life in older adults: A systematic review. *The Gerontologist*, *64*(4), Article gnad041. https://doi.org/10.1093/geront/gnad041

Westerhof, G. J., Miche, M., Brothers, A. F., Barrett, A. E., Diehl, M., Montepare, J. M., Wahl, H. W., & Wurm, S. (2014). The influence of subjective aging on health and longevity: A meta-analysis of longitudinal data. *Psychology and Aging*, *29*(4), 793–802. https://doi.org/10.1037/a0038016

Wilton-Harding, B., & Windsor, T. D. (2022). Awareness of age-related change, future time perspective, and implications for goal adjustment in older adulthood. *Aging & Mental Health*, *26*(6), 1189–1197. https://doi.org/10.1080/13607863.2021.1893269

Wrzus, C., Hänel, M., Wagner, J., & Neyer, F. J. (2013). Social network changes and life events across the life span: A meta-analysis. *Psychological Bulletin*, *139*(1), 53–80. https://doi.org/10.1037/a0028601

Yanagida, T. (2020). *misty: Miscellaneous functions "T. Yanagida"* (Version 0.6.8) [Data set]. https://doi.org/10.32614/CRAN.package.misty

Received August 17, 2024
Revision received December 14, 2024
Accepted December 17, 2024 ■

Chapter 5 – Subjective Views of Aging and Social Activities: A 10-Year Longitudinal Perspective

---

The subsequent article was revised and resubmitted in September 2025 to the Journal of Psychology and Aging

The supplementary material is included in the appendix.

Future Self-Views of Aging and Social Activities: Domain-Specific Bidirectional Links Across Adulthood

Christina Ristl, MSc. [1], Selma Korlat, PhD [1], Fiona S. Rupprecht, PhD [2], M. Clara P. de Paula Couto, PhD [3], Klaus Rothermund, PhD [3], & Jana Nikitin, PhD [1]

[1]University of Vienna,

[2]University of Kaiserslautern-Landau

[3]Friedrich Schiller University Jena

Author Note

Correspondence concerning this article should be addressed to Christina Ristl, Department of Educational and Developmental Psychology, University of Vienna, Liebiggasse 5, 1010 Vienna, Austria. Email: christina.ristl@univie.ac.at

Funding:

This work was supported by grants of the VolkswagenStiftung (Az. II / 83 142, Az. 86 758, Az. 93 272) to K. R.

Conflict of Interest:

We have no conflict of interest to disclose.

Data Availability:

Data and analysis scripts are available from the corresponding author upon request. The research questions and analytic approach were not preregistered.

Abstract

How people anticipate their own aging may influence whether and how they stay socially engaged in later life. This study examined whether future self-views of aging predict self-reported social activities over time and whether social activities, in turn, shape individuals' future self-views of aging. Data were drawn from 459 German adults aged 30 to 80 years, assessed at three time points over a ten-year period. Participants reported their future self-views of aging in three social domains—family, friendship, and formal engagement—as well as their weekly hours spent in domain-matched social activities. We applied random intercept cross-lagged panel models to test within-person, bidirectional associations and conducted age-group comparisons.

More positive future self-views of aging predicted increases in corresponding social activities over time—but not vice versa. In age-group analyses, an association between family-related future self-views of aging and later family activities emerged specifically among older adults. These associations remained when adjusting for subjective health, age, neuroticism, extraversion, and partnership status. Expectations about aging and formal engagement (e.g., clubs or volunteering) predicted behavior only among participants without a partner.

Overall, the findings suggest that how individuals envision their aging selves is prospectively related to their social engagement, with associations differing by age and relational domain. Future self-views of aging may represent one motivational pathway through which adults maintain social involvement, particularly in developmentally salient domains or when close relational resources are limited. Interventions that foster more positive expectations about one's own aging may help support sustained social participation across adulthood.

Keywords: Self-perception of aging, social participation, leisure activities, social motivation, lifespan development

Public Significance Statement

People who expect to remain socially active in old age are more likely to stay engaged with family and friends over time. This effect is particularly pronounced when close support (e.g., a partner) is absent. Promoting positive, domain-specific expectations about aging may strengthen social ties and counteract social isolation in later life.

Introduction

As social beings, humans seek meaningful connections across the lifespan (Baumeister & Leary, 1995). In later life, sustained social engagement is widely considered a cornerstone of successful aging (Rowe & Kahn, 2015). It has been linked to better physical and cognitive functioning (Bourassa et al., 2017; Smith et al., 2017), improved health outcomes (Douglas et al., 2017), and reduced mortality risk (Shor & Roelfs, 2015). The benefits of social activity appear cumulative and particularly enhance well-being among older adults facing economic or social disadvantage (Monteiro et al., 2024). Although social involvement tends to decline with age, considerable interindividual variability remains unexplained by chronological age alone (Pinto & Neri, 2017; Wrzus et al., 2013). Understanding the psychological factors that promote or hinder social engagement is therefore crucial for identifying adaptive aging trajectories.

Subjective views of aging are increasingly recognized as important psychological predictors of successful aging, given their associations with a wide range of developmental outcomes in later life (Sabatini et al., 2024; Tully-Wilson et al., 2021; Westerhof et al., 2023). They encompass individuals' expectations, beliefs, and evaluations regarding their own aging (Sabatini et al., 2024; Wurm et al., 2017). While traditionally studied in relation to physical and cognitive functioning (Sabatini et al., 2024), there is growing recognition that they also shape social outcomes, including social motivation, engagement, perceived support, and loneliness (Bu et al., 2024; Hu & Li, 2022; Menkin et al., 2016; Meyer-Wyk & Wurm, 2024; Ristl et al., 2025; Schwartz et al., 2021).

In aging research subjective views of aging function as an umbrella term that includes distinct yet interrelated constructs that vary in scope and complexity (Diehl et al., 2015; Sabatini et al., 2024; Shrira et al., 2022). Prominent examples include awareness of age-related change (Diehl et al., 2014), subjective age, felt age (e.g. Barrett, 2003), or attitudes toward own aging (Lawton, 1975). Among these, *future self-views of aging* (FSV)—individuals' expectations about what they will be like in old age—represent a prospective component of subjective views of aging. They provide directions for future behavior and influence the extent to which individuals seek or avoid social participation (Hoppmann et al., 2007; Kornadt & Rothermund, 2011; Markus & Nurius, 1986). At the same time, social experiences may feed back into individuals' future-self views of aging and reshape internalized beliefs about what later life typically entails, referred to as externalization hypothesis (Kornadt et al., 2015; Rothermund & Brandtstädter, 2003).

The present study examines this dynamic interplay by investigating the bidirectional relationship between future-self-views of aging and social activities in four social domains: family, friends, volunteering, and club participation. We further explore whether these associations differ in strength and direction across age groups and assess their robustness when accounting for other correlates of subjective views of aging and social participation, including subjective health, neuroticism, extraversion, and partnership status. By clarifying these reciprocal pathways, we aim to advance understanding of how subjective views of aging interact with social behavior across domains—and to inform future interventions that foster social engagement and positive views of aging throughout adulthood.

Subjective Views of Aging Shape Social Engagement

The Stereotype Embodiment Theory (Levy, 2009) offers a framework for understanding how aging-related beliefs influence behavior. According to the theory, individuals are exposed to societal age stereotypes early on in life. These stereotypes—shaped by media, culture, and social interactions—are reinforced throughout life, internalized, and become self-relevant in older adulthood. Once internalized, they shape how individuals anticipate and interpret their own aging.

One way in which internalized age stereotypes manifest is through future-self views of aging (FSV), that is, cognitive–affective representations of what individuals expect to be like in later life (Kornadt et al., 2015; Kornadt & Rothermund, 2011). Future-self views of aging translate societal stereotypes into personalized expectations that begin to guide behavior long before old age is reached (Kornadt & Rothermund, 2012; Voss et al., 2017). In line with Markus and Nurius' (1986) concept of possible selves, future self-views of aging organize attention, inform goal representations, and guide behavior toward or away from anticipated outcomes. Future-self views of aging share with possible selves that both are future-oriented self-representations capturing positive and negative expectations. They differ, however, in that possible selves refer to a broad range of future identities across the lifespan, whereas future-self views of aging target realistically anticipated states in older adulthood (Kornadt et al., 2015; de Paula Couto et al., 2022). Moreover, they are theoretically and empirically linked to age stereotypes and constitute a key mechanism through which such stereotypes become internalized into the aging self (Kornadt & Rothermund, 2012; Kornadt, 2017). As an established component of subjective views of aging, future-self views of aging also predict consequential outcomes such as preparation for age-related changes, leisure activities

around retirement, and the valence of later life events (Kornadt et al., 2015; de Paula Couto et al., 2022; Voss et al., 2017).

In the social domain, future-self views of aging may shape individuals' motivation to engage with or to avoid others, maintain close relationships, or take on socially embedded roles. Individuals who envision their older future selves as socially active, valued, and connected are more likely to invest in social relationships, initiate new interactions, and seek out opportunities for meaningful involvement—such as volunteering or mentoring. In contrast, those who anticipate becoming socially isolated or burdensome may expect rejection or reduced social reward, leading them to withdraw or avoid social engagement altogether.

Empirical findings support this notion. In a daily diary study with very old adults, Hoppmann et al. (2007) showed that domain-specific hopes and fears about aging predicted corresponding daily behavior. Those anticipating social losses pursued fewer social goals, whereas individuals who held more positive social expectations invested more effort in daily social interactions. These findings illustrate how future-oriented expectations regarding aging translate into concrete patterns of behavior and goal engagement. Similarly, Menkin et al. (2016) found in a study on volunteering that positive expectations regarding aging were associated with new friendship development 2 years later and greater perceived support availability 12 months later.

Although longitudinal evidence on future-self views of aging and social activity remains limited, related constructs provide converging support. Schwartz et al. (2021) found that more positive attitudes toward own aging predicted greater engagement in informal and formal social roles. Similarly, studies by Bu et al. (2024) and de Paula Couto et al. (2022) showed that negative attitudes toward and negative future-related self-views of one's own aging predicted reduced participation in leisure activities, in particular when transitioning to retirement (de Paula Couto et al., 2022). These findings reinforce the idea that views about aging trajectories shape the extent and quality of social involvement.

Importantly, future-self views of aging are not a global construct but vary across life domains such as health, cognition, and social relationships (Kornadt et al., 2015). For instance, individuals may hold optimistic views about their physical functioning in old age while simultaneously anticipating cognitive decline or social withdrawal. The behavioral relevance of these differentiated expectations lies in their domain-specificity: future-self views of

aging, like other subjective views of aging, tend to shape outcomes that match the domain to which they refer (Kornadt et al., 2015; Kornadt, Voss, et al., 2019; Voss et al., 2017).

The strength of the association between future-self views of aging and social activity may also depend on age. Stereotype embodiment theory predicts that stereotypes gain behavioral relevance when they become self-relevant (Levy, 2009). Future-self views of aging may become more consolidated and predictive over time, as aging becomes a salient aspect of identity. Moreover, subjective views of aging themselves are not static but evolve with age—and do so differently across domains. Diehl et al. (2021) found that perceptions of personal growth and openness to new experiences tend to decline after age 55, while perceptions of physical and social loss increase from age 65 onward. These findings suggest that both the content and consequences of future-self views of aging are likely to shift with age and domain. Taken together, these insights highlight the need to account for domain-specificity and age-group variation when examining the role of future-self views of aging in shaping social activities.

Social Activities Shape Subjective Views of Aging

Social activities—typically understood as participation in interpersonal interactions that extend beyond obligatory or instrumental exchanges—can be broadly classified into informal (e.g., contact with family and friends) and formal (e.g., volunteering, civic or club involvement) domains (Pinto & Neri, 2017). Across the adult lifespan, these forms of engagement serve distinct psychological functions and show different age-related patterns (Huxhold et al., 2022). Importantly, engaging in such activities not only reflects but may also shape how individuals envision their own aging. According to the externalisation hypothesis (e.g. Rothermund & Brandtstädter, 2003), individuals project their personal experiences and internal states onto generalized beliefs about aging. Rather than merely internalizing cultural age stereotypes, they reinterpret these cultural narratives through the lens of their own lived experiences. In this process, personal experiences become a reference point for constructing future-oriented self-perceptions. Thus, active engagement in meaningful social roles—particularly those that challenge deficit-oriented age stereotypes, such as being competent, helpful, or socially valued—may prompt individuals to revise their expectations about later life. For example, older adults who experience themselves as socially included and effective may develop more positive views of their future aging selves (Cohn-Schwartz et al., 2022).

Beyond this self-referential mechanism, interactions with others can influence future-self views of aging through social comparison and perspective-taking processes. According to Allport's (1954) contact hypothesis, sustained, high-quality intergroup contact reduces stereotypes and promotes more differentiated attitudes. Applied to aging, frequent and positive engagement with both younger and older people can attenuate internalized ageism and broaden expectations about one's own aging trajectory. Cohn-Schwartz et al. (2023), for instance, found that older adults embedded in age-integrated social networks reported more positive self-views of aging—particularly when contact occurred with other older adults. Such experiences may offer concrete counterexamples to age-based decline narratives and foster identity-affirming comparisons that influence how individuals imagine themselves in later life.

In addition, individuals embedded in broader and more diverse social networks benefit from increased access to psychosocial resources—such as emotional support, validation, and continuity of social roles. These resources have been linked to more favorable self-perceptions of aging, particularly in domains related to personal growth and social connectedness (Meyer-Wyk & Wurm, 2024). Exposure to a range of age-related experiences and behaviors through these networks may also encourage more resilient, flexible, and differentiated expectations for one's own aging.

While social engagement is beneficial across the lifespan, its impact on future-self views of aging may become especially pronounced in later adulthood. As aging becomes a more salient part of identity, social roles and interactions increasingly serve as reference points for interpreting age-related change and anticipating one's future self. For example, Cohn-Schwartz et al. (2023) found that the positive effect of age-integrated contact on self-perceptions of aging was stronger among older adults. These findings suggest that the influence of social activities on future-self views of aging may intensify with age, highlighting later life as a sensitive period for reinforcing or reshaping expectations about aging.

The Present Study

The present study investigates the bidirectional associations between domain-specific future-self views of aging and social activities in four relational contexts: family, friendship, volunteering, and club participation. Prior studies have provided preliminary evidence for such dynamic associations but have yielded inconsistent findings. Schwartz et al. (2020)

identified a predictive effect of attitudes toward own aging on informal and formal activities but did not find formal social activities to influence attitudes toward own aging. In contrast, Bu et al. (2024) reported reciprocal associations between community engagement and attitudes toward own aging. These discrepancies may stem from the use of unidimensional measures and undifferentiated activity indicators. Variation in age ranges across studies may also contribute to inconsistent results. From a lifespan-developmental perspective, early, middle, and later adulthood differ in developmental tasks, social contexts, and in the salience of subjective views of aging. Prior work has documented non-linear age-related patterns in these processes (e.g. Cohn-Schwartz & Gerstorf, 2022; Diehl & Wahl, 2024; Kornadt et al., 2017). To capture potential non-linear age effects, we examine the associations separately across three age groups, enabling an exploration of whether these dynamics manifest differently across the adult life span.

Our study extends prior work by applying a domain-matched design that aligns domain-specific future self-views of aging with corresponding social activities across three age groups. This approach will clarify when, for whom, and in which domains subjective views of aging and social engagement shape each other over the life span. We hypothesize that domain-specific social activities predict changes in corresponding future-self views of aging, and that future-self views of aging predict future engagement in the same domain. Furthermore, we expect these bidirectional associations to be more pronounced among older adults, for whom aging is more salient and socially relevant.

Methods

Transparency and Openness

Models were prepared and analyzed in R (v4.4.1; R Core Team, 2024) using the packages lavaan (Rosseel, 2012), semTools (Jorgensen, 2022), correlation (Makowski et al., 2020, 2022), psych (Revelle, 2017) and foreign (R Core Team, 2025). All study materials Data and analysis scripts are available from the authors upon request. The research questions and analytic approach were not preregistered.

Participants

Participants were drawn from the German paper-pencil cohort of the *Ageing as Future* study, a longitudinal project funded by the Volkswagen Stiftung Germany (Lang et al., 2024). At baseline in 2009, 768 adults aged 30 to 80 years were randomly sampled from local registry

offices in two mid-sized German cities. The sample was stratified by age, gender, and place of residence. Follow-up assessments were conducted in 2014 and 2019, resulting in three waves of data spanning a ten-year period. Further details on the sampling procedure are reported in Lang et al. (2024) and Kornadt and Rothermund (2011).

A total of 459 individuals (60% of the initial sample) completed all three waves. Compared to those with incomplete participation, they did not differ in gender, $\chi^2(1) = 0.88$, $p = .34$, or education, $t(7) = 11$, $p = .08$, but were on average two years younger, $t(588) = 2.33$, $p = .02$, more likely to have a partner, $\chi^2(1) = 188.27$, $p < .001$, and reported better self-rated health, $t(599.31) = 3.35$, $p < .001$.

To examine age-related differences, participants were grouped by age at baseline: 30–45 years (younger adults), 46–60 years (middle-aged adults), and 61–80 years (older adults). This classification follows previous studies using *Ageing as Future* data (Kornadt, Voss, et al., 2019). Descriptive statistics for the full sample and age groups are provided in Table 1.

Procedure

Participants received study materials by mail. After providing written informed consent, they completed the questionnaire at home, returning it via prepaid envelope. At each follow-up, they were recontacted by mail and invited to participate again. Compensation was offered as a gift card or a charitable donation. The study was approved by the institutional review board at Friedrich Schiller University Jena (approval no. FSV18/36) and supported by grants of the VolkswagenStiftung (Az. II / 83 142, Az. 86 758, Az. 93 272).

Table 1

Sample Characteristics for the Three Age Groups (30 to 45 years; 46 to 60 years; 61 to 80 years) at Baseline (T1)

	Younger ge-group (n = 150)	Middle age-group (n = 140)	Older age-group (n = 169)
Age, M (SD)	38.21 (4.61)	53.19 (4.24)	69.27 (5.29)
Gender (% female)	47.33 %	52.14 %	53.02 %
Family Status %			
Married or in relationship	76.34 %	76.63 %	75.14 %
Single	13.53 %	11.68 %	1.20 %
Divorced or separated	10.13 %	10.94 %	14.19 %
Widowed	0 %	0.73 %	9.47 %
Higher education degree % (%)	49.33 %	51.44 %	46.15 %
Subjective health, M (SD)	2.98 (0.87)	2.64 (1.01)	2.60 (0.83)

Note. M = mean, SD = standard deviation. Subjective health ranged from 0 to 4. Higher education degree represents a university degree or equivalent.

Measures

Future-Self Views

Future self-views of aging (FSV) were measured using the questionnaire developed by Kornadt and Rothermund (2011). Each item began with the prompt "When I am old…" and presented two opposing statements reflecting negative versus positive expectations about one's own aging. Participants rated their expectations on an eight-point bipolar scale ranging from 1 (strongly negative) to 8 (strongly positive), without a neutral midpoint. Higher scores indicated more favourable future-self views of aging.

Three domains were assessed: family (three items; e.g., "When I am old… I will have many conflicts in the relationship with my family — I will have a harmonious relationship"), friendships (three items; e.g., "…I will have few friends and acquaintances — I will have many friends and acquaintances"), and leisure/social engagement (four items; e.g., "…I will have few opportunities for leisure activities and social engagement — I will have plenty of opportunities"). Descriptive statistics for the full sample across all waves are presented in

Table 2. Age-group–specific descriptives, sociodemographic distributions, and Cronbach's α values for multi-item scales across waves are reported in Supplementary Tables S1–S3.

Social Activities

Social activities were assessed in four domains: time spent with partner or family (e.g., walks, visits), with friends (e.g., going out, meetings, sports), in clubs (e.g., sports clubs, choirs, church groups), and in volunteering (e.g., self-help groups, political organizations, fire department). Participants were asked: "Which of the following activities do you engage in during your free time, and approximately how many hours per week do you spend on each?" Engagement was recorded as weekly hours per domain. Because only 141 of 448 participants reported any volunteering and 272 reported any club participation across the waves, these two domains were combined into one variable *formal activities* by summing hours. Descriptive statistics across all three time points are presented in Table 2; age-specific values are provided in Supplementary Table S1.

Covariates

Covariates included partnership status, chronological age, subjective health, neuroticism, and extraversion. Including these covariates allows us to evaluate whether associations between future self-views of aging and social activities hold above and beyond well-established individual differences. *Partnership status* (0 = no partner, 1 = has partner) was included because marital and cohabiting unions structure opportunities for social contact (Kalmijn, 2012; Monteiro et al., 2024).

Subjective health, measured with a single item (1 = not good at all, 5 = very good), was added because health limitations are a central barrier to social participation (e.g. Townsend et al., 2021; Pinto & Neri, 2017).

Neuroticism and extraversion were assessed with the German short version of the Big Five Inventory (BFI-S Lang et al., 2011), using three items per construct. Neuroticism was measured with items such as "I see myself as someone who worries a lot" and extraversion with items such as "I see myself as someone who is outgoing and sociable."

Table 2

Mean Values and Standard Deviations for Study Variables at T1, T2, T3 in Total

	T1			T2			*T3*		
	M (SD), %	*Min-Max*	*n*	*M (SD), %*	*Min-Max*	*n*	*M (SD), %*	*Min-Max*	*n*
FSV family	5.49 (1.37)	0-7	453	5.39 (1.37)	0.33-7	458	5.36 (1.3)	0-7	455
FSV friends	4.12 (1.60)	0-7	451	3.99 (1.65)	0-7	458	3.85 (1.66)	0-7	453
FSV leisure & engagement	5.00 (1.14)	0.5-7	456	4.87 (1.40)	0-7	451	4.82 (1.26)	0-7	452
Family activities	10.42 (7.62)	0-37	458	13.92 (9.66)	0-49	459	12.16 (9.59)	0-57	449
Friends activities	6.21 (4.73)	0-24	458	8.64 (4.72)	0-39	459	6.33 (5.96)	0-32	449
Formal activities	3.98 (5.53)	0-31	458	4.49 (6.26)	0-49	459	5.77 (7.66)	0-41	449
Age, M (SD)	54.22 (13.80)	30-80	459	58.10 (13.80)	34-84	459	63.16 (13.80)	39-89	459
Subjective health, M (SD)	2.74 (0.92)	0-4	458	2.61 (0.97)	0-4	458	2.60 (0.97)	0-4	458
Neuroticism, M (SD)	-	-	-	3.89 (1.27)	1-7	454	-	-	-
Extraversion, M (SD)	-	-	-	4.62 (1.23)	1-7	454	-	-	-
Family Status %									
Married or in relationship	76.22 %		454	73.46 %		456	72.15 %		456
Single	8.15 %		454	7.89 %		456	7.02 %		456
Divorced or separated	11.89 %		454	13.16 %		456	12.28 %		456
Widowed	3.74 %		454	4.82 %		456	8.34 %		456
Higher education degree	48.37 %		452	50.74 %		456	53.47 %		447
Gender (female)	50.98 %		459	50.98 %		459	50.98 %		459

Note. FSV = Future self-views, M = mean, SD = standard deviation. Neuroticism and extraversion were only reported at wave-2 (T2). Higher education degree refers to a university degree or equivalent. Social activities are self-reported in hours per week. Formal activities reflect the combined weekly hours of club and volunteering activities.

All items were rated on a 7-point scale (1 = does not apply at all, 7 = applies completely) and were assessed exclusively at wave 2. Given the high rank-order stability of these personality characteristics over approximately five-year intervals across adulthood (Bleidorn et al., 2022), wave 2 scores can be interpreted as valid indicators of individuals' stable dispositional tendencies. Their inclusion is relevant, since neuroticism and extraversion shape the emotional and motivational context in which individuals form expectations about their aging views: higher neuroticism is associated with greater negative affectivity and worry, leading to less favorable views of aging, whereas higher extraversion reflects positive affectivity and social approach tendencies that foster more positive views of aging (Diehl et al., 2021; Miche et al., 2014; Rupprecht et al., 2019). Both traits also reliably predict social participation—extraverted individuals engage more actively in social life, while those higher in neuroticism tend to withdraw (Back et al., 2023; Sander et al., 2021). Controlling for these traits is therefore essential when examining specific links between future self-views of aging and social activities.

Statistical Analysis

We used structural equation modeling to examine bidirectional associations between domain-specific future-self views of aging (FSV) and social activity engagement (SOC) over three measurement waves (T1–T3). Specifically, we estimated random intercept cross-lagged panel models (RI-CLPM; Hamaker et al., 2015), which decompose each observed variable into three components: a grand mean (μ_t), a person-specific random intercept (b_i) reflecting stable between-person differences, and a within-person deviation (w_{it}) capturing change over time:

$$FSV_{it} = \mu FSV_t + bFSV_i + wFSV_{it}$$

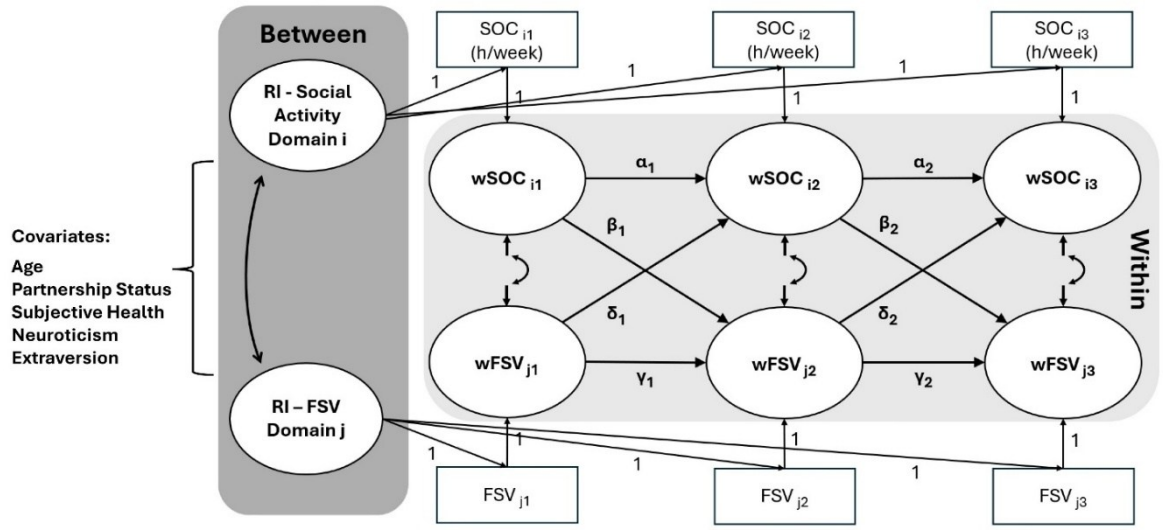
$$SOC_{it} = \mu SOC_t + bSOC_i + wSOC_{it}$$

Only the within-person components ($wFSV_{it}$, $wSOC_{it}$) were used to estimate cross-lagged and autoregressive paths, allowing us to test whether within-person change in one variable predicts within-person change in the other variable. We tested cross-lagged effects from $wFSV$ to $wSOC$ and vice versa. This approach allowed us to assess the direction and strength of within-person associations across time. To account for temporal stability of effects, we constrained paths to be equal across time (i.e., Wave 1→2 and Wave 2→3). Figure 1 provides an illustration of the RI-CLPM implemented in this study. We estimated separate

RI-CLPMs (Model 1) for each FSV–activity domain pair (family, friendship, formal activities).

Figure 1

Graphic representation of the random intercept cross-lagged panel model (RI-CLPM) adapted from Mulder and Hamaker (2021) for domain-specific future self-views of aging (FSV) and social activities (SOC).



Note. SOCit indicates the observed weekly hours (h/week) spent on social activity i (i.e., family, friendship, formal) at time point t (wave 1–3). FSVjt denotes the observed score for future self-views of aging in domain j (i.e., family, friendship, leisure and engagement) at time point t. The within-person components (wFSVjt, wSOCit) represent deviations from expected values based on each individual's grand mean and random intercept. Autoregressive ($\alpha_1=\alpha_2;\gamma_1=\gamma_2$) and cross-lagged ($\beta_1=\beta_2$; $\delta_1=\delta_2$) paths were constrained to be equal across waves. RI = random intercept.

To examine age-related differences, we applied a multiple-group RI-CLPM (Model 2; Mulder & Hamaker, 2021 Extension 2) across three age groups (30–45 years, 46–60 years, 61–80 years). To test the robustness of the within-person effects, we finally extended each domain-specific RI-CLPM by including the covariates. Missing data were handled using full information maximum likelihood (FIML).

Results

Correlations Between Future Self-Views of Aging and Social Activities

Supplementary Tables S4 and S5 present correlations between all variables across adjacent waves (T1–T2; T2–T3). Consistent with the assumption of domain-specificity, correlations

between domain-matched future-self views of aging and social activities were generally stronger than non-matched associations. FSV–family was primarily correlated with family activities (r = .17, .25), and FSV–friendship correlated exclusively with friendship-related activities (r = .20, .24). In contrast, FSV–leisure was related to all social activities, with correlations ranging from r = .10 to r = .18, indicating a less domain-bound association pattern.

Random Intercept Cross-Lagged Panel Models (RI-CLPMs)

To disentangle stable between-person associations from intraindividual variation, we estimated RI-CLPMs separately for each FSV-domain and corresponding social activities (see Table 3). Model fit was evaluated using established guidelines (Hu & Bentler, 1999): CFI ≥ .95, RMSEA ≤ .06, SRMR ≤ .08. All models met these criteria.

At the between-person level, future-self views of aging (FSV) and domain-matched social activities were positively correlated across all three domains: r = .37 for family, r = .24 for friendship, and r = .23 for formal activities, indicating that individuals with more hours spent on social activities per week also held more positive age-related future-self views of aging. At the within-person level, correlations were also positive and significant, ranging from r = .11 to r = .27, indicating that future-self views of aging were systematically associated with domain-specific social activity at the same time point. In the family domain, correlations at adjacent waves were r = .25, .27, and .16 (p < .05); in the friendship domain, r = .11, .14, and .19; and in the formal domain, r = .19, .18, and .12.

Cross-Lagged Effects Between Future Self-Views of Aging and Social Activities

Results indicated that increases in future-self views of aging were prospectively associated with increases in domain-matched social activities. Specifically, when individuals reported more positive family-related future-self views of aging at one timepoint, they spent significantly more hours per week on family-related activities five years later (B = 1.40, SE = 0.54, p = .010). A similar pattern was found for the friendship domain: higher future-self views of aging in the friendship domain predicted greater engagement in friendship-related activities at the subsequent wave (B = 0.58, SE = 0.22, p = .010). Leisure- and engagement-related future-self views of aging did not significantly predict subsequent formal social activities (B = 0.65, SE = 0.37, p = .080).

Table 3

Results of the Random Intercept Cross-Lagged Panel Model (Model 1) and Multigroup RI-CLPM Model (Model 2)

Domain	Correlation Between RI	Correlation within-person (wFSV-wSOC)	Autoregression B (SE)		Cross-lagged Effects B (SE)		Model Fit		
	(RI_{FSV},RI_{SOC})	T1/T2/T3	SOC	FSV	$SOC_{(t-1)}\rightarrow FSV_t$	$FSV_{(t-1)}\rightarrow SOC_t$	CFI	RMSEA	SRMR
Family activities – FSV-family									
Model 1: Total sample	**.37**	**.25 / .27 / .16**	**.31 (.06)**	.10 (.11)	**.02 (.01)**	**1.40 (.54)**	.997	.035	.028
Model 2[a]: Younger adults	.60	.12 / .03 / .06	**.51 (.10)**	**-.27 (.11)**	.00 (.02)	-.90 (1.19)	.995	.043	.043
Middle-aged adults	.47	**.25** / .15 / **.33**	.17 (.10)	.08 (.17)	.01 (.01)	1.72 (.96)			
Older adults	**.46**	**.29** / **.34** / **.17**	.20 (.11)	.22 (.15)	.00 (.01)	**1.73 (.75)**			
Friends activities – FSV-friends									
Model 1: Total sample	**.24**	**.11 / .14 / .19**	**.15 (.05)**	**.34 (.08)**	.01 (.04)	**.58 (.22)**	.995	.042	.025
Model 2[b]: Younger adults	**.41**	.02 / .05 / **.16**	**.23 (.08)**	**.47 (.11)**	-.02 (.02)	-.01 (.34)	.997	.034	.037
Middle-aged adults	.24	**.13** / **.24** / **.25**	.10 (.10)	.07 (.16)	.03 (.03)	**1.00 (.42)**			
Older adults	.24	.08 / **.28** / .10	.14 (.09)	**.38 (.14)**	-.00 (.02)	.48 (.39)			
Formal activities – FSV leisure &engagement									
Model 1: Total sample	**.23**	**.18 / .18 / .11**	**.23 (.09)**	.03 (.11)	.01 (.02)	.65 (.37)	.995	.038	.027

Note: SOC = Social activity; FSV = Future self-view; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standard Root Mean Square Residual. Values in bold print are significant at $p < .05$. Age ranged from 30 to 80 years in the total sample at wave one, from 30 to 45 years in the younger age-group, from 46 to 60 years in the middle age-group and from 61 to 80 years in the older age-group.

a Chi²-Difference Test: $\Delta\chi^2 = 15.77$, $\Delta df = 8$, $p = .045$.

b Chi²-Difference Test: $\Delta\chi^2 = 15.64$, $\Delta df = 8$, $p = .048$.

By contrast, we found no significant evidence that changes in social activities predicted subsequent changes in future-self views of aging. A small effect in the family domain (B = 0.02, SE = 0.01, p = .024) did not remain significant after adjusting for covariates. Standardized coefficients are presented in Supplementary Table S6.

To test the robustness of these findings, we re-estimated the models including the covariates age, subjective health, neuroticism, extraversion and partnership status (see Supplementary Tables S7 and S8). The pattern of results remained largely unchanged except for partnership status. Among individuals without a partner, family-related future-self views of aging were a strong predictor of later family activities, a one-unit increase in future-self views of aging corresponded to approximately two additional hours per week in family activities (B = 2.41, SE = 0.62, p < .001), while leisure- and engagement-related future-self views of aging significantly predicted subsequent time spent in formal social activities. Specifically, a one-unit increase in future-self views of aging corresponded to approximately one additional reported hour per week in formal activities (B = 1.28, SE = 0.61, p = .038). These effects were not significant among individuals with a partner. In contrast, the effect of friendship-related future-self views of aging on friendship-related activities did not differ by partnership status and remained significant for partnered (B = 0.55, SE = 0.26, p = .035) and unpartnered individuals (B = 0.83, SE = 0.27, p = .025).

Cross-Lagged Effects Across Age Groups

To examine age-related differences in within-person associations between future-self views of aging and social activities, we estimated multiple-group random intercept cross-lagged panel models (RI-CLPM; Hamaker et al., 2015) across the three age groups, separately for the family and friendship domains (see Table 3). No age-group model was estimated for formal activities due to low overall engagement and substantial floor effects, which impaired model stability. To ensure robust interpretation, only domains with sufficient variability were included in age-stratified analyses. In the family domain, within-person increases in future-self views of aging were associated with subsequent increases in time spent on family activities among older adults (B = 1.73, SE = 0.75, p = .020). A similar pattern appeared in the friendship domain for middle-aged adults (B = 1.00, SE = 0.42, p = .012). After adjusting for covariates, age-specific effects persisted only in the family domain for older adults (see Supplementary Table S7). No significant cross-lagged effects from social activities to future self-views were observed across age groups.

Discussion

This longitudinal study, spanning three waves over a ten-year period, examined bidirectional within-person associations between domain-specific future-self views of aging and social activities in the domains of family, friendship, and formal engagement, across three age groups. While individuals with more positive future-self views of aging also reported higher engagement in corresponding social activities at the between-person level, our primary finding concerned within-person processes: more positive future-self views of aging predicted subsequent increases in domain-matched social activities, whereas higher levels of engagement in social activities did not predict later changes in future-self views of aging. These effects remained robust after adjusting for age, subjective health, neuroticism, extraversion and partnership status. We also observed age-specific patterns: family-related future-self views of aging predicted subsequent family engagement in older adulthood.

These findings are consistent with theoretical models such as stereotype embodiment theory (Levy, 2009), in which future-self views of aging can be conceptualized as internalized, motivationally relevant aging self-stereotypes (Kornadt et al., 2015; Voss et al., 2017). In line with the stereotype embodiment theory, individuals who expect to remain socially engaged in later life may adopt proactive goals and invest effort to maintain or expand their social networks (Hoppmann et al., 2007; Menkin et al., 2016). Our results support this assumption, showing that future-oriented expectations regarding one's social life are followed by corresponding behavioral engagement. This extends prior findings on subjective views of aging (e.g., attitudes toward one's own aging), which have been linked to later social participation in both informal and formal domains (Bu et al., 2024; De Paula Couto et al., 2022; Hoppmann et al., 2007; Menkin et al., 2016; Schwartz et al., 2021).

Surprisingly, we did not find evidence that changes in social activities predicted changes in future-self views of aging. This contrasts with previous studies showing that subjective views of aging—particularly attitudes toward one's own aging—can be shaped by current social engagement (Bu et al., 2024; Schwartz et al., 2021). One possible explanation lies in the conceptual distinction between present-oriented constructs like attitudes toward own aging and future-oriented constructs like future-self views of aging. While attitudes toward own aging reflect current self-perceptions grounded in lived experiences, future-self views of aging are anticipatory representations that may not be directly informed by present behavior unless explicitly linked to the aging self. Individuals often do not interpret their

current lives through the lens of aging, especially when they do not yet identify as “old.” For example, individuals may lead active social lives while still expecting social withdrawal in old age - *"when I am old, I will be lonely, but for now, I am not old and am socially active".* Such psychological distancing from old-age identity is common across adulthood (Rupprecht et al., 2025; Weiss & Lang, 2012; Wettstein et al., 2024) and may serve as a strategy to buffer against age-related stereotypes (Pinquart & Wahl, 2021). As a result, current social behavior might sometimes not be incorporated into future-self views of aging—constraining the conditions under which the projection hypothesis applies.

We also observed age-related differences in the predictive strength of future-self views of aging across relational domains. Only in the older-age group, family-related future-self views of aging reliably predicted subsequent increases in family activities, and this effect remained robust after adjusting for covariates. This pattern is consistent with the Stereotype Embodiment Theory, which proposes that age stereotypes gain self-relevance with increasing age and thereby become more behaviorally consequential (Levy, 2009). It also aligns with evidence that the motivational impact of future-self views of aging depends on whether a domain is developmentally central in a given life phase (Kornadt et al., 2015; Voss et al., 2017). In later life, emotionally meaningful and stable family relationships typically become more salient —as described by the socioemotional selectivity theory (Carstensen et al., 1999) - and network composition shifts toward kin-focused ties (Huxhold et al., 2022; Wrzus et al., 2013), which may help explain why family-related expectations remain behaviorally relevant in older adulthood. These findings indicate that the behavioral relevance of future-self views of aging is shaped by the developmental significance of a given domain.

In line with prior research, our sensitivity analyses showed that better self-rated health predicted more positive future-self views of aging and higher social engagement (Westerhof et al., 2023; Pinto & Neri, 2017). In addition, higher extraversion predicted more positive future-self views of aging across all domains and greater friendship-related engagement, whereas lower neuroticism predicted more positive views in the friendship domain. These patterns mirror prior evidence linking extraversion to more favorable aging perceptions and higher social participation, and neuroticism to less favorable perceptions and lower involvement (Kornadt, Siebert, et al., 2019; Miche et al., 2014; Rupprecht et al., 2019; Sander et al., 2021).Beyond these expected associations, we also found that future-self views

of aging regarding leisure and engagement predicted formal social activities but only among individuals without a partner. This finding aligns with research showing that adults in a partnership tend to engage in volunteering and club activities together—spousal involvement is a strong predictor of one's own participation (Rotolo & Wilson, 2006), while individuals without a partner often turn to formal social contexts to satisfy social and purpose-driven needs once intimate partnerships are absent (Cornwell & Waite, 2009). In these cases, future-self views of aging becomes especially actionable: individuals who envision themselves as socially active in later life may translate these self-views into volunteering or group involvement to compensate for the lack of daily relational scaffolding. Thus, future-self views of aging may serve as an important motivational factor enabling volitional engagement in formal activities when close partnerships are unavailable. A similar pattern emerged for family-related activities: Future-self views of aging in the family domain predicted engagement only among individuals without a partner. Among partnered adults, family involvement is often shaped by shared routines and obligations, leaving less room for future-self views of aging to influence behavior. In contrast, unpartnered individuals must initiate and maintain family ties more autonomously. Positive future-self views of aging may motivate active outreach to relatives, while negative expectations could discourage engagement due to fears of burdening others or lacking support in later life. Thus, when no partner is present, future-self views of aging may guide intergenerational contact and promote familial closeness over time.

Limitations

Although our covariate-adjusted analyses revealed a significant association between future-self views of aging and formal engagement among individuals without a partner, we did not observe consistent bidirectional effects for this domain in the total sample or across age groups. One explanation may be limited statistical power due to low variability in formal activity engagement. While Bu et al. (2024) reported small reciprocal effects between social engagement and attitudes toward one's own aging, their findings were based on between-person differences. In contrast, our within-person approach is more stringent and requires substantial intraindividual change. However, many participants reported little or no formal activity (e.g., club activities, volunteering), with minimal change across waves. This restricted variability may have reduced our ability to detect within-person effects (Hamaker et al., 2015). Another reason may lie in the nature of formal social activities, which depend

on contextual constraints—such as availability, accessibility, or infrastructure—that were not assessed (Townsend et al., 2021). While individuals may hold positive expectations about late-life engagement—especially with more discretionary time after retirement—these intentions may not be realized if structural opportunities are lacking. Thus, motivational readiness may not translate into behavior when external conditions are unfavorable.

A further limitation concerns the study's temporal scope. Effects were examined across five-year intervals, which is good in order to capture lasting changes in outcomes, but may not be sensitive for capturing more short-term dynamic processes. This is relevant given that our future-self views of aging items explicitly refer to old age (e.g., "When I am old…"), and many individuals do not consider themselves old until well into their seventies (Lang et al., 2024; Rupprecht et al., 2025; Wettstein et al., 2024). Hence, changes in social behavior may not yet inform aging-related expectations in younger adults—especially over relatively short time spans. Furthermore, because the sample was drawn from Germany, the extent to which the findings generalize to other cultural and societal contexts remains unclear.

Our indicators of social activity rely on participants' self-reported weekly hours rather than objective behavioral records and may be affected by recall or social-desirability biases. Even so, these subjective estimates provide a valuable and informative approximation of individuals' social participation (Chan, 2010; Newsome et al., 2019). Our findings offer an incremental extension of the existing evidence and can be meaningfully situated within this research field, as they align with previous studies that likewise rely on self-reported social activity (e.g., Bu et al., 2024; Schwartz et al., 2020). Future research using more objective or intensive approaches (e.g., ecological momentary assessment) would be a valuable next step to complement these findings. Furthermore, the present study focused on social activities with family, friends, and in formal contexts. Another salient domain is the workplace; examining how subjective views of aging relate to social interactions at work represents a promising research avenue.

Conclusion

This study extends prior research by examining domain-specific, within-person associations between future self-views of aging and social engagement across three age groups over a ten-year period. Using domain-matched longitudinal assessments and random-intercept cross-lagged panel models, we were able to differentiate stable between-person differences from dynamic intraindividual processes. The findings indicate that future self-views of

aging—particularly in the domains of family and friendships— are prospectively linked to greater social engagement, above and beyond subjective health, partnership status, neuroticism, and extraversion. Overall, these results suggest that future-self views of aging function as motivational self-concepts that shape developmental regulation over time. Supporting more positive views of one's own aging may therefore represent a promising avenue for promoting sustained social engagement and help lay the foundation for a fulfilling social life in older adulthood.

References

Allport, G. W., Clark, K., & Pettigrew, T. (1954). *The nature of prejudice*. https://api.taylorfrancis.com/v4/content/books/mono/download?identifierName=isbn&identifierValue=9781912282401&type=previewpdf

Back, M. D., Branje, S., Eastwick, P. W., Human, L. J., Penke, L., Sadikaj, G., Slatcher, R. B., Thielmann, I., Van Zalk, M. H. W., & Wrzus, C. (2023). Personality and Social Relationships: What Do We Know and Where Do We Go. *Personality Science*, *4*(1), e7505. https://doi.org/10.5964/ps.7505

Barrett, A. E. (2003). Socioeconomic Status and Age Identity: The Role of Dimensions of Health in the Subjective Construction of Age. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *58*(2), S101–S109. https://doi.org/10.1093/geronb/58.2.S101

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497–529. https://doi.org/10.1037/0033-2909.117.3.497

Bleidorn, W., Schwaba, T., Zheng, A., Hopwood, C. J., Sosa, S. S., Roberts, B. W., & Briley, D. A. (2022). Personality stability and change: A meta-analysis of longitudinal studies. *Psychological Bulletin*. https://doi.org/10.1037/bul0000365

Bourassa, K. J., Memel, M., Woolverton, C., & Sbarra, D. A. (2017). Social participation predicts cognitive functioning in aging adults over time: Comparisons with physical health, depression, and physical activity. *Aging & Mental Health*, *21*(2), 133–146. https://doi.org/10.1080/13607863.2015.1081152

Bu, F., Mak, H. W., Bone, J. K., Gao, Q., Sonke, J. K., & Fancourt, D. (2024). Leisure Engagement and Self-Perceptions of Aging: Longitudinal Analysis of Concurrent and Lagged Relationships. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, *79*(3), gbad182. https://doi.org/10.1093/geronb/gbad182

Chan, D. (2010). So Why Ask Me? Are Self-Report Data Really That Bad? In *Statistical and Methodological Myths and Urban Legends*. Routledge. https://doi.org/10.4324/9780203867266

Cohn-Schwartz, E., De Paula Couto, M. C., Fung, H. H., Graf, S., Hess, T. M., Liou, S., Nikitin, J., & Rothermund, K. (2023). Contact With Older Adults Is Related to Positive Age Stereotypes and Self-Views of Aging: The Older You Are the More You Profit. *The Journals of Gerontology: Series B*, *78*(8), 1330–1340. https://doi.org/10.1093/geronb/gbad038

Cohn-Schwartz, E., Schafer, M. H., & Ayalon, L. (2022). Age integration in later life social networks and self-perceptions of aging: Examining their reciprocal associations. *European Journal of Ageing*, *19*(4), 1145–1153. https://doi.org/10.1007/s10433-022-00688-0

Cornwell, E. Y., & Waite, L. J. (2009). Social Disconnectedness, Perceived Isolation, and Health among Older Adults. *Journal of Health and Social Behavior*, *50*(1), 31–48. https://doi.org/10.1177/002214650905000103

De Paula Couto, M. C. P., Ekerdt, D. J., Fung, H. H., Hess, T. M., & Rothermund, K. (2022). What will you do with all that time? Changes in leisure activities after retirement are determined by age-related self-views and preparation. *Acta Psychologica*, *231*, 103795. https://doi.org/10.1016/j.actpsy.2022.103795

Diehl, M., Brothers, A. F., & Wahl, H.-W. (2021). Self-perceptions and awareness of aging: Past, present, and future. In *Handbook of the Psychology of Aging* (pp. 155–179). Elsevier. https://doi.org/10.1016/B978-0-12-816094-7.00001-5

Diehl, M., Wahl, H.-W., Barrett, A. E., Brothers, A. F., Miche, M., Montepare, J. M., Westerhof, G. J., & Wurm, S. (2014). Awareness of aging: Theoretical considerations on an emerging concept. *Developmental Review*, *34*(2), 93–113. https://doi.org/10.1016/j.dr.2014.01.001

Diehl, M., Wahl, H.-W., Brothers, A., & Miche, M. (2015). Subjective Aging and Awareness of Aging: Toward a New Understanding of the Aging Self. *Annual Review of Gerontology and Geriatrics*, *35*(1), 1–28. https://doi.org/10.1891/0198-8794.35.1

Douglas, H., Georgiou, A., & Westbrook, J. (2017). Social participation as an indicator of successful aging: An overview of concepts and their associations with health. *Australian Health Review*, *41*(4), 455. https://doi.org/10.1071/AH16038

Hamaker, E. L., Kuiper, R. M., & Grasman, R. P. P. P. (2015). A critique of the cross-lagged panel model. *Psychological Methods*, *20*(1), 102–116. https://doi.org/10.1037/a0038889

Hoppmann, C. A., Gerstorf, D., Smith, J., & Klumb, P. L. (2007). Linking Possible Selves and Behavior: Do Domain-Specific Hopes and Fears Translate Into Daily Activities in Very Old Age? *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *62*(2), P104–P111. https://doi.org/10.1093/geronb/62.2.P104

Hu, R. X., & Li, L. W. (2022). Social Disconnectedness and Loneliness: Do Self-Perceptions of Aging Play a Role? *The Journals of Gerontology: Series B*, *77*(5), 936–945. https://doi.org/10.1093/geronb/gbac008

Huxhold, O., Fiori, K. L., & Windsor, T. (2022). Rethinking Social Relationships in Adulthood: The Differential Investment of Resources Model. *Personality and Social Psychology Review*, *26*(1), 57–82. https://doi.org/10.1177/10888683211067035

Kalmijn, M. (2012). Longitudinal analyses of the effects of age, marriage, and parenthood on social contacts and support. *Advances in Life Course Research*, *17*(4), 177–190. https://doi.org/10.1016/j.alcr.2012.08.002

Kornadt, A. E., & Rothermund, K. (2011). Contexts of Aging: Assessing Evaluative Age Stereotypes in Different Life Domains. *The Journals of Gerontology: Series B*, *66B*(5), 547–556. https://doi.org/10.1093/geronb/gbr036

Kornadt, A. E., & Rothermund, K. (2012). Internalization of age stereotypes into the self-concept via future self-views: A general model and domain-specific differences. *Psychology and Aging*, *27*(1), 164.

Kornadt, A. E., Siebert, J. S., & Wahl, H.-W. (2019). The interplay of personality and attitudes toward own aging across two decades of later life. *PLoS One*, *14*(10), e0223622.

Kornadt, A. E., Voss, P., Fung, H. H., Hess, T. M., & Rothermund, K. (2019). Preparation for Old Age: The Role of Cultural Context and Future Perceptions. *The Journals of Gerontology: Series B*, *74*(4), 609–619. https://doi.org/10.1093/geronb/gby075

Kornadt, A. E., Voss, P., & Rothermund, K. (2015). Age Stereotypes and Self-Views Revisited: Patterns of Internalization and Projection Processes Across the Life Span. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, gbv099. https://doi.org/10.1093/geronb/gbv099

Lang, F. R., John, D., Lüdtke, O., Schupp, J., & Wagner, G. G. (2011). Short assessment of the Big Five: Robust across survey methods except telephone interviewing. *Behavior Research Methods*, *43*(2), 548–567. https://doi.org/10.3758/s13428-011-0066-z

Lang, F. R., Lessenich, S., & Rothermund, K. (2022). *Altern als Zukunft – eine Studie der VolkswagenStiftung*. Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-662-63405-9

Lawton, M. P. (1975). The Philadelphia Geriatric Center Morale Scale: A Revision. *Journal of Gerontology*, *30*(1), 85–89. https://doi.org/10.1093/geronj/30.1.85

Levy, B. (2009). Stereotype Embodiment: A Psychosocial Approach to Aging. *Current Directions in Psychological Science*, *18*(6), 332–336. https://doi.org/10.1111/j.1467-8721.2009.01662.x

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, *41*(9), 954–969. https://doi.org/10.1037/0003-066X.41.9.954

Menkin, J. A., Robles, T. F., Gruenewald, T. L., Tanner, E. K., & Seeman, T. E. (2016). Positive Expectations Regarding Aging Linked to More New Friends in Later Life. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, gbv118. https://doi.org/10.1093/geronb/gbv118

Meyer-Wyk, F., & Wurm, S. (2024). The role of social network diversity in self-perceptions of aging in later life. *European Journal of Ageing*, *21*(1), 20. https://doi.org/10.1007/s10433-024-00815-z

Miche, M., Elsässer, V. C., Schilling, O. K., & Wahl, H.-W. (2014). Attitude toward own aging in midlife and early old age over a 12-year period: Examination of measurement equivalence and developmental trajectories. *Psychology and Aging*, *29*(3), 588.

Monteiro, J. M., Gonçalves, R., Bastos, A., & Barbosa, M. R. (2024). Social engagement and wellbeing in late life: A systematic review. *Ageing and Society*, 1–28. https://doi.org/10.1017/S0144686X24000011

Mulder, J. D., & Hamaker, E. L. (2021). Three extensions of the random intercept cross-lagged panel model. *Structural Equation Modeling*, *28*(4), 638–648. https://doi.org/10.1080/10705511.2020.1784738

Newsome, D., Newsome, K., Fuller, T. C., & Meyer, S. (2019). How contextual behavioral scientists measure and report about behavior: A review of JCBS. *Journal of Contextual Behavioral Science*, *12*, 347–354. https://doi.org/10.1016/j.jcbs.2018.11.005

Pinquart, M., & Wahl, H.-W. (2021). Subjective age from childhood to advanced old age: A meta-analysis. *Psychology and Aging*, *36*(3), 394–406. https://doi.org/10.1037/pag0000600

Pinto, J. M., & Neri, A. L. (2017). Trajectories of social participation in old age: A systematic literature review. *Revista Brasileira de Geriatria e Gerontologia*, *20*(2), 259–272. https://doi.org/10.1590/1981-22562017020.160077

Ristl, C., Korlat, S., Rupprecht, F. S., Burgstaller, A., & Nikitin, J. (2025). Self-perceptions of aging and social goals. *Psychology and Aging*, *40*(4), 413–420. https://doi.org/10.1037/pag0000881

Rothermund, K., & Brandtstädter, J. (2003). Age stereotypes and self-views in later life: Evaluating rival assumptions. *International Journal of Behavioral Development*, *27*(6), 549–554. https://doi.org/10.1080/01650250344000208

Rotolo, T., & Wilson, J. (2006). Substitute or Complement? Spousal Influence on Volunteering. *Journal of Marriage and Family*, *68*(2), 305–319. https://doi.org/10.1111/j.1741-3737.2006.00254.x

Rowe, J. W., & Kahn, R. L. (2015). Successful Aging 2.0: Conceptual Expansions for the 21st Century. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *70*(4), 593–596. https://doi.org/10.1093/geronb/gbv025

Rupprecht, F. S., De Paula Couto, M. C. P., Rothermund, K., & Nikitin, J. (2025). Maintaining a young self-concept: Feeling young or shifting age thresholds? *European Journal of Ageing*, *22*(1), 15. https://doi.org/10.1007/s10433-025-00851-3

Rupprecht, F. S., Dutt, A. J., Wahl, H.-W., & Diehl, M. K. (2019). The Role of Personality in Becoming Aware of Age-Related Changes. *GeroPsych*, *32*(2), 57–67. https://doi.org/10.1024/1662-9647/a000204

Sabatini, S., Rupprecht, F., Kaspar, R., Klusmann, V., Kornadt, A., Nikitin, J., Schönstein, A., Stephan, Y., Wettstein, M., Wurm, S., Diehl, M., & Wahl, H.-W. (2024). Successful Aging and Subjective Aging: Toward a Framework to Research a Neglected Connection. *The Gerontologist*, *65*(1), gnae051. https://doi.org/10.1093/geront/gnae051

Sander, J., Schumann, P., Richter, D., & Specht, J. (2021). Leisure Activities as a Driver of Personality Development? A Random-Intercept Cross-lagged Panel Model Across 13 Years in Adulthood. *Collabra: Psychology*, *7*(1), 23473. https://doi.org/10.1525/collabra.23473

Schwartz, E., Ayalon, L., & Huxhold, O. (2021). Exploring the Reciprocal Associations of Perceptions of Aging and Social Involvement. *The Journals of Gerontology: Series B*, *76*(3), 563–573. https://doi.org/10.1093/geronb/gbaa008

Shor, E., & Roelfs, D. J. (2015). Social contact frequency and all-cause mortality: A meta-analysis and meta-regression. *Social Science & Medicine*, *128*, 76–86. https://doi.org/10.1016/j.socscimed.2015.01.010

Shrira, A., Palgi, Y., & Diehl, M. (2022). Advancing the Field of Subjective Views of Aging: An Overview of Recent Achievements. In Y. Palgi, A. Shrira, & M. Diehl (Eds.), *Subjective Views of Aging* (Vol. 33, pp. 11–37). Springer International Publishing. https://doi.org/10.1007/978-3-031-11073-3_2

Smith, L., Banting, L., Eime, R., O'Sullivan, G., & Van Uffelen, J. G. Z. (2017). The association between social support and physical activity in older adults: A systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, *14*(1), 56. https://doi.org/10.1186/s12966-017-0509-8

Townsend, B. G., Chen, J. T.-H., & Wuthrich, V. M. (2021). Barriers and Facilitators to Social Participation in Older Adults: A Systematic Literature Review. *Clinical Gerontologist*, *44*(4), 359–380. https://doi.org/10.1080/07317115.2020.1863890

Tully-Wilson, C., Bojack, R., Millear, P. M., Stallman, H. M., Allen, A., & Mason, J. (2021). Self-perceptions of aging: A systematic review of longitudinal studies. *Psychology and Aging*, *36*(7), 773–789. https://doi.org/10.1037/pag0000638

Voss, P., Kornadt, A. E., & Rothermund, K. (2017). Getting what you expect? Future self-views predict the valence of life events. *Developmental Psychology*, *53*(3), 567–580. https://doi.org/10.1037/dev0000285

Weiss, D., & Lang, F. R. (2012). "They" are old but "I" feel younger: Age-group dissociation as a self-protective strategy in old age. *Psychology and Aging*, *27*(1), 153.

Westerhof, G. J., Nehrkorn-Bailey, A. M., Tseng, H.-Y., Brothers, A., Siebert, J. S., Wurm, S., Wahl, H.-W., & Diehl, M. (2023). Longitudinal effects of subjective aging on health and longevity: An updated meta-analysis. *Psychology and Aging*, *38*(3), 147–166. https://doi.org/10.1037/pag0000737

Wettstein, M., Park, R., Kornadt, A. E., Wurm, S., Ram, N., & Gerstorf, D. (2024). Postponing old age: Evidence for historical change toward a later perceived onset of old age. *Psychology and Aging*, *39*(5), 526–541. https://doi.org/10.1037/pag0000812

Wrzus, C., Hänel, M., Wagner, J., & Neyer, F. J. (2013). Social network changes and life events across the life span: A meta-analysis. *Psychological Bulletin*, *139*(1), 53–80. https://doi.org/10.1037/a0028601

Wurm, S., Diehl, M., Kornadt, A. E., Westerhof, G. J., & Wahl, H.-W. (2017). How do views on aging affect health outcomes in adulthood and late life? Explanations for an established connection. *Developmental Review*, *46*, 27–43. https://doi.org/10.1016/j.dr.2017.08.002

Chapter 6 - Subjective Views of Aging and the Experience of Social Interactions in Daily Life

---

The subsequent article was submitted in January 2026 to the Journals of Gerontology, *Series B.*

The supplementary material is included in the appendix.

Day-to-Day Associations Between Social Interaction Valence and Awareness of Age-Related Change

Christina Ristl, MSc.[1], Lukas Kraiger, MSc.[1], Selma Korlat, PhD[1], Sarah E. Martiny, PhD[2] and Jana Nikitin, PhD[1]

[1] Department of Developmental and Educational Psychology, University of Vienna, Austria

[2] Department of Psychology, UiTThe Arctic University of Norway, Tromsø, Norway

Author Note

Christina Ristl https://orcid.org/0000-0001-9277-7009

Lukas Kraiger https://orcid.org/0009-0006-6792-0444

Selma Korlat https://orcid.org/0000-0001-5719-5222

Sarah E. Martiny https://orcid.org/0000-0002-6791-2122

Jana Nikitin https://orcid.org/0000-0003-1642-154X

Correspondence concerning this article should be addressed to Christina Ristl, Department of Educational and Developmental Psychology, University of Vienna, Liebiggasse 5, 1010 Vienna, Austria. Email: christina.ristl@univie.ac.at

Conflict of Interest: We have no conflict of interest to disclose.

Data Availability: Data and analysis scripts are available from the authors upon request. The research questions and analytic approach were preregistered.

Abstract

Objectives: Awareness of age-related change (AARC) reflects how individuals perceive aging through daily gains and losses. Social interactions constitute a central context of everyday life in which such perceptions may be shaped, yet little is known about their short-term interplay in daily life. The present study examined same-day and next-day associations between AARC-gains and losses and the perceived positivity and negativity of daily social interactions in middle-aged and older adults.

Methods: Using a 14-day daily diary design, we assessed 109 adults aged 50–85 years (M = 63.16, SD = 9.17), yielding 1,502 daily observations. Dynamic structural equation modeling (DSEM) was used to disentangle within-person dynamics from stable between-person differences.

Results: At the within-person level, days characterized by higher-than-usual AARC-gains were associated with more positive social interactions, whereas days marked by higher-than-usual AARC-losses were associated with less positive and more negative social interactions. Regarding temporal associations, higher-than-usual AARC-losses predicted increased negativity of social interactions on the following day, whereas daily social interaction valence did not predict next-day changes in AARC-gains or losses.

Conclusion: Overall, the findings indicate that daily awareness of age-related change is closely embedded in everyday social experience and highlight age-related losses as particularly consequential for the short-term perception of negative social interactions.

Keywords: self-perception of aging, subjective aging, social participation, engagement, attitudes toward aging

Introduction

Everyday experience is not a direct reflection of objective reality but is shaped by psychological filters such as expectations, beliefs, memories, and emotions (Almadi, 2022; Merton, 1948). This is particularly evident in social interactions. Daily social encounters are often ambiguous in valence and open to interpretation: an offer of help may be experienced as caring and supportive by one person, but as intrusive or patronizing by another. How such interactions are interpreted matters, as the perceived quality of everyday social encounters is linked to short-term fluctuations in cognitive and physical functioning, health, and wellbeing (e.g. Birditt, 2014; Jang et al., 2024; Zhou et al., 2024). Negative social interactions—such as experiences of rejection, burden, or interpersonal tension— are among the most frequent and impactful daily stressors (Almeida, 2005). They are associated with impairments in objective and subjective cognitive functioning (Jang et al., 2024; Zhaoyang et al., 2021), elevated negative affect (Birditt, 2014; Luong & Charles, 2014), greater loneliness, and, over time, increases in depressive symptoms (Rook, 2001; Zhou et al., 2024). Positive daily social interactions, by contrast, contribute to momentary happiness, foster social connectedness (Zhou et al., 2024), and buffer against stress and health-related adversity (Birditt et al., 2018).

The experience and evaluation of social interactions change with age. According to the Strength and Vulnerability Integration model (SAVI; Charles, 2010), older adults develop socioemotional strengths that allow them to prioritize emotionally meaningful interactions and regulate exposure to negative social experiences. Consistent with this view, older adults tend to evaluate their daily social interactions as more positive and less negative than younger adults (Birditt & Fingerman, 2005; Carstensen, 2021; Luong & Charles, 2014; Nikitin et al., 2024). They are also less likely to engage in direct, confrontational responses to interpersonal conflict, such as arguing or yelling, and instead more often rely on avoidance-based strategies, including ignoring or doing nothing (Birditt et al., 2005; Birditt & Fingerman, 2005). Importantly, SAVI also emphasizes that these socioemotional advantages are conditional. When avoidance strategies are unavailable, older adults may show heightened emotional and physiological reactivity to negative social encounters (Birditt, 2014). This coexistence of age-related strengths and vulnerabilities renders older adults particularly sensitive to the emotional quality of their social lives (Rook & Charles, 2017). At the same time, substantial interindividual variability persists in how social interactions are experienced and evaluated in later life that age alone cannot explain (Buijs

et al., 2023; Carstensen, 2021; Charles, 2010). Identifying psychological factors that help explain this variability is therefore critical for understanding age-related differences in everyday social experience.

The present study examines whether awareness of age-related gains and losses (AARC; Diehl & Wahl, 2010)—an interpretive filter rooted in age-related beliefs— is associated with the perceived valence of everyday social interactions. Lifespan developmental perspectives further emphasize that development unfolds through continuous person–environment transactions (Bronfenbrenner, 1977; Bronfenbrenner & Morris, 1998): Individuals' interpretive frameworks shape how social experiences are perceived, while repeated social experiences may, in turn, recalibrate these frameworks over time. Therefore, we examine the bidirectional associations between the valence of daily social interactions and AARC-gains and losses.

Awareness of Age-related Gains and Losses as an Interpretive Filter

Awareness of age-related change (AARC) refers to "*all those experiences that make a person aware that his or her behavior, level of performance, or ways of experiencing life have changed as a consequence of having grown older*" (Diehl & Wahl, 2010, p. 340). Conceptually, AARC is embedded within the broader framework of subjective views of aging, which capture how individuals think about, interpret, and anticipate their own aging (Diehl et al., 2021; Wurm et al., 2017). Within this framework, AARC represents a proximal, experience-based manifestation of subjective views of aging, reflecting how age-related beliefs (e.g., age-stereotypes) and age-related expectations are instantiated in concrete everyday experiences across multiple life domains (Diehl et al., 2021; Diehl & Wahl, 2010). Importantly, AARC reflects an evaluative and attributional process rather than objective age-related change per se. Individuals become aware of changes in their everyday functioning and explicitly attribute these changes to getting older, appraising them as age-related gains or losses irrespective of their factual accuracy (Diehl et al., 2021). Age-related gains and losses constitute distinct and partially independent dimensions, allowing individuals to experience growth and decline concurrently across different domains of life. Conceptually, AARC reflects an intermediate level between broad, relatively stable subjective views of aging and momentary affective states. In this way, AARC constitutes a subjective lens through which age-related experiences are noticed, interpreted, and given meaning in everyday life.

Empirical research on AARC has predominantly examined associations with health-related, cognitive, and motivational outcomes (e.g. Diehl et al., 2021; Neupert & Bellingtier, 2017; Wilton-Harding et al., 2022). Evidence linking AARC to social functioning is limited and has so far concentrated on global, interindividual differences in perceived social and psychosocial resources, most notably perceived social support and psychosocial well-being (Kaspar et al., 2023; O'Brien & Sharifian, 2020). These studies consistently show that higher age-related gains and lower age-related losses are associated with more favorable evaluations of social resources, whereas higher age-related losses are associated with less favorable evaluations at the between-person level. Building on this work, the present study extends the focus from stable interindividual differences to the within-person experience of everyday social contacts.

In everyday social interactions, awareness of age-related gains and losses may shape how ambiguous social cues are interpreted. When age-related losses are salient, expectations of declining competence or reduced social value may heighten sensitivity to rejection or devaluation, leading individuals to interpret ambiguous behaviors—such as unsolicited help—as patronizing. In contrast, when age-related gains are salient, expectations of emotional competence or valued contribution may render the same cues more likely to be experienced as caring or affirming. Evidence from social anxiety research illustrates this mechanism: individuals with heightened concerns about negative evaluation interpret ambiguous social feedback more negatively than others (Amir et al., 2005).

Beyond cognitive expectations, AARC may influence the perceived valence of social interactions through affective responding. Daily diary studies show that higher perceived age-related losses are associated with elevated negative affect and stronger emotional reactivity to daily stressors, whereas age-related gains are linked to more positive affective states and greater vitality (Neupert & Bellingtier, 2017; Wilton-Harding et al., 2022). Affective states play a central role in how social interactions are perceived and evaluated: negative affect increases the likelihood that ambiguous social cues are interpreted as unpleasant or threatening, whereas positive affect and social connectedness facilitate more favorable interpretations (Neta & Brock, 2021). Applied to everyday social encounters, this suggests that AARC-losses may amplify perceived negativity, whereas AARC-gains may enhance perceived positivity.

Finally, awareness of age-related gains and losses may shape social experience by influencing approach and avoidance tendencies. Research indicates that AARC-gains are

associated with stronger social approach goals, whereas AARC-losses are linked to social avoidance goals (Ristl et al., 2025). These motivational orientations, in turn, affect which social situations individuals seek out or avoid, thereby structuring exposure to social experiences (Nikitin et al., 2019; Nikitin & Schoch, 2021). Consistent with this process, longitudinal evidence shows that more positive expectations toward aging predict the subsequent occurrence of more positive life events, which then reinforce these self-views (Voss et al., 2017).

The strength of the association between AARC and social activity may also depend on age. AARC may become more consolidated and predictive over time, as aging becomes a salient aspect of identity (Diehl et al., 2021). A study by Kaspar et al. (2023) investigated age-related gains and losses in young, middle and older adults and found, that AARC-losses were higher in old age, whereas AARC-gains did not differ across adulthood. Taken together, awareness of age-related gains and losses may shape the experienced valence of daily social interactions by organizing aging-related expectations, modulating affective responding, and influencing approach–avoidance tendencies in everyday life and the strengths may depend on age.

How Daily Social Interactions Shape Awareness of Age-Related Gains and Losses

At the same time, AARC is not only a lens through which everyday experiences are interpreted but also a construct that is continuously shaped by those experiences. Repeated exposure to positive versus negative social interactions may provide feedback about competence, social value, and role fulfillment, thereby reinforcing or recalibrating awareness of age-related gains and losses over time (Diehl & Wahl, 2010; Diehl et al., 2021).

Social interactions are particularly well suited to shape AARC because they are frequent, emotionally salient, and directly linked to domains central to subjective aging. Through everyday social feedback—such as being treated with respect, dependence, or disregard—individuals may update their AARC by interpreting these experiences as evidence of gain or loss. Although no studies have directly examined daily social interaction valence as a predictor of short-term fluctuations in AARC, converging evidence from longitudinal and observational research supports the plausibility of this pathway (Hu & Li, 2022; Huo et al., 2021; Schwartz et al., 2020). Greater social engagement and meaningful role involvement predict more positive subjective views of aging, whereas social isolation and loneliness are associated with more negative subjective views of aging (Hu & Li, 2022; Huo et al., 2021; Schwartz et al., 2020). Changes in social network characteristics, such as increased diversity

or contact frequency, have similarly been linked to subsequent improvements in subjective views of aging (Cohn-Schwartz et al., 2022; Meyer-Wyk & Wurm, 2024). Several of these studies also report reciprocal associations, suggesting that social experience and subjective aging may mutually shape each other over time (e.g. Bu et al., 2024; Schwartz et al., 2020). Together, these findings point to daily social interactions as a meaningful context in which awareness of age-related gains and losses may be continuously updated.

The Present Study

The present study examined the daily interplay between the perceived valence of social interactions and awareness of age-related change (gains and losses) in middle-aged and older adults. This focus follows from the conceptualization of AARC as an experience-based component of subjective aging that reflects how individuals interpret age-related change in their everyday lives (Diehl et al., 2021; Diehl & Wahl, 2010). As outlined before, social interactions provide a frequent and emotionally meaningful context for such interpretations, as they offer ongoing feedback about social functioning, competence, and belonging. Prior research has linked AARC to social resources primarily at a stable between-person level, capturing individual differences in overall social integration and support (e.g. Kaspar et al., 2023; O'Brien & Sharifian, 2020). The present study builds on this work by examining how age-related gains and losses align with the experienced positivity and negativity of social interactions as they occur from day to day.

Using a 14-day daily diary design, the present study focuses on the emotional quality of daily social interactions and on short-term fluctuations in AARC as they unfold in individuals' natural environments. By adopting a within-person perspective and examining associations across consecutive days, the study provides insight into how subjective aging and social experience are dynamically linked in everyday life. Guided by theory and empirical studies demonstrating meaningful day-to-day variability in AARC (e.g. Wilton-Harding et al., 2022; Windsor et al., 2024), we formulated three preregistered hypotheses.

H1 (Concurrent Associations). We hypothesized that AARC and social interaction valence would be concurrently associated at both the within-person and between-person levels. At the within-person level, days characterized by higher-than-usual age-related gains were expected to be associated with more-than-usual positive social interactions, whereas days characterized by higher-than-usual age-related losses were expected to be associated with more-than-usual negative social interactions within the same day.

H2 (Reciprocal Prospective Associations). At the within-person level, we hypothesized reciprocal lagged associations across consecutive days. Days characterized by higher-than-usual age-related gains (/losses) on one day (t−1) were expected to be associated with more-than-usual positive (/negative) social interactions on the following day (t). Conversely, days characterized by more-than-usual positive (/negative) social interactions on one day (t−1) were expected to be associated with higher-than-usual age-related gains (/losses) on the following day (t).

H3 (Age Moderation). We hypothesized that chronological age would moderate the within-person daily associations between awareness of age-related change and social interaction valence. Specifically, we expected the concurrent and lagged associations between age-related losses and negative social interactions to be stronger at higher ages, whereas associations involving age-related gains and positive social interactions were expected to be weaker or more stable across age.

Method

The study is embedded in a multinational research consortium on daily experiences of aging across cultural contexts. Analyses were based on the Austrian subsample, as only this sample assessed social interaction valence. The research questions were preregistered on the Open Science Framework (https://osf.io/a8egh/). Although the preregistration specified the use of a Random Intercept Cross-Lagged Panel Model (RI-CLPM), we employed Dynamic Structural Equation Modeling (DSEM) with a Bayesian estimator to better accommodate the intensive longitudinal data structure and to ensure robust parameter estimation given the final sample size (Asparouhov et al., 2018). Study materials, data, and analysis scripts are available from the authors upon request.

Participants

The final sample consisted of 109 adults from Austria, aged 50–85 years (M = 62.98, SD = 9.30; 56% female) who completed at least 7 daily questionnaires. Most participants were married or in a romantic relationship (69.7%), followed by separated or divorced (17.4%), single (8.3%), and widowed participants (4.6%). Furthermore, 56.1% had completed higher education and 28.4% vocational training or a high school diploma; 59.0% were currently employed. Participants were recruited between April 9 and June 10, 2025 via personal contacts and social media as part of a university research seminar. After providing written informed consent and completing a baseline questionnaire, participants completed evening

daily questionnaires on up to 14 consecutive days assessing AARC and the perceived positivity and negativity of daily social interactions. Compliance with the diary protocol among included participants was high (91.8%, range 50–100%), yielding 1,502 daily diary entries. Participants received financial compensation based on participation level (€35 for full participation, €25 for ≥10 days, €15 for ≥7 days). Ethical approval was obtained from the internal review board of the Department of Educational and Developmental Psychology at the University of Vienna (approval number: 9_25).

Measures

Daily Positive and Negative Social Interactions

Daily positive and negative social interactions were assessed using two self-developed single-item measures. Each evening, participants rated the overall emotional quality of their social interactions during the day in response to the question, *"How did you experience your social interactions today?"* Positivity was rated on a 5-point scale from 1 (not at all positive) to 5 (very positive), and negativity on a separate 5-point scale from 1 (not at all negative) to 5 (very negative). Although participants could indicate having had no social interaction on a given day, this option was never selected. Descriptive statistics and variance components are reported in Table 1. The original German items are provided in Supplementary Table S3.

Daily Awareness of Age-related Gains and Losses

Daily awareness of age-related gains and losses was assessed with a 20-item short form of the Awareness of Age-Related Change Scale (AARC-SF Diehl & Wahl, 2010; Neupert & Bellingtier, 2017). Items were framed to capture participants' experiences during the past 24 hours and began with the stem *"With my awareness of aging in the past 24 hours, I realized that ..."*. Responses were provided on a 5-point Likert scale ranging from 1 (not at all) to 5 (very much). The self-report questionnaire included 10 items assessing age-related gains and 10 items assessing age-related losses, covering changes in cognitive and physical functioning, social and emotional functioning, and lifestyle-related aspects. Example items were *"...I appreciate relationships and people much more"* (gains) and *"...I am slower in my thinking"* (losses). The original German items are provided in Supplementary Table S3. Daily AARC-gains and AARC-losses scores were calculated by averaging responses across the respective item sets, with higher values indicating greater perceived gains or losses on that day. Descriptive statistics and variance components are reported in Table 1. Reliability was evaluated using McDonald's omega. Reliability estimates indicated acceptable to good

internal consistency for daily gains (ω_within = 0.65; ω_between = 0.92) and daily losses (ω_within = 0.65; ω_between = 0.92).

Table 1

Descriptive statistics and variance components of study variables.

Variable	M / %	SD	Min	Max	SD_between	SD_within	ICC
Positive social interaction	4.27	0.84	1	5	0.52	0.65	0.32
Negative social interaction	1.65	0.96	1	5	0.62	0.71	0.34
Awareness of age-related gains	3.19	0.80	1	5	0.73	0.30	0.83
Awareness of age-related losses	1.86	0.67	1	4.6	0.62	0.24	0.83
Age	62.98	9.3	50	85	-	-	-
Subjective health	3.65	0.84	2	5	-	-	-
Education (%)							
Primary education (%)	12.2	-	-	-	-	-	-
Lower secondary education (%)	10.2	-	-	-	-	-	-
Upper secondary education (%)	21.4	-	-	-	-	-	-
Tertiary education (%)	56.1	-	-	-	-	-	-
Partnership status (with partner, %)	69.7	-	-	-	-	-	-
Gender (female, %)	56.0						

Note. M = mean; % = percentage; SD = standard deviation; Min = minimum; Max = maximum. ICC denotes the intraclass correlation coefficient. Descriptive statistics for daily variables are pooled across all diary days. SD_between reflects between-person variability; SD_within reflects within-person day-to-day variability. Partnership status was coded 0 = not partnered, 1 = partnered.

Covariates

Chronological age, subjective health (single item; 1 = very poor to 5 = excellent), educational attainment (ordinal, five levels), and partnership status (dichotomous: partnered vs. not partnered) were assessed via self-report at baseline and included as covariates in all analyses, as these variables are consistently associated with subjective views of aging and social outcomes in adulthood and later life (Tully-Wilson et al., 2021). Descriptive statistics are provided in Table 1.

Analysis

To examine the bidirectional and dynamic associations between daily AARC-gains and losses and social interaction valence (positive and negative), we employed Dynamic Structural Equation Modeling (DSEM). DSEM integrates multilevel modeling with time-series analysis (VAR(1) models), allowing for the simultaneous estimation of within-person fluctuations and stable between-person differences (Asparouhov et al., 2018). All analyses were conducted in Mplus Version 9.

Our analytic approach followed a three-step procedure: (1) Main Models: Estimation of the primary DSEM models containing the dynamic associations between AARC and social interaction valence. (2) Sensitivity Analysis: To examine the robustness of the identified effects, chronological age, subjective health, education, and partnership status were included as Level-2 covariates predicting the between-person means of the focal variables; and (3) Moderation Analysis: Main models were extended to test whether chronological age moderated the within-person cross-lagged associations between AARC and social interaction valence. However, the models were affected by convergence problems (PSR > 1.10; low effective sample sizes (ESS)) across model specifications and were therefore not interpreted.

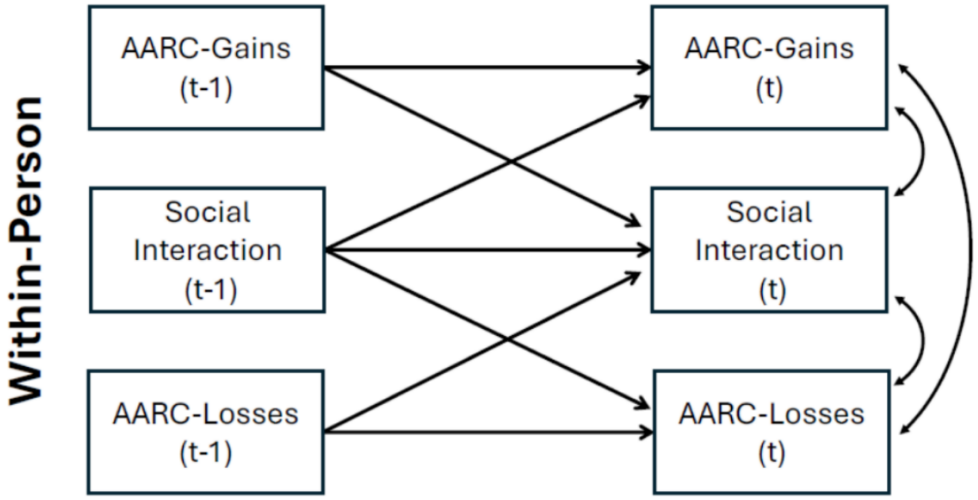
For each social interaction valence, we specified a two-level first-order vector autoregressive (VAR(1)) model capturing concurrent associations, autoregressive effects, and cross-lagged effects from day $t-1$ to day t. Same-day associations were modeled via within-person residual covariances, whereas next-day associations were modeled via lagged regression paths. Within-person and between-person variance were separated via latent person-mean centering, which avoids the Nickell bias inherent in observed centering with short time series (Hamaker & Grasman, 2015). To maintain temporal integrity, the TINTERVAL was set to 1, and the time variable reflected a one-day interval.

Figure 1 provides a schematic illustration of the within-person VAR(1) model estimated in the DSEM analyses. Models were estimated using a Bayesian framework with Markov Chain Monte Carlo (MCMC) algorithms and non-informative priors. Missing data were handled via data augmentation, treating missingness as unknown parameters estimated from the posterior distribution (Asparouhov & Muthen, 2021). Two chains with 10,000 iterations each were run; convergence was confirmed by Potential Scale Reduction (PSR) values below 1.05. Parameter stability was further evaluated by inspecting effective sample sizes (ESS) for all focal effects.

Given the sample size (N = 109) and number of measurement occasions (T = 14), simulation studies suggest that such designs are sufficient to obtain reliable point estimates and adequate credible interval coverage for both fixed effects and random effect variances in multilevel VAR(1) models (Schultzberg & Muthén, 2018). While larger samples generally improve precision, the present design aligns with current recommendations for recovering meaningful within-person dynamics and their inter-individual differences within a DSEM framework.

Figure 1

Conceptual illustration of the within-person DSEM for daily AARC and social interactions (positive, negative).



Note. The figure illustrates the within-person structure of the dynamic structural equation models (DSEM). Solid arrows indicate lagged effects from day $t-1$ to day t, and curved double-headed arrows indicate same-day residual correlations. Only within-person processes are shown; between-person components and covariates are omitted. Rectangles denote observed daily variables.

Results

Preliminary Analyses

Descriptive statistics indicated that participants evaluated their daily social interactions as predominantly positive and reported relatively low levels of negative interactions (Table 1). Average levels of awareness of age-related losses were low, whereas awareness of age-related gains was, on average, slightly above the scale midpoint. Intraclass correlation

coefficients (ICCs) revealed substantial day-to-day variability in social interaction valence (*ICCpos* = .32; *ICCneg* = .34), while awareness of age-related losses and gains showed greater stability across persons (*ICCs* = .83), with meaningful within-person variability observed across days (Table 1).

Bivariate within-person correlations (Table 2) showed that on days with higher-than-usual AARC-losses, individuals reported fewer positive ($r = -.12$, $p < .001$) and more negative social interactions ($r = .42$, $p < .001$). Conversely, days with higher-than-usual AARC-gains were associated with more positive ($r = .09$, $p < .01$), but not negative, social interactions. At the between-person level, individuals reporting higher average AARC-losses experienced more negative social interactions, were older, reported poorer subjective health, and were less likely to be partnered. Average levels of AARC-gains showed a small association with higher educational attainment.

Daily Dynamics Of AARC and Social Interactions (H1 & H2)

DSEM analyses revealed a valence-specific pattern of same-day within-person associations (Tables 3 and 4). On days with higher-than-usual awareness of age-related losses, individuals reported more negative ($\beta = .19$) and fewer positive social interactions ($\beta = -.14$). In contrast, higher-than-usual awareness of age-related gains was associated with more positive social interactions ($\beta = .09$), whereas AARC-gains were not related to negative interaction valence within the same day.

Cross-lagged analyses further revealed selective next-day associations (Tables 3 and 4). Higher-than-usual AARC-losses on one day predicted more negative social interactions on the following day ($\beta = .10$). No other cross-lagged effects were observed: AARC-gains did not predict next-day positive or negative social interactions, and neither positive nor negative social interactions predicted subsequent changes in AARC-gains or losses.

Table 2

Bivariate Within- and Between-Person Correlations Among Study Variables.

Variable	1	2	3	4	5	6	7	8	9
1. Positive social interactions	1.00	**-0.57*** **	**0.24***	**-0.32*** **	0.03	0.10	**0.21***	0.14	0.15
2. Negative social interactions	**-.53*** **	1.00	-0.18	**0.42*** **	0.06	-0.07	-0.11	-0.12	-0.09
3. Awareness of age-related gains	**.09** **	-.04	1.00	0.06	0.14	0.04	0.02	-0.18	0.02
4. Awareness of age-related losses	**-.12*** **	**.18*** **	**.15*** **	1.00	**0.33*** **	-0.05	-0.04	**-0.23***	**-0.27** **
5. Age	-	-	-	-	1.00	0.01	-0.08	-0.10	-0.13
6. Gender (1= female)	-	-	-	-	-	1.00	0.13	-0.18	-0.08
7. Education	-	-	-	-	-	-	1.00	-0.02	0.07
8. Partnership status (1=with partner)	-	-	-	-	-	-	-	1.00	**0.23***
9. Subjective health	-	-	-	-	-	-	-	-	1.00

Note. Pearson correlations are based on 109 participants contributing 1,401 daily observations. Values in the lower triangle represent within-person correlations (day-to-day covariation), whereas values in the upper triangle represent between-person correlations based on person-level means aggregated across diary days. Gender was dummy-coded (1 = female, 0 = male), and partnership status was dummy-coded (1 = partnered, 0 = not partnered). In bolt * $p < .05$, ** $p < .01$, *** $p < .001$.

Stability And Individual Differences

All study variables showed significant autoregressive effects, indicating moderate temporal stability from one day to the next for AARC-gains (β = .41), AARC-losses (β = .33), positive social interactions (β = .18), and negative social interactions (β = .20; Tables 3 and 4). At the between-person level, significant random intercept variances indicated substantial interindividual differences in average levels of AARC-gains, AARC-losses, and social interaction valence. In addition, significant random slope variances for the autoregressive paths and selected cross-lagged associations indicated marked heterogeneity across individuals in the strength of day-to-day dynamics.

All findings remained robust after adjusting for age, subjective health, education, and partnership status (Supplementary Tables S1 and S2).

Discussion

Awareness of age-related change reflects how individuals notice and interpret gains and losses associated with aging in everyday life (Diehl et al., 2014, 2021). Because social interactions provide frequent and emotionally meaningful information about competence, belonging, and social functioning across adulthood, they constitute a particularly relevant everyday context in which such interpretations may arise and be updated. Building on this perspective, the present daily-diary study examined how fluctuations in AARC-gains and losses are linked to the perceived positivity and negativity of daily social interactions in middle-aged and older adults, both within the same day and across consecutive days.

Across analyses, AARC was systematically aligned with how participants evaluated their everyday social encounters. On days when individuals reported higher-than-usual AARC-gains, they experienced their social interactions as more positive. On days when they reported higher-than-usual AARC-losses, interactions were experienced as less positive and more negative. Beyond these concurrent links, only AARC-losses showed temporal carryover, predicting increased negativity in social interactions on the following day, and all reported associations remained robust after adjusting for chronological age, subjective health, partnership status, and educational attainment.

Table 3

Dynamic Structural Equation Modeling of Daily Associations Between AARC-Gains and Losses and Negative Social Interactions

Parameter	B	p. SD	95% CrI	β
Within-Person Level (Daily Dynamics)				
Lagged Effects (day t−1 → day t)				
AARC-Losses (t−1) → Negative Social Interaction (t)	**0.295***	**0.127**	**[0.057, 0.560]**	**0.102***
AARC-Gains (t−1) → Negative Social Interaction (t)	-0.102	0.079	[-0.249, 0.062]	-0.04
Negative Social Interaction (t−1) → AARC-Losses (t)	-0.003	0.013	[-0.030, 0.022]	-0.009
Negative Social Interaction (t−1) → AARC-Gains (t)	-0.015	0.015	[-0.044, 0.014]	-0.033
Autoregressive Effects (Stability)				
Negative Social Interaction (t−1 → t)	**0.195***	**0.049**	**[0.097, 0.290]**	**0.196***
AARC-Losses (t−1 → t)	**0.348***	**0.058**	**[0.239, 0.466]**	**0.335***
AARC-Gains (t−1 → t)	**0.421***	**0.048**	**[0.330, 0.517]**	**0.409***
Same-Day Residual Associations				
AARC-Losses ↔ Negative Social Interaction	—	—	—	**0.186***
AARC-Gains ↔ Negative Social Interaction	—	—	—	-0.031
AARC-Losses ↔ AARC-Gains	—	—	—	**0.170***
Between-Person Level (Individual Differences)				
Random Intercept Variances				
σ2 AARC-Gains (Intercept)	**0.505***	**0.083**	**[0.369, 0.695]**	—
σ2 AARC-Losses (Intercept)	**0.340***	**0.058**	**[0.241, 0.472]**	—
σ2 Negative Social Interaction (Intercept)	**0.175***	**0.043**	**[0.107, 0.274]**	—
Random Slope Variances (Dynamics)				
σ2 Autoregressive: AARC-Gains	**0.083***	**0.023**	**[0.045, 0.136]**	—
σ2 Autoregressive: AARC-Losses	**0.070***	**0.028**	**[0.023, 0.130]**	—
σ2 Autoregressive: Negative Social Interaction	**0.086***	**0.024**	**[0.048, 0.142]**	—
σ2 Cross-lagged: AARC-Losses → Neg. Interaction	**0.341***	**0.236**	**[0.041, 0.953]**	—
σ2 Cross-lagged: AARC-Gains → Neg. Interaction	**0.051***	**0.064**	**[0.004, 0.238]**	—
σ2 Cross-lagged: Neg. Interaction → AARC-Gains	**0.004***	**0.002**	**[0.001, 0.010]**	—
σ2 Cross-lagged: Neg. Interaction → AARC-Losses	**0.002***	**0.001**	**[0.001, 0.006]**	—

Note. N = 109 participants; total observations = 1,502. AARC = Awareness of Age-Related Change. B = unstandardized posterior mean; p.SD = posterior standard deviation; 95% CrI = 95% Bayesian Credibility Interval; β= standardized coefficient (STDYX). Significant coefficients (where the 95% CrI does not include zero) are highlighted in bold and marked with an asterisk (*). All continuous variables were person-mean centered at the within-person level.

Table 4

Dynamic Structural Equation Modeling of Daily Associations Between AARC-Gains and Losses and Positive Social Interactions

Parameter	B	p. SD	95% CrI	β
Within-Person Level (Daily Dynamics)				
Lagged Effects (day t−1 → day t)				
AARC-Losses (t−1) → Positive Social Interaction (t)	-0.13	0.102	[-0.333, 0.069]	-0.067
AARC-Gains (t−1) → Positive Social Interaction (t)	0.066	0.072	[-0.084, 0.199]	0.043
Positive Social Interaction (t−1) → AARC-Losses (t)	-0.016	0.016	[-0.048, 0.015]	-0.041
Positive Social Interaction (t−1) → AARC-Gains (t)	-0.001	0.016	[-0.034, 0.031]	-0.002
Autoregressive Effects (Stability)				
Positive Social Interaction (t−1 → t)	**0.178***	**0.047**	**[0.085, 0.268]**	**0.180***
AARC-Losses (t−1 → t)	**0.339***	**0.058**	**[0.232, 0.457]**	**0.332***
AARC-Gains (t−1 → t)	**0.424***	**0.047**	**[0.334, 0.518]**	**0.411***
Same-Day Residual Associations				
AARC-Losses ↔ Positive Social Interaction	—	—	—	**-0.138***
AARC-Gains ↔ Positive Social Interaction	—	—	—	**0.087***
AARC-Losses ↔ AARC-Gains	—	—	—	**0.169***
Between-Person Level (Individual Differences)				
Random Intercept Variances				
σ2 AARC-Gains (Intercept)	**0.504***	**0.083**	**[0.364, 0.694]**	—
σ2 AARC-Losses (Intercept)	**0.347***	**0.057**	**[0.253, 0.475]**	—
σ2 Positive Social Interaction (Intercept)	**0.186***	**0.042**	**[0.116, 0.282]**	—
Random Slope Variances (Dynamics)				
σ2 Autoregressive: AARC-Gains	**0.088***	**0.024**	**[0.048, 0.142]**	—
σ2 Autoregressive: AARC-Losses	**0.074***	**0.028**	**[0.026, 0.135]**	—
σ2 Autoregressive: Positive Social Interaction	**0.063***	**0.024**	**[0.020, 0.117]**	—
σ2 Cross-lagged: AARC-Losses → Pos. Interaction	**0.140***	**0.128**	**[0.011, 0.494]**	—
σ2 Cross-lagged: AARC-Gains → Pos. Interaction	**0.030***	**0.037**	**[0.003, 0.141]**	—
σ2 Cross-lagged: Pos. Interaction → AARC-Gains	**0.004***	**0.003**	**[0.001, 0.011]**	—
σ2 Cross-lagged: Pos. Interaction → AARC-Losses	**0.005***	**0.004**	**[0.001, 0.014]**	—

Note. N = 109 participants; total observations = 1,502. AARC = Awareness of Age-Related Change. B = unstandardized posterior mean; *p.SD* = posterior standard deviation; 95% CrI = 95% Bayesian credibility interval; β = standardized coefficient (STDYX). All continuous variables were person-mean centered. Random slope variances were estimated for all autoregressive and cross-lagged effects. Significant coefficients (95% CrI excluding zero) are shown in bold and marked with an asterisk (*).

These findings fit conceptual accounts that define AARC as an experience-based cognitive–affective orientation through which ongoing events are appraised and incorporated into a broader understanding of one's aging experience (Diehl & Wahl, 2010; Diehl et al., 2021). In social contexts, heightened awareness of age-related losses may increase the likelihood that interpersonal cues—especially those that are evaluatively open or ambiguous—are construed in ways that map onto age-relevant concerns (e.g., diminished efficacy, devaluation, reduced inclusion), whereas heightened awareness of age-related gains may coincide with more favorable construals of social encounters. Converging micro-longitudinal evidence similarly indicates that AARC-losses show robust links to maladaptive daily states, including elevated negative affect and heightened reactivity, whereas associations involving AARC-gains tend to be more selective and context-specific (Neupert & Bellingtier, 2017; Wilton-Harding et al., 2022; Windsor et al., 2024).

Notably, the present findings suggest that awareness of age-related losses is more consequential for social experience than awareness of age-related gains, both in terms of breadth across social valence and persistence over time. One explanation may lie in the interpersonal meaning and self-relevance of losses. When age-related losses are salient, interpersonal information that is ambiguous (e.g., being corrected, receiving unsolicited help, subtle noninclusion) may be construed as more diagnostic of diminished social functioning or social standing, thereby increasing perceived negativity and simultaneously attenuating perceived positivity of the same interaction stream. In contrast, awareness of age-related gains may support more benign construals, but may less consistently shift evaluations across both valence dimensions because positive meanings are often easier to accommodate without reinterpreting ambiguous cues as self-relevant threats.

The fact that only awareness of age-related losses predicted next-day negativity further suggests that loss-related interpretations may be more likely to persist cognitively beyond the immediate social context. Across relationship and social-support research, negative interpersonal experiences are often more consequential than positive experiences, such that aversive exchanges can outweigh the benefits of supportive exchanges when both are considered simultaneously (Baumeister et al., 2001; Rook & Charles, 2017). A mechanistic account for this temporal persistence is provided by the perseverative cognition hypothesis: negative appraisals can remain mentally active (e.g., through repetitive thinking such as worry, rumination, and anticipatory monitoring), prolonging their psychological impact beyond the eliciting situation (Brosschot et al., 2006; Ottaviani et al., 2016). Within an adult-development perspective, this is also compatible

with Strength and Vulnerability Integration model (SAVI; Charles, 2010), which posits that age-related strengths in regulating affect are most evident when negative situations can be avoided or de-escalated, but that vulnerability emerges when negative, belonging-relevant stressors are sustained or unavoidable.

Surprisingly, despite the central role of social interactions in daily life, we did not find evidence that the perceived positivity or negativity of social interactions predicted subsequent changes in awareness of age-related gains or losses across days. This asymmetry is theoretically consistent with the conceptualization of AARC as an attributional process that requires experiences to be explicitly interpreted as age-related in order to inform subjective aging (Diehl et al., 2014, 2021). Although social encounters provide emotionally salient information about inclusion, competence, and social value, such information is not automatically processed through an aging-related lens. Rather, whether an experience contributes to subjective aging depends on selective age attribution, which functions as a critical gatekeeper in the integration of everyday experiences into age-related self-perceptions (Rothermund et al., 2021).

From this perspective, the absence of lagged effects from daily social interaction valence to AARC suggests that most everyday interactions—whether positive or negative—are likely experienced as situational or relational events rather than as indicators of one's aging. Even when individual encounters within a day are perceived as age-relevant, their influence may be diluted when social interaction valence is assessed at an aggregated daily level that combines age-diagnostic and non-diagnostic experiences, as was the case in this study. For social experiences to shape AARC beyond the same day, they likely need to be not only emotionally salient but also clearly attributed to aging and cognitively sustained over time. This represents a higher threshold than that required for concurrent associations and may help explain why daily social interaction valence did not translate into systematic next-day changes in awareness of age-related gains and losses.

Importantly, the absence of next-day effects of social interaction valence on AARC does not contradict longitudinal evidence demonstrating reciprocal associations between broader subjective views of aging and social functioning. Prior work indicates that such reciprocal processes unfold across longer timescales and involve more global aging-related self-views (Cohn-Schwartz et al., 2022; Hu & Li, 2022; Schwartz et al., 2020). In contrast, the present study captures short-term, day-to-day fluctuations in age-attributed experience, which may be insufficient to produce detectable change in AARC at the next-day level.

Limitations

Several limitations should be considered when interpreting the present findings. The daily assessment interval constrains temporal resolution. The study relied on an evening diary design, which is well suited to capturing meaningful day-to-day fluctuations but cannot detect processes unfolding within shorter time frames. If reciprocal influences between social interactions and AARC operate within hours or during specific encounters, such effects may not be observable across days. Accordingly, the absence of lagged effects from daily social interaction valence to next-day AARC should be interpreted as a boundary of the temporal measurement resolution rather than as evidence that short-term social influences on age-related awareness do not occur.

In addition, social interactions were assessed at an aggregated daily level without information on interaction partners or situational context. This limits conclusions about which interpersonal settings are most relevant for age-related awareness. Because AARC depends on whether experiences are explicitly construed as age-relevant, interactions with close partners, encounters involving age-salient roles, or situations that make age particularly noticeable may be more influential than can be detected using overall daily ratings. Aggregation across heterogeneous interactions may therefore dilute age-diagnostic signals that occur in specific interpersonal contexts.

Finally, AARC captures consciously accessible, self-reported awareness of age-related gains and losses. Experiences that influence aging perceptions at a more implicit or automatic level may therefore remain unobserved in the present design. This conceptual boundary further underscores that not all emotionally salient social experiences are necessarily incorporated into subjective views of aging, but only those that are explicitly attributed to aging and cognitively processed as such.

Building on these considerations, future studies using shorter assessment intervals (e.g., experience sampling designs) and partner- or context-specific measures of social interactions could be well positioned to capture the micro-temporal dynamics through which age salience and social experience mutually shape one another.

Conclusion

The present study demonstrates that daily awareness of age-related change is systematically linked to how individuals perceive and evaluate their everyday social interactions. Variations in age-related gains and losses were associated with the perceived valence of social interactions, underscoring the close embedding of subjective aging in daily social experience. Notably, awareness of age-related losses emerged as particularly consequential, showing broader

associations across social valence and extending into the following day, whereas the valence of daily social interactions did not predict subsequent changes in awareness of aging. Together, these findings highlight age-related losses as a potential mechanism through which social experiences may be interpreted over time and underscore the role of explicit age attributions in everyday social perceptions.

References

Almadi, S. (2022). The meta-narrative of self-fulfilling prophecy in the different research areas. *Society and Economy*. https://doi.org/10.1556/204.2022.00001

Almeida, D. M. (2005). Resilience and Vulnerability to Daily Stressors Assessed via Diary Methods. *Current Directions in Psychological Science*, *14*(2), 64–68. https://doi.org/10.1111/j.0963-7214.2005.00336.x

Amir, N., Beard, C., & Bower, E. (2005). Interpretation Bias and Social Anxiety. *Cognitive Therapy and Research*, *29*(4), 433–443. https://doi.org/10.1007/s10608-005-2834-5

Asparouhov, T., Hamaker, E. L., & Muthén, B. (2018). Dynamic Structural Equation Models. *Structural Equation Modeling: A Multidisciplinary Journal*, *25*(3), 359–388. https://doi.org/10.1080/10705511.2017.1406803

Asparouhov, T., & Muthen, B. (2021). *Bayesian Analysis of Latent Variable Models using Mplus*. https://www.statmodel.com/download/BayesAdvantages18.pdf

Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is Stronger than Good. *Review of General Psychology*, *5*(4), 323–370. https://doi.org/10.1037/1089-2680.5.4.323

Birditt, K. S. (2014). Age Differences in Emotional Reactions to Daily Negative Social Encounters. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *69*(4), 557–566. https://doi.org/10.1093/geronb/gbt045

Birditt, K. S., & Fingerman, K. L. (2005). Do We Get Better at Picking Our Battles? Age Group Differences in Descriptions of Behavioral Reactions to Interpersonal Tensions. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *60*(3), P121–P128. https://doi.org/10.1093/geronb/60.3.P121

Birditt, K. S., Fingerman, K. L., & Almeida, D. M. (2005). Age Differences in Exposure and Reactions to Interpersonal Tensions: A Daily Diary Study. *Psychology and Aging*, *20*(2), 330–340. https://doi.org/10.1037/0882-7974.20.2.330

Birditt, K. S., Tighe, L. A., Nevitt, M. R., & Zarit, S. H. (2018). Daily Social Interactions and the Biological Stress Response: Are There Age Differences in Links Between Social Interactions and Alpha-Amylase? *The Gerontologist*, *58*(6), 1114–1125. https://doi.org/10.1093/geront/gnx168

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, *32*(7), 513–531. https://doi.org/10.1037/0003-066X.32.7.513

Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. In *Handbook of child psychology: Theoretical models of human development, Volume 1, 5th ed.* (pp. 993–1028). John Wiley & Sons, Inc.

Brosschot, J. F., Gerin, W., & Thayer, J. F. (2006). The perseverative cognition hypothesis: A review of worry, prolonged stress-related physiological activation, and health. *Journal of Psychosomatic Research*, *60*(2), 113–124. https://doi.org/10.1016/j.jpsychores.2005.06.074

Bu, F., Mak, H. W., Bone, J. K., Gao, Q., Sonke, J. K., & Fancourt, D. (2024). Leisure Engagement and Self-Perceptions of Aging: Longitudinal Analysis of Concurrent and Lagged Relationships. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, *79*(3), gbad182. https://doi.org/10.1093/geronb/gbad182

Buijs, V. L., Jeronimus, B. F., Lodder, G. M., Riediger, M., Luong, G., & Wrzus, C. (2023). Interdependencies between family and friends in daily life: Personality differences and associations with affective well-being across the lifespan. *European Journal of Personality*, *37*(2), 154–170. https://doi.org/10.1177/08902070211072745

Carstensen, L. L. (2021). Socioemotional Selectivity Theory: The Role of Perceived Endings in Human Motivation. *The Gerontologist*, *61*(8), 1188–1196. https://doi.org/10.1093/geront/gnab116

Charles, S. T. (2010). Strength and vulnerability integration: A model of emotional well-being across adulthood. *Psychological Bulletin*, *136*(6), 1068–1091. https://doi.org/10.1037/a0021232

Cohn-Schwartz, E., Schafer, M. H., & Ayalon, L. (2022). Age integration in later life social networks and self-perceptions of aging: Examining their reciprocal associations. *European Journal of Ageing*, *19*(4), 1145–1153. https://doi.org/10.1007/s10433-022-00688-0

Diehl, M., Brothers, A. F., & Wahl, H.-W. (2021). Self-perceptions and awareness of aging: Past, present, and future. In *Handbook of the Psychology of Aging* (pp. 155–179). Elsevier. https://doi.org/10.1016/B978-0-12-816094-7.00001-5

Diehl, M., & Wahl, H.-W. (2010). Awareness of age-related change: Examination of a (Mostly) unexplored concept. *Journals of Gerontology - Series B Psychological Sciences and Social Sciences*, *65 B*(3), 340–350. https://doi.org/10.1093/geronb/gbp110

Diehl, M., Wahl, H.-W., Barrett, A. E., Brothers, A. F., Miche, M., Montepare, J. M., Westerhof, G. J., & Wurm, S. (2014). Awareness of aging: Theoretical considerations on an emerging concept. *Developmental Review*, *34*(2), 93–113. https://doi.org/10.1016/j.dr.2014.01.001

Hu, R. X., & Li, L. W. (2022). Social Disconnectedness and Loneliness: Do Self-Perceptions of Aging Play a Role? *The Journals of Gerontology: Series B*, *77*(5), 936–945. https://doi.org/10.1093/geronb/gbac008

Huo, M., Miller, L. M. S., Kim, K., & Liu, S. (2021). Volunteering, Self-Perceptions of Aging, and Mental Health in Later Life. *The Gerontologist*, *61*(7), 1131–1140. https://doi.org/10.1093/geront/gnaa164

Jang, H., Hill, N. L., Turner, J. R., Bratlee-Whitaker, E., Jeong, M., & Mogle, J. (2024). Poor-Quality Daily Social Encounters, Daily Stress, and Subjective Cognitive Decline Among Older Adults. *Innovation in Aging*, *8*(6), igae038. https://doi.org/10.1093/geroni/igae038

Kaspar, R., Schilling, O. K., Diehl, M., Gerstorf, D., Rupprecht, F. S., Sabatini, S., & Wahl, H.-W. (2023). Differences in self-perceptions of aging across the adult lifespan: The sample case of awareness of age-related gains and losses. *Psychology and Aging*, *38*(8), 824–836. https://doi.org/10.1037/pag0000783

Luong, G., & Charles, S. T. (2014). Age differences in affective and cardiovascular responses to a negative social interaction: The role of goals, appraisals, and emotion regulation. *Developmental Psychology*, *50*(7), 1919–1930. https://doi.org/10.1037/a0036621

Merton, R. K. (1948). The Self-Fulfilling Prophecy. *The Antioch Review*, *8*(2), 193. https://doi.org/10.2307/4609267

Meyer-Wyk, F., & Wurm, S. (2024). The role of social network diversity in self-perceptions of aging in later life. *European Journal of Ageing*, *21*(1), 20. https://doi.org/10.1007/s10433-024-00815-z

Neta, M., & Brock, R. L. (2021). Social connectedness and negative affect uniquely explain individual differences in response to emotional ambiguity. *Scientific Reports*, *11*(1), 3870. https://doi.org/10.1038/s41598-020-80471-2

Neupert, S. D., & Bellingtier, J. A. (2017). Aging attitudes and daily awareness of age-related change interact to predict negative affect. *The Gerontologist*, *57*(suppl_2), S187–S192.

Nikitin, J., Gong, X., Schoch, S., & Freund, A. M. (2019). Social motives, attributions and expectations as predictors of the decision to participate in a speed-dating event. *Motivation and Emotion*, *43*, 610–624.

Nikitin, J., Luchetti, M., Alimanovic, N., Rupprecht, F. S., & Sutin, A. R. (2024). Are social interactions perceived as more meaningful in older adulthood? *Psychology and Aging*, *39*(6), 599–607. https://doi.org/10.1037/pag0000827

Nikitin, J., & Schoch, S. (2021). Social approach and avoidance motivations. *The Handbook of Solitude: Psychological Perspectives on Social Isolation, Social Withdrawal, and Being Alone*, 191–208.

O'Brien, E. L., & Sharifian, N. (2020). Managing expectations: How stress, social support, and aging attitudes affect awareness of age-related changes. *Journal of Social and Personal Relationships*, *37*(3), 986–1007. https://doi.org/10.1177/0265407519883009

Ottaviani, C., Thayer, J. F., Verkuil, B., Lonigro, A., Medea, B., Couyoumdjian, A., & Brosschot, J. F. (2016). Physiological concomitants of perseverative cognition: A systematic review and meta-analysis. *Psychological Bulletin*, *142*(3), 231–259. https://doi.org/10.1037/bul0000036

Ristl, C., Korlat, S., Rupprecht, F. S., Burgstaller, A., & Nikitin, J. (2025). Self-perceptions of aging and social goals. *Psychology and Aging*, *40*(4), 413–420. https://doi.org/10.1037/pag0000881

Rook, K. S. (2001). Emotional Health and Positive Versus Negative Social Exchanges: A Daily Diary Analysis. *Applied Developmental Science*, *5*(2), 86–97. https://doi.org/10.1207/S1532480XADS0502_4

Rook, K. S., & Charles, S. T. (2017). Close social ties and health in later life: Strengths and vulnerabilities. *American Psychologist*, *72*(6), 567–577. https://doi.org/10.1037/amp0000104

Rothermund, K., De Paula Couto, M. C. P., Fung, H. H., Graf, S., Hess, T. M., Liou, S., & Nikitin, J. (2021). Age-Related Attributions of Experienced Changes in Life: Origins and Implications. *The Journals of Gerontology: Series B*, *76*(5), 881–893. https://doi.org/10.1093/geronb/gbaa160

Schultzberg, M., & Muthén, B. (2018). Number of Subjects and Time Points Needed for Multilevel Time-Series Analysis: A Simulation Study of Dynamic Structural Equation Modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, *25*(4), 495–515. https://doi.org/10.1080/10705511.2017.1392862

Schwartz, E., Ayalon, L., & Huxhold, O. (2020). Exploring the reciprocal associations of perceptions of aging and social involvement. *The Journals of Gerontology: Series B*.

Tully-Wilson, C., Bojack, R., Millear, P. M., Stallman, H. M., Allen, A., & Mason, J. (2021). Self-perceptions of aging: A systematic review of longitudinal studies. *Psychology and Aging*, *36*(7), 773–789. https://doi.org/10.1037/pag0000638

Voss, P., Kornadt, A. E., & Rothermund, K. (2017). Getting what you expect? Future self-views predict the valence of life events. *Developmental Psychology*, *53*(3), 567–580. https://doi.org/10.1037/dev0000285

Wilton-Harding, B., Weber, N., & Windsor, T. D. (2022). Awareness of age-related gains and losses as moderators of daily stress reactivity in middle- and older-adulthood. *Frontiers in Psychiatry*, *13*, 929657. https://doi.org/10.3389/fpsyt.2022.929657

Windsor, T. D., Wilton-Harding, B., & Sabatini, S. (2024). Daily Dynamics of Awareness of Aging and Basic Psychological Need Satisfaction and Frustration in Middle and Older Adulthood. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, *79*(4), gbae010. https://doi.org/10.1093/geronb/gbae010

Wurm, S., Diehl, M., Kornadt, A. E., Westerhof, G. J., & Wahl, H.-W. (2017). How do views on aging affect health outcomes in adulthood and late life? Explanations for an established connection. *Developmental Review*, *46*, 27–43. https://doi.org/10.1016/j.dr.2017.08.002

Zhaoyang, R., Scott, S. B., Martire, L. M., & Sliwinski, M. J. (2021). Daily social interactions related to daily performance on mobile cognitive tests among older adults. *PLOS ONE*, *16*(8), e0256583. https://doi.org/10.1371/journal.pone.0256583

Zhou, Z., Zhang, S., Kim, Y. K., Birditt, K. S., & Fingerman, K. L. (2024). Need to belong, daily social engagement, and transient loneliness in late life. *Journal of Social and Personal Relationships*, *41*(1), 115–136. https://doi.org/10.1177/02654075231211617

Chapter 7 – General Discussion

Across three empirical studies, this dissertation examined whether and how subjective views of aging are linked to social functioning across adulthood, conceptualizing subjective views of aging as an important individual characteristic that, in line with the Differential Investment of Resources Model (DIRe; Huxhold et al., 2022), shapes social goals, social activities, and the evaluation of social interactions.

First, subjective views of aging were associated with social motivation. Individuals who reported more age-related gains were more likely to pursue social approach goals, whereas more awareness of age-related losses were linked to social avoidance goals. These associations emerged both at the trait level and in everyday social situations, indicating that subjective views of aging are meaningfully related to stable motivational orientations as well as to momentary goal pursuit in daily life.

Second, subjective views of aging were prospectively linked to social behaviour. More positive future self-views of aging predicted increases in corresponding social activities over time. In age-group analyses, an association between family-related future self-views of aging and later family activities emerged specifically among older adults. Expectations about aging and formal engagement (e.g., clubs and volunteering) predicted behaviour only among participants without a partner. In contrast, changes in social activities did not predict later changes in future self-views of aging, suggesting an asymmetry in directional effects at the behavioural level.

Third, subjective views of aging were closely tied to the evaluation of everyday social interactions. On days characterized by higher awareness of age-related gains, individuals experienced their social interactions at the same time as more positive, whereas higher awareness of age-related losses was associated with more negative and less positive social interactions. Beyond same-day associations, age-related losses showed temporal carryover effects, predicting increased negativity of social interactions on the following day. However, for the experience of social interactions no carryover effect was found.

Importantly, these patterns emerged above and beyond related covariates, including chronological age, subjective health, partnership status, educational attainment, and stable personality traits such as neuroticism and extraversion. Moreover, the observed associations were consistent across different time scales, ranging from momentary social experiences in daily life to long-term developmental change over several years. These findings underscore that

personal views of aging are embedded in multiple layers of social functioning, spanning motivational, behavioural, and experiential processes. At the same time, the results point to an asymmetry in predictive strength, suggesting that personal views of aging exert a more consistent and robust influence on social functioning than social functioning exerts on personal views of aging.

Subjective Views of Aging as Cognitive Filter

Building on these findings, the overall pattern is consistent with the Stereotype Embodiment Theory (SET; Levy, 2009) and subsequent integrative accounts that specify psychological and behavioural pathways as key routes through which subjective views of aging translate into observable developmental outcomes such as health (Wurm et al., 2017). In the present dissertation, the links between sVoA and social goals, social activities, and the evaluation of interactions map closely onto these pathways: sVoA appear to shape social functioning via (a) psychological mechanisms that organize goal priorities and momentary appraisals of social encounters, and (b) behavioural mechanisms that guide sustained engagement in social activities. In this sense, the present results support the well-established SET logic from health-related outcomes (Wurm et al., 2017) to social functioning by showing that personal views of aging function as a filter through which individuals' approach, enact, and experience their social lives.

The observed pattern demonstrated a clear valence-specific asymmetry in how subjective views of aging was linked to social functioning. Across the studies on social goals and social interaction experience, age-related gains were selectively associated with social approach goals and more positive evaluations of social interactions, whereas age-related losses were consistently related to social avoidance goals, more negative interaction experiences, and—critically—also to reduced positive social experiences. This pattern aligns with the conceptualization of subjective views of aging as a dual construct in which gains and losses represent qualitatively distinct components rather than opposite ends of a single continuum (Diehl & Wahl, 2010; Diehl et al., 2021). Within this framework, gains signal preserved or expanding resources and thus primarily facilitate engagement and approach, whereas losses signal constraint and vulnerability and are therefore more directly tied to protective, avoidance-oriented regulation. Importantly, this implies that positive views of aging are not expected to function as the mere absence of negative views, but to exert their influence through different psychological directions.

This asymmetry is consistent with core assumptions of lifespan motivational theories and with well-established negativity effects in aging research (Baumeister et al., 2001; Heckhausen et al., 2010). According to the Motivational Theory of Life-Span Development, perceived gains in resources promote approach-oriented striving, whereas perceived losses primarily activate prevention-focused and avoidance-related processes aimed at limiting further loss (Heckhausen et al., 2010). Losses may therefore exert a stronger motivational influence, as they signal threats to control and adaptive functioning and are weighted more heavily in self-regulatory processes (Baumeister et al., 2001; Heckhausen et al., 2010). Applied to the social domain, this supports the idea that gain-related perceptions promote social approach without necessarily dampening avoidance tendencies, whereas loss-related perceptions exert broader effects by both increasing avoidance and biasing the appraisal of social situations toward negativity. Stereotype Embodiment Theory further suggests that negative age-related beliefs carry greater psychological weight than positive ones because loss-oriented age stereotypes are more frequent in society, more easily activated, and more closely linked to threat-related processing (Levy, 2009; Diehl et al., 2021).

Bidirectionality of Subjective Views of Aging and Social Functioning

Surprisingly, we did not find a bidirectional relationship between subjective views of aging and social functioning within individuals. This contrasts previous studies that reported reciprocal associations between subjective aging constructs—most notably attitudes toward one's own aging (ATOA)—and aggregated social activities (e.g. Bu et al., 2024), as well as between subjective aging and informal social behaviour such as giving advice or emotional support (Schwartz et al., 2020). At the same time, the present findings are not inconsistent with theory, rather, they may help to specify the conditions under which subjective views of aging (sVoA) are expected to shape social functioning and when, social functioning may (or may not) feed back into aging-related self-views.

Aging Attribution as a Necessary Precondition for Feedback

A potential reason why we observed only paths from sVoA to social functioning may lie in the attributional nature of subjective aging: Scholars emphasize that sVoA are not direct reflections of everyday experiences but self-relevant interpretations that arise only when experiences are explicitly construed as age-related (Diehl et al., 2021; Rothermund, 2021). Within the AARC framework, experiences influence subjective aging only if individuals interpret changes in functioning, behaviour, or experience as consequences of getting older

and integrate them into their aging self-concept (Diehl & Wahl, 2021). But also studies targeting sVoA more general, make a similar point: experiences affect views of aging only when they become "about age," rather than "about life" (Rothermund & Brandtstädter, 2003; Rothermund et al., 2021).

Most everyday social experiences may not meet this criterion. Daily interaction valence, feeling supported or annoyed, or spending more or less time in social activities can be highly consequential for well-being without being interpreted as evidence of aging. As long as such experiences are explained in terms of situational demands, relationship dynamics, or personal circumstances or other situational context, they should not be expected to update sVoA. From this perspective, the absence of feedback effects in the present dissertation is theoretically coherent: social functioning can change without becoming age-diagnostic.

When Social Experiences Become Age-diagnostic

The literature suggests that social experiences are most likely to feed back into sVoA when they make age salient—by activating age-related roles, comparisons, or cultural age expectations (Rothermund, 2021; Diehl et al., 2021). Empirical evidence for reciprocity is strongest for social outcomes that are closely tied to age identity. Schwartz et al. (2020), for example, found bidirectional associations between ATOA and informal social involvement, such as giving advice or providing emotional support. These behaviours are readily interpretable as age-graded roles and align with normative expectations and developmental tasks of later life, including generativity and the stereotype of older adults as experienced and wise (Erikson, 1998; Hummert, 2011). In contrast, the same study did not observe reciprocal effects for formal social participation, indicating that not all forms of social engagement may carry equal age-related meaning.

Related arguments emerge from studies on age integration and intergenerational contact (Allport, 1955; Paolini et al., 2021). Social environments that alter the age composition of interaction partners—such as age-integrated networks—may provide direct age-relevant information and are therefore more likely to influence sVoA (Cohn-Schwartz et al., 2022, 2023; Meyer-Wyk & Wurm, 2024). These findings build on the classic contact hypothesis (Allport, 1955; Paolini et al., 2021), which overall posit that interpersonal contact between members of different groups is one of the most effective ways to reduce prejudice, stereotypes, and discrimination. Accordingly, Cohn-Schwartz et al. (2023) showed that contact with older adults was associated with changes in aging-related self-views, with effects being

most pronounced among older adults. By contrast, the social indicators examined in the present dissertation—interaction valence and activity frequency—do not inherently involve age comparisons or age-based role expectations and thus provide little impetus for age attribution.

Selective social steering may further reduce the likelihood that everyday social life generates new age-diagnostic information. Lifespan theories emphasize that older adults increasingly regulate their social environments by prioritizing emotionally meaningful relationships and avoiding conflict (Carstensen, 2021; Charles, 2010; Rolison & Lamarche, 2023; Rook & Charles, 2017). Empirical evidence shows that network size shrinks mainly through the loss of peripheral ties, while close relationships are preserved (Wrzus et al., 2013). Such selective regulation may stabilize the social environment and limits exposure to novel or discrepant social signals that could challenge existing views of aging. In this context, social functioning may remain influential for daily experience without becoming a driver of change in sVoA.

Finally, everyday social situations are often multiply determined: Stress and interaction research highlights that interpersonal events are typically appraised through contextual and relational lenses (Lazarus & Folkman, 1984, as applied in Jang et al., 2024; Luong et al., 2014; Rook & Charles, 2017). This may further reduce the likelihood that social experiences are interpreted as age-related self-knowledge, as contextual and relational cues may outweigh age as an explanatory frame.

Properties of sVoA Constructs and Temporal Alignment

Feedback effects also depend on the nature of the sVoA construct itself. The present dissertation focused on within-person changes in AARC and future self-views of aging (FSV), both of which may be comparatively stable constructs in terms of updating. AARC explicitly requires age attribution, and FSV are prospective representations that refer to a future self ("when I am old"). For many adults, this future self remains psychologically distant for a substantial part of adulthood, even when current social life changes (Wettstein et al., 2024). Present-oriented evaluations such as ATOA, which are more tightly coupled to current self-appraisal (Example item: "I have as much pep as I did last year."; Lawton, 1975), may therefore be more sensitive to feedback from ongoing behaviour (e.g. Bu et al., 2024; Cai et al., 2024)

Temporal scale may further constrain feedback processes. Integrative reviews emphasize that different time metrics capture different developmental dynamics (Cohn-Schwartz &

Gerstorf, 2022; Neupert & Bellingtier, 2022). Short intervals are well suited to detect affective carryover, but it may be unlikely to capture changes in higher-order self-representations, whereas long intervals capture enduring change but may miss gradual updating processes that unfold between waves. Against this background, the present pattern—immediate effects of sVoA on social functioning without reciprocal within-person change—is consistent with the assumption that sVoA operate as relatively stable orientations that guide behaviour and experience, while feedback requires prolonged, repeated exposure to age-diagnostic experiences.

Domain specificity adds another layer of complexity. Social aging does not proceed uniformly across domains. Friendship networks often contract with age and life events, whereas family roles can become more central and even gain-laden, for instance through grandparenthood (Fingerman et al., 2020; Wrzus et al., 2013). As a result, social experiences may simultaneously signal losses in one domain and gains in another. Aggregated indicators of social functioning—or global sVoA scores—can therefore obscure domain-specific feedback processes. This interpretation aligns with evidence of domain-matching sVoA effects (Kornadt & Rothermund, 2015, 2017; Wurm et al., 2017). In the present dissertation family-related future self-views predicted subsequent family-related activities particularly in older adulthood, underscoring that the relevance of specific social domains may also varies by age and context. To identify when social experiences feed back into sVoA, domain- and context-specific approaches across different age groups are therefore essential.

Taken together, the present dissertation supports an asymmetric coupling between subjective views of aging and social functioning. sVoA consistently shaped social functioning. Feedback from social functioning to sVoA, in contrast, was absent within individuals. This pattern does not invalidate reciprocal models proposed in the literature; rather, it delineates their boundary conditions. Empirical studies reporting bidirectionality typically examine present-focused sVoA, age-salient social roles, or rely on between-person differences (Bu et al., 2024; Schwartz et al., 2020; Cohn-Schwartz et al., 2022). In contrast, the present work isolates within-person processes and focuses on social indicators that are meaningful but not inherently age-diagnostic. Thus, the present findings refine existing theory by showing that subjective views of aging primarily function as upstream organizers of social functioning. Social experiences are likely to feed back into sVoA only under conditions that render age salient, identity-relevant, and sustained over time. Where these conditions are not met, social life can change without rewriting how individuals think about their own aging.

7.1 Future Directions

Taken together, the present findings point less to a lack of associations between subjective views of aging and social functioning than to a lack of precision regarding the conditions under which these associations unfold. While the three studies provide converging evidence that subjective views of aging shape social motivation, behavior, and experience, they also highlight substantial heterogeneity across social domains, age groups, and contextual conditions. At present, we still know relatively little about when subjective views of aging become behaviorally consequential, for whom they matter most, and in which social contexts their effects are most likely to emerge. Clarifying these boundary conditions represents a particularly promising direction for future research.

Across the present studies, the relevance of subjective views of aging varied systematically by social domain, age group, and structural context. Family-related future self-views of aging predicted subsequent family engagement primarily in older adulthood, whereas friendship-related future self-views were most relevant for social behavior in midlife (when not controlled for covariates). In addition, subjective views of aging exerted stronger behavioral effects when social roles were less pre-structured, as indicated by the moderating role of partnership status. These patterns suggest that subjective views of aging do not operate uniformly across adulthood but become especially influential in domains that are developmentally salient and contextually open to individual regulation. For example, midlife is often characterized by pronounced time constraints and competing role demands, which may render investments in friendships a particularly central developmental concern. In such contexts, friendship-related subjective views of aging may exert a disproportionate influence on social motivation and behavior. In later adulthood, by contrast, family relationships often gain importance for emotional meaning and identity, rendering family contexts especially sensitive to aging-related self-views (Carstensen, 2021).

A deeper understanding of these processes would benefit from examining subjective views of aging in everyday life, where domain relevance, situational demands, and age-related meaning dynamically intersect. Investigations at the level of everyday life would be particularly informative for disentangling when situational characteristics render age salient and when subjective views of aging are activated in concrete social encounters. Such approaches would also help clarify when social contexts themselves become influential for aging-related self-views. Advancing this line of research, however, requires methodological tools capable of capturing age-related gains and losses at the situational level. At present, the Awareness

of Age-Related Change framework represents the only established approach that explicitly differentiates gains and losses on daily level, however it is not appropriate for investigating situational effects multiple times per day, due to its length. The development and validation of measures that assess age-related gains and losses in specific situations—and that are suitable for intensive ambulatory designs with multiple assessments per day—would therefore constitute a particularly promising avenue for future research, enabling more precise insights into how subjective views of aging and social functioning dynamically co-evolve in everyday life.

7.2 Practical Implications

The present findings have clear practical implications for promoting social functioning across adulthood. Most importantly, they indicate that efforts to foster social engagement and well-being benefit from explicitly addressing subjective views of aging (sVoA). Across the studies, sVoA consistently organized social motivation, behavior, and experience, suggesting that how individuals think about their own aging shapes how they approach, enact, and evaluate their social lives. Interventions that neglect aging self-views may therefore leave intact the cognitive filters through which social experiences are interpreted, limiting their effectiveness (Levy, 2009; Wurm et al., 2017).

The findings further suggest that effective approaches would benefit from addressing both gain- and loss-related dimensions of sVoA. Strengthening perceptions of age-related gains may support social approach and engagement, whereas addressing age-related losses appears critical for reducing social avoidance and negative social appraisals. Interventions that focus exclusively on gains may thus fall short if loss-oriented expectations remain unchallenged, given their broader and more persistent influence on social functioning.

Finally, the results highlight the role of structural and relational contexts in shaping when sVoA translate into behavior. The observation that sVoA predicted formal social engagement primarily among individuals without a partner suggests that this group may be particularly sensitive to aging-related self-views in the absence of pre-structured social roles. From a practical perspective, unpartnered adults may therefore represent a promising target group for interventions aimed at strengthening adaptive sVoA and supporting social engagement.

7.3 Conclusion

This dissertation demonstrates that subjective views of aging constitute a central psychological framework through which social functioning across adulthood is organized. Across three empirical studies, subjective views of aging were consistently linked to how individuals regulate their social relations—shaping social goals, guiding engagement in social activities, and colouring the evaluation of everyday social interactions. These associations emerged across multiple time scales and remained robust after accounting for chronological age, health, partnership status, education, and personality traits, underscoring that views of aging represent a distinct individual characteristic that function as a cognitive filter through which social opportunities are approached, enacted, and experienced.

Moreover, the findings highlight that subjective views of aging are not uniform in their effects. Age-related gains and losses were shown to operate through distinct pathways, with gains primarily facilitating social approach and positive engagement, and losses exerting broader influence by fostering social avoidance and negative social experience. Moreover, subjective views of aging consistently preceded social functioning, whereas social functioning did not predict subsequent changes in views of aging within individuals. Together, these results position subjective views of aging as upstream organizers of social development across adulthood, shaping how social lives unfold.

Statement on the Use of Artificial Intelligence

For the present dissertation, the AI-based language model ChatGPT was used to support linguistic refinement of selected text passages (e.g., clarity, style, and phrasing).

All content, including the conceptualization, theoretical framing, data analyses, interpretation of results, and scientific conclusions, was developed independently by the author.

References

Allport, F. H. (1955). Theories of perception and the concept of structure: A review and critical analysis with an introduction to a dynamic-structural theory of behavior. John Wiley & Sons Inc. https://doi.org/10.1037/11116-000

Amir, N., Beard, C., & Bower, E. (2005). Interpretation Bias and Social Anxiety. Cognitive Therapy and Research, 29(4), 433–443. https://doi.org/10.1007/s10608-005-2834-5

Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is Stronger than Good. Review of General Psychology, 5(4), 323–370. https://doi.org/10.1037/1089-2680.5.4.323

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. Psychological Bulletin, 117(3), 497–529. https://doi.org/10.1037/0033-2909.117.3.497

Bernstein, M. J., Zawadzki, M. J., Juth, V., Benfield, J. A., & Smyth, J. M. (2018). Social interactions in daily life: Within-person associations between momentary social experiences and psychological and physical health indicators. Journal of Social and Personal Relationships, 35(3), 372–394. https://doi.org/10.1177/0265407517691366

Birditt, K. S. (2014). Age Differences in Emotional Reactions to Daily Negative Social Encounters. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 69(4), 557–566. https://doi.org/10.1093/geronb/gbt045

Birditt, K. S., Fingerman, K. L., & Almeida, D. M. (2005). Age Differences in Exposure and Reactions to Interpersonal Tensions: A Daily Diary Study. Psychology and Aging, 20(2), 330–340. https://doi.org/10.1037/0882-7974.20.2.330

Bourassa, K. J., Memel, M., Woolverton, C., & Sbarra, D. A. (2017). Social participation predicts cognitive functioning in aging adults over time: Comparisons with physical health, depression, and physical activity. Aging & Mental Health, 21(2), 133–146. https://doi.org/10.1080/13607863.2015.1081152

Bu, F., Mak, H. W., Bone, J. K., Gao, Q., Sonke, J. K., & Fancourt, D. (2024). Leisure Engagement and Self-Perceptions of Aging: Longitudinal Analysis of Concurrent and Lagged Relationships. The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences, 79(3), gbad182. https://doi.org/10.1093/geronb/gbad182

Buijs, V. L., Jeronimus, B. F., Lodder, G. M., Riediger, M., Luong, G., & Wrzus, C. (2023). Interdependencies between family and friends in daily life: Personality differences and associations with affective well-being across the lifespan. European Journal of Personality, 37(2), 154–170. https://doi.org/10.1177/08902070211072745

Cai, Y., Ren, X., Wang, J., Hou, Y., Zhang, M., & Chen, O. (2024). Associations between self-perceptions of aging and social functioning in older adults: An analysis based on health and

retirement study data. Archives of Gerontology and Geriatrics, 119, 105307. https://doi.org/10.1016/j.archger.2023.105307

Carretié, L. (2014). Exogenous (automatic) attention to emotional stimuli: A review. Cognitive, Affective, & Behavioral Neuroscience, 14(4), 1228–1258. https://doi.org/10.3758/s13415-014-0270-2

Carstensen, L. L. (2006). The influence of a sense of time on human development. Science, 312(5782), 1913–1915. https://doi.org/10.1126/science.1127488

Carstensen, L. L. (2021). Socioemotional Selectivity Theory: The Role of Perceived Endings in Human Motivation. The Gerontologist, 61(8), 1188–1196. https://doi.org/10.1093/geront/gnab116

Carstensen, Laura L, Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. American psychologist, 54(3), 165.

Carstensen, Laura L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. American Psychologist, 54(3), 165–181. https://doi.org/10.1037/0003-066X.54.3.165

Charles, S. T. (2010). Strength and vulnerability integration: A model of emotional well-being across adulthood. Psychological Bulletin, 136(6), 1068–1091. https://doi.org/10.1037/a0021232

Cheng, S.-T. (2016). Self-Perception of Aging and Satisfaction With Children's Support. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, gbv113. https://doi.org/10.1093/geronb/gbv113

Cheng, S.-T. (2020). The Effect of Negative Aging Self-Stereotypes on Satisfaction With Social Support. The Journals of Gerontology: Series B, 75(5), 981–990. https://doi.org/10.1093/geronb/gby113

Cohn-Schwartz, E., De Paula Couto, M. C., Fung, H. H., Graf, S., Hess, T. M., Liou, S., Nikitin, J., & Rothermund, K. (2023). Contact With Older Adults Is Related to Positive Age Stereotypes and Self-Views of Aging: The Older You Are the More You Profit. The Journals of Gerontology: Series B, 78(8), 1330–1340. https://doi.org/10.1093/geronb/gbad038

Cohn-Schwartz, E., & Gerstorf, D. (2022). Subjective Views of Aging: The Utility of Studying Multiple Time Metrics. In Y. Palgi, A. Shrira, & M. Diehl (Hrsg.), Subjective Views of Aging (Bd. 33, S. 169–186). Springer International Publishing. https://doi.org/10.1007/978-3-031-11073-3_10

Cohn-Schwartz, E., Schafer, M. H., & Ayalon, L. (2022). Age integration in later life social networks and self-perceptions of aging: Examining their reciprocal associations. European Journal of Ageing, 19(4), 1145–1153. https://doi.org/10.1007/s10433-022-00688-0

Connidis, I. A., & McMullin, J. A. (2002). Sociological Ambivalence and Family Ties: A Critical Perspective. Journal of Marriage and Family, 64(3), 558–567. https://doi.org/10.1111/j.1741-3737.2002.00558.x

De Paula Couto, M. C. P., Ekerdt, D. J., Fung, H. H., Hess, T. M., & Rothermund, K. (2022). What will you do with all that time? Changes in leisure activities after retirement are determined by age-related self-views and preparation. Acta Psychologica, 231, 103795. https://doi.org/10.1016/j.actpsy.2022.103795

Diehl, M., Brothers, A. F., & Wahl, H.-W. (2021). Self-perceptions and awareness of aging: Past, present, and future. In Handbook of the Psychology of Aging (S. 155–179). Elsevier. https://doi.org/10.1016/B978-0-12-816094-7.00001-5

Diehl, M., & Wahl, H.-W. (2010). Awareness of age-related change: Examination of a (Mostly) unexplored concept. Journals of Gerontology - Series B Psychological Sciences and Social Sciences, 65 B(3), 340–350. https://doi.org/10.1093/geronb/gbp110

Diehl, M., & Wahl, H.-W. (2024). Self-perceptions of aging: A conceptual and empirical overview. Current Opinion in Psychology, 55, 101741. https://doi.org/10.1016/j.copsyc.2023.101741

Diehl, M., Wahl, H.-W., Barrett, A. E., Brothers, A. F., Miche, M., Montepare, J. M., Westerhof, G. J., & Wurm, S. (2014). Awareness of aging: Theoretical considerations on an emerging concept. Developmental Review, 34(2), 93–113. https://doi.org/10.1016/j.dr.2014.01.001

Douglas, H., Georgiou, A., & Westbrook, J. (2017). Social participation as an indicator of successful aging: An overview of concepts and their associations with health. Australian Health Review, 41(4), 455. https://doi.org/10.1071/AH16038

Erikson, E. H. (with Erikson, J. M.). (1998). The Life Cycle Completed (Extended Version) (1st ed). W. W. Norton & Company, Incorporated.

Fang, X., Deng, M., Zhang, W., Wang, L., Wang, H., Xu, P., Luo, Y., & Yao, G. (2024). The bidirectional association between self-perceptions of aging and frailty: The mediating role of subjective cognitive decline. BMC Geriatrics, 24(1), 985. https://doi.org/10.1186/s12877-024-05577-y

Fingerman, K. L., Hay, E. L., & Birditt, K. S. (2004). The Best of Ties, the Worst of Ties: Close, Problematic, and Ambivalent Social Relationships. Journal of Marriage and Family, 66(3), 792–808. https://doi.org/10.1111/j.0022-2445.2004.00053.x

Fingerman, K. L., Huo, M., Charles, S. T., & Umberson, D. J. (2020). Variety Is the Spice of Late Life: Social Integration and Daily Activity. The Journals of Gerontology: Series B, 75(2), 377–388. https://doi.org/10.1093/geronb/gbz007

Fiori, K. L., Smith, J., & Antonucci, T. C. (2007). Social network types among older adults: A multidimensional approach. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 62(6), P322–P330.

Flechsenhar, A., Kanske, P., Krach, S., Korn, C., & Bertsch, K. (2022). The (un)learning of social functions and its significance for mental health. Clinical Psychology Review, 98, 102204. https://doi.org/10.1016/j.cpr.2022.102204

Heckhausen, J., Wrosch, C., & Schulz, R. (2010). A motivational theory of life-span development. Psychological Review, 117(1), 32–60. https://doi.org/10.1037/a0017668

Heuveline, P. (2022). Global and National Declines in Life Expectancy: An End-of-2021 Assessment. Population and Development Review, 48(1), 31–50. https://doi.org/10.1111/padr.12477

Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and Social Isolation as Risk Factors for Mortality: A Meta-Analytic Review. Perspectives on Psychological Science, 10(2), 227–237. https://doi.org/10.1177/1745691614568352

Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social Relationships and Mortality Risk: A Meta-analytic Review. PLoS Medicine, 7(7), e1000316. https://doi.org/10.1371/journal.pmed.1000316

Hu, R. X., & Li, L. W. (2022). Social Disconnectedness and Loneliness: Do Self-Perceptions of Aging Play a Role? The Journals of Gerontology: Series B, 77(5), 936–945. https://doi.org/10.1093/geronb/gbac008

Hummert, M. L. (2011). Age stereotypes and aging. In Handbook of the psychology of aging (S. 249–262). Elsevier.

Huo, M., Ng, Y. T., Fuentecilla, J. L., Leger, K., & Charles, S. T. (2021). Positive Encounters as a Buffer: Pain and Sleep Disturbances in Older Adults' Everyday Lives. Journal of Aging and Health, 33(1–2), 75–85. https://doi.org/10.1177/0898264320958320

Huxhold, O., Fiori, K. L., & Windsor, T. (2022). Rethinking Social Relationships in Adulthood: The Differential Investment of Resources Model. Personality and Social Psychology Review, 26(1), 57–82. https://doi.org/10.1177/10888683211067035

Joshanloo, M. (2025). Longitudinal Relationship Between Self-Perceptions of Aging and Depressive Symptoms: Exploring Reciprocal Within-Person Links. International Journal of Mental Health and Addiction, 23(2), 1162–1178. https://doi.org/10.1007/s11469-023-01162-3

Karppinen, H., Laakkonen, M.-L., Strandberg, T. E., Huohvanainen, E. A., & Pitkala, K. H. (2016). Do you want to live to be 100? Answers from older people. Age and Ageing, 45(4), 543–549. https://doi.org/10.1093/ageing/afw059

Kastenbaum, R., Derbin, V., Sabatini, P., & Artt, S. (1972). "The Ages of Me": Toward Personal and Interpersonal Definitions of Functional Aging. Aging and Human Development, 3(2), 197–211. https://doi.org/10.2190/TUJR-WTXK-866Q-8QU7

Kornadt, A. E., Kessler, E.-M., Wurm, S., Bowen, C. E., Gabrian, M., & Klusmann, V. (2020). Views on ageing: A lifespan perspective. European Journal of Ageing, 17(4), 387–401. https://doi.org/10.1007/s10433-019-00535-9

Kornadt, A. E., & Rothermund, K. (2011). Contexts of aging: Assessing evaluative age stereotypes in different life domains. Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 66(5), 547–556.

Kornadt, A. E., & Rothermund, K. (2012). Internalization of age stereotypes into the self-concept via future self-views: A general model and domain-specific differences. Psychology and Aging, 27(1), 164.

Kornadt, A. E., Voss, P., & Rothermund, K. (2015). Age Stereotypes and Self-Views Revisited: Patterns of Internalization and Projection Processes Across the Life Span. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, gbv099. https://doi.org/10.1093/geronb/gbv099

Kornadt, A. E., Voss, P., & Rothermund, K. (2017). Age Stereotypes and Self-Views Revisited: Patterns of Internalization and Projection Processes Across the Life Span. The Journals of Gerontology: Series B, 72(4), 582–592. https://doi.org/10.1093/geronb/gbv099

Lang, F. R., Baltes, P. B., & Wagner, G. G. (2007). Desired Lifetime and End-of-Life Desires Across Adulthood From 20 to 90: A Dual-Source Information Model. The Journals of Gerontology: Series B, 62(5), P268–P276. https://doi.org/10.1093/geronb/62.5.P268

Lawton, M. P. (1975). The Philadelphia Geriatric Center Morale Scale: A Revision. Journal of Gerontology, 30(1), 85–89. https://doi.org/10.1093/geronj/30.1.85

Levy, B. (2009). Stereotype Embodiment: A Psychosocial Approach to Aging. Current Directions in Psychological Science, 18(6), 332–336. https://doi.org/10.1111/j.1467-8721.2009.01662.x

Luong, G., & Charles, S. T. (2014). Age differences in affective and cardiovascular responses to a negative social interaction: The role of goals, appraisals, and emotion regulation. Developmental Psychology, 50(7), 1919–1930. https://doi.org/10.1037/a0036621

Madrigal, C., Bower, E., Simons, K., Gillespie, S. M., Van Orden, K., & Mills, W. L. (2021). Assessing Social Functioning During COVID-19 and Beyond: Tools and Considerations for Nursing Home Staff. Journal of the American Medical Directors Association, 22(10), 1989–1997. https://doi.org/10.1016/j.jamda.2021.07.022

Menkin, J. A., Robles, T. F., Gruenewald, T. L., Tanner, E. K., & Seeman, T. E. (2017). Positive expectations regarding aging linked to more new friends in later life. Journals of Gerontology - Series B Psychological Sciences and Social Sciences, 72(5), 771–781. https://doi.org/10.1093/geronb/gbv118

Menkin, J. A., Smith, J. L., & Bihary, J. G. (2020). Brief Anti-Ageism Messaging Effects on Physical Activity Motivation Among Older Adults. Journal of Applied Gerontology. https://doi.org/10.1177/0733464820960925

Meyer-Wyk, F., & Wurm, S. (2024). The role of social network diversity in self-perceptions of aging in later life. European Journal of Ageing, 21(1), 20. https://doi.org/10.1007/s10433-024-00815-z

Monteiro, J. M., Gonçalves, R., Bastos, A., & Barbosa, M. R. (2024). Social engagement and well-being in late life: A systematic review. Ageing and Society, 1–28. https://doi.org/10.1017/S0144686X24000011

Neupert, S. D., & Bellingtier, J. A. (2017). Aging attitudes and daily awareness of age-related change interact to predict negative affect. The Gerontologist, 57(suppl_2), S187–S192.

Neupert, S. D., & Bellingtier, J. A. (2022). Between- and Within-Person Approaches to Subjective Views of Aging. In Y. Palgi, A. Shrira, & M. Diehl (Hrsg.), Subjective Views of Aging (Bd. 33, S. 187–207). Springer International Publishing. https://doi.org/10.1007/978-3-031-11073-3_11

Ng, Y. T., Huo, M., Gleason, M. E., Neff, L. A., Charles, S. T., & Fingerman, K. L. (2021). Friendships in Old Age: Daily Encounters and Emotional Well-Being. The Journals of Gerontology: Series B, 76(3), 551–562. https://doi.org/10.1093/geronb/gbaa007

Nikitin, J., Luchetti, M., Alimanovic, N., Rupprecht, F. S., & Sutin, A. R. (2024). Are social interactions perceived as more meaningful in older adulthood? Psychology and Aging, 39(6), 599–607. https://doi.org/10.1037/pag0000827

Nikitin, J., & Schoch, S. (2021). Social approach and avoidance motivations. The handbook of solitude: Psychological perspectives on social isolation, social withdrawal, and being alone, 191–208.

Paolini, S., White, F. A., Tropp, L. R., Turner, R. N., Page-Gould, E., Barlow, F. K., & Gómez, Á. (2021). Intergroup contact research in the 21st century: Lessons learned and forward progress if we remain open. Journal of Social Issues, 77(1), 11–37. https://doi.org/10.1111/josi.12427

Pikhartova, J., Bowling, A., & Victor, C. (2016). Is loneliness in later life a self-fulfilling prophecy? Aging and Mental Health, 20(5), 543–549. https://doi.org/10.1080/13607863.2015.1023767

Rippon, I., & Steptoe, A. (2018). Is the relationship between subjective age, depressive symptoms and activities of daily living bidirectional? Social Science & Medicine, 214, 41–48. https://doi.org/10.1016/j.socscimed.2018.08.013

Rolison, J. J., & Lamarche, V. M. (2023). Do older adults construct more emotionally gratifying social environments than younger adults? Evidence from a social network decision task. Current Psychology, 42(33), 29418–29434. https://doi.org/10.1007/s12144-022-03960-9

Rook, K. S. (2001). Emotional Health and Positive Versus Negative Social Exchanges: A Daily Diary Analysis. Applied Developmental Science, 5(2), 86–97. https://doi.org/10.1207/S1532480XADS0502_4

Rook, K. S., & Charles, S. T. (2017). Close social ties and health in later life: Strengths and vulnerabilities. American Psychologist, 72(6), 567–577. https://doi.org/10.1037/amp0000104

Rothermund, K., & Brandtstädter, J. (2003). Age stereotypes and self-views in later life: Evaluating rival assumptions. International Journal of Behavioral Development, 27(6), 549–554. https://doi.org/10.1080/01650250344000208

Rothermund, K., de Paula Couto, M. C. P., Fung, H. H., Graf, S., Hess, T. M., Liou, S., & Nikitin, J. (2021). Age-related attributions of experienced changes in life: Origins and implications. The Journals of Gerontology: Series B, 76(5), 881–893.

Rowe, J. W., & Kahn, R. L. (2015). Successful Aging 2.0: Conceptual Expansions for the 21st Century. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 70(4), 593–596. https://doi.org/10.1093/geronb/gbv025

Sabatini, S., Rupprecht, F., Kaspar, R., Klusmann, V., Kornadt, A., Nikitin, J., Schönstein, A., Stephan, Y., Wettstein, M., Wurm, S., Diehl, M., & Wahl, H.-W. (2024). Successful Aging and Subjective Aging: Toward a Framework to Research a Neglected Connection. The Gerontologist, 65(1), gnae051. https://doi.org/10.1093/geront/gnae051

Schwartz, E., Ayalon, L., & Huxhold, O. (2020). Exploring the reciprocal associations of perceptions of aging and social involvement. The Journals of Gerontology: Series B.

Seidler, A. L., & Wolff, J. K. (2017). Bidirectional Associations Between Self-Perceptions of Aging and Processing Speed Across 3 Years. GeroPsych, 30(2), 49–59. https://doi.org/10.1024/1662-9647/a000165

Shor, E., & Roelfs, D. J. (2015). Social contact frequency and all-cause mortality: A meta-analysis and meta-regression. Social Science & Medicine, 128, 76–86. https://doi.org/10.1016/j.socscimed.2015.01.010

Shrira, A., Palgi, Y., & Diehl, M. (2022). Advancing the Field of Subjective Views of Aging: An Overview of Recent Achievements. In Y. Palgi, A. Shrira, & M. Diehl (Hrsg.), Subjective Views of Aging (Bd. 33, S. 11–37). Springer International Publishing. https://doi.org/10.1007/978-3-031-11073-3_2

Spuling, S. M., Miche, M., Wurm, S., & Wahl, H.-W. (2013). Exploring the Causal Interplay of Subjective Age and Health Dimensions in the Second Half of Life: A Cross-Lagged Panel Analysis. Zeitschrift für Gesundheitspsychologie, 21(1), 5–15. https://doi.org/10.1026/0943-8149/a000084

Statistics Austria. (2026). Life expectancy calculator [Software]. Statistics Austria.

Tully-Wilson, C., Bojack, R., Millear, P. M., Stallman, H. M., Allen, A., & Mason, J. (2021). Self-perceptions of aging: A systematic review of longitudinal studies. Psychology and Aging, 36(7), 773–789. https://doi.org/10.1037/pag0000638

Voss, P., Kornadt, A. E., & Rothermund, K. (2017). Getting what you expect? Future self-views predict the valence of life events. Developmental Psychology, 53(3), 567–580. https://doi.org/10.1037/dev0000285

Westerhof, G. J., Nehrkorn-Bailey, A. M., Tseng, H.-Y., Brothers, A., Siebert, J. S., Wurm, S., Wahl, H.-W., & Diehl, M. (2023). Longitudinal effects of subjective aging on health and longevity: An updated meta-analysis. Psychology and Aging, 38(3), 147–166. https://doi.org/10.1037/pag0000737

Wettstein, M., Park, R., Kornadt, A. E., Wurm, S., Ram, N., & Gerstorf, D. (2024). Postponing old age: Evidence for historical change toward a later perceived onset of old age. Psychology and Aging, 39(5), 526–541. https://doi.org/10.1037/pag0000812

Windsor, T. D., Wilton-Harding, B., & Sabatini, S. (2024). Daily Dynamics of Awareness of Aging and Basic Psychological Need Satisfaction and Frustration in Middle and Older Adulthood. The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences, 79(4), gbae010. https://doi.org/10.1093/geronb/gbae010

Wrzus, C., Hänel, M., Wagner, J., & Neyer, F. J. (2013). Social network changes and life events across the life span: A meta-analysis. Psychological Bulletin, 139(1), 53–80. https://doi.org/10.1037/a0028601

Wurm, S., Diehl, M., Kornadt, A. E., Westerhof, G. J., & Wahl, H.-W. (2017). How do views on aging affect health outcomes in adulthood and late life? Explanations for an established connection. Developmental Review, 46, 27–43. https://doi.org/10.1016/j.dr.2017.08.002

Zhaoyang, R., Sliwinski, M. J., Martire, L. M., & Smyth, J. M. (2019). Social interactions and physical symptoms in daily life: Quality matters for older adults, quantity matters for younger adults. Psychology & Health, 34(7), 867–885. https://doi.org/10.1080/08870446.2019.1579908

Zhou, Z., Gao, S., Richards, N. E., & Fingerman, K. L. (2025). Daily sleep, social encounters, and momentary loneliness in late life. The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences, 80(10), gbaf145. https://doi.org/10.1093/geronb/gbaf145

Zhu, X., & Neupert, S. D. (2021). Dynamic awareness of age-related losses predict concurrent and subsequent changes in daily inductive reasoning performance. British Journal of Developmental Psychology, 39(2), 282–298. https://doi.org/10.1111/bjdp.12344

Appendices

Appendix Chapter 4

Table S1

Multilevel Models of Fixed and Random Effects for AARC-gains, AARC-losses and Age as Covariate on Situational Social Approach Goals and Situational Social Avoidance Goals (State) as Outcome

Model 1	**Situational Social Approach Goals (State)**		**Situational Social Avoidance Goals (State)**	
Fixed Effects	Estimate (SE)	p	Estimate (SE)	p
Intercept	3.708 (0.053)	**<0.001**	2.717 (0.086)	**<0.001**
AARC-gains	0.198 (0.063)	**0.002**	0.103 (0.101)	0.308
AARC-losses	-0.020 (0.043)	0.640	0.152 (0.069)	**0.031**
Random Effects				
Intercept (SD)	0.497		0.853	
Residual (SD)	0.934		1.116	
Model 2				
Fixed Effects	Estimate (SE)	p	Estimate (SE)	
Intercept	3.721 (0.052)	**<0.001**	2.730 (0.086)	**<0.001**
AARC-gains	0.18 (0.060)	**0.003**	0.089 (0.100)	0.420
AARC-losses	-0.052 (0.043)	0.224	0.124 (0.071)	0.083
Age	0.010 (0.003)	**0.003**	0.008 (0.005)	0.121
Random Effects				
Intercept (SD)	0.476		0.844	
Residual (SD)	0.933		1.116	

Notes AARC = awareness of age-related change; Fixed effects: Standard errors in parentheses. Significant parameters ($p < .05$) are printed in bold. The analysis is based on n (within) = 1772, n (between) = 117 participants. All predictor variables on level 2 are grand-mean centred. For the random effects, variances unexplained by the predictors are shown; SD=Standard deviation.

Table S2

An a priori power analysis was conducted using G*Power version 3.1.9.7 (Faul et al., 2007, 2009) to determine the minimum sample size required to test the study hypothesis. Results indicated the required sample size to achieve 95% power for detecting a medium effect ($f^2=0.15$), at a significance criterion of $\alpha = .05$, including 3 predictors, was N =77 for a fixed linear multiple regression model testing R^2 deviation from zero. Thus, the obtained sample size of N = 117 is adequate to test the study hypothesis. This applies in particular to the results aggregated situational social approach goals and aggregated situational social avoidance goals, as the mean values were aggregated across multiple time points (situations) within individuals, which increases the statistical power. (e.g. Snider et al., 2005).

Table S3

Variable	Questionnaire (Self-rated)	Item Label	Response Code	Response Label
Social approach goals (trait)	Baseline	I'm trying to deepen my social relationships.	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Social approach goals (trait)	Baseline	I'm trying to move toward growth and development in my social relationships.	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered

Social approach goals (trait)	Baseline	I'm trying to enhance the bonding and intimacy in my social relationships.	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Social approach goals (trait)	Baseline	I'm trying to share many fun and meaningful experiences in my social relationships.	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Social avoidance goals (trait)	Baseline	I'm trying to avoid disagreements and conflicts in my social relationships.	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Social approach goals (trait)	Baseline	I'm trying to stay away from situations that could harm anyone of my social relationships.	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Social approach goals (trait)	Baseline	I'm trying to avoid getting embarrassed, betrayed, or hurt by anyone of my social relationships	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Social approach goals (trait)	Baseline	I'm trying to make sure that nothing bad happens to anyone in my social relationships	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Social approach goals (state)	Daily Assessment	Did you want to achieve something positive in the situation?	1 to 5	1= not at all 5= very strong
Social avoidance goals (state)	Daily Assessment	Did you want to avoid something negative in the situation?	1 to 5	1= not at all 5= very strong

Awareness of age-related gains	Baseline	With my increasing age, I realize that … I pay more attention to my health	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Awareness of age-related gains	Baseline	With my increasing age, I realize that … I have more experience and knowledge to evaluate things and people	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Awareness of age-related gains	Baseline	With my increasing age, I realize that … I appreciate relationships and people much more	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Awareness of age-related gains	Baseline	With my increasing age, I realize that … I have a better sense of what is important to me	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Awareness of age-related gains	Baseline	With my increasing age, I realize that … I have more freedom to live my days the way I want	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Awareness of age-related losses	Baseline	With my increasing age, I realize that … I have less energy	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Awareness of age-related gains	Baseline	With my increasing age, I realize that … my mental capacity is declining	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Awareness of age-related gains	Baseline	With my increasing age, I realize that … I feel more dependent on the help of others	1 to 7, -9	1= strongly disagree 7= strongly agree

				-9= not answered
Awareness of age-related gains	Baseline	With my increasing age, I realize that … I find it harder to motivate myself	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Awareness of age-related gains	Baseline	With my increasing age, I realize that … I have to limit my activities	1 to 7, -9	1= strongly disagree 7= strongly agree -9= not answered
Age	Baseline	How old are you? (In years)	Open text	
Gender	Baseline	Which gender do you identify with?		1 = female 2 = male 3 = diverse -9 = not answered
Relationship status	Baseline	What is your current relationship status?		1 = single 2 = widowed 3 = divorced 4 = married 5 = stable partnership 6 = open partnership -9 = not answered
Formal education	Baseline	What is your highest level of education?		2 = no school certificate 3 = compulsory schooling 4 = Apprenticeship 5 = Matura/Abitur (A-level)

				6 = University degree 9 = Other educational qualification -9 = not answered
Residence	Baseline	What country do you currently live in?		2= Switzerland 3 = Germany 10 = Austria 9 = Other country -9 = not answered

Note. The table contains all variables addressed in this study and are translated into English.

References

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149–1160. https://doi.org/10.3758/BRM.41.4.1149

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191. https://doi.org/10.3758/BF03193146

Snijders, T. A. (2005). Power and sample size in multilevel modeling. *Encyclopedia of statistics in behavioral science*, *3*(157), 1573. https://www.stats.ox.ac.uk/~snijders/PowerSampleSizeMultilevel.pdf (17.08.2024)

Appendix Chapter 5

Supplementary Material

Supplementary Table S1

Mean Values and Standard Deviations for Study Variables at T1, T2, T3 in Age groups: 30-45-Year-olds', 46-60-Year-olds' and 61-80-Year-olds'.

	T1			T2			*T3*		
	M (SD)	*Min-Max*	*n*	*M (SD)*	*Min-Max*	*n*	*M (SD)*	*Min-Max*	*n*
Younger age-group									
FSV family	5.45 (1.29)	0-7	150	5.37 (1.22)	2-7	150	5.17 (1.37)	0.33-7	149
FSV friends	4.13 (1.49)	0-7	149	4.03 (1.63)	0-7	150	3.79 (1.62)	0-7	149
FSV leisure & engagement	5.08 (1.03)	.75-7	150	5.07 (1.04)	0-7	147	5.10 (1.11)	0-7	149
Family activities	11.62 (7.77)	0-37	150	15.89 (9.74)	0-49	150	14.54 (10.21)	0-57	146
Friends activities	6.86 (4.91)	0-24	150	9.44 (6.81)	0-39	150	6.80 (5.89)	0-32	146
Formal activities	2.59 (4.71)	0-31	150	3.94 (6.62)	0-49	150	4.59 (6.63)	0-33	146
Age	38.21 (4.61)	30-45	150	42.11 (4.61)	34-49	150	47.16 (4.60)	39-54	150
Subjective health	2.98 (0.87)	0-4	149	2.85 (0.99)	0-4	150	2.91 (0.87)	0-4	150
Neuroticism	-	-	-	3.67 (1.31)	1-7	148	-	-	-
Extraversion	-	-	-	4.58 (1.32)	1.33-7	148	-	-	-
Middle age-group									
FSV family	5.55 (1.25)	1-7	137	5.44 (1.22)	2-7	139	5.53 (1.18)	2.33-7	138
FSV friends	4.00 (1.71)	0-7	137	3.82 (1.56)	0-7	140	3.81 (1.65)	0-7	139
FSV leisure & engagement	5.01 (1.07)	1.5-7	138	4.78 (1.19)	1-7	139	4.79 (1.17)	1-7	138
Family activities	10.06 (6.93)	0-30	139	13.55 (9.52)	0-47	140	12.91 (9.28)	0-43	137
Friends activities	5.78 (4.31)	0-24	139	8.31 (6.56)	0-30	140	6.60 (6.09)	0-27	137
Formal activities	2.87 (4.56)	0-23	139	3.49 (4.72)	0-25	140	5.28 (6.60)	0-27	137
Age	57.06 (4.24)	49-64	140	57.06 (4.30)	49-64	140	62.14 (4.24)	54-69	140

Subjective health	2.64 (1.01)	0-4	140	2.64 (0.91)	0-4	140	2.59 (0.98)	0-4	140
Neuroticism	-	-	-	4.02 (1.28)	1.33-7	138	-	-	-
Extraversion	-	-	-	4.56 (1.36)	1-7	138	-	-	-
Older age group									
FSV family	5.46 (1.54)	.33-7	166	5.36 (1.59)	.33-7	169	5.41 (1.49)	0-7	167
FSV friends	4.20 (1.61)	0-7	165	4.09 (1.74)	0-7	168	3.95 (1.72)	0-7	165
FSV leisure & engagement	5.25 (1.27)	0.5-7	168	4.76 (1.16)	0.5-7	165	4.60 (1.43)	0-7	165
Family activities	9.65 (7.93)	0-33	169	12.46 (9.46)	0-42	169	9.46 (8.62)	0-31	166
Friends activities	5.98 (4.87)	0-22	169	8.20 (6.76)	0-30	169	5.68 (5.88)	0-31	166
Formal activities	6.12 (6.25)	0-22	169	5.81 (6.84)	0-31	169	7.21 (9.03)	0-41	166
Age	69.27 (5.29)	61-80	169	73.13 (5.29)	64-84	169	78.21 (5.32)	69-89	169
Subjective health	2.60 (0.83)	0-4	169	2.37 (0.94)	0-4	168	2.33 (0.98)	0-4	169
Neuroticism	-	-	-	3.82 (1.28)	1-6.67	168	-	-	-
Extraversion	-	-	-	4.72 (1.03)	1.33-7	136	-	-	-

*Note***.** M = Mean, SD = Standard deviation. Future self-views (FSV) range from 0-7. Extraversion and neuroticism ranges from 1-7. All social activities are self-rated in hours per week.

Supplementary Table S2

Sociodemographic Characteristics (Categorical Variables) by Age Group and Wave (%)

	T1 (%)	T2 (%)	T3 (%)
Younger age-group			
Gender (female)	47.33 %	47.33 %	47.33 %
Family Status			
Married or in relationship	76.34 %	76.35 %	76.35 %
Single	13.53 %	12.84 %	9.33 %
Divorced or separated	10.13 %	12.16 %	11.33 %
Widowed	0.00 %	0.00 %	0.00 %
Higher education degree (university or equivalent)	49.33 %	51.67 %	56.66 %
Middle age-group			
Gender (female)	52.14 %	52.14 %	52.14 %
Family Status			
Married or in relationship	76.63 %	76.97 %	74.82 %
Single	11.68 %	10.07 %	10.79 %
Divorced or separated	10.94 %	12.23 %	12.95 %
Widowed	0.73 %	0.00 %	1.44 %
Higher education degree (university or equivalent)	51.44 %	55.00 %	54.01 %
Older age-group			
Gender (female)	53.02 %	53.02 %	53.02 %
Family Status			
Married or in relationship	75.14 %	68.45 %	63.69 %
Single	1.20 %	2.98 %	1.79 %
Divorced or separated	14.19 %	14.88 %	12.50 %
Widowed	9.47 %	13.10 %	21.43 %
Higher education degree (university or equivalent)	46.15 %	49.91 %	50.00 %

Note. Older age group N=168. Middle age group N = 140. Young age group N= 150

Supplementary Table S3

Internal Consistency (Cronbach's α) of Study Variables Across Waves

	T1 α [95% CI]	T2 α [95% CI]	T3 α [95% CI]
FSV-Family	.76 [.71, .79]	.77 [.72, .79]	.71 [.64, .74]
FSV-Friends	.84 [.81, .86]	.87 [.85, .89]	.87 [.84, .89]
FSV-Leisure & Engagement	.76 [.72, .79]	.78 [.74, .81]	.83 [.80, .86]
Neuroticism	-	.71 [.66, .75]	-
Extraversion	-	.73 [.68, .77]	-

Note. Cronbach's alpha (α) values reflect standardized alpha coefficients; confidence intervals (CI) are reported in brackets. FSV = Future-self views of aging

Supplementary Table S4

Bivariate Correlations of the Study Variables at Wave 1 (T1) and Wave 2 (T2)

Variables	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Age T1	.06	.07	.05	.03	.02	**-.10***	**-.11***	**-.16****	-.06	-.09	**.28****	**.15****	**-.20****	**-.24****	-.04	-.02	-.07	.01	-.01	.05
2. FSV family T1	-	**.58****	**.38****	**.28****	**.27****	**.25****	**.23****	**.17****	.04	**.11***	-.01	-.03	**.17****	**.15****	.05	**.43****	**.33****	.00	**-.18****	**.20****
3 FSV family T2		-	**.23****	**.34****	**.20****	**.29****	**.14****	**.24****	-.02	.03	-.02	-.00	**.19****	**.20****	.02	**.39****	**.42****	.07	**-.15****	**.11***
4. FSV friends T1			-	**.60****	**.45****	**.36****	-.03	.04	**.16****	**.20****	.07	.09	.06	.06	-.07	.06	.05	-.05	**-.26****	**.33****
5. FSV friends T2				-	**.27****	**.41****	-.03	.02	**.11***	**.21****	.08	.09	**.11***	.09	-.05	.06	.02	-.02	**-.27****	**.36****
6. FSV leisure T1					-	**.49****	.03	**.11***	**.16****	**.15****	**.23****	**.18****	**.24****	**.18****	-.03	.05	.03	**.09**	**-.15****	**.14****
7. FSV leisure T2						-	.01	**.13****	.09	**.16****	**.12***	**.18****	**.19****	**.24****	-.03	**.12***	**.10***	.07	**-.11***	**.22****
8. Family activities T1							-	**.43****	**.29****	**.14***	**-.13****	-.08	**.12***	.04	-.02	**.25****	**.20****	.08	-.02	.01
9. Family activities T2								-	**.18****	**.25****	**-.11***	-.04	**.20****	**.10***	.06	**.21****	**.24****	.09	-.09	.08
10. Friends activities T1									-	**.50****	.00	.08	.04	.06	-.07	-.06	-.06	-.04	-.06	**.14****
11. Friends activities T2										-	-.03	.04	**.13***	**.14***	-.06	-.03	**-.10***	.08	**-.12***	**.20****
12. Formal activities T1											-	**.61****	.02	.03	.03	.04	.02	.07	.02	.07
13. Formal activities T2												-	.06	.05	.04	.07	.06	.06	-.01	.02
14. Health T1														**.62****	.07	**.10***	.07	**.13****	**-.25****	.06
15. Health T2														-	**10***	**.11***	**.11***	**.12***	**-.26****	.04
16. Gender T1															-	**.10***	**.15****	**.20****	**-.22****	**-.18****
17. Partnership status T1																-	**.73****	**.10***	-.01	-.04
18. Partnership status T2																	-	.09	-.01	-.05
19. Education T1																		-	-.09	-.06
20. Neuroticism																			-	**-.12****
21. Extraversion																				-.

Note. Spearman correlations based on n = 458 participants. In bold * $p < .05$ (two-tailed), ** $p < .01$ (two-tailed). FSV = Future self-view; FSV leisure = FSV leisure & engagement. Partnership status is a dichotomous variable (1 = married or in a long-term relationship, 0 = not married or in a long-term relationship). Gender is a dichotomous variable (0 = female, 1 = male).

Supplementary Table S5

Bivariate Correlations of the Study Variables at Wave 2 (T2) and Wave 3 (T3)

Variables	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Age T2	.07	**.10***	.03	.06	**-.10***	**-15****	**-.16****	**-.22****	-.09	-.09	**.16****	**.12***	**-.25****	**-.27****	-.04	-.07	**-.15****	.00	-.01	.05
2. FSV family T2	-	**.63****	**.34****	**.22****	**.29****	**.27****	**.24****	**.25****	.03	.04	.00	-.05	**.20****	**.20****	.02	**.42****	**.40****	.05	**-.15****	**.11***
3 FSV family T3		-	**.28****	**.32****	**.24****	**.30****	**.22****	**.26****	.06	**.10***	.08	.09	**.15****	**.16****	.04	**.37****	**.38****	.07	**-.20****	**.14****
4. FSV friends T2			-	**.61****	**.41****	**.33****	.02	.07	**.21****	**.24****	.09	.08	.09	**.10***	-.06	.02	.03	-.04	**-.27****	**.36****
5. FSV friends T3				-	**.29****	**.42****	.04	.04	**.16****	**.26****	.09	**.10***	.08	**.17****	-.08	-.01	-.03	-.05	**-.23****	**.37****
6. FSV leisure T2					-	**.48****	**.13****	**.10***	**.16****	**.18****	**.18****	**.18****	**.24****	**.23****	-.02	**.10***	**.11***	.07	**-.11***	**.22****
7. FSV leisure T3						-	**.13****	**.13***	.08	**.21****	**.15****	**.20****	**.26****	**.33****	.02	.06	.07	.09	**-.22****	**.18****
8. Family activities T2							-	**.46****	**.25****	**.22***	-.04	-.02	**.10***	**.14****	.06	**.24****	**.28****	.09	-.09	.08
9. Family activities T3								-	**.16****	**.26****	.05	.02	**.13****	**.21****	.03	**.23****	**.32****	.07	-.09	.01
10. Friends activities T2									-	**.46****	.04	.08	**.14****	**.10***	-.06	**-.10***	-.04	-.03	**-.12***	**.20****
11. Friends activities T3										-	**.11***	**.17****	**.13****	**.15****	-.07	-.07	**-.12****	-.07	**-.10***	**.19****
12. Formal activities T2											-	**.49****	.05	.06	.04	.06	-.01	.07	-.01	.02
13. Formal activities T3												-	.09	.08	-.08	-.03	-.03	-.03	.06	**.10***
14. Health T2													-	**.60****	**.10***	**.11***	**.19****	**.11***	**-.26****	.04
15. Health T3														-	.03	.09	**.16****	**.10***	**-.26****	.01
16. Gender T2															-	**.15****	**.17****	**.18****	**-.22****	**-.18****
17. Partnership status T2																-	**.72****	.08	.01	-.05
18. Partnership status T3																	-	**.13****	-.06	-.06
19. Education T2																		-	-.08	-.08
20. Neuroticism																			-	**-.12****
21. Extraversion																				-

Note. Spearman correlations based on n = 458 participants. In bold * $p < .05$ (two-tailed), ** $p < .01$ (two-tailed). FSV = Future self-view; FSV leisure = FSV leisure & engagement . Partnership status is a dichotomous variable (1 = married or in a long-term relationship, 2 = not married or in a long-term relationship). Gender is a dichotomous variable (0 = female, 1 = male).

Supplementary Table S6

Results of the Random Intercept Cross-Lagged Panel Model (Model 1) and the Multigroup RI-CLPM (Model 2): Standardized Parameter Estimates at Wave 1 (B1) and Wave 2 (B2), and Model Fit Indices

Domain	Autoregression B_1/B_2		Cross-lagged Effects B_1/B_2		Model Fit		
	SOC	FSV	$SOC_{(t-1)} \rightarrow FSV_t$	$FSV_{(t-1)} \rightarrow SOC_t$	CFI	RMSEA	SRMR
Family activities – FSV-family							
Model 1: Total sample	**.28/.30**	.11/.14	**.13 /.17**	**.14 /.14**	.997	.035	.028
Model 2: Younger adults	**.44/.48**	**-.43/-38.**	.06/.05	-.08 /-.05	.995	.043	.043
Middle-aged adults	.12/.16	.08/.09	.03/.06	.17/.17			
Older adults	.17/.19	.21/.24	.14/.18	**.20/.22**			
Friends activities – FSV-friends							
Model 1: Total sample	**.13/.16**	**.32/.36**	.01/.02	**.12/.15**	.995	.042	.025
Model 2: Younger adults	**.21/.25**	**.45/.49**	-.03/-.07	-.00/-.01	.997	.034	.037
Middle-aged adults	.08/.10	.09/.06	.06/.09	**.20/.18**			
Older adults	.11/.16	**.32/.36**	-.02/-.03	.12/.15			
Formal activities– FSV leisure & engagement							
Model 1: Total sample	**.17/.16**	.04/.03	.05/.08	.12/.08	.995	.038	.027

Note. SOC = Social activity; FSV = Future self-view; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual. Bold values indicate significance at $p < .05$. Age at Wave 1 ranged from 30 to 80 years in the total sample, with 30–45 years representing the younger age group, 46–60 years the middle-aged group, and 61–80 years the older age group. In lavaan (Rosseel, 2012), standardized coefficients are automatically calculated separately for each wave transition, even when unstandardized paths are constrained to equality. This is due to wave-specific variances, which preclude a single standardized coefficient. For transparency, we report both values; they did not differ significa

Supplementary Table S7

Results of the Random Intercept Cross-Lagged Panel Model and Multigroup RI-CLPM Model with the Covariates Health, Age, Neuroticism and Extraversion: Model Parameter Estimate (B), Standard Error (SE) and Fit Indices.

Domain	Cross-lagged Effects B (SE)										Model Fit		
	Outcome FSV					Outcome SOC							
Predictors and Covariables	SOC	Health	N	E	Age	FSV	Health	N	E	Age	CFI	RMSEA	SRMR
Family activities – FSV-family													
Model 1: Total sample	.01 (.01)	.10 (.04)	-.03 (.05)	.12 (.05)	.01 (.003)	1.05 (.45)	.70 (.32)	.31 (.37)	.42 (.37)	-.10 (.02)	.942	.059	.062
Model 2: Younger adults	.00 (.02)	.15 (.07)	-.00 (.01)	.30 (.11)		-1.23 (1.09)	1.03 (.58)	.09 (.66)	.77 (.70)		.937	.072	.080
Middle-aged adults	.01 (.01)	.05 (.07)	-.16 (.09)	.10 (.08)		1.74 (.98)	1.01 (.58)	.81 (.71)	.47 (.64)				
Older adults	.02 (.01)	.08 (.07)	-.03 (.08)	.05 (.08)		1.65 (.74)	0.42 (.51)	-.02 (.57)	.21 (.60)				
Friends activities – FSV-friends													
Model 1: Total sample	.00 (.01)	.07 (.05)	-.17 (.06)	0.37 (.06)	.00 (.004)	.47 (.23)	.38 (.20)	-.21 (.24)	.54 (.25)	-.01 (.01)	.953	.051	.052
Model 2: Younger adults	-.01 (.02)	.07 (.08)	-.02 (.01)	.41 (.11)		.05 (.39)	-.61 (.34)	-.14 (.41)	.53 (.45)		.945	.068	.069
Middle-aged adults	.02 (.03)	.02 (.09)	-.46 (.13)	.38 (.12)		.60 (.41)	.89 (.35)	-1.15 (.45)	.73 (.43)				
Older adults	-.01 (.02)	.13 (.09)	-.11 (.09)	.31 (.11)		.49 (.39)	.74 (.35)	-.14 (.39)	.64 (.43)				
Formal activities – FSV leisure & engagement													
Model 1: Total sample	.02 (.02)	.13 (.04)	-.03 (.05)	.18 (.05)	-.01 (.003)	.60 (.34)	.27 (.21)	-.08 (.25)	.33 (.25)	-.00 (.02)	.910	.072	.080

Note. SOC = Social activity in the respective social domain (hours/week); FSV = Future self-view in the respective domain; N = Neuroticism; E = Extraversion; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual. Values in bold are significant at $p < .05$. Covariates age (Age) and subjective health (Health) were entered as cross-lagged predictors of all wave-2 variables (for T1→T2 paths) and of all wave-3 variables (for T2→T3 paths). Neuroticism (N) and Extraversion (E) were assessed at wave-2 only and included as time-invariant covariates predicting all wave-2 and wave-3 variables in the extended models.

Supplementary Table 8

Results of the Multigroup Random Intercept Cross-Lagged Panel Model with the Covariate Partnership Status (with a partner or without a partner): Model Parameter Estimate (B), Standard Error (SE) and Fit Indices.

Domain	Correlation Between RI	Correlation within-person (wFSV-wSOC)	Autoregression B (SE)		Cross-lagged Effects B (SE)		Model Fit		
	(RI_{FSV},RI_{SOC})	T1/T2/T3	SOC	FSV	$SOC_{(t-1)}\rightarrow FSV_t$	$FSV_{(t-1)}\rightarrow SOC_t$	CFI	RMSEA	SRMR
Family activities – FSV-family									
With partner	.23	.14 / **.19** / .10	**.31 (.06)**	**.32 (.08)**	.01 (.01)	.81 (.58)	.987	.060	.037
Without partner	.41	**.41 / .42 / .39**	**.27 (.12)**	.17 (.15)	.03 (.02)	**2.41 (0.62)**			
Friends activities – FSV-friends									
With partner	**.20**	.10 / **.17** / .12	**.11 (.06)**	**.30 (.09)**	.01 (.01)	**.55 (.26)**	.995	.037	.028
Without partner	.36	.29 / .12 / **.33**	**.29 (.10)**	**.46 (.17)**	.01 (.03)	**.83 (.37)**			
Formal activities – FSV leisure & engagement									
With partner	**.28**	.13 / .10 / .10	**.27 (.12)**	.03 (.11)	.01 (.02)	.44 (.45)	.997	.032	.031
Without partner	.10	.33 / **.37** / .15	.13 (.16)	.15 (.19)	.03 (.02)	**1.28 (.61)**			

Note: SOC = Social activity; FSV = Future self-views; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standard Root Mean Square Residual. Values in bold print are significant at $p < .05$.

Appendix Chapter 6

Supplementary Material

Table S1

Dynamic Structural Equation Modeling of Daily Associations Between AARC-Gains and Losses and Negative Social Interactions Including the Covariates Age, Health, Partnership status and Education.

Parameter	*B*	*p.SD*	*95% CrI*	*β*
Within-Person Level (Daily Dynamics)				
Lagged Effects (day t−1 → day t)				
AARC-Losses (t−1) → Negative Social Interaction (t)	**0,288***	**0,122**	**[0,060; 0,536]**	**0,102***
AARC-Gains (t−1) → Negative Social Interaction (t)	-0,082	0,08	[-0,237; 0,074]	-0,038
Negative Social Interaction (t−1) → AARC-Losses (t)	-0,005	0,013	[-0,031; 0,020]	-0,016
Negative Social Interaction (t−1) → AARC-Gains (t)	-0,013	0,015	[-0,042; 0,017]	-0,03
Autoregressive Effects (Stability)				
Negative Social Interaction (t−1 → t)	**0,189***	**0,048**	**[0,096; 0,282]**	**0,191***
AARC-Losses (t−1 → t)	**0,346***	**0,055**	**[0,248; 0,462]**	**0,346***
AARC-Gains (t−1 → t)	**0,428***	**0,048**	**[0,335; 0,527]**	**0,415***
Same-Day Residual Associations				
AARC-Losses ↔ Negative Social Interaction	—	—	—	**0,185***
AARC-Gains ↔ Negative Social Interaction	—	—	—	-0,031
AARC-Losses ↔ AARC-Gains	—	—	—	**0,171***
Between-Person Level (Individual Differences)				
Random Intercept Variances (Residual)				
σ2 AARC-Gains (Intercept)	**0,519***	**0,089**	**[0,378; 0,729]**	—
σ2 AARC-Losses (Intercept)	**0,310***	**0,053**	**[0,223; 0,431]**	—
σ2 Negative Social Interaction (Intercept)	**0,188***	**0,046**	**[0,115; 0,298]**	—
Random Slope Variances (Dynamics)				
σ2 Autoregressive: AARC-Gains	**0,086***	**0,023**	**[0,047; 0,139]**	—
σ2 Autoregressive: AARC-Losses	**0,066***	**0,026**	**[0,022; 0,124]**	—
σ2 Autoregressive: Negative Social Interaction	**0,087***	**0,025**	**[0,047; 0,143]**	—
σ2 Cross-lagged: AARC-Losses → Neg. Interaction	**0,339***	**0,208**	**[0,070; 0,851]**	—
σ2 Cross-lagged: AARC-Gains → Neg. Interaction	**0,051***	**0,062**	**[0,003; 0,235]**	—

σ2 Cross-lagged: Neg. Interaction → AARC-Gains	**0,005***	**0,003**	**[0,001; 0,011]**	—
σ2 Cross-lagged: Neg. Interaction → AARC-Losses	**0,002***	**0,001**	**[0,001; 0,006]**	—
Effects of Covariates (Regression Paths)				
Age → Negative Social Interaction (Intercept)	0,001	0,006	[-0,012; 0,013]	0,01
Education → Negative Social Interaction (Intercept)	-0,056	0,057	[-0,166; 0,059]	-0,134
Health → Negative Social Interaction (Intercept)	-0,094	0,07	[-0,230; 0,045]	-0,176
Partnership Status → Negative Social Interaction (Intercept)	-0,141	0,128	[-0,392; 0,108]	-0,147
Age → AARC-Losses (Intercept)	**0,020***	**0,006**	**[0,008; 0,032]**	**0,305***
Education → AARC-Losses (Intercept)	-0,011	0,056	[-0,122; 0,100]	-0,02
Health → AARC-Losses (Intercept)	**-0,151***	**0,071**	**[-0,291; -0,011]**	**-0,209***
Partnership Status → AARC-Losses (Intercept)	-0,194	0,129	[-0,454; 0,059]	-0,147
Age → AARC-Gains (Intercept)	0,012	0,008	[-0,004; 0,029]	0,155
Education → AARC-Gains (Intercept)	0,023	0,075	[-0,127; 0,170]	0,034
Health → AARC-Gains (Intercept)	0,074	0,095	[-0,110; 0,263]	0,087
Partnership Status → AARC-Gains (Intercept)	-0,283	0,172	[-0,621; 0,057]	-0,179

Note. *N* = 109 participants; total observations = 1,502. AARC = Awareness of Age-Related Change. *B* = unstandardized posterior mean; *p.SD* = posterior standard deviation; 95% CrI = 95% Bayesian credibility interval; *β* = standardized coefficient (STDYX). All continuous variables were person-mean centered. Covariates were included at the between-person level. Random slope variances were estimated for all autoregressive and cross-lagged effects. Significant coefficients (95% CrI excluding zero) are shown in bold and marked with an asterisk (*).

Table S2

Dynamic Structural Equation Modeling of Daily Associations Between AARC-Gains and Losses and Positive Social Interactions Including the Covariates Age, Health, Partnership status and Education.

Parameter	*B*	*p.SD*	*95% CrI*	*β*
Within-Person Level (Daily Dynamics)				
Lagged Effects (day t−1 → day t)				
AARC-Losses (t−1) → Positive Social Interaction (t)	-0,112	0,1	[-0,303; 0,085]	-0,043
AARC-Gains (t−1) → Positive Social Interaction (t)	0,068	0,069	[-0,067; 0,204]	0,044
Positive Social Interaction (t−1) → AARC-Losses (t)	-0,012	0,016	[-0,043; 0,021]	-0,029
Positive Social Interaction (t−1) → AARC-Gains (t)	-0,002	0,016	[-0,034; 0,030]	-0,003
Autoregressive Effects (Stability)				
Positive Social Interaction (t−1 → t)	**0,179***	**0,048**	**[0,087; 0,273]**	**0,178***
AARC-Losses (t−1 → t)	**0,329***	**0,054**	**[0,228; 0,441]**	**0,325***
AARC-Gains (t−1 → t)	**0,430***	**0,047**	**[0,337; 0,523]**	**0,420***
Same-Day Residual Associations				
AARC-Losses ↔ Positive Social Interaction	—	—	—	**-0,131***
AARC-Gains ↔ Positive Social Interaction	—	—	—	**0,089***
AARC-Losses ↔ AARC-Gains	—	—	—	**0,172***
Between-Person Level (Individual Differences)				
Random Intercept Variances (Residual)				
σ2 AARC-Gains (Intercept)	**0,520***	**0,09**	**[0,375; 0,726]**	—
σ2 AARC-Losses (Intercept)	**0,313***	**0,053**	**[0,228; 0,435]**	—
σ2 Positive Social Interaction (Intercept)	**0,190***	**0,045**	**[0,118; 0,289]**	—
Random Slope Variances (Dynamics)				
σ2 Autoregressive: AARC-Gains	**0,087***	**0,022**	**[0,050; 0,139]**	—
σ2 Autoregressive: AARC-Losses	**0,067***	**0,025**	**[0,027; 0,125]**	—
σ2 Autoregressive: Positive Social Interaction	**0,069***	**0,024**	**[0,027; 0,123]**	—
σ2 Cross-lagged: AARC-Losses → Pos. Interaction	**0,131***	**0,122**	**[0,008; 0,457]**	—
σ2 Cross-lagged: AARC-Gains → Pos. Interaction	**0,027***	**0,042**	**[0,002; 0,155]**	—
σ2 Cross-lagged: Pos. Interaction → AARC-Gains	**0,003***	**0,003**	**[0,001; 0,010]**	—

σ2 Cross-lagged: Pos. Interaction → AARC-Losses	**0,005***	**0,003**	**[0,001; 0,014]**	—
Between-Level Associations (Covariates)				
Health → Positive Social Interaction	0,052	0,068	[-0,081; 0,185]	0,097
Education → Positive Social Interaction	**0,114***	**0,052**	**[0,009; 0,212]**	**0,268***
Age → Positive Social Interaction	0,004	0,006	[-0,008; 0,015]	0,072
Partnership Status → Positive Social Interaction	0,134	0,118	[-0,101; 0,363]	0,137
Health → AARC-Losses	**-0,139***	**0,071**	**[-0,280; -0,001]**	**-0,192***
Education → AARC-Losses	-0,011	0,058	[-0,123; 0,103]	-0,02
Age → AARC-Losses	**0,020***	**0,006**	**[0,008; 0,033]**	**0,311***
Family Status → AARC-Losses	-0,191	0,131	[-0,451; 0,058]	-0,145
Health → AARC-Gains	0,07	0,093	[-0,112; 0,249]	0,082
Education → AARC-Gains	0,024	0,076	[-0,122; 0,176]	0,035
Age → AARC-Gains	0,012	0,008	[-0,004; 0,029]	0,156
Partnership Status → AARC-Gains	-0,278	0,17	[-0,611; 0,059]	-0,178

Note. *N* = 109 participants; total observations = 1,502. AARC = Awareness of Age-Related Change. *B* = unstandardized posterior mean; *p.SD* = posterior standard deviation; 95% CrI = 95% Bayesian credibility interval; β = standardized coefficient (*STDYX*). All continuous variables were person-mean centered. Covariates were included at the between-person level. Random slope variances were estimated for all autoregressive and cross-lagged effects. Significant coefficients (95% CrI excluding zero) are shown in bold and marked with an asterisk (*).

Table S3

Original German Items of the Measures Used in the Study

Interaction Valence (German)

Wie haben Sie heute Ihre sozialen Interaktionen erlebt?

(Stufen Skala 1-5; -1 Ich habe heute keine sozialen Interaktionen gehabt, -9 Keine Angabe)

Gar nicht positiv [1] – Sehr positiv [5]

Gar nicht negativ [1] – Sehr negativ [5]

Awareness of Age-related Change (German)

(Stufen Skala 1= „Stimme voll zu“ bis 5= „Stimme überhaupt nicht zu“; -9 Keine Angabe)

„Mit meinem Älterwerden in den letzten 24 Stunden ist mir bewusst geworden, dass…

1. ...ich meiner Gesundheit mehr Aufmerksamkeit widme.
2. ... meine geistige Leistungsfähigkeit abnimmt.
3. ...ich Beziehungen und andere Menschen wesentlich mehr schätze.
4. ...ich häufiger traurig bin.
5. ... ich mehr Freiheit habe, meine Tage so zu verleben, wie ich will.
6. ... ich weniger Energie habe.
7. ... ich mehr Erfahrung und Wissen habe, um Dinge und Menschen einzuschätzen.
8. ... andere Leute Dinge für mich tun, von denen sie annehmen, dass ich sie selbst nicht mehr tun kann.
9. ... ich versuche, mehr ich selbst zu sein.
10. ... ich meine Aktivitäten einschränken muss.
11. ... meine körperlichen Fähigkeiten nicht mehr so sind wie früher.
12. ... ich weiser geworden bin.
13. ... ich mich mehr von der Hilfe anderer abhängig fühle.
14. ... ich ein besseres Gespür dafür habe, was mir wichtig ist.
15. ...ich nicht mehr so viele Dinge mache.
16. ...ich mehr darauf achte, mich gesund zu ernähren.
17. ...ich langsamer in meinem Denken bin.
18. ... meine Freundschaften und Beziehungen stärker geworden sind.
19. ... ich mir mehr Sorgen um die Zukunft mache.
20. … ich mehr Zeit für die Dinge habe, die mir Spaß machen.

Note. Social interaction valence was assessed using self-developed single items (for details, see the Measures section of the manuscript).

Table S4

English Items of the Measures Used in the Study

Interaction Valence (Englisch)
How did you experience your social interactions today?
(Likert-scale 1-5; -1 No Social Interactions, -9 Missing)
Not at all positive [1] – Very positive [5]
Not at all negative [1] – Very negative [5]
Awareness of Age-related Change (English)
(Likert-scale 1= „Not at all"s 5= „Very much"; -9 Missing)
„With my increasing age in the last 24 hours, I realize that…
1. ... I pay more attention to my health.
2. ... my mental capacity is declining.
3. ... I appreciate relationships and people much more.
4. ... I am sad more often.
5. … I have more freedom to live my days the way I want.
6. ... I have less energy.
7. ... I have more experience and knowledge to evaluate things and people.
8. ... other people do things for me because they assume that I can't do them anymore.
9. ... I try to be more myself.
10. ... I have to limit my activities.
11. ... my physical ability is not what it used to be.
12. ... I have become wiser.
13. ... I feel more dependent on the help of others.
14. ... I have a better sense of what is important to me
15. ... I don't do as many things anymore.
16. ... I pay more attention to eating healthy food.
17. ... I am slower in my thinking.
18. … my friendships and relationships have become stronger.
19. … I am more anxious about the future.
20. … I have more time for the things I enjoy.

Note. Social interaction valence was assessed using self-developed single items (for details, see the Measures section of the manuscript).