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Life Goals Across Adulthood and Old Age: Associations With Personality and Well-Being

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Table of Content

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Abstract

Life goals are what people talk about when asked what makes a successful life. Based on the assumption that the judgement of what is important and desirable in life changes with age, this dissertation investigated the life span development of important life goals like having children, career success, or self-fulfillment and their developmental relationships with the Big Five personality traits and eight different aspects of well-being. The three empirical studies are based on six to 30 waves of data from the German socio-economic panel (SOEP) and span study periods of 13 to 30 years.

Study I examined the lifespan development of nine life goals and tested if gender, parental status (i.e., if someone is a biological parent or not), education, and regional socialization (former East versus West Germany) influenced development. The results suggest that life goals evolve through periods of stability and change, which correspond to age-graded developmental tasks, shifts in future time perspective, and generativity orientation. Mean-level changes in normative life goals that are closely tied to societal scripts, such as career success and having children, exhibited stronger alignment with typical age-grading in developmental tasks, while less normative goals that can mean different things to different people (e.g., self-fulfillment) changed independently. Of all investigated moderators, gender and parental status had the strongest impact on development. The goals career success and having children selected women, but not men into parenthood. Parenthood amplified existing traditional gender role conforming differences (i.e., compared to women, men perceived career success as more important and family goals as less important).

Study II was the first large-scale longitudinal study to examine the codevelopment of life goals and the Big Five personality traits in a sample that is heterogeneous in terms of age and education. It investigated if change in the importance of life goals goes hand in hand with change in the Big Five and if this conjoint change depends on a person's age, perceived

control, gender, education, and regional socialization. The results suggest a weak to moderate relationship between changes in life goals and changes in the Big Five. The strongest codevelopment concerned personal growth goals (i.e., self-fulfillment) and Openness, followed by communal goals (i.e., being there for others) and Agreeableness. Career goals codeveloped with Conscientiousness. Normative life goals that are strongly tied to social scripts (e.g., having children or career success) codeveloped more strongly with traits during midlife (ages 25-59), whereas less scripted life goals (e.g., self-fulfillment) codeveloped with traits across the entire lifespan.

Study III employed a rigorous case-controlled longitudinal design to investigate how achieving or disengaging from normative developmental goals impacted mental health, well-being, and loneliness across young adulthood and midlife. To do so it focused on the goal to have children and examined how the perceived importance to have children and career success assessed in early adulthood (ages 18-30) affected the midlife well-being trajectories of people without children and parents. The results showed that the mental health, well-being, and loneliness trajectories of people without children and parents largely converged. The largest differences concern established adulthood (ages 30-45). Supporting developmental regulation theories, prioritizing the goal to have children during early adulthood was found to negatively affect the midlife mental health and well-being of adults who remain childfree whereas prioritizing career success was found to negatively affect the well-being of parents. Disengaging from the goal to have children in midlife was beneficial for the well-being of people without children as well as for the work satisfaction of parents. Study III shows that what we prioritize when we are young can have long-lasting effects on mental health and well-being, especially if we fail to adjust our goals.

Zusammenfassung

Lebensziele sind das, worüber Menschen sprechen, wenn sie gefragt werden, was ein erfolgreiches Leben ausmacht. Basierend auf der Annahme, dass sich die Einschätzung dessen, was im Leben wichtig und erstrebenswert ist, mit dem Alter ändert, untersuchte diese Dissertation die lebenslange Entwicklung wichtiger Lebensziele wie die Familiengründung, beruflichen Erfolg oder Selbstverwirklichung und ihre Entwicklungsbeziehungen zu den Big Five Persönlichkeitsmerkmalen sowie zu acht verschiedenen Aspekten des Wohlbefindens. Die drei empirischen Studien basieren auf sechs bis 30 Datenwellen des Deutschen Sozio-ökonomischen Panels (SOEP) und erstrecken sich über Untersuchungszeiträume von 13 bis 30 Jahren.

Studie I untersuchte die lebenslange Entwicklung von neun Lebenszielen und prüfte, ob Geschlecht, Elternschaft, Bildung und regionale Sozialisation (ehemaliges Ost- versus Westdeutschland) diese Entwicklung beeinflussen. Die Ergebnisse legen nahe, dass Lebensziele Phasen von Stabilität und Veränderung durchlaufen, welche die altersabhängigen Entwicklungsaufgaben, Veränderungen in der Zeitperspektive und Generativitätsorientierung widerspiegeln. Veränderung und Stabilität normativer Lebensziele, die stark an soziale Skripte gebunden sind (z. B. beruflicher Erfolg oder Elternschaft), korrespondierten stärker mit typischen Entwicklungsaufgaben, während sich weniger normative Ziele, die für verschiedene Menschen unterschiedliche Bedeutungen haben können (z. B. Selbstverwirklichung), unabhängig veränderten. Von allen untersuchten Moderatoren hatten Geschlecht und Elternschaft den stärksten Einfluss auf die Entwicklung. Die Ziele Kinder zu bekommen und beruflicher Erfolg selektieren Frauen, aber nicht Männer in Elternschaft. Elternschaft verstärkte bestehende Unterschiede, die den traditionellen Geschlechterrollen entsprachen (d. h. im Vergleich zu Frauen betrachteten Männer beruflichen Erfolg als wichtiger und familiäre Ziele als weniger wichtig).

Studie II war die erste groß angelegte Längsschnittstudie, welche die gemeinsame Entwicklung von Lebenszielen und den Big Five Persönlichkeitsmerkmalen in einer alters- und bildungsheterogenen Stichprobe analysierte. Sie untersuchte, ob Veränderungen in der Bedeutung von Lebenszielen Hand in Hand mit Veränderungen in den Big Five gehen und, ob diese gemeinsame Veränderung von Alter, wahrgenommener Kontrolle, Geschlecht, Bildung und regionaler Sozialisation einer Person abhängt. Die Ergebnisse legen nahe, dass eine schwache bis moderate Beziehung zwischen Veränderungen in Lebenszielen und Veränderungen bei den Big Five besteht. Der stärkste längsschnittliche Zusammenhang bestand zwischen persönliche Wachstumszielen (Selbstverwirklichung) und Offenheit, gefolgt von gemeinschaftlichen Zielen (für andere da sein) und Verträglichkeit. Berufsziele entwickelten sich zusammen mit Gewissenhaftigkeit. Normative Lebensziele, die eng an gesellschaftliche Erwartungen geknüpft sind (z.B. Familiengründung oder beruflicher Erfolg), veränderten sich insbesondere während der Lebensmitte (im Alter von 25-59 Jahren) gemeinsam mit den Big Five, während weniger normative Lebensziele (z.B. Selbstverwirklichung) sich über die gesamte Lebensspanne hinweg gemeinsam mit Persönlichkeitsmerkmalen veränderten.

Studie III untersuchte mit Hilfe von Propensity Score Matching, wie das Erreichen oder Loslassen von normativen Entwicklungszielen die psychische Gesundheit, das Wohlbefinden und die Einsamkeit im jungen Erwachsenenalter und in der Lebensmitte beeinflusst. Im Fokus der Studie lag das Ziel Elternschaft. Untersucht wurde, wie die im frühen Erwachsenenalter (18-30 Jahren) erfasste wahrgenommene Bedeutung von Familiengründung und beruflichem Erfolg, die Entwicklung des Wohlbefindens von Personen ohne Kinder und Eltern beeinflussten. Die Ergebnisse zeigten, dass die Verläufe der psychischen Gesundheit, des Wohlbefindens und der Einsamkeit von Menschen ohne Kinder und Eltern weitgehend konvergierten. Die größten Unterschiede traten im Alter zwischen 30

und 45 Jahren auf. Die Ergebnisse stützen Theorien der Entwicklungsregulation und zeigen, dass das Priorisieren von Familiengründung im frühen Erwachsenenalter sich negativ auf die spätere psychische Gesundheit und das Wohlbefinden von kinderlosen Erwachsenen auswirkte, während das frühe Priorisieren von beruflichem Erfolg sich negativ auf das Wohlbefinden von Eltern auswirkte. Das Abwerten des Ziels Kinder zu haben im mittleren Erwachsenenalter hatte einen positiven Effekt auf das Wohlbefinden kinderloser Personen und einen positiven Effekt auf die Arbeitszufriedenheit von Eltern. Studie III zeigt, dass das, was wir in jungen Jahren priorisieren, langanhaltende Auswirkungen auf die psychische Gesundheit und das Wohlbefinden haben kann, insbesondere wenn wir es versäumen, unsere Ziele anzupassen.

Chapter 1

Introduction

Introduction

When I started this dissertation journey, the job in academia was supposed to bridge the time until I found what I then called a "meta-goal" to work towards. Like many emerging adults (Arnett, 2000; Mayseless & Keren, 2014), I was searching for a meaningful goal to structure my developmental path. By definition, I was looking for a life goal. The search for a life goal turned into research about life goals and became the theme of this dissertation.

Life goals are what people talk about when asked what makes a successful and meaningful life. Since people are motivated to pursue that which is important and meaningful to them, life goals can guide their feelings, thoughts, and actions over extensive periods of time (Austin & Vancouver, 1996; Roberts & Robins, 2000). Life goals are strongly shaped by societal norms and expectations and tend to reflect subjective evaluations of age-graded developmental tasks (Havighurst, 1972), like being successful in one's career, starting a family, or having a happy relationship (Roberts & Robins, 2000). At the same time they are also sources of individual agency in development (e.g., Baltes & Baltes, 1990; Brandtstädter, 2009; Brandtstädter & Rothermund, 2002; Havighurst, 1972; Heckhausen et al., 2010, 2019), and opportunities for self-exploration and self-actualization. By choosing which life goals to pursue and which ones to disengage from people can actively shape their life path. This also includes their personality traits (Hudson et al., 2019; Hudson & Fraley, 2016; Jayawickreme et al., 2019; McCabe & Fleeson, 2012, 2016) and well-being (e.g., Emmons, 1991; Headey et al., 2013; Heckhausen et al., 2001; King et al., 1998; Sheldon & Cooper, 2008). Importantly, life goals not only matter to personality and well-being in early adulthood when people must select which life goals to pursue. They continue to influence development throughout the lifespan as people have to adjust their goals to changing opportunities and constraints (Haase et al., 2013). Accordingly, a comprehensive understanding of life goals and their development across the lifespan is central for developmental research in personality and

positive psychology and contributes more generally to a better understanding of successful aging.

The relevance of life goals for personality development is reflected in earlier theoretical accounts (e.g., Ach, 1935; Allport, 1961; Bandura, 1985; Little, 1989) as well as more recent theoretical frameworks (e.g., DeYoung, 2015; Jayawickreme et al., 2019; McAdams & Pals, 2006; Quirin et al., 2020; Roberts & Wood, 2006; Wagner et al., 2020; Wrzus & Roberts, 2017). Even the recovery of personality psychology in the mid-eighties from almost two unprosperous decades has been, at least partially, attributed to an increased interest in motivational concepts like life goals (Emmons, 1993; McAdams, 1997). Yet, empirical research on their assessment (Kiendl & Hennecke, 2022; Partsch et al., 2023), development (Bühler et al., 2019; Wehner et al., 2022), and developmental associations with other important personality domains (Atherton et al., 2021) has only recently started to accumulate.

As for the field of positive psychology, established theoretical models of successful aging (Baltes, 1997; Havighurst, 1961; J. Heckhausen, 1999; Ryff, 1982) and well-being (Diener et al., 1998, 2006; Ryff, 1989) all incorporate motivational concepts like life goals. Some aspects of well-being are by definition so closely linked to goals that they are theorized to directly mirror goal progress (Diener et al., 2003; Oishi et al., 1999). However, many of the theoretically implied relationships between life goals and well-being have mostly been tested in cross-sectional studies or in longitudinal studies that only covered short time periods (e.g., J. Heckhausen et al., 2001; 2023; Wrosch et al., 2003, 2013; Wrosch & Heckhausen, 1999 but, see Shane et al., 2023 for a recent longitudinal study).

As a consequence, to date large scale longitudinal research on the lifespan development of life goals is still sparse. Moreover, important questions about the developmental relationship between life goals and other relevant personality domains, such as

the Big Five and well-being remain to be answered. This dissertation addresses the aforementioned research gaps in five important ways and more broadly contributes to a better understanding of development. First, it advances our knowledge of lifespan development by providing an overview of the development of nine different life goals, comprising the domains work, family, personal growth, and social integration across the entire adult life span. Second, it investigates the developmental relationships of these nine life goals with the Big Five personality traits. Third, it examines the predictive effect of family and career goals on midlife well-being trajectories. Fourth, it tests established theoretical perspectives on developmental regulation, specifically goal adjustment in rigorous longitudinal designs. Finally, it explores the effects of important moderators, both withing the person and their environment, such as gender, regional socialization, being a parent, perceived control, and education.

Specifically, the three empirical studies that comprise this dissertation seek to answer the following research questions: RQ1 how does the importance of different life goals change as we get older, RQ2 does change in life goals go hand in hand with personality trait change, and RQ3 how do life goals during emerging adulthood affect the development of mental health, well-being, and loneliness later in life contingent on goal attainment. To investigate these questions large scale longitudinal data from the German socio-economic Panel survey (SOEP) were used that span study periods of 12 to 30 years. Study I investigated how life goals develop across the entire adult life span and if development is affected by gender, educational background, regional socialization, and parental status (i.e., if someone is a biological parent or not). Study II investigated if life goals and the Big Five personality traits change together. Finally, Study III investigated the effect of two life goals that are central to many people's lives, having children and career success, on the development of mental health, well-being, and loneliness contingent on the attainment of the goal to have children.

This chapter will proceed as follows: First, I will explain how life goals are conceptualized in this dissertation and will distinguish them from other motivational constructs. Next, I will contextualize life goals in personality and positive psychology. Then, I will introduce theory and existing empirical research on the lifespan development of life goals, personality traits, and well-being as well as their (longitudinal) interrelatedness. I will close this chapter with an interim summary which illustrates how the previous theoretical and empirical work motivated the three empirical studies and outline their objectives and individual research goals.

1.1. Conceptualizations of Life Goals and Related Constructs

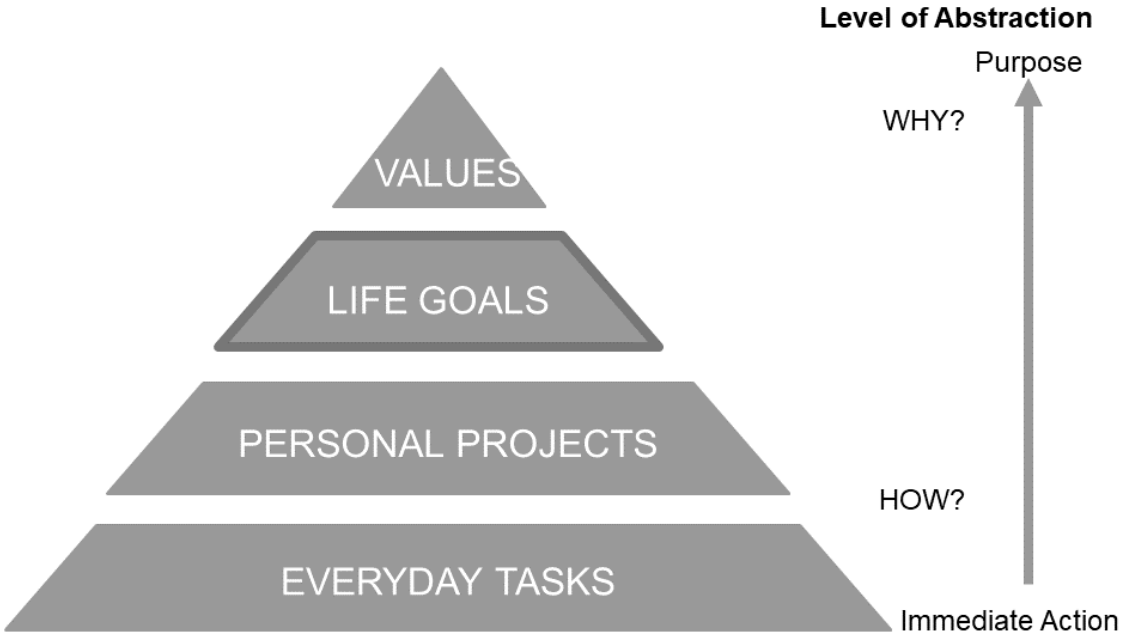
Goal constructs in psychology date back to the beginning of the 20th century and are thought to be hierarchically organized (for a review, see Austin & Vancouver, 1996; Carver & Scheier, 1981; Emmons, 1986; Powers, 1973). Goals that are further up the hierarchy are conceptually very close to values and some have argued that they are indistinguishable from values (Fetvadjiev & He, 2019; Ritter & Freund, 2014). They span contexts and time and provide the individual with a sense of purpose and meaning in life (Emmons, 2003).More subordinate goals are conceptually closer to tasks, context-bound and require immediate action (Austin & Vancouver, 1996). Figure 1 gives a simplified idea of the hierarchical organization of goal construct in psychology.

Personality psychologist have traditionally focused on mid- and higher-level motivational units such as life tasks (Cantor & Langston, 1989), possible selves (Brandtstädter, 1998; Markus & Nurius, 1986), personal projects (Little, 1989), personal strivings (e.g., Emmons, 1986), “wants” (H. Heckhausen & Kuhl, 1985), narratives (J. J. Bauer et al., 2008; Singer, 2004), life stories (Habermas & Bluck, 2000; McAdams, 1989; Sarbin, 1986), or major life goals (Roberts & Robins, 2000). Most of these constructs can be summarized under Austin and Vancouver’s (1996) definition of goals: they are cognitive

representations of desired end states that impact cognition, emotion, and behavior (see also Fishbach & Ferguson, 2007). However, they differ regarding their level of abstraction, content, valence, time perspective, and the way they are commonly assessed. For instance, life goals and possible selves share that they impact cognition, emotion, and behavior across long time periods, but life goals are generally desirable and strongly tied to societal expectations about what should be achieved and when (Roberts & Robins, 2000) whereas possible selves are highly personalized and can also contain negative content. Being a bad partner or spouse is an example for a (feared) possible self, whereas having a happy marriage or relationship would be a related life goal. Moreover, life goals are at least to some degree context bound whereas possible selves and personal strivings can be quite abstract.

Figure 1

Hierarchy of Goal Constructs in Psychology (Simplified)



Note. There are many more goal constructs in psychological research which are not displayed in this figure. Yet, all of them can be categorized in terms of their level of abstraction and time perspective.

Moreover, life goals are commonly assessed in the form of importance ratings of a predefined list of life goals (Deci & Ryan, 1997; 2022; Pöhlmann & Brunstein, 1997; Roberts et al., 2004; Roberts & Robins, 2000, but see Kiendl & Hennecke, 2022 for a recent critical review on the assessment of goal constructs) whereas possible selves, personal projects, and personal strivings are often assessed in an open question format (Cross & Markus, 1991; Emmons, 1986, 1991, 1992; Little, 1989).As such, the assessment of these constructs compared to life goals is less dependent on societal expectations and social scripts and allows more interindividual variation. In a study that investigated possible selves in older women, Hoppmann and Smith (2007) identified 24 categories of possible selves whereas most life goal measures assess between six and eight life goal domains (Deci & Ryan, 1997; Roberts & Robins, 2000; Pöhlmann & Brunstein, 1997). Depending on the theoretical framework, these life goal domains can be further aggregated.

One frequently adopted way to aggregate life goal domains (e.g., Atherton et al., 2021; J. J. Bauer & McAdams, 2010; Bleidorn et al., 2010; Bühler et al., 2021; Diekman et al., 2010; Kuenemund et al., 2013; Pöhlmann, 2001; Pöhlmann & Brunstein, 1997; Roberts & Wood, 2006; Salmela-Aro, 2009) is along the dimensions of agency (e.g., competence, assertiveness, dominance) and communion (e.g., warmth, relatedness, morality; see Bakan, 1966). Agency is associated with self-promotion in social hierarchies, communion is associated with maintaining positive social relationships (e.g., Trapnell & Paulhus, 2012). Thus, life goals that revolve around getting ahead (e.g., career success, status, economic achievement, hedonism, and personal growth) are considered agentic whereas life goals that revolve around getting along (e.g., having harmonious relationships, being there for others, and having a happy marriage or relationship) are considered communal (Atherton et al., 2021; Roberts & Robins; 2000). It is, however, also possible that life goals contain both agentic and communal content.

Another frequently used way of aggregating life goals (e.g., Brdar et al., 2009; Kasser & Ryan, 2001; Twenge et al., 2012; Williams et al., 2000) is within the framework of self-determination theory (SDT; Ryan & Deci, 2000). SDT distinguishes between intrinsically versus extrinsically motivated life goals. The pursuit of intrinsic life goals is thought to enable the individual to experience autonomy and act in line with their personal values which is theorized to foster well-being and healthy personality development (Niemiec et al., 2010). Theoretically, any life goal can be intrinsic as long as it is self-concordant, that is, it matches relatively stable features of a person's personality, such as traits, personal interest and values (Sheldon, 2004, 2008). In practice, however, most studies and assessment instruments categorize goals that revolve around personal growth, meaningful relationships, or community contributions as intrinsic goals and goals related to wealth or status as extrinsic goals (e.g., Pöhlmann et al., 2010; Sheldon & Kasser, 2001b). Studies also showed that compared to agentic goals, communal goals are described as being more self-concordant (e.g., Sheldon & Cooper, 2008). Communal and intrinsic life goals have been treated as conceptually close in both theory and research. To a lesser extend this is also true for agentic and extrinsic goals (with an exception of personal growth goals). This conceptual overlap is supported by studies investigating the associations between life goals and well-being (Emmons, 2003; Headey et al., 2013; Kasser & Ahuvia, 2002; Kasser & Ryan, 2001; Pinquart et al., 2009; Sheldon & Kasser, 2001b). Life goals classified as intrinsic or communal reliably predict better well-being (e.g., Headey et al., 2013; Niemic et al., 2010; Sheldon & Kasser, 2001). Importantly, however, communal life goals can be extrinsically motivated, too (e.g., in the sense of social desirability). There are still other taxonomies to aggregate life goal domains (e.g., Emmons, 2003; Headey, 2008) which usually translate into the agency versus communion taxonomy relatively easily.

In the context of research on goal processes such as commitment, progress, attainability, conflict or facilitation (Boudreaux & Ozer, 2013; Brunstein, 1993; Carver & Scheier, 2000; Freund et al., 2010; Freund & Hennecke, 2015; Gollwitzer & Sheeran, 2006; Riediger et al., 2005; S. Wiese & M. Freund, 2005; for a recent theoretical review, see Brandstätter & Bernecker, 2022) goals are sometimes categorization into approach versus avoidance goals (e.g., Elliot & Thrash, 2002; Nikitin & Freund, 2008). Being a caring, attentive partner to have a happy relationship or marriage is an approach goal whereas being a caring, attentive partner to avoid relationship dissolution is an avoidance goal. Approach and avoidance goals have been differentially associated with different aspects of well-being (see Tamir & Diener, 2008 for an introductory book chapter). However, since goal processes only tangentially relate to the topics of this dissertation, I will refrain from going into further detail.

This dissertation aimed to shed light on the development and longitudinal associations of the importance of different life goals conceptualized as domain-specific, higher order motivational strivings that span long time periods and provide general life structure (Roberts & Robins, 2000). This dissertation organizes and interprets life goals along the dimensions agency and communion and assesses them in the form of importance ratings.

1.2. Life Goals and Personality Psychology

The above provided definition of life goals originates from the field of personality psychology. Personality describes the relatively enduring patterns of behavior, cognition, emotion, and motivation that differ between people (Kandler et al., 2014; Wilt & Revelle, 2015). Thus, personality comprises, among others, personality traits (e.g., the Big Five; Goldberg, 1990), more stable components of well-being (e.g., life satisfaction; Lucas & Donnellan, 2007), and higher order goals. For a long time, different aspects of personality such as life goals and personality traits were investigated in separate strands of research

(Austin & Vancouver, 1996; Emmons, 2003; Roberts, 2009). It has only been within the last three decades that the research interest in the interrelatedness of different components of personality has increased. (e.g., Bleidorn et al., 2010; Bühler et al., 2021; Lüdtke et al., 2009; Roberts, 2009; Roberts et al., 2004; Salmela-Aro et al., 2012). At the same time theoretical models of personality also began to acknowledge the interrelatedness of different components of personality and became more integrative (e.g., Baumert et al., 2017; Jayawickreme et al., 2019; McAdams & Olson, 2010; McAdams & Pals, 2006; McCrae & Costa, 2008; Roberts & Wood, 2006; Wagner et al., 2020). As a result, today, most personality psychologists agree that life goals are critically relevant to fully capture an individual's personality. It should be noted that, within these more integrative models, traits and life goals, which are of particular relevance for this dissertation, only represent two of several elements. For instance, self-related schemata (e.g., locus of control, self-esteem, risk-aversion), abilities (e.g., the g-factor), social attitudes (e.g., social dominance orientation), beliefs (e.g., religiousness), values (e.g., conservatism), and narratives (e.g., scripts) are also considered important aspects of personality (Frey et al., 2017; Kandler et al., 2014; Roberts & Wood, 2006). It should further be noted that the empirical studies that comprise this dissertation conceptualized personality traits in terms of the Big Five, Agreeableness, Conscientiousness, Extraversion, Openness, and Neuroticism. Hence, throughout this dissertation the term (personality) trait refers to the Big Five unless otherwise specified.

Recent theoretical models of personality (Baumert & Schmitt, 2012; DeYoung, 2015; Jayawickreme et al., 2019; Quirin et al., 2020; Roberts & Wood, 2006; Wagner et al., 2020; Wrzus & Roberts, 2017) conceptualize traits and life goals as interrelated building blocks of personality at the same hierarchical level. This is contrary to more "classical" structural approaches (e.g., Asendorpf & Van Aken, 2003; Digman, 1990; McCrae & John, 1992; Zuckerman et al., 1993) which assume a small set of strongly hereditary and relatively stable

core characteristics (also called *basic traits*; e.g., the Big Five traits) which form the basis for less stable, more environmentally malleable, and hierarchically subordinate surface characteristics (also called *characteristic adaptations*; e.g., life goals). The "classic" structural perspective has been challenged by several studies (for a review, see Kandler et al., 2014) that found (a) only small or no differences regarding the heritability of basic traits and life goals or values (e.g., Alford et al., 2005; Bleidorn et al., 2010; Renner et al., 2012; Salmela-Aro et al., 2012), found (b) similar levels of rank-order stability of basic traits and life goals (Atherton et al., 2021; Roberts et al., 2004), and (c) life goals as independent predictors of important life outcomes (J. J. Bauer & McAdams, 2010; Headey et al., 2013; Winter et al., 1998) . Thus, following recent theoretical models of personality and empirical research, traits and life goals are conceptualized as interrelated but distinct aspects of personality at the same hierarchical level in this dissertation, whereby traits represent the descriptive part and life goals the motivational part of personality.

Like life goals, the Big Five traits can have agentic and communal content. Prior studies showed that Extraversion and Openness contain agentic content, whereas Agreeableness contains communal content, Conscientiousness contains both, and Neuroticism neither (e.g., Abele et al., 2016; Entringer et al., 2022; Furr & Funder, 1998; Gebauer et al., 2015)

1.3. Life Goals and Positive Psychology

Positive psychology studies factors that promote satisfaction, happiness, and thriving rather than malfunctioning and pathology (Eid & Larsen, 2008; Emmons, 2003; Seligman & Csikszentmihalyi, 2000; Sheldon & King, 2001). By definition, most well-being constructs refer to life goals in one way or another (Emmons & Kaiser, 1996). For instance, cognitive-evaluative well-being, an aspect of subjective well-being (SWB; Diener et al., 1998; Eid & Larsen, 2008), reflects the evaluation of current against aspired life conditions and as such

depends on a person's goals. Moreover, as people make progress towards their goals, they feel positive emotions like happiness or mastery, resulting in increased levels in the affective aspect of SWB (Diener et al., 1998). Life goals also help people generate purpose and meaning in life (e.g., Emmons, 2003) which have been found to predict cognitive-evaluative and affective aspects of SWB (e.g., Gudmundsdottir et al., 2023) and which are both aspects of eudaimonic well-being (EWB; e.g., Ryff, 1989). EWB has been described as a sense of integrity that arises from living a good, meaningful, and virtuous life that is consistent with one's true potential (e.g., Deci & Ryan, 2008). Besides purpose and meaning in life, EWB encompasses a multitude of constructs (for a review, see Huta & Waterman, 2014) but since this dissertation only included measures of SWB, I will not go into further detail.

1.3.1. Subjective Well-Being

Research interest in SWB took off in the 1980s with works by Ed Diener and colleagues (e.g., Diener, 1984; Diener et al., 1985; Diener & Emmons, 1984) but can be traced back to work by Bradburn (1969). SWB has been described as the hedonic aspect of well-being (e.g., Ryan & Deci, 2001). As stated above, it encompasses a cognitive-evaluative component and an affective component which are conceptually and empirically distinct (Luhmann, Hawkley, et al., 2012). Cognitive-evaluative components of well-being are commonly assessed through self-report measures of global and domain-specific satisfaction (Diener et al., 1985; Eid & Larsen, 2008). The affective component of well-being reflects positive affect (e.g., feeling happy, enthusiastic, or proud) and negative affect (e.g., feeling sad, afraid, or irritable) which are longitudinally independent from one another (Diener & Emmons, 1984; Schimmack, 2008). Measures of affective well-being commonly assess on a Likert-type scale how often and with what intensity people felt positive and negative affect in a given time frame (e.g., Watson et al., 1988). Depending on the research question this can range from "right now" to weeks or months. However prior research

showed that single self-report assessments that refer to longer time periods are strongly influenced by current affect (e.g., Brose et al., 2013) whereas that is not the case for assessments of cognitive-evaluative well-being (Eid & Diener, 2004).

1.3.2. Empirical Research on the Association of Life Goals and Well-Being

Empirical research on the association between life goals and well-being addresses predominantly two research questions: (1) is valuing (certain) goals *per se* associated with well-being and (2) how are goal processes (e.g., commitment, progress, adjustment, or attainment) related to well-being. Studies that investigated the effect of valuing certain goals *per se* found that valuing any goal in life, regardless of its content, is associated with better SWB (e.g., Anic & Tončić, 2013; J. J. Bauer & McAdams, 2004; Rijavec et al., 2011). Moreover, several studies found that valuing life goals with communal content is associated with better SWB than valuing life goals with agentic content (Headey et al., 2013; McGregor et al., 2006; Salmela-Aro et al., 2001; Schmuck et al., 2000).

Studies that investigated goal processes and well-being reliably linked goal progress to increased SWB (for a meta-analysis, see Klug & Maier, 2015). Failure to attain valued goals as well as holding on to unattainable goals has been negatively associated with well-being (Boudrenghien et al., 2012; Brandstätter et al., 2013; J. Heckhausen et al., 2001; Ntoumanis et al., 2014; Verschuren & Douilliez, 2022; Wrosch et al., 2003, 2007, 2013).

1.4. Lifespan Development of Life Goals, Personality traits, and Well-Being

Although life goals and personality traits are both interrelated personality domains (e.g., Dweck, 2017; Roberts & Robins, 2000; Wagner et al., 2020), their development has been investigated in mostly separate lines of research. In the last three decades, personality psychologists have shown with great methodological rigor how personality traits change across the lifespan (for a recent meta-analysis, see Bleidorn et al., 2022), but lingering questions about the theoretical foundation of trait stability and change, remain to be answered

(for reviews, see Bleidorn et al., 2021; Specht et al., 2014). In contrast, theoretical models of developmental regulation and successful aging which explain the development of motivational constructs like life goals are well-established (Baltes & Baltes, 1990; Brandtstädter, 1998; Brandtstädter & Rothermund, 2002; Ebner et al., 2006; Freund, 2008; Freund & Baltes, 2002; Haase et al., 2013; J. Heckhausen et al., 2010, 2019). These models propose mechanisms which center around three key processes that are thought to dominate more or less in different phases of development: goal engagement, goal disengagement, and metaregulation (Haase et al., 2013). Compared to personality traits, fewer empirical studies tested the theoretically implied lifespan development of life goals and did so with less methodological rigor. At least partly, this is due to the poorer representation of motivational constructs in large-scale panel studies.

As for well-being, set-point theory (Brickman & Campbell, 1971) and its derivatives (e.g., Diener et al., 2006), which in essence propose short-term fluctuations around major life events but otherwise relative mean-level stability, are the prevailing theoretical perspective in research on the development of SWB. Since SWB constructs, especially cognitive-evaluative well-being, are well represented in large-scale panel studies, this perspective has been extensively contested by empirical research (for meta analyses, see Bühler et al., 2023; Luhmann, Hofmann, et al., 2012).

1.4.1. Lifespan Development of Life Goals.

Several theoretical approaches explain how the importance of different life goals should change across the adult life span (for reviews, see Haase et al., 2013; J. Heckhausen et al., 2019). Classics in the literature of successful aging are the dual-process model of assimilative and accommodative coping (Brandtstädter, 1989, 2009), the metatheoretical framework of selection, optimization, and compensation (SOC; Baltes & Baltes, 1990), and the motivational theory of lifespan development (MTD; J. Heckhausen et al., 2010 for an

attempt of theoretical integration of the three models, see Haase et al., 2013). The dual-process model distinguishes between two modes to handle discrepancies between aspired and actual life conditions: Assimilation, which refers to actively changing the situation to come closer to aspired goals (e.g., goal engagement or persistent commitment), and accommodation, which refers to rescaling one's goals to make attainment more realistic (e.g., goal adjustment and disengagement). The dual-process model predicts that assimilative strategies decrease with age whereas accommodative strategies increase. This means that the importance of life goals that are age-bound by societal or biological constraints should decreases throughout life.

The SOC suggests three processes that explains how people maneuver through life in a way that maximizes gains and minimize losses: selection, optimization, and compensation. Selection refers to prioritizing the pursuit of age-appropriate goals over others. Optimization is characterized by generation and refinement of goal-relevant means and resources. Compensation refers to behaviors counteracting loss or decline in goal-relevant means. This could be either by choosing different means to reach the same goal, or by disengaging from the goal (e.g., when the goal is no longer attainable or extremely difficult to attain). Compensation could for example include increasing effort, dropping lower-priority goals and getting help. Applied to life goals, the SOC would predict a phase of considerable change in the importance of some goals in young adulthood followed by relative stability in midlife and change again in late adulthood. In young adulthood, individuals need to select from a wide range of possible goals which results in changes. During midlife individuals focus on maintenance and optimization of the goals selected during young adulthood which results in relative stability. In old age, when the pursuit of some goals becomes increasingly difficult and developmental deadlines have passed, individuals may disengage from unattainable goals resulting again in change.

Similarly, the MTD and its action phase model (J. Heckhausen, 2000) conceptualizes the life span as a sequentially organized, age-graded field of opportunities and constraints in which people have to prioritize age-appropriate goals over others. This theory differentiates between four types of control strategies: (1) selective primary control which refers to strategies that involve own effort, time and skill an individual invests, (2) compensatory primary control which refers to strategies that help and support the individual (e.g., hiring an assistant or getting fertility treatment), (3) selective secondary control which refers to self-mobilization strategies (e.g., avoid distractions), and (4) compensatory secondary control which refers to self-protection mechanisms after goal disengagement (e.g., downgrade importance of a goal). According to the action phase model of developmental regulation (J. Heckhausen, 2000), control strategies (or in the terminology of the SOC model, optimization efforts) differ depending on the distance to a developmental deadline. Developmental deadlines are defined by biological or societal constraints that make goal attainment impossible. As the deadline approaches and opportunities decrease, the individual intensifies goal-related behaviors. This suggests that the developmental trajectories of different life goals differ depending on whether they are age-bound (i.e., have a developmental deadline) or not. The importance of life goals with a clear developmental deadline (e.g., having children or career success) should follow an inverted U-shaped trajectory, whereas life goals that are less age-bound (e.g., being socially involved or having a happy partnership) may exhibit greater stability across the life span. It should be noted that developmental opportunities, constraints, and deadline can differ greatly depending on a person's context. Factors like gender, region, perceived control, or socio-economic background contribute to interindividual differences in the developmental trajectories of life goals (Cygan-Rehm & Maeder, 2013; Greenhaus & Allen, 2011; J. Heckhausen et al., 2001).

Two other theories that explain the development of life goals, particularly in the social domain, are Erikson's concept of generativity (Erikson, 1963) and Socio-Emotional Selectivity Theory (SST; Carstensen et al., 1999, 2003). Generativity describes the tendency to care for future generation and has been theorized to peak in midlife (Erikson, 1963), but some studies have also shown sustained high levels of generativity throughout late adulthood (McAdams et al., 1993; Sheldon & Kasser, 2001a). SST explains how changes in time perception influence the importance of different goals. SST posits that during young adulthood time is typically perceived as open ended which allows the pursuit of future-oriented goals focused on knowledge acquisition and expanding one's horizon. The older we get, the narrower our time perspective becomes and the less we are motivated by future-oriented goals. Instead, present oriented goals that provide emotional meaning (e.g., being socially involved or having a happy partnership) become important. The proposition of SST that emotionally meaningful goals become more important with age is also consistent with SDT which proposes that people get better at pursuing self-concordant goals, that is goals that are in line with their personal values and interests as they get older (Sheldon, 2008). More recently, Freund (2020) explained the stronger focus on social goals in late adulthood with the so-called the bucket list effect. According to this perspective, leisure and social goals are postponed until after retirement due to the compression of work- and family-related demands during late young and middle adulthood in Western societies (see also Mehta et al., 2020).

Taken together, these theories suggest that (1) most life goals change more during early and late adulthood due to goal selection and goal disengagement, (2) most life goals exhibit some degree of stability during midlife due to the primary focus on maintenance and optimization, (3) life goals that are clearly age-bound (i.e., have hard developmental deadlines) develop differently than goals that are not tied to developmental deadlines, (4)

future-oriented goals that are focused on personal growth and knowledge acquisition are more important during young adulthood whereas present-oriented goals that are focused on making emotionally meaningful experiences are more important later in life.

Note that these assumptions have some degree of overlap. Goals that are focused on making meaningful emotional experiences (e.g., being a caring friend or partner) are likely not age-bound whereas future-oriented goals that require the acquisition of specific knowledge or skill are often tied to developmental deadlines (e.g., becoming a martial arts black belt is tied to a biologically determined developmental deadline).

1.4.2. Lifespan Development of Personality Traits.

Around the turn of the millennium, evidence began to accumulate that personality traits are less stable across adulthood than originally thought and continue to develop way past the age of 30 (e.g., Caspi & Roberts, 2001; Roberts & DelVecchio, 2000). Since then, hundreds of studies have shown that there is both stability and change in personality traits across the lifespan (Damian et al., 2019; Graham et al., 2020; Harris et al., 2016; Seifert et al., 2022; Wagner et al., 2016, for a review, see Bleidorn et al., 2021, for a meta-analysis, see Bleidorn et al., 2022). These studies show that rank-order change is most pronounced during adolescence and emerging adulthood as well as old age, intermitted by a period of relative stability in midlife (Bleidorn, 2015; Bleidorn & Schwaba, 2017; Milojev & Sibley, 2017; Pusch et al., 2019; Seifert et al., 2022; Specht et al., 2011). With regards to the direction of change, studies consistently showed that, on average, people become more agreeable, conscientious, and emotionally stable (i.e., less neurotic) especially throughout young adulthood (Bleidorn et al., 2022), a pattern which has been termed the maturation principle (e.g., Roberts & Woods, 2006). Some studies found a reversal of this pattern later in life (for coordinated analyses, see Graham et al., 2020; Seifert et al., 2023). However, this is not reflected in the meta-analytic findings of Bleidorn et al. (2022). Still, they also found greater

late life differences between the mean level trajectories of Agreeableness, Conscientiousness, and Neuroticism than expected and recommended considering development in these traits separately.

Regarding the drivers of development, prior research concluded that both genetic and environmental factors contribute to the stability and change of personality traits (Bleidorn et al., 2014; Briley & Tucker-Drob, 2014; Harris et al., 2016; Johnson et al., 2005; Mõttus et al., 2017, 2019; Penke & Jokela, 2016). However, questions about the exact pathways through which specific genes or environments shape personality development remain largely unanswered (Bleidorn et al., 2021; Wagner et al., 2020). Many theoretical models have in common that they propose a feedback loop between motivational constructs and traits (Denissen et al., 2013; DeYoung, 2015; Dweck, 2017; Hennecke et al., 2014; Jayawickreme et al., 2019; Quirin et al., 2020; Roberts & Wood, 2006; Wrzus & Roberts, 2017). For instance, models that suggest self-regulatory mechanisms as drivers of development propose that, momentary trait-relevant behaviors, feelings, and thoughts (cf. trait-relevant states; Jayawickreme et al., 2019) are performed as strategic means to attain desirable goals (Denissen et al., 2013; Hennecke et al., 2014). If, in order to achieve desirable goals, these trait-relevant states are experienced repeatedly, they are expected to manifest in changed trait levels. Readiness to engage in trait-relevant behaviors to achieve desirable goals as well as doing so persistently differs between people. Some theoretical models explicitly account for these interindividual differences in factors like perceived control (e.g., Dweck, 2017; Quirin et al., 2020).

Desirable goals often reflect normative developmental tasks and these change across the lifespan. Thus, traits that were suitable means to attain desired goals in young adulthood may not be as suitable to attain desirable goals later in life (e.g., Olaru et al., 2023). This suggests that personality traits should change in response to the changing demands that come

with new developmental tasks. An assumption also made by theoretical perspectives that propose developmental tasks as a framework to study personality development (Hutteman et al., 2014). A similar mechanism as proposed by self-regulation perspectives is also implied in whole trait theory (WTT; Jayawickreme et al., 2019). WTT conceptualizes traits as comprising both descriptive (e.g., states assessments of the Big Five) and explanatory (e.g., motivational constructs such as life goals, values, or social scripts) aspects. Although WTT was intended as a theoretical integration of personality structure and process, it can also explain development. It proposes a directional link between explanatory and descriptive aspects of traits. Specifically, explanatory aspects like life goals cause descriptive aspects like Big Five states, which is similar to the core assumption of self-regulation models. In the context of WTT, this has been empirically demonstrated for Conscientiousness and Extraversion (McCabe & Fleeson, 2012; McCabe et al., 2016). Recently, more supporting evidence for the self-regulation perspective accumulated from the field of volitional personality change. This research shows that people can purposefully change their personality traits in a desired direction to attain goals and found short-term effects of such interventions for Conscientiousness, Extraversion, and Neuroticism (e.g., Hudson et al., 2019, 2020; Hudson & Fraley, 2016; Moore et al., 2021; Olaru et al., 2022; Stieger et al., 2021).

A reciprocal mechanism is proposed by the corresponsive principle, defined within neo-socioanalytic theory (NST; Roberts & Woods, 2006). It suggests that self-selection and socialization processes form a feedback loop (Roberts & Woods, 2006). This means that, depending on their personality, people prioritize different goals, which if achieved, reinforce the traits that initiated their pursuit. Studies that investigated longitudinal associations between motivational constructs and traits provided evidence for reciprocal relationships (Atherton et al., 2021; Bleidorn et al., 2010; Roberts et al., 2004) but some only found

predictive effects of traits on motivational constructs and not vice versa (Lüdtke et al., 2009; Vecchione et al., 2019).

Another principle defined within NST that also highlights the role of socialization processes and environmental influences in personality development is the social investment principle (SIP). It proposes that personality develops through investment in normative social roles. Thus, patterns of relative mean-level and rank-order stability during midlife may reflect the more stable social roles and life circumstances during this phase, compared to emerging adulthood when people are still searching for their purpose (Mayseless & Keren, 2014) and exploring different life paths (Arnett, 2000), or old age, when they must adjust to changing life conditions like poorer health (Seifert et al., 2022) or retirement (Schwaba & Bleidorn, 2017). Note, that this is also in line with theories of successful aging, that propose a focus on maintenance during midlife (Freund, 2008; Freund & Baltes, 2002; J. Heckhausen, 2000).

The SIP has been extensively tested by studies investigating the effect of life events that correspond to normative social roles (e.g., becoming a parent or entering the work force) on personality trait change. These studies produced mixed results (for a review, see Bleidorn et al., 2018; for a meta-analysis, see Bühler et al., 2023). Several studies found no effects (e.g., Krämer, Van Scheppingen, et al., 2023; Spikic et al., 2021), and if effects were found, these tended to be small and sometimes ran counter the principle of maturation (Asselmann & Specht, 2021; Denissen et al., 2019; van Scheppingen et al., 2016). Normative social roles, like being a spouse, an executive employee, or a parent represent important life goals for many people. It seems plausible that investments into social roles start once a life goal is formed which can mean years before the occurrence of the corresponding life event itself. From a self-regulation perspective, an individual may take regulatory action towards a desired end state as soon as that end state is formulated, for instance, as a life goal. Someone aiming for career success will choose specific courses in high school, decline party invitations in favor of

studying during their college years, and attend informal business meetups to network. Someone who wants to be a parent may invest into this role long before the birth of their child (e.g., Bass, 2015). At the same time, the mere occurrence of normative life events may not always reflect strong investment with the associated social roles. Following this line of reasoning, personality trait changes should mirror changes in the subjective importance of life goals.

1.4.3. Lifespan Development of Well-Being.

The prevailing model to explain lifespan development of SWB is set-point theory (Brickman & Campbell, 1971) which posits that individuals have a set-point around which their SWB fluctuates. These fluctuations are only temporary, suggesting that, on average, SWB stays at the same level throughout the lifespan. This has been disproved by longitudinal research that found mean-level changes in both cognitive-evaluative and affective well-being. On average, people's cognitive-evaluative well-being is relatively stable throughout young and middle adulthood but declines steeply at the end of life (Baird et al., 2010; Gerstorf et al., 2008a, 2008b; Lucas & Donnellan, 2007). As for affective well-being, positive affect steadily decreases throughout life. Experiencing anger peaks in young adulthood and steeply declines thereafter. Experiencing sadness remains relatively stable throughout young and middle adulthood but slightly increases in late adulthood (Kunzmann et al., 2013, 2014; Kunzmann & Thomas, 2014).

Compared to personality traits, SWB fluctuates more and is more strongly influenced by environmental factors (Anusic & Schimmack, 2016; Schimmack et al., 2008) especially its affective component (Anusic et al., 2012). This is reflected in the dynamic equilibrium model, a revision of set-point theory (e.g., Diener et al., 2006) which proposes short-term fluctuations of SWB around life events as well as gradual age-related change. It states that an individual's set-points and their propensity to change may vary between the different components of well-being. However, it also suggests that life events, have no long-lasting

effect on SWB, a proposition that has been empirically contested by a myriad of studies (Anusic et al., 2014; Asselmann & Specht, 2022, 2023; Doré & Bolger, 2018; Fujita & Diener, 2005; Hentschel et al., 2017; Krämer, Van Scheppingen, et al., 2023; Krämer & Rodgers, 2020; Lawes et al., 2023; Lucas et al., 2004; Richter et al., 2019; for meta-analyses, see Bühler et al., 2023; Luhmann, Hofmann et al., 2012).

The findings of these studies are mixed but tend to support a pattern of fluctuation around life events rather than permanent change. Exceptions to this pattern are loss of a spouse, ongoing unemployment, and disability which have repeatedly been shown to reduce SWB long-term (Anusic & Lucas, 2014; Lucas, 2007; Lucas et al., 2004; Schwaba et al., 2023; Wünsche et al., 2020). Importantly, however, these studies also found considerable heterogeneity in individuals' change trajectories around life events, which shifted the research focus towards a more idiosyncratic perspective on life events. This very recent line of research that emerged from the field of personality psychology suggests that idiosyncratic perceptions and evaluations of an event contribute to explaining interindividual differences in development (Haehner, Pfeifer, et al., 2023; Haehner, Rakhshani, et al., 2023; Kritzler et al., 2023; Luhmann et al., 2021; Rakhshani et al., 2022; Schwaba et al., 2023). Specifically, Luhman et al., (2021) suggested nine event characteristics to consider when investigating the effect of life events. Being an important life goal, however, is not one of them (although valence, predictability, and emotional significance may be proxies).

Few studies have investigated EWB as a multi-faceted construct across the lifespan (cf. Springer et al., 2011). However, several have examined single aspects such as meaning or purpose in life, authenticity, or personal growth (e.g., J. J. Bauer & McAdams, 2010; Hill et al., 2010; Ko et al., 2016; LeFebvre & Huta, 2021; Mackenzie et al., 2018; Steger et al., 2009; see Pfund & Lewis, 2020 for an introductory chapter on purpose across the lifespan) Steger et al., (2009) used large-scale cross-sectional data to investigate differences in the

presence of and search for meaning between different age groups. They found higher levels of search for meaning in younger people and higher levels of presence of meaning in older people. Moreover, they found a positive relationship between presence of meaning and SWB in all age groups but a negative relationship between search for meaning and SWB only in older age groups. Studies that used longitudinal data (J. J. Bauer & McAdams, 2010; Ko et al., 2016; Springer et al., 2011) found increases in EWB (conceptualized as psychosocial maturity) in emerging adulthood (Bauer & McAdams, 2010), relative stability of EWB (conceptualized as purpose in life and/or personal growth) throughout middle adulthood (Ko et al., 2016; Springer et al., 2011), and declines in EWB (conceptualized as purpose in life) in late adulthood (Springer et al., 2011).

1.5. Interim Summary and Objectives of Empirical Studies

Life goals can be seen as a scaffolding for human development. The shape of this scaffolding is influenced by biological constraints and societal norms about which goals should be achieved and when. At the same time, there is room for individual agency in development. By choosing which goals to pursue and which ones to disengage from people can actively influence the direction of their developmental path within this societally influenced scaffolding. Parts of the scaffolding are extremely sturdy and secure. These represent time windows during which goal pursuit requires the least effort because almost no constraints block the way and opportunities for development are plentiful. There are also parts of the scaffolding that appear rather sketchy. It is still relatively safe to go there but they require some fixing. These represent the time windows during which goal attainment is theoretically still possible but requires increased efforts due to more constraints and fewer opportunities. Finally, there are parts of the scaffolding which are obvious safety hazards. Going there will likely harm well-being. These represent the time widow when goal attainment is no longer possible or associated with tremendous efforts and continued pursuit will hamper well-being.

Factors that influence which life goals are seen as important and which ones as dispensable are for instance a person's personality traits (e.g., Lüdtke et al., 2009) and time perspective

(Carstensen et al., 1999). At the same time, goal pursuit influences which personality traits are reinforced and which one's regress. Attainment of desired life goals requires the initiation and maintenance of goal-relevant behaviors, feelings, and thoughts, which over time manifest in changed personality trait levels (e.g., Hennecke et al., 2014; Quirin et al., 2020). Moreover, life goals select individuals into goal-relevant environments which in turn influence personality traits. Importantly, life goals are a personality domain themselves at the same hierarchical level as traits (e.g., Roberts & Wood, 2006, Wagner et al., 2020). Both life goals and the Big Five traits can be organized in terms of the content dimensions agency and communion (e.g., Entringer et al., 2022), whereby some traits and goals can contain both agentic and communal content (e.g., Conscientiousness and being societally involved). Both life goals and the Big Five traits change across the entire life span, whereby change is most pronounced in young adulthood and to a lesser extend in old age. Midlife represents a period of relative stability but there are also considerable interindividual differences in change. Past theory and research suggested that developmental tasks which are associated with normative social roles (Huttemann et al, 2014; Roberts & Wood, 2006), self-regulation mechanisms (e.g., J. Heckhausen et al., 2001; Hennecke et al., 2014), and more generally person-environment transactions (e.g., Wagner et al., 2020; Wrzus & Roberts, 2017) play a key role in explaining the development of life goals and personality traits.

Life goals are closely linked to well-being. First, by definition cognitive-evaluative well-being is the result of comparing current against aspired life conditions (i.e., life goals). Second, making progress towards or attaining desired life goals should result in positive affect such as feelings of happiness or mastery whereas failure to attain goals should result in negative affect. Life goals contribute to having a sense of purpose in life which is an aspect of EWB. SDT suggests that the pursuit of self-concordant goals is fundamental for well-being and more generally healthy (personality) development. The healthy personality in terms of the Big Five has been described as high Openness, Extraversion, and Agreeableness, and low Neuroticism (Bleidorn et al., 2020).

1.5.1. Motivation and Goals: Study I

Study I of this dissertation was motivated predominantly by three observations: First, MTD (e.g., J. Heckhausen et al., 2019) and SST (Carstensen et al., 1999) predict different developmental trajectories for goals that are age-bound (e.g., having children or having a successful career) and those that are not (e.g., self-fulfillment) but these predictions have mostly been tested in cross-sectional studies (J. Heckhausen et al., 2001; Wrosch et al., 2003; 2013). Second, recently studies highlighted the predictive power of lower personality dimensions (e.g., Mõttus & Rozgonjuk, 2021) and recommended to investigate personality development on the item-level. Regarding (not only) research on life goals, had not been attempted empirically. Third, and most importantly, Study I was motivated by an evident gap in the literature that since 2000 has been pointed at repeatedly (see Atherton et al., 2021 for the most recent example) but still remains to be adequately filled. This gap concerns the, compared to other personality domains, relatively scarce research on the lifespan development of life goals. Thus, Study I (as well as Study II) was a direct response to Roberts and Robins' (2000) call for more longitudinal studies on the development of life goals. Study I aimed to provide a methodologically solid overview of the life span development of life goals in different domains of life on the item-level to test the predictions made by MDT and SST. It addressed the following research questions:

1. How do life goals in different domains of life change across the adult lifespan?
2. Do the importance trajectories of age-bound goals align with age-graded changes in goal-relevant opportunities and constraints?
3. Do context factors like gender, education, status as a parent, and regional socialization influence levels and changes in the importance of life goals?

1.5.2. Motivation and Goals: Study II

Although most personality psychologists agree that life goals and the Big Five personality traits are closely related and critically relevant to capture an individual's personality, they have mostly been studied in separate lines of research (e.g., Austin & Vancouver, 1996; Emmons, 2003). Since Roberts and Robins' (2000) original call for more research on the lifespan development of life goals and their longitudinal associations with personality traits, to my knowledge only four longitudinal studies on the codevelopment of life goals and the Big Five personality traits have been published (Atherton et al., 2021; Bleidorn et al., 2010; Lüdtke et al., 2009; Roberts & Robins, 2004). Study II of this dissertation is the first to use large-scale longitudinal survey data that includes individuals of all ages and educational backgrounds to examine conjoint change of life goals and the Big Five traits. It aimed to provide a methodologically solid overview of the codevelopment of life goals and the Big Five and extends prior research by investigating the effect of several important moderators on codevelopment Specifically Study II addressed the following research questions:

1. Do life goals and the Big Five personality traits change in conjunction with each other?
2. Does the magnitude of conjoint change vary by age group, perceived control, gender, education, and regional socialization?

1.5.3. Motivation and Goals: Study III

Associations between goal attainment, goals disengagement, and psychological well-being are theoretically well established (e.g., J. Heckhausen et al., 2010, 2019) but lack evidence from extensive longitudinal studies. Making progress towards and attaining socially desirable goals should go hand in hand with increases in SWB (e.g., Diener et al., 2006) whereas holding on to unattainable goals should hamper well-being (e.g., J. Heckhausen et

al., 2001; Wrosch et al., 2013). Moreover, SDT highlights the role of self-concordant goals for well-being (i.e., goals that are in line with a person's values and interests). If a socially desirable goal is not self-concordant, non-attainment should not hamper well-being, at least not as much (Niemiec et al., 2010). To investigate these mechanisms, Study III focused on the goal to have children. This goal was chosen because it is highly normative, socially desirable and strongly tied to societal expectations. Accordingly, it is assumed to affect people's lives in one way or another, whether they end up having children or not. Being age-bound by both biological and social constraints, it allows for the investigation of disengagement from unattainable goals. Finally, compared to other life goals like self-fulfillment or even career success for which attainment can mean different things to different people, attainment of the goal to have children can be assessed relatively easily. Study III builds on and extends prior research by more generally investigating the effect of (not) having children on the midlife development of eight well-being measures in a rigorous, case-controlled, longitudinal design. Specifically, Study III addressed the following research questions:

1. Is attainment of a socially desirable life goal, such as having children, generally associated with better lifespan well-being, mental health, and loneliness?
2. Is failure to attain a socially desirable life goal, such as having children more detrimental to lifespan well-being, mental health, and loneliness if this life goal was highly valued before the developmental deadline?
3. Is disengaging from an unattainable life goal after the developmental deadline associated with better lifespan well-being mental health, and loneliness?

Chapter 2

The Development of Life Goals Across the Adult Life Span

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The Development of Life Goals Across the Adult Lifespan

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Abstract

Objectives. Life goals are important organizing units for individual agency in development. On a societal level, they align with age-normative developmental tasks; on the individual level, they guide people's attempts at shaping their own development. This study investigates the development of life goals across the adult lifespan with a focus on differences regarding gender, parental status, education, and region. **Method.** Using longitudinal data from the German Socio-Economic Panel study (SOEP, N=52,052; age range: 18-84 years), we estimated the developmental trajectories of importance ratings for nine life goals across the adult lifespan using multiple-group latent growth curve modelling. **Results.** Having a happy relationship or marriage, having children, and being there for others are the life goals rated as most important across almost the entire adult lifespan. Having a happy relationship or marriage differed strongly by gender. Up to middle adulthood it was more important for women but more important for men in late adulthood. Parental status amplified gender differences in the work and family domain. Low education was associated with a higher perceived importance of being there for others. The largest regional differences (East vs. West) were found for home ownership. **Discussion.** Although the importance of some life goal trajectories reflects typical age-grading in developmental tasks, other life goals (e.g., having children) remain important even after goal attainment or after developmental deadlines have passed.

Keywords: Developmental methods, Gender, Life course development, Longitudinal change, Parenthood

The Development of Life Goals Across the Adult Lifespan

When asking people about their ideas of a successful life, most refer to the goals they want to achieve. Goals organize behavior and structure development (Heckhausen, 2000; Heckhausen et al., 2010; Nurmi, 1991). They are cognitive representations of desirable states (Austin & Vancouver, 1996), whereby desirability depends on societal expectations about what people ought to achieve and when.

Age-specific expectations are referred to as "developmental tasks" (Havighurst, 1948) and are theorized to influence behavior when adopted as goals (Havighurst, 1948; Nurmi, 1991). Adaptive developmental goals should align with the peak opportunity time for certain experiences and should follow a normative sequence (e.g., career entry and family formation in early adulthood) (Heckhausen, 1999; Heckhausen et al., 2019). As developmental opportunities change across the lifespan, goal engagement and disengagement should be roughly congruent (Heckhausen et al., 2010, 2019).

Societal changes may affect the timing and relevance of developmental tasks. For instance, in the 1950s, women married and had their first child in their late teens or early twenties (Koropeckyj-Cox et al., 2007). Today, the average age of first-time mothers is 30.1 years (Statistisches Bundeamt [Destatis], 2020). Moreover, recent findings suggest that the perceived importance of a romantic relationship for personal happiness is lower in younger birth cohorts (Scheling & Richter, 2021).

Life goals are domain-specific higher-order goals that span time and contexts and that reflect what people generally strive for (Atherton et al., 2020; Bleidorn et al., 2010; Roberts et al., 2004). To date, there are few empirical studies on the long-term development of life goals. Most earlier research was cross-sectional (Nurmi, 1992), focused on a specific developmental stage (Nurmi et al., 1994), or, if longitudinal, only covered brief time periods (e.g., about four years, Salmela-Aro & Nurmi, 1997; Yau et al., 2021). For two decades,

researchers have been calling for more longitudinal research in the field of goal development (Atherton et al., 2020; Dunlop et al., 2017; Roberts & Robins, 2000).

There are a few notable exceptions. A study investigating the development of life goals over a 24-year period from college age to middle adulthood found mean-level decreases over time (Atherton et al., 2020). The sample size, however, was relatively small (N=251), and the points of assessment were spread unevenly across the study period (four points in the first four years, plus one point in year 24). Moreover, the study gave no insights into the development of life goals in late adulthood. Another recent study covering a six-year period with biannual data collection found negative associations between age and the importance of work-, status-, and growth-related goals and positive associations between age and prosocial goals (Bühler et al., 2019). A study investigating life goals at the transition to parenthood found high rank-order and ipsative stability of life goals over the course of one year for parents and childless individuals (Wehner, van Scheppingen, & Bleidorn, in press). The study period of one year seems short, however, in this context. Findings from personality research suggest that changes might occur long before or after the transition to parenthood (Asselmann & Specht, 2020).

Theoretical Perspectives on Goal Development

The motivational theory of lifespan development (MTD; Heckhausen et al., 2010) explains how individuals successfully navigate life's changing opportunities and challenges. It conceptualizes the lifespan as an age-graded, sequentially organized action field of opportunities and constraints in which individuals have to prioritize the pursuit of urgent, age-appropriate goals over others.

Young adulthood is characterized by high control capacity and ample opportunities. Therefore, life goals that are oriented towards the achievement of developmental gains (e.g., personal fulfillment) should have priority (Ebner et al., 2006). According to the action phase

model of developmental regulation (Heckhausen, 2000), goal-striving efforts differ depending on the distance from a developmental deadline. As the deadline approaches and opportunities shrink, the individual intensifies goal-related behaviors. In middle adulthood, opportunities begin to decline, and developmental deadlines loom larger. Hence, the importance of age-constrained goals (e.g., parenthood) should spike before the critical developmental deadlines (e.g., biological clock) have been reached.

Old age is characterized by a loss in primary control capacity and decreasing opportunities, yet also bears some potential for new goal engagement after people retire from working life. Accordingly, this phase should be dominated by disengagement and goal adjustment (Heckhausen, 1999). Life goals for which the developmental deadlines have passed should lose relevance, while social goals that offer support and protection against loneliness should gain relevance. Both close social ties and weaker social ties (e.g., between spouses and between club members, respectively) have been linked to well-being in late adulthood (Huxhold et al., 2020).

Moderators of Life Goals Beyond Age

Human development is inevitably a person-context interaction (Lerner, 1991). Thus, it is essential to investigate life goals in relation to personality and context variables. The current study stresses the relevance of context factors like gender, educational background, parental status, and geographical region. For recent work on the relationship between life goals and personality, see Atherton et al. (2020).

Gender

Men and women are subject to differing social expectations, especially in the work and family domain, where gender-specific socialization is strong (e.g., Eccles, 1994). Findings from the 1990s show a strong reflection of traditional gender roles in young adults' life goals: Career success and property-related goals were more important for young men,

whereas family-related goals were more important for young women (Nurmi, 1991; Nurmi et al., 1994).

Parental Status

Research on the compatibility of career and family life concludes that, for most women, having a child comes with a career penalty (for a review, see Greenhaus & Allen, 2011). The question arises if women, or more generally parents, adapt their career goals after entering parenthood or if they placed lower importance on career-related goals before becoming parents. Some studies suggest substantial decreases in career-related goals and increases in family-related goals for women (and to a lesser degree for men) (Salmela-Aro et al., 2000). Others find hardly any changes (Wehner et al., in press).

Educational Background

Work-related opportunities increase with higher levels of education, which might lead to a prioritization of work-related over family-related goals in early adulthood. Among women, higher levels of education were associated with decreased fertility and a shift of the normative timing of parenthood to a later age (Cygan-Rehm & Maeder, 2013). Outside of the work and family domain, little is known about the influence of education on life goals.

Region

For 40 years, the German Democratic Republic (GDR) and the Federal Republic of Germany (FRG) were separate states. Societal expectations, opportunities, and the normative timing of developmental tasks differed considerably between the two. In the FRG, women were predominantly responsible for housekeeping and childrearing, whereas GDR-women worked full-time. Unemployment was practically nonexistent in the GDR, yet opportunities for career development were limited, and positions requiring expertise and higher education offered only slightly better pay (Stephan & Wiedemann, 1990). In most cases, housing was

allocated by the government. These differences can be expected to have shaped the life goals of people who are now middle-aged or older, even decades after Germany's reunification.

The Current Study

The present study investigates how goals in different domains of life change in importance across the adult lifespan. Based on previous empirical work and the discussion of changes in goal-engagement opportunities across the lifespan, we derive the following hypotheses:

H1: Life goals oriented towards developmental gains (i.e., career success, personal fulfillment, travel) are perceived as more important in young adulthood and decrease over the adult lifespan.

H2: Life goals related to social interaction (i.e., being there for others, being socially or politically involved) increase in importance across the lifespan.

H3: The perceived importance of having children increases throughout early adulthood and decreases after middle adulthood.

H4: The importance of having a happy marriage or relationship and being able to afford things remains relatively stable throughout early, middle, and late adulthood.

H5: Throughout the adult lifespan, the perceived importance of family-related life goals (i.e., having children and having a happy relationship) is higher in women.

H6: Throughout the adult lifespan, the perceived importance of career success is higher in men.

H7: A higher educational background is associated with a higher perceived importance of career success up to retirement age and a lower perceived importance of parenthood in early adulthood.

H8: The trajectories of perceived importance of career success and home ownership differ between individuals socialized in the former GDR and those socialized in the FRG.

Due to the lack of existing research and partially inconclusive findings, we did not derive hypotheses for all moderator-goal combinations but tested them in an explorative manner. Additionally, we tested for cohort differences since our methodological approach is based on the assumption that there are no cohort effects.

Method

Participants

We used data from the German Socio-Economic Panel study (SOEP, version 35) at the German Institute for Economic Research (DIW Berlin). Launched in 1984, the SOEP is an ongoing, annual, large, and diverse multi-cohort longitudinal study of private households in Germany. For comprehensive information about survey design, assessment procedures, participants, and variables, see (Goebel et al., 2019).

For the present study, we included data from six waves (1992, 1995, 2004, 2008, 2012, and 2016). Though an annual survey, life goals were only assessed in the six waves mentioned above, plus an additional wave in 1990. The 1990 wave was not included since data were not available for the East German sub-population. All participants who provided information on at least one life goal at one point of assessment were included in the analysis. Following Lemola and Richter (2013), we restricted our analysis to participants below the age of 85 to avoid imprecise estimates due to smaller sample size.

Sample characteristics are displayed in Supplementary Table 1. The total number of respondents ranged from 50,616 for “being able to afford things for myself” to 52,052 for “being there for others.” Of all respondents, 52.85% were women, and the mean age of our sample ranged from M=43.51 (SD=16.28) in 1992 to M=48.83 (SD=17.07) in 2008. On

average, participants took part in *M*=2.20 (*SD*=1.36) waves. The majority (61.55%) were married and living with their spouse. On average, participants had *M*=1.47 (*SD*=1.35) children. Over a quarter of our sample (28.88%) remained childless throughout the study period.

Measures

In line with previous research (Atherton et al., 2020; Bleidorn et al., 2010; Roberts et al., 2004; Roberts & Robins, 2000) we used normative importance ratings to assess life goals. The scale ranged from 1 (*very important*) to 4 (*not at all important*). The nine goals covered the domains of work and family (being successful in my career, having a happy marriage/relationship, and having children), materialistic goals (being able to afford things for myself and owning a house), self-realization (being self-fulfilled and seeing the world/ traveling extensively), and altruistic goals (being there for others and being socially/politically involved). Prior to the analysis, goal ratings were centered at the wave-specific person-mean across all goals. This technique was adopted from research on values to measure respondents' priorities rather than individual differences regarding the use of the response scale (Schwartz, 2012).

Participants' location in 1989, before German reunification, and their current location were used as regional coding. Participants' highest International Standard Classification of Education (ISCED) score throughout the study period served to code educational background. Scores were split into three categories (low, middle, and high), with "low" representing below upper secondary level of education, "middle" representing upper secondary level, and "high" representing tertiary level. We coded individuals who had children at any point during the study period as parents. There were no adoptive parents in our sample.

Statistical Models

To examine the lifespan trajectories, we estimated a series of latent growth curve models (LGMs). LGMs are convenient for studying development since they permit the estimation of inter-individual variability in intra-individual change patterns over time (Preacher et al., 2008) and offer a straightforward approach to modeling non-linear change (Grimm & Ram, 2009). The LGMs were estimated with Mplus Version 8 (see Muthén & Muthén, 1998-2017). Model fit was assessed with the Bayesian information criterion (BIC). Lower values indicate better model fit when comparing multiple models.

In this study, time is conceptualized as a function of participants' chronological age rather than measurement waves. This means that our estimation must allow for individually varying points of observation. We solved this by fixing individual slope loadings (see Figure 1) based on participant's age at each point of assessment (see Mehta & West, 2000; Preacher et al., 2008). This allows us to estimate the trajectory across the complete age range with information from all participants simultaneously. One of the central assumptions of this approach is that the common trajectory modeled with the multi-cohort sample represents the trajectory of a hypothetical sample in which the different cohorts are followed across the entire lifespan.

Prior to analysis, age was centered and rescaled by a factor of 10^{-2} to obtain numerically larger estimates and improve readability. To investigate birth cohort differences, we split participants into six decade-based cohort groups (pre-1941, 1941-1950, 1951-1960, 1961-1970, 1971-1980, and post-1980) and estimated separate models. To test for moderator effects, we fit multiple group LGMs with and without cross-group constraints. If lifting constraints led to a better model fit, we assumed group differences.

We estimated three models with a linear, quadratic, and cubic slope factor for time for each of the nine goals in each (sub-)sample. For all models that included a quadratic and/or

cubic slope factor, the variances of these factors were set to zero to allow for convergence of the models.

Results

For seven life goals, the trajectories of importance ratings were best described by the model that included a cubic polynomial (see Supplementary Table 2). For the goals "owning a house" and "being there for others," the quadratic model had a superior fit. An overview of pooled goal importance ratings across the adult lifespan can be found in Supplementary Figures 1 and 2.

Gender

Multiple-group LGMs demonstrated better fit for all unconstrained models, indicating gender effects. For the importance trajectories of personal fulfillment, being able to afford things, and social/political involvement, gender differences appeared in early adulthood (<30) or old age (>70) (see Figure 2*)*. Men showed higher importance ratings for being able to afford things in early adulthood, whereas women perceived this goal as more important in late adulthood ($\Delta M_{age83\text{M-F}}$ = -0.217[-0.330;0.104], t(493)=-3.775, d=0.349). Gender differences for social/political involvement were largest at age 21 ($\Delta M_{\text{M-F}}$ = 0.158[0.093;0.222], t(1772)=-4.808, d=0.228) and for personal fulfillment at 84 ($\Delta M_{\text{M-F}}$ = -0.118[-0.268;0.033], t(367)=-1.535, d=0.162). Importance trajectories for being there for others and owning a house were almost parallel, with higher ratings for being there for others for women (greatest difference at age 79; $\Delta M_{\text{M-F}}$ = -0.349[-0.265;-0.433], t(760)=8.171, d=0.596) and higher ratings of owning a house for men (greatest difference at age 20; $\Delta M_{\text{M-F}}$ = 0.215[0.151;0.279], t(1861)=6.557, d=0.304).

There were substantial gender differences for the goal of having a happy relationship or marriage with regard to intercept and slope. In early adulthood, men's perceived importance of this goal was lower, but increased throughout life while women reached a

turning point in their forties, after which importance ratings declined. Women rated a happy relationship highest at age 33 (M=0.801, SD=0.464), men much later at age 84 (M=0.907, SD=0.634). This was the largest gender difference at any age across all goals ($\Delta M_{84\text{M-F}}$ = 0.542[0.374;0.710], t(354)=6.353, d = 0.680).

Another relatively large gender-related difference concerned the importance of parenthood ($\Delta M_{\text{M-F}}$ = -0.356[-0.421;-0.291], t(2068)=10.708, d=0.474). Women consistently rated having children as somewhat more important than men. This gap was larger in early adulthood and middle adulthood but narrowed towards old age. Career success was rated more important by men across all ages (largest difference at 46; $\Delta M_{\text{M-F}}$ = 0.338[0.152;0.239], t(2767)=8.757, d=0.334).

Parental status

Multiple-group LGMs indicated significant group effects of parental status on all life goals except for being there for others. Parents and individuals who would later become parents perceived life goals outside the family domain as less important than childless participants (see Figure 3). The most prominent difference pertained to the goal of having children, followed by the goal of traveling. Gender-specific analysis (see Figure 4) revealed that for childless women, the importance of parenthood decreased consistently up to age 60, whereas for fathers, mothers, and childless men it increased. Notably, for all four groups, the importance of parenthood increased in old age (>70). The results for career success were similar for fathers and childless women. Compared to fathers, childless men had a higher intercept and steeper slope during the active phase of their careers (20-50), but past age 50, these differences disappeared. For mothers, the curve of the trajectory was similar to that for childless women and fathers, but significant level differences remained up to age 70.

For some goals, we find substantial intercept differences between parents and individuals who remained childless. In our sample, the mean age at birth of the first child for

women was *M*=25.31 (*SD*=5.15) and *M*=28.84 (*SD*=5.77) for men. Only 4.16% of participants became parents at the age of 18 or younger. The largest differences between parents and those who remained childless at age 18 concerned being socially and politically involved ($\Delta M_{P\text{-}C}$ = -0.158[-0.268; -0.048], *t*(1862)=2.811, *d*=0.220) and having a happy relationship/marriage ($\Delta M_{P\text{-}C}$ = 0.161 [0.067; 0.256], *t*(1844)=3.358, *d*=0.264).

Educational Background

Model comparisons indicated no group effects of educational background on the perceived importance of parenthood, being able to afford things, and being socially or politically involved. For the remaining goals, the unconstrained multi-group LGMs had a better fit, suggesting group effects (see Supplementary Table 3). Group differences increased with age for having a successful career and being there for others, while the intercepts varied little (see Figure 5). At age 18, group differences regarding perceived importance of being there for others [F(2,1933)=0.481, *p*=0.618] and a successful career were nonsignificant [F(2,1892)=1.773, *p*=0.170]. Starting in middle adulthood, the differences began to increase. Throughout most of the adult lifespan participants with a low level of education perceived being there for others as more important than the other two groups did, while those with a high level of education perceived a successful career as more important. At age 60, the group differences were highly significant [$F_{career}(2,1636)=34.22$, $p=0.000$, $\eta^2=0.06$; $F_{others}(2,1541)=8.255$, $p=0.000$, $\eta^2=0.01$]. The perceived importance of traveling was consistently higher among participants with a high level of education than in the other groups. Up to middle adulthood, there was almost no difference regarding the perceived importance of traveling between participants with a low and middle educational background ($\Delta M_{age45\text{L-M}}=0.027$, $t_{age45}(1811)=0.507$, $p=0.612$). This changed as participants approached retirement age ($\Delta M_{age60\text{L-M}}=-0.099$, $t_{age60}(1240)=-1.677$, $p=0.094$, $d=0.135$).

Region

The two regional coding variables were highly correlated (r=0.888 [0.887;0.891], p=0.000), indicating that most participants had remained in the region of Germany where they lived prior to reunification. The results presented here are based on participants' locations in 1989. Multiple group LGM showed no effect of region on having a happy relationship or marriage. Although statistically significant, intercepts and slopes in both regions were nearly identical for the goals of having children and traveling (see Supplementary Figure 3). There were larger differences for the goal of owning a house, which received consistently lower importance ratings from participants located in the former GDR in 1989. While the importance of home ownership increased consistently for former West Germans, it decreased after age 50 for former East Germans. The largest empirical difference was at age 77 ($\Delta M_{W\text{-}E}$ = 0.567 [0.450; 0.730], t(884)=8.2563, d = 0.632).

Up to retirement age, having a successful career was more important for individuals from the former East. The greatest difference was found at age 52 ($\Delta M_{W\text{-}E}$ = -0.213[-0.261; -0.149;], t(1967)=-7.190, d = 0.354). Former West Germans placed less importance on personal fulfillment. This difference was small in early adulthood but increased with age. At age 75, the difference was largest ($\Delta M_{W\text{-}E}$ = -0.232[-0.333; -0.152], t(1034)=-5.243, d = 0.372).

Testing for Cohort Effects

Cohort-specific trajectories overlapped to a substantial extent for the importance of personal fulfillment, travel, and home ownership. Results for the importance of having a happy relationship or marriage, being there for others, and being socially or politically involved showed largely parallel trajectories, with slight level differences (see Supplementary Figure 4, panel C, F, and G). The most noticeable difference was for individuals born before 1941, who seemed to place substantially less importance on being socially or politically

involved but valued being able to afford things considerably higher (see Supplementary Figure 4, panel D and F).

Discussion

As expected, some life goals seem to be relatively independent of a person's current developmental stage, whereas others change over the lifespan in line with the individual's current developmental task. For the majority of goals, the greatest changes occurred in early adulthood and/or old age. These were, however, also the phases when inter-individual variability was highest. This is presumably one reason why these phases of development have received greater research attention.

We find partial support for H1: Both a successful career and personal fulfilment are perceived as more important in early adulthood and become less important throughout life. This corroborates the propositions of MTD. Importance ratings are highest in early adulthood, when personal control capacity is high and opportunities are plentiful. Furthermore, this finding is in line with recently published work on the development of life goals up to middle adulthood (Atherton et al., 2020; Bühler et al., 2019). Goals related to personal growth and new experiences decrease with age, as do opportunities. The exception to this pattern is the importance of travelling, which increases around the age of retirement, presumably due to increased time available to travel.

Confirming H2, our study shows that the importance of social goals increases with age. This trend was particularly strong for the goal of being socially/politically involved, highlighting the role of weaker social ties in late adulthood (see also Huxhold et al., 2020).

Generally, our findings emphasize the necessity of studies that cover the entire adult lifespan when investigating development (see also Lachman, 2015). Turning points go unnoticed when assessment periods are too short or when points of measurement are spread unevenly across the lifespan. Regarding the question of what causes these changes and/or

turning points, several trajectories support the conceptual framework of MTD, which proposes that systematic changes in opportunities across adulthood drive changes in goal preference (Heckhausen, 2000; Heckhausen et al., 2010, 2019).

The trajectories for the goal of having children did not match the prediction in H3. Mothers and fathers reported an increasing importance of this goal in early to middle adulthood, confirming part of the hypothesis, but the importance ratings continued increasing after retirement. One explanation for this finding could be grandparenthood. Grandparenthood is part of the normative sequence of aging and is subject to societal expectations, like any other developmental task (Baltes et al., 2006). Thus, the high importance ratings of having children among older respondents may refer to grandchildren. It is also plausible that ratings of importance, in contrast to ratings of goal striving, reflect the value a person generally places on a given domain of life. This would imply that the value of having children is undiminished in old age and independent of actual goal attainment. However, people who do not have children would be expected to view parenthood as less important, as shown in studies comparing childless women before and after developmental deadlines have been reached (Heckhausen et al., 2001). Intriguingly, childless women show a pattern of decreasing importance ratings for having children. In late adulthood, however, this goal seems to catch up with them again. Increased levels of loneliness, greater time flexibility after retirement, and societal expectations related to grandparenthood may be explanatory factors. Especially for women, recent research links the birth of a grandchild to improvements in quality of life and life satisfaction (Tanskanen et al., 2019). For childless men, the goal seems to steadily increase in importance throughout adulthood. Research on potential regret of childlessness in late adulthood suggests no significant well-being difference between parents and childless individuals (Koropeckyj-Cox, 2002). Some studies found gender-specific effects of childlessness on components of subjective well-being, but

other factors (e.g., marital status) seem to play a far more important role in well-being in late adulthood (Hansen et al., 2009).

We find relatively stable importance ratings of a happy relationship/marriage and being able to afford things, supporting H4. In late adulthood, however, the perceived importance of this goal either increases (for men) or decreases (for women) only partially supporting H5. One possible explanation is that women are more likely than men to have close relationships with people other than their romantic partner (Birditt & Antonucci, 2007). Once developmental tasks that require a functioning relationship, like raising young children, have been completed, a happy relationship may therefore be less important to women, since they receive more social support from others. Similarly, childless women may view a happy relationship as less important once they have passed the developmental deadline for childbearing.

Interestingly, our results show substantial intercept differences between childless participants and those who became parents. Accordingly, the life goals of parents seem to differ from those of childless participants before they have made the transition to parenthood or before even thinking about having a child. This finding provides further support for a previously suggested selection effect of parenthood on life goals (Wehner et al., in press).

We find partial support for H7. There were clear differences between people different levels of education in the trajectories of career importance, but we found no effect of level of educational on the perceived importance of having children. Additionally, our results suggest a significant effect of educational background on the importance of being there for others. For the low educational level group, this trajectory increased steadily over the entire lifespan, while for middle and high educational level groups, it remained stable or decreased slightly into middle adulthood. This is in line with previous research linking lower socio-economic status to higher levels of prosociality (Piff et al., 2010).

Limitations

One limitation of this study is that the German SOEP only followed participants over a period of 24 years and not over the entire lifespan. We used a cohort sequential longitudinal design to address this limitation. This methodology is based on the assumption that changes across age groups are predominantly due to intra-individual change rather than cohort effects. The results of our cohort-specific analysis, however, indicate that this might not be the case for all nine goals.

Unlike most previous research, the present study used single-item measures for each goal and refrained from inferring latent factors. While this may present the possibility of varied interpretations, recent research suggests that single-item measures can be stable and valid assessments and even out-predict scales (Mõttus et al., 2020). Moreover, in utilizing this approach, we follow the recommendation to represent findings on the item level, especially in developmental research with a primary focus on description (Mõttus & Rozgonjuk, 2019).

Future research directions

Our results suggest that many life goals follow long-term developmental trends, comparable to personality traits. Despite increased interest in the relationship between life goals and personality traits (e.g., Atherton et al., 2020), longitudinal research covering the entire adult lifespan remains the exception rather than the norm. Generally, our results emphasize the relevance of social and historical context factors in the developmental trajectory of life goals. The current study should be understood as a starting point for more in-depth research that could address specific influencing processes. We suggest that future studies focus on domain- and group-specific research questions and place stronger emphasis on moderators. Parental socialization, for instance, has been shown to have a lifelong impact on value development (Johnson et al., 2020; Martinez-Escudero et al., 2020). Future research

could investigate the impact of parenting on the development of life goals in adulthood across different generations.

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References

Asselmann, E., & Specht, J. (2020). Testing the Social Investment Principle Around Childbirth: Little Evidence for Personality Maturation Before and After Becoming a Parent. *European Journal of Personality*. https://doi.org/10.1002/per.2269

Atherton, O. E., Grijalva, E., Roberts, B. W., & Robins, R. W. (2020). Stability and Change in Personality and Major Life Goals from College to Midlife. *Personality and Social Psychology Bulletin*. https://doi.org/10.1177/0146167296224006

Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin*, *120*(3), 338–375. https://doi.org/10.1037/0033-2909.120.3.338

Baltes, P. B., Lindenberger, U., & Staudinger, U. M. (2006). Life Span Theory in Developmental Psychology. In R. M. Lener (Ed.), *Handbook of child psychology: Theoretical models of human development* (pp. 569–664). Wiley. https://doi.org/10.1002/9780470147658.chpsy0111

Birditt, K. S., & Antonucci, T. C. (2007). Relationship Quality Profiles and Well-Being Among Married Adults. *Journal of Family Psychology*, *21*(4), 595–604. https://doi.org/10.1037/0893-3200.21.4.595

Bleidorn, W., Kandler, C., Hülsheger, U. R., Riemann, R., Angleitner, A., & Spinath, F. M. (2010). Nature and nurture of the interplay between personality traits and major life goals. *Journal of Personality and Social Psychology*, *99*(2), 366–379. https://doi.org/10.1037/a0019982

Bühler, J. L., Weidmann, R., Nikitin, J., & Grob, A. (2019). A Closer Look at Life Goals Across Adulthood: Applying a Developmental Perspective to Content, Dynamics, and Outcomes of Goal Importance and Goal Attainability. *European Journal of Personality*, *33*(3), 359–384. https://doi.org/10.1002/per.2194

Cygan-Rehm, K., & Maeder, M. (2013). The effect of education on fertility: Evidence from a compulsory schooling reform. *Labour Economics*, *25*, 35–48. https://doi.org/10.1016/j.labeco.2013.04.015

Dunlop, W. L., Bannon, B. L., & McAdams, D. P. (2017). Studying the Motivated Agent Through Time: Personal Goal Development During the Adult Life Span. *Journal of Personality*, *85*(2), 207–219. https://doi.org/10.1111/jopy.12234

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

Eccles, J. S. (1994). Understanding Women's Educational and Occupational Choices: Applying the Eccles et al. Model of Achievement-Related Choices. *Psychology of Women Quarterly*, *18*(4), 585–609. https://doi.org/doi/10.1111/j.1471-6402.1994.tb01049.x

Goebel, J., Grabka, M. M., Liebig, S., Kroh, M., Richter, D., Schröder, C., & Schupp, J. (2019). The German Socio-Economic Panel (SOEP). *Jahrbucher Fur Nationalokonomie Und Statistik*, *239*(2), 345–360. https://doi.org/10.1515/jbnst-2018-0022

Greenhaus, J. H., & Allen, T. D. (2011). Work–family balance: A review and extension of the literature. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 165–183). American Psychological Association. https://doi.org/https://doi.org/10.1037/10474-000

Grimm, K. J., & Ram, N. (2009). Non-linear Growth Models in Mplus and SAS. *Structural Equation Modeling*, *16*(4), 676–701. https://doi.org/10.1080/10705510903206055

Hansen, T., Slagsvold, B., & Moum, T. (2009). Childlessness and psychological well-being in midlife and old age: An examination of parental status effects across a range of

outcomes. *Social Indicators Research*, *94*(2), 343–362. https://doi.org/10.1007/s11205-008-9426-1

Havighurst, R. J. (1948). *Developmental tasks and education*. University of Chicago Press.

Heckhausen, J. (1999). Developmental Regulation in Adulthood. In *Developmental Regulation in Adulthood: Age-Normative and Sociostructural Constraints as Adaptive Challenges*. Cambridge University Press. https://doi.org/10.1017/cbo9780511527852

Heckhausen, J. (2000). Developmental regulation across the life span: An action-phase model of engagement and disengagement with developmental goals. In *Advances in Psychology* (Vol. 131, Issue C). Elsevier Masson SAS. https://doi.org/10.1016/S0166-4115(00)80013-8

Heckhausen, J., Worsch, C., & Schulz, R. (2010). A Motivational Theory of Life-Span Development. *Psychological Review*, *117*(1), 1–32. https://doi.org/10.1037/a0017668.A

Heckhausen, J., Wrosch, C., & Fleeson, W. (2001). Developmental regulation before and after a developmental deadline: The sample case of "biological clock" for childbearing. *Psychology and Aging*, *16*(3), 400–413. https://doi.org/10.1037/0882-7974.16.3.400

Heckhausen, J., Wrosch, C., & Schulz, R. (2019). Agency and Motivation in Adulthood and Old Age. *Annual Review of Psychology*, *70*(1). https://doi.org/10.1146/annurev-psych-010418-103043

Huxhold, O., Fiori, K. L., Webster, N. J., & Antonucci, T. C. (2020). The strength of weaker ties: An underexplored resource for maintaining emotional well-being in later life. *Journals of Gerontology - Series B Psychological Sciences and Social Sciences*, *75*(7), 1433–1442. https://doi.org/10.1093/geronb/gbaa019

Johnson, M. K., Mortimer, J. T., & Heckhausen, J. (2020). Work Value Transmission From Parents to Children: Early Socialization and Delayed Activation. In *Work and Occupations* (Vol. 47, Issue 1). https://doi.org/10.1177/0730888419877445

Koropeckyj-Cox, T. (2002). Beyond Parental Status: Psychological Well-Being in Middle and Old Age. *Journal of Marriage and Family*, *64*(4), 957–971. https://doi.org/https://doi.org/10.1111/j.1741-3737.2002.00957.x

Koropeckyj-Cox, T., Pienta, A. M., & Brown, T. H. (2007). Women of the 1950s and the "normative" life course: The implications of childlessness, fertility timing, and marital status for psychological well-being in late midlife. *International Journal of Aging and Human Development*, *64*(4), 299–330. https://doi.org/10.2190/8PTL-P745-58U1-3330

Lachman, M. E. (2015). Mind the Gap in the Middle: A Call to Study Midlife. *Research in Human Development*, *12*(3–4), 327–334. https://doi.org/10.1080/15427609.2015.1068048

Lemola, S., & Richter, D. (2013). The course of subjective sleep quality in middle and old adulthood and its relation to physical health. *Journals of Gerontology - Series B Psychological Sciences and Social Sciences*, *68*(5), 721–729. https://doi.org/10.1093/geronb/gbs113

Lerner, R. M. (1991). Changing Organism-Context Relations as the Basic Process of Development: A Developmental Contextual Perspective. *Developmental Psychology*, *27*(1), 27–32. https://doi.org/10.1037/0012-1649.27.1.27

Martinez-Escudero, J. A., Villarejo, S., Garcia, O. F., & Garcia, F. (2020). Parental socialization and its impact across the lifespan. *Behavioral Sciences*, *10*(6). https://doi.org/10.3390/BS10060101

Mehta, P. D., & West, S. G. (2000). Putting the individual back into individual growth curves. *Psychological Methods*, *5*(1), 23–43. https://doi.org/10.1037/1082-989X.5.1.23

Mõttus, R., & Rozgonjuk, D. (2019). Development Is in the Details: Age Differences in the Big Five Domains, Facets, and Nuances. *Journal of Personality and Social Psychology*. https://doi.org/10.1037/pspp0000276

Mõttus, R., Wood, D., Condon, D. M., Back, M. D., Baumert, A., Costantini, G., Epskamp, S., Greiff, S., Johnson, W., Lukaszewski, A., Murray, A., Revelle, W., Wright, A. G. C., Yarkoni, T., Ziegler, M., & Zimmermann, J. (2020). Descriptive, Predictive and Explanatory Personality Research: Different Goals, Different Approaches, but a Shared Need to Move Beyond the Big Few Traits. *European Journal of Personality*, *34*(6), 1175–1201. https://doi.org/10.1002/per.2311

Muthén, L. K., & Muthén, B. O. (n.d.). *Mplus User's Guide. Eighth Edition.* Muthén & Muthén.

Nurmi, J. E. (1991). How do adolescents see their future? A review of the development of future orientation and planning. *Developmental Review*, *11*(1), 1–59. https://doi.org/10.1016/0273-2297(91)90002-6

Nurmi, J. E. (1992). Age Differences in Adult Life Goals, Concerns, and Their Temporal Extension: A Life Course Approach to Future-oriented Motivation. *International Journal of Behavioral Development*, *15*(4), 487–508. https://doi.org/10.1177/016502549201500404

Nurmi, J. E., Poole, M. E., & Kalakoski, V. (1994). Age differences in adolescent future-oriented goals, concerns, and related temporal extension in different sociocultural contexts. *Journal of Youth and Adolescence*, *23*(4), 471–487. https://doi.org/10.1007/BF01538040

Piff, P. K., Kraus, M. W., Côté, S., Cheng, B. H., & Keltner, D. (2010). Having Less, Giving More: The Influence of Social Class on Prosocial Behavior. *Journal of Personality and Social Psychology*, *99*(5), 771–784. https://doi.org/10.1037/a0020092

Preacher, K. J., Wichman, A. L., MacCallum, R. C., & Briggs, N. E. (2008). *Latent Growth Curve Modeling* (Vol. 1, Issue). SAGE Publications Sage CA: Los Angeles, CA.

Roberts, B. W., O'Donnell, M., & Robins, R. W. (2004). Goal and personality trait

development in emerging adulthood. *Journal of Personality and Social Psychology*, *87*(4), 541–550. https://doi.org/10.1037/0022-3514.87.4.541

Roberts, B. W., & Robins, R. W. (2000). Broad dispositions, broad aspirations: The intersection of personality traits and major life goals. *Personality and Social Psychology Bulletin*, *26*(10), 1284–1296. https://doi.org/10.1177/0146167200262009

Salmela-Aro, K., & Nurmi, J. E. (1997). Goal contents, well-being, and life context during transition to university: A longitudinal study. *International Journal of Behavioral Development*, *20*(3), 471–491. https://doi.org/10.1080/016502597385234

Salmela-Aro, K., Nurmi, J. E., Saisto, T., & Halmesmäki, E. (2000). Women's and men's personal goals during the transition to parenthood. *Journal of Family Psychology, 14*(2), 171–186. https://doi.org/10.1037/0893-3200.14.2.171

Scheling, L., & Richter, D. (2021). Generation Y: Do millennials need a partner to be happy? *Journal of Adolescence*, *90*, 23–31. https://doi.org/10.1016/j.adolescence.2021.05.006

Schwartz, S. H. (2012). An Overview of the Schwartz Theory of Basic Values. *Online Readings in Psychology and Culture*, *2*(1), 1–20. https://doi.org/10.9707/2307-0919.1116

SOEP. (2019). *Socio-Economic Panel (SOEP), data for years 1984-2018, version 35*. https://doi.org/10.5684/soep.v35

Statistisches, B. (2020). *Durchschnittliches Alter der Mutter bei der Geburt des Kindes 2019*. https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Geburten/Tabellen/geburten-mutter-biologischesalter.html

Stephan, H., & Wiedemann, E. (1990). Lohnstruktur und Lohndifferenzierung in der DDR. *Mitteilungen Aus Der Arbeits- Und Berufsforschung*, *23*(4), 550–562.

Tanskanen, A. O., Danielsbacka, M., Coall, D. A., & Jokela, M. (2019). Transition to Grandparenthood and Subjective Well-Being in Older Europeans: A Within-Person

Investigation Using Longitudinal Data. *Evolutionary Psychology*, *17*(3), 1–12. https://doi.org/10.1177/1474704919875948

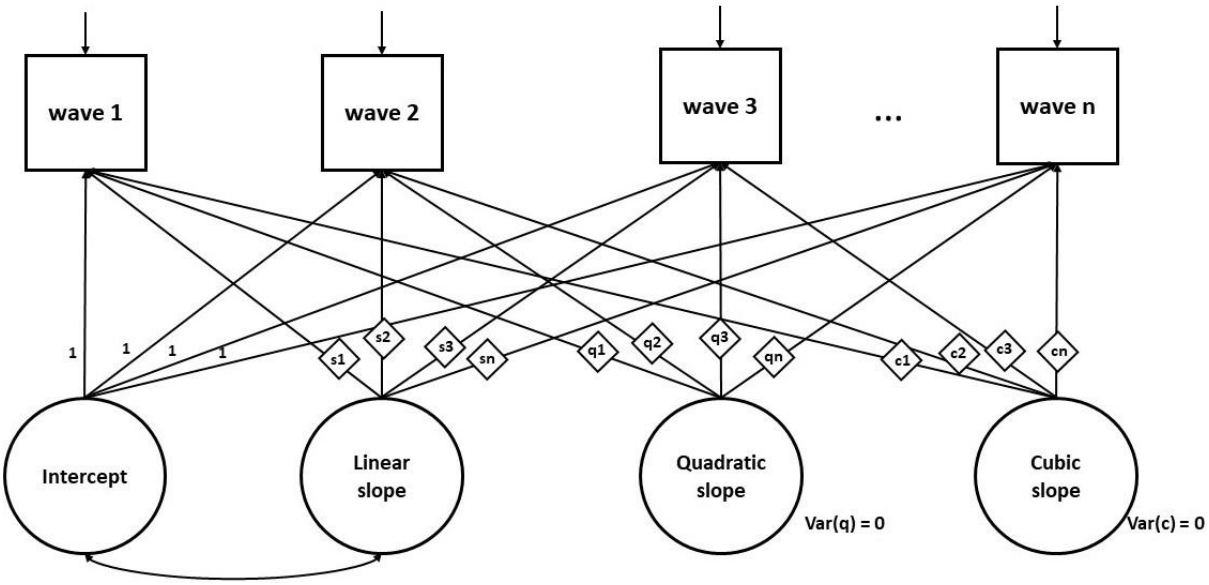
Wehner, C., van Scheppingen, M. A., & Bleidorn, W. (in press). Stability and Change in Major Life Goals During the Transition to Parenthood. *European Journal of Personality*. 10.31234/osf.io/gphfj

Yau, P. S., Shane, J., & Heckhausen, J. (2021). Developmental goals during the transition to young Adulthood. *International Journal of Behavioral Development*.

Figures

Figure 1

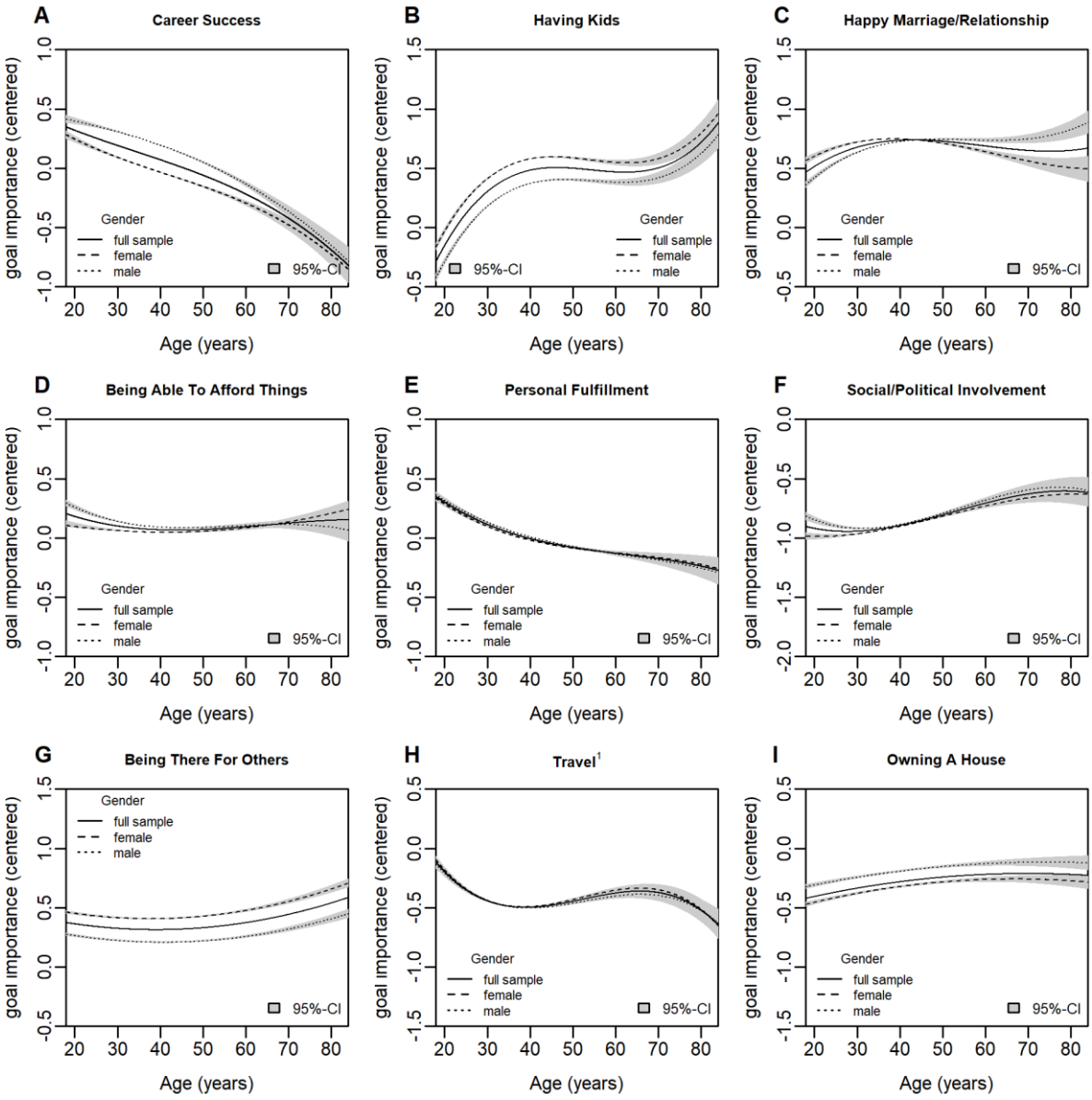
Latent Growth Curve Model for Linear, Quadratic, and Cubic Change in the Relative Goal Importance



Note. Rhombi represent individually varying slope loadings to estimate development across the entire observed age range (Mehta & West, 2000; Preacher et al., 2008). To allow for the model to converge, variances of the quadratic and cubic slope factor were fixed to zero.

Figure 2

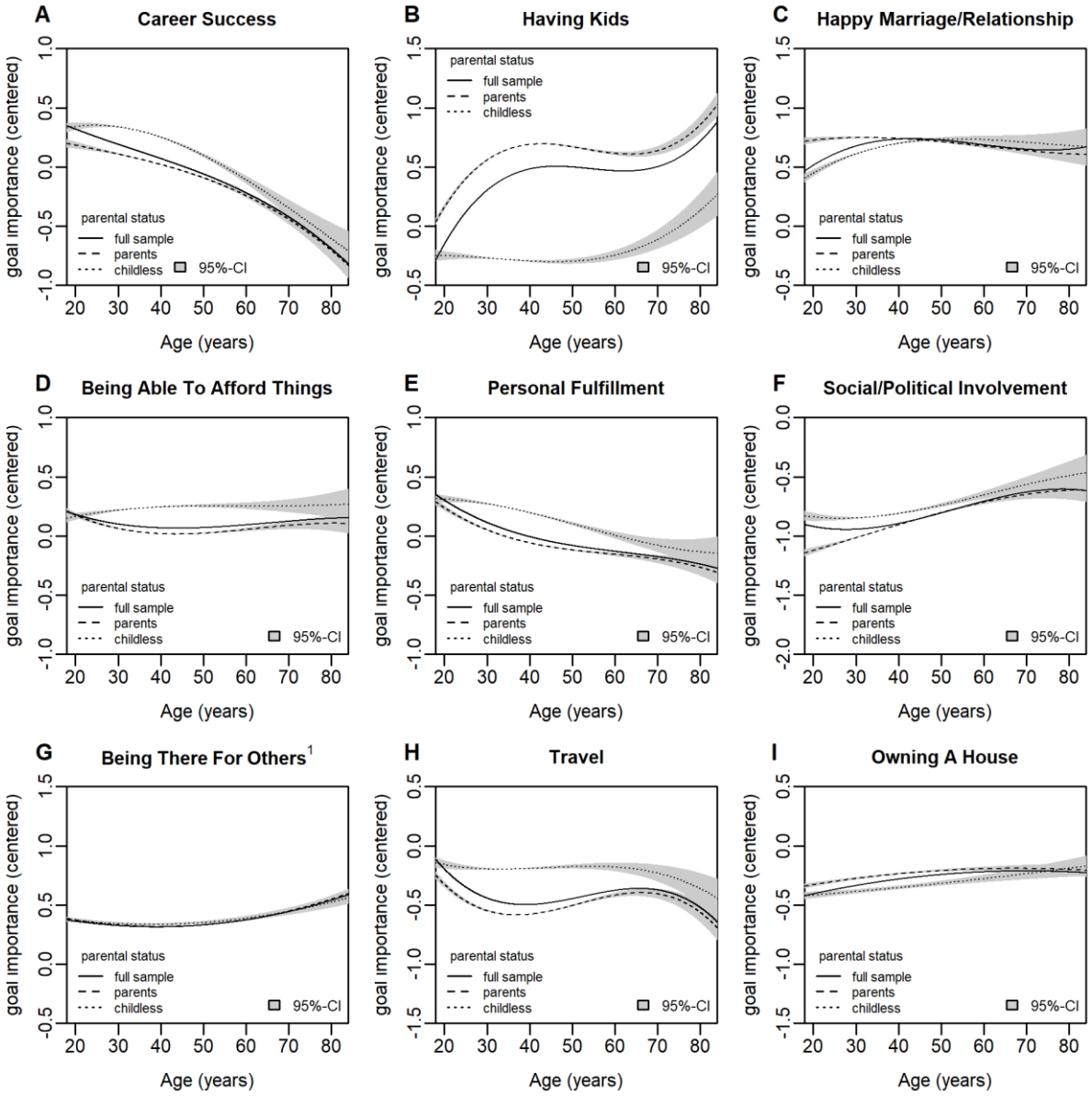
Model of Estimated Goal Importance Trajectories for the Full sample and by Gender



Note. Importance trajectories of career success, having children and having a happy marriage/relationship are displayed in panel A, B, and C. Importance trajectories of being able to afford things, personal fulfillment and social/political involvement can be found in panel D, E, and F. Panel G, H and I display the Importance trajectories of being there for others, travelling and owning a house. [1]Model with cross-group constraints had a better fit, indicating no group differences.

Figure 3

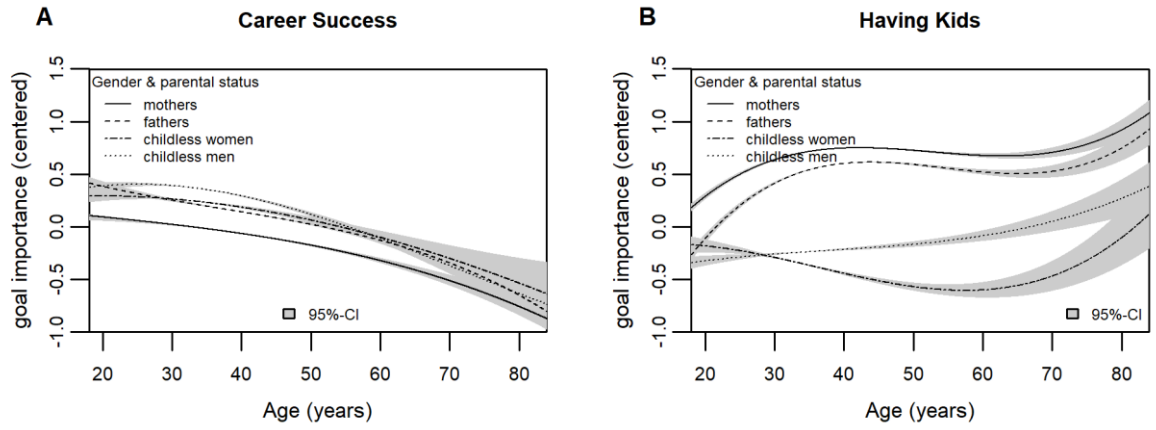
Model of Estimated Goal Importance Trajectories for the Full Sample and by Parental Status



Note. Importance trajectories of career success, having children and having a happy marriage/relationship are displayed in panel A, B, and C. Importance trajectories of being able to afford things, personal fulfillment and social/political involvement can be found in panel D, E, and F. Panel G, H and I display the Importance trajectories of being there for others, travelling and owning a house. [1]Model with cross-group constraints had better fit, indicating no group differences.

Figure 4

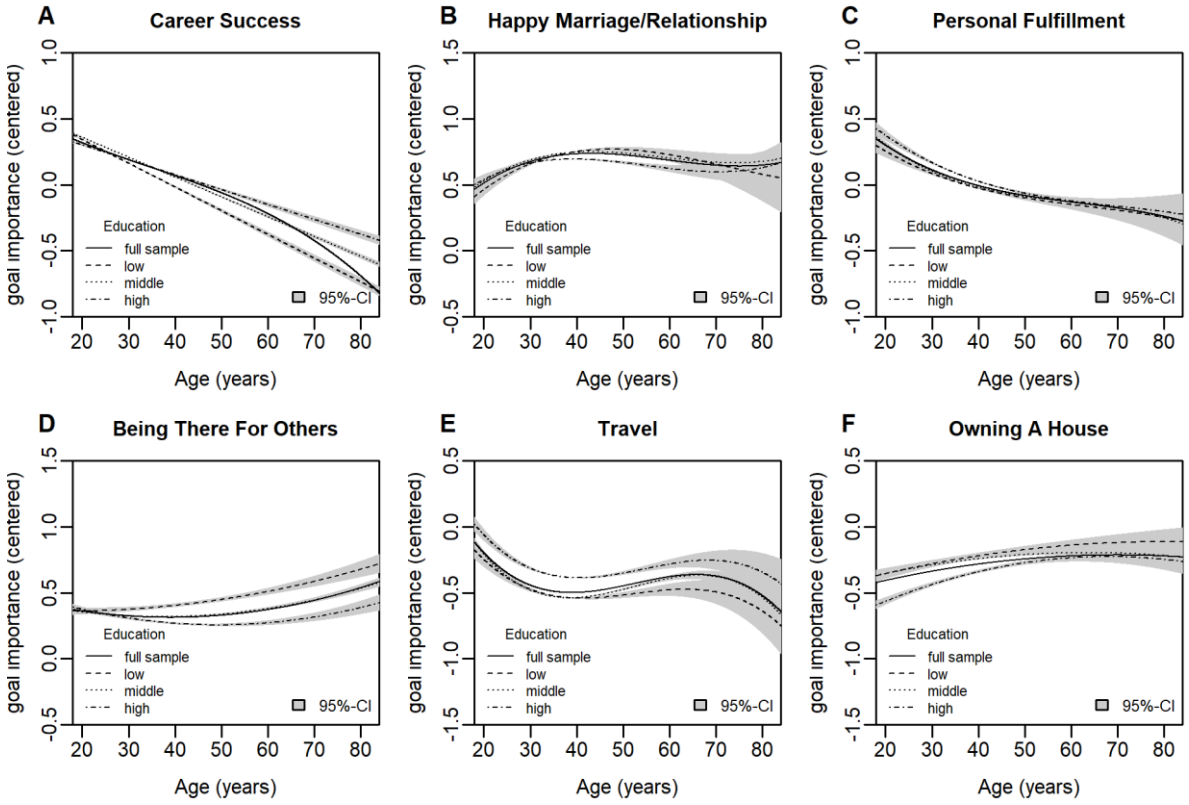
Model of Estimated Goal Importance Trajectories by Gender and Parental Status



Note. Trajectories of the perceived importance to have children are displayed in panel A and the perceived importance of having a successful career is displayed in panel B.

Figure 5

Goal Importance Trajectories by Educational Background



Note. Importance trajectories of career success (panel A), having a happy marriage/relationship (panel B), personal fulfillment (panel C), being there for others (panel D), travelling (panel E) and owning a house (panel F) by educational background. Importance trajectories with no significant group differences (having children, being able to afford things and social/political involvement) are not displayed.

Chapter 3

Codevelopment of Life Goals and the Big Five Personality Traits in Adulthood and Old Age

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Chapter 4

Kids or no Kids? Life Goals in One's 20s Predict Midlife Trajectories of Mental Health

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Kids or no Kids?

Life Goals in one's 20s Predict Midlife Trajectories of Well-Being

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The authors made the following contributions. Laura Buchinger: conceptualization (lead), data curation (lead), formal analysis (lead), methodology (lead), visualization (lead), writing–original draft (lead), writing–review and editing (lead), Iris Wahring: conceptualization (supporting), writing-original draft (supporting), writing–review and editing (supporting), Nilam Ram: methodology (supporting), writing–review and editing (supporting), Christiane Hoppmann: writing–review and editing (supporting), Jutta Heckhausen: writing–review and editing (supporting), Denis Gerstorf: conceptualization (supporting), methodology (supporting), writing–review and editing (supporting).

Please note that we preregistered this study via the Open Science Framework (OSF; https://osf.io/nvdrz/?view_only=33cf9bc8c7134442a6c3b17b8a18e02f). The whole OSF project including further supplement materials can be accessed here: https://osf.io/7e4rs/?view_only=21def6fbec98467b95d84a52d9ab31c2.

Correspondence concerning this article should be addressed to Laura Buchinger, Socio-Economic Panel (SOEP), German Institute for Economic Research, Mohrenstraße 58, 10117 Berlin, Germany. E-mail: lbuchinger@diw.de. This study is part of her dissertation during which she was a pre-doctoral fellow of the International Max Planck Research School on the Life Course (LIFE, www.imprs-life.mpg.de; participating institutions: Max Planck Institute for Human Development, Freie Universität Berlin, Humboldt-Universität zu Berlin, University of Michigan, University of Virginia, University of Zurich).

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This research has not been presented at a conference or meeting, it has not been posted on a listserv, neither has it been shared on a website. The first author will present parts of this research at the 17th Biennial Conference of the Differential Psychology, Personality and Psychological Assessment (DPPD) Section this September.

Abstract

For many people, parenthood constitutes a crucial part of a successful life. Yet, the number of adults who never have children is increasing and has prompted concerns about their well-being and loneliness. Past research mostly focused on parents and rarely investigated factors that are theoretically meaningful for the well-being of adults without children. Our preregistered study applies a propensity-score matched design to investigate the role of life goals in contributing to differences in the development of mental health, well-being, and loneliness between adults with and without children. Data came from the German Socio-Economic Panel. Individuals were included if they stayed in the panel from when they were young adults (ages 18-30) to an age when parenthood becomes less likely (age 40 for women, age 50 for men). The matched sample comprised $N = 562$ individuals (average participation = 24.9 waves). We find almost no significant differences in the average midlife well-being trajectories of people with and without children. Only in young adulthood, people without children reported better mental health and lower negative affect, but also lower positive affect. Select evidence for a gender moderation suggests that compared to mothers, childfree women, and men, fathers were least lonely. Prioritizing the goal to have children during early adulthood predicted lower midlife mental health, cognitive, and affective well-being in people without children, but not in parents. Disengaging from the goal to have children was associated with positive changes in life satisfaction in adults without children, and positive changes in work satisfaction in parents.

Keywords: life goals, subjective well-being, mental health, childfree, propensity score matching

Public Significance Statement

Against popular opinion, this research shows that well-being and loneliness develop similarly for people who never have children and those who do. Only fatherhood (but not motherhood) seemed to protect from loneliness during midlife. The study also highlights the role of life goals and goal adjustment for well-being in later life. Specifically, perceiving the goal to have children as highly important in one's twenties was negatively associated with later life well-being for those who never became parents.

Kids or no Kids?

Life Goals in one's 20s Predict Midlife Trajectories of Well-Being

People who never have biological children represent a growing subgroup of the population, amounting to around 20% in developed western countries (e.g., 23% in Germany and 19% in Canada, Switzerland, and Austria) and up to 35% in East Asian countries (Sobotka, 2021); they have largely been ignored in research. We know very little about the factors that may influence childfree adults' mental health, well-being, and loneliness. Life goals are one such factor because (a) people actively influence their own development by choosing which goals to pursue and which to disengage from (e.g., Heckhausen et al., 2019), (b) for many people parenthood itself represents a central life goal (e.g., Buchinger et al., 2022; Salmela-Aro et al., 2007; Stanley et al., 2003), and (c) life goals are known to influence well-being across the lifespan (e.g., Headey et al., 2013; Heckhausen et al., 2001; Salmela-Aro, 2009; Sheldon & Cooper, 2008). For example, holding on to unattainable goals has been linked to poor well-being in cross-sectional research (Heckhausen et al., 2001; Wrosch et al., 2003, 2013; Wrosch & Heckhausen, 1999). Our study draws on and extends previous work in three important ways: First, we investigate the predictive effects of life goals, assessed when people were in their 20s, on midlife trajectories in well-being and loneliness. Our main focus lays on the effects of the goal to have children. At the same time, we also investigate how the goal to have a successful career, which is central for many people as well, differently affects the well-being of people with and without children. Second, we examine how eight aspects of mental health, well-being, and loneliness differ between matched samples of people who do and who do not have children. Third, we examine these relations and differences using a rich and rigorous, case-controlled longitudinal study design with annual assessments obtained over an average of 24 years.

Conceptual Rationale for Differences between Adults who do and do not have Children

Fertility rates are continuously declining in most OECD countries (OECD, 2023), reproductive plans are postponed (Spéder & Kapitány, 2014), and more and more people do not have biological children throughout their lives (Miettinen et al., 2015). In 2018, one in every five German women aged 45 to 49 did not have children. Twenty years earlier, less than one in eight did not have children. For men, this ratio is even lower (Statistisches Bundesamt (Destatis), 2019). Historical trends in fertility rates are comparable in many other high-income nations such as the US (Brown, 2021; Valerio et al., 2021). Even as fertility rates decline, most people still view parenthood as quintessential to a fulfilled and successful life (e.g., Ashburn-Nardo, 2017; Hansen, 2012). Having children can provide a sense of meaning in life, companionship, late-life security, and support (e.g., Nomaguchi & Milkie, 2017; Schoen et al., 1997), all of which are associated with better (mental) health and well-being (M. Y. Ho et al., 2010; Lyubomirsky & Boehm, 2010; Santos et al., 2012; Steger et al., 2009). Based on these and other findings, Nelson et al. (2014) derived the parent well-being model which posits that children promote well-being by providing their parents with life meaning and goals to pursue, by reliably eliciting positive emotions in their parents, by expanding their parents' identity through additional social roles, and by fulfilling basic human needs. As a consequence, concerns about the mental health and well-being of the growing population of adults who do not have children have been raised (Zhang & Hayward, 2001). These concerns are more frequently voiced for women because many people still believe that for a woman (less than for a man) to feel fulfilled, she needs children (De La Rochebrochard & Rozée, 2022). Studies show that others (e.g., family, friends, acquaintances) react with more disapproval to women, as opposed to men, who choose to be childfree (Eicher et al., 2016). In studies with voluntarily childfree people, women felt like

they have to justify their choice to not have children and experience more backlash when requesting sterilization (Hintz & Brown, 2019; Richie, 2013).

A contrasting phenomenon is that having children often comes with a lot of strain to parents and their relationship, especially so for parents who already face difficulties in managing their own lives and other family relationships (Cowan & Cowan, 1992; Nelson et al., 2014). The parent well-being model Nelson et al. (2014) identifies four important risk factors for parental well-being which are all backed by empirical evidence: (1) strained partner relationships (e.g., Keizer et al., 2010; van Scheppingen et al., 2018), (2) sleep disturbances (e.g., Richter et al., 2019), (3) frequent negative emotions (e.g., Fingerman et al., 2016), and (4) financial strain (e.g., Pollmann-Schult, 2014). These risk factors are amplified for single parents (Heintz-Martin & Langmeyer, 2020). Moreover, parent-child relationships are not always supportive, but can themselves be a source of stress and suffering (Agllias, 2018; Fingerman et al., 2008). For example, many people experience estrangement from family members (Arránz Becker & Hank, 2022; Conti, 2015), which is associated with reduced well-being (Scharp & Dorrance Hall, 2019).

Prominent theoretical approaches to well-being suggest that people with and without children would have similar lifespan trajectories. The *dynamic equilibrium model*, also referred to as set-point theory (Brickman & Campbell, 1971) posits that most life events have on average no long-lasting effects on well-being. Following the model, there may be temporary fluctuations around an event, but ultimately, well-being will return to its set-point. Thus, well-being may fluctuate around childbirth, but will return to its set-point in the long run. Accordingly, if there were differences in the lifespan well-being trajectories of people with and without children, set-point theory would assume that these are due to selection effects (i.e., initial level differences between people who become parents and those who do not). This is also true for revisions of the theory (e.g., Diener et al., 2006) which suggest that

set-points are subject to short-term fluctuations around life events as well as gradual age-related change. Moreover, set-points and their propensity to change may differ across different components of well-being (e.g., affective, cognitive).

The broader concept of well-being is part of mental health which also comprises other frequently researched constructs in the context of parenthood, including loneliness (e.g., Penning et al., 2022), depressive mood, and anxiety (Nelson et al., 2014). The construct of subjective well-being is comprised by affective and cognitive-evaluative well-being. Affective facets of well-being encompass positive affect (e.g., feelings of happiness) and negative affect (e.g., feelings of sadness) and may well be subject to spontaneous recalibration to a given set point. In contrast, cognitive-evaluative facets of well-being reflect the evaluation of current life (global and domain-specific) in comparison to earlier aspirations (e.g., Diener et al., 1998; Eid & Larsen, 2008), are less subject to retrospective recalibration. Cognitive-evaluative facets of well-being are commonly assessed through measures of global life satisfaction and satisfaction with particular life domains (e.g., satisfaction with work and family life).

In summary, according to theoretical perspectives, well-being should develop similarly for people with and without children, but the trajectories may vary depending on the well-being component, with cognitive-evaluative aspects of life satisfaction showing effects of discrepancies from original aspirations and goals. However, there are theoretical reasons that well-being would develop differently for people with and without children. On the one hand, not having children may be associated with a lack of meaning and goals, fewer positive emotions and social roles, higher levels of loneliness (e.g., Chou & Chi, 2004), and lower levels of well-being (Steger et al., 2009). On the other hand, not having children may be associated with living a less stressful life, with fewer financial concerns and responsibilities,

fewer worries, and more freedom to pursue personal interests and hobbies (Ross & Mirowsky, 2002; Stanley et al., 2003), which in turn may result in better well-being.

Empirical Evidence of Differences between Adults who do and do not have Children

The literature on differences in mental health, well-being, and loneliness between adults with and without children is inconclusive (for reviews, see Hansen, 2012; Nelson et al., 2014; Stahnke et al., 2023). Most studies find no association between parenthood and well-being (e.g., Gibney et al., 2017; Hoppmann & Smith, 2007; Keizer et al., 2010; K. M. Nomaguchi & Milkie, 2003; Penning et al., 2022; Quashie et al., 2021; Stahnke et al., 2023), some studies find that parents have higher levels of well-being than non-parents (e.g., Nelson et al., 2013), and some studies find that parents have lower levels of well-being than non-parents (e.g., Bleidorn et al., 2016; Evenson & Simon, 2005). Research on gender differences in the association between parenthood and well-being is similarly inconsistent. Some studies report more (dis)advantages for a certain gender, others find no differences (Hansen, 2012; Mikucka & Rizzi, 2020; Nelson et al., 2014). Even studies that rely on the same data report in part different results (e.g., Evenson & Simon, 2005; Nomaguchi & Milkie, 2003 regarding depression in the National Survey of Families and Households). Thus, although there are numerous studies on well-being differences between people with and without children, there is a broad spectrum of different conclusions.

One approach to reconcile these differences may be to distinguish between different facets of well-being. Some aspects of mental health and well-being, such as life satisfaction and loneliness are considered to be relatively stable across most of the adult lifespan (e.g., Baird et al., 2010; Hawkley et al., 2022), whereas others, like positive affect and mental health, change from young adulthood to old age (Kunzmann et al., 2013; Nübling et al., 2006). In line with the *dynamic equilibrium model*, prior research found relatively consistently that life satisfaction fluctuates around the event of childbirth, but ultimately

returns to its initial level (e.g., Asselmann & Specht, 2023; Dyrdal & Lucas, 2012; Krämer & Rodgers, 2020; Luhmann et al., 2012). In contrast, childbirth seemed to have long-lasting effects on affective well-being (Luhmann et al., 2012) and domain satisfaction (Krämer & Rodgers, 2020) in some studies, which may be a signal for a developmental stage shift. One study also found steeper loneliness increases among fathers, compared to people without children and mothers (Keizer et al., 2010). However, most studies have only investigated effects of (not) having children on loneliness among adults in late adulthood (e.g., Penning et al., 2022).

The Role of Life Goals

Life goals refer to the motivational strivings that guide individual thoughts, feeling, and behaviors over years and decades (Roberts et al., 2004) and may critically influence when and why people with or without children are happier. Life goals are essential for structuring development (e.g., Heckhausen et al., 2019) and are known to influence well-being across the lifespan (e.g., Headey et al., 2013; Heckhausen et al., 2001; Sheldon & Cooper, 2008). According to the motivational theory of life-span development (MTD; Heckhausen et al., 2010), the lifespan is a sequentially organized, age-graded action field of opportunities and constraints in which people have to prioritize select age-appropriate goals over others. Life goals like having children, or to a lesser degree having a successful career, are tied to developmental deadlines after which their attainment becomes extremely difficult, if not impossible. Cross-sectional research shows that once a developmental deadline is crossed, holding on to a goal that is no longer attainable reduces well-being (Heckhausen et al., 2001; Wrosch et al., 2003, 2013). To illustrate, one may want to compare two persons who both prioritized having children in their 20s, but do not have any children by the time they are in their mid-40s. The person who shifts their focus to other, still attainable goals likely reports higher well-being than the person who cannot let go of the goal to have

children. Similarly, one may want to compare two persons who both prioritized career success in their 20s but are forced because of childcare obligations to work part-time in their 30s. The person who holds on to their original career goals presumably reports lower well-being than the person who adjusts their career aspirations. One study provides initial longitudinal support selectively focusing on mothers. Specifically, Salmela-Aro et al. (2001) investigated the role of goals for maternal well-being and found that self-focused goals during pregnancy predicted increases in depressive symptoms, whereas family-related goals predicted better well-being. No longitudinal study has investigated how earlier life goals and goal adjustment are related to later well-being outcomes in women and men with and without children.

Methodological Considerations

The majority of prior longitudinal research on this topic can be divided into two sets of studies: One set focusing on the effects of having adult children on well-being later in life, often in the context of grandparenthood (Krämer et al., 2022; Mahne & Huxhold, 2015; Muller & Litwin, 2011; Penning et al., 2022; Silverstein & Bengtson, 1994; Stallings et al., 1997; Tanskanen et al., 2019), and the other set focusing on the immediate effect of childbirth on well-being in the first few months up to the first seven years as a parent (e.g., Brandel et al., 2018; Krämer & Rodgers, 2020; Nomaguchi & Milkie, 2003; van Scheppingen et al., 2018).

The latter sets of studies may produce diverging results depending upon design features. Specifically, not measuring and adjusting for pre-existing differences between people who never have children and prospective parents (i.e., selection effects) introduces confounding bias (VanderWeele et al., 2020). The impact of (not) adjusting for pre-existing differences has recently been demonstrated in a mega-analytic framework (Beck & Jackson, 2022). One way to minimize confounding bias caused by pre-existing differences is

propensity score matching. This technique is uniquely suited to take into consideration well-established predictors of outcomes (here, mental health and well-being) and treatment (here not having children). For instance, education is associated with both the treatment and the outcome. Higher education has been associated with decreased likelihood to enter parenthood (e.g., Cygan-Rehm & Maeder, 2013; Smock & Greenland, 2010), but better well-being (e.g., (Araya et al., 2003). In propensity score matching, a score for each individual is calculated based on selected variables that represent this person's propensity to be exposed to a so-called 'treatment' (e.g., never have children). All individuals who will 'never' have children are then "matched" to individuals who become parents at some point. This allows testing the effect of never having children on the development of mental health, well-being, and loneliness against a matched control group of individuals who become parents but are otherwise very similar on the selected variables to individuals who never have children.

The "modified disjunctive cause criterion" (VanderWeele, 2019, p.218) helps guide the variable selection process: A variable should be included if it is expected to (a) influence the outcome, (b) influence the treatment (never having children vs. becoming a parent), or both, or (c) if it is a proxy for an unmeasured common cause of outcome and treatment. However, even in studies with designs this rigorous (e.g., Krämer & Rodgers, 2020) another problem remains because often the follow-up interval is very limited so that it is possible that participants assigned to the control group of non-parents (e.g., at age 28) may become parents later (e.g., at age 35).

In summary, relevant longitudinal research comes with a number of limitations. First, the vast majority of this research focuses on the well-being of parents, without parallel examination of non-parents. Second, most prior work concentrates on a specific time window in the lives of people. This is often the time around childbirth, or it is late adulthood. Although it has long been proposed to adopt a lifespan approach (Umberson et al., 2010),

very few studies have done so. One exception is a study by Graham (2015) who used ten waves, spanning 10 years of Australian panel data (N = 13,969) to investigate the effect of (not) having children on women's lifespan (mental) health and well-being. She included women aged 18 to well above age 65 and found that life stage mattered. Compared to mothers, women who did not have children reported worse health and well-being during their peak reproductive years but better health and well-being later in life. Her study also highlights one already mentioned limitation (not knowing if non-parents are just not parents, yet) and two other frequent limitations: not examining pre-existing (mental) health differences that are seldom controlled for and not considering men who are often excluded in these studies.

The Present Study

In the present study, we examine the effect of not having children[6] on the midlife trajectories of mental health and well-being with a focus on life goals as moderators using a study design that addresses the aforementioned limitations in three ways. First, we employ a less parent-centric approach by including child and career goals as moderators of well-being levels and change that are meaningful to people with and without children. Second, our study includes eight theoretically distinct outcome measures to shed light on how different aspects of mental health, well-being, and loneliness change in people who do and those who do not have children. Third, to address the aforementioned methodological limitations and to control for selection effects, we apply a rich and rigorous, case-controlled longitudinal design with an average participation of over 24 annual waves.

[6] We want to note upfront that although our study assessed the importance of having children which may serve as a proxy for childbearing intention, we cannot distinguish between involuntary and voluntary childfree individuals, neither can we distinguish between planned and unplanned parenthood.

Based on extant research that also controlled for selection effects and given the manifold stressors associated with parenthood, we expect less favorable mental health, well-being, and loneliness changes (i.e., steeper declines/flatter increases) among people who have children compared to people who never have children (H1a). According to traditional gender norms, motherhood is central to women's identity (Arendell, 2000). Hence, we expect the slope differences between people with and without children to be smaller for women (H1b). In line with theory and earlier empirical reports, we hypothesize that prioritizing the goal to have children in early adulthood (ages 18 through 30 years) is associated with less favorable changes (i.e., steeper declines/flatter increases) in mental health, well-being, and loneliness in individuals who never have children compared to parents (H2a). Because motherhood is more central to women's identity than fatherhood is to men's identity, we expect this effect to be larger for women (H2b). We further hypothesize that prioritizing career goals in early adulthood is associated with less favorable mental health, well-being, and loneliness changes (i.e., steeper declines/flatter increases) in parents, compared to individuals who have no children (H3a). Because having children often comes with a more severe career penalty for women than it does for men (for a review, see Greenhaus & Allen, 2011), we expect this effect to be larger for women (H3b). Finally, in line with MTD and cross-sectional research, we expect that disengaging from the goal to have children in midlife is associated with more favorable mental health, well-being, and loneliness changes (i.e., steeper declines/flatter increases) in individuals who have no children compared to those who do (H4).

Finally, prior research highlights the role of sociocultural norms and political regulations for the well-being of people with and without children. For instance, people without children are less satisfied with their lives if they live in pronatalist countries (Tanaka & Johnson, 2016). Moreover, studies from Scandinavian countries found higher life satisfaction in people who have children compared to people without children (e.g., Hansen,

2012) which has been linked to the extensive governmental support for families provided by these countries (Abela et al., 2021). In this context Germany represents a special case. From 1949 to 1990, the country was divided into two states with different political and economic systems which supported different lifestyles, work attitudes, values, and family policies (Adler & Brayfield, 1996; Frese et al., 1996; Kreyenfeld & Geisler, 2006; Pfau-Effinger & Smidt, 2011): The Federal Republic of Germany (FRG) in the West with individualistic values and a capitalist economy and the soviet-ruled German Democratic Republic (GDR) in the East with communist values and a planned economy. In the GDR it was the norm for women to participate in the labor market whereas in the FRG the norm of the stay-at-home housewife prevailed. To ensure that female labor market participation was possible, the GDR provided a good childcare infrastructure (Adler & Brayfield, 1996) which has also been associated with higher fertility rates in the GDR compared to the FRG during the time of division (Kreyenfeld & Geisler, 2006). Even today, only 13% of women raised in the former GDR who are now past the fertile age do not have children, whereas it is 21% of women raised in the FRG. Hence, we explored a potential moderation effect of living in the former GRD versus FRG on the effect of (not) having children on the midlife mental health, well-being, and loneliness trajectories. This was not preregistered.

Method

Transparency and Openness

We used data from the German Socio-Economic Panel Study (SOEP, 2021 version 36, EU-Edition). The SOEP data are available to research institutes and universities for research and teaching purposes from the SOEP Research Data Centre (RDC SOEP). Information about eligibility and the application process is found at https://www.diw.de/en/diw_01.c.601584.en/data_access.html. Since we used archival data

available in the public domain, which were collected in compliance with high ethical standards, we are exempt from an IRB review.

Data preparation, descriptive analyses, propensity score matching, and visualization was done in R, version 4.0.4 (R Core Team, 2020) with the packages mentioned before. LGMs were estimated in Mplus Version 8 (Muthén & Muthén, 1998-2017). Model results were transferred back to R using the MplusAutomation package (Hallquist & Wiley, 2018).

This study's hypotheses and analysis strategy were preregistered (https://osf.io/nvdrz/?view_only=33cf9bc8c7134442a6c3b17b8a18e02f). All R and Mplus code for data preparation and analyses is provided on the OSF-project site (https://osf.io/7e4rs/?view_only=21def6fbec98467b95d84a52d9ab31c2).

Sample

Launched in 1984, the SOEP is an ongoing, annual, multi-cohort study of private households in Germany. The data include reports of mental health and well-being obtained at multiple waves as well as information about the importance of different life goals and birth biographies. Detailed information about sampling strategy, survey design, and assessment procedures can be found in Goebel et al. (2019). Although the authors have used SOEP data for previous publications[7], this is the first examination of the interplay of life goals and multiple aspects of well-being among parents and individuals who have no children.

Because the SOEP has been continuously revised and extended, not all measures, including some relevant to this study, were assessed in all waves. Some were introduced to the SOEP many years after the launch of the study and are assessed at varying measurement intervals. Following our interest in how life goals in early adulthood are related to mental

[7] Publications based on SOEP data can be searched at https://www.diw.de/en/diw_01.c.789503.en/publications_based_on_soep_data__soeplit.html

health and well-being in the context of (non)parenting, we used data after life goals were introduced into the assessment, specifically from 1990 onwards.

Measures

Mental Health and Well-Being

Changes in mental health and well-being were tracked using eight measures that spanned multiple facets of life satisfaction, mental health-related quality of life, affective well-being, and loneliness – all of which were measured on between eight and 30 occasions. Comprehensive information on all instruments used in the SOEP is available in the Scale Manual (Entringer et al., 2022).

Life Satisfaction and Satisfaction with Life Domains. Since the SOEP's launch in 1984, *global life satisfaction* has been assessed annually with a single item measure, asking participants how satisfied they are with their life, all things considered, using an 11-point scale (0 = '*completely dissatisfied'* to 10 = *'completely satisfied'*). This measure has been shown to perform equally well compared to multi-item scales (Cheung & Lucas, 2014).

Several single-item measures of satisfaction with different life domains using the same response format as the global life satisfaction measure (0-10), have also been included in the SOEP annually since 1984. Of these, we included satisfaction with health and satisfaction with work. We further included satisfaction with family life which was introduced to the SOEP in 2006 and has since been assessed annually on the same response scale (0-10). Information on development, reliability, and validity of these measures can be found in Schimmack et al. (2008, 2010). These single-item measures have been reported to show convergent validity with theoretical expectations (e.g., regarding average changes with age) as well as empirical findings reported from more comprehensive measures (Diener et al., 2013; Kunzmann et al., 2013).

Mental Health-Related Quality of Life (SF-12). Mental health-related quality of life has been assessed biennially since 2002 as part of the German translation of the short form 12 (SF-12) questionnaire, which was developed specifically for the SOEP (Andersen et al., 2007). Participants rated how often in the past four weeks they had experienced certain mental health states (e.g., "run down / melancholy" or "feeling tired / worn out") on a five-point scale (1 = *always* to 5 = *never*). Following Nübling et al. (2006), the item responses were aggregated to obtain one mental health-related quality of life indicator. Higher scores on the indicator reflect better mental health-related quality of life.

Affective Well-Being. Affective well-being has been assessed in the SOEP annually since 2007. Participants are asked to indicate on a 5-point scale (1 = *'very rarely*' to 5 = *'very often*') how often in the past four weeks they felt '*sad', 'angry', 'worried'* and *'happy*'. A *negative affect* composite score was calculated for each assessment as the average of the ratings for sad, angry, and worried.

Loneliness. *Loneliness* was assessed on eight occasions (1992, 1993, 1995, 1996, 1997, 2008, 2013, and 2018) by asking participants to indicate level of agreement (1 = "Agree completely" to 4 = Disagree completely) with the single item "I often feel lonely". The reliability and validity of single item measures of loneliness has been shown in previous studies (Mund et al., 2023). Scores were reverse coded before analysis so that higher scores reflect higher levels of loneliness.

Life Goals

In 1990, 1992, 1995, 2004, 2008, 2012, and 2016 participants were asked to rate the importance of nine life goals on a 1 (very important) to 4 (not at all important) scale. The use of normative importance ratings is in line with existing research (Atherton et al., 2021; Wehner et al., 2022). Prior to analysis, participants' importance ratings were reverse scored so that higher scores reflect greater importance. Of the nine life goals assessed in the SOEP,

"having children" and "being successful in my career" are particularly important for the current paper and the remaining seven life goals were included as covariates for propensity score matching.

Extent of disengagement from the goal to have children was operationalized as the difference in an individual's goal importance ratings in the period before the developmental deadline and their ratings in period after the developmental deadline ($goal_{i\_postDL} - goal_{i\_preDL}$). Specifically, the disengagement score was calculated separately for each individual by subtracting the average importance rating of the goal to have children of all available waves before age 35 for women and age 45 for men from the average of all available waves after age 35 for women and age 45 for men. Negative scores indicate more disengagement while positive scores indicate enhanced engagement.

The age cut-offs are a deviation from the preregistration which specified the cut-offs as used for the developmental deadline of childbearing (age 40 for women and age 50 for men). This deviation was necessary to keep the sample as large as possible. Because life goals were assessed less frequently than the well-being variables (only every four years until 2016) not adjusting the cut-offs would have resulted in large numbers of missing data due to a lack of post-deadline assessments.

Demographics

The treatment variable (0 = parent and 1 = no children) was created based on two generated variables in the SOEP. One that informs about the total number of biological children (sumkids) and one that informs about the birthyear of the first child (kidgeb01). To be classified into the no children group, sumkids had to be zero and kidgeb01 had to be missing. To be classified as a parent, sumkids had to be greater than zero.

Other demographic variables that were included in our study (in the main analyses and/or for propensity score matching) were age (in years, generated from participants birth

year and the current survey year), gender (coded 0 for women, and 1 for men), survey region (coded 0 for former FRG, and 1 for former GRD), monthly household income (log-transformed), household size, migration background (none, indirect, direct), education (International Standard Classification of Education score), relationship status (single, serious relationship, married, divorced), employment status (full-time, part-time, trainee, irregular part-time, in education, not employed, registered unemployed), regional socialization (location in former East vs West Germany before unification in 1989), and current location at the time of matching (former East vs West Germany).

Procedure

Following recommendations by VanderWeele et al. (2020), we included a total of 39 variables for the propensity score matching which covered individual's basic demographics, financial situation, health, life goals at the time of matching, outcome variables at the time of matching when available, as well as survey participation prior to matching and current survey wave. An overview of all matching variables, including our (conceptual) rationale for inclusion can be found on the OSF (OSF_covariate-overview.xlsx).

From the larger sample, we first selected all young adults (individuals aged 18 to 30) who took part in at least one of four survey waves (1990, 1992, 1995, and 2004) in which life goals were assessed (N = 5,968). This was done to ensure that individuals were young enough to be in a phase when life goals are still being formed (Arnett, 2014) at their first life goal assessment but old enough to be past the developmental deadline of childbearing at their last mental health and well-being assessment. To determine our analysis sample, we then followed three steps of subsetting the available archival data (see Figure 1). First, we excluded participants who provided life goal data but dropped out of the larger study before they passed the developmental deadline for childbearing. Biological and to a lesser extent, especially for men, societal constraints increase greatly when people are in their 40s (e.g.,

Morris et al., 2021; Sharma et al., 2015). This is also reflected in the age restrictions of fertility treatment providers. Many will not treat women above the age of 39 and men above 49 (Adrian et al., 2021; Cavaliere & Fletcher, 2022). Despite rising numbers, pregnancies in the 40s are still uncommon. In 2020, only 2.9% of Germany's newborns were delivered by mothers aged 40 or above (Statistisches Bundesamt (Destatis), 2022). Of new fathers, 6% were aged 45 or older and 1.5% were aged 50 or older at the birth of their first child (Statistisches Bundesamt (Destatis), 2020). Hence, 40 years of age was chosen as the developmental deadline for women and 50 years as the developmental deadline for men. These cut-offs make it very unlikely that an individual who has not become a parent yet was categorized incorrectly as childfree. After excluding individuals who dropped out of the larger study before they reached the developmental deadline for childbearing, N = 1,797 individuals remained in the sample.

Second, we excluded individuals who experienced the death of a child. Losing a child has been shown to significantly reduce life satisfaction and happiness and increase sadness both short- and long-term (Asselmann & Specht, 2023b). Moreover, individuals who lost a child might question themselves regarding their parental goals. This led to a further exclusion of n = 9 individuals (two fathers and seven mothers), leaving us with a sample of N = 1,788. Third, we excluded individuals who had their first child within the two years following the first life goal assessment (matchtime) or earlier (n = 874). This was done to ensure that the covariates used to estimate the propensity score and obtain matched groups are not confounded with the transition to parenthood. For many couples, this transition does not start with pregnancy but with the decision to try for a baby (Heckhausen et al., 2019). This is supported by studies that investigated well-being several years before and after the transition to parenthood and found anticipation effects that start before pregnancy (e.g., Asselmann &

Specht, 2023a; Dyrdal & Lucas, 2012; Krämer & Rodgers, 2020). This further reduced the sample size drastically to the final sample before matching of $N = 914$.

Propensity Score Matching

The final analysis sample was then identified by matching the lifetime childfree individuals with a future parent who was most similar on a set of covariates. As previously described, this minimizes confounding through pre-existing differences. We combined exact matching on gender and propensity score matching on the remaining covariates which were selected following the "modified disjunctive cause criterion" (i.e., covariates that may be a cause of the parent treatment, or of the well-being outcomes, or of both; VanderWeele, 2019, p.218). Because propensity score matching techniques currently require complete data, we imputed missing data on the covariates at the time of matching using the *mice* package (van Buuren & Groothuis-Oudshoorn, 2011). Imputed data were only used for the matching procedure. All following analyses were done with the original, incomplete data using missing at random assumptions (i.e., with informative covariates). We computed propensity scores in five imputed data sets by predicting treatment assignment (remaining childfree vs. becoming a parent) with all covariates listed in OSF_covariate-overview.xlsx, using logistic regression with a logit link function. To combine propensity scores and multiple imputations, we averaged the propensity scores across the five imputed data sets. Next, we performed exact matching on gender, combined with 1:1 nearest neighbor matching with a .2 caliper on the propensity score using the R package MatchIt (D. Ho et al., 2011). Covariate balance after the matching procedure was good (see Table S1), with, as recommended in the literature (Austin, 2011), standardized mean difference on all matching variables < .10. The final sample after matching included $N = 562$ individuals ($n = 281$ parents, $n = 281$ no children, 30% were male) with an average age of 24.81 at their first life goal assessment[8]. The age

[8] The SOEP does not provide information about racial identity.

distribution by gender is illustrated in Figure S1. Sample characteristics are depicted in Table 1.

In post-hoc analyses examining robustness of findings to choices in how matching was done, we also applied a basic matching procedure which only included gender, age, and survey year at the time of matching as covariates. Again, we performed exact matching on gender and 1:1 nearest neighbor matching but this time without a caliper on age and time of matching. The resulting sample comprised N = 640 individuals (n = 340 parents, n = 340 no children). [one sentence here summarizing whether this makes a difference or not, and if so that it will be discussed later].

Statistical Models

Hypotheses were tested using a series of (multiple-group) latent growth curve models (LGMs) that facilitated examination of group differences in non-linear change and between-person differences in within-person change (Grimm et al., 2017; Preacher et al., 2008). To examine age-related change in the well-being outcomes, we conceptualized time as a function of participants' chronological age rather than measurement occasion or time since matching. Specifically, the TSCORE option in Mplus was used to invoke participants' age at each point of assessment into the factor loadings in the LGM (P. D. Mehta & West, 2000; Preacher et al., 2008). One central assumption of this approach is that the common trajectory modeled with the multi-cohort sample represents the trajectory of a hypothetical sample in which a single cohort is followed across the entire lifespan. To test this assumption, we split our sample into four cohort groups (individuals born in 1960-1964, 1965-1969, 1970-1974, and 1975-1980) and fit separate growth models for each cohort. We then plotted the cohort-specific trajectories to examine if they overlapped at shared ages. When they did, we assumed continuity across age (i.e., no cohort differences). The results of the cohort-specific LGMs are shown in Figure S4 of the supplement materials, and indicate little to no evidence of

cohort differences, with the age trajectories largely overlapping between the four cohorts on all eight outcomes.

Prior to analysis, age was centered at 40 and rescaled by a factor of 10^{-2} to obtain numerically larger estimates and improve readability. We successively fitted LGMs with linear, quadratic, and (when possible) cubic slope factors to determine the functional form of the trajectory. When necessary, we fixed the variance of the quadratic and cubic slope factor to zero to obtain convergence. The sample-size adjusted Bayesian information criterion (adjusted BIC) served to assess model fit. The results of these analyses are reported in the supplement materials. We used grouped local regression smoothed (LOESS) line plots to visually inspect the data and obtain to additional information about possible differences regarding the functional form of the trajectories between childfree men and women, mothers and fathers. This was not preregistered. We created these plots with the matched and the unmatched sample, to illustrate the effect of the matching procedure. Differences in the plots with the unmatched sample appear larger. LOESS-plots for all outcomes with the matched and unmatched data are displayed in the supplement material (Figure S2-S3).

Once we determined the functional form of the trajectory of each mental health and well-being outcome, we added the treatment variable (0 = parents, 1 = no children) as grouping variable to the best fitting model. To test if the development of mental health and well-being differed between the two groups (H1a), we compared models with and without cross-group constraints on the means and variances of the intercept and slope factors. To examine if the average level and change differed between parents and people without children, we compared modes with and without cross-group constraints on the factor means. To examine if the interindividual differences in levels and change differed between the two groups, we compared models with and without cross-group constraints on the factor variances. When the un-constrained model provided better model fit, we inferred there were

group differences. To test the remaining hypotheses, we specified in the preregistration that we would run multiple-group conditional LGMs with the treatment dummy as grouping variable and gender, life goals, goal disengagement, and the interaction of life goals and gender as predictors of the intercept and slope factors. This method was originally chosen to avoid three-way interaction terms. Unfortunately, some of these models failed to converge, especially those with higher-order polynomials. This led us to estimate ungrouped conditional LGMs and successively added all moderators as predictors of the intercept and slope factors. To test hypothesis H1b, we ran conditional LGMs with the treatment dummy, gender, and an interaction term of treatment group and gender regressed onto the intercept and slope factors. To test hypotheses H2a and H3a, we added the grandmean-centered life goals at the time of matching (H2a: importance to have children, H3a: importance to have a successful career) and their interaction with the treatment dummy as predictors of the intercept and slope factors to the previous model. To test H2b and H3b, we added a three-way interaction term including treatment group, life goal, and gender as a predictor of intercept and slope factors to the previously described model. Finally, to test H4, the grandmean-centered goal disengagement variable and an interaction term of the disengagement variable with the treatment dummy were then added to the model as predictors of the slope factors. All conditional LGMs with the preregistered predictors were also run in the sample matched only on gender, age, and survey year at the time of matching. Finally, to explore if region (coded as 0 for former FRG and 1 for former GDR) moderated the effect of not having children on the mental health, well-being, and loneliness trajectories, we added a dummy to the final conditional LGMs. Throughout the results section, we discuss findings based on statistical tests with $p < .05$.

Results

Life satisfaction, satisfaction with health, and satisfaction with work followed an age-related change trajectory with a quadratic and cubic polynomial. Satisfaction with family life,

mental health-related quality of life (SF-12 MCS), positive affect, and negative affect, followed a trajectory with a quadratic polynomial. Loneliness followed a linear trajectory. The results of the series of LGMs to determine the functional form of the trajectories are reported in detail in the supplement materials.

Mental Health, Well-Being, and Loneliness Across Adulthood in People With and Without Children

The effect estimates for the conditional LGMs with all predictors added to the model are reported in Tables S5A-S12A of the supplement materials. Figure 3 shows the model estimated mental health and well-being trajectories of individuals with and without children based on the multiple group LGMs without cross-group constraints on either factor means or variances. The BICs of the models with and without cross-group constraints on factor means and/or variances are reported in Table S4 of the supplement materials. The model estimated factor means and variances of the unconstrained models are reported in Table S3. For global life satisfaction, satisfaction with health, satisfaction with work, satisfaction with family life, and negative affect, the models with constraints on the factor means, but freely estimated variances had the best fit. This suggests that the average trajectories of people without children and people who became parents are similar, but that there are differences in the extent of heterogeneity. For loneliness and mental health, the model with constrained factor variances, but freely estimated means had the best fit. This suggests that the average trajectories differ between people without children and parents, but the extent of heterogeneity in levels and change is comparable in both groups.

The better fit of the model with unconstrained factor means for loneliness was driven by level differences between the two groups. Compared to parents, individuals without children were lonelier at age 40 (B = .12 [.03; .22], p = .010). However, once gender and its interaction with the treatment dummy were added to the model, the main effect disappeared.

The treatment effect was moderated by gender, such that the rate of change in loneliness was more favorable among men than among women (B = –1.43 [–2.73; –0.13], p = .032). Figure S3 suggests that this effect was driven by significantly lower levels of loneliness in fathers from the mid-20s to the late 30s, but similar levels of loneliness past age 40 (see Figure S3). Once all predictors were added to the model, only the effect of gender on the loneliness intercept (B = –0.23 [–0.36; –0.09], p = .001) remained significant. However, Figure S3 also indicates that a linear model may not be suitable to describe the loneliness trajectory of fathers. This is confirmed when comparing models with a linear, quadratic, and cubic slope factor in the father subsample. Adding a quadratic and cubic polynomial improved model fit (BIC_l = 1288.15 vs BIC_{lqc} = 1277.17). This suggests that fathers are least lonely, particularly in their 20s and 30s.

The better fit of the model with unconstrained factor means for mental health was driven by differences in the linear slope. The mental health of people without children did not change significantly (mean linear slope = 6.79 [–2.88; 16.46], p = .169) whereas that of people who became parents increased (mean linear slope = 16.89 [6.77; 27.01], p = .001). Figure 3 shows that in early adulthood the mental health of people without children is better compared to that of parents, but the trajectories converge in midlife.

Although the BICs of the models with constrained factor means indicated better fit than the freely estimated models for positive and negative affect, these differences were miniscule (0.56 for positive affect and 0.30 for negative affect). Since Figure 3 shows clear affective well-being differences between people with and without children in early adulthood but not later in life, the centering age (40) could have obscured these effects. The conditional LGMs showed significant effects of not having children on the positive affect intercept (B = –0.15 [–0.26; –0.04], p = .009) and the linear slope of negative affect (B = 1.31 [0.31; 2.31] p = .010). However, the effect on the positive affect intercept disappeared when gender and its

interaction with not having children were added to the model. Gender moderated the effect of (not) having children on the linear (B = 4.87 [1.81; 7.92], p = .002) and quadratic change (B = –27.94 [–43.56; –12.31], p < .001) of positive affect. This means that positive affect changed less favorably for men without children. The effect on the negative affect slope disappeared when the interaction of not having children and disengaging from the goal to have children were added to the model.

Running the same models in the larger sample (N = 640) based on the more lenient matching procedure resulted in significant effects of (not) having children on six out of eight outcomes. Specifically, not having children was associated with lower positive affect at age 40, lower satisfaction with family life at age 40, higher loneliness at age 40, less favorable cubic change in satisfaction with health, and more favorable quadratic change in mental health (see Supplementary Tables S6B, S8B-S10B, and S12B). Moreover, the multiple group models in the larger sample also indicated better fit for the unconstrained models of life satisfaction, satisfaction with family life, and positive affect. All effect estimates based on the sample matched only on gender, age, and survey year at the time of matching are reported in Tables S5B-S12B. An equivalent to Figure 3 based on the more lenient matching procedure is provided in the supplement materials (Figure S5) and shows larger mental health and well-being differences between people with and without children.

For most outcomes, the effects of not having children were similar for people located in either region of Germany (former GDR or former FRG). The only significant moderation effects concerned the quadratic change of mental health (B = 194.74 [19.75; 269.71], p = .020) and negative affect (B = -19.04 [-34.46; -3.62], p = .020). This means that mental health and negative affect changed more favorably for people without children located in the former GDR, compared to people without children located in the former FRG.

Do Life Goals in Early Adulthood Matter to Trajectories of Lifespan Mental Health, Well-Being, and Loneliness Across the Adult Lifespan?

The perceived importance to have children as assessed in early adulthood moderated the effect of (not) having children on the trajectories of mental health, satisfaction with family life, and positive affect. The perceived importance of career success as assessed in early adulthood moderated the effect of (not) having children on the trajectories of cognitive and affective well-being. Life goals during early adulthood did not moderate the effect of (not) having children on loneliness.

Perceived Importance to Have Children in Early Adulthood

As expected, individuals who perceived having children as relatively more important during their 20s and who remained childfree experienced more undesirable linear change in satisfaction with family life (–6.12 [–10.26; –1.97], p = .004, see Figure S6) and mental health (B = –23.50 [–42.48; –4.53], p = .015, see Figure S7), as well as more undesirable quadratic change in positive affect (B = –14.35 [–28.30; –0.40], p = .044, see Figure S8). Although none of the three-way interactions with gender were significant, the visualization of the results suggests that the effect on mental health was primarily driven by women (see Figure S4). In their forties and early fifties women without children who perceived having children as relatively unimportant when they were young were mentally healthier than women who ascribed high importance to having children when they were young. Due to the later inclusion of the SF-12 to the SOEP (2002) and the stricter inclusion criteria for men (last assessment at ≥ 50) there are no mental health assessments of men in their twenties. To bypass this problem, we estimated follow-up analyses that used a multiple group LGM with gender as grouping variable. The results showed that for women, the perceived importance to have children in early adulthood moderated the effect of (not) having children on the mental health intercept (B = –2.69 [–4.91; –0.47], p = .018) and on the quadratic mental health slope

(B = –167.75 [26.67; 359.60], p = .020), but not for men ($B_{intercept}$ = 0.18 [–3.47; 3.82], p = .924; B_{slope} = 13.78 [–305.24; 332.80], p = .933).

Perceived Importance of Career Success in Early Adulthood

There were small but significant interaction effects of (not) having children and perceived importance of career success on the development of life satisfaction, satisfaction with health, satisfaction with work, positive affect, and negative affect. These effects are illustrated in Figures S9-S13.

Individuals who perceived career success as relatively more important in their twenties and never had children, changed less favorably on all aforementioned outcomes in early adulthood, but more favorably later in life. This is suggested by the positive (negative for negative affect) interaction effect on quadratic change (see Tables S4-6 and Tables S9-10). The significant negative (positive for negative affect) three-way interaction effects of gender on the quadratic change of satisfaction with work, positive affect, and negative affect, indicate that these effects were weaker in men. There was also a significant three-way interaction effect on the quadratic change of mental health (B = –328.22 [–624.84; –31.60], p = .030). This means that the mental health of men who perceived career success as relatively more important in their twenties and never had children changed more favorably in early adulthood but less favorably later in life. The three-way interaction on cubic change of life satisfaction (B = –281.83 [–508.93; –54.72], p = .015) suggests that the life satisfaction of men who focus on career success and remain childfree changed less favorably both in early adulthood and midlife. Figures S11-S12 show, however, that these effects were driven by fathers. The mental health and negative affect of people without children and mothers developed similarly whether they perceived career success as very important or not, but fathers who perceived career success as very important experienced lower levels of mental health and higher levels of negative affect throughout their working life.

Disengaging From the Goal to Have Children

Disengaging from the goal to have children in midlife moderated the effect of not having children on the development of cognitive well-being. Specifically, the interaction of treatment (no children) and disengagement had a negative effect on the cubic change of life satisfaction (B = –150.60 [–285.24; –15.96], p = .028), as well as negative effects on the quadratic (B = –31 [–62.28; –1.64], p = .039) and cubic change (B = –230.24 [–439.93; –20.56], p = .031) of satisfaction with work. This means that the cognitive well-being of people who never have children and disengage from the goal to have children changed more favorably later in life (see Figures 9 and 10). Figure S14 shows that the effect on satisfaction with work was driven by a small group (9.25%) of parents who disengaged. The work satisfaction of parents who stayed engaged as well as the work satisfaction of people without children regardless of whether they disengaged or not developed similarly (relative stability). However, the work satisfaction of parents who disengaged increased. In a post-hoc analysis we tested if mean income across survey waves, maximum level of education across the study period, number of children, relationship status across the study period, age at first birth, predicted disengagement in parents but found no significant effects. We also descriptively compared parents who disengaged to parents who stayed engaged and people without children. The results of these post-hoc analyses are displayed in tables S13-14. The majority of people without children disengaged (63.70%).

Discussion

Is (not) having children beneficial or detrimental to mental health, well-being and loneliness across young adulthood and midlife, and does it affect people differently depending on the importance they ascribed to having children and career success when they were young? These were the questions our case-controlled, longitudinal study sought to answer. Supporting and extending set-point theory and prior research (e.g., Gibney et al.,

2017; Hoppmann & Smith, 2007; Keizer et al., 2010; Nomaguchi & Milkie, 2003; Penning et al., 2022; Quashie et al., 2021; Stahnke et al., 2023), our findings suggest that from a lifespan perspective (not) having children is neither systematically beneficial nor systematically detrimental for most well-being outcomes. For measures of affective well-being in young adulthood though, it seems to be both. In line with our hypotheses and MTD, our findings also show that the importance we ascribe to having children and career success in our twenties matters for later life mental health and well-being, although most effects were relatively small. Overall, the average well-being trajectories of people without children and parents were similar, but there was greater interindividual variability in change among parents.

Do Mental Health, Well-Being, and Loneliness Develop Differently for People who Never Have Children and Those who Do?

We expected more favorable development of mental health, well-being, and loneliness for people who never have children (H1a) and expected differences to be smaller for women (H1b). This was partially confirmed for mental health, affective well-being, and loneliness but neither H1a nor H1b were supported for cognitive-evaluative well-being. Supporting prior research (e.g., Evenson & Simon, 2005; Leiferman et al., 2021), we find that people who never have children reported better mental health than parents, especially in their twenties and thirties. This time of the lifespan has been associated with the "career-and-care-crunch" (C. M. Mehta et al., 2020) which is characterized by a peak of work- and family-related demands. Many people experience this time as overwhelming (C. M. Mehta & LaRiviere, 2023) and postpone their leisure and social goals (Freund, 2020). It is also the time when people are usually still at the peak of their physical health but have gained some financial security, theoretically allowing them to make the most of their leisure and social life. Prior research showed that people without children focus on personal fulfillment, seeing

the world, and being socially or politically active during this time (Buchinger et al., 2022). These goals have been associated with healthy personality development (Buchinger et al., 2023; Niemiec et al., 2010) and may boost mental health.

Our results further suggest that not only did people without children enjoy better mental health during their twenties and thirties, their emotional lives also seemed steadier. Compared to parents, people without children experienced both less frequent negative and positive affect as well as smaller changes in affect. This is likely due to the unique challenges that come with raising children (e.g., Nelson et al., 2014). Factors like relationship distress (e.g., Keizer et al., 2010; van Scheppingen et al., 2018), sleep deprivation (e.g., Richter et al., 2019), reduced leisure time (Claxton & Perry-Jenkins, 2008), financial strain (e.g., Pollmann-Schult, 2014), and the general concern about their child's health and well-being may contribute to increasing negative affect in parents. For instance, one study that used SOEP data to investigate the effect of childbirth on facets of affective well-being in N = 5,532 first-time parents found long-lasting increases in the frequency of experiencing anger (Asselmann & Specht, 2023a). However, since this study did not include a control group, it is unclear how the reported changes compare to same-aged peers who did not become parents. At the same time, children can evoke profound positive emotions in their parents by doing the simplest things, like having a good time in the sand box or enjoying a new food. In line with the cost and rewards perspective on parenthood (Nomaguchi, 2012), which predicts the largest psychological rewards from parenthood before children start school, these differences in positive affect diminish later in life.

Contrary to our expectations but in line with set-point theory, we found that cognitive-evaluative components of well-being developed similarly for people with and without children. These components of well-being are likely to reflect the evaluation of current achievements against aspired goals (e.g., Diener et al., 1998; Eid & Larsen, 2008). Having

children is a central life goal for many people (e.g., Ashburn-Nardo, 2017; Hansen, 2012) and considered a fundamental part of a successful life in many societies. Accordingly, having children per se may have a positive effect on cognitive-evaluative well-being. Despite negative and stressful experiences in every-day life, it represents the achievement of an important, socially desirable life goal (cf. Hansen, 2012). Conversely, not having children per se may have a negative effect on the cognitive-evaluative well-being of people without children and counterbalance the positive sides of not having children, such as having more time for personal growth, leisure, and self-fulfillment, higher relationship satisfaction, or fewer financial concerns. This is supported by prior cross-cultural research showing that people without children are less satisfied with their lives if they live in pronatalist countries (Tanaka & Johnson, 2016). The results of the exploratory analysis regarding regional differences suggest similar effects of (not) having children on most outcomes in both parts of Germany (former GDR and former FRG). Since our sample was limited to parents who had their first child in a united Germany, these results may reflect the assimilation of family policies since unification. Future cross-cultural research may also investigate the role of family-friendly policies in contributing to the well-being trajectories of people with and without children. It seems plausible that having children results in better cognitive-evaluative well-being in countries that provide extensive and easily accessible governmental support for families. For instance, although German parents receive up to 14 months of paid parental leave, Scandinavian nations provide even more governmental support for families (Abela et al., 2021). This is reflected in previous research that found higher life satisfaction in Norwegian mothers compared to non-mothers (Hansen et al., 2009).

These null results add to the growing body of literature that suggests similar development of cognitive-evaluative well-being for people with and without children (e.g., Asselmann & Specht, 2023a; Dyrdal & Lucas, 2012; Krämer & Rodgers, 2020; Luhmann et

al., 2012). In the context of our strict matching procedure, our results also show that there are larger between-person differences in cognitive-evaluative well-being change among parents than in people who do not have children. The largest difference concerned satisfaction with family life, which illustrates the heterogeneity of the parenting experience.

Supporting prior research (Hawkley et al., 2022) and partially supporting H1b, mean-levels of loneliness in people without children and mothers were similar and relatively stable throughout the investigated age span. However, as compared to childfree men, fathers were significantly less lonely from their mid-twenties to their mid-forties, the time when their children typically reside in the same household, but the trajectories converged thereafter. This finding translates to steeper loneliness increases in fathers later on, which is in line with prior research (Keizer et al., 2010). Recently, Bauer et al. (2023) used data from the Survey of Health, Ageing and Retirement in Europe (SHARE) to investigate the effect of parenthood on health and well-being in older adults. Controlling also for selection effects, they found positive health effects of parenthood only for men but not for women.

The question remains, why having children seems to protect young men but not women from loneliness. Even today, the great majority of men in Germany does not take parental leave but continues to work full-time when becoming a father (Griese, 2023). Women in Germany on the other hand take on average more than a full year of parental leave and mostly return to work part-time, if they return at all (Griese, 2023). Thus, the sudden lifestyle change (e.g., spending whole days alone with a child instead of being at the office, the gym, or in restaurants) and the dramatic loss in time to socialize with adults (friends, co-workers, club members, etc.) that comes with having children are often more severe for women than they are for men. Moreover, men's close relationships are mostly within the immediate family, whereas women have many close relationships outside the immediate family (Birditt & Antonucci, 2007). Thus, having children may benefit men's social

integration through close relationships within the family (Birditt & Antonucci, 2007) while not affecting other relationships as much (e.g., at work) but poses young women at risk of experiencing loneliness. This is supported by qualitative research which found that new mothers expressed intense feelings of loneliness and being left out (Lee et al., 2019).

Aside from the effect on loneliness, gender moderated the effect of (not) having children on positive affect. Men without children showed less pronounced decreases in positive affect whereas fathers and women showed similar decreases. Generally, we only find few gender effects, providing only little support for H1b. These (null) results regarding gender should, however, be interpreted with caution. Due to our stricter inclusion criteria (men had to be ≥ 50 at their last assessment) and the late introduction of the affective well-being measure (first wave in 2007) and the SF-12 (first wave in 2002) to the SOEP, data on the affective well-being and mental health of men was only available from the mid-thirties onwards. Since the effect of (not) having children on these variables seemed to be most pronounced during young adulthood, our findings regarding gender require replication. It should also be noted that the effect of (not) having children on mental health, affective well-being, and loneliness may be biased by preexisting differences, since this was impossible to control for due to the later introduction of these constructs to the panel.

Do Life Goals During Early Adulthood Affect People With and Without Children Differently?

Both investigated life goals moderated the effect of (not) having children on the trajectories of mental health and well-being, but not of loneliness. The goal to have children mattered more to mental health, whereas the goal to have a successful career mattered more to cognitive-evaluative and affective well-being.

We expected less favorable mental health and well-being changes for people who perceived having children as relatively more important when they were young but did not

become parents (H2a) and expected this effect to be stronger for women (H2b). Our results support H2a regarding satisfaction with family life, mental health, and positive affect. Satisfaction with family life is an aspect of cognitive well-being, which reflects the evaluation of current against aspired achievements, in this case in the family domain. This evaluation comes to a negative result if someone aspired to start a family but remains childfree.

Perceived importance to have children moderated the effect of (not) having children on mental health changes. Ascribing high importance to the goal to have children during early adulthood seemed to put people who do not become parents at risk of experiencing negative mental health changes. This effect mainly concerned young adulthood and early midlife but ebbed off thereafter which may reflect different stages of goal pursuit. MTD (e.g., Heckhausen et al., 2019) suggests that in the urgent phase before the developmental deadline, people typically increase their efforts to achieve the desired goal. This can be stressful and may decrease mental health should these efforts repeatedly fail. After the developmental deadline people should disengage from the unattainable goal and reallocate available resources to other, still available goals. Hence, the more positive mental health changes during late midlife may reflect successful goal disengagement. The majority of people in our study who never had children disengaged, indicating that most people adapt well to unattainable goals.

We hypothesized that the protective effect of lower perceived importance to have children on the mental health and well-being trajectories of people who never have children would be stronger for women (H2b). This was not supported in the conditional LGMs but the graphical analysis and multiple group LGMs indicated that the effect was driven by women. As pointed out previously, this study's (null) results regarding gender require replication if

they concern outcomes that were introduced to the SOEP after 2002 (i.e., SF-12, satisfaction with family life, affective well-being) before strong conclusions can be drawn.

Having children comes with a career penalty, especially for women (for a review, see Greenhaus & Allen, 2011), which may induce additional stress and frustration in parents with high career aspirations. Hence, we expected less favorable mental health and well-being changes for people who perceived career success as relatively more important when they were young and then became parents (H3a). Supporting H3a and prior research (Salmela-Aro et al., 2001), our finding suggests that people with children who had prioritized career success indeed experienced more negative cognitive-evaluative and affective-well-being change. The "career-and-care-crunch" (C. M. Mehta et al., 2020) may be particularly salient for parents with high career aspirations who are also highly invested in child care. For instance, not being able to work overtime to meet an important deadline because the child is sick or having to decline projects that involve business travel represent barriers to achieving high career goals and may cause stress and frustration. Moreover, parents with high career aspirations may lack the time to relax and regenerate after long and stressful workdays. In line with this and prior research (Becker & Moen, 1999), our results show that parents who disengage from the goal to have children experience work satisfaction increases whereas parents who stay engaged do not. Prior research also found a strong association between work role conflict and life satisfaction, for individuals who valued both, work, and family (Carlson & Kacmar, 2000). This is supported by our findings: Parents who perceived a successful career as very important were less satisfied with their health throughout their working life and also less satisfied with their life in general. Smartphone sensing and experience sampling methods could help identify exactly when and why parents with high career aspirations experience negative well-being changes and connect these experiences to involvement in childcare, health behaviors, and social contact frequency.

Our study also showed that most people adjust their goals to their life circumstances. The majority of people without children disengaged from the goal to have children, whereas the majority of parents rated having children as even more important after the developmental deadline. As expected, and in line with MTD, disengagement from the goal to have children moderated the effect of (not) having children on life satisfaction. People without children who disengaged from the goal to have children experienced life satisfaction increases, particularly later in life, compared to those who stayed engaged. Once having children is no longer considered an important goal, remaining childfree will no longer impair life satisfaction (i.e., the evaluation of current against aspired life conditions).

Limitations and Future Research Directions

In closing, we note limitations of our study sample, design, and measures. First, our sample represents a selected fraction of the larger SOEP sample. An average SOEP participant took part in 8.3 survey waves. For our average participant, it was three times as much (24.9). As a consequence, participants included in our sample are positively select so that findings obtained may not necessarily generalize to the underlying population. With our sample inclusion and matching procedure, we deliberately decided for a purposeful tradeoff for internal validity (in the quasi-experimental matched design) at the cost of external validity. Moreover, men were generally underrepresented and data on their mental health and affective well-being were only available from their mid-thirties onwards. This was due to the stricter inclusion criteria which required men to be ≥ 50 at their last assessment whereas women only had to be ≥ 40. Future research should aim to include more men because the father role slowly becomes more diverse, and men become more involved in child care.

Second, as a limitation of our study design we note that despite applying a rigorous propensity score matched design, some of our findings may still be biased by pre-existing differences because some outcomes had only been introduced to the SOEP in the 2000s. All

outcomes that were controlled for pre-existing differences (i.e., the cognitive-evaluative well-being measures) developed similarly for individuals with and without children. The later introduction of some outcomes to the SOEP combined with the strict inclusion criteria also restricted the age span we could investigate, especially in men. We also cannot exclude the possibility that some of the individuals we classified as lifetime childfree, had their first child in their forties (or fifties for men) after leaving the panel. Another limitation of the study design were the relatively long measurement intervals. These span one (e.g., in the case of life satisfaction or affective well-being) to 11 years (between the sixth and the seventh loneliness assessment). A measurement interval between one to five years may be adequate to inform about the lifespan development of relatively stable well-being outcomes like life satisfaction but can hardly capture the emotional reality of the daily lives of people with and without children. Parenthood may be especially challenging in the first few years when the new parents still lack experience and the needs and abilities of their child change at an extremely fast rate. This phase requires more close-knit assessments but is only inadequately captured in our study. Because affective well-being had only been introduced to the SOEP in 2007, the children of most parents in our sample were already preschoolers (72%) or in school (57%). Hence, our finding that parents experience both positive and negative affect more frequently mainly applies to parents with children aged three years or older. Future research could use experience sampling methods or smartphone sensing to gain more in-depth information about the emotional lives of people with and without children on a more fine-grained timeline, to identify phases that are especially challenging.

Third, our measure of perceived importance to have children pre-developmental deadline can serve as a proxy of childbearing intention. Yet, our study cannot distinguish between involuntary and voluntary childfree individuals, neither can it distinguish between planned and unplanned parenthood. Prior research showed that especially voluntarily

childfree individuals lead happier, more satisfied lives (Jeffries & Konnert, 2002) whereas involuntary childfreeness can cause tremendous suffering (e.g., Payne et al., 2021). Similarly, parents of unplanned children may struggle more than parents who prepared for and looked forward to having a child (e.g., Faisal-Cury et al., 2015). Future research should hence include measures of childbearing intention and ideal number of children. These measures should preferably be administered pre and post developmental deadline because the post-assessment on its own can be biased by successful coping. In Jeffries and Konnert's study, some individuals who were classified as involuntarily childfree by the research team stated that they were in fact childfree by choice. Due to data restrictions, our cut-off to compute the goal disengagement variable was five years prior to the theoretically and empirically defined developmental deadline of 40 for women and 50 for men. Although the majority of people without children disengaged (63.70 %) and the majority of people who became parents stayed engaged or increased in importance (80.75 %), the effect of disengagement on the well-being of people without children may still be underestimated due to misclassification of people who disengage at a later age. In our study, we did not include relationship satisfaction which has been shown to steeply decline after childbirth (van Scheppingen et al., 2018). Unfortunately, the SOEP does not include a repeated measure of relationship satisfaction. It is plausible that the relationship satisfaction trajectories of people with and without children converge towards the end of midlife like it was the case for most outcomes in our study. This assumption remains to be investigated in future research. Future research could also place a stronger focus on interindividual differences in change which our study found to be larger among parents. Finally, future research should include measures of eudaemonic well-being to shed light on the postulated association between (not) having children and purpose or meaning in life.

Conclusion

Our study provides further evidence against the popular belief that parents lead happier and more satisfied lives than people without children. In midlife, (not) having children did not matter much to a total of eight well-being outcomes. It was only during young adulthood that a few differences were observed when people without children reported better mental health and lower negative affect, but also lower positive affect. We also found select evidence for gender moderation in that fathers compared to non-fathers, mothers and child-free women are least lonely, particularly in their 20s and 30s. Our study also shows that there is considerable heterogeneity in how all eight aspects of well-being develop with age for people who are parents and for people with no children. Children are theorized to promote well-being through providing their parents with life goals and meaning in life. Not embracing these goals as a parent may impair mental health and well-being but not achieving them if they were important is also harmful.

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References

Abela, A., Radka, D., Andras, G., Haskova, H., Kojan, B. H., Kotzeva, T., Putnina, A., Šadić, S., Sesar, K., Tereškinas, A., Thiene, A., & Tzivian, L. (2021). *Child and family support policies across Europe: National reports from 27 countries*. EurofamNet. https://www.um.edu.mt/library/oar/handle/123456789/102252

Adler, M. A., & Brayfield, A. (1996). East-West Differences in Attitudes About Employment and Family in Germany. *The Sociological Quarterly, 37*(2), Article 2. https://doi.org/10.1111/j.1533-8525.1996.tb01748.x

Adrian, S. W., Kroløkke, C., & Herrmann, J. R. (2021). Monstrous Motherhood – Women on the Edge of Reproductive Age. *Science as Culture, 30*(4), Article 4. https://doi.org/10.1080/09505431.2021.1935842

Agllias, K. (2018). Missing family: The adult child's experience of parental estrangement. *Journal of Social Work Practice, 32*(1), Article 1. https://doi.org/10.1080/02650533.2017.1326471

Andersen, H. H., Mühlbacher, A., & Nübling, M. (2007). *Die SOEP-Version des SF 12 als Instrument gesundheitsökonomischer Analysen*.

Araya, R., Lewis, G., Rojas, G., & Fritsch, R. (2003). Education and income: Which is more important for mental health? *Journal of Epidemiology & Community Health, 57*(7), 501–505. https://doi.org/10.1136/jech.57.7.501

Arendell, T. (2000). Conceiving and Investigating Motherhood: The Decade's Scholarship. *Journal of Marriage and Family, 62*(4), Article 4. https://doi.org/10.1111/j.1741-3737.2000.01192.x

Arnett, J. J. (2014). *Emerging adulthood: The winding road from the late teens through the twenties* (Second Edition). Oxford University Press.

Arránz Becker, O., & Hank, K. (2022). Adult children's estrangement from parents in Germany. *Journal of Marriage and Family*, *84*(1), Article 1. https://doi.org/10.1111/jomf.12796

Ashburn-Nardo, L. (2017). Parenthood as a Moral Imperative? Moral Outrage and the Stigmatization of Voluntarily Childfree Women and Men. *Sex Roles*, *76*(5–6), Article 5–6. https://doi.org/10.1007/s11199-016-0606-1

Asselmann, E., & Specht, J. (2023a). Baby bliss: Longitudinal evidence for set-point theory around childbirth for cognitive and affective well-being. *Emotion*. https://doi.org/10.1037/emo0001217

Asselmann, E., & Specht, J. (2023b). Dramatic effects but fast adaptation: Changes in life satisfaction and different facets of affective well-being around the death of a partner and death of a child. *Applied Psychology: Health and Well-Being*, *15*(2), Article 2. https://doi.org/10.1111/aphw.12388

Atherton, O. E., Grijalva, E., Roberts, B. W., & Robins, R. W. (2021). Stability and Change in Personality Traits and Major Life Goals From College to Midlife. *Personality and Social Psychology Bulletin*, *47*(5), 841–858. https://doi.org/10.1177/0146167220949362

Austin, P. C. (2011). An Introduction to Propensity Score Methods for Reducing the Effects of Confounding in Observational Studies. *Multivariate Behavioral Research*, *46*(3), Article 3. https://doi.org/10.1080/00273171.2011.568786

Baird, B. M., Lucas, R. E., & Donnellan, M. B. (2010). Life Satisfaction Across the Lifespan: Findings from Two Nationally Representative Panel Studies. *Social Indicators Research*, *99*(2), Article 2. https://doi.org/10.1007/s11205-010-9584-9

Bauer, G., Brandt, M., & Kneip, T. (2023). The Role of Parenthood for Life Satisfaction of

Older Women and Men in Europe. *Journal of Happiness Studies*, *24*(1), 275-307. https://doi.org/10.1007/s10902-022-00600-8

Beck, E. D., & Jackson, J. J. (2022). A mega-analysis of personality prediction: Robustness and boundary conditions. *Journal of Personality and Social Psychology*, *122*(3), Article 3. https://doi.org/10.1037/pspp0000386

Becker, P. E., & Moen, P. (1999). Scaling Back: Dual-Earner Couples' Work-Family Strategies. *Journal of Marriage and Family*, *61*(4), 995–1007. https://doi.org/10.2307/354019

Birditt, K. S., & Antonucci, T. C. (2007). Relationship quality profiles and well-being among married adults. *Journal of Family Psychology*, *21*(4), Article 4. https://doi.org/10.1037/0893-3200.21.4.595

Bleidorn, W., Buyukcan-Tetik, A., Schwaba, T., Van Scheppingen, M. A., Denissen, J. J. A., & Finkenauer, C. (2016). Stability and Change in Self-Esteem During the Transition to Parenthood. *Social Psychological and Personality Science*, *7*(6), Article 6. https://doi.org/10.1177/1948550616646428

Brandel, M., Melchiorri, E., & Ruini, C. (2018). The Dynamics of Eudaimonic Well-Being in the Transition to Parenthood: Differences Between Fathers and Mothers. *Journal of Family Issues*, *39*(9), Article 9. https://doi.org/10.1177/0192513X18758344

Brickman, P., & Campbell, D. T. (1971). Hedonic relativism and planning the good society. In M. H. Appleby, *Adaptation-Level Theory* (pp. 287–302). Academic Press.

Brown, A. (2021). *Growing share of childless adults in U.S. don't expect to ever have children*. Pew Research Center. https://pewrsr.ch/3DAU3RR

Buchinger, L., Entringer, T. M., Richter, D., Wagner, G. G., Gerstorf, D., & Bleidorn, W. (2023). Codevelopment of life goals and the Big Five personality traits across

adulthood and old age. *Journal of Personality and Social Psychology*. https://doi.org/10.1037/pspp0000477

Buchinger, L., Richter, D., & Heckhausen, J. (2022). The Development of Life Goals Across the Adult Life Span. *The Journals of Gerontology: Series B*, *77*(5), Article 5. https://doi.org/10.1093/geronb/gbab154

Carlson, D. S., & Kacmar, K. M. (2000). Work–Family Conflict in the Organization: Do Life Role Values make a Difference? *JOURNAL OF MANAGEMENT*, *26*(5), Article 5.

Cavaliere, G., & Fletcher, J. R. (2022). Age-discriminated IVF Access and Evidence-based Ageism: Is There a Better Way? *Science, Technology, & Human Values*, *47*(5), Article 5. https://doi.org/10.1177/01622439211021914

Cheung, F., & Lucas, R. E. (2014). Assessing the validity of single-item life satisfaction measures: Results from three large samples. *Quality of Life Research*, *23*(10), Article 10. https://doi.org/10.1007/s11136-014-0726-4

Chou, K.-L., & Chi, I. (2004). Childlessness and psychological well-being in Chinese older adults. *International Journal of Geriatric Psychiatry*, *19*(5), Article 5. https://doi.org/10.1002/gps.1111

Claxton, A., & Perry-Jenkins, M. (2008). No Fun Anymore: Leisure and Marital Quality Across the Transition to Parenthood. *Journal of Marriage and Family*, *70*(1), Article 1. https://doi.org/10.1111/j.1741-3737.2007.00459.x

Conti, R. P. (2015). Family Estrangement: Establishing a Prevalence Rate. *Journal of Psychology and Behavioral Science*, *3*(2), Article 2. https://doi.org/10.15640/jpbs.v3n2a4

Cowan, C. P., & Cowan, P. A. (1992). *When partners become parents: The big life change for couples*. Basic Books.

Cygan-Rehm, K., & Maeder, M. (2013). The effect of education on fertility: Evidence from a compulsory schooling reform. *Labour Economics*, *25*, 35–48. https://doi.org/10.1016/j.labeco.2013.04.015

De La Rochebrochard, E., & Rozée, V. (2022). Revealing Gender Double Standards in the Parenthood Norm Depends on Question Order. *Sex Roles*, *86*(7–8), Article 7–8. https://doi.org/10.1007/s11199-022-01276-3

Diener, E., Inglehart, R., & Tay, L. (2013). Theory and Validity of Life Satisfaction Scales. *Social Indicators Research*, *112*(3), Article 3. https://doi.org/10.1007/s11205-012-0076-y

Diener, E., Lucas, R. E., & Scollon, C. N. (2006). Beyond the hedonic treadmill: Revising the adaptation theory of well-being. *American Psychologist*, *61*(4), Article 4. https://doi.org/10.1037/0003-066X.61.4.305

Diener, E., Sapyta, J. J., & Suh, E. (1998). Subjective Well-Being Is Essential to Well-Being. *Psychological Inquiry*, *9*(1), Article 1. https://doi.org/10.1207/s15327965pli0901_3

Dyrdal, G. M., & Lucas, R. E. (2012). Reaction and adaptation to the birth of a child: A couple-level analysis. *Developmental Psychology*, *49*(4), Article 4. https://doi.org/10.1037/a0028335

Eicher, V., Settersten, R. A., Penic, S., Glaeser, S., Martenot, A., & Spini, D. (2016). Normative Climates of Parenthood across Europe: Judging Voluntary Childlessness and Working Parents. *European Sociological Review*, *32*(1), Article 1. https://doi.org/10.1093/esr/jcv083

Eid, M., & Larsen, R. J. (Eds.). (2008). *The science of subjective well-being*. Guilford Press.

Entringer, T. M., Griese, F., Zimmermann, S., & Richter, D. (2022). SOEP Scales Manual (updated for SOEP-Core v37). *SOEP Survey Papers 1217 Series C*.

Evenson, R. J., & Simon, R. W. (2005). Clarifying the Relationship Between Parenthood and Depression. *Journal of Health and Social Behavior*, *46*(4), Article 4. https://doi.org/10.1177/002214650504600403

Faisal-Cury, A., Quayle, J., Marques, T., Menezes, P. R., & Matijasevich, A. (2015). The relationship between socioeconomic indicators during pregnancy and gynecological appointment at any time after childbirth. *International Journal for Equity in Health*, *14*(1), 64. https://doi.org/10.1186/s12939-015-0191-x

Fingerman, K. L., Kim, K., Birditt, K. S., & Zarit, S. H. (2016). The Ties That Bind: Midlife Parents' Daily Experiences With Grown Children: Parents' Daily Experiences With Grown Children. *Journal of Marriage and Family*, *78*(2), Article 2. https://doi.org/10.1111/jomf.12273

Fingerman, K. L., Pitzer, L., Lefkowitz, E. S., Birditt, K. S., & Mroczek, D. (2008). Ambivalent Relationship Qualities Between Adults and Their Parents: Implications for the Well-Being of Both Parties. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *63*(6), Article 6. https://doi.org/10.1093/geronb/63.6.P362

Frese, M., Kring, W., Soose, A., & Zempel, J. (1996). Personal Initiative At Work: Differences Between East and West Germany. *Academy of Management Journal*, *39*(1), 37–63. https://doi.org/10.5465/256630

Freund, A. M. (2020). The bucket list effect: Why leisure goals are often deferred until retirement. *American Psychologist*, *75*(4), Article 4. https://doi.org/10.1037/amp0000617

Gibney, S., Delaney, L., Codd, M., & Fahey, T. (2017). Lifetime Childlessness, Depressive Mood and Quality of Life Among Older Europeans. *Social Indicators Research*, *130*(1), Article 1. https://doi.org/10.1007/s11205-015-1177-1

Goebel, J., Grabka, M. M., Liebig, S., Kroh, M., Richter, D., Schröder, C., & Schupp, J. (2019). The German Socio-Economic Panel (SOEP). *Jahrbücher Für Nationalökonomie Und Statistik*, *239*(2), Article 2. https://doi.org/10.1515/jbnst-2018-0022

Graham, M. (2015). Is Being Childless Detrimental to a Woman's Health and Well-Being Across Her Life Course? *Women's Health Issues*, *25*(2), Article 2. https://doi.org/10.1016/j.whi.2014.12.002

Greenhaus, J., & Allen, T. D. (2011). Work–family balance: A review and extension of the literature. In L. E. Tetrick, *Handbook of occupational health psychology* (pp. 165–183). American Psychological Association. 10.1037/10474-000

Griese, F. (2023). *Gleichstellungsimpuls BEEG? Erwerbsverläufe werdender Mütter vor und nach der Elternzeitreform von 2007 (unveröffentlichte Masterarbeit, Sozialwissenschaften) [Equality impulse BEEG? Employment histories of expectant mothers before and after the 2007 parental leave reform (unpublished master's thesis, social sciences)]. Humboldt Universität zu Berlin, Berlin.*

Grimm, K. J., Ram, N., & Estabrook, R. (2017). *Growth modeling: Structural equation and multilevel modeling approaches*. Guilford Press.

Hallquist, M. N., & Wiley, J. F. (2018). *MplusAutomation*: An R Package for Facilitating Large-Scale Latent Variable Analyses in M *plus*. *Structural Equation Modeling: A Multidisciplinary Journal*, *25*(4), 621–638. https://doi.org/10.1080/10705511.2017.1402334

Hansen, T. (2012). Parenthood and Happiness: A Review of Folk Theories Versus Empirical Evidence. *Social Indicators Research*, *108*(1), Article 1. https://doi.org/10.1007/s11205-011-9865-y

Hansen, T., Slagsvold, B., & Moum, T. (2009). Childlessness and Psychological Well-Being in Midlife and Old Age: An Examination of Parental Status Effects Across a Range of Outcomes. *Social Indicators Research*, *94*(2), Article 2. https://doi.org/10.1007/s11205-008-9426-1

Hawkley, L. C., Buecker, S., Kaiser, T., & Luhmann, M. (2022). Loneliness from young adulthood to old age: Explaining age differences in loneliness. *International Journal of Behavioral Development*, *46*(1), Article 1. https://doi.org/10.1177/0165025420971048

Headey, B., Muffels, R., & Wagner, G. G. (2013). Choices Which Change Life Satisfaction: Similar Results for Australia, Britain and Germany. *Social Indicators Research*, *112*(3), Article 3. https://doi.org/10.1007/s11205-012-0079-8

Heckhausen, J., Wrosch, C., & Fleeson, W. (2001). *Developmental Regulation Before and After a Developmental Deadline: The Sample Case of 'Biological Clock' for Childbearing* (3). *16*(3), Article 3.

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

Heckhausen, J., Wrosch, C., & Schulz, R. (2019). Agency and Motivation in Adulthood and Old Age. *Annual Review of Psychology*, *70*(1), Article 1. https://doi.org/10.1146/annurev-psych-010418-103043

Heintz-Martin, V. K., & Langmeyer, A. N. (2020). Economic Situation, Financial Strain and Child Wellbeing in Stepfamilies and Single-Parent Families in Germany. *Journal of Family and Economic Issues*, *41*(2), 238–254. https://doi.org/10.1007/s10834-019-09653-z

Hintz, E. A., & Brown, C. L. (2019). Childfree by Choice: Stigma in Medical Consultations for Voluntary Sterilization. *Women's Reproductive Health*, *6*(1), Article 1. https://doi.org/10.1080/23293691.2018.1556427

Ho, D., Imai, K., King, G., & Stuart, E. A. (2011). MatchIt: Nonparametric Preprocessing for Parametric Causal Inference. *Journal of Statistical Software*, *42*, 1–28. https://doi.org/10.18637/jss.v042.i08

Ho, M. Y., Cheung, F. M., & Cheung, S. F. (2010). The role of meaning in life and optimism in promoting well-being. *Personality and Individual Differences*, *48*(5), Article 5. https://doi.org/10.1016/j.paid.2010.01.008

Hoppmann, C., & Smith, J. (2007). Life-History Related Differences in Possible Selves in Very Old Age. *The International Journal of Aging and Human Development*, *64*(2), Article 2. https://doi.org/10.2190/GL71-PW45-Q481-5LN7

Jeffries, S., & Konnert, C. (2002). Regret and Psychological Well-Being among Voluntarily and Involuntarily Childless Women and Mothers. *The International Journal of Aging and Human Development*, *54*(2), Article 2. https://doi.org/10.2190/J08N-VBVG-6PXM-0TTN

Keizer, R., Dykstra, P. A., & Poortman, A.-R. (2010). The transition to parenthood and well-being: The impact of partner status and work hour transitions. *Journal of Family Psychology*, *24*(4), Article 4. https://doi.org/10.1037/a0020414

Krämer, M. D., & Rodgers, J. L. (2020). The impact of having children on domain-specific life satisfaction: A quasi-experimental longitudinal investigation using the Socio-Economic Panel (SOEP) data. *Journal of Personality and Social Psychology*, *119*(6), 1497–1514. https://doi.org/10.1037/pspp0000279

Krämer, M. D., Van Scheppingen, M. A., Chopik, W. J., & Richter, D. (2022). The transition to grandparenthood: No consistent evidence for change in the Big Five personality

traits and life satisfaction. *European Journal of Personality*, 089020702211184. https://doi.org/10.1177/08902070221118443

Kreyenfeld, M., & Geisler, E. (2006). Müttererwerbstätigkeit in Ost- und Westdeutschland. *Journal of Family Research*, *18*(3), Article 3. https://doi.org/10.20377/jfr-299

Kunzmann, U., Richter, D., & Schmukle, S. C. (2013). Stability and change in affective experience across the adult life span: Analyses with a national sample from Germany. *Emotion*, *13*(6), Article 6. https://doi.org/10.1037/a0033572

Lee, K., Vasileiou, K., & Barnett, J. (2019). 'Lonely within the mother': An exploratory study of first-time mothers' experiences of loneliness. *Journal of Health Psychology*, *24*(10), Article 10. https://doi.org/10.1177/1359105317723451

Leiferman, J. A., Farewell, C. V., Jewell, J., Rachael Lacy, Walls, J., Harnke, B., & Paulson, J. F. (2021). Anxiety among fathers during the prenatal and postpartum period: A meta-analysis. *Journal of Psychosomatic Obstetrics & Gynecology*, *42*(2), Article 2. https://doi.org/10.1080/0167482X.2021.1885025

Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: A meta-analysis. *Journal of Personality and Social Psychology*, *102*(3), Article 3. https://doi.org/10.1037/a0025948

Lyubomirsky, S., & Boehm, J. K. (2010). Human Motives, Happiness, and the Puzzle of Parenthood: Commentary on Kenrick et al. (2010). *Perspectives on Psychological Science*, *5*(3), Article 3. https://doi.org/10.1177/1745691610369473

Mahne, K., & Huxhold, O. (2015). Grandparenthood and Subjective Well-Being: Moderating Effects of Educational Level. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *70*(5), Article 5. https://doi.org/10.1093/geronb/gbu147

Mehta, C. M., Arnett, J. J., Palmer, C. G., & Nelson, L. J. (2020). Established adulthood: A new conception of ages 30 to 45. *American Psychologist, 75*(4), Article 4. https://doi.org/10.1037/amp0000600

Mehta, C. M., & LaRiviere, K. (2023). "You Have Those Adult Responsibilities, But You're Still Getting Your Feet on the Ground": The Lived Experience of Established Adulthood. *Journal of Adult Development, 30*(1), 36–52. https://doi.org/10.1007/s10804-022-09410-x

Mehta, P. D., & West, S. G. (2000). Putting the individual back into individual growth curves. *Psychological Methods, 5*(1), 23–43. https://doi.org/10.1037/1082-989X.5.1.23

Miettinen, A., Lainiala, L., & Rotkirch, A. (2015). Women's housework decreases fertility: Evidence from a longitudinal study among Finnish couples. *Acta Sociologica, 58*(2), Article 2. https://doi.org/10.1177/0001699315572028

Mikucka, M., & Rizzi, E. (2020). The Parenthood and Happiness Link: Testing Predictions from Five Theories. *European Journal of Population, 36*(2), Article 2. https://doi.org/10.1007/s10680-019-09532-1

Morris, G., Mavrelos, D., Odia, R., Viñals Gonzalez, X., Cawood, S., Yasmin, E., Saab, W., Serhal, P., & Seshadri, S. (2021). Paternal age over 50 years decreases assisted reproductive technology (ART) success: A single UK center retrospective analysis. *Acta Obstetricia et Gynecologica Scandinavica, 100*(10), Article 10. https://doi.org/10.1111/aogs.14221

Muller, Z., & Litwin, H. (2011). Grandparenting and psychological well-being: How important is grandparent role centrality? *European Journal of Ageing, 8*(2), Article 2. https://doi.org/10.1007/s10433-011-0185-5

Mund, M., Maes, M., Drewke, P. M., Gutzeit, A., Jaki, I., & Qualter, P. (2023). Would the Real Loneliness Please Stand Up? The Validity of Loneliness Scores and the Reliability of Single-Item Scores. *Assessment, 30*(4), Article 4. https://doi.org/10.1177/10731911221077227

Muthén, L. K., & Muthén, B. O. (1998-2017). Mplus user's guide. Eighth edition. Muthén & Muthén.

Nelson, S. K., Kushlev, K., English, T., Dunn, E. W., & Lyubomirsky, S. (2013). In Defense of Parenthood: Children Are Associated With More Joy Than Misery. *Psychological Science, 24*(1), 3–10. https://doi.org/10.1177/0956797612447798

Nelson, S. K., Kushlev, K., & Lyubomirsky, S. (2014). The pains and pleasures of parenting: When, why, and how is parenthood associated with more or less well-being? *Psychological Bulletin, 140*(3), Article 3. https://doi.org/10.1037/a0035444

Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2010). Self-Determination Theory and the Relation of Autonomy to Self-Regulatory Processes and Personality Development. In R. H. Hoyle (Ed.), *Handbook of Personality and Self-Regulation* (pp. 169–191). Wiley-Blackwell. https://doi.org/10.1002/9781444318111.ch8

Nomaguchi, K. M. (2012). Parenthood and psychological well-being: Clarifying the role of child age and parent–child relationship quality. *Social Science Research, 41*(2), Article 2. https://doi.org/10.1016/j.ssresearch.2011.08.001

Nomaguchi, K. M., & Milkie, M. A. (2003). Costs and Rewards of Children: The Effects of Becoming a Parent on Adults' Lives. *Journal of Marriage and Family, 65*(2), Article 2. https://doi.org/10.1111/j.1741-3737.2003.00356.x

Nomaguchi, K. M., & Milkie, M. A. (2017). Sociological Perspectives on Parenting Stress: How Social Structure and Culture Shape Parental Strain and the Well-Being of Parents and Children. In K. Deater-Deckard & R. Panneton (Eds.), *Parental Stress*

and Early Child Development (pp. 47–73). Springer International Publishing. https://doi.org/10.1007/978-3-319-55376-4_3

Nübling, M., Andersen, H. H., & Mühlbacher, A. (2006). *Entwicklung eines Verfahrens zur Berechnung der körperlichen und psychischen Summenskalen auf Basis der SOEP-Version des SF 12 (Algorithmus)*.

OECD. (2023). *Fertility rates (indicator)*. https://doi.org/doi.org/10.1787/8272fb01-en

Payne, N., Seenan, S., & Van Den Akker, O. (2021). Experiences of involuntary childlessness and treatment in the UK: What has changed in 20 years? *Human Fertility*, *24*(5), Article 5. https://doi.org/10.1080/14647273.2019.1687946

Penning, M. J., Wu, Z., & Hou, F. (2022). Childlessness and social and emotional loneliness in middle and later life. *Ageing and Society*, 1–28. https://doi.org/10.1017/S0144686X22000824

Pfau-Effinger, B., & Smidt, M. (2011). Differences in women's employment patterns and family policies: Eastern and western Germany. *Community, Work & Family*, *14*(2), Article 2. https://doi.org/10.1080/13668803.2011.571401

Pollmann-Schult, M. (2014). Parenthood and Life Satisfaction: Why Don't Children Make People Happy?: Parenthood and Life Satisfaction. *Journal of Marriage and Family*, *76*(2), Article 2. https://doi.org/10.1111/jomf.12095

Preacher, K. J., Wichman, A. L., MacCallum, R. C., & Briggs, N. E. (2008). *Latent growth curve modelling (Vol. 1)*. SAGE.

Quashie, N. T., Arpino, B., Antczak, R., & Mair, C. A. (2021). Childlessness and Health Among Older Adults: Variation Across Five Outcomes and 20 Countries. *The Journals of Gerontology: Series B*, *76*(2), Article 2. https://doi.org/10.1093/geronb/gbz153

R Core Team. (2020). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing.

Richie, C. (2013). Voluntary Sterilization for Childfree Women: Understanding Patient Profiles, Evaluating Accessibility, Examining Legislation. *Hastings Center Report*, *43*(6), Article 6. https://doi.org/10.1002/hast.216

Richter, D., Krämer, M. D., Tang, N. K. Y., Montgomery-Downs, H. E., & Lemola, S. (2019). Long-term effects of pregnancy and childbirth on sleep satisfaction and duration of first-time and experienced mothers and fathers. *Sleep*, *42*(4), Article 4. https://doi.org/10.1093/sleep/zsz015

Roberts, B. W., O'Donnell, M., & Robins, R. W. (2004). Goal and Personality Trait Development in Emerging Adulthood. *Journal of Personality and Social Psychology*, *87*(4), Article 4. https://doi.org/10.1037/0022-3514.87.4.541

Ross, C. E., & Mirowsky, J. (2002). Family Relationships, Social Support and Subjective Life Expectancy. *Journal of Health and Social Behavior*, *43*(4), Article 4. https://doi.org/10.2307/3090238

Salmela-Aro, K. (2009). Personal goals and well-being during critical life transitions: The four C's—Channelling, choice, co-agency and compensation. *Advances in Life Course Research*, *14*(1–2), Article 1–2. https://doi.org/10.1016/j.alcr.2009.03.003

Salmela-Aro, K., Aunola, K., & Nurmi, J.-E. (2007). Personal Goals During Emerging Adulthood: A 10-Year Follow Up. *Journal of Adolescent Research*, *22*(6), Article 6. https://doi.org/10.1177/0743558407303978

Salmela-Aro, K., Nurmi, J.-E., Saisto, T., & Halmesmäki, E. (2001). Goal reconstruction and depressive symptoms during the transition to motherhood: Evidence from two cross-lagged longitudinal studies. *Journal of Personality and Social Psychology*, *81*(6), Article 6. https://doi.org/10.1037/0022-3514.81.6.1144

Santos, M. C. J., Magramo Jr., C., Oguan Jr., F., Paat, J., & Barnacheau, B. (2012). MEANING IN LIFE AND SUBJECTIVE WELL – BEING: IS A SATISFYING LIFE MEANINGFUL? *Researchers World*, *3*(4), Article 4.

Scharp, K. M., & Dorrance Hall, E. (2019). Reconsidering Family Closeness: A Review and Call for Research on Family Distancing. *Journal of Family Communication*, *19*(1), Article 1. https://doi.org/10.1080/15267431.2018.1544563

Schimmack, U., Krause, P., Wagner, G. G., & Schupp, J. (2010). Stability and Change of Well Being: An Experimentally Enhanced Latent State-Trait-Error Analysis. *Social Indicators Research*, *95*(1), Article 1. https://doi.org/10.1007/s11205-009-9443-8

Schimmack, U., Schupp, J., & Wagner, G. G. (2008). The Influence of Environment and Personality on the Affective and Cognitive Component of Subjective Well-being. *Social Indicators Research*, *89*(1), Article 1. https://doi.org/10.1007/s11205-007-9230-3

Schoen, R., Kim, Y. J., Nathanson, C. A., Fields, J., & Astone, N. M. (1997). Why Do Americans Want Children? *Population and Development Review*, *23*(2), Article 2. https://doi.org/10.2307/2137548

Sharma, R., Agarwal, A., Rohra, V. K., Assidi, M., Abu-Elmagd, M., & Turki, R. F. (2015). Effects of increased paternal age on sperm quality, reproductive outcome and associated epigenetic risks to offspring. *Reproductive Biology and Endocrinology*, *13*(1), Article 1. https://doi.org/10.1186/s12958-015-0028-x

Sheldon, K. M., & Cooper, M. L. (2008). Goal Striving Within Agentic and Communal Roles: Separate but Functionally Similar Pathways to Enhanced Well-Being. *Journal of Personality*, *76*(3), Article 3. https://doi.org/10.1111/j.1467-6494.2008.00491.x

Silverstein, M., & Bengtson, V. L. (1994). Does intergenerational social support influence the psychological well-being of older parents? The contingencies of declining health and

widowhood. *Social Science & Medicine*, *38*(7), Article 7. https://doi.org/10.1016/0277-9536(94)90427-8

Smock, P. J., & Greenland, F. R. (2010). Diversity in Pathways to Parenthood: Patterns, Implications, and Emerging Research Directions. *Journal of Marriage and Family*, *72*(3), Article 3. https://doi.org/10.1111/j.1741-3737.2010.00719.x

Sobotka, T. (2021). Un tiers des femmes d'Asie de l'Est resteront sans enfant: *Population & Sociétés*, *N° 595*(11), 1–4. https://doi.org/10.3917/popsoc.595.0001

SOEP. (2021). *Sozio-oekonomisches Panel (SOEP), Version 36, Daten der Jahre 1984-2019 (SOEP-Core v36, EU-Edition)*. https://doi.org/10.5684/soep.core.v36eu

Spéder, Z., & Kapitány, B. (2014). Failure to Realize Fertility Intentions: A Key Aspect of the Post-communist Fertility Transition. *Population Research and Policy Review*, *33*(3), Article 3. https://doi.org/10.1007/s11113-013-9313-6

Stahnke, B., Cooley, M. E., & Blackstone, A. (2023). A Systematic Review of Life Satisfaction Experiences Among Childfree Adults. *The Family Journal*, *31*(1), Article 1. https://doi.org/10.1177/10664807221104795

Stallings, M. C., Dunham, C. C., Gatz, M., Baker, L. A., & Bengtson, V. L. (1997). Relationships Among Life Events and Psychological Well-Being: More Evidence for a Two-Factor Theory of Well-Being. *Journal of Applied Gerontology*, *16*(1), Article 1. https://doi.org/10.1177/073346489701600106

Stanley, N., Penhale, B., Riordan, D., Barbour, R. S., & Holden, S. (2003). Working on the interface: Identifying professional responses to families with mental health and child-care needs. *Health & Social Care in the Community*, *11*(3), 208–218. https://doi.org/10.1046/j.1365-2524.2003.00428.x

Statistisches Bundesamt (Destatis). (2019). *Kinderlosigkeit, Geburten und Familie—Ergebnisse des Mikrozensus 2018 [Childlessness, Births, and Family—Results of the*

2018 Microcensus]. https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Haushalte-Familien/Publikationen/_publikationen-innen-geburtentrends.html

Statistisches Bundesamt (Destatis). (2020). *Väter bei Geburt von Kindern im Jahr 2019 im Durchschnitt 34,6 Jahre alt*. https://www.destatis.de/DE/Presse/Pressemitteilungen/2020/10/PD20_411_12.html

Statistisches Bundesamt (Destatis). (2022). *Bei der Geburt ihres ersten Kindes sind Frauen in Deutschland durchschnittlich 30,2 Jahre alt*. https://www.destatis.de/DE/Presse/Pressemitteilungen/Zahl-der-Woche/2022/PD22_18_p002.html

Steger, M. F., Oishi, S., & Kashdan, T. B. (2009). Meaning in life across the life span: Levels and correlates of meaning in life from emerging adulthood to older adulthood. *The Journal of Positive Psychology, 4*(1), Article 1. https://doi.org/10.1080/17439760802303127

Tanaka, K., & Johnson, N. E. (2016). Childlessness and Mental Well-Being in a Global Context. *Journal of Family Issues, 37*(8), Article 8. https://doi.org/10.1177/0192513X14526393

Tanskanen, A. O., Danielsbacka, M., Coall, D. A., & Jokela, M. (2019). Transition to Grandparenthood and Subjective Well-Being in Older Europeans: A Within-Person Investigation Using Longitudinal Data. *Evolutionary Psychology, 17*(3), Article 3. https://doi.org/10.1177/1474704919875948

Umberson, D., Pudrovska, T., & Reczek, C. (2010). Parenthood, Childlessness, and Well-Being: A Life Course Perspective. *Journal of Marriage and Family, 72*(3), Article 3. https://doi.org/10.1111/j.1741-3737.2010.00721.x

Valerio, T., Knop, B., Kreider, R. M., & He, W. (2021). *Childless Older Americans: 2018* (Current Population Reports). U.S Census Bureau. https://www.census.gov/content/dam/Census/library/publications/2021/demo/p70-173.pdf

van Buuren, S., & Groothuis-Oudshoorn, K. (2011). **mice**: Multivariate Imputation by Chained Equations in *R*. *Journal of Statistical Software*, *45*(3). https://doi.org/10.18637/jss.v045.i03

van Scheppingen, M. A., Denissen, J. J. A., Chung, J. M., Tambs, K., & Bleidorn, W. (2018). Self-Esteem and Relationship Satisfaction During the Transition to Motherhood. *Journal of Personality and Social Psychology*, *114*(6), Article 6. http://dx.doi.org/10.1037/pspp0000156

VanderWeele, T. J. (2019). Principles of confounder selection. *European Journal of Epidemiology*, *34*(3), Article 3. https://doi.org/10.1007/s10654-019-00494-6

VanderWeele, T. J., Mathur, M. B., & Chen, Y. (2020). Outcome-Wide Longitudinal Designs for Causal Inference: A New Template for Empirical Studies. *Statistical Science*, *35*(3), Article 3. https://doi.org/10.1214/19-STS728

Wehner, C., Scheppingen, M. A. van, & Bleidorn, W. (2022). Stability and change in major life goals during the transition to parenthood. *European Journal of Personality*, *36*(1), 61–71. https://doi.org/10.1177/0890207021996894

Wrosch, C., & Heckhausen, J. (1999). Control processes before and after passing a developmental deadline: Activation and deactivation of intimate relationship goals. *Journal of Personality and Social Psychology*, *77*(2), 415–427. https://doi.org/10.1037/0022-3514.77.2.415

Wrosch, C., Scheier, M. F., & Miller, G. E. (2013). Goal Adjustment Capacities, Subjective Well-being, and Physical Health: Goal Adjustment and Quality of Life. *Social and*

Personality Psychology Compass, *7*(12), Article 12. https://doi.org/10.1111/spc3.12074

Wrosch, C., Scheier, M. F., Miller, G. E., Schulz, R., & Carver, C. S. (2003). Adaptive Self-Regulation of Unattainable Goals: Goal Disengagement, Goal Reengagement, and Subjective Well-Being. *Personality and Social Psychology Bulletin*, *29*(12), Article 12. https://doi.org/10.1177/0146167203256921

Zhang, Z., & Hayward, M. D. (2001). Childlessness and the Psychological Well-Being of Older Persons. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *56*(5), Article 5. https://doi.org/10.1093/geronb/56.5.S311

Tables and Figures

Figure 2

Participant Flow Chart

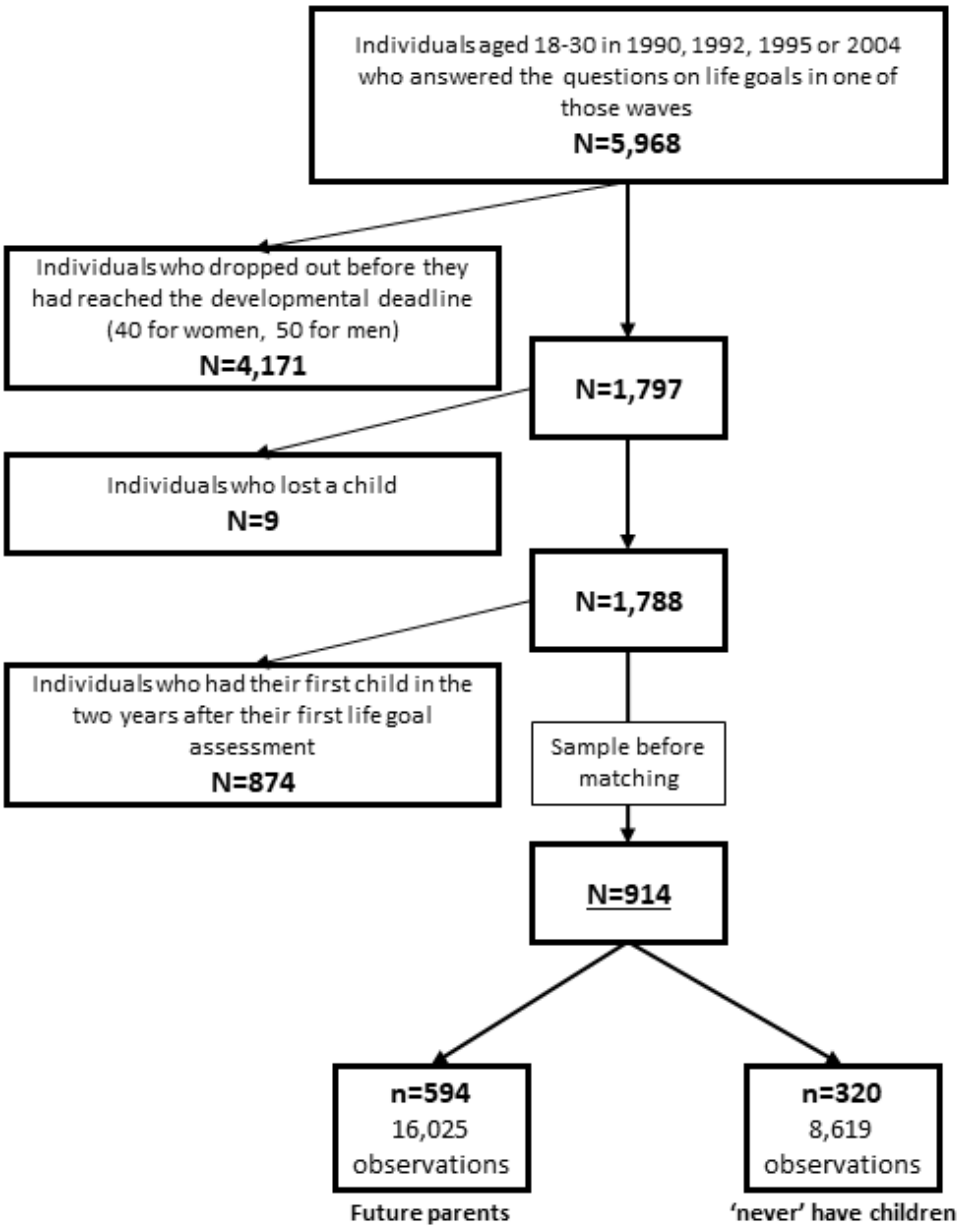


Table 1

Summary Statistics of The Matched Sample at the Time of Matching (N=562)

	No Children		**Parents**	
	% / Mean	***N / SD***	**% / Mean**	***N / SD***
n				
Age	24.94	3.45	24.67	3.51
Male (%)	29.89	84	29.89	84
Region East (%)	19.57	55	18.15	51
Total Number of Children	--	--	1.70	0.68
Age at First Birth				
Mothers	--	--	31.82	4.19
Fathers	--	--	33.99	4.82
Waves Participated Prior to Matching	4.66	2.35	4.71	2.59
Waves Participated After Matching	22.64	6.39	22.53	5.99
Monthly Household Income	1979.68	1073.30	1998.96	998.22
Religious Service Attendance	1.66	0.91	1.68	0.93
Relationship Status				
Married (%)	12.10	34	12.46	35
Committed Relationship (%)	22.06	62	22.06	62
Single (%)	65.12	184	65.48	183
Divorced (%)	0.00	1	0.00	1
Employment Status				
Full-Time Employment (%)	57.65	162	55.16	155
Part-Time Employment (%)	5.34	15	4.98	14
Marginal Employment (%)	1.07	24	1.78	18
Trainee (%)	8.54	3	6.41	5
In Education (%)	11.74	31	14.59	37
Registered Unemployed (%)	4.63	33	3.91	41
Not Employed[1] (%)	11.03	13	13.17	11
Migration Background				
None (%)	92.88	261	93.24	262
Direct (%)	2.85	8	4.63	13
Indirect (%)	4.27	12	2.14	6
Educational Background				
In School	3.56	10	4.27	12
No Degree (%)	0.71	2	1.42	4
Elementary School Degree (%)	13.88	39	13.17	37
Middle School (%)	54.45	153	55.52	156
High-School (%)	10.32	29	10.68	30
Higher Vocational Degree (%)	6.41	18	6.76	19
University Degree (%)	10.68	30	8.19	23

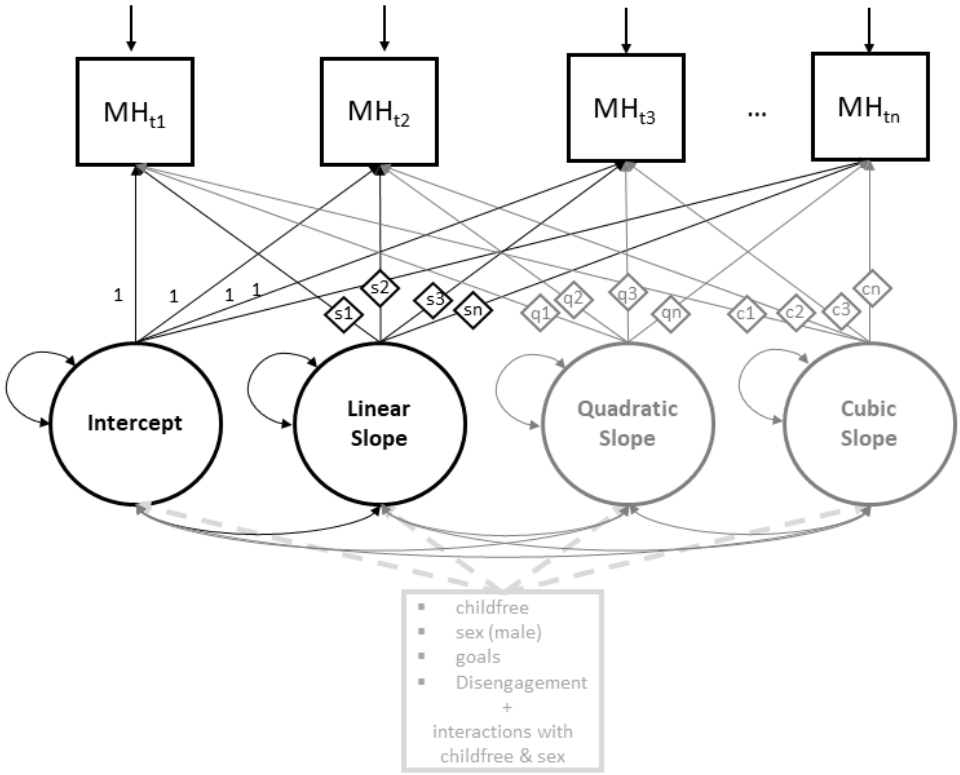
Table 1 (Continued)

	No Children		Parents	
	% / Mean	***N / SD***	**% / Mean**	***N / SD***
Time of Matching				
1990 (%)	47.69	134	45.91	129
1992 (%)	18.51	52	18.51	52
1995 (%)	15.66	44	16.01	44
2004 (%)	18.15	51	19.57	51
Well-Being Outcomes				
Life Satisfaction	7.16	1.71	7.11	1.74
Satisfaction With Health	7.54	2.03	7.46	1.93
Satisfaction With Work	7.22	2.14	7.20	2.15
Life Goals (Importance)				
Have Children	2.62	0.82	2.62	0.84
Career Success	3.24	0.68	3.25	0.62
Happy Relationship / Marriage	3.60	0.65	3.62	0.61
Be There for Others	3.19	0.60	3.18	0.59
Self-Fulfillment	3.27	0.67	3.22	0.66
Being Able to Afford Things	3.15	0.60	3.14	0.63
Social/Political Involvement	2.04	0.72	2.04	0.72
Own a House	2.41	0.86	2.41	0.86
See the World/Travel	2.79	0.79	2.78	0.78

Note. [1]This group includes individuals who are not working but are not registered unemployed with the job center (e.g., retirees, parental leave).

Figure 3

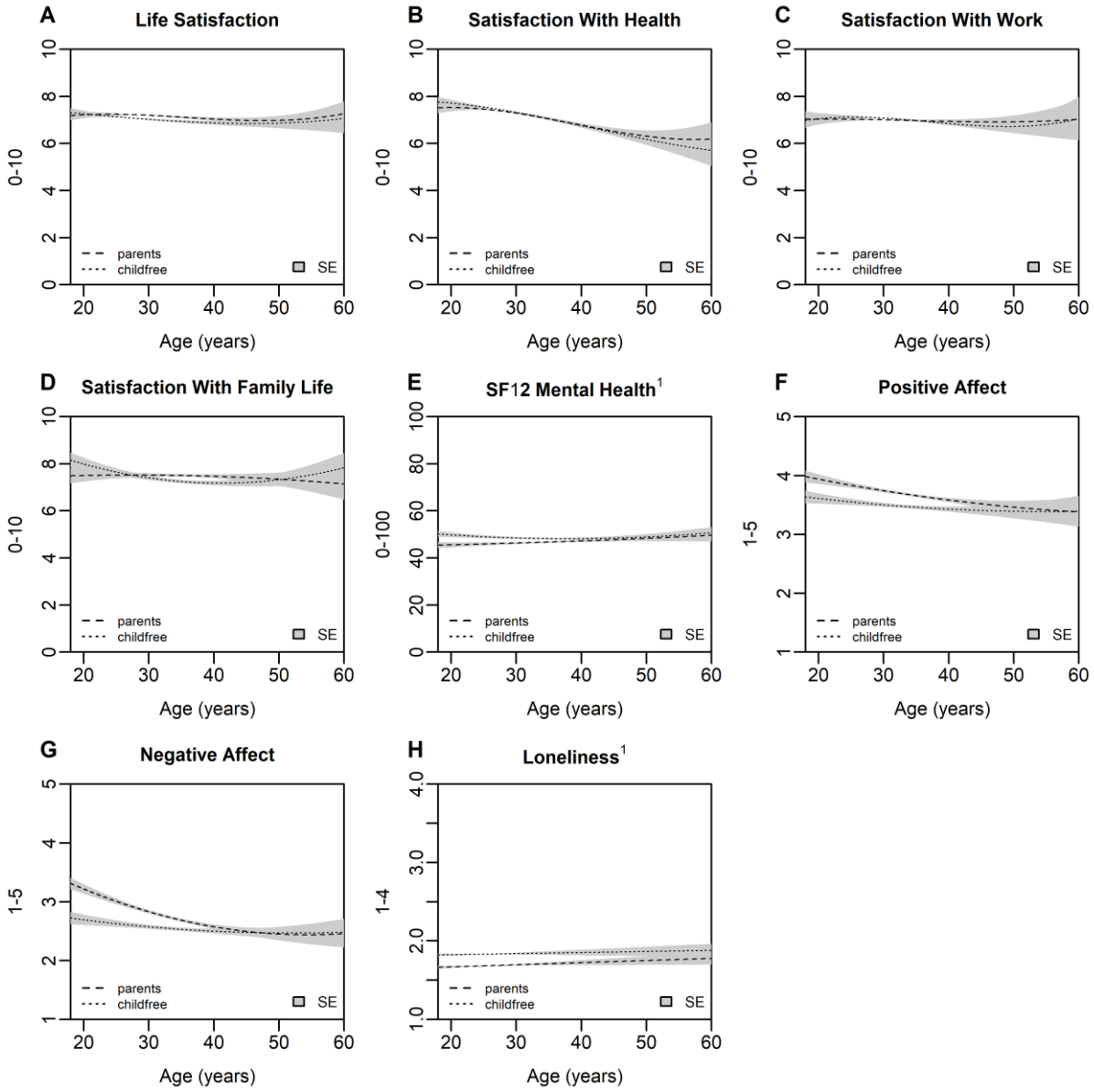
Conditional Latent Growth Curve Model With Individually Varying Points of Observation



Note. MH represents all mental health and well-being outcomes. Not all final models included a quadratic and/or cubic slope, hence they are greyed. Rhombi represent individually varying slope loadings to estimate development across the entire observed age range (Mehta & West, 2000; Preacher et al., 2008).

Figure 4

Model Estimated Mental Health and Well-Being Trajectories (N = 562, Sample Matched on all Covariates)

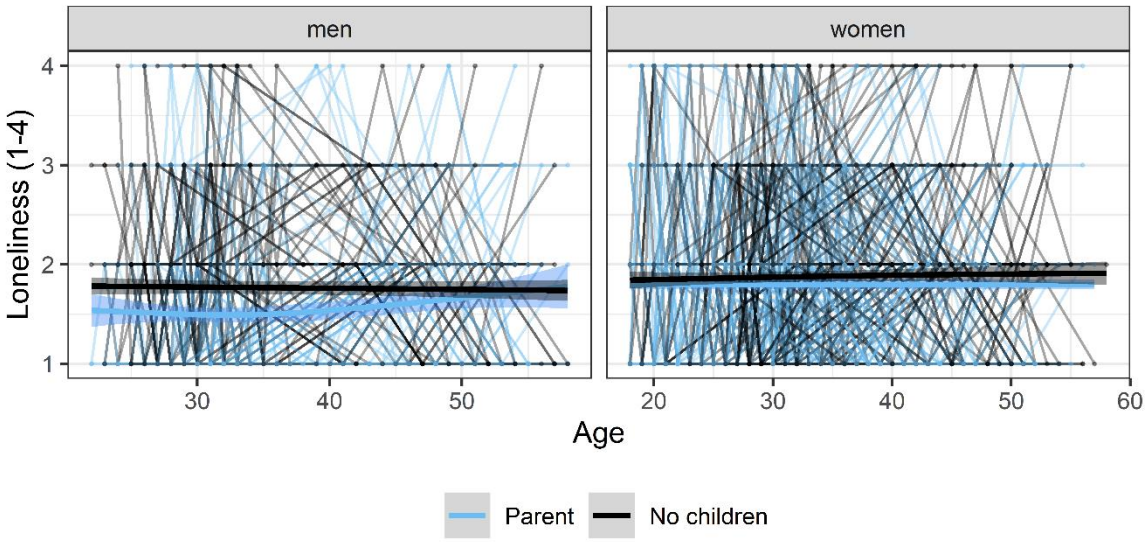


Note. Model estimated trajectories of the eight outcomes for (future) parents (dashed line) and those who do not have children (dotted line). [1]The model without cross-group constraints on the factor means but constrained factor variances had better fit. It can be obtained that against popular opinion, well-being and loneliness developed largely similar for people with and without children. People without children even reported better mental health and

experienced less negative affect but also less positive affect during young adulthood and midlife than their peers with children.

Figure 4

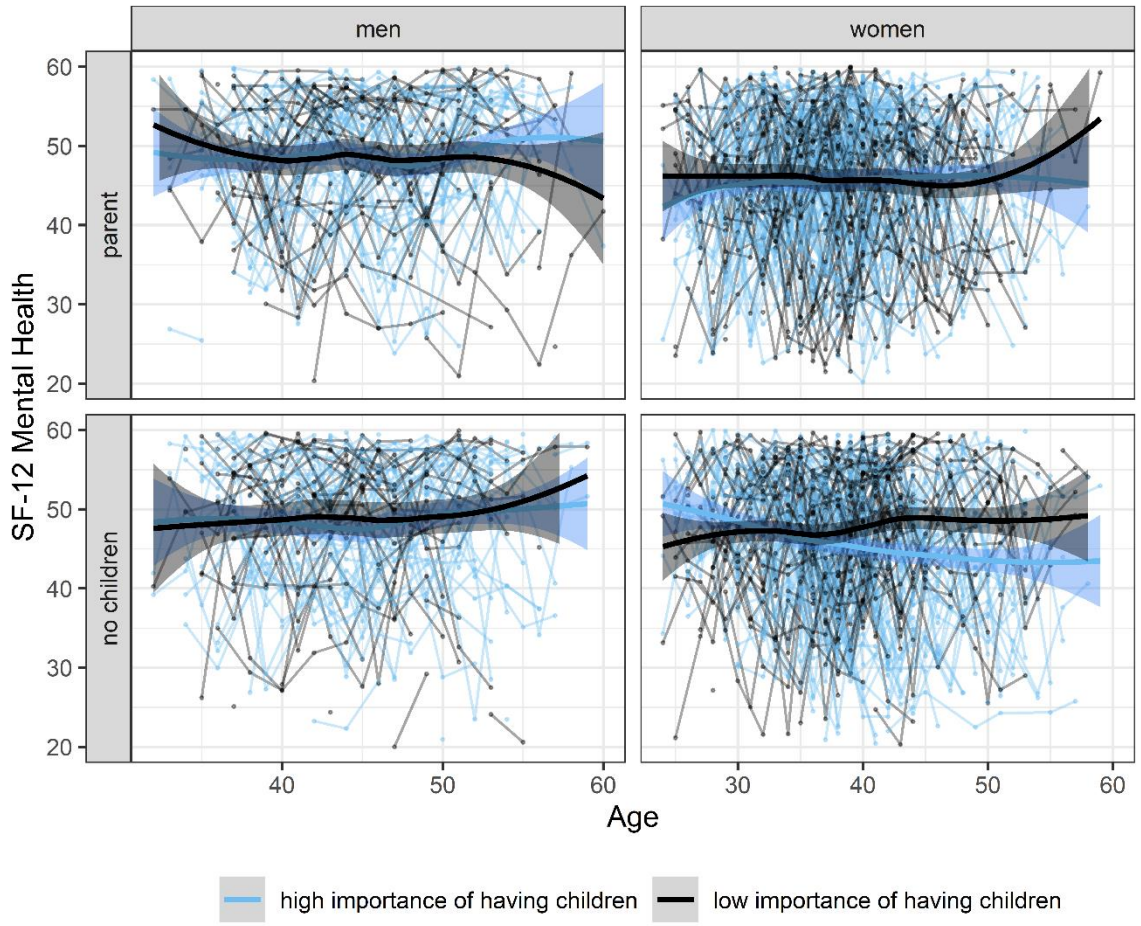
Visual Depiction of the Interaction Effect of (not) Having Children and Gender on Loneliness



Note. Depicted are individual trajectories to illustrate inter-individual variability in change and an average trajectory for each group (men with and without children and women with and without children). Local regression smoothing (LOESS) is used to illustrate non-linear change. It can be obtained that compared to people without children and mothers, fathers were the least lonely, particularly in their 40s.

Figure 5

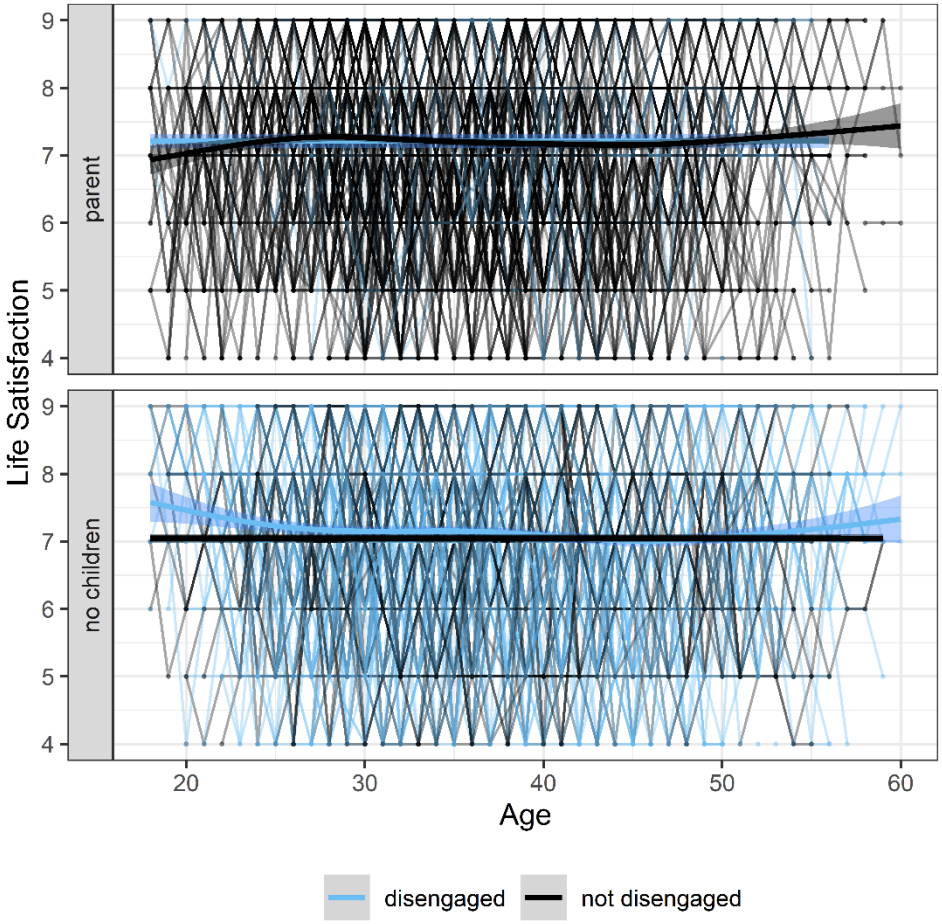
Visual Depiction of the Three-Way Interaction Effect of (not) Having Children and Perceived Importance to Have Children and Gender on Mental Health (SF-12)



Note. Depicted are individual trajectories to illustrate inter-individual variability in change and an average trajectory for each group. A median split was performed to dichotomize perceived importance to have children. Individuals who responded that having children is rather or very important are in the "high importance" group. Local regression smoothing (LOESS) is used to illustrate non-linear change.

Figure 6

Visual Depiction of the Interaction Effect of (not) Having Children and Disengaging From the Goal to Have Children on Life Satisfaction



Note. Depicted are individual trajectories to illustrate inter-individual variability in change and an average trajectory for each group. A median split was performed to dichotomize perceived importance to have children. Individuals who responded that having children is rather or very important are in the "high importance" group. Local regression smoothing (LOESS) is used to illustrate non-linear change.

Chapter 5

Discussion

Discussion

The three empirical studies that comprise this dissertation used data from the German socio-economic panel survey (SOEP) to examine life goals and their relationship with the Big Five personality traits and different aspects of well-being from a lifespan perspective. Study I sought to answer the question how the importance of life goals from different life domains changes as we get older (RQ1). Study II investigated if change in life goals goes hand in hand with personality trait change (RQ2). Finally, Study III zoomed in on the goal to have children to investigate how life goals early in life affect the development of mental health, well-being, and loneliness later in life contingent on goal attainment (RQ3). Or in other words, what happens to our mental health, well-being, and loneliness if we do not achieve the things, we considered important when we were young? The SOEP was uniquely suited to answer these questions since it is the only large-scale panel survey that includes not only multiple waves of data on mental health, well-being, and the Big Five personality traits, but also seven waves of data on life goals. The SOEP is a representative longitudinal panel survey of private households in Germany that has been running since 1984 in the states of former West Germany and since 1990 in the states of the former German Democratic Republic (GDR). Each year around 30,000 individuals in 15,000 households are surveyed.

This dissertation dealt with developmental questions that addressed motivational, descriptive, and affective aspects of personality. It followed calls for a more integrated study of personality, both on the theoretical and the empirical level (e.g., Baumert et al., 2017; Graham et al., 2020; Niemiec et al., 2010; Roberts & Robins, 2000), and aimed to connect perspectives of developmental regulation, successful aging, and personality development.

5.1. Summary of Empirical Results

5.1.1 Study I

For this study, we used six[9] waves of longitudinal data from the SOEP (N = 52,052), spanning 24 years and an age range of 18-84 years to examine lifetime changes in the relative importance of nine different life goals, assessed with single-item measures. Relative importance means that following Austin and Vancouver (1996), we represented the importance of a goal in relation to all other goals, as is also common practice in research with other higher order motivational constructs such as values (e.g., Ritter & Freund, 2014; Schwartz et al., 2012). Three of the investigated life goals contained communal content (i.e., having a happy relationship or marriage, having children, and being there for others), two contained agentic content with a focus on personal growth (i.e., self-fulfillment and seeing the world/travel extensively), and two contained agentic content with a focus on economic achievement (i.e., career success and being able to afford things for oneself). Applying an SDT perspective (e.g., Sheldon & Kasser, 2001b), the three communal goals as well as the two agentic goals with a focus on personal growth would be classified as intrinsic, whereas the agentic goals with a focus on economic achievement would be classified as extrinsic. Finally, two contained both agentic and communal content (i.e., being socially or politically involved and owning a house).

We estimated latent growth curve models (LGMs) which suggested three patterns of change: First, pronounced changes in young and late adulthood intermitted by a period of relative stability during midlife. This concerned the goals to have children and to see the world/travel. Having children increased throughout early adulthood whereas seeing the

[9]In this study, we did not use life goal data from the 1990 wave, since life goals were only assessed in the West German subsample but not in the newly acquired subsample of individuals located in the territories of the former GDR. Since we were (amongst others) interested in the effect of regional socialization (East vs West) on the development of life goals, we only included waves with available life goal assessments in both regions (1992, 1995, 2004, 2008, 2012, and 2016).

world/travel decreased, but both goals increased in late adulthood. Second, gradual change throughout the entire lifespan in both directions which concerned career success and personal fulfillment (decrease) as well as being socially or politically involved and owning a house (increase). Third, relative stability throughout most of the entire lifespan which concerned being there for others, having a happy relationship or marriage, and being able to afford things.

Using multiple-group LGMs we tested and found that gender, educational background, parental status (that is, if someone is a biological parent at some point in their life or not), and regional socialization influenced the development of life goals. Gender effects were in line with traditional gender norms that expect women to focus more on communal goals and men to focus more on economic achievement. An exception was the goal to have a happy relationship or marriage. For men, this goal increased throughout the lifespan, but for women it reached a turning point in the forties after which it decreased and fell below the level of men. Parenthood amplified gender role conforming differences between men and women. We also found evidence suggesting that in women (but not men) higher perceived importance to have children and lower perceived importance of career success select into parenthood.

Study I provides insights on the lifespan development of a personality domain that was long neglected in personality research. It showed, that like personality traits, most life goals demonstrate relative mean-level stability throughout the lifespan, especially in midlife, but also change, particularly in young and late adulthood. The developmental trajectories predominantly supported theories of developmental regulation and successful aging, suggesting that direction and magnitude of change correspond to the changing opportunities and constraints throughout life (e.g., Ebner et al., 2006; J. Heckhausen et al., 2010). Specifically, our findings suggest a shift from personal growth and economic attainment towards generativity and making meaningful emotional experiences (Carstensen et al., 1999;

McAdams et al., 1993; Sheldon & Kasser, 2001a). However, some results also raise questions. Contrary to our expectations, the importance to have children increased around retirement age, which may reflect grandparenthood for people who have children, but not for men and women without children for whom we found the same change pattern. As discussed in more detail below, these findings may reflect changing functions of life goals like life planning and life review, that such higher-order motivational constructs may fulfil throughout the lifespan (Ritter & Freund, 2014).

5.1.2. Study II

Study II was the first to use large-scale longitudinal survey data (N = 55,040) to examine the codevelopment of life goals and the Big Five personality traits in a sample that is heterogeneous in terms of age and education. It included the same life goals as Study I and also represented the importance of a goal in relation to all other goals (ipsatization). To analyze codevelopment bivariate LGMs with multiple indicators for the Big Five and single indicators for life goals were used. To test if codevelopment differed across the lifespan, we created four age groups based on age at first assessment (25 or younger, 26-39 years, 40-59 years, and 60 years or older) and estimated multiple-group LGMs. The same strategy was used to test moderating effects of perceived control, gender, education, and regional socialization.

Seven out of nine life goals codeveloped with at least one of the Big Five personality traits. Goals that are less socially scripted and not tied to developmental deadlines codeveloped more strongly with personality traits and did so more consistently across the lifespan, whereas socially scripted goals with a developmental deadline only codeveloped with traits in the age group for whom the goal reflected a normative developmental task. Specifically, conjoint change across all age groups was strongest for personal growth goals (i.e., self-fulfillment) and Openness, followed by communal goals (i.e., being there for

others) and Agreeableness. We also found suggestive evidence for positive codevelopment of personal growth goals with Extraversion and negative codevelopment with Neuroticism. As discussed in more detail below, these findings can be interpreted in the light of SDT and eudaimonic well-being which suggest that personal growth goals are essential for healthy (personality) development. Conscientiousness codeveloped with life goals that are age-bound and more socially scripted (i.e., having children and career success), particularly in people with either low or high educational background and particularly during midlife. As will be discussed in more detail below, conscientious behaviors, feelings, and thoughts may be especially relevant to master normative developmental tasks of midlife, such as advancing one's career, but become less relevant after retirement, when the focus shifts towards social and leisure goals (Freund, 2020; Graham et al., 2020). In line with this, we found that social and leisure goals (i.e., seeing the world/travel and being societally/politically involved) codeveloped most strongly with Extraversion in the oldest age group. We also found (suggestive) evidence for moderation effects of gender on the codevelopment of several life goals with Conscientiousness. Except for a few isolated effects, perceived control did not moderate codevelopment between life goals and traits. Study II highlights the role of changing opportunities and constraints not only for single personality domains but also for their interrelatedness. As discussed in more detail below, the question regarding the causal direction of the relationship between life goals and the Big Five traits remains to be answered.

5.1.3. Study III

Study III tested in a rigorous case-controlled longitudinal design, if the attainment of and disengagement from normative developmental goals influence lifespan mental health, well-being, and loneliness. To do so, the study zoomed in on a life goal that is essential for many people: parenthood. Specifically, Study III tested if (a) (not) having children is

beneficial or detrimental to mental health, well-being, and loneliness across young adulthood and midlife, (b) if it affects people differently depending on the importance, they ascribed to having children and career success when they were young, and (c) if letting go of the goal to have children (goal disengagement) during midlife improves mental health, well-being, and loneliness of people without children. To be included in the study, people had to be young adults (18-30) in one of the first four SOEP-waves in which life goals were assessed (1990, 1992, 1995, or 2004). We only used these first four waves since women had to be 40 or older at their last assessment and men had to be 50 or older. This was to ensure that becoming a parent would be unlikely in future waves or after leaving the panel. We performed two propensity score matching procedures, one that included 39 theoretically and/or empirically informed covariates and one that only included age, sex, and survey wave at the first life goal assessment to match individuals who never have children to a group of future parents. As the time of matching, we selected each individual's first life goal assessment. We then performed a series of multiple-group and conditional LGMs to examine differences in the developmental trajectories of people with and without children, and the role of life goals in explaining these differences. All analyses were performed in the sample based on the more lenient procedure (N = 640) and the stricter matching procedure (N = 562).

Our results show that from a life span perspective (not) having children is neither beneficial nor detrimental for cognitive-evaluative well-being but for affective well-being it seems to be both. People without children report slightly better mental health, lower negative affect but also lower positive affect. Loneliness differed between men without children and fathers but not between women without children and mothers. All reported differences were most pronounced during the 20's and 30's but the trajectories converged in the mid- or late 40's. This may hint at the fact that parents' mental health, well-being, and loneliness only differ from that of people without children as long as their children are young and in the same

household. It could also reflect a relaxation of the career-and-care crunch (Mehta et al., 2020) as will be discussed in more detail below. Interindividual variability in change was larger among parents than among people without children. In line with our hypotheses and MTD, we find that prioritizing the goal to have children during early adulthood predicted lower midlife mental health, cognitive, and affective well-being in adults who ended up not having children, but not in those who became parents. Disengaging from the goal to have children in midlife was associated with positive cognitive-evaluative well-being changes in adults without children and positive changes in work satisfaction in parents. Our study shows that what we prioritize when we are young can have long-lasting effects on mental health and well-being, especially if we fail to adjust our goals.

5.2. Theoretical Implications

This dissertation comprehensively investigated the lifespan development of life goals, their longitudinal associations with the Big Five traits, and their predictive effect on the development of mental health, well-being, and loneliness.

Our findings indicate that in developmental research, a distinction between constructs that correspond closely to developmental tasks and constructs that are less normative may be useful. It is conceivable that also the drivers of development may differ between these two categories. For instance, our finding regarding less socially scripted constructs support theories that highlight changing motives and time perspective throughout the lifespan as potential common causes of change in both life goals and traits (Carstensen et al., 2003; McAdams et al., 1997; Sheldon & Kasser, 2001a). The findings regarding socially scripted, age-bound goals and their codevelopment with personality traits, support theoretical perspectives that propose developmental tasks, opportunities, and constraints as a framework to study development (e.g., J. Heckhausen et al., 2010; Huttemann et al., 2014).

Study II showed that intrinsic life goals that are relatively independent from normative developmental tasks, changed in conjunction with personality traits that are considered "healthy" (Bleidorn et al., 2020) and did so more strongly and more consistently than traits and goals that strongly correspond to normative developmental tasks. Study III showed that, in line with SDT, non-attainment of a socially desirable goal only hampered well-being if that goal was highly valued (Niemiec et al., 2010). Together, these findings highlight how the eudaimonic perspective may help explain the developmental links between personality traits, life goals, and hedonic aspects of well-being.

Below, I will discuss in more detail, how the results of the three empirical studies inform theory and research on the (interrelated) lifespan development of motivational and descriptive aspects of personality and how the results inform theory and research on the associations between normative life goals and well-being.

5.2.1. Implications for Research on the Lifespan Development of Motivational Constructs

Studies I and II provided important insights regarding the general pattern and magnitude of change in life goals. They shed light on factors that help explain interindividual differences in development and point out goal characteristics that may help explain differences in the mean-level trajectories between different goals.

First, the lifespan trajectories of life goals were characterized by phases of both relative mean-level stability and change (see Study I, Figure 2 and/or Study II, Table 2) and these patterns corresponded to age-graded developmental tasks (e.g., J. Heckhausen et al., 2010), changes in future time perspective (Carstensen et al., 1999; 2003), and generativity orientation (Erikson, 1963; McAdams et al., 1993; Sheldon & Kasser, 2001a). Second, compared to the Big Five traits, the average rank-order stability of life goals was somewhat

smaller ($\bar{r}_{BigFive}$ = .50 and $\bar{r}_{goals}$ = .41 across a 12-year period; see Study II, Table 1), suggesting that life goals are more dynamic than the Big Five traits[10].

Theories of successful aging and developmental regulation (Baltes, 1997; Ebner et al., 2006; J. Heckhausen et al., 2010) predict pronounced change during early and late adulthood due to goal selection and goal disengagement, intermitted by relative stability during midlife due to a focus on maintenance and optimization. The results of this dissertation partially support this pattern but also showed that some life goals follow a different trajectory. Some goals seemed to be relatively stable throughout the entire lifespan (e.g., being there for others) and others seemed to change continuously without a phase of relative stability in midlife (e.g., career success).

More specifically, the results of Study I and II suggest that future-oriented goals which focus on personal growth and knowledge acquisition are more important during young adulthood whereas present-oriented goals that focus on generativity and making emotionally meaningful experiences become more important later in life. In detail, we found that the perceived relative importance of all investigated agentic life goals is highest early in life and decreases throughout young adulthood. The most pronounced change concerned career success (see Study I, Figure 2, panel A for a visualization of the lifespan trajectories, Study II, Table 2 for slope coefficients by age group, and https://osf.io/m8bkn for level coefficients by age group) which decreased continuously throughout midlife, and at an even faster rate when approaching retirement. Communal life goals or life goals with a focus on generativity and making meaningful connections (e.g., being socially or politically involved or being there for others) increase in importance throughout the lifespan or stayed at the same level (see Study I, Figure 2 and Study II, Table 2). However, independent of agentic or communal content, the magnitude of mean-level change across the lifespan as well as the shape of the

[10] As will be discussed later, this finding may, however, also be a methodological artifact.

trajectories differed considerably between life goals that are tied to developmental deadlines and those that can theoretically be achieved at any point in life.

Age-bound life goals that are tied to normative social scripts, such as career success or having children changed by almost 1.5 standard deviations, whereas less socially scripted life goals and goals that can mean different things to different people changed by under one standard deviation (i.e., self-fulfillment) or only about half a standard deviation (i.e., being there for others). Interestingly, these were also the goals that exhibited among the lowest rank-order stabilities but the highest correlated change with the Big Five (see Study II, Tables 1 and 3). Thus, even though these goals may not undergo much mean-level change across the lifespan, they exhibit considerable interindividual differences in intraindividual change. Their stronger developmental association with the Big Five traits, may indicate that the individual agency in development (e.g., Baltes, 1997; Brandtstädter, 2009; Brandtstädter & Rothermund, 2002; J. Heckhausen et al., 2010, 2019) lies in these unscripted, nonnormative life goals, which are relatively free from developmental deadlines and allow the individual to acts in ways that match the more stable parts of their personality, their personal interests and values (i.e., experience self-concordance; Sheldon & Kasser, 2008). Our conclusion is that as has been suggested previously (Bleidorn et al., 2021; Luhmann et al., 2014), developmental research should place an even stronger emphasis on interindividual differences in intraindividual patterns of change and move beyond examining normative life goals and events. To gain a comprehensive understanding of personality development more longitudinal research on non-normative life goals and events, daily goals and events as well as non-events (i.e., failure to attain normative life goals) is needed.

Further underscoring the need to study interindividual differences in intraindividual patterns of change, we found that all investigated moderators influenced the development of life goals. The largest effects pertained to education, gender, and parenthood whereby

parenthood amplified traditional gender role conforming differences. It is conceivable that these moderation effects reflect differences regarding societal expectations, developmental opportunities and constraints between social groups. Put differently, depending on a person's education and gender, their developmental scaffolding may look very different and be more or less sturdy. This is most apparent in the work and family domain. Even though the mean-level changes in the perceived importance of career success and having children were comparable (~ |1.5| SD), having children followed a different trajectory which corresponded more closely to theory and research that suggest stability during midlife (e.g., Ebner et al., 2003) and intensified goal striving when approaching a developmental deadline (J. Heckhausen et al., 2001; 2010; Wrosch et al., 2013). However, this theoretically implied pattern of engagement and disengagement did not apply to men. Only women without children seemed to disengage from the goal to have children after the developmental deadline in midlife. In contrast, men without children did not disengage. Instead, their perceived importance to have children steadily increased throughout life but compared to fathers, at a much slower rate. Pronounced gender differences also concerned the goal to have a happy relationship or marriage, which steadily increased in importance for men but for women, contradicting theory and research (Carstensen et al., 2003; Sander et al., 2017), reached a turning point in the forties after which it decreased and fell below the level of men. These gender differences may reflect gender-specific opportunities and constraints and may, particularly in the case of parenthood mirror the softer developmental deadline for men. Against theoretical predictions the perceived importance to have children of both parents and people without children increased again around retirement age. This may be interpreted in the context of grandparenthood which has been proposed as an important developmental task of late midlife and old age (Hutteman et al., 2014). However, grandparenthood does not explain

why the importance to have children also increased again for people without children, long after the developmental deadline is crossed.

Drawing on insights from theory and research on values (Ritter & Freund, 2014), this finding may indicate that life goals fulfil different functions throughout life. Values have been described as "higher order goals that an individual personally endorses […] about what people ought to do or what is generally important in life" (Freund & Ritter, 2014, p.273). This definition demonstrates the conceptual overlap between life goals and values, which is also reflected in recent efforts to improve the measurement of both values and life goals (Partsch et al., 2023). Freund and Ritter (2014) proposed that values fulfill two functions throughout the lifespan: life planning in early adulthood, and life review in late adulthood. In midlife, which has been described as the rush hour of life (see also career-and-care crunch; Mehta et al., 2020), people have to make decisions more pragmatically and values only play a negligible role. In the context of life planning in early adulthood, values guide future behavior, whereas in the context of life review in late adulthood, they help construct a coherent life story by guiding and making sense of thoughts about the past.

Applying this to the findings of Study I, it is conceivable that the increased relative importance to have children in late adulthood among people without children reflects regret. This could be due to the increased focus on meaningful connections and emotional experiences (Carstensen et al., 1999) which is something own children could have provided.

The late life increases in the importance to have children could, however, also be a methodological artifact. Although it has been recommended to represent life goals in relation to each other (Austing & Vancouver, 1996) as is also done with values (Ritter & Freund; Schwartz et al., 2012), this ipsatization means that the absolute importance of, for instance having children may have actually stayed at the same level, but late life decreases in the absolute importance of other goals (e.g., career success and personal fulfillment) caused the

relative importance of having children to increase. General additive model (GAM) smoothed line plots based on the absolute goal importance ratings suggested that in the full sample this is in fact the case. In line with prior research (Atherton et al., 2021), these plots indicated that the perceived importance of most life goals decreases slightly throughout the lifespan but having children remains relatively stable after the thirties and career success decreases steeply (see Study I, Figure S2). This extenuates the above made argument but does not completely refute it. It is still notable that the absolute importance of having children remains stable throughout late adulthood whereas most other goals decrease in importance.

5.2.2. Implications for Research on the Longitudinal Interplay of Life Goals and Personality Traits

Supporting SDT and specifically the notion that the pursuit of self-concordant goals fosters healthy development, the results of Study II showed that change in life goals which could be categorized as intrinsic (i.e., personal growth goals and being there for others) is positively associated with change in "healthy" traits (Bleidorn et al., 2020) whereas change in life goals that could be categorized as extrinsic (i.e., afford things) was negatively associated with change in "healthy" traits. Importantly, these "healthy" developmental associations were the strongest in the entire study. Moreover, they were not tied to a specific developmental phase but occurred across the entire lifespan. This underscores once more, the need to investigate unscripted, non-normative life goals and events. Overall, the results of Study II showed weak to moderate change-change correlations between life goals and the Big Five which generally supports theoretical models that propose a feedback loop between motivational constructs and traits (e.g., Denissen et al., 2013; DeYoung, 2015; Dweck, 2017; Hennecke et al., 2014; Jayawickreme et al., 2019; Quirin et al., 2020; Roberts & Wood, 2006; Wrzus & Roberts, 2017). However, Study II was not designed to test directional relationships, which most of the aforementioned theoretical models imply. Based on the

results of Study II, future research may want to investigate in more detail, the directional links between those goal and trait domains which we found to codevelop. So far, this has only been done for Conscientiousness and Extraversion (McCabe & Fleeson, 2012; McCabe et al., 2016). Like McCabe and Fleeson (2012) who identified goals that require the manifestation of Extraversion in everyday behavior to answer the question "what is Extraversion for?", future research may ask "what are Agreeableness, Conscientiousness, Openness, or Neuroticism for?".

Alternatively, it is also conceivable that changes in both life goals and traits are driven by a common third variable. For instance, a normative developmental task, such as starting one's first job, may increase both the importance of career success and Conscientiousness. This is in line with theoretical perspectives that suggested the mastery of developmental tasks and the acquisition of new social roles as drivers of personality maturation (e.g., Huttemann et al., 2014; Roberts & Woods, 2006). Investigating the effect of normative life events on personality trait change has been the common way to test this proposition (for a review, see Bleidorn et al., 2018). Although the effects tend to be small, the life event literature produced some robust evidence for maturation through new social roles in the work domain but hardly any evidence was found for maturation through social roles in the family domain[11]. Childbirth has even been associated with personality trait changes that run counter to the principle of maturation (Asselmann & Specht, 2021; Denissen et al., 2019; van Scheppingen et al., 2016). In a recent meta-analysis that investigated the effects of ten normative life events on personality trait change, the positive effect of starting the first job on Conscientiousness was the largest effect size[12] (Bühler et al., 2023). Of all life events in the family domain, only starting a new relationship was associated with trait maturation,

[11] Some studies find effects of starting a new relationship, but generally effect sizes are even smaller than in the work domain.
[12] The largest effect size concerning the Big Five personality traits. The effect size of entering a new relationship on life satisfaction was larger.

specifically increased Conscientiousness, but this effect was only half the size of the effect of job entry on Conscientiousness. Although, this dissertation did not include any classical life event studies, it still contributes to this strand of literature in several ways. First, Study II adds to the existing evidence that links the work domain to personality maturation. The results suggest conjoint change in the perceived importance of career success and Conscientiousness, particularly in midlife (ages 25-59; $.32 \leq r \leq .34$), when career obligations but also opportunities for career advancements are highest. This was among the highest correlated change we found during midlife[13]. Moreover, Conscientious not only codeveloped with family and career goals during midlife, but also with personal growth goals. These findings indicate that Conscientiousness may be crucial for mastering the competing demands of midlife, which is also in line with prior research that found a negative association between Conscientiousness and work-family conflict (Wayne et al., 2004). Adding to this, Olaru et al. (2023) recently showed that Conscientiousness also codeveloped more strongly with global and domain satisfaction during the thirties and forties, but these findings were only descriptive and require replication. These findings also highlight the relevance to study midlife (Infurna et al., 2020; Lachman, 2015). Although prior research and Study I showed that there may not be as much mean-level change during midlife, this relative stability should not obscure the intensity of these demanding years in terms of career and family demands. Stability may mask important turning points and interindividual differences in handling the career-and-care crunch which may set the course for successful aging (Mehta et al., 2020).

Second, adding to the literature that challenges the idea that personality matures through becoming a parent (e.g., Asselmann & Specht, 2021; van Scheppingen et al., 2016), Study II found almost no positive association between changes in family goals and changes in

[13] During midlife, only two other goals codeveloped more strongly with some of the Big Five traits: self-fulfillment with Openness ($.33 \leq r \leq .46$) and being there for others with Agreeableness ($.28 \leq r \leq .41$).

trait “maturity”. Instead, we found a negative association between change in the perceived importance to have children and change in Conscientiousness during young adulthood and midlife ($-.20 \leq r \leq -.16$, see Study II, Figure 4, panel A and/or Tables S12-13). A possible explanation for this negative association is offered by Study III. Supporting prior research, Study III showed that people who became parents experienced more negative affect and reported lower levels of mental health than people without children at least until their mid-forties after which the trajectories converged. Entering parenthood is an extremely stressful experience, that has been associated with poor sleep (Richter et al., 2019), reduced leisure time (Claxton & Perry-Jenkins, 2008), relationship distress (Kalmijn, 2012; van Scheppingen et al., 2018), and financial strain (Pollmann-Schult, 2014). On top of this, young parents also have something entirely new to worry about which is the health and safety of their child. Looking at these stressors, it seems unreasonable to expect notoriously sleep-deprived, stressed, and emotionally overwhelmed people to become more conscientious, agreeable, and emotionally stable.

The findings of a recent meta-analysis further underscore the consideration that maturation may mainly be driven by changes in the work domain. M. Wright et al. (2023) found that most young people today base their judgment about whether they have reached adulthood or not, on career-related benchmarks rather than on developmental milestones in the family domain such as marriage or parenthood (M. Wright et al., 2023). As more diverse lifestyles that do not include marriage and/or parenthood become more common, work-related milestones represent a more uniformly applicable benchmark. The authors conclude that developmental research should de-emphasize marriage and parenthood and instead focus more on the work domain. Supporting this, the results of Study III also emphasize the importance of the career domain, especially for parents. Perceiving career success as very important in young adulthood amplified the negative effects of having children on well-

being. Not only do parents with high career aspirations on average experience more frequent negative affect and report lower levels of mental health, they are also less satisfied with their health and their lives in general. In developed countries where people spend more time in education, the years from 30 to the mid-forties have been described as the most intense phase of adult life. Both career and parenting demands are at their peak, which has been termed the career-and-care crunch (Freund, 2020; Mehta et al., 2020) or the rush hour of life (Knecht & Freund, 2016). Differences in handling the intensity of these competing developmental tasks can have long-lasting consequences on adult development. Mehta et al. (2020) recently coined the term "established adulthood" to describe the time between 30 and 45 and distinguished this period from emerging adulthood and midlife. The results of Study III support the notion that the years 30 to 45 represent their own developmental phase that is characterized by competing demands from the family and career domain. All mental health and well-being differences between people without children and parents were most prominent during this time but diminished or disappeared thereafter.

Finally, this dissertation adds additional evidence to the debate about whether certain aspects of personality predict who becomes a parent (selection) or whether certain aspects of personality change after becoming a parent (socialization). The results of Study I suggest that people with specific life goals select into parenthood, especially women, but also that life goals develop differently across midlife in people with and without children, which suggests some socialization effects. Specifically, higher perceived importance of family goals (i.e., having a happy relationship/marriage and having children) and lower perceived importance of career success was associated with becoming a parent. In line with prior research (Wehner et al., 2022) selection effects into parenthood, especially of low perceived importance of career success, were stronger for women. Importantly, the perceived importance to have children continued to increase throughout young adulthood until it reached a plateau around

age 40 until it increased again around retirement age. This indicates that people continue to rate life goals as important even after they have already attained them and is in line with the assumption that people rate those domains of life as important which they are already satisfied with (Headey, 2008).

To summarize, Study I and II support prior research that suggests (a) an association between the work domain and personality maturation, (b) a negative association between the family domain and personality maturation, and (c) selection effects into parenthood, especially for women. Study III offers an explanation why parenthood may not be accompanied by personality maturation and provides support for theories underlining the 30's and 40's as a distinct developmental phase with unique demands. This dissertation also highlights that the four concepts normative developmental tasks, normative life events, normative social roles, and life goals are interlinked (J. Heckhausen et al., 2019; Huttemann et al., 2014; Roberts & Woods, 2006). Acquiring the new social role of being a parent usually presupposes having experienced the life event childbirth which presupposes having mastered the developmental tasks of family formation and finding a partner. As Study I showed, this usually presupposes that these developmental tasks were adopted as life goals but currently research does not investigate life goals and events jointly. Moreover, developmental tasks, events, social roles, and life goal are not only related within the same life domain but also across different domains such that for instance career-related goals and events may influence family-related goals and events and vice versa. This interrelatedness is currently not adequately reflected in theory and research and should be integrated in future work (but see Krämer, Rohrer, et al., 2023 for recent advances in the context of life events).

5.2.3. Implications for Research on Life Goals and Well-Being

This above-described interrelatedness of life goals, developmental tasks, and life events also extends to well-being. The results of Study III provide evidence, that failure to

master societally desirable developmental tasks only hampers subjective well-being if they were adopted as life goals. Specifically, we find no negative effect of remaining childfree (i.e., failure to master the developmental task of parenthood) on the midlife development of almost all investigated well-being outcomes. Instead, people without children even reported better mental health and less frequent negative affect during established adulthood (Mehta et al., 2020). During this time, people are usually still at the peak of their physical health and have gained some financial security, allowing them to make the most of their leisure and social life. In line with this, Study I showed that during established adulthood, people without children strongly focus on intrinsic goals that are related to personal growth, whereas parents mainly focus on child goals. In line with SDT, Study II linked these personal growth goals to healthy personality development, which may explain the better mental health and subjective well-being of people without children during this phase. Most parents may simply lack the time to pursue self-concordant personal growth goals during this phase of development, since they are busy mastering the competing demands of career and care (Freund, 2020; Mehta et al., 2020).

Overall, Study III also showed greater interindividual differences in intraindividual patterns of change among parents compared to people without children suggesting that the parent experience is extremely heterogeneous. Again, this adds to the previously mentioned recommendation to place an even stronger emphasis in developmental research on explaining the interindividual differences in intraindividual patterns of change. In the context of parenthood, the parent well-being model (Nelson et al., 2014) may help guide the selection of factors that potentially explain interindividual differences. However, this model neglects structural factors such as differences in the extent and accessibility of governmental support for families, which should also be included in future research. This dissertation highlights one explanatory factor that contributed to differences in the perceived importance of family goals,

their association with personality traits, as well as (parental) well-being. This factor is, maybe unsurprisingly, gender. Study I showed that career and child goals select women but not men into parenthood but as Study III showed, women seem to benefit less from being mothers than men from being fathers. Although gender differences in the contexts of parenthood have been extensively researched, phenomena like the debate about #regrettingmotherhood (Donath, 2015) and the increasing visibility and rising number of women who choose to be childfree in white, educated, industrialized, rich, and democratic (WEIRD) countries (e.g., Brown, 2021), make it as topical as ever.

To lighten up this rather grim picture of parenthood, I want to point to the results of Study III regarding positive affect. During established adulthood, parents not only experienced more negative, but also more positive affect, likely because children can evoke profound positive emotions in their parents by doing the simplest things[14]. However, these effects diminished towards the mid-forties. Recently, Bauer et al. (2023) used data from the Survey of Health, Ageing and Retirement in Europe (SHARE), and found positive effects of fatherhood (but not motherhood) on physical health in late adulthood. The authors suggested that children represent an instance of social control, which is associated with better self-care.

Another frequently named, but rarely researched, pathway through which parenthood, and life goals in general, should enhance well-being across the entire lifespan, is by providing meaning and purpose in life (e.g., Nelson et al., 2014; Nomaguchi & Milkie, 2017; Schoen et al., 1997). In this context I want to point out the discrepancy between the theoretically well described relation between life goals and eudaimonic well-being (EWB; Deci & Ryan, 2008; Sheldon & Kasser, 2001b) and the empirical foundation that is in dire need of improvement.

[14] Since the literature only provided an abundance of reasons for why parents experience negative affect (e.g., poor sleep, work-family conflict, reduced leisure time, or strained partner relationships) but hardly any concrete examples for why they experience positive affect, I asked my friends with children (with N = 8, 50% men, an arguably rather small sample). This little survey that only included the question "when does your child makes you feel positive emotions?" resulted in answers like "when he runs towards me", "just looking at him sleeping peacefully", "when she discovers a new food and likes it", or "when she has a great time in the sand box".

Aspects of EWB, such as sense of purpose or meaning, have been reliably linked to successful aging (for a review, see Ribeiro et al., 2020) and recently Gudmundsdottir et al. (2023) found predictive effects of sense of purpose on life satisfaction and positive affect but no evidence for directional effects of SWB on EWB. Compared to subjective well-being (SWB; e.g., Diener et al., 2006), however, EWB is less frequently researched, potentially due to its lack of agreed-upon theoretical and measurement approach (Disabato et al., 2016; Heintzelman, 2018). This may also explain its poor representation in large-scale panel surveys. In personality development research it is currently still the exception rather than the norm that to include EWB constructs (cf. Lawes et al., 2023). The results of this dissertation suggest, that this could be a direction for future research since EWB constructs seem to play a key role in explaining the developmental associations between life goals, personality traits, and SWB.

5.3. Methodological Implications

As pointed out above, research on the interrelatedness of motivational constructs, personality traits, and well-being currently falls short of including EWB constructs. One reason for this is their measurement. The most frequently used instrument is the Psychological Well-Being Scale (PWBS; Ryff, 1989) that comprises six theory-driven sub-scales (self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth), but several studies failed to replicate its factor structure (e.g., Burns & Machin, 2009; Springer & Hauser, 2006; Trachik et al., 2023; Triadó et al., 2007). Moreover, conceptualizations of EWB are not limited to the six factors proposed by Ryff. Other EWB constructs in psychological research are for instance meaning in life (e.g., Park, 2010; Pfund & Hill, 2018; Steger, 2016; Steger et al., 2009; Weston et al., 2021), authenticity (e.g., Smallenbroek et al., 2017), feelings of engagement (e.g., Vittersø et al.,

2017), or intrinsic goal content (Kasser & Ryan, 2001 for a review on eudaimonic concepts, see Huta & Waterman, 2014).

The same problem is holding back (longitudinal) research on life goals as a personality domain. Compared to the Big Five, life goals are poorly represented in large-scale panel surveys. To my knowledge, the SOEP is the only panel survey with as many as seven assessment waves that include life goal measures. Yet, the SOEP has only sporadically been used to inform research about life goals (besides the three studies that comprise this dissertation, only Headey, 2008; Headey et al., 2013; Recksiedler et al., 2019; A. J. Wright et al., 2023). This could of course be a sign for the still tenuous research interest in the topic, but more likely points at another, more fundamental methodological issue which is the conceptualization and assessment of life goals. Even the four other studies that used SOEP data to inform research on life goals varied to some degree regarding item choice and aggregation [15].

Recently, Kiendl and Hennecke (2022) reviewed goal assessment in empirical studies and found 1,166 different terms for goal dimensions[16]. The great majority (80%) used single-item scales to assess goal dimensions, every other item (52%) was used to measure multiple goal dimensions, and in over two in five cases (42%) item sources were not reported or items were created ad hoc making both jingle and jangle fallacies likely. Although the use of single-item measures is unproblematic or even desirable when the research goal is to describe

[15] Headey (2008) derived three scales from seven of the nine SOEP life goals which he named familygoals (i.e., having children and having a happy relationship/marriage), success/achievement goals (i.e., career success, self-fulfillment, and being able to afford things), and altruistic goals (i.e., being there for others and being socially/politically) which he also used for his later study (Headey et al., 2013). The altruistic scale originally also included the item "having a circle of friends" which was dropped after the 1995 wave. Wright et al. (2023) applied a similar approach but included the goal "owning a house" in the family goals subscale which Headey had dropped for reasons of face validity. The reliabilities of the three scales were extremely rough ($\alpha < .45$) and in my own attempts to replicate this factor structure with additional SOEP waves, I found considerable cross-loadings and failed to show measurement invariance across adulthood. Recksiedler et al. (2019) used all nine life goals as single-item measures but like the other three studies she did not adhere to the recommendations to represent life goals in relation to each other (Austin & Vancouver, 1996).

[16] Note that Kiendl and Hennecke's (2021) review also includes instruments that assess goal processes, such as commitment, progress, or enjoyment.

lifespan development in its detail (Mõttus et al., 2020; Mõttus & Rozgonjuk, 2021)like it was in Study I of this dissertation, it becomes an issue when comparing the single-item measure (e.g., life goals) with multi-item measures (e.g., the Big Five), like it was the case in Study II. For instance, according to Study II, life goals exhibited considerably less rank-order stability than the Big Five traits. However, studies that used multi-item scales to assess life goals found comparable rank-order stabilities of life goals and the Big Five (Atherton et al., 2021; Roberts et al., 2004), suggesting that the discrepancy in Study II may at least be partly attributed to the single-item measure. Thus, in terms of absolute levels of stability, it may be more accurate to compare life goals with personality facets or nuances, which indeed show similar levels of rank-order stability (Mõttus et al., 2017).

At the same time, Study I revealed quite different developmental trajectories for life goals that would have been aggregated to a single scale according to Headey (2008). For instance, the perceived importance of career success decreased by almost 1.5 standard deviations throughout the lifespan, whereas being able to afford things stayed almost exactly the same. Similarly, having children increased by more than 1 standard deviation but having a happy relationship or marriage increased only negligibly. As for codevelopment between life goals and the Big Five, especially in the family domain, the results of Study II did not match that of prior research which used multi-item scales to assess life goals. For instance, Study II found a positive association between changes in the perceived importance of a happy relationship or marriage and changes in Neuroticism which was not the case in studies that used multi-item measures (Atherton et al., 2021; Roberts et al., 2004). From here, two important mandates for future research emerge: First, similar to the works of Mõttus and colleagues in the field of personality facets and nuances (e.g., Mõttus et al., 2017, 2020; Mõttus & Rozgonjuk, 2021; Stewart et al., 2022), future research should examine the development of life goals in all its detail, possibly also replicating prior works (e.g., Atherton

et al., 2021) on the item level. The focus of this research should thereby be on both description and prediction. The three empirical studies of this dissertation, which I view as a first response to this mandate, provided a comprehensive first overview and inspire others to conduct more research in this field.

As the research interest in motivational constructs increases, the lack of theoretically well-grounded measurement instruments of good psychometric quality becomes indisputably apparent. Kiendl and Hennecke (2021) found that studies rarely provide information on the theoretical background from which the items were derived. They recommend a stronger focus on construct validity for the development of a parsimonious, yet comprehensive goal taxonomy, which could be both theory-driven or data-driven like the approach to develop the Big Five taxonomy. Roberts and Robins (2000) clearly argued in favor of a theory-driven top-down approach since, according to them, there is no source to determine the universe of all possible life goals. The basis of their own instrument are Rokeach's (1973) terminal values, which are also the theoretical basis of the SOEP life goals, and which have been described as conceptually close to social roles (Roberts & Wood, 2006). Based on the results of Studies I and II, and drawing on theories from successful aging and personality development (Carstensen et al., 2003; J. Heckhausen et al., 2010; Hennecke et al., 2014; Hutteman et al., 2014; Ryan & Deci, 2000), I want to suggest three dimensions along which to organize life goals for future scale development: one content dimension (agentic versus communal; Bakan, 1966), one meta-motivational dimension (intrinsic versus extrinsic; Ryan & Deci, 2000), and one time/specificity dimension (age-bound/specific versus free/broad; Carstensen et al., 2003; J. Heckhausen et al., 2010).

In line with prior work (M. Wright et al., 2023), the results of this dissertation indicate that developmental research may benefit from a stronger emphasize on developmental tasks and life goals in the work domain, at least during midlife. The results of Study II suggested

that Conscientiousness may be an indicator of midlife mastery, but educational background and gender moderated codevelopment between the trait and career as well as child goals. It may be interesting for future research to investigate gender differences in the effects of career level and perceived importance of career success prior to the transition to parenthood on later development of the Big Five and well-being. Study III provided initial evidence that perceiving career success as very important in before entering parenthood decreases well-being across midlife, especially in fathers (see, Study III, Figure S10). It may be interesting for future research to investigate the effect of goal disengagement as well as goal attainment on well-being in the work domain.

One problem in this context is the more difficult assessment of having attained the goal to be successful in one's career. Although, high salary, managerial responsibilities, or a high-status profession may be proxies, the assessment is not as straightforward as it is for the goal to have children. A senior physician may still think they have underachieved whereas a florist may think they have made the most out of their professional life. To better investigate the dynamic interplay of descriptive, motivational, and affective aspects of personality in this challenging phase of life a more detailed time resolution is necessary.

This dissertation, specifically the results of Study III, also highlight the importance to control for selection effects when estimating causal effects in developmental research. This means, to take into consideration and control for preexisting differences on the outcome variables as well as established predictors of outcome and treatment (VanderWeele et al., 2020). In addition to the main analyses in Study III that included 39 covariates, we also ran all analyses in a sample matched only on age, sex, and survey wave at first assessment, as is often done in developmental research. Contrary to the findings of the main analysis, the results based on this more leniently matched sample, suggested better cognitive-evaluative well-being for parents across most of the adult lifespan, as is sometimes found in studies that

do not control for selection effects (e.g., Nelson et al., 2013). Covariate selection should be well-grounded in theory and prior research to avoid endogenous selection bias or conditioning on a collider (Elwert & Winship, 2014). VanderWeele et al. (2020) offers a good starting point to guide covariate selection.

5.4. Practical Implications

When reflecting on the practical implications of this dissertation, I want to point out that Study II did not test causal relationships and some of the effects in Study III were rather small. Hence, further research to consolidate these findings and any conclusions drawn from them is needed. Yet, I want to highlight two areas for which this dissertation provided relevant insights that may inform more applied research, interventions, or policy. These two areas are personality trait change interventions and family policy.

Study II showed that personality traits and life goals codevelop but that, depending on the type of life goal, the strength of codevelopment varied considerably across the lifespan. Some personality traits also codeveloped with completely different life goals during different phases of development, suggesting that the same patterns of thoughts, feelings, and behaviors serve to pursue different goals throughout life (e.g., Elder et al., 2003; Hutteman et al., 2014). Conversely, the pursuit of the same goal may reinforce different personality traits depending on when during the lifespan the goal is pursued. These findings may inform the development and refinement of personality intervention programs (e.g., Stieger et al., 2018). Knowing which exact goals people wish to achieve through changing their personality traits is essential for the success of these programs (Olaru et al., 2022). Thus, our findings may help tailor interventions to different age groups.

Study III showed, that having children is a risk factor for poorer mental health during midlife, especially for people with high career aspirations and especially for women. Adding to this, Study I showed that women with high career aspirations select out of parenthood

whereas no such effect could be observed for men. Still fathers with high career aspiration also reported poorer mental health. Certainly, most policy makers would agree that parenthood should not be a mental health risk. To reduce this risk, our findings suggest that policy interventions should target early midlife (ages 30-45) when the discrepancy between the mental health and well-being of parents and people without children is highest, likely due to the intensity of competing demands in the work and family domain. This could be in the form of more flexible working arrangements and an improved childcare infrastructure that may also include employers to enable both parents to fulfill their career demands. Moreover, current parental leave regulations could be adjusted to facilitate accessibility and foster a more equal distribution between mothers and fathers. Since also fathers receive backlash when taking parental leave (Rudman & Mescher, 2013), this would benefit both parents. Lastly, parents may benefit from easily accessible low-threshold (mental) health interventions.

Finally, having children still is the social norm and strongly societally expected. This is also reflected in Study I which showed that having children is among the highest rated goals across the entire lifespan. However, Study III showed that high perceived importance of the goal to have children impaired mental health and well-being when people failed to attain this goal. Letting go of the goal to have children or never perceiving it as important in the first place was associated with better mental health and well-being in people without children. This is easier in a society that equally supports alternative, more diverse life scripts that do not include parenthood.

5.5. Limitations and Future Research Directions

I want to point out some additional limitations and future research directions that are relevant in the broader context of this dissertation, besides the ones already mentioned in the

individual empirical studies and the ones discussed in the methodological implications section.

First, all three studies that comprise this dissertation are based on SOEP data. As previously explained, this was because the SOEP was the only panel survey with extensive longitudinal data on all constructs of interest. Nevertheless, relying on data from just one country greatly limits the generalizability of the findings. Developmental tasks and their normative timing can vary greatly between countries, cultures, and regions (e.g., OECD, 2021; Van Bavel & Nitsche, 2013). For instance, within Germany the average timing of the developmental task "entering parenthood" can vary by 2.6 years – enough time to complete a master's degree (Statistisches Bundesamt (Destatis), 2023). These differences in the timing of developmental tasks may influence the (co-)development of all investigated outcomes. As Study I illustrates, even between the two formerly dived parts of Germany (German Democratic Republic and Federal Republic of Germany), the development of all but one life goal (i.e., to have a happy relationship/marriage) differed significantly (see, Study I, Figure S3). Similar to prior research in personality development (Bleidorn et al., 2013), future (cross-cultural) studies may investigate regional and cultural differences in the general developmental trends of life goals, but also focus on attainment, adjustment, interindividual differences in development, and codevelopment. Although, Study II only provided suggestive evidence for regional differences in the codevelopment of life goals and the Big Five, it seems plausible that the same personality trait may serve the pursuit of different goals in cultures that differ more strongly than the two formerly divided parts of Germany.

Second, another downside of using panel data are the sometimes very large time lags between assessments. This concerns most panel studies and is not exclusively tied to the SOEP. In the SOEP life goals and the Big Five are assessed at a four-year interval. This may be adequate to capture general developmental trends across the life span, as was one of the

important goals of this dissertation. However, especially in young adulthood, when developmental tasks follow in quicker succession and life conditions change at a faster rate, this time resolution may be too rough, especially for the investigation of interindividual differences in intraindividual patterns of change. Moreover, the explicit testing of theories that informed Study II (Denissen et al., 2013; DeYoung, 2015; Dweck, 2017; Hennecke et al., 2014; Jayawickreme et al., 2019; Quirin et al., 2020; Roberts & Wood, 2006; Wrzus & Roberts, 2017) would require a finer time resolution (e.g., in the form of measurement burst designs with daily diary assessments) to test the individual paths and processes that make up the proposed feedback loop between motivational and trait aspects of personality. Recent advances in this direction showed that daily experiences predict long-term development in the Big Five traits (Quintus et al., 2021) but more research in this field is needed.

Finally, this dissertation did not include any informant assessments, behavioral measures, or any other type of measure that is not self-report to investigate the (co-) development of life goals, the Big Five, and well-being. Hence, the results may be influenced by common method bias (Podsakoff et al., 2003). For instance, it is conceivable that well-being changes after the developmental deadline of childbearing in childfree individuals may have been noticeable to others but not internalized by the individual as part of cognitive coping strategies. Similarly, it seems plausible that individuals exaggerate their perceived importance of socially commendable goals. This has been shown in the context of personality development. Specifically, prior research showed that (the development of) self- and other-ratings can differ considerably, especially in highly socially desirable traits (Ausmees et al., 2022; Oltmanns et al., 2020; Schwaba et al., 2022). Thus, in addition to the general need for better life goal assessments (see 5.3.), future research should aim to include informant ratings as well as behavioral measures. This seems especially relevant for research focusing on goal processes.

5.6. General Conclusion

Lifespan and personality psychology recognize the importance of motivational constructs like life goals in both daily processes and long-term development, yet longitudinal research is lagging. Since, compared to other constructs in personality psychology, life goals are more tangible for a non-scientific audience, they are also well-suited to work with in psychological intervention settings. Thus, an in-depth knowledge about the development of life goals and their longitudinal associations not only advances basic research in lifespan and personality psychology but can also inform more applied research. This dissertation contributed to providing this in-depth knowledge by investigating life goals and their interrelations with personality traits and different aspects of well-being across the adult lifespan.

- Study I examined the development of nine life goals across the adult lifespan and found more pronounced changes in goals that correspond to normative developmental tasks compared to goals that are less socially scripted. Regarding goal content, it showed that personal growth and future-oriented goals were more important early in life whereas social goals that enable meaningful emotional experiences prevailed later in life. Gender moderated development, especially in normative life goals, and parenthood amplified these gender differences.
- Study II investigated if life goals and the Big Five traits develop in conjunction and found that agentic goals and traits change together, as do communal goals and traits but to a lesser extent. Career goals codeveloped with Conscientiousness whereas agentic goals with a focus on personal growth codeveloped with Extraversion and Openness. Corroborating the role of developmental tasks in structuring development, age moderated the strength of codevelopment, especially of associations that included more normative life goals. Less socially scripted life

goals that could be described as intrinsic codeveloped more strongly with traits, compared to normative life goals such as having children or career success.

- Study III tested if career and family goals assessed in young adulthood differently shape the mental health, well-being, and loneliness trajectories of people who become parents and those who remain childfree. Corroborating developmental regulation theories, the results suggest that strong parenthood goals impair the mental health and well-being of people without children, but disengaging from parenthood goals in midlife benefitted their well-being. Conversely, strong career goals impaired parental well-being, specifically due to increased negative affect. Beyond these insights on the predictive effects of life goals on well-being trajectories, Study III also showed that, against popular opinion, the mental health, well-being, and loneliness of people with and without children is more similar than different. People without children even reported better mental health and less frequent negative affect during midlife.

As laid out above, future research should aim to develop better quality measures to improve the assessment of life goals which currently represents a major barrier. Moreover, lifespan and personality psychology could benefit from better theoretical integration. Successful aging theories may also serve to inform the study of personality development including interindividual differences in change (Graham et al., 2020). Lastly, to fully capture the developmental interplay of life goals, personality, and well-being, it is essential to include the eudaimonic perspective, both on the theoretical level and especially on the analytical level.

References for Chapters 1 and 5

Abele, A. E., Hauke, N., Peters, K., Louvet, E., Szymkow, A., & Duan, Y. (2016). Facets of the Fundamental Content Dimensions: Agency with Competence and Assertiveness—Communion with Warmth and Morality. *Frontiers in Psychology*, *7*. https://doi.org/10.3389/fpsyg.2016.01810

Ach, N. K. (1935). Analyse des Willens [Analysis of Will]. In E. Abderhalden (Ed.), *Handbuch der biologishen Arbeitsmethoden*. Urban & Schwarzenberg.

Allport, G. W. (1961). *Patternd and growth in personality*. Holt, Reinhart & Winston.

Anic, P., & Tončić, M. (2013). Orientations to happiness, subjective well-being and life goals. *Psihologijske Teme*, *22*(1), 135–153.

Anusic, I., & Lucas, R. E. (2014). Do Social Relationships Buffer the Effects of Widowhood? A Prospective Study of Adaptation to the Loss of a Spouse: Social Relationships and Widowhood. *Journal of Personality*, *82*(5), 367–378. https://doi.org/10.1111/jopy.12067

Anusic, I., Lucas, R. E., & Donnellan, M. B. (2012). Dependability of Personality, Life Satisfaction, and Affect in Short-Term Longitudinal Data: Dependability in Short-Term Studies. *Journal of Personality*, *80*(1), 33–58. https://doi.org/10.1111/j.1467-6494.2011.00714.x

Anusic, I., & Schimmack, U. (2016). Stability and change of personality traits, self-esteem, and well-being: Introducing the meta-analytic stability and change model of retest correlations. *Journal of Personality and Social Psychology*, *110*(5), 766–781. https://doi.org/10.1037/pspp0000066

Anusic, I., Yap, S. C. Y., & Lucas, R. E. (2014). Does personality moderate reaction and adaptation to major life events? Analysis of life satisfaction and affect in an Australian national sample. *Journal of Research in Personality*, *51*, 69–77. https://doi.org/10.1016/j.jrp.2014.04.009

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, *55*(5), 469–480. https://doi.org/10.1037/0003-066X.55.5.469

Asendorpf, J. B., & Van Aken, M. A. G. (2003). Personality-Relationship Transaction in Adolescence: Core Versus Surface Personality Characteristics: Core Versus Surface. *Journal of Personality*, *71*(4), 629–666. https://doi.org/10.1111/1467-6494.7104005

Asselmann, E., & Specht, J. (2021). Testing the social investment principle around childbirth: Little evidence for personality maturation before and after becoming a parent. *European Journal of Personality*, *35*(1), 85–102. https://doi.org/10.1002/per.2269

Asselmann, E., & Specht, J. (2022). Dramatic effects but fast adaptation: Changes in life satisfaction and different facets of affective well-being around the death of a partner and death of a child. *Applied Psychology: Health and Well-Being*, aphw.12388. https://doi.org/10.1111/aphw.12388

Asselmann, E., & Specht, J. (2023). Baby bliss: Longitudinal evidence for set-point theory around childbirth for cognitive and affective well-being. *Emotion*. https://doi.org/10.1037/emo0001217

Atherton, O. E., Grijalva, E., Roberts, B. W., & Robins, R. W. (2021). Stability and Change in Personality Traits and Major Life Goals From College to Midlife. *Personality and Social Psychology Bulletin*, *47*(5), 841–858. https://doi.org/10.1177/0146167220949362

Ausmees, L., Kandler, C., Realo, A., Allik, J., Borkenau, P., Hřebíčková, M., & Mõttus, R. (2022). Age differences in personality traits and social desirability: A multi-rater multi-sample study. *Journal of Research in Personality*, *99*, 104245. https://doi.org/10.1016/j.jrp.2022.104245

Austin, J. T., & Vancouver, J. B. (1996). *Goal Constructs in Psychology: Structure, Process, and Content*. 38.

Baird, B. M., Lucas, R. E., & Donnellan, M. B. (2010). Life Satisfaction Across the Lifespan: Findings from Two Nationally Representative Panel Studies. *Social Indicators Research*, *99*(2), 183–203. https://doi.org/10.1007/s11205-010-9584-9

Bakan, D. (1966). *The duality of human existence: Isolation and communion in Western man.* Beacon Press.

Baltes, P. B. (1997). On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as foundation of developmental theory. *American Psychologist*, *52*(4), 366–380. https://doi.org/10.1037/0003-066X.52.4.366

Baltes, P. B., & Baltes, M. M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. In P. B. Baltes & M. M. Baltes (Eds.), *Successful Aging* (1st ed., pp. 1–34). Cambridge University Press. https://doi.org/10.1017/CBO9780511665684.003

Bandura, A. (1985). Model of Causality in Social Learning Theory. In *Cognition and psychotherapy* (pp. 81–99). Springer US.

Bass, B. C. (2015). Preparing for Parenthood?: Gender, Aspirations, and the Reproduction of Labor Market Inequality. *Gender & Society*, *29*(3), 362–385. https://doi.org/10.1177/0891243214546936

Bauer, G., Brandt, M., & Kneip, T. (2023). The Role of Parenthood for Life Satisfaction of Older Women and Men in Europe. *Journal of Happiness Studies*, *24*(1), 275–307. https://doi.org/10.1007/s10902-022-00600-8

Bauer, J. J., & McAdams, D. P. (2004). Growth Goals, Maturity, and Well-Being. *Developmental Psychology*, *40*(1), 114–127. https://doi.org/10.1037/0012-1649.40.1.114

Bauer, J. J., & McAdams, D. P. (2010). Eudaimonic growth: Narrative growth goals predict increases in ego development and subjective well-being 3 years later. *Developmental Psychology*, *46*(4), 761–772. https://doi.org/10.1037/a0019654

Bauer, J. J., McAdams, D. P., & Pals, J. L. (2008). Narrative identity and eudaimonic well-being. *Journal of Happiness Studies*, *9*(1), 81–104. https://doi.org/10.1007/s10902-006-9021-6

Baumert, A., & Schmitt, M. (2012). Personality and Information Processing. *European Journal of Personality*, *26*(2), 87–89. https://doi.org/10.1002/per.1850

Baumert, A., Schmitt, M., Perugini, M., Johnson, W., Blum, G., Borkenau, P., Costantini, G., Denissen, J. J. A., Fleeson, W., Grafton, B., Jayawickreme, E., Kurzius, E., MacLeod, C., Miller, L. C., Read, S. J., Roberts, B., Robinson, M. D., Wood, D., & Wrzus, C. (2017). Integrating Personality Structure, Personality Process, and Personality Development. *European Journal of Personality*, *31*(5), 503–528. https://doi.org/10.1002/per.2115

Bleidorn, W. (2015). What Accounts for Personality Maturation in Early Adulthood? *Current Directions in Psychological Science*, *24*(3), 245–252. https://doi.org/10.1177/0963721414568662

Bleidorn, W., Hopwood, C. J., Ackerman, R. A., Witt, E. A., Kandler, C., Riemann, R., Samuel, D. B., & Donnellan, M. B. (2020). The healthy personality from a basic trait perspective. *Journal of Personality and Social Psychology*, *118*(6), 1207–1225. https://doi.org/10.1037/pspp0000231

Bleidorn, W., Hopwood, C. J., Back, M. D., Denissen, J. J. A., Hennecke, M., Hill, P. L., Jokela, M., Kandler, C., Lucas, R. E., Luhmann, M., Orth, U., Roberts, B. W., Wagner, J., Wrzus, C., & Zimmermann, J. (2021). Personality trait stability and change. *Personality Science*, *2*, e6009. https://doi.org/10.5964/ps.6009

Bleidorn, W., Hopwood, C. J., & Lucas, R. E. (2018). Life Events and Personality Trait Change: Life Events and Trait Change. *Journal of Personality*, *86*(1), 83–96. https://doi.org/10.1111/jopy.12286

Bleidorn, W., Kandler, C., & Caspi, A. (2014). The Behavioural Genetics of Personality Development in Adulthood—Classic, Contemporary, and Future Trends. *European Journal of Personality*, *28*(3), 244–255. https://doi.org/10.1002/per.1957

Bleidorn, W., Kandler, C., Hülsheger, U. R., Riemann, R., Angleitner, A., & Spinath, F. M. (2010). Nature and nurture of the interplay between personality traits and major life goals. *Journal of Personality and Social Psychology*, *99*(2), 366–379. https://doi.org/10.1037/a0019982

Bleidorn, W., Klimstra, T. A., Denissen, J. J. A., Rentfrow, P. J., Potter, J., & Gosling, S. D. (2013). Personality Maturation Around the World: A Cross-Cultural Examination of Social-Investment Theory. *Psychological Science*, *24*(12), 2530–2540. https://doi.org/10.1177/0956797613498396

Bleidorn, W., & Schwaba, T. (2017). Personality development in emerging adulthood. In *Personality Development Across the Lifespan* (pp. 39–51). Elsevier. https://doi.org/10.1016/B978-0-12-804674-6.00004-1

Bleidorn, W., Schwaba, T., Zheng, A., Hopwood, C. J., Sosa, S., Roberts, B., & Briley, D. A. (2022). *Personality Stability and Change: A Meta-Analysis of Longitudinal Studies* [Preprint]. PsyArXiv. https://doi.org/10.31234/osf.io/eq5d6

Boudreaux, M. J., & Ozer, D. J. (2013). Goal conflict, goal striving, and psychological well-being. *Motivation and Emotion*, *37*(3), 433–443. https://doi.org/10.1007/s11031-012-9333-2

Boudrenghien, G., Frenay, M., & Bourgeois, É. (2012). Unattainable educational goals: Disengagement, reengagement with alternative goals, and consequences for subjective well-being. *European Review of Applied Psychology*, *62*(3), 147–159. https://doi.org/10.1016/j.erap.2012.04.002

Bradburn, N. M. (1969). *The structure of psychological well-being* (pp. xvi, 318). Aldine.

Brandstätter, V., Herrmann, M., & Schüler, J. (2013). The Struggle of Giving Up Personal Goals: Affective, Physiological, and Cognitive Consequences of an Action Crisis. *Personality and Social Psychology Bulletin*, *39*(12), 1668–1682. https://doi.org/10.1177/0146167213500151

Brandtstädter, J. (1989). Personal self-regulation of development: Cross-sequential analyses of development-related control beliefs and emotions. *Developmental Psychology*, *25*(1), 96–108. https://doi.org/10.1037/0012-1649.25.1.96

Brandtstädter, J. (1998). Action perspectives on human development. In R. M. Lerner (Ed.), *Handbook of child psychology*. Wiley.

Brandtstädter, J. (2009). Goal pursuit and goal adjustment: Self-regulation and intentional self-development in changing developmental contexts. *Advances in Life Course Research*, *14*(1–2), 52–62. https://doi.org/10.1016/j.alcr.2009.03.002

Brandtstädter, J., & Rothermund, K. (2002). The Life-Course Dynamics of Goal Pursuit and Goal Adjustment: A Two-Process Framework. *Developmental Review*, *22*(1), 117–150. https://doi.org/10.1006/drev.2001.0539

Brdar, I., Rijavec, M., & Miljkovic, D. (2009). Life Goals and Well-Being: Are Extrinsic Aspirations Always Detrimental to Well-Being? *Psychological Topics / Psihologijske Teme*, *18*(2), 317–334.

Brickman, P., & Campbell, D. T. (1971). Hedonic relativism and planning the good society. In M. H. Appleby, *Adaptation-Level Theory* (pp. 287–302). Academic Press.

Briley, D. A., & Tucker-Drob, E. M. (2014). Genetic and environmental continuity in personality development: A meta-analysis. *Psychological Bulletin*, *140*(5), 1303–1331. https://doi.org/10.1037/a0037091

Brose, A., Scheibe, S., & Schmiedek, F. (2013). Life contexts make a difference: Emotional stability in younger and older adults. *Psychology and Aging*, *28*(1), 148–159. https://doi.org/10.1037/a0030047

Brown, A. (2021). *Growing share of childless adults in U.S. don't expect to ever have children*. Pew Research Center. https://pewrsr.ch/3DAU3RR

Brunstein, J. C. (1993). Personal goals and subjective well-being: A longitudinal study. *Journal of Personality and Social Psychology*, *65*(5), 1061–1070. https://doi.org/10.1037/0022-3514.65.5.1061

Bühler, J. L., Orth, U., Bleidorn, W., Weber, E., Kretzschmar, A., Scheling, L., & Hopwood, C. J. (2023). Life Events and Personality Change: A Systematic Review and Meta-Analysis. *European Journal of Personality*, 08902070231190219. https://doi.org/10.1177/08902070231190219

Bühler, J. L., Weidmann, R., & Grob, A. (2021). The actor, agent, and author across the life span: Interrelations between personality traits, life goals, and life narratives in an age-

heterogeneous sample. *European Journal of Personality*, *35*(2), 168–196. https://doi.org/10.1002/per.2275

Bühler, J. L., Weidmann, R., Nikitin, J., & Grob, A. (2019). A Closer Look at Life Goals across Adulthood: Applying A Developmental Perspective to Content, Dynamics, and Outcomes of Goal Importance and Goal Attainability. *European Journal of Personality*, *33*(3), 359–384. https://doi.org/10.1002/per.2194

Burns, R. A., & Machin, M. A. (2009). Investigating the Structural Validity of Ryff's Psychological Well-Being Scales Across Two Samples. *Social Indicators Research*, *93*(2), 359–375. https://doi.org/10.1007/s11205-008-9329-1

Cantor, N., & Langston, C. A. (1989). Ups and downs of life tasks in a life transition. In *Goal concepts in personality and social psychology* (pp. 127–167). Lawrence Erlbaum Associates, Inc.

Carstensen, L. L., Fung, H. H., & Charles, S. T. (2003). Socioemotional Selectivity Theory and the Regulation of Emotion in the Second Half of Life. *Motivation and Emotion*.

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

Carver, C. S., & Scheier, M. F. (1981). The self-attention-induced feedback loop and social facilitation. *Journal of Experimental Social Psychology*, *17*(6), 545–568. https://doi.org/10.1016/0022-1031(81)90039-1

Carver, C. S., & Scheier, M. F. (2000). Scaling back goals and recalibration of the affect system are processes in normal adaptive self-regulation: Understanding 'response shift' phenomena. *Social Science & Medicine*, *50*(12), 1715–1722. https://doi.org/10.1016/S0277-9536(99)00412-8

Caspi, A., & Roberts, B. W. (2001). Personality Development Across the Life Course:The Argument for Change and Continuity. *Psychological Inquiry*, *12*(2), 49–66. https://doi.org/10.1207/S15327965PLI1202_01

Claxton, A., & Perry-Jenkins, M. (2008). No Fun Anymore: Leisure and Marital Quality Across the Transition to Parenthood. *Journal of Marriage and Family*, *70*(1), 28–43. https://doi.org/10.1111/j.1741-3737.2007.00459.x

Cross, S., & Markus, H. (1991). Possible Selves across the Life Span. *Human Development (0018716X)*, *34*(4), 230–255. https://doi.org/10.1159/000277058

Cygan-Rehm, K., & Maeder, M. (2013). The effect of education on fertility: Evidence from a compulsory schooling reform. *Labour Economics*, *25*, 35–48. https://doi.org/10.1016/j.labeco.2013.04.015

Damian, R. I., Spengler, M., Sutu, A., & Roberts, B. W. (2019). Sixteen going on sixty-six: A longitudinal study of personality stability and change across 50 years. *Journal of Personality and Social Psychology*, *117*(3), 674–695. https://doi.org/10.1037/pspp0000210

Deci, E. L., & Ryan, R. M. (1997). *Aspiration Index: Scale description*. Rochester University, Department of Clinical and Social Science in Psychology. https://selfdeterminationtheory.org/aspirations-index/

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology / Psychologie Canadienne*, *49*(3), 182–185. https://doi.org/10.1037/a0012801

Denissen, J. J. A., Luhmann, M., Chung, J. M., & Bleidorn, W. (2019). Transactions between life events and personality traits across the adult lifespan. *Journal of Personality and Social Psychology*, *116*(4), 612–633. https://doi.org/10.1037/pspp0000196

Denissen, J. J. A., van Aken, M. A. G., Penke, L., & Wood, D. (2013). Self-Regulation Underlies Temperament and Personality: An Integrative Developmental Framework. *Child Development Perspectives*, *7*(4), 255–260. https://doi.org/10.1111/cdep.12050

DeYoung, C. G. (2015). Cybernetic Big Five Theory. *Journal of Research in Personality*, *56*, 33–58. https://doi.org/10.1016/j.jrp.2014.07.004

Diekman, A. B., Brown, E. R., Johnston, A. M., & Clark, E. K. (2010). Seeking Congruity Between Goals and Roles: A New Look at Why Women Opt Out of Science, Technology, Engineering, and Mathematics Careers. *Psychological Science*, *21*(8), 1051–1057.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, *95*(3), 542–575. https://doi.org/10.1037/0033-2909.95.3.542

Diener, E., & Emmons, R. A. (1984). The independence of positive and negative affect. *Journal of Personality and Social Psychology*, *47*(5), 1105–1117. https://doi.org/10.1037/0022-3514.47.5.1105

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, *49*(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13

Diener, E., Lucas, R. E., & Scollon, C. N. (2006). Beyond the hedonic treadmill: Revising the adaptation theory of well-being. *American Psychologist*, *61*(4), 305–314. https://doi.org/10.1037/0003-066X.61.4.305

Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, Culture, and Subjective Well-Being: Emotional and Cognitive Evaluations of Life. *Annual Review of Psychology*, *54*(1), 403–425. https://doi.org/10.1146/annurev.psych.54.101601.145056

Diener, E., Sapyta, J. J., & Suh, E. (1998). Subjective Well-Being Is Essential to Well-Being. *Psychological Inquiry*, *9*(1), 33–37. https://doi.org/10.1207/s15327965pli0901_3

Digman, J. M. (1990). Personality Structure: Emergence of the Five-Factor Model. *Annual Review of Psychology*, *41*(1), 417–440. https://doi.org/10.1146/annurev.ps.41.020190.002221

Disabato, D. J., Goodman, F. R., Kashdan, T. B., Short, J. L., & Jarden, A. (2016). Different types of well-being? A cross-cultural examination of hedonic and eudaimonic well-being. *Psychological Assessment*, *28*(5), 471–482. https://doi.org/10.1037/pas0000209

Donath, O. (2015). Regretting Motherhood: A Sociopolitical Analysis. *Signs: Journal of Women in Culture and Society*, *40*(2), 343–367. https://doi.org/10.1086/678145

Doré, B., & Bolger, N. (2018). Population- and Individual-Level Changes in Life Satisfaction Surrounding Major Life Stressors. *Social Psychological and Personality Science*, *9*(7), 875–884. https://doi.org/10.1177/1948550617727589

Dweck, C. S. (2017). From needs to goals and representations: Foundations for a unified theory of motivation, personality, and development. *Psychological Review*, *124*(6), 689–719. https://doi.org/10.1037/rev0000082

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

Eid, M., & Diener, E. (2004). Global Judgments of Subjective Well-Being: Situational Variability and Long-Term Stability. *Social Indicators Research*, *65*(3), 245–277. https://doi.org/10.1023/B:SOCI.0000003801.89195.bc

Eid, M., & Larsen, R. J. (Eds.). (2008). *The science of subjective well-being*. Guilford Press.

Elder, G. H., Johnson, M. K., & Crosnoe, R. (2003). The Emergence and Development of Life Course Theory. In J. T. Mortimer & M. J. Shanahan (Eds.), *Handbook of the Life Course* (pp. 3–19). Springer US. https://doi.org/10.1007/978-0-306-48247-2_1

Elliot, A. J., & Thrash, T. M. (2002). Approach-avoidance motivation in personality: Approach and avoidance temperaments and goals. *Journal of Personality and Social Psychology*, *82*(5), 804–818. https://doi.org/10.1037/0022-3514.82.5.804

Elwert, F., & Winship, C. (2014). Endogenous Selection Bias: The Problem of Conditioning on a Collider Variable. *Annual Review of Sociology*, *40*(1), 31–53. https://doi.org/10.1146/annurev-soc-071913-043455

Emmons, R. A. (1986). Personal strivings: An approach to personality and subjective well-being. *Journal of Personality and Social Psychology*, *51*(5), 1058–1068. https://doi.org/10.1037/0022-3514.51.5.1058

Emmons, R. A. (1991). Personal Strivings, Daily Life Events, and Psychological and Physical Well-Being. *Journal of Personality*, *59*(3), 453–472. https://doi.org/10.1111/j.1467-6494.1991.tb00256.x

Emmons, R. A. (1992). Abstract versus concrete goals: Personal striving level, physical illness, and psychological well-being. *Journal of Personality and Social Psychology*, *62*(2), 292–300. https://doi.org/10.1037/0022-3514.62.2.292

Emmons, R. A. (1993). Current Status of the Motive Concept. In K. H. Craik, R. Hogan, & R. N. Wolfe (Eds.), *Fifty Years of Personality Psychology* (pp. 187–196). Springer US. https://doi.org/10.1007/978-1-4899-2311-0_13

Emmons, R. A. (2003). Personal goals, life meaning, and virtue: Wellsprings of a positive life. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived.* (pp. 105–128). American Psychological Association. https://doi.org/10.1037/10594-005

Emmons, R. A., & Kaiser, H. (1996). Goal Orientation and Emotional Well-Being: Linking Goals and Affect Through the Self. In L. L. Martin & A. Tesser (Eds.), *Striving and Feeling*. Psychology Press.

Entringer, T. M., Gebauer, J. E., & Paulhus, D. L. (2022). Extracting Agency and Communion From the Big Five: A Four-Way Competition. *Assessment*, *29*(6), 1216–1235. https://doi.org/10.1177/10731911211003978

Erikson, E. H. (1963). *Childhood and Society (2nd. Ed)*. Norton.

Fetvadjiev, V. H., & He, J. (2019). The longitudinal links of personality traits, values, and well-being and self-esteem: A five-wave study of a nationally representative sample. *Journal of Personality and Social Psychology*, *117*(2), 448–464. https://doi.org/10.1037/pspp0000212

Fishbach, A., & Ferguson, M. J. (2007). The goal construct in social psychology. In A. W. Kruglanski & E. T. Higgins (Eds.), *Social psychology: Handbook of basic principles* (2nd ed). Guilford Press.

Freund, A. M. (2008). Successful Aging as Management of Resources: The Role of Selection, Optimization, and Compensation. *Research in Human Development, 5*(2), 94–106. https://doi.org/10.1080/15427600802034827

Freund, A. M. (2020). The bucket list effect: Why leisure goals are often deferred until retirement. *American Psychologist*, *75*(4), 499–510. https://doi.org/10.1037/amp0000617

Freund, A. M., & Baltes, P. B. (2002). Life-management strategies of selection, optimization and compensation: Measurement by self-report and construct validity. *Journal of Personality and Social Psychology, 82*(4), 642–662.

Freund, A. M., & Hennecke, M. (2015). On Means and Ends: The Role of Goal Focus in Successful Goal Pursuit. *Current Directions in Psychological Science, 24*(2), 149–153. https://doi.org/10.1177/0963721414559774

Freund, A. M., Hennecke, M., & Riediger, M. (2010). Age-related differences in outcome and process goal focus. *European Journal of Developmental Psychology, 7*(2), 198–222. https://doi.org/10.1080/17405620801969585

Frey, R., Pedroni, A., Mata, R., Rieskamp, J., & Hertwig, R. (2017). Risk preference shares the psychometric structure of major psychological traits. *Science Advances*, *3*(10), e1701381. https://doi.org/10.1126/sciadv.1701381

Fujita, F., & Diener, E. (2005). Life Satisfaction Set Point: Stability and Change. *Journal of Personality and Social Psychology*, *88*(1), 158–164. https://doi.org/10.1037/0022-3514.88.1.158

Furr, R. M., & Funder, D. C. (1998). A Multimodal Analysis of Personal Negativity. *Journal of Personality and Social Psychology*, *74*(6), 1580–1591.

Gebauer, J. E., Sedikides, C., Wagner, J., Bleidorn, W., Rentfrow, P. J., Potter, J., & Gosling, S. D. (2015). Cultural norm fulfillment, interpersonal belonging, or getting ahead? A large-scale cross-cultural test of three perspectives on the function of self-esteem. *Journal of Personality and Social Psychology*, *109*(3), 526–548. https://doi.org/10.1037/pspp0000052

Gerstorf, D., Ram, N., Estabrook, R., Schupp, J., Wagner, G. G., & Lindenberger, U. (2008a). Life satisfaction shows terminal decline in old age: Longitudinal evidence

from the German Socio-Economic Panel Study (SOEP). *Developmental Psychology*, *44*(4), 1148–1159. https://doi.org/10.1037/0012-1649.44.4.1148

Gerstorf, D., Ram, N., Estabrook, R., Schupp, J., Wagner, G. G., & Lindenberger, U. (2008b). Life satisfaction shows terminal decline in old age: Longitudinal evidence from the German Socio-Economic Panel Study (SOEP). *Developmental Psychology*, *44*(4), 1148–1159. https://doi.org/10.1037/0012-1649.44.4.1148

Goldberg, L. R. (1990). An alternative" description of personality": The big-five factor structure. *Journal of Personality and Social Psychology*, *59*(6), 1216–1229. https://doi.org/10.1037/0022-3514.59.6.1216

Gollwitzer, P. M., & Sheeran, P. (2006). Implementation Intentions and Goal Achievement: A Meta-analysis of Effects and Processes. In *Advances in Experimental Social Psychology* (Vol. 38, pp. 69–119). Academic Press. https://doi.org/10.1016/S0065-2601(06)38002-1

Graham, E. K., Weston, S. J., Gerstorf, D., Yoneda, T. B., Booth, T., Beam, C. R., Petkus, A. J., Drewelies, J., Hall, A. N., Bastarache, E. D., Estabrook, R., Katz, M. J., Turiano, N. A., Lindenberger, U., Smith, J., Wagner, G. G., Pedersen, N. L., Allemand, M., Spiro, A., … Mroczek, D. K. (2020). Trajectories of Big Five Personality Traits: A Coordinated Analysis of 16 Longitudinal Samples. *European Journal of Personality*, *34*(3), 301–321. https://doi.org/10.1002/per.2259

Greenhaus, J., & Allen, T. D. (2011). Work–family balance: A review and extension of the literature. In L. E. Tetrick, *Handbook of occupational health psychology* (pp. 165–183). American Psychological Association. 10.1037/10474-000

Gudmundsdottir, G. R., Pfund, G. N., Hill, P. L., & Olaru, G. (2023). Reciprocal associations between sense of purpose and subjective well-being in old age. *European Journal of Personality*, 089020702311767. https://doi.org/10.1177/08902070231176702

Haase, C. M., Heckhausen, J., & Wrosch, C. (2013). Developmental regulation across the life span: Toward a new synthesis. *Developmental Psychology*, *49*(5), 964–972. https://doi.org/10.1037/a0029231

Habermas, T., & Bluck, S. (2000). Getting a Life: The Emergence of the Life Story in Adolescence. *Psychological Bulletin*, *126*(5), 748–769.

Haehner, P., Pfeifer, L. S., Fassbender, I., & Luhmann, M. (2023). Are changes in the perception of major life events associated with changes in subjective well-being? *Journal of Research in Personality*, *102*, 104321. https://doi.org/10.1016/j.jrp.2022.104321

Haehner, P., Rakhshani, A., Fassbender, I., Lucas, R. E., Donnellan, M. B., & Luhmann, M. (2023). Perception of major life events and personality trait change. *European Journal of Personality*, *37*(5), 524–542. https://doi.org/10.1177/08902070221107973

Harris, M. A., Brett, C. E., Johnson, W., & Deary, I. J. (2016). Personality stability from age 14 to age 77 years. *Psychology and Aging*, *31*(8), 862–874. https://doi.org/10.1037/pag0000133

Havighurst, R. J. (1961). Successful Aging1. *The Gerontologist*, *1*(1), 8–13. https://doi.org/10.1093/geront/1.1.8

Havighurst, R. J. (1972). *Developmental tasks and education*. McKay Company.

Headey, B. (2008). Life Goals Matter to Happiness: A Revision of Set-Point Theory. *Social Indicators Research*, *86*(2), 213–231. https://doi.org/10.1007/s11205-007-9138-y

Headey, B., Muffels, R., & Wagner, G. G. (2013). Choices Which Change Life Satisfaction: Similar Results for Australia, Britain and Germany. *Social Indicators Research*, *112*(3), 725–748. https://doi.org/10.1007/s11205-012-0079-8

Heckhausen, H., & Kuhl, J. (1985). From Wishes to Action: The Dead Ends and Short Cuts on the Long Way to Action. In *Goal Directed Behavior*. Routledge.

Heckhausen, J. (1999). *Developmental regulation in adulthood: Age-normative and sociostructural constraints as adaptive challenges* (pp. xi, 250). Cambridge University Press.

Heckhausen, J. (2000). 10 - Developmental Regulation Across the Life Span: An Action-Phase Model of Engagement and Disengagement With Developmental Goals. In J. Heckhausen (Ed.), *Advances in Psychology* (Vol. 131, pp. 213–231). North-Holland. https://doi.org/10.1016/S0166-4115(00)80013-8

Heckhausen, J., Wrosch, C., & Fleeson, W. (2001). Developmental regulation before and after a developmental deadline: The sample case of "biological clock" for childbearing. *Psychology and Aging*, *16*(3), 400–413. https://doi.org/10.1037/0882-7974.16.3.400

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

Heckhausen, J., Wrosch, C., & Schulz, R. (2019). Agency and Motivation in Adulthood and Old Age. *Annual Review of Psychology*, *70*(1), 191–217. https://doi.org/10.1146/annurev-psych-010418-103043

Heintzelman, S. J. (2018). Eudaimonia in the contemporary science of subjective well-being: Psychological well-being, self-determination, and meaning in life. In E. Diener, S. Oishi, & L. Tay (Eds.), *Handbook of well-being*. DEF Publisher.

Hennecke, M., Bleidorn, W., Denissen, J. J. A., & Wood, D. (2014). A Three–Part Framework for Self–Regulated Personality Development across Adulthood. *European Journal of Personality*, *28*(3), 289–299. https://doi.org/10.1002/per.1945

Hentschel, S., Eid, M., & Kutscher, T. (2017). The Influence of Major Life Events and Personality Traits on the Stability of Affective Well-Being. *Journal of Happiness Studies*, *18*(3), 719–741. https://doi.org/10.1007/s10902-016-9744-y

Hill, P. L., Burrow, A. L., Brandenberger, J. W., Lapsley, D. K., & Quaranto, J. C. (2010). Collegiate purpose orientations and well-being in early and middle adulthood. *Journal of Applied Developmental Psychology*, *31*(2), 173–179. https://doi.org/10.1016/j.appdev.2009.12.001

Hoppmann, C., & Smith, J. (2007). Life-History Related Differences in Possible Selves in Very Old Age. *The International Journal of Aging and Human Development*, *64*(2), 109–127. https://doi.org/10.2190/GL71-PW45-Q481-5LN7

Hudson, N. W., Briley, D. A., Chopik, W. J., & Derringer, J. (2019). You have to follow through: Attaining behavioral change goals predicts volitional personality change. *Journal of Personality and Social Psychology*, *117*(4), 839–857. https://doi.org/10.1037/pspp0000221

Hudson, N. W., & Fraley, R. C. (2016). Do People's Desires to Change Their Personality Traits Vary With Age? An Examination of Trait Change Goals Across Adulthood. *Social Psychological and Personality Science*, *7*(8), 847–856. https://doi.org/10.1177/1948550616657598

Hudson, N. W., Fraley, R. C., Chopik, W. J., & Briley, D. A. (2020). Change Goals Robustly Predict Trait Growth: A Mega-Analysis of a Dozen Intensive Longitudinal Studies Examining Volitional Change. *Social Psychological and Personality Science*, *11*(6), 723–732. https://doi.org/10.1177/1948550619878423

Huta, V., & Waterman, A. S. (2014). Eudaimonia and Its Distinction from Hedonia: Developing a Classification and Terminology for Understanding Conceptual and Operational Definitions. *Journal of Happiness Studies*, *15*(6), 1425–1456. https://doi.org/10.1007/s10902-013-9485-0

Hutteman, R., Hennecke, M., Orth, U., Reitz, A. K., & Specht, J. (2014). Developmental Tasks as a Framework to Study Personality Development in Adulthood and Old Age. *European Journal of Personality*, *28*(3), 267–278. https://doi.org/10.1002/per.1959

Infurna, F. J., Gerstorf, D., & Lachman, M. E. (2020). Midlife in the 2020s: Opportunities and challenges. *American Psychologist*, *75*(4), 470–485. https://doi.org/10.1037/amp0000591

Jayawickreme, E., Zachry, C. E., & Fleeson, W. (2019). Whole Trait Theory: An integrative approach to examining personality structure and process. *Personality and Individual Differences*, *136*, 2–11. https://doi.org/10.1016/j.paid.2018.06.045

Johnson, W., McGue, M., & Krueger, R. F. (2005). Personality Stability in Late Adulthood: A Behavioral Genetic Analysis. *Journal of Personality*, *73*(2), 523–552. https://doi.org/10.1111/j.1467-6494.2005.00319.x

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

Kandler, C., Zimmermann, J., & McAdams, D. P. (2014). Core and Surface Characteristics for the Description and Theory of Personality Differences and Development. *European Journal of Personality*, *28*(3), 231–243. https://doi.org/10.1002/per.1952

Kasser, T., & Ahuvia, A. (2002). Materialistic values and well-being in business students. *European Journal of Social Psychology*, *32*(1), 137–146. https://doi.org/10.1002/ejsp.85

Kasser, T., & Ryan, R. M. (2001). Be careful what you wish for: Optimal functioning and the relative attainment of intrinsic and extrinsic goals. In *Life goals and well-being: Towards a positive psychology of human striving* (pp. 116–131). Hogrefe & Huber Publishers.

Kiendl, K., & Hennecke, M. (2022). The measurement of goal dimensions: A critical review. *Motivation Science*, *8*(3), 215–229. https://doi.org/10.1037/mot0000268

King, L. A., Richards, J. H., & Stemmerich, E. (1998). Daily Goals, Life Goals, and Worst Fears: Means, Ends, and Subjective Well-Being. *Journal of Personality*, *66*(5), 713–744. https://doi.org/10.1111/1467-6494.00030

Klug, H. J. P., & Maier, G. W. (2015). Linking Goal Progress and Subjective Well-Being: A Meta-analysis. *Journal of Happiness Studies*, *16*(1), 37–65. https://doi.org/10.1007/s10902-013-9493-0

Knecht, M., & Freund, A. M. (2016). Boundary Management: A Time-Sampling Study on Managing Work and Private Life in Middle Adulthood. *Research in Human Development*, *13*(4), 297–311. https://doi.org/10.1080/15427609.2016.1234307

Ko, H.-J., Hooker, K., Geldhof, G. J., & McAdams, D. P. (2016). Longitudinal purpose in life trajectories: Examining predictors in late midlife. *Psychology and Aging*, *31*(7), 693–698. https://doi.org/10.1037/pag0000093

Krämer, M. D., & Rodgers, J. L. (2020). The impact of having children on domain-specific life satisfaction: A quasi-experimental longitudinal investigation using the Socio-Economic Panel (SOEP) data. *Journal of Personality and Social Psychology*, *119*(6), 1497–1514. https://doi.org/10.1037/pspp0000279

Krämer, M. D., Rohrer, J. M., Lucas, R. E., & Richter, D. (2023). *Life events and life satisfaction: Estimating effects of multiple life events in combined models*. PsyArXiv. https://doi.org/10.31234/osf.io/wfg8h

Krämer, M. D., Van Scheppingen, M. A., Chopik, W. J., & Richter, D. (2023). The transition to grandparenthood: No consistent evidence for change in the Big Five personality traits and life satisfaction. *European Journal of Personality*, *37*(5), 560–586. https://doi.org/10.1177/08902070221118443

Kritzler, S., Rakhshani, A., Terwiel, S., Fassbender, I., Donnellan, M. B., Lucas, R. E., & Luhmann, M. (2023). How are common major life events perceived? Exploring differences between and variability of different typical event profiles and raters. *European Journal of Personality*, *37*(2), 171–186. https://doi.org/10.1177/08902070221076586

Kuenemund, A., Zwick, S., Doering, B. K., Conrad, N., Rief, W., & Exner, C. (2013). Decline in attainability of communion and agency life goals over 2 years following acquired brain injury and the impact on subjective well-being. *Neuropsychological Rehabilitation*, *23*(5), 678–697. https://doi.org/10.1080/09602011.2013.801779

Kunzmann, U., Kappes, C., & Wrosch, C. (2014). Emotional aging: A discrete emotions perspective. *Frontiers in Psychology*, *5*. https://www.frontiersin.org/articles/10.3389/fpsyg.2014.00380

Kunzmann, U., Richter, D., & Schmukle, S. C. (2013). Stability and change in affective experience across the adult life span: Analyses with a national sample from Germany. *Emotion*, *13*(6), 1086–1095. https://doi.org/10.1037/a0033572

Kunzmann, U., & Thomas, S. (2014). Multidirectional age differences in anger and sadness. *Psychology and Aging*, *29*(1), 16–27. https://doi.org/10.1037/a0035751

Lachman, M. E. (2015). Mind the Gap in the Middle: A Call to Study Midlife. *Research in Human Development*, *12*(3–4), 327–334. https://doi.org/10.1080/15427609.2015.1068048

Lawes, M., Hetschko, C., Schöb, R., Stephan, G., & Eid, M. (2023). The impact of unemployment on cognitive, affective, and eudaimonic well-being facets: Investigating immediate effects and short-term adaptation. *Journal of Personality and Social Psychology*, *124*(3), 659–681. https://doi.org/10.1037/pspp0000417

LeFebvre, A., & Huta, V. (2021). Age and Gender Differences in Eudaimonic, Hedonic, and Extrinsic Motivations. *Journal of Happiness Studies*, *22*(5), 2299–2321. https://doi.org/10.1007/s10902-020-00319-4

Little, B. R. (1989). Personal projects analysis: Trivial pursuits, magnificent obsessions, and the search for coherence. In *Personality psychology: Recent trends and emerging directions* (pp. 15–31). Springer US.

Lucas, R. E. (2007). Long-term disability is associated with lasting changes in subjective well-being: Evidence from two nationally representative longitudinal studies. *Journal of Personality and Social Psychology*, *92*(4), 717–730. https://doi.org/10.1037/0022-3514.92.4.717

Lucas, R. E., Clark, A. E., Georgellis, Y., & Diener, E. (2004). Unemployment Alters the Set Point for Life Satisfaction. *Psychological Science*, *15*(1), 8–13. https://doi.org/10.1111/j.0963-7214.2004.01501002.x

Lucas, R. E., & Donnellan, M. B. (2007). How stable is happiness? Using the STARTS model to estimate the stability of life satisfaction. *Journal of Research in Personality*, *41*(5), 1091–1098. https://doi.org/10.1016/j.jrp.2006.11.005

Lüdtke, O., Trautwein, U., & Husemann, N. (2009). Goal and Personality Trait Development in a Transitional Period: Assessing Change and Stability in Personality Development. *Personality and Social Psychology Bulletin*, *35*(4), 428–441. https://doi.org/10.1177/0146167208329215

Luhmann, M., Fassbender, I., Alcock, M., & Haehner, P. (2021). A dimensional taxonomy of perceived characteristics of major life events. *Journal of Personality and Social Psychology*, *121*(3), 633–668. https://doi.org/10.1037/pspp0000291

Luhmann, M., Hawkley, L. C., Eid, M., & Cacioppo, J. T. (2012). Time frames and the distinction between affective and cognitive well-being. *Journal of Research in Personality*, *46*(4), 431–441. https://doi.org/10.1016/j.jrp.2012.04.004

Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: A meta-analysis. *Journal of Personality and Social Psychology*, *102*(3), 592–615. https://doi.org/10.1037/a0025948

Luhmann, M., Orth, U., Specht, J., Kandler, C., & Lucas, R. E. (2014). Studying Changes in Life Circumstances and Personality: It's about Time. *European Journal of Personality*, *28*(3), 256–266. https://doi.org/10.1002/per.1951

Mackenzie, C. S., Karaoylas, E. C., & Starzyk, K. B. (2018). Lifespan Differences in a Self Determination Theory Model of Eudaimonia: A Cross-Sectional Survey of Younger, Middle-Aged, and Older Adults. *Journal of Happiness Studies*, *19*(8), 2465–2487. https://doi.org/10.1007/s10902-017-9932-4

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

Mayseless, O., & Keren, E. (2014). Finding a Meaningful Life as a Developmental Task in Emerging Adulthood: The Domains of Love and Work Across Cultures. *Emerging Adulthood*, *2*(1), 63–73. https://doi.org/10.1177/2167696813515446

McAdams, D. P. (1989). The Development of a Narrative Identity. In D. M. Buss & N. Cantor (Eds.), *Personality Psychology: Recent Trends and Emerging Directions* (pp. 160–174). Springer US. https://doi.org/10.1007/978-1-4684-0634-4_12

McAdams, D. P. (1997). Chapter 1—A Conceptual History of Personality Psychology. In R. Hogan, J. Johnson, & S. Briggs (Eds.), *Handbook of Personality Psychology* (pp. 3–39). Academic Press. https://doi.org/10.1016/B978-012134645-4/50002-0

McAdams, D. P., de St. Aubin, E., & Logan, R. L. (1993). Generativity Among Young, Midlife, and Older Adults. *Psychology and Aging*, *8*(2), 221–230.

McAdams, D. P., Diamond, A., de St. Aubin, E., & Mansfield, E. (1997). Stories of commitment: The psychosocial construction of generative lives. *Journal of Personality and Social Psychology*, *72*(3), 678–694. https://doi.org/10.1037/0022-3514.72.3.678

McAdams, D. P., & Olson, B. D. (2010). Personality Development: Continuity and Change Over the Life Course. *Annual Review of Psychology*, *61*(1), 517–542. https://doi.org/10.1146/annurev.psych.093008.100507

McAdams, D. P., & Pals, J. L. (2006). A new Big Five: Fundamental principles for an integrative science of personality. *American Psychologist*, *61*(3), 204–217. https://doi.org/10.1037/0003-066X.61.3.204

McCabe, K. O., & Fleeson, W. (2012). What Is Extraversion For? Integrating Trait and Motivational Perspectives and Identifying the Purpose of Extraversion. *Psychological Science*, *23*(12), 1498–1505. https://doi.org/10.1177/0956797612444904

McCabe, K. O., & Fleeson, W. (2016). Are traits useful? Explaining trait manifestations as tools in the pursuit of goals. *Journal of Personality and Social Psychology*, *110*(2), 287–301. https://doi.org/10.1037/a0039490

McCrae, R. R., & Costa, P. T. (2008). Empirical and Theoretical Status of the Five-Factor Model of Personality Traits. In G. Boyle, G. Matthews, & D. Saklofske, *The SAGE Handbook of Personality Theory and Assessment: Volume 1—Personality Theories and Models* (pp. 273–294). SAGE Publications Ltd. https://doi.org/10.4135/9781849200462.n13

McCrae, R. R., & John, O. P. (1992). An Introduction to the Five-Factor Model and Its Applications. *Journal of Personality*, *60*(2), 175–215. https://doi.org/10.1111/j.1467-6494.1992.tb00970.x

McGregor, I., McAdams, D. P., & Little, B. R. (2006). Personal projects, life stories, and happiness: On being true to traits. *Journal of Research in Personality*, *40*(5), 551–572. https://doi.org/10.1016/j.jrp.2005.05.002

Mehta, C. M., Arnett, J. J., Palmer, C. G., & Nelson, L. J. (2020). Established adulthood: A new conception of ages 30 to 45. *American Psychologist*, *75*(4), 431–444. https://doi.org/10.1037/amp0000600

Milojev, P., & Sibley, C. G. (2017). Normative personality trait development in adulthood: A 6-year cohort-sequential growth model. *Journal of Personality and Social Psychology*, *112*(3), 510–526. https://doi.org/10.1037/pspp0000121

Moore, A. M., Holding, A. C., Buchardt, L., & Koestner, R. (2021). On the efficacy of volitional personality change in young adulthood: Convergent evidence using a longitudinal personal goal paradigm. *Motivation and Emotion*, *45*(2), 171–185. https://doi.org/10.1007/s11031-021-09865-7

Mõttus, R., Briley, D. A., Zheng, A., Mann, F. D., Engelhardt, L. E., Tackett, J. L., Harden, K. P., & Tucker-Drob, E. M. (2019). Kids becoming less alike: A behavioral genetic analysis of developmental increases in personality variance from childhood to adolescence. *Journal of Personality and Social Psychology*, *117*(3), 635–658. https://doi.org/10.1037/pspp0000194

Mõttus, R., Kandler, C., Bleidorn, W., Riemann, R., & McCrae, R. R. (2017). Personality traits below facets: The consensual validity, longitudinal stability, heritability, and

utility of personality nuances. *Journal of Personality and Social Psychology*, *112*(3), 474–490. https://doi.org/10.1037/pspp0000100

Mõttus, R., & Rozgonjuk, D. (2021). Development is in the details: Age differences in the Big Five domains, facets, and nuances. *Journal of Personality and Social Psychology*, *120*(4), 1035–1048. https://doi.org/10.1037/pspp0000276

Mõttus, R., Wood, D., Condon, D. M., Back, M. D., Baumert, A., Costantini, G., Epskamp, S., Greiff, S., Johnson, W., Lukaszewski, A., Murray, A., Revelle, W., Wright, A. G. C., Yarkoni, T., Ziegler, M., & Zimmermann, J. (2020). Descriptive, Predictive and Explanatory Personality Research: Different Goals, Different Approaches, but a Shared Need to Move beyond the Big Few Traits. *European Journal of Personality*, *34*(6), 1175–1201. https://doi.org/10.1002/per.2311

Nelson, S. K., Kushlev, K., English, T., Dunn, E. W., & Lyubomirsky, S. (2013). In Defense of Parenthood: Children Are Associated With More Joy Than Misery. *Psychological Science*, *24*(1), 3–10. https://doi.org/10.1177/0956797612447798

Nelson, S. K., Kushlev, K., & Lyubomirsky, S. (2014). The pains and pleasures of parenting: When, why, and how is parenthood associated with more or less well-being? *Psychological Bulletin*, *140*(3), 846–895. https://doi.org/10.1037/a0035444

Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2010). Self-Determination Theory and the Relation of Autonomy to Self-Regulatory Processes and Personality Development. In R. H. Hoyle (Ed.), *Handbook of Personality and Self-Regulation* (pp. 375–402). Wiley-Blackwell. https://doi.org/10.1002/9781444318111.ch17

Nikitin, J., & Freund, A. M. (2008). The Role of Social Approach and Avoidance Motives for Subjective Well-Being and the Successful Transition to Adulthood. *Applied Psychology*, *57*(s1), 90–111. https://doi.org/10.1111/j.1464-0597.2008.00356.x

Nomaguchi, K., & Milkie, M. A. (2017). Sociological Perspectives on Parenting Stress: How Social Structure and Culture Shape Parental Strain and the Well-Being of Parents and Children. In K. Deater-Deckard & R. Panneton (Eds.), *Parental Stress and Early Child Development* (pp. 47–73). Springer International Publishing. https://doi.org/10.1007/978-3-319-55376-4_3

Ntoumanis, N., Healy, L. C., Sedikides, C., Duda, J., Stewart, B., Smith, A., & Bond, J. (2014). When the Going Gets Tough: The "Why" of Goal Striving Matters. *Journal of Personality*, *82*(3), 225–236. https://doi.org/10.1111/jopy.12047

OECD. (2021). *Pensions at a Glance: PaG2021—Effective labour market exit age* [dataset]. https://stats.oecd.org/Index.aspx?QueryId=111940

Oishi, S., Diener, E., Suh, E., & Lucas, R. E. (1999). Value as a Moderator in Subjective Well-Being. *Journal of Personality*, *67*(1), 157–184. https://doi.org/10.1111/1467-6494.00051

Olaru, G., Stieger, M., Rüegger, D., Kowatsch, T., Flückiger, C., Roberts, B. W., & Allemand, M. (2022). Personality change through a digital-coaching intervention: Using measurement invariance testing to distinguish between trait domain, facet, and nuance change. *European Journal of Personality*, 089020702211450. https://doi.org/10.1177/08902070221145088

Olaru, G., Van Scheppingen, M. A., Bleidorn, W., & Denissen, J. J. A. (2023). The link between personality, global, and domain-specific satisfaction across the adult lifespan. *Journal of Personality and Social Psychology*, *125*(3), 590–606. https://doi.org/10.1037/pspp0000461

Oltmanns, J. R., Jackson, J. J., & Oltmanns, T. F. (2020). Personality change: Longitudinal self-other agreement and convergence with retrospective-reports. *Journal of Personality and Social Psychology*, *118*(5), 1065–1079. https://doi.org/10.1037/pspp0000238

Park, C. L. (2010). Making sense of the meaning literature: An integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological Bulletin*, *136*(2), 257–301. https://doi.org/10.1037/a0018301

Partsch, M. V., Schmidt, I., Haehner, P., & Lechner, C. M. (2023). *VaLiGo—Measuring Basic Human Values and Life Goals With a Nested 30–20–10-Item Inventory (German Version)* [Preprint]. PsyArXiv. https://doi.org/10.31234/osf.io/evr7a

Penke, L., & Jokela, M. (2016). The evolutionary genetics of personality revisited. *Current Opinion in Psychology*, *7*, 104–109. https://doi.org/10.1016/j.copsyc.2015.08.021

Pfund, G. N., & Hill, P. L. (2018). The Multifaceted Benefits of Purpose in Life. *The International Forum for Logotherapy*, *41*, 27–37.

Pinquart, M., Silbereisen, R. K., & Fröhlich, C. (2009). Life goals and purpose in life in cancer patients. *Supportive Care in Cancer*, *17*(3), 253–259. https://doi.org/10.1007/s00520-008-0450-0

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended

remedies. *Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Pöhlmann, K. (2001). Agency- and communion-orientation in life goals: Impacts on goal pursuit strategies and psychological well-being. In *Life goals and well-being: Towards a positive psychology of human striving* (pp. 68–84). Hogrefe & Huber Publishers.

Pöhlmann, K., & Brunstein, J. C. (1997). GOALS: Ein Fragebogen zur Messung von Lebenszielen [GOALS: A questionnaire for assessing life goals]. *Diagnostica*, *43*, 63–79.

Pöhlmann, K., Brunstein, J. C., Koch, R., Brähler, E., & Joraschky, P. (2010). Der Lebenszielfragebogen GOALS: Befunde zur internen und externen Validität auf der Basis einer repräsentativen Bevölkerungsstichprobe und einer klinischen Stichprobe [The life goal questionnaire GOALS: Findings on internal and external validity based on a representative population sample and a clinical sample.]. *Zeitschrift Für Medizinische Psychologie*, *19*(2), 70–80.

Pollmann-Schult, M. (2014). Parenthood and Life Satisfaction: Why Don't Children Make People Happy?: Parenthood and Life Satisfaction. *Journal of Marriage and Family*, *76*(2), 319–336. https://doi.org/10.1111/jomf.12095

Powers, W. T. (1973). Feedback: Beyond Behaviorism. *Science*, *179*, 351–356.

Pusch, S., Mund, M., Hagemeyer, B., & Finn, C. (2019). Personality Development in Emerging and Young Adulthood: A Study of Age Differences. *European Journal of Personality*, *33*(3), 245–263. https://doi.org/10.1002/per.2181

Quintus, M., Egloff, B., & Wrzus, C. (2021). Daily life processes predict long-term development in explicit and implicit representations of Big Five traits: Testing predictions from the TESSERA (Triggering situations, Expectancies, States and State Expressions, and ReActions) framework. *Journal of Personality and Social Psychology*, *120*(4), 1049–1073. https://doi.org/10.1037/pspp0000361

Quirin, M., Robinson, M. D., Rauthmann, J. F., Kuhl, J., Read, S. J., Tops, M., & DeYoung, C. G. (2020). The Dynamics of Personality Approach (DPA): 20 Tenets for Uncovering the Causal Mechanisms of Personality. *European Journal of Personality*, *34*(6), 947–968. https://doi.org/10.1002/per.2295

Rakhshani, A., Lucas, R. E., Donnellan, M. B., Fassbender, I., & Luhmann, M. (2022). Personality Traits and Perceptions of Major Life Events. *European Journal of Personality*, *36*(4), 683–703. https://doi.org/10.1177/08902070211045825

Recksiedler, C., Settersten, R. A., Geldhof, G. J., & Hooker, K. (2019). Stable goals despite economic strain: Young adults' goal appraisals across the Great Recession. *International Journal of Behavioral Development*, *43*(2), 147–156. https://doi.org/10.1177/0165025418798494

Ribeiro, C. C., Yassuda, M. S., & Neri, A. L. (2020). Purpose in life in adulthood and older adulthood: Integrative review. *Ciência & Saúde Coletiva*, *25*, 2127–2142. https://doi.org/10.1590/1413-81232020256.20602018

Richter, D., Krämer, M. D., Tang, N. K. Y., Montgomery-Downs, H. E., & Lemola, S. (2019). Long-term effects of pregnancy and childbirth on sleep satisfaction and duration of first-time and experienced mothers and fathers. *Sleep*, *42*(4). https://doi.org/10.1093/sleep/zsz015

Riediger, M., Freund, A. M., & Baltes, P. B. (2005). Managing Life Through Personal Goals: Intergoal Facilitation and Intensity of Goal Pursuit in Younger and Older Adulthood. *The Journals of Gerontology: Series B*, *60*(2), P84–P91. https://doi.org/10.1093/geronb/60.2.P84

Rijavec, M., Brdar, I., & Miljković, D. (2011). ASPIRATIONS AND WELL-BEING: EXTRINSIC VS. INTRINSIC LIFE GOALS. *Drustvena Istrazivanja*, *20*(3 (113)), 693–710. https://doi.org/10.5559/di.20.3.05

Ritter, J. O., & Freund, A. M. (2014). Values Across Adulthood: A Neglected Developmental Construct Guiding Thought and Action Over Time. In P. Verhaeghen & C. K. Hertzog (Eds.), *The Oxford handbook of emotion, social cognition, and problem solving in adulthood* (pp. 273–287). Oxford University Press.

Roberts, B. W. (2009). Back to the future: Personality and Assessment and personality development. *Journal of Research in Personality*, *43*(2), 137–145. https://doi.org/10.1016/j.jrp.2008.12.015

Roberts, B. W., & DelVecchio, W. F. (2000). The rank-order consistency of personality traits from childhood to old age: A quantitative review of longitudinal studies. *Psychological Bulletin*, *126*(1), 3–25. https://doi.org/10.1037/0033-2909.126.1.3

Roberts, B. W., O'Donnell, M., & Robins, R. W. (2004). Goal and Personality Trait Development in Emerging Adulthood. *Journal of Personality and Social Psychology*, *87*(4), 541–550. https://doi.org/10.1037/0022-3514.87.4.541

Roberts, B. W., & Robins, R. W. (2000). Broad Dispositions, Broad Aspirations: The Intersection of Personality Traits and Major Life Goals. *Personality and Social Psychology Bulletin*, *26*(10), 1284–1296. https://doi.org/10.1177/0146167200262009

Roberts, B. W., & Wood, D. (2006). Personality Development in the Context of the Neo-Socioanalytic Model of Personality. In D. K. Mroczek & T. D. Little (Eds.), *Handbook of Personality Development*. Routledge. https://doi.org/10.4324/9781315805610.ch2

Rokeach, M. (1973). *The Nature of Human Values*. Free Press.

Rudman, L. A., & Mescher, K. (2013). Penalizing Men Who Request a Family Leave: Is Flexibility Stigma a Femininity Stigma?: Feminizing Male Leave Requesters. *Journal of Social Issues*, *69*(2), 322–340. https://doi.org/10.1111/josi.12017

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Ryff, C. D. (1982). Successful Aging: A Developmental Approach. *The Gerontologist*, *22*(2), 209–214. https://doi.org/10.1093/geront/22.2.209

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*(6), 1069–1081. https://doi.org/10.1037/0022-3514.57.6.1069

S. Wiese, B., & M. Freund, A. (2005). Goal progress makes one happy, or does it? Longitudinal findings from the work domain. *Journal of Occupational and Organizational Psychology*, *78*(2), 287–304. https://doi.org/10.1348/096317905X26714

Salmela-Aro, K. (2009). Personal goals and well-being during critical life transitions: The four C's—Channelling, choice, co-agency and compensation. *Advances in Life Course Research*, *14*(1–2), 63–73. https://doi.org/10.1016/j.alcr.2009.03.003

Salmela-Aro, K., Nurmi, J.-E., Saisto, T., & Halmesmäki, E. (2001). Goal reconstruction and depressive symptoms during the transition to motherhood: Evidence from two cross-lagged longitudinal studies. *Journal of Personality and Social Psychology*, *81*(6), 1144–1159. https://doi.org/10.1037/0022-3514.81.6.1144

Salmela-Aro, K., Read, S., Nurmi, J.-E., Vuoksimaa, E., Siltala, M., Dick, D. M., Pulkkinen, L., Kaprio, J., & Rose, R. J. (2012). Personal goals and personality traits among young adults: Genetic and environmental effects. *Journal of Research in Personality*, *46*(3), 248–257. https://doi.org/10.1016/j.jrp.2012.01.007

Sander, J., Schupp, J., & Richter, D. (2017). Getting together: Social contact frequency across the life span. *Developmental Psychology*, *53*(8), 1571–1588. https://doi.org/10.1037/dev0000349

Sarbin, T. R. (1986). *Narrative Psychology: The Storied Nature of Human Conduct*. Bloomsbury Publishing USA.

Schimmack, U. (2008). The Structure of Subjective Wellbeing. In *The science of subjective well-being*.

Schimmack, U., Schupp, J., & Wagner, G. G. (2008). The Influence of Environment and Personality on the Affective and Cognitive Component of Subjective Well-being. *Social Indicators Research*, *89*(1), 41–60. https://doi.org/10.1007/s11205-007-9230-3

Schmuck, P., Kasser, T., & Ryan, R. M. (2000). Intrinsic and Extrinsic Goals: Their Structure and Relationship to Well-Being in German and U.S. College Students. *Social Indicators Research*, *50*(2), 225–241. https://doi.org/10.1023/A:1007084005278

Schoen, R., Kim, Y. J., Nathanson, C. A., Fields, J., & Astone, N. M. (1997). Why Do Americans Want Children? *Population and Development Review*, *23*(2), 333. https://doi.org/10.2307/2137548

Schwaba, T., Bleidorn, W., Hopwood, C. J., Manuck, S. B., & Wright, A. G. C. (2022). Refining the maturity principle of personality development by examining facets, close others, and comaturation. *Journal of Personality and Social Psychology*, *122*(5), 942–958. https://doi.org/10.1037/pspp0000400

Schwaba, T., Denissen, J., Luhmann, M., Hopwood, C., & Bleidorn, W. (2023). *Subjective experiences of life events match individual differences in personality development*. PsyArXiv. https://doi.org/10.31234/osf.io/veztu

Schwartz, S. H., Cieciuch, J., Vecchione, M., Davidov, E., Fischer, R., Beierlein, C., Ramos, A., Verkasalo, M., Lönnqvist, J.-E., Demirutku, K., Dirilen-Gumus, O., & Konty, M. (2012). Refining the theory of basic individual values. *Journal of Personality and Social Psychology*, *103*(4), 663–688. https://doi.org/10.1037/a0029393

Seifert, I. S., Rohrer, J. M., Egloff, B., & Schmukle, S. C. (2022). The development of the rank-order stability of the Big Five across the life span. *Journal of Personality and Social Psychology*, *122*(5), 920–941. https://doi.org/10.1037/pspp0000398

Seifert, I. S., Rohrer, J. M., & Schmukle, S. C. (2023). *Using Within-Person Change in Three Large Panel Studies to Estimate Personality Age Trajectories* [Preprint]. PsyArXiv. https://doi.org/10.31234/osf.io/v3pwc

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, *55*(1), 5–14. https://doi.org/10.1037/0003-066X.55.1.5

Shane, J., Hamm, J. M., & Amada, N. (2023). Codevelopment of Well-Being and Developmental Progress in Central Life Domains During Established Adulthood.

Journal of Adult Development, *30*(1), 21–35. https://doi.org/10.1007/s10804-022-09411-w

Sheldon, K. M. (2004). The self-concordance model of healthy goal striving: When personal goals correctly represent. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of Self-determination Research* (pp. 65–86). University Rochester Press.

Sheldon, K. M. (2008). Changes in Goal-Striving Across the Life Span: Do People Learn to Select More Self-Concordant Goals as They Age? In *Handbook of Research on Adult Learning and Development*. Routledge.

Sheldon, K. M., & Cooper, M. L. (2008). Goal Striving Within Agentic and Communal Roles: Separate but Functionally Similar Pathways to Enhanced Well-Being. *Journal of Personality*, *76*(3), 415–448. https://doi.org/10.1111/j.1467-6494.2008.00491.x

Sheldon, K. M., & Kasser, T. (2001a). Getting older, getting better? Personal strivings and psychological maturity across the life span. *Developmental Psychology*, *37*(4), 491–501. https://doi.org/10.1037/0012-1649.37.4.491

Sheldon, K. M., & Kasser, T. (2001b). Goals, Congruence, and Positive Well-Being: New Empirical Support for Humanistic Theories. *Journal of Humanistic Psychology*, *41*(1), 30–50. https://doi.org/10.1177/0022167801411004

Sheldon, K. M., & King, L. (2001). Why positive psychology is necessary. *American Psychologist*, *56*(3), 216–217. https://doi.org/10.1037/0003-066X.56.3.216

Singer, J. A. (2004). Narrative Identity and Meaning Making Across the Adult Lifespan: An Introduction. *Journal of Personality*, *72*(3), 437–460. https://doi.org/10.1111/j.0022-3506.2004.00268.x

Smallenbroek, O., Zelenski, J. M., & Whelan, D. C. (2017). Authenticity as a eudaimonic construct: The relationships among authenticity, values, and valence. *The Journal of Positive Psychology*, *12*(2), 197–209. https://doi.org/10.1080/17439760.2016.1187198

Specht, J., Bleidorn, W., Denissen, J. J. A., Hennecke, M., Hutteman, R., Kandler, C., Luhmann, M., Orth, U., Reitz, A. K., & Zimmermann, J. (2014). What Drives Adult Personality Development? A Comparison of Theoretical Perspectives and Empirical Evidence. *European Journal of Personality*, *28*(3), 216–230. https://doi.org/10.1002/per.1966

Specht, J., Egloff, B., & Schmukle, S. C. (2011). Stability and change of personality across the life course: The impact of age and major life events on mean-level and rank-order

stability of the Big Five. *Journal of Personality and Social Psychology*, *101*(4), 862–882. https://doi.org/10.1037/a0024950

Spikic, S., Mortelmans, D., & Pasteels, I. (2021). Does divorce change your personality? Examining the effect of divorce occurrence on the Big Five personality traits using panel surveys from three countries. *Personality and Individual Differences*, *171*, 110428. https://doi.org/10.1016/j.paid.2020.110428

Springer, K. W., & Hauser, R. M. (2006). An assessment of the construct validity of Ryff's Scales of Psychological Well-Being: Method, mode, and measurement effects. *Social Science Research*, *35*(4), 1080–1102. https://doi.org/10.1016/j.ssresearch.2005.07.004

Springer, K. W., Pudrovska, T., & Hauser, R. M. (2011). Does psychological well-being change with age? Longitudinal tests of age variations and further exploration of the multidimensionality of Ryff's model of psychological well-being. *Social Science Research*, *40*(1), 392–398. https://doi.org/10.1016/j.ssresearch.2010.05.008

Statistisches Bundesamt (Destatis). (2023). *Daten zum durchschnittlichen Alter der Mutter bei Geburt insgesamt und 1. Kind nach Bundesländern*. Statistisches Bundesamt. https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Geburten/Tabellen/geburten-mutter-alter-bundeslaender.html

Steger, M. F. (2016). Creating Meaning and Purpose at Work. In *The Wiley Blackwell Handbook of the Psychology of Positivity and Strengths-Based Approaches at Work* (pp. 60–81). John Wiley & Sons, Ltd. https://doi.org/10.1002/9781118977620.ch5

Steger, M. F., Oishi, S., & Kashdan, T. B. (2009). Meaning in life across the life span: Levels and correlates of meaning in life from emerging adulthood to older adulthood. *The Journal of Positive Psychology*, *4*(1), 43–52. https://doi.org/10.1080/17439760802303127

Stewart, R. D., Mõttus, R., Seeboth, A., Soto, C. J., & Johnson, W. (2022). The finer details? The predictability of life outcomes from Big Five domains, facets, and nuances. *Journal of Personality*, *90*(2), 167–182. https://doi.org/10.1111/jopy.12660

Stieger, M., Flückiger, C., Rüegger, D., Kowatsch, T., Roberts, B. W., & Allemand, M. (2021). Changing personality traits with the help of a digital personality change intervention. *Proceedings of the National Academy of Sciences*, *118*(8), e2017548118. https://doi.org/10.1073/pnas.2017548118

Stieger, M., Nißen, M., Rüegger, D., Kowatsch, T., Flückiger, C., & Allemand, M. (2018). PEACH, a smartphone- and conversational agent-based coaching intervention for

intentional personality change: Study protocol of a randomized, wait-list controlled trial. *BMC Psychology*, *6*(1), 43. https://doi.org/10.1186/s40359-018-0257-9

Tamir, M., & Diener, E. (2008). Well-Being Approach–Avoidance Goals and Well-Being: One Size Does Not Fit All. In A. J. Elliot (Ed.), *Handbook of Approach and Avoidance Motivation.* Taylor & Francis.

Trachik, B., Fawver, B., Trapp, S. K., Goldberg, S. B., Ganulin, M. L., Kearns, N. T., McKeon, A. B., Dretsch, M. N., & Sowden, W. J. (2023). Measurement validity of the six-factor model of psychological well-being in a military sample: Implications for measuring well-being in service members. *Psychological Assessment*, *35*(9), 729–739. https://doi.org/10.1037/pas0001239

Trapnell, P. D., & Paulhus, D. L. (2012). Agentic and Communal Values: Their Scope and Measurement. *Journal of Personality Assessment*, *94*(1), 39–52. https://doi.org/10.1080/00223891.2011.627968

Triadó, C., Villar, F., Solé, C., & Celdrán, M. (2007). Construct Validity of Ryff's Scale of Psychological Well-Being in Spanish Older Adults. *Psychological Reports, 100,* 1151–1164. https://doi.org/10.2466/PR0.100.4.1151-1164

Twenge, J. M., Campbell, W. K., & Freeman, E. C. (2012). Generational differences in young adults' life goals, concern for others, and civic orientation, 1966–2009. *Journal of Personality and Social Psychology*, *102*(5), 1045–1062. https://doi.org/10.1037/a0027408

Van Bavel, J., & Nitsche, N. (2013). 'The Proper Age for Parenthood' and Second Birth Rates in Europe. *European Sociological Review*, *29*(6), 1149–1161. https://doi.org/10.1093/esr/jct003

van Scheppingen, M. A., Denissen, Jaap. J. A., Chung, J. M., Tambs, K., & Bleidorn, W. (2018). Self-esteem and relationship satisfaction during the transition to motherhood. *Journal of Personality and Social Psychology*, *114*(6), 973–991. https://doi.org/10.1037/pspp0000156

van Scheppingen, M. A., Jackson, J. J., Specht, J., Hutteman, R., Denissen, J. J. A., & Bleidorn, W. (2016). Personality Trait Development During the Transition to Parenthood: A Test of Social Investment Theory. *Social Psychological and Personality Science*, *7*(5), 452–462. https://doi.org/10.1177/1948550616630032

VanderWeele, T. J., Mathur, M. B., & Chen, Y. (2020). Outcome-Wide Longitudinal Designs for Causal Inference: A New Template for Empirical Studies. *Statistical Science*, *35*(3). https://doi.org/10.1214/19-STS728

Vecchione, M., Alessandri, G., Roccas, S., & Caprara, G. V. (2019). A look into the relationship between personality traits and basic values: A longitudinal investigation. *Journal of Personality*, *87*(2), 413–427. https://doi.org/10.1111/jopy.12399

Verschuren, A., & Douilliez, C. (2022). Goal disengagement and goal reengagement: Associations with depression, anxiety, and satisfaction with life. *Canadian Journal of Behavioural Science / Revue Canadienne Des Sciences Du Comportement*, No Pagination Specified-No Pagination Specified. https://doi.org/10.1037/cbs0000360

Vittersø, J., Prebensen, N. K., Hetland, A., & Dahl, T. (2017). The Emotional Traveler: Happiness and Engagement as Predictors of Behavioral Intentions Among Tourists in Northern Norway. In *Advances in Hospitality and Leisure* (Vol. 13, pp. 3–16). Emerald Publishing Limited. https://doi.org/10.1108/S1745-354220170000013001

Wagner, J., Orth, U., Bleidorn, W., Hopwood, C. J., & Kandler, C. (2020). Toward an Integrative Model of Sources of Personality Stability and Change. *Current Directions in Psychological Science*, *29*(5), 438–444. https://doi.org/10.1177/0963721420924751

Wagner, J., Ram, N., Smith, J., & Gerstorf, D. (2016). Personality trait development at the end of life: Antecedents and correlates of mean-level trajectories. *Journal of Personality and Social Psychology*, *111*(3), 411–429. https://doi.org/10.1037/pspp0000071

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063–1070. https://doi.org/10.1037/0022-3514.54.6.1063

Wayne, J. H., Musisca, N., & Fleeson, W. (2004). Considering the role of personality in the work–family experience: Relationships of the big five to work–family conflict and facilitation. *Journal of Vocational Behavior*, *64*(1), 108–130. https://doi.org/10.1016/S0001-8791(03)00035-6

Wehner, C., Scheppingen, M. A. van, & Bleidorn, W. (2022). Stability and change in major life goals during the transition to parenthood. *European Journal of Personality*, *36*(1), 61–71. https://doi.org/10.1177/0890207021996894

Weston, S. J., Hill, P. L., & Cardador, M. T. (2021). Working toward a purpose: Examining the cross-sectional and longitudinal effects of work characteristics on sense of purpose. *Journal of Personality*, *89*(2), 244–257. https://doi.org/10.1111/jopy.12579

Williams, G. C., Hedberg, V. A., Cox, E. M., & Deci, E. L. (2000). Extrinsic Life Goals and Health-Risk Behaviors in Adolescents1. *Journal of Applied Social Psychology*, *30*(8), 1756–1771. https://doi.org/10.1111/j.1559-1816.2000.tb02466.x

Wilt, J., & Revelle, W. (2015). Affect, Behaviour, Cognition and Desire in the Big Five: An Analysis of Item Content and Structure. *European Journal of Personality*, *29*(4), 478–497. https://doi.org/10.1002/per.2002

Winter, D. G., John, O. P., Stewart, A. J., Klohnen, E. C., & Duncan, L. E. (1998). Traits and motives: Toward an integration of two traditions in personality research. *Psychological Review, 105*(2), 230–250. https://doi.org/10.1037/0033-295X.105.2.230

Wright, A. J., Litwin, A. W., & Jackson, J. J. (2023). Compensatory couple effects: How a spouse's life goals impact one's own career and health outcomes. *Journal of Research in Personality, 103,* 104350. https://doi.org/10.1016/j.jrp.2023.104350

Wright, M., Oxley, F. A. R., & Stumm, S. von. (2023). *Measuring adulthood: A meta-analysis of the markers of adulthood scale*. PsyArXiv. https://doi.org/10.31234/osf.io/bj5yv

Wrosch, C., & Heckhausen, J. (1999). Control processes before and after passing a developmental deadline: Activation and deactivation of intimate relationship goals. *Journal of Personality and Social Psychology*, *77*(2), 415–427. https://doi.org/10.1037/0022-3514.77.2.415

Wrosch, C., Miller, G. E., Scheier, M. F., & De Pontet, S. B. (2007). Giving Up on Unattainable Goals: Benefits for Health? *Personality and Social Psychology Bulletin, 33*(2), 251–265. https://doi.org/10.1177/0146167206294905

Wrosch, C., Scheier, M. F., & Miller, G. E. (2013). Goal Adjustment Capacities, Subjective Well-being, and Physical Health: Goal Adjustment and Quality of Life. *Social and Personality Psychology Compass, 7*(12), 847–860. https://doi.org/10.1111/spc3.12074

Wrosch, C., Scheier, M. F., Miller, G. E., Schulz, R., & Carver, C. S. (2003). Adaptive Self-Regulation of Unattainable Goals: Goal Disengagement, Goal Reengagement, and Subjective Well-Being. *Personality and Social Psychology Bulletin, 29*(12), 1494–1508. https://doi.org/10.1177/0146167203256921

Wrzus, C., & Roberts, B. W. (2017). Processes of Personality Development in Adulthood: The TESSERA Framework. *Personality and Social Psychology Review*, *21*(3), 253–277. https://doi.org/10.1177/1088868316652279

Wünsche, J., Weidmann, R., & Grob, A. (2020). Until death do us part: The codevelopment of life satisfaction in couples preceding the death of one partner. *Journal of Personality and Social Psychology*, *119*(4), 881–900. https://doi.org/10.1037/pspi0000228

Zuckerman, M., Kuhlman, D. M., Joireman, J., Teta, P., & Kraft, M. (1993). A comparison of three structural models for personality: The Big Three, the Big Five, and the Alternative Five. *Journal of Personality and Social Psychology*, *65*(4), 757–768. https://doi.org/10.1037/0022-3514.65.4.757

Appendix A

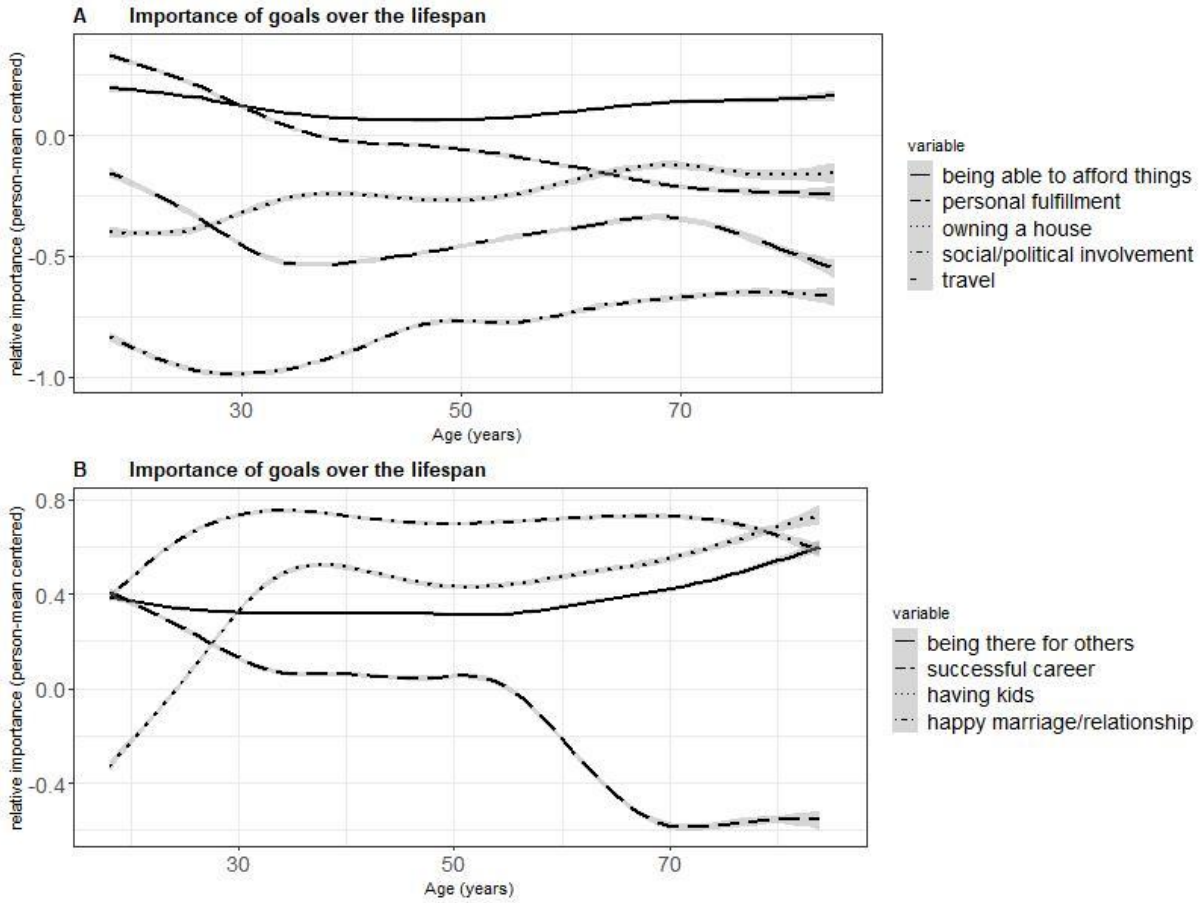
Supplementary Materials Study I

Supplementary Table 2. Sample characteristics

Variable	1992	1995	2004	2008	2012	2016
Age, *M* (SD)	43.51 (16.28)	43.75 (16.15)	47.37 (16.71)	48.83 (17.07)	47.81 (16.54)	48.00 (16.83)
Female, n (%)	5655 (52.48)	6969 (51.90)	13790 (51.56)	13469 (52.0)	18921 (53.87)	17399 (53.53)
Current region, former GDR, n (%)	3883 (36.03)	3825 (31.72)	5243 (24.06)	4873 (24.66)	6251 (22.43)	5073 (20.74)
Location 1989, former GDR, n (%)	3940 (37.00)	4540 (37.30)	7255 (29.15)	7238 (30.20)	8997 (29.20)	7632 (30.30)
Generation, n (%)						
Pre 1941	3821 (35.46)	4009 (29.86)	6589 (24.63)	6063 (23.39)	6051 (30,5)	4963 (15.27)
1941-1950	1599 (14.84)	1784 (13.29)	3611 (13.50)	3476 (13.41)	3974 (16,2)	3485 (10.72)
1951-1960	2279 (21.15)	2749 (20.48)	5148 (19.25)	4854 (18.72)	5737 (1,6)	5165 (15.89)
1961-1970	2408 (22.35)	3402 (25.34)	5857 (21.90)	5577 (21.51)	8258 (32,2)	7119 (21.90)
1971-1980	669 (6.21)	1482 (11.04)	3610 (13.50)	3256 (12.56)	6180 (17.60)	5553 (17.08)
Post 1981	-	-	1933 (7.23)	2700 (10.41)	4923 (14.02)	6220 (19.14)
Education (ISCED), n (%)						
low	1386 (12.89)	1676 (12.98)	3418 (13.20)	3135 (12.46)	4401 (12.76)	4433 (13.89)
middle	7365 (68.51)	8819 (68.30)	16852 (65.07)	16350 (64.97)	22209 (64.39)	20104 (62.97)
high	1999 (18.60)	2417 (18.72)	5629 (21.73)	5680 (22.57)	7881 (22.85)	7389 (23.144)
Employment[a], n (%)						
Full-time	5268 (48.87)	5347 (46.52)	8644 (40.41)	7634 (39.45)	10585 (38.42)	9240 (38.17)
Part-time	976 (9.06)	1186 (10.93)	3138 (14.67)	3146 (16.26)	5601 (20.33)	5308 (21.93)
Vocational training	337 (3.13)	360 (1.10)	553 (2.59)	429 (2.22)	576 (2.10)	666 (2.75)
Not employed	4195 (38.93)	4510 (4.15)	9029 (42.21)	8118 (41.95)	10764 (39.07)	8959 (37.01)
Sheltered workshop	-	-	26 (0,12)	24 (0,12)	27 (0,10)	33 (0,14)
Family status[b], n (%)						
Single	2335 (21.67)	2531 (22.20)	5067 (23.69)	4693 (24.25)	6330 (22.99)	5945 (24.71)
Married	7137 (66.23)	7496 (65.75)	13591 (63.54)	11972 (61.87)	17186 (62.42)	14659 (60.93)
divorced	587 (5.45)	666 (5.84)	1507 (7.05)	1519 (7.85)	2649 (9.62)	2304 (9.58)
widowed	717 (6.65)	707 (6.20)	1225 (5.73)	1167 (6.03)	1366 (4.96)	1152 (4.78)
Parental status, n (%)						
Parent	6250 (69.76)	7466 (69.51)	16945 (70.04)	16307 (69.51)	24801 (75.55)	21867 (72.12)
Childless	2709 (30.24)	3275 (30.49)	7250 (29.96)	7153 (30.49)	8025 (24.45)	8455 (27.88)
Goal variables, *M* (SD)						
Afford something	0.19 (0.56)	0.15 (0.56)	0.15 (0,55)	0,17 (0,55)	0,05 (0,57)	0,03 (0,57)
Success in job	0.03 (0.76)	0.05 (0.72)	-0.01 (0.71)	-0.03 (0.72)	-0.06 (0.70)	-0.10 (0.68)
Fulfillment	0.01 (0.64)	0.04 (0.62)	-0.03 (0.63)	-0.05 (0.63)	-0.02 (0.61)	-0.04 (0.61)
Travelling	-0.33 (0.75)	-0.42 (0.72)	-0.43 (0.72)	-0.45 (0.71)	-0,45 (0.73)	-0.33 (0.72)
Own a house	-0.27 (0.88)	-0.20 (0.84)	-0.19 (0.84)	-0.23 (0.83)	-0,30 (0.84)	-0.29 (0.83)
Happy relationship	0.75 (0.59)	0.75 (0.58)	0.70 (0.58)	0,73 (0.57)	0.66 (0.59)	0.63 (0.60)
Have children	0.36 (0.78)	0.37 (0.78)	0.33 (0.79)	0,41 (0.78)	0.43 (0.74)	0.44 (0.76)
Help others	0.27 (0.57)	0.30 (0.55)	0.30 (0.55)	0,35 (0.53)	0.40 (0.53)	0.41 (0.54)
Be involved	-1,01 (0.65)	-1.04 (0.65)	-0.80 (0.66)	-0.92 (0.67)	-0.70 (0.70)	-0.70 (0.71)

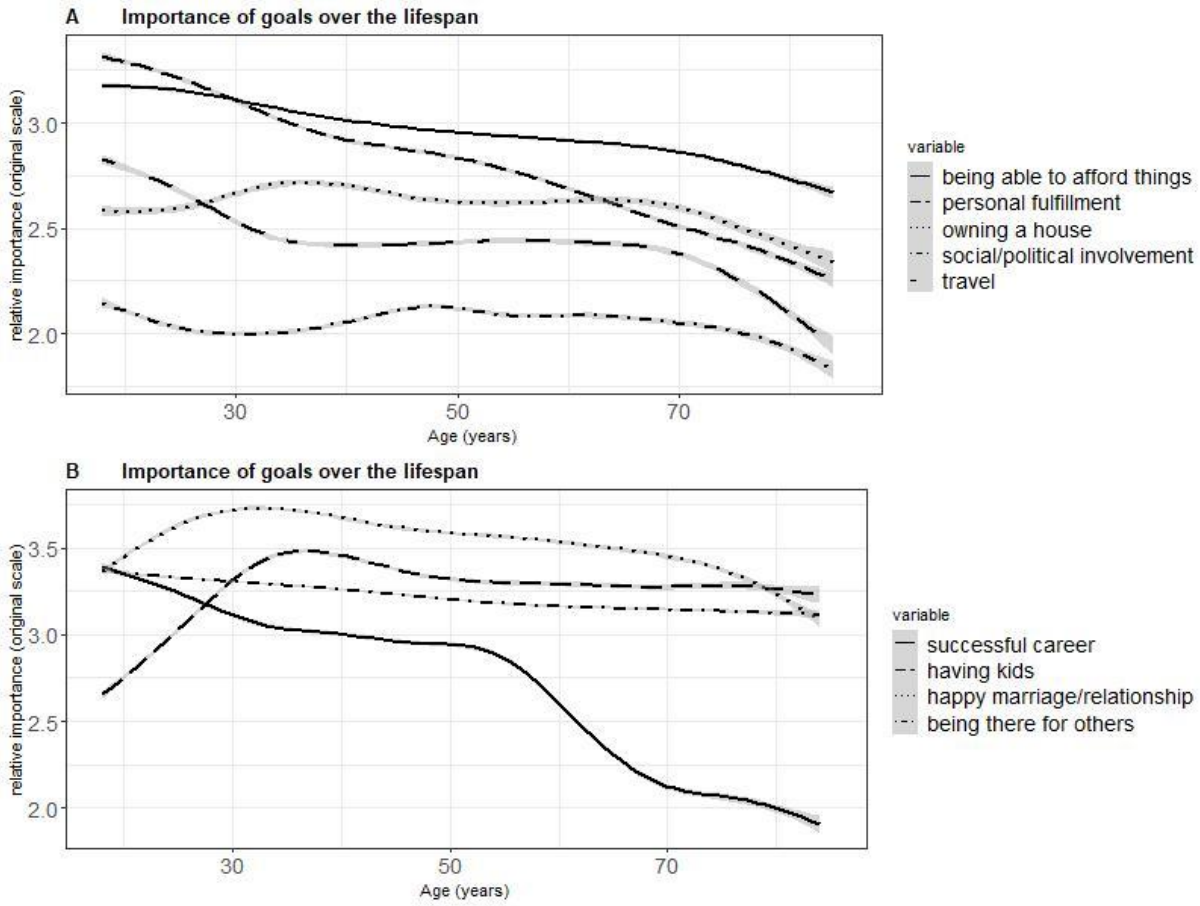
[a]Part-time includes marginal, irregular part-time and not employed includes those in tertiary education.
[b]Married includes couples living together and separately as well as gay couples in a registered partnership. Divorced includes separated gay couples.

Supplementary Figure 5.



Note. General additive model (GAM) smoothed line plots of pooled goal importance ratings centered at the person-mean of all nine goals over the lifespan. The GAM-method allows different types of local smoothing (not just linear) and is recommended for n > 1000.

Supplementary Figure 6.



Note. General additive model (GAM) smoothed line plots of pooled goal importance ratings (original scale) over the lifespan.

Supplementary Table 3. Model Fits and Unstandardized Estimates for Latent Growth Curve Models of Life Goals

Model Statistics	Career success	Having children	Happy marriage/ relationship	Afford things	Personal fulfillment	Being there for others	Social/ political involvement	Travel	Owning a house
BIC for model with linear (1), quadrat (2) and cubic (3) slope factors									
BIC_1	208,181.831	228,302.364	183,597.054	177,270.159	196,287.647	173,466.592	221,030.736	229,959.828	252,325.305
BIC_2	207,950.672	227,050.701	182,810.291	176,961.582	195,848.110	**172,974.639**	220,968.101	229,635.779	**252,256.555**
BIC_3	**207,909.303**	**225,052.962**	**182,549.832**	**176,924.650**	**195,762.446**	172,981.376	**220,810.860**	**228,504.481**	294,355.142
Model parameters for model with best fit									
Intercept	-0.061***	0.498***	0.726***	0.069***	-0.082***	0.329***	-0.905***	-0.448***	-0.224***
s	-1.413***	-0.267***	-0.305***	0.152***	-0.584***	0.295***	0.799***	0.745***	0.309***
q	-1.391***	-2.418***	-1.609***	1.051***	1.246***	1.342***	0.478***	0.989***	-0.778***
c	-2.985***	19.087***	5.886***	-2.284***	-3.511***		-5.221***	-14.284***	
Moderators									
Gender									
Basic model	**205,873.948**	**223,852.931**	**180,948.129**	**176,667.483**	**195,802.354**	**170,325.828**	**220,731.829**	228,546.576	**251,851.134**
Constraint model	207,591.001	225,074.077	181,689.860	176,934.430	195,811.414	173,034.760	220,853.216	**226,548.998**	252,276.036
Region (1989)									
Basic model	**183,659.260**	**196,890.915**	161,316.149	**154,456.569**	**172,911.701**	**151,401.994**	**191,822.853**	**200,141.874**	**221,502.356**
Constraint model	184,156.702	197,025.503	**161,304.230**	154,665.251	173,393.719	151,474.028	192,169.614	200,149.951	222,103.880
Region (current)									
Basic model	**207,377.141**	**224,825.004**	182,538.730	**176,768.459**	**195,253.131**	**172,944.701**	**220,615.238**	**228,499.959**	**251,652.039**
Constraint model	207,892.313	224,891.546	**182,535.621**	176,976.775	195,677.150	173,026.748	220,840.839	228,523.666	252,140.145
Education									
Basic model	**207,220.823**	299,244.766	**181,357.762**	191,031.856	**195,254.958**	**171,763.694**	227,363.059	**227,211.878**	**251,322.570**
Constraint model	207,523.323	**224,378.596**	181,487.949	**176,356.628**	195,302.225	172,327.796	**229,027.185**	227,706.833	Not converged

Supplementary Table 2 - *continued*

Model Statistics	Career success	Having children	Happy marriage/ relationship	Afford things	Personal fulfillment	Being there for others	Social/ political involvement	Travel	Owning a house
Parental status									
Basic model	**200,635.007**	**197,544.685**	**175,624.198**	**169,913.671**	**188,633.619**	167,589.020	**213,735.655**	**219,396.231**	**244,331.561**
Constraint model	201,654.690	279,278.131	176,317.060	171,050.077	222,423.148	**167,576.575**	214,245.980	221,233.704	244,474.862

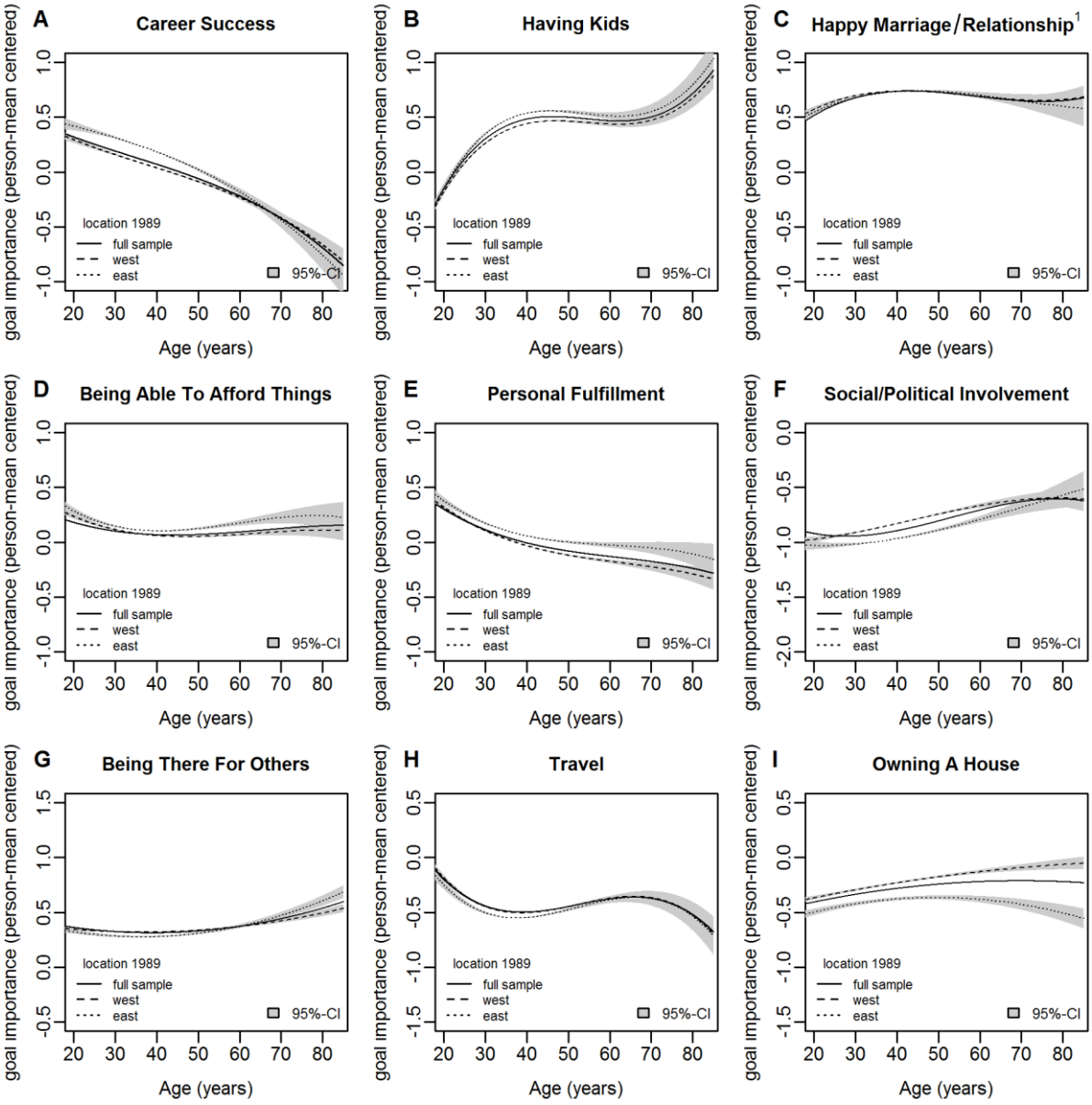
*** indicates a p-value of < .001

Supplementary Table 3.

Model Fits for Cohort-Specific Growth Curve Models of Life Goals between 1992 and 2016

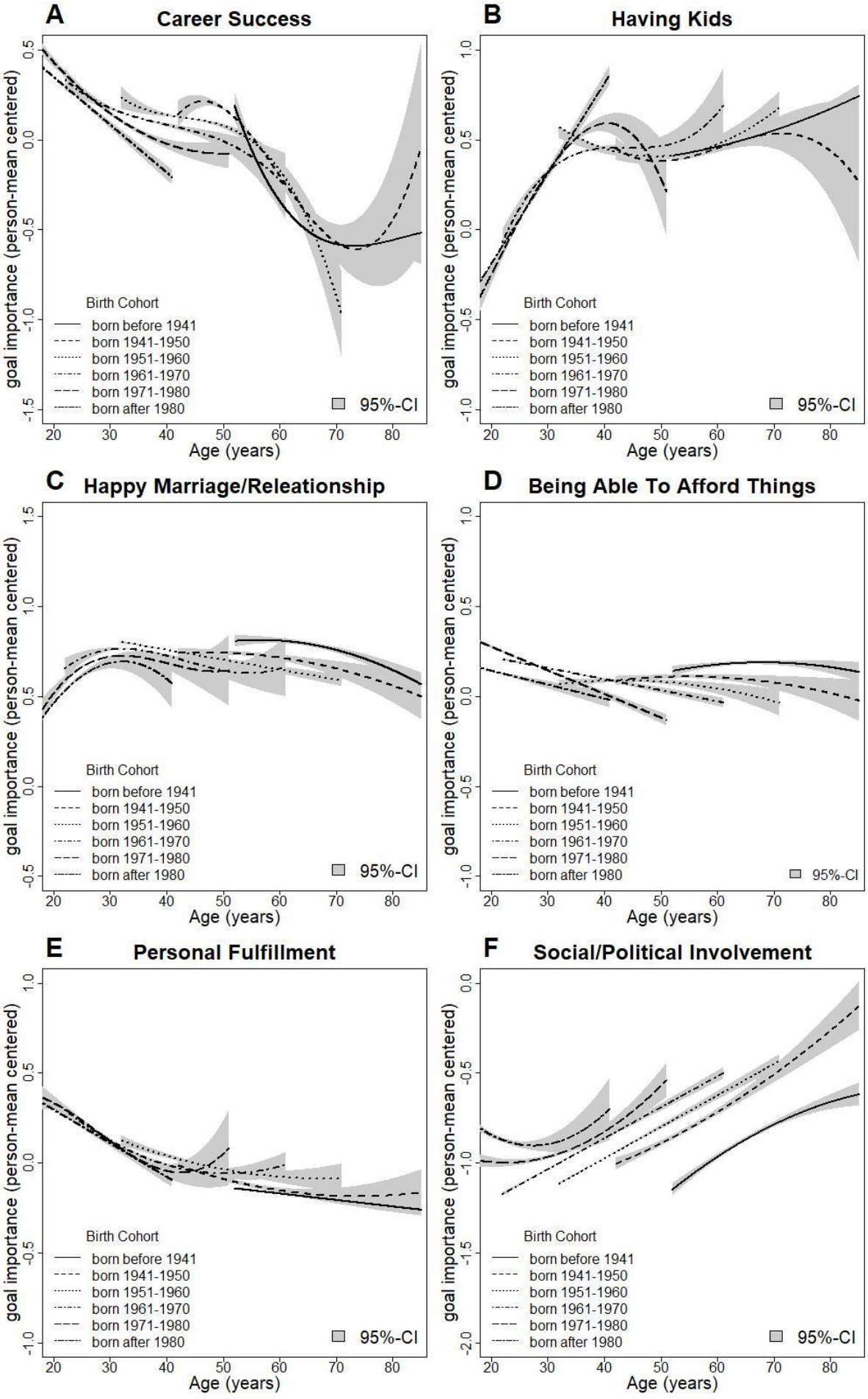
Model Statistics by cohort	Career success	Having children	Happy marriage/ relationship	Afford things	Personal fulfillment	Being there for others	Social/ political involvement	Travel	Owning a house
BIC for model with linear (1), quadrat (2) and cubic (3) slope factors									
Pre 1941									
BIC_1	42,361.832	41,425.289	36,309.731	31,417.812	**36,582.062**	**31,227.918**	36,928.437	39,618.962	43,676.092
BIC_2	41,994.842	**41,425.161**	**36,293.428**	**31,412.743**	36,585.125	31,233.361	**36,916.262**	**39,584.091**	43,661.136
BIC_3	**41,983.935**	41,430.732	36,297.907	31,413.836	36,590.240	31,231.991	36,917.462	39,588.887	**43,645.978**
1941-1950									
BIC_1	27,504.368	26,647.584	25,814.279	24,035.858	28,689.539	23,332.265	30,174.151	**31,472.151**	34,550.552
BIC_2	27,467.217	26,645.260	**25,811.124**	**24,033.879**	**28,687.617**	23,335.810	**30,172.389**	31,477.439	**34,532.790**
BIC_3	**27,402.450**	**26,635.335**	25,815.666	24,038.702	28,692.285	**23,329.185**	30,177.873	31,476.554	34,537.282
1951-1960									
BIC_1	34,904.191	38,070.812	**29,967.673**	29,812.516	33,534.396	28,982.814	**37,367.159**	38,752.875	43,289.496
BIC_2	34,754.857	**37,995.093**	29,973.368	**29,806.622**	**33,530.460**	**28,981.557**	37,371.794	**38,749.624**	43,292.668
BIC_3	**34,713.445**	38,000.850	29,978.602	29,811.814	33,533.537	28,987.355	37,375.860	38,752.626	**43,274.338**
1961-1970									
BIC_1	41,446.338	48,748.312	37,741.882	**37,762.725**	41,272.845	36,934.030	**47,271.063**	49,520.889	54,983.716
BIC_2	41,451.865	48,631.500	37,709.830	37,768.195	**41,201.684**	**36,927.241**	47,271.130	49,293.808	54,890.865
BIC_3	**41,444.768**	**48,577.229**	**37,695.107**	37,774.065	41,203.654	36,930.892	47,259.360	**49,263.002**	**54,869.941**
1971-1980									
BIC_1	30,121.939	34,803.623	25,983.790	**27,385.944**	29,517.959	**26,914.656**	35,106.882	36,150.904	40,177.326
BIC_2	**30,077.672**	34,447.166	25,844.317	27,391.922	29,491.317	26,920.546	**35,076.637**	**35,958.580**	**40,174.442**
BIC_3	30,083.400	**34,439.393**	**25,835.465**	27,393.723	**29,485.993**	26,919.586	35,080.881	35,964.636	40,177.169
Post 1980									
BIC_1	**26,600.651**	**34,311.614**	24,705.516	**25,031.873**	**26,134.879**	**24,891.070**	32,539.729	**33,510.828**	not converged
BIC_2	26,606.483	34,328.037	**24,634.909**	25,033.990	26,313.755	24,893.208	**32,522.364**	33,516.364	**35,004.240**
BIC_3	not converged	not converged	not converged	not converged	not converged	not converged	not converged	not converged	not converged

Supplementary Figure 7.

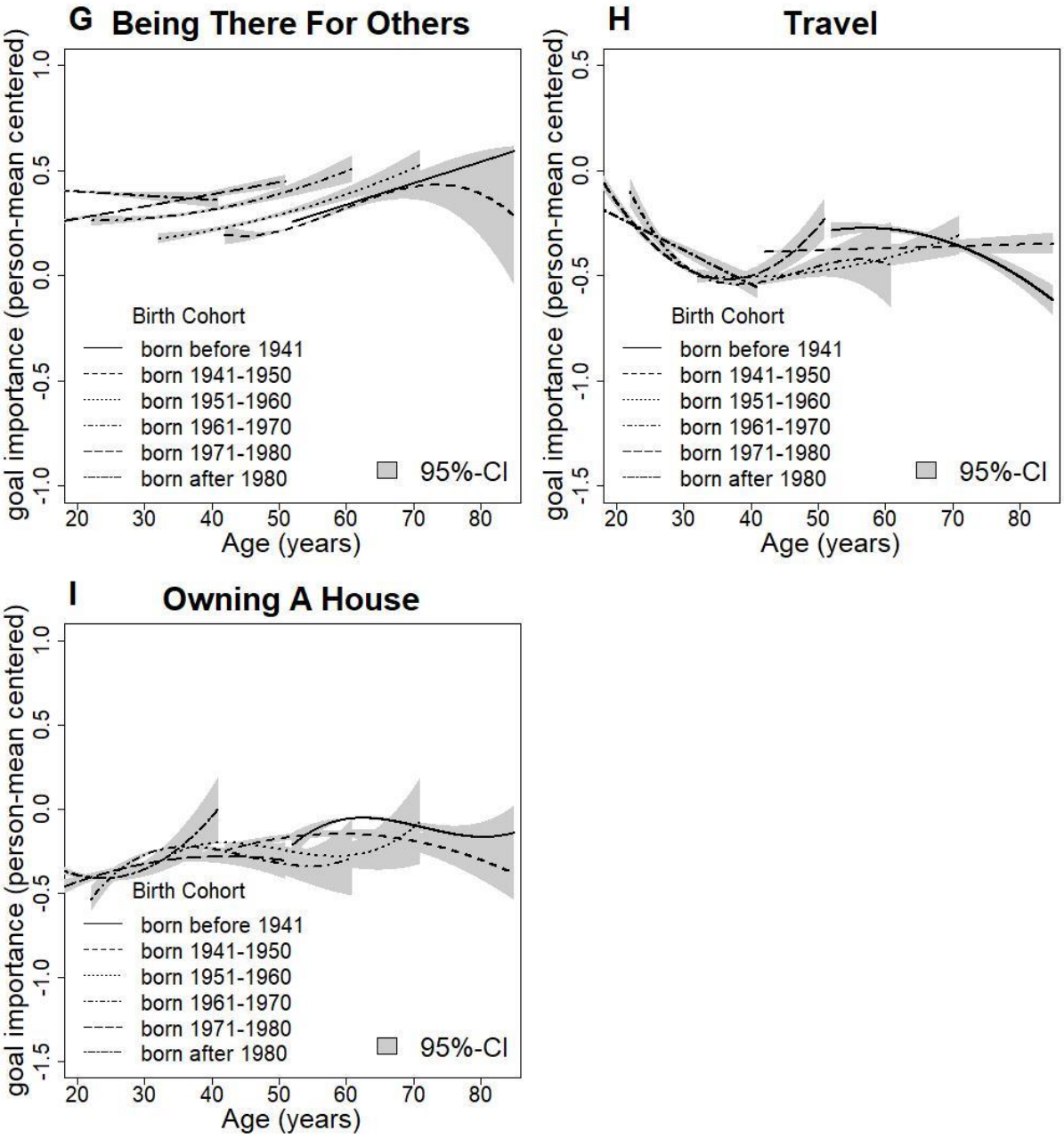


Note. Model estimated goal importance trajectories for the full sample and by region coded as location in 1989. [1]Model with cross-group constraints had a better fit, indicating no group differences.

Supplementary Figure 8.



Supplementary Figure 4 - *continued*



Cohort-specific trajectories for life goals. Panel A: Importance of having a successful career. Panel B: Importance of having children. Panel C: Importance of having a happy marriage or relationship. Panel D: Importance of being able to afford things. Panel E: Importance of being personally fulfilled. Panel F: Importance of being socially or politically involved. Panel G: Importance of being there for others. Panel H: Importance of travelling. Panel I: Importance of owning a house. Trajectories are depicted for the theoretical age range of six different cohorts in the time period between 1992 and 2016. Linear, quadratic, and cubic growth curve models were fitted for each cohort separately. Figures are based on the growth curve models with best fit (adjusted BIC) depicted in Supplementary Table 3.

Appendix B

Supplementary Materials Study II

Appendix C

Supplementary Materials Study III

Table S4

Covariate Balance Before and After Matching

		Absolute Standardized Mean Difference	
Covariate	**Description**	Before matching	After matching
pscore	Propensity score	0.85	0.05
age_m	Age at the time of matching	0.40	0.08
sex	Gender	0.19	0.00
logincome	Monthly household income (logarithm)	0.22	0.08
past_waves	Waves participated prior to matching	0.22	0.02
hhgr_m	Household size	0.17	0.08
sat_health_m	Satisfaction with health at matchtime	0.10	0.04
sat_work_m	Satisfaction with work at matchtime	0.03	0.01
lifesat_m	Life satisfaction at matchtime	0.08	0.03
seriousrel	Committed relationship (relationship status)	0.16	0.00
married	Married (relationship status)	0.04	0.01
divorced	Divorced (relationship status)	0.00	0.00
parttime	Part-time employment (employment status)	0.04	0.02
trainee	Trainee (employment status)	0.17	0.08

Table S1 (continued)

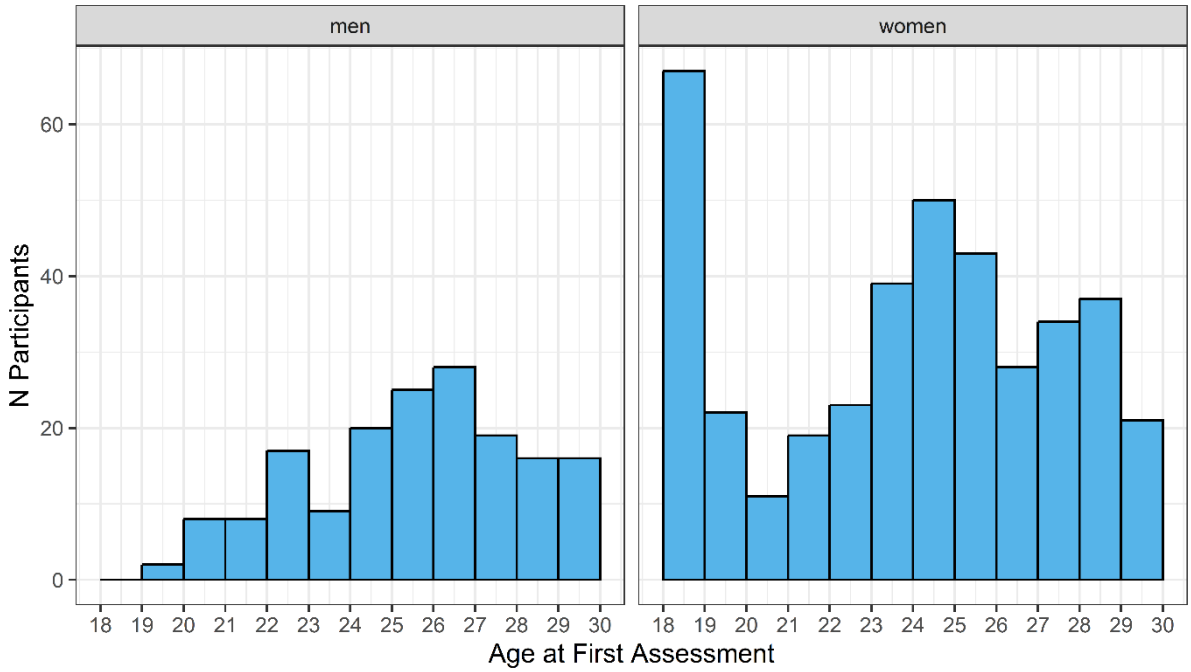
		Absolute Standardized Mean Difference	
Covariate	**Description**	Before matching	After matching
marginal	Marginal part-time employment (employment status)	0.18	0.06
notemployed	Not employed (employment status)	0.07	0.07
ineducation	In education (employment status)	0.08	0.08
jobcenter	Registered unemployed (employment status)	0.09	0.04
ost	Survey region at the time of matching (former East Germany)	0.03	0.04
match1992	Time of matching = 1992	0.02	0.00
match1995	Time of matching = 1995	0.04	0.01
match2004	Time of matching = 2004	0.03	0.04
ost89	Lived in East Germany in 1989 (prior to reunification)	0.06	0.04
abroad89	Lived abroad in 1989 (prior to reunification)	0.01	0.06
inschool	Still in school at time of matching (education)	0.03	0.04
nodegree	No degree at time of matching (education)	0.02	0.07
elementary	Elementary school degree at time of matching (education)	0.17	0.02
abitur	High school leaving certificate at time of matching (education)	0.07	0.01

Table S1 (continued)

highervoc	Higher vocational degree at time of matching (education)	0.05	0.01
higheruni	University degree at time of matching (education)	0.07	0.09
gl_trvl_raw_m	See the world/travel (subjective importance at time of matching)	0.11	0.01
gl_inv_raw_m	Social/political involvement (subjective importance at time of matching)	0.16	0.01
gl_house_raw_m	Own a house (subjective importance at time of matching)	0.04	0.00
gl_ful_raw_m	Self-fulfillment (subjective importance at time of matching)	0.02	0.07
gl_rel_raw_m	Happy relationship / marriage (subjective importance at time of matching)	0.34	0.02
gl_job_raw_m	Career success (subjective importance at time of matching)	0.01	0.01
gl_oth_raw_m	Being there for others (subjective importance at time of matching)	0.22	0.01
gl_aff_raw_m	Being able to afford things (subjective importance at time of matching)	0.02	0.02
gl_kid_raw_m	Have children (subjective importance at time of matching)	0.42	0.00
rel_att_m	Religious service attendance at time of matching	0.10	0.03

Figure S 1

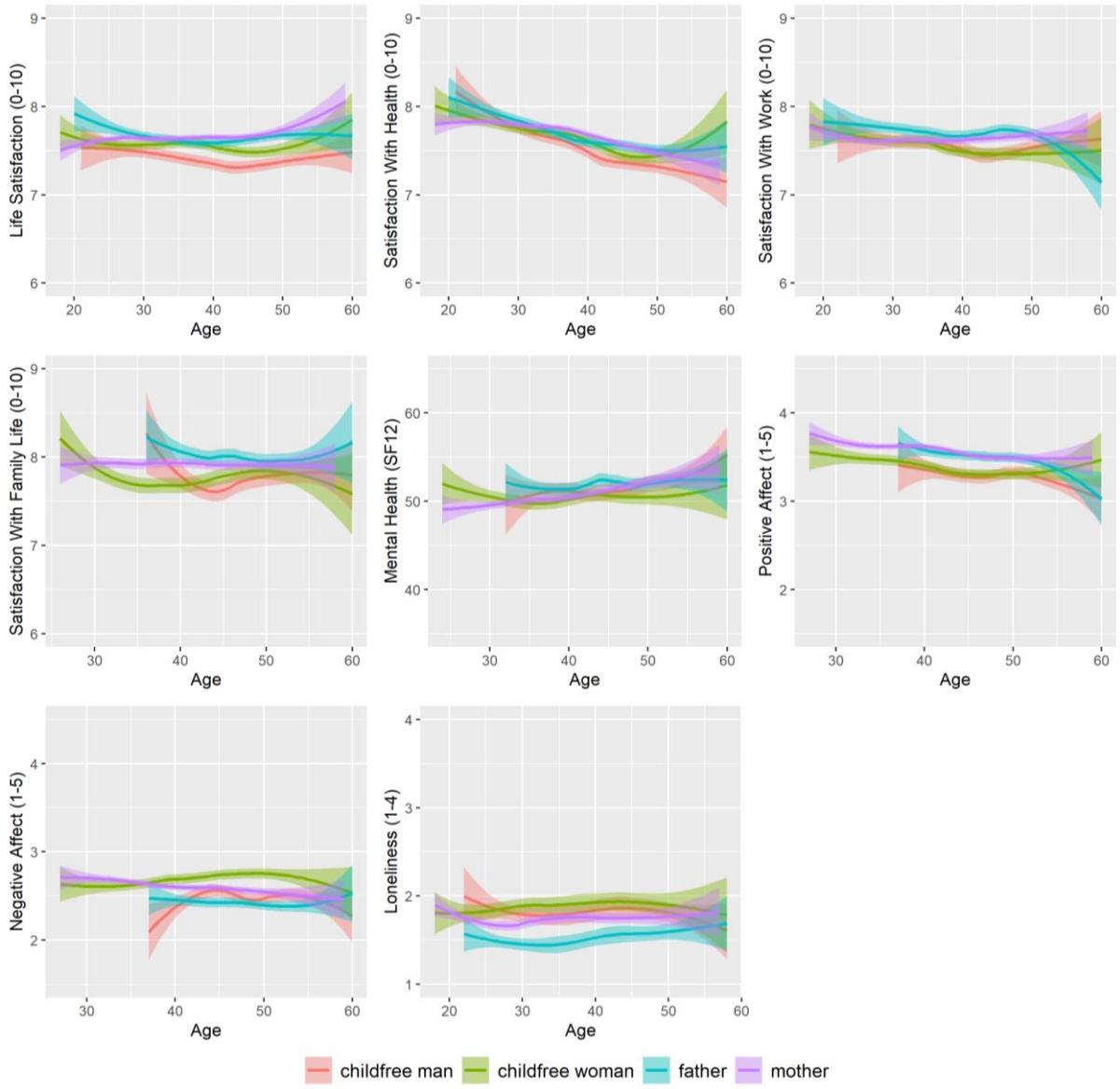
Age Distribution of the Sample at First Life Goal Assessment by Gender



Note. Displayed is the age distribution at the time of matching (first available life goal assessment, which is either 1990, 1992, 1995, or 2004).

Figure S 2

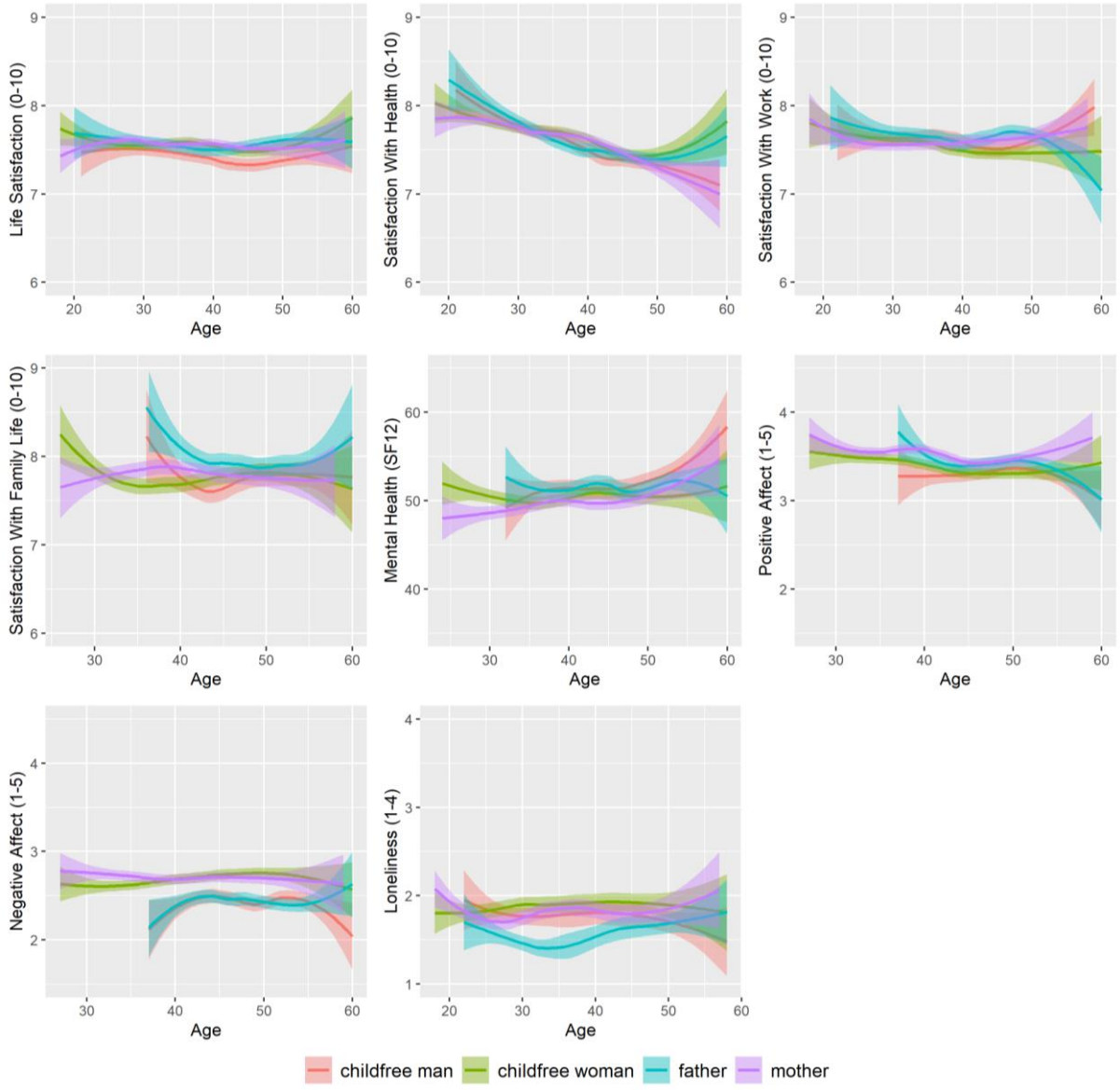
Mental health and well-being across adulthood in the unmatched sample (N=914) by gender and childfree status.



Note. See figure S2 note.

Figure S 3

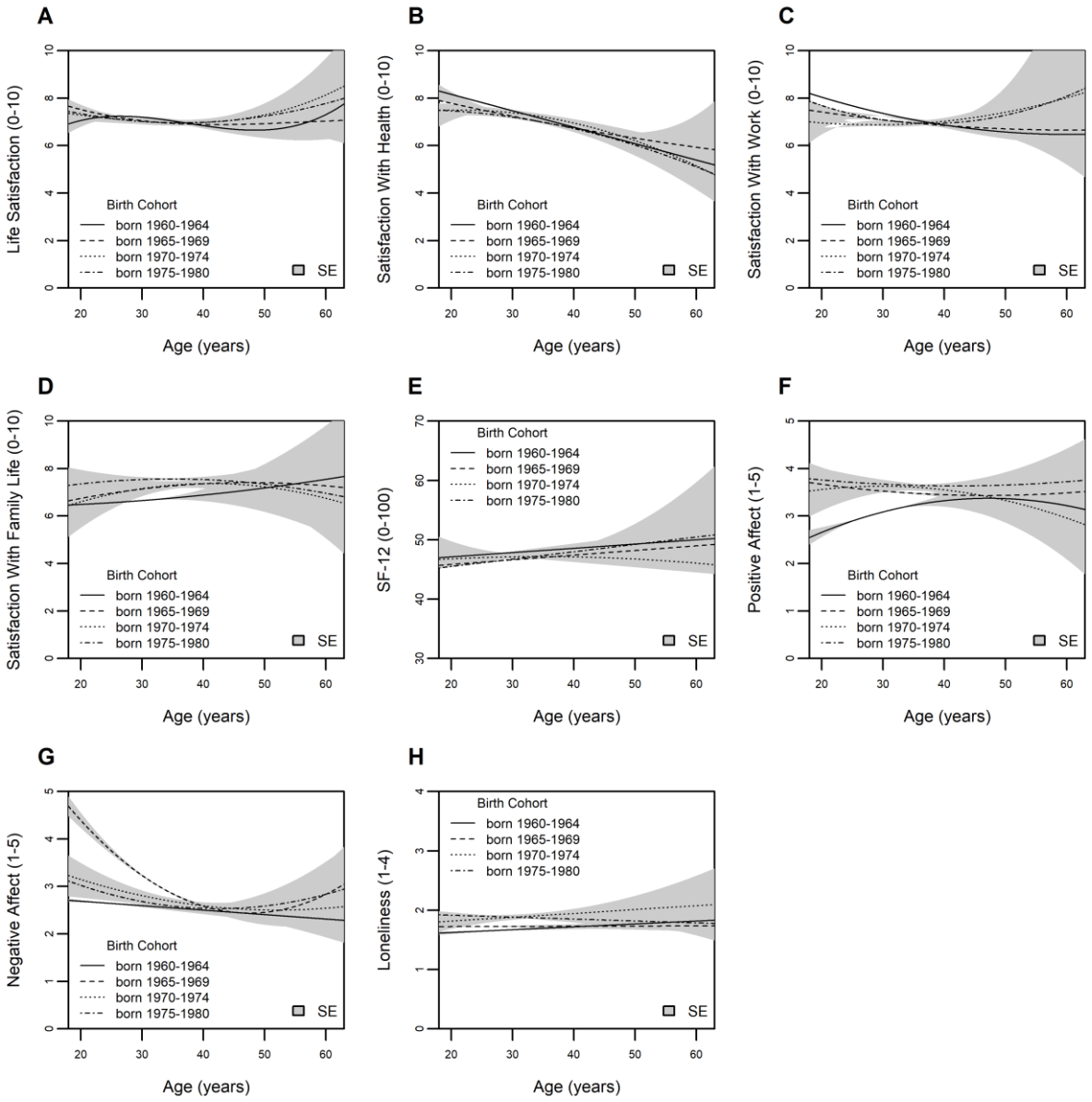
Mental health and well-being across adulthood in the matched sample (N=562) by gender and childfree status.



Note. Local regression smoothing (LOESS) is used. This method is recommended for n < 1000. In all panels red color represents the trajectory of childfree men, green that of childfree women, blue that of fathers, and purple that of mothers. Mental health, satisfaction with family life, and affective well-being (PA and NA) were introduced to the SOEP in 2002 or later. Our developmental deadline inclusion criteria required men to stay in the panel until after the age of 50 which results in systematic missings for males on the above-described outcomes at younger ages.

Figure S4

Visualization of The Cohort-Specific Latent Growth Curve Models



Note. Visualizations are based on separate LGMs for each cohort group. Panel A displays the cohort-specific trajectories of life satisfaction, panel B of Satisfaction with health, panel C of satisfaction with work, panel C of satisfaction with family life, panel E of the mental health SF-12 subscale, panel F of positive affect, panel G of negative affect and panel H of loneliness.

Functional Form of the Mental Health, Well-Being, and Loneliness Trajectories

Table S2 gives an overview of the model fit statistics of the series of LGMs to determine the functional form of the mental health, well-being, and loneliness trajectories. For life satisfaction, satisfaction with health, and satisfaction with work the adjusted BICs indicated better fit when a quadratic and cubic polynomial were added to the model (see Table S2). For satisfaction with family life, mental health-related quality of life (SF-12 MCS), positive affect, and negative affect, the model with a quadratic but no cubic polynomial had a superior fit. In the models with the affective well-being composite score the variance of the quadratic slope had to be fixed to zero to allow for convergence. After fixing the slope variance, the model with a quadratic polynomial had the best fit, but the difference compared to the linear model was miniscule (BIC_q=26,218.03 vs BIC_l=26,218.82). For loneliness, the adjusted BIC indicated the best fit for the linear model.

Although, the adjusted BICs indicated better model fit for eight out of nine outcomes when adding a quadratic (and cubic) polynomial, the cubic slope factor did not reach significance in any model and the quadratic slope factor was only significant in the models for life satisfaction and negative affect. With regards to mean-levels, life satisfaction and negative affect decreased slightly throughout young and middle adulthood but increased again later in life (Figure 2, panels A and G). Mean-levels of satisfaction with health, satisfaction with work, and positive affect decreased (see Figure 2, panels B, C, and F). Mental health and affective well-being levels increased (see Figure 2, panels E and H). Satisfaction with family life and loneliness did not change significantly across the investigated age range (see Figure 2, panel D and I). However, there was significant variance in the latent slopes of all models, indicating interindividual differences in change across the investigated age range. All model estimated parameters of the best-fitting unconditional LGMs are reported in Table S3.

Table S2

Bayesian Fit Criterion for the Latent Growth Curve Models With Linear, Quadratic, and Cubic Slope Factors

	Life Satisfaction	Satisfaction With Health	Satisfaction With Work	Satisfaction With Family Life	SF-12 Mental Health	Positive Affect	Negative Affect	Loneliness
				Sample size adjusted BIC				
s	44322,736	48794,477	44058,904	23860,739	31377,387	12494,876	11094,194	**7626,953**
s q	44123,384	48621,25	43920,387	**23775,632**	**31360,723**	**12475,903**	**11059,364**	7627,951
s q c	**44050,929**	**48534,405**	**43837,367**	24667,793	33194,189	Not converged	Not converged	Not converged
s q c@0						12609,711	11062,332	7630,94
s q@0 c@0						12500,701	11093,525	7633,049

Table S3

Unstandardized Parameter Estimates and Variances of the Latent Growth Curve Models for all Mental Health and Well-Being Outcomes

Outcome	Intercept [95%-CI]	*p*	Linear Slope [95%-CI]	*p*	Quadratic Slope [95%-CI]	*p*	Cubic Slope [95%-CI]	*p*
Life Satisfaction								
Means	6.95 [6.85; 7.06]	<.001	-1.18 [-2.06; -.30]	.009	6.21 [1.16; 11.27]	.016	25.86 [-15.40; 67.13]	.219
Variance	1.54 [1.28; 1.80]	<.001	65.16 [46.72; 83.60]	<.001	1409.21 [966.05; 1852.37]	<.001	75632.52 [45979.65; 105283.38]	<.001

Table S3 (continued)

Outcome	Intercept [95%-CI]	*p*	Linear Slope [95%-CI]	*p*	Quadratic Slope [95%-CI]	*p*	Cubic Slope [95%-CI]	*p*
Satisfaction With Health								
Means	6.77 [6.64; 6.90]	<.001	-5.64 [-6.64; -4.64]	<.001	-.15 [-6.36; 6.06]	.961	35.66 [-11.62; 82.95]	.139
Variance	2.13 [1.82; 2.45]	<.001	85.03 [64.01; 106.06]	<.001	2013.20 [1398.67; 2627.74]	<.001	92274.03 [.65847.52; 118700.58]	<.001
Satisfaction With Work								
Means	6.89 [6.78; 7.00]	<.001	-1.45 [-2.67; -.23]	.020	3.803; -4.27; 11.88]	.356	36.13 [-29.06; 101.31]	.277
Variance	1.44 [1.22; 1.66]	<.001	115.78 [81.85; 149.71]	<.001	3271.35 [2064.89; 4477.81]	<.001	196212.72 [135554.19; 256871.25]	<.001
Satisfaction With Family Life								
Means	7.32 [7.20; 7.45]	<.001	-.68 [-2.01; .66]	.322	6.89 [-5.61; 19.40]	.280	--	--
Variance	1.91 [1.62; 2.20]	<.001	92.43 [56.87; 127.99]	<.001	7236.82 [3404.101; 11069.54]	<.001		
SF-12 Mental Health								
Means	47.66 [46.99; 48.33]	<.001	6.22 [.76; 11.67]	.026	30.47 [-16.32; 77.27]	.202	--	--
Variance	52.38 [44.84; 59.91]	<.001	1648.01 [1150.02; 2145.99]	<.001	30524.20 [17230.19; 43818.21]	<.001		
Positive Affect								
Means	3.51 [3.45; 3.56]	<.001	-1.00 [-1.57; -.44]	.001	2.11 [-2.34; 6.55]	.353	--	--
Variance	.36 [.30; .42]	<.001	12.72 [7.98; 17.46]	<.001	255.57 [171.41; 339.72]	<.001		

Table S3 (continued)

Outcome	Intercept [95%-CI]	*p*	Linear Slope [95%-CI]	*p*	Quadratic Slope [95%-CI]	*p*	Cubic Slope [95%-CI]	*p*
Negative Affect								
Means	2.54 [2.48; 2.60]	<.001	-1.26 [-1.78; -.74]	<.001	4.47 [.26; 8.67]	.037	--	--
Variance	0.36 [0.31; 0.41]	<.001	13.75 [10.17; 17.33]	<.001	265.98 [172.28; 359.67]	<.001		
Loneliness								
Means	1.79 [1.74; 1.84]	<.001	0.19 [-.14; .51]	.269	--	--	--	--
Variance	.19 [.29; .46]	<.001	3.45 [1.77; 5.12]	<.001				

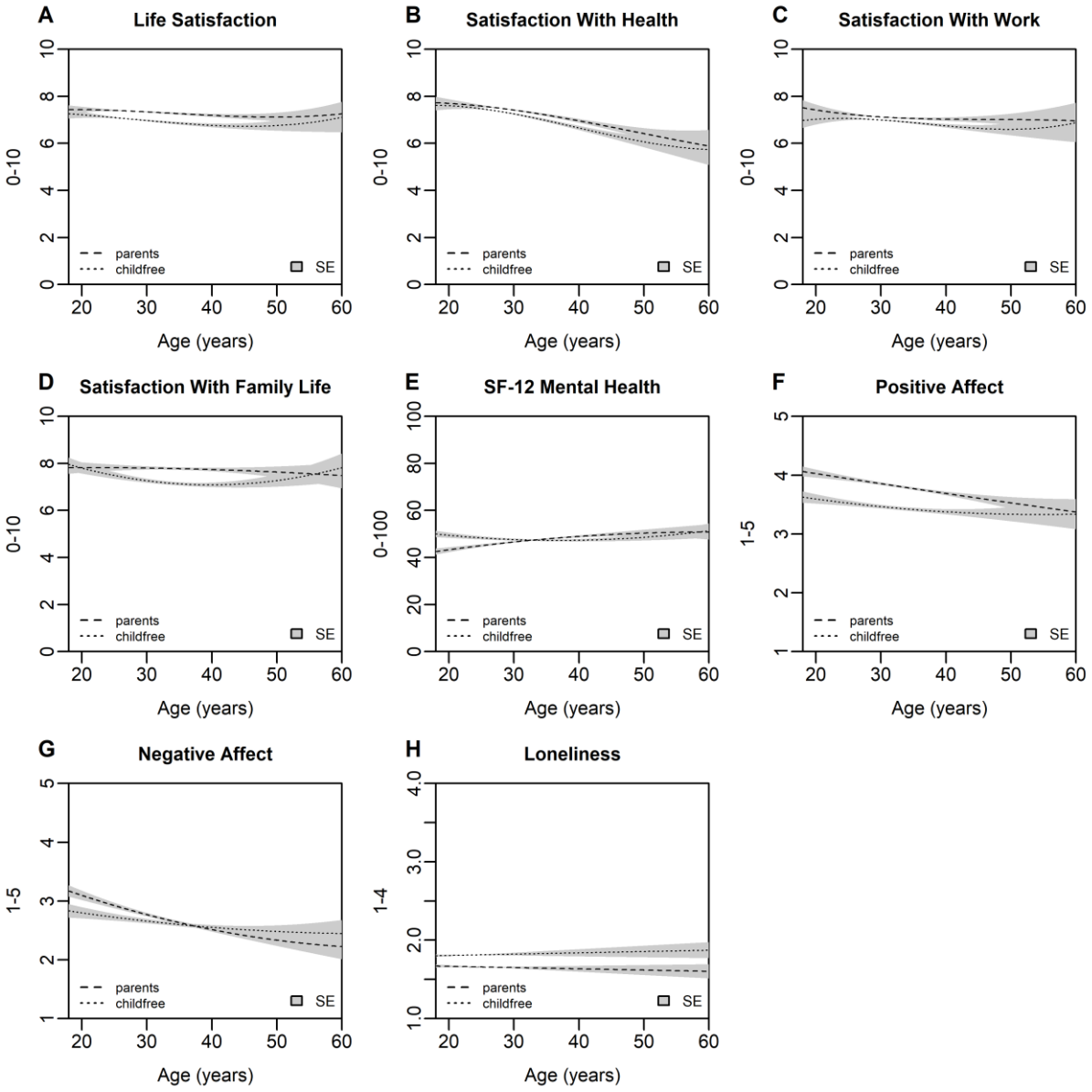
Table S4

Bayesian Fit Criterion for the Latent Growth Curve Models With and Without Cross-Group Constraints

	Life Satisfaction	Satisfaction With Health	Satisfaction With Work	Satisfaction With Family Life	SF-12 Mental Health	Positive Affect	Negative Affect	Loneliness
				Sample size adjusted BIC				
Means Constrained	**44076,982**	**48596,383**	**43875,892**	**23779,647**	31390,307	**12510,491**	**11109,140**	7643,005
Variances Constrained	45372,988	48654,440	44012,028	23781,240	**27005,275**	14169,497	11600,905	**4813,230**
Means & Variances Constrained	45382,042	48664,805	44021,718	23784,115	27007,595	14170,984	11601,297	4813,409
Free	44086,234	48606,741	43885,519	23781,966	31392,903	12511,050	11109,444	7640,082

Figure S 5

Model Estimated Mental Health and Well-Being Trajectories (N = 640, Sample Matched Only on Age, Gender, and Time of Matching)



Note. Model estimated trajectories of the eight outcomes for (future) parents (dashed line) and those who do not have children (dotted line). It can be obtained that especially for cognitive well-being, but also for positive affect and loneliness, the effects are larger compared to the stricter matching procedure.

Table S5 A

Results of the Conditional Growth Curve Model of Age-Related Change Life Satisfaction: The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=562, Sample Matched on all Covariates)

	Intercept			Linear Slope Factor			Quadratic Slope Factor			Cubic Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	6.97	0.13	<.001	-1.59	1.13	.160	-0.61	5.95	.918	-14.37	46.32	.756
Childfree	-0.02	0.19	.918	2.38	1.47	.105	8.96	10.05	.373	-35.22	65.72	.592
Gender (male)	0.11	0.16	.508	0.01	1.27	.995	10.00	7.28	.169	15.36	60.10	.798
Goal (child)	0.08	0.12	.514	1.31	1.30	.311	6.02	6.70	.369	48.23	50.44	.339
Goal (career)	0.01	0.13	.916	-0.29	1.19	.808	-13.41	8.13	.099	-80.18	45.25	.076
Disengagement (goal child)	0.06	0.16	.694	0.21	1.30	.872	1.77	6.40	.782	68.67	52.61	.192
Gender*childfree	-0.28	0.23	.232	-2.81	1.85	.129	-12.79	11.17	.252	66.80	86.08	.438
Goal (child)*childfree	-0.06	0.19	.772	-1.44	1.57	.358	-11.36	10.41	.275	-75.09	66.73	.261
Goal (career)*childfree	0.05	0.21	.816	0.84	1.66	.614	**21.92**	**10.20**	**.032**	119.19	69.42	.086
Disengagement*childfree	-0.05	0.21	.812	1.03	1.72	.548	-5.29	10.04	.598	**-150.60**	**68.69**	**.028**
Goal (child)*gender	0.11	0.18	.548	0.36	1.48	.810	-4.57	7.87	.561	-109.57	64.81	.091
Goal (career)*gender	-0.12	0.28	.663	0.57	1.85	.757	14.96	11.58	.196	128.79	97.49	.186
Goal (child)*gender*childfree	-0.12	0.32	.716	-0.95	2.29	.676	7.94	14.24	.577	132.85	100.08	.184
Goal(career)*gender*childfree	0.19	0.36	.608	0.27	2.45	.913	-8.79	16.01	.583	**-281.83**	**115.87**	**.015**

Note. Higher levels indicate higher life satisfaction. The scale ranges from 0 to 10. Intercept is centered at age 40. Unstandardized estimates and standard errors are presented.

Table S5 B

Results of the Conditional Growth Curve Model of Age-Related Change in Life Satisfaction: The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=640, Sample Matched Only on Age, Gender, and Time of Matching)

	Intercept			Linear Slope Factor			Quadratic Slope Factor			Cubic Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	7.16	0.13	<.001	-1.18	1.08	.274	6.79	5.29	.199	32.69	41.48	.431
Childfree	-0.30	0.19	.120	2.09	1.46	.152	1.11	9.58	.908	-107.65	65.41	.100
Gender (male)	-0.04	0.15	.787	-0.73	1.19	.541	-1.37	6.17	.824	-40.81	53.49	.445
Goal (child)	0.07	0.13	.616	1.06	1.16	.363	1.29	4.57	.779	-13.97	39.24	.722
Goal (career)	0.01	0.12	.958	-0.42	0.97	.668	-4.24	4.95	.392	11.18	38.14	.769
Disengagement (goal child)	0.07	0.17	.674	0.66	1.23	.593	-1.38	6.06	.820	7.60	51.43	.883
Gender*childfree	-0.17	0.22	.442	-2.52	1.81	.165	2.93	10.27	.776	**169.16**	**83.20**	**.042**
Goal (child)*childfree	0.04	0.19	.854	-0.75	1.43	.600	-4.28	8.88	.630	3.00	59.39	.960
Goal (career)*childfree	0.07	0.20	.714	1.36	1.47	.355	7.60	7.73	.326	-17.71	63.82	.781
Disengagement*childfree	-0.13	0.22	.556	1.19	1.67	.475	-0.36	9.68	.970	-113.75	69.51	.102
Goal (child)*gender	0.15	0.16	.355	0.67	1.24	.589	-5.75	5.82	.323	-81.77	52.53	.120
Goal (career)*gender	0.00	0.22	.993	2.26	1.64	.169	8.17	8.11	.314	-107.28	79.23	.176
Goal (child)*gender*childfree	-0.05	0.29	.858	-1.61	2.10	.445	3.27	12.46	.793	82.12	92.53	.375
Goal(career)*gender*childfree	-0.01	0.33	.975	-0.99	2.40	.681	0.51	13.62	.970	-40.94	107.14	.702

Note. Higher levels indicate higher life satisfaction. The scale ranges from 0 to 10. Intercept is centered at age 40. Unstandardized estimates and standard errors are presented.

Table S6 A

Results of the Conditional Growth Curve Model of Age-Related Change in Satisfaction With Health: The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=562, Sample Matched on all Covariates)

	Intercept			Linear Slope Factor			Quadratic Slope Factor			Cubic Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	6.69	0.16	<.001	-6.33	1.34	<.001	-5.52	9.09	.543	-151.13	72.12	.036
Childfree	0.00	0.22	.995	2.22	1.78	.212	6.08	11.65	.601	-86.97	68.55	.205
Gender (male)	0.22	0.19	.244	1.50	1.52	.325	13.07	9.61	.173	-54.65	53.58	.308
Goal (child)	0.11	0.15	.461	0.54	1.27	.671	-6.21	8.43	.461	-51.43	62.23	.409
Goal (career)	-0.10	0.16	.528	1.26	1.46	.388	-7.08	9.89	.474	-26.36	56.31	.640
Disengagement (goal child)	0.03	0.19	.866	0.94	1.43	.511	5.92	8.40	.481	173.15	93.92	.065
Gender*childfree	-0.03	0.27	.923	-3.67	2.13	.085	-10.57	13.30	.427	34.58	66.28	.602
Goal (child)*childfree	-0.11	0.21	.600	-0.52	1.66	.756	10.78	10.83	.320	106.67	79.19	.178
Goal (career)*childfree	0.23	0.23	.318	-1.90	1.89	.313	**24.77**	**12.57**	**.049**	-107.30	72.19	.137
Disengagement*childfree	-0.08	0.24	.750	1.27	1.89	.501	-1.09	11.06	.922	13.91	72.66	.848
Goal (child)*gender	0.05	0.22	.811	0.18	1.63	.913	9.24	10.21	.365	-33.67	105.29	.749
Goal (career)*gender	-0.27	0.36	.463	-0.70	2.43	.774	13.43	13.22	.310	-18.95	106.47	.859
Goal (child)*gender*childfree	-0.08	0.36	.814	-2.42	2.48	.328	-14.87	16.40	.365	4.34	128.12	.973
Goal(career)*gender*childfree	0.18	0.45	.692	1.74	3.08	.572	-16.38	18.38	.373	**-151.13**	**72.12**	**.036**

Note. Higher levels indicate higher satisfaction with health. The Scale ranges from 0 to 10. Age is centered at 40. Unstandardized estimates and standard errors are presented.

Table S6 B

Results of the Conditional Growth Curve Model of Age-Related Change in Satisfaction With Health: The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=640, Sample Matched Only on Age, Gender, and Time of Matching)

	Intercept			Linear Slope Factor			Quadratic Slope Factor			Cubic Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	6.93	0.15	<.001	-5.59	1.19	<.001	-9.35	7.17	.192	70.33	45.71	.124
Childfree	-0.33	0.22	.126	1.36	1.62	.402	9.16	9.57	.338	**-144.67**	**60.46**	**.017**
Gender (male)	0.11	0.18	.546	0.96	1.37	.484	9.76	7.93	.218	-118.03	64.72	.068
Goal (child)	0.01	0.15	.935	-0.62	1.18	.601	-7.99	6.61	.227	-36.28	39.47	.358
Goal (career)	-0.03	0.13	.847	0.74	1.12	.511	-8.35	6.47	.197	-66.31	40.12	.098
Disengagement (goal child)	-0.02	0.20	.924	0.88	1.44	.539	5.74	7.05	.416	-50.12	47.73	.294
Gender*childfree	0.04	0.26	.882	**-4.11**	**2.01**	**.041**	-5.37	11.20	.631	**242.05**	**85.43**	**.005**
Goal (child)*childfree	0.11	0.21	.608	0.87	1.58	.582	12.60	9.48	.184	17.40	58.51	.766
Goal (career)*childfree	0.23	0.22	.309	-1.21	1.59	.447	**22.33**	**10.22**	**.029**	112.71	64.36	.080
Disengagement*childfree	-0.08	0.24	.743	1.46	1.86	.434	-0.85	9.73	.931	-83.32	64.53	.197
Goal (child)*gender	0.22	0.20	.265	1.40	1.50	.351	4.58	8.40	.586	-11.69	66.06	.859
Goal (career)*gender	-0.18	0.27	.500	-0.26	2.16	.905	16.33	10.59	.123	9.66	99.37	.923
Goal (child)*gender*childfree	-0.20	0.31	.515	-2.91	2.19	.185	-10.24	12.90	.427	-11.97	98.51	.903
Goal(career)*gender*childfree	0.08	0.39	.829	1.47	2.90	.612	-19.46	15.61	.213	-57.15	122.65	.641

Note. Higher levels indicate higher satisfaction with health. The Scale ranges from 0 to 10. Age is centered at 40. Unstandardized estimates and standard errors are presented.

Table S7 A

Results of the Conditional Growth Curve Model of Age-Related Change in Satisfaction With Work: The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=562, Sample Matched on all Covariates)

	Intercept			Linear Slope Factor			Quadratic Slope Factor			Cubic Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	6.97	.13	<.001	-0.99	1.60	.537	-23.31	11.16	.037	-78.60	80.99	.332
Childfree	-0.05	0.18	.782	2.60	2.14	.224	**29.87**	**14.58**	**.040**	2.56	108.54	.981
Gender (male)	0.07	0.18	.708	-0.52	1.83	.776	**23.27**	**11.56**	**.044**	64.43	97.24	.508
Goal (child)	0.04	0.12	.759	0.45	1.67	.787	13.73	9.92	.166	91.49	80.19	.254
Goal (career)	0.16	0.13	.211	-0.06	1.74	.973	-14.38	13.42	.284	-108.16	88.57	.222
Disengagement (goal child)	-0.12	0.17	.464	1.12	1.79	.531	**31.92**	**10.57**	**.003**	97.54	82.47	.237
Gender*childfree	-0.05	0.24	.830	-4.57	2.53	.071	-22.79	16.26	.161	163.26	132.24	.217
Goal (child)*childfree	0.10	0.16	.541	-0.42	2.11	.841	-6.21	14.39	.666	-102.87	106.22	.333
Goal (career)*childfree	-0.20	0.19	.290	-0.37	2.34	.874	**36.64**	**17.04**	**.032**	160.80	128.09	.209
Disengagement*childfree	0.25	0.21	.237	3.16	2.37	.183	**-31.96**	**15.47**	**.039**	**-230.24**	**106.98**	**.031**
Goal (child)*gender	-0.02	0.21	.923	0.96	2.06	.641	-3.38	12.18	.782	-139.33	116.33	.231
Goal (career)*gender	-0.48	0.31	.123	0.43	2.89	.882	**38.51**	**16.40**	**.019**	121.82	155.36	.433
Goal (child)*gender*childfree	0.07	0.34	.843	-3.38	3.45	.326	-10.85	23.22	.640	209.11	187.26	.264
Goal(career)*gender*childfree	0.54	0.39	.160	-0.49	3.74	.896	**-62.33**	**23.73**	**.009**	-129.74	203.02	.523

Note. Higher levels indicate higher satisfaction with work. Intercept is centered at age 40. The Scale ranges from 0 to 10. Age is centered at 40. Unstandardized estimates and standard errors are presented.

Table S7 B

Results of the Conditional Growth Curve Model of Age-Related Change in Satisfaction With Work: The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=640, Sample Matched Only on Age, Gender, and Time of Matching)

	Intercept			Linear Slope Factor			Quadratic Slope Factor			Cubic Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	7.20	0.12	<.001	-0.63	1.43	.660	-10.26	8.51	.228	-26.37	63.23	.677
Childfree	-0.32	0.17	.065	1.49	2.00	.457	13.52	11.80	.252	-37.14	94.78	.695
Gender (male)	-0.09	0.16	.567	-0.30	1.70	.861	8.05	9.59	.401	-46.87	83.29	.574
Goal (child)	-0.19	0.12	.107	0.44	1.31	.736	8.23	7.42	.267	5.45	55.47	.922
Goal (career)	0.12	0.11	.292	-2.13	1.39	.126	-8.56	8.49	.314	-3.26	70.61	.963
Disengagement (goal child)	**-0.36**	**0.16**	**.024**	0.71	1.59	.655	**31.14**	**8.80**	**<.001**	64.85	71.38	.364
Gender*childfree	0.01	0.22	.971	-4.32	2.40	.072	-2.75	13.55	.839	**247.44**	**117.88**	**.036**
Goal (child)*childfree	**0.42**	**0.17**	**.013**	-0.13	1.80	.943	-0.62	11.29	.956	-19.58	85.34	.819
Goal (career)*childfree	-0.19	0.18	.304	1.54	1.96	.431	**30.81**	**12.21**	**.012**	73.06	105.79	.490
Disengagement*childfree	**0.46**	**0.20**	**.020**	2.89	2.21	.190	**-34.99**	**12.78**	**.006**	-185.13	96.32	.055
Goal (child)*gender	0.16	0.17	.362	2.33	1.60	.147	-1.40	9.13	.878	-114.18	84.80	.178
Goal (career)*gender	-0.08	0.23	.739	0.18	2.34	.938	**30.24**	**11.91**	**.011**	128.22	123.86	.301
Goal (child)*gender*childfree	-0.04	0.28	.888	-3.77	2.72	.166	-12.61	16.16	.435	203.78	140.04	.146
Goal**(career)*gender*childfree**	0.23	0.32	.472	-0.22	3.15	.945	**-56.09**	**17.91**	**.002**	-156.86	165.35	.343

Note. Higher levels indicate higher satisfaction with work. Intercept is centered at age 40. The Scale ranges from 0 to 10. Age is centered at 40. Unstandardized estimates and standard errors are presented.

Table S8 A

Results of the Conditional Growth Curve Model of Age-Related Change in Satisfaction With Family Life: The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=562, Sample Matched on all Covariates)

	Intercept			Linear Slope Factor			Quadratic Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	7.34	.16	<.001	-3.18	1.64	.053	-3.87	16.67	.816
Childfree	-.07	.22	.742	2.25	2.10	.283	19.89	20.73	.337
Gender (male)	.19	.25	.452	3.71	4.51	.411	-5.84	30.53	.848
Goal (child)	.02	.16	.914	**5.08**	**1.71**	**.003**	4.05	16.68	.808
Goal (career)	-.20	.15	.167	-3.31	1.72	.054	2.48	19.62	.900
Disengagement (goal child)	.12	.20	.541	2.70	2.28	.236	-13.14	22.05	.551
Gender*childfree	-.44	.33	.186	-2.78	5.48	.612	7.86	39.07	.840
Goal (child)*childfree	.34	.23	.142	**-6.12**	**2.12**	**.004**	-14.79	22.24	.506
Goal (career)*childfree	.37	.24	.119	3.74	2.18	.086	4.35	22.99	.850
Disengagement*childfree	-.09	.27	.728	-3.49	2.96	.237	16.29	28.20	.563
Goal (child)*gender	.10	.25	.698	-1.22	4.44	.784	-23.20	29.38	.430
Goal (career)*gender	.24	.41	.563	3.31	7.91	.676	2.87	49.96	.954
Goal (child)*gender*childfree	-.50	.40	.209	4.68	6.03	.438	18.65	41.23	.651
Goal (career)*gender*childfree	-.37	.53	.482	-6.18	8.61	.473	19.47	54.72	.722

Note. Higher levels indicate higher satisfaction with family life. The Scale ranges from 0 to 10. Age is centered at 40. Unstandardized estimates and standard errors are presented.

Table S8 B

Results of the Conditional Growth Curve Model of Age-Related Change in Satisfaction With Family Life: The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=640, Sample Matched Only on Age, Gender, and Time of Matching)

	Intercept			Linear Slope Factor			Quadratic Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	7.74	0.16	<.001	-4.31	1.52	.005	-3.61	15.43	.815
Childfree	**-0.49**	**0.22**	**.025**	3.60	2.01	.074	16.36	19.85	.410
Gender (male)	-0.02	0.21	.938	2.70	3.51	.442	0.01	24.02	1.000
Goal (child)	0.05	0.15	.758	**4.02**	**1.71**	**.019**	8.01	14.83	.589
Goal (career)	-0.11	0.13	.387	0.01	1.29	.995	-8.36	12.72	.511
Disengagement (goal child)	-0.01	0.18	.959	3.73	2.20	.090	-3.40	19.58	.862
Gender*childfree	-0.31	0.31	.315	-0.35	4.62	.940	-0.33	31.89	.992
Goal (child)*childfree	0.29	0.22	.190	-3.69	2.17	.089	-14.27	19.83	.472
Goal (career)*childfree	0.31	0.23	.176	0.60	1.81	.740	10.28	17.31	.553
Disengagement*childfree	-0.06	0.25	.824	-3.25	2.93	.266	7.16	25.25	.777
Goal (child)*gender	0.16	0.22	.447	-1.39	4.17	.738	-15.87	26.68	.552
Goal (career)*gender	-0.14	0.30	.646	6.83	6.08	.261	-31.76	40.08	.428
Goal (child)*gender*childfree	-0.08	0.44	.858	-5.47	7.33	.456	49.50	37.69	.189
Goal (career)*gender*childfree	-0.07	0.47	.889	-7.13	7.95	.370	40.75	46.67	.383

Note. Higher levels indicate higher satisfaction with family life. The Scale ranges from 0 to 10. Age is centered at 40. Unstandardized estimates and standard errors are presented.

Table S9 A

Results of the Conditional Growth Curve Model of Age-Related Change in Mental Health (SF-12): The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=562, Sample Matched on all Covariates)

	Intercept			Linear Slope Factor			Quadratic Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	46.23	0.80	<.001	1.12	7.07	.874	-35.34	50.55	.485
Childfree	0.49	1.13	.667	-4.60	9.27	.619	112.94	68.46	.099
Gender (male)	2.92	1.05	.005	0.65	10.70	.952	22.89	80.24	.775
Goal (child)	-0.25	0.82	.757	9.69	7.60	.202	50.47	55.68	.365
Goal (career)	-0.04	0.84	.962	-9.27	8.21	.259	-103.54	77.66	.182
Disengagement (goal child)	0.14	0.99	.887	9.08	9.96	.362	70.22	67.93	.301
Gender*childfree	-0.70	1.50	.640	0.77	15.89	.961	24.92	118.80	.834
Goal (child)*childfree	-2.00	1.08	.063	**-23.50**	**9.68**	**.015**	71.93	67.71	.288
Goal (career)*childfree	0.45	1.12	.691	0.67	10.96	.951	166.62	92.32	.071
Disengagement*childfree	-1.70	1.35	.208	-11.32	12.38	.361	-8.15	81.61	.920
Goal (child)*gender	0.53	1.22	.663	-0.54	11.11	.961	-57.97	89.52	.517
Goal (career)*gender	-1.58	1.81	.384	-1.02	16.43	.951	105.84	119.24	.375
Goal (child)*gender*childfree	1.48	1.94	.447	0.85	17.96	.962	20.95	141.50	.882
Goal (career)*gender*childfree	2.95	2.40	.218	32.63	21.49	.129	**-328.22**	**151.34**	**.030**

Note. Higher levels indicate better mental-health related quality of life. Intercept is centered at age 40. Unstandardized estimates and standard errors are presented.

Table S9 B

Results of the Conditional Growth Curve Model of Age-Related Change in Mental Health (SF-12): The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=640, Sample Matched Only on Age, Gender, and Time of Matching)

	Intercept			Linear Slope Factor			Quadratic Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	48.37	0.76	<.001	5.40	6.53	.409	-36.39	41.41	.380
Childfree	-2.12	1.10	.054	-8.52	8.77	.331	**133.06**	**60.67**	**.028**
Gender (male)	1.38	0.95	.148	-4.17	10.89	.702	25.32	70.77	.720
Goal (child)	-0.05	0.74	.950	7.13	6.32	.259	-23.13	39.87	.562
Goal (career)	-0.16	0.73	.828	-1.73	6.19	.780	-57.12	53.79	.288
Disengagement (goal child)	-0.02	0.89	.986	11.58	9.42	.219	64.10	53.67	.232
Gender*childfree	0.34	1.42	.810	1.05	15.37	.946	64.35	95.61	.501
Goal (child)*childfree	-1.67	1.03	.105	**-18.29**	**8.53**	**.032**	**126.03**	**55.14**	**.022**
Goal (career)*childfree	0.58	1.05	.580	-8.38	9.23	.364	104.52	74.04	.158
Disengagement*childfree	-1.64	1.26	.192	-11.30	11.67	.333	6.63	66.79	.921
Goal (child)*gender	0.83	1.02	.419	7.57	11.45	.508	-45.22	76.88	.556
Goal (career)*gender	-0.82	1.40	.557	-5.95	15.39	.699	104.70	105.33	.320
Goal (child)*gender*childfree	2.04	1.74	.240	2.52	16.15	.876	-49.74	103.53	.631
Goal (career)*gender*childfree	2.18	2.03	.282	33.92	20.33	.095	**-326.61**	**133.67**	**.015**

Note. Higher levels indicate better mental-health related quality of life. Intercept is centered at age 40. Unstandardized estimates and standard errors are presented.

Table S10 A

Results of the Conditional Growth Curve Model of Age-Related Change in Positive Affect: The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=562, Sample Matched on all Covariates)

	Intercept			Linear Slope Factor			Quadratic Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	3.58	0.07	<.001	-1.00	0.61	.102	-5.81	4.73	.220
Childfree	-0.14	0.09	.151	0.11	0.79	.890	7.91	6.02	.188
Gender (male)	-0.04	0.09	.629	-0.57	1.16	.619	7.06	6.14	.250
Goal (child)	0.00	0.07	.968	0.06	0.67	.923	**14.07**	**4.78**	**.003**
Goal (career)	0.01	0.07	.884	-0.72	0.71	.309	-8.56	5.37	.111
Disengagement (goal child)	0.04	0.09	.610	-0.64	0.85	.448	11.83	6.23	.058
Gender*childfree	-0.22	0.13	.084	**4.87**	**1.56**	**.002**	**-27.94**	**7.97**	**<.001**
Goal (child)*childfree	-0.02	0.10	.808	-0.38	0.87	.659	**-14.35**	**7.12**	**.044**
Goal (career)*childfree	-0.04	0.10	.698	-1.36	0.97	.162	**18.98**	**6.81**	**.005**
Disengagement*childfree	-0.11	0.12	.361	0.87	1.13	.440	-14.02	8.94	.117
Goal (child)*gender	0.08	0.10	.416	1.08	1.35	.425	**-21.74**	**6.71**	**.001**
Goal (career)*gender	0.09	0.13	.468	-2.41	1.88	.199	**33.49**	**8.26**	**<.001**
Goal (child)*gender*childfree	0.15	0.21	.486	-1.01	2.98	.734	20.17	17.81	.257
Goal (career)*gender*childfree	-0.09	0.19	.626	4.27	2.22	.054	**-37.49**	**10.44**	**<.001**

Note. Higher levels indicate more frequent experience of positive affect (feeling happy during the past four weeks). Values range between 1 and 5. Intercept is centered at age 40. Unstandardized estimates and standard errors are presented.

Table S10 B

Results of the Conditional Growth Curve Model of Age-Related Change in Positive Affect: The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=640, Sample Matched Only on Age, Gender, and Time of Matching)

	Intercept			Linear Slope Factor			Quadratic Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	3.70	0.07	<.001	-1.61	0.60	.007	-2.20	3.92	.574
Childfree	**-0.27**	**0.10**	**.005**	0.77	0.78	.323	4.73	4.89	.334
Gender (male)	-0.05	0.08	.520	-0.90	1.10	.417	4.10	5.02	.414
Goal (child)	-0.04	0.07	.576	0.33	0.61	.587	5.02	4.45	.259
Goal (career)	0.03	0.06	.643	-0.26	0.60	.665	3.02	3.60	.401
Disengagement (goal child)	0.03	0.08	.748	0.44	0.74	.550	3.00	5.26	.569
Gender*childfree	-0.21	0.13	.105	**4.50**	**1.42**	**.001**	**-20.65**	**5.88**	**<.001**
Goal (child)*childfree	0.05	0.10	.604	-0.50	0.84	.549	-4.25	6.72	.527
Goal (career)*childfree	-0.06	0.10	.528	**-2.16**	**0.89**	**.015**	5.48	5.40	.310
Disengagement*childfree	-0.09	0.11	.442	-0.09	1.08	.933	-4.14	8.06	.608
Goal (child)*gender	0.12	0.08	.118	0.75	1.01	.457	**-10.21**	**4.55**	**.025**
Goal (career)*gender	0.02	0.10	.852	-1.60	1.35	.235	**16.29**	**5.98**	**.006**
Goal (child)*gender*childfree	0.12	0.21	.580	-0.29	3.60	.937	4.84	17.55	.783
Goal (career)*gender*childfree	0.04	0.19	.830	3.74	2.84	.187	-21.97	14.31	.125

Note. Higher levels indicate more frequent experience of positive affect (feeling happy during the past four weeks). Values range between 1 and 5. Intercept is centered at age 40. Unstandardized estimates and standard errors are presented.

Table S11 A

Results of the Conditional Growth Curve Model of Age-Related Change in Negative Affect: The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=562, Sample Matched on all Covariates)

	Intercept			Linear Slope Factor			Quadratic Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	2.68	0.07	<.001	-0.90	0.61	.140	10.25	4.41	.020
Childfree	-0.04	0.09	.661	0.94	0.80	.240	-8.97	5.93	.130
Gender (male)	-0.32	0.10	.002	-0.27	1.16	.816	-1.65	6.21	.791
Goal (child)	0.04	0.07	.596	-0.81	0.69	.240	0.73	4.91	.882
Goal (career)	-0.04	0.07	.542	-0.46	0.72	.522	**24.83**	**5.08**	**<.001**
Disengagement (goal child)	-0.04	0.08	.650	-0.64	0.88	.467	-8.78	6.00	.144
Gender*childfree	0.04	0.13	.742	-1.14	1.61	.480	8.55	8.58	.319
Goal (child)*childfree	0.07	0.09	.445	1.13	0.87	.197	-2.34	5.58	.675
Goal (career)*childfree	-0.07	0.09	.434	0.60	0.93	.520	**-21.07**	**6.50**	**.001**
Disengagement*childfree	0.15	0.11	.168	0.65	1.09	.553	7.62	7.15	.287
Goal (child)*gender	-0.04	0.11	.692	0.15	1.24	.902	-1.57	6.39	.806
Goal (career)*gender	0.09	0.17	.579	**4.75**	**1.71**	**.005**	**-50.37**	**10.04**	**<.001**
Goal (child)*gender*childfree	-0.04	0.17	.809	1.88	1.92	.326	-18.99	9.78	.052
Goal (career)*gender*childfree	-0.11	0.21	.602	**-4.47**	**2.07**	**.030**	**41.58**	**11.33**	**<.001**

Note. Higher levels indicate more frequent experience of negative affect (feeling angry, worried, and sad during the past four weeks). Values range between 1 and 5. Intercept is centered at age 40. Unstandardized estimates and standard errors are presented.

Table S11 B

Results of the Conditional Growth Curve Model of Age-Related Change in Negative Affect: The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=640, Sample Matched Only on Age, Gender, and Time of Matching)

	Intercept			Linear Slope Factor			Quadratic Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	2.59	0.06	<.001	-1.13	0.56	.043	0.29	4.36	.948
Childfree	0.07	0.09	.405	1.26	0.74	.088	0.10	6.05	.986
Gender (male)	**-0.29**	**0.08**	**<.001**	-0.52	1.00	.601	**12.22**	**6.07**	**.044**
Goal (child)	0.02	0.07	.716	**-1.49**	**0.55**	**.007**	6.32	3.85	.101
Goal (career)	0.01	0.06	.847	-0.35	0.53	.504	8.79	4.84	.069
Disengagement (goal child)	-0.01	0.07	.890	-0.70	0.72	.331	-2.09	4.95	.673
Gender*childfree	0.07	0.12	.566	-0.38	1.48	.797	-13.10	8.32	.115
Goal (child)*childfree	0.03	0.09	.715	**1.76**	**0.80**	**.028**	-5.86	6.11	.338
Goal (career)*childfree	-0.12	0.09	.174	0.68	0.78	.385	-4.46	7.21	.536
Disengagement*childfree	0.12	0.10	.223	0.71	1.04	.496	0.73	8.18	.929
Goal (child)*gender	-0.05	0.09	.581	-0.09	1.07	.937	0.89	6.48	.891
Goal (career)*gender	0.24	0.13	.068	0.16	1.92	.934	-12.25	13.56	.366
Goal (child)*gender*childfree	-0.01	0.15	.971	-0.69	2.06	.738	-2.40	12.04	.842
Goal (career)*gender*childfree	-0.28	0.18	.128	0.34	2.61	.897	6.77	17.98	.706

Note. Higher levels indicate more frequent experience of negative affect (feeling angry, worried, and sad during the past four weeks). Values range between 1 and 5. Intercept is centered at age 40. Unstandardized estimates and standard errors are presented.

Table S12 A

Results of the Conditional Growth Curve Model of Age-Related Change Loneliness: The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=562, Sample Matched on all Covariates)

	Intercept			Linear Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	1.81	0.06	<.001	0.80	0.45	.076
Childfree	0.13	0.08	.118	-0.11	0.61	.851
Gender (male)	**-0.23**	**0.07**	**.001**	0.25	0.48	.608
Goal (child)	0.02	0.06	.782	-0.37	0.43	.393
Goal (career)	-0.02	0.06	.799	-0.22	0.46	.637
Disengagement (goal child)	-0.02	0.07	.767	**-1.13**	**0.57**	**.048**
Gender*childfree	0.06	0.10	.532	-1.19	0.68	.081
Goal (child)*childfree	0.04	0.09	.661	0.89	0.59	.131
Goal (career)*childfree	-0.03	0.09	.741	-0.28	0.65	.664
Disengagement*childfree	0.08	0.09	.397	1.38	0.70	.051
Goal (child)*gender	0.01	0.08	.846	0.10	0.53	.850
Goal (career)*gender	0.03	0.10	.726	0.05	0.69	.937
Goal (child)*gender*childfree	-0.08	0.12	.526	-0.72	0.82	.375
Goal (career)*gender*childfree	-0.21	0.14	.139	0.17	0.96	.863

Note. Higher levels indicate higher loneliness. The response scale ranges from one to four. Intercept is centered at age 40. Unstandardized estimates and standard errors are presented.

Table S12 B

Results of the Conditional Growth Curve Model of Age-Related Change Loneliness: The Role of Remaining Childfree, Gender, Life Goals, and Goal Disengagement (N=640, Sample Matched Only on Age, Gender, and Time of Matching)

	Intercept			Linear Slope Factor		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Parameter Estimate	1.67	0.05	<.001	0.17	0.40	.671
Childfree	**0.29**	**0.08**	**.001**	0.58	0.55	.298
Gender (male)	**-0.18**	**0.06**	**.003**	0.17	0.43	.690
Goal (child)	0.04	0.05	.416	-0.14	0.37	.707
Goal (career)	0.00	0.05	.988	-0.38	0.36	.288
Disengagement (goal child)	0.05	0.06	.388	-0.17	0.49	.726
Gender*childfree	0.03	0.10	.727	-1.10	0.63	.082
Goal (child)*childfree	-0.01	0.08	.869	0.49	0.53	.354
Goal (career)*childfree	-0.07	0.09	.394	-0.12	0.56	.826
Disengagement*childfree	0.01	0.09	.898	0.37	0.62	.556
Goal (child)*gender	0.01	0.06	.911	-0.16	0.47	.733
Goal (career)*gender	-0.02	0.09	.809	0.78	0.61	.203
Goal (child)*gender*childfree	-0.12	0.11	.248	-0.65	0.76	.397
Goal (career)*gender*childfree	-0.07	0.13	.618	-0.26	0.90	.776

Note. Higher levels indicate higher loneliness. The response scale ranges from one to four. Intercept is centered at age 40. Unstandardized estimates and standard errors are presented

Table S13

Results of the Post-hoc Analysis to Determine Predictors of Parent's Disengaging from the Goal to Have Children

	b	SE	t-Wert	*p*
(Constant)	0.271	0.174		
Age at 1st Birth	-0.005	0.005	-0.118	.906
Single[a]	-0.009	0.007	-1.286	.906
In Relationship[a]	-0.008	0.007	-1.046	.297
Married[a]	-0.005	0.007	-0.754	.451
Household Income	0.005	0.007	-1.398	.163
Waves Participated	-0.00003	0.00002	0.824	.411
Low Education	-0.095	0.110	-0.866	.388
High Education	0.077	0.042	1.814	.071
Number of Children	-0.044	0.028	-1.600	.111

Note. [a]Refers to the total number of survey years individuals have spent single, in a relationship or married.

Table S14

Descriptive Comparison of Mothers and Fathers who Disengage with Parents who Stay Engaged and Non-Parents

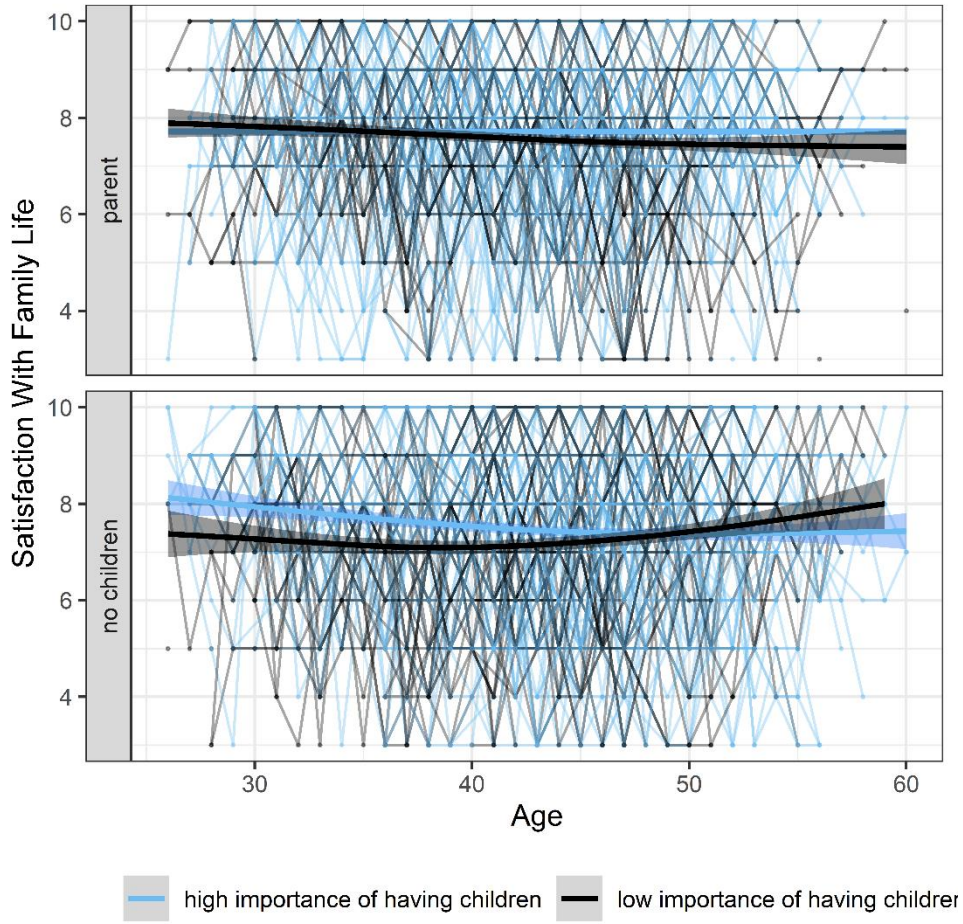
	Age at 1st birth	Waves single (%)	Waves in relationship (%)	Waves married (%)	Waves participated	Income across waves	Number of children
Disengaged Mother	31.69	20.87	15.58	56.80	21.06	2461.99	1.50
Disengaged Father	33.90	15.31	14.52	63.49	26.50	3074.77	1.50
Engaged Mother	31.83	23.80	18.00	54.56	21.71	2855.90	1.70
Engaged Father	34.00	17.21	13.63	65.82	28.09	3081.97	1.77
Woman Without Children	--	49.19	17.17	29.56	21.75	2757.19	--
Man Without Children	--	55.73	16.81	22.92	28.07	2660.11	--

Note. Higher levels indicate higher loneliness. The response scale ranges from one to four.

Intercept is centered at age 40. Unstandardized estimates and standard errors are presented.

Figure S6

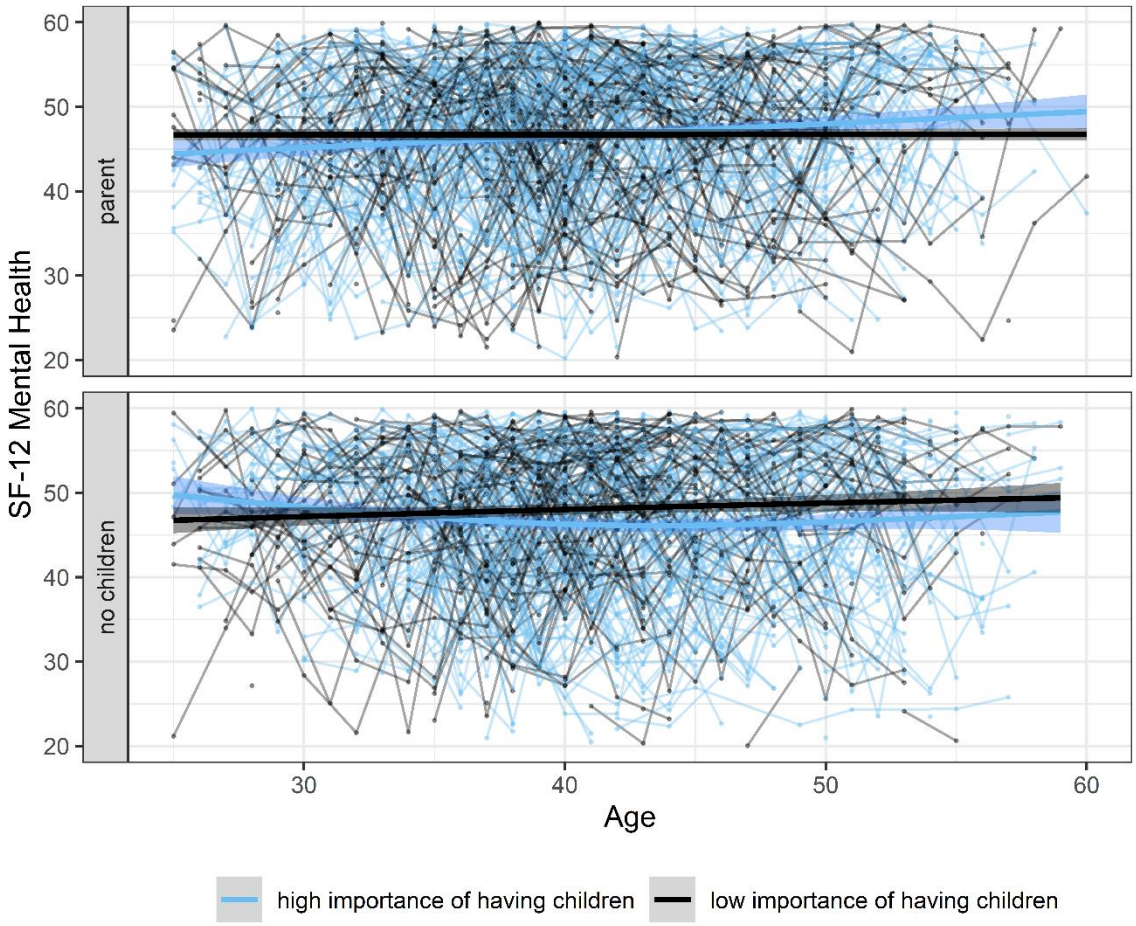
Visual Depiction of the Interaction Effect of (not) Having Children and Perceived Importance to Have Children on Satisfaction With Family Life



Note. Depicted are individual trajectories to illustrate inter-individual variability in change and an average trajectory for each group. A median split was performed to dichotomize perceived importance to have children. Individuals who responded that having children is rather or very important are in the "high importance" group. Local regression smoothing (LOESS) is used to illustrate non-linear change.

Figure S7

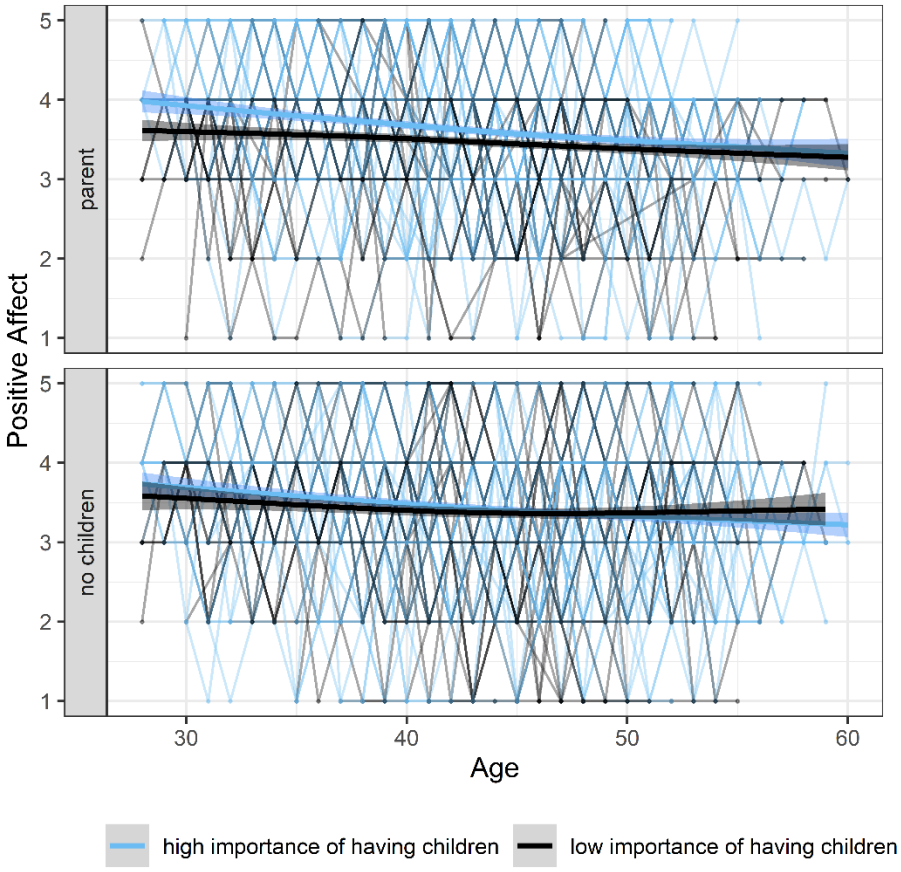
Visual Depiction of the Interaction Effect of (not) Having Children and Perceived Importance to Have Children on Mental Health (SF-12)



Note. Depicted are individual trajectories to illustrate inter-individual variability in change and an average trajectory for each group. A median split was performed to dichotomize perceived importance to have children. Individuals who responded that having children is rather or very important are in the "high importance" group. Local regression smoothing (LOESS) is used to illustrate non-linear change. It can be obtained that prioritizing the goal to have children during emerging adulthood was found to predict lower midlife mental health and well-being of adults without children, but not of those with children.

Figure S8

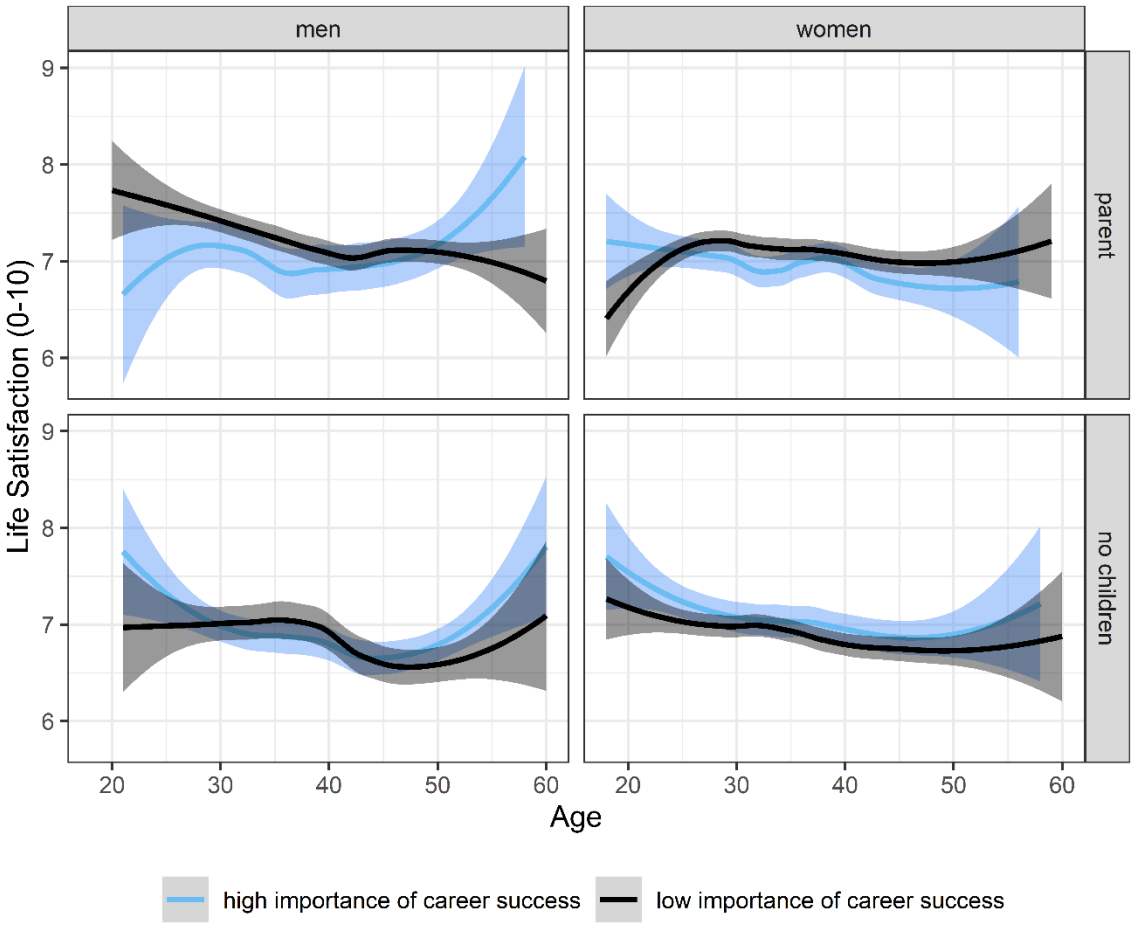
Visual Depiction of the Interaction Effect of (not) Having Children and Perceived Importance to Have Children on Positive Affect



Note. Depicted are individual trajectories to illustrate inter-individual variability in change and an average trajectory for each group. A median split was performed to dichotomize perceived importance to have children. Individuals who responded that having children is rather or very important are in the "high importance" group. Local regression smoothing (LOESS) is used to illustrate non-linear change.

Figure S9

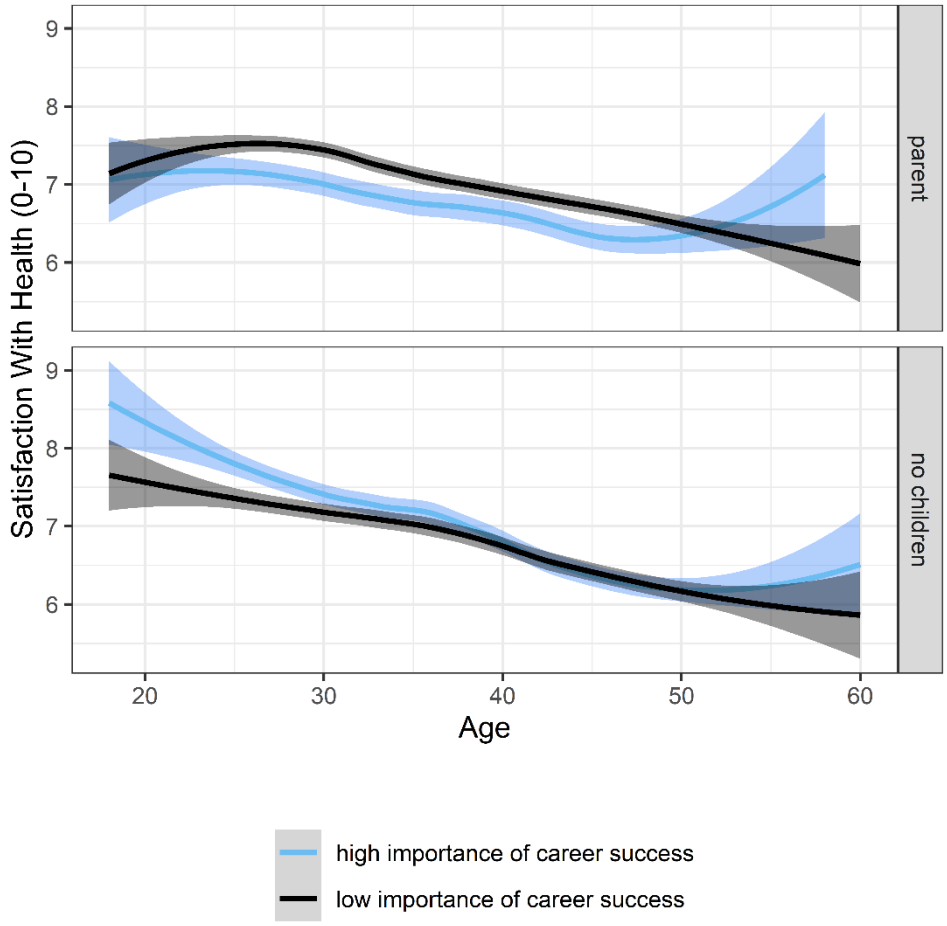
Visual Depiction of the Three-Way Interaction Effect of (not) Having Children, Perceived Importance of Career Success, and Gender on Life Satisfaction



Note. Depicted are local regression smoothed (LOESS) lines to illustrate non-linear change. A median split was performed to dichotomize perceived importance of career success. Individuals who responded that having children is very important are in the "high importance" group.

Figure S10

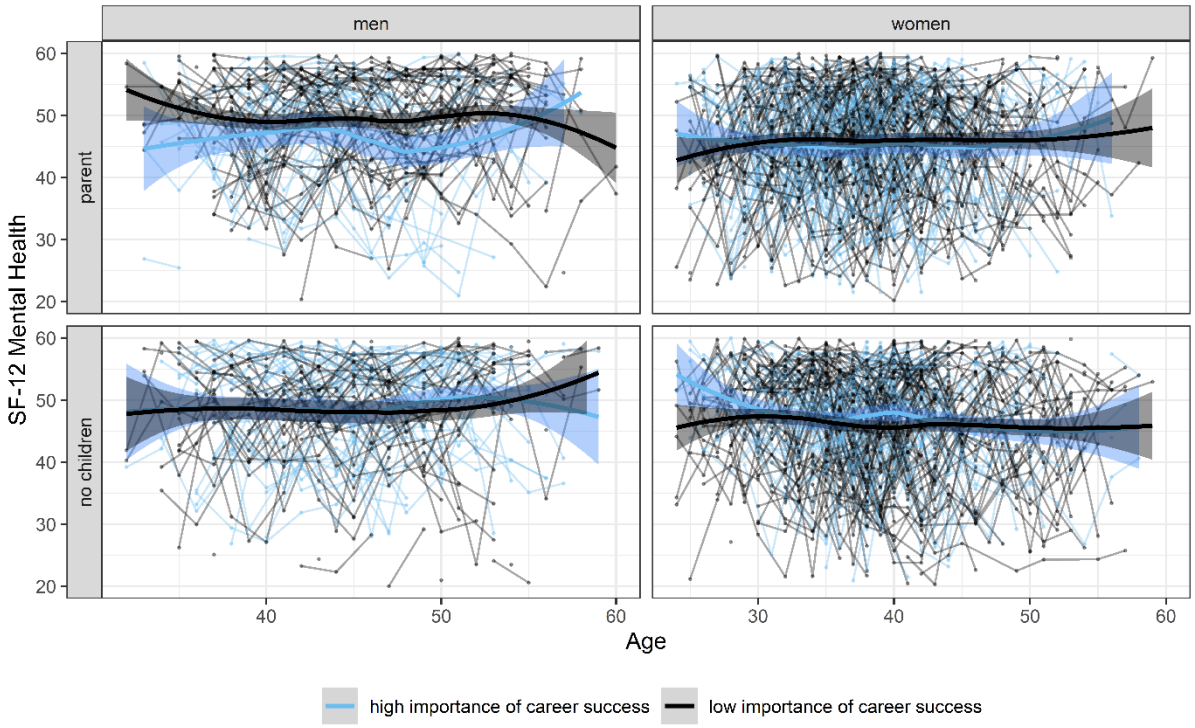
Visual Depiction of the Interaction Effect of (not) Having Children and Perceived Importance of Career Success on Satisfaction With Health



Note. Depicted are local regression smoothed (LOESS) lines to illustrate non-linear change. A median split was performed to dichotomize perceived importance of career success. Individuals who responded that having children is very important are in the "high importance" group.

Figure S11

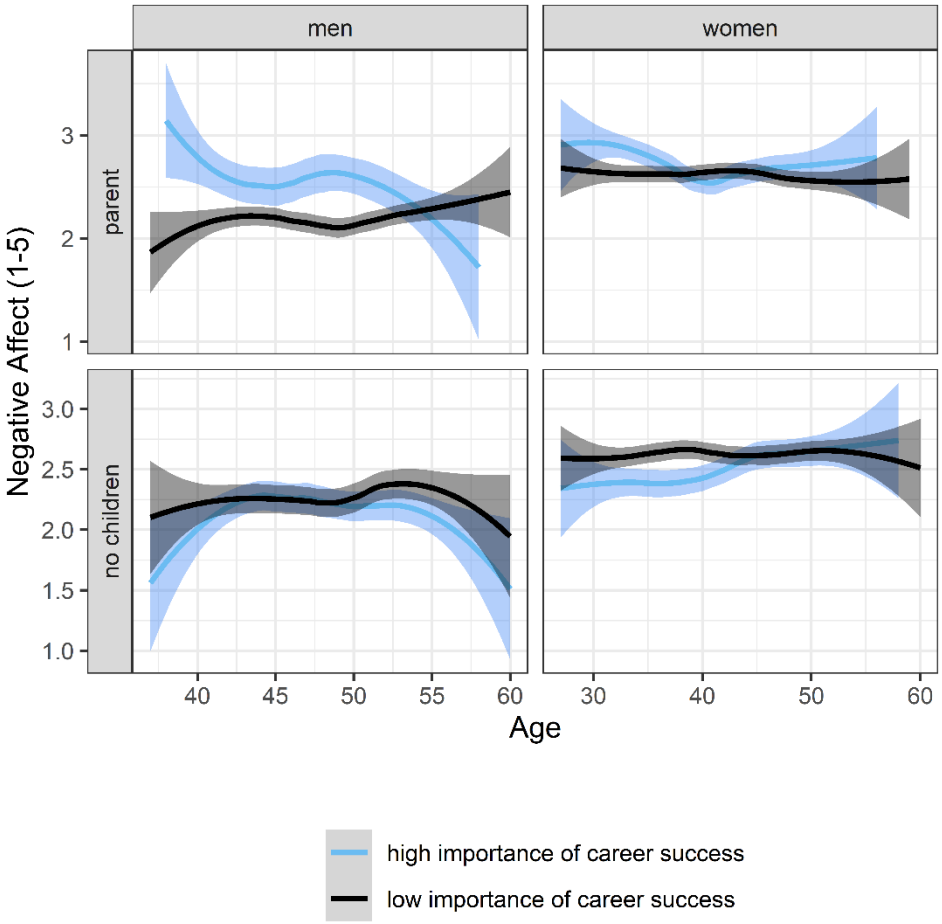
Visual Depiction of the Three-Way Interaction Effect of (not) Having Children, Perceived Importance of Career Success, and Gender on Mental Health (SF-12 MCS)



Note. Depicted are local regression smoothed (LOESS) lines to illustrate non-linear change. A median split was performed to dichotomize perceived importance of career success. Individuals who responded that having children is very important are in the "high importance" group.

Figure S12

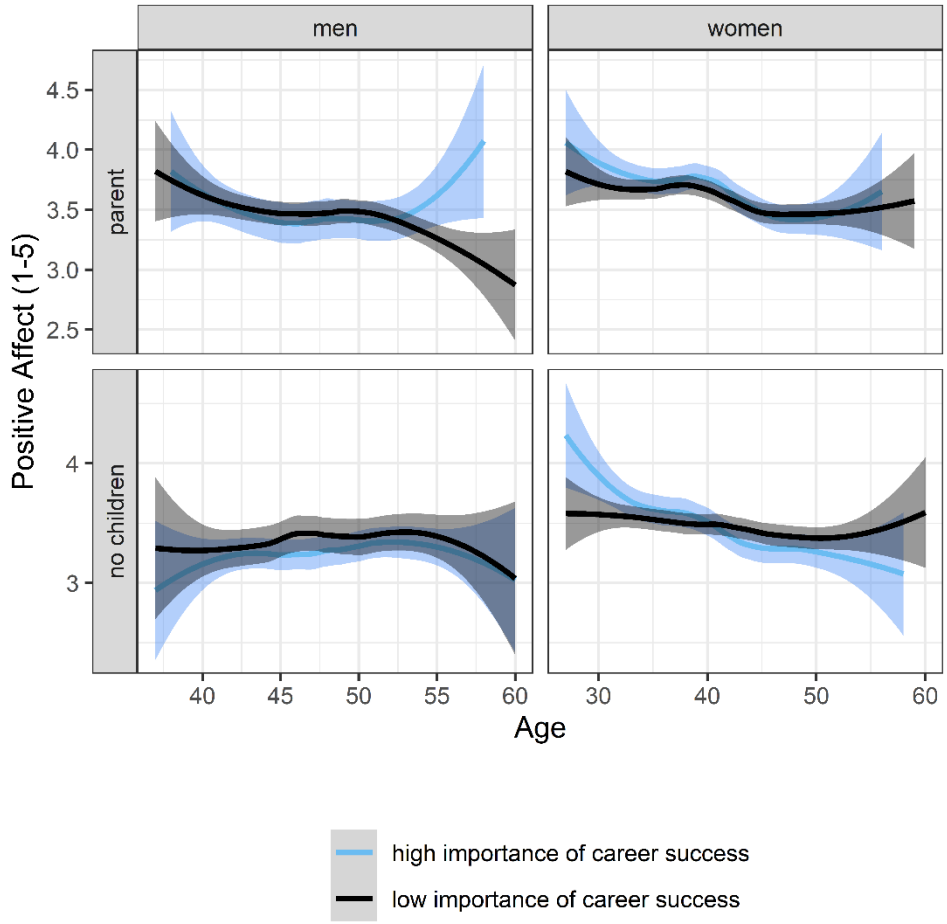
Visual Depiction of the Three-Way Interaction Effect of (not) Having Children, Perceived Importance of Career Success, and Gender on Negative Affect



Note. Depicted are local regression smoothed (LOESS) lines to illustrate non-linear change. A median split was performed to dichotomize perceived importance of career success. Individuals who responded that having children is very important are in the "high importance" group.

Figure S13

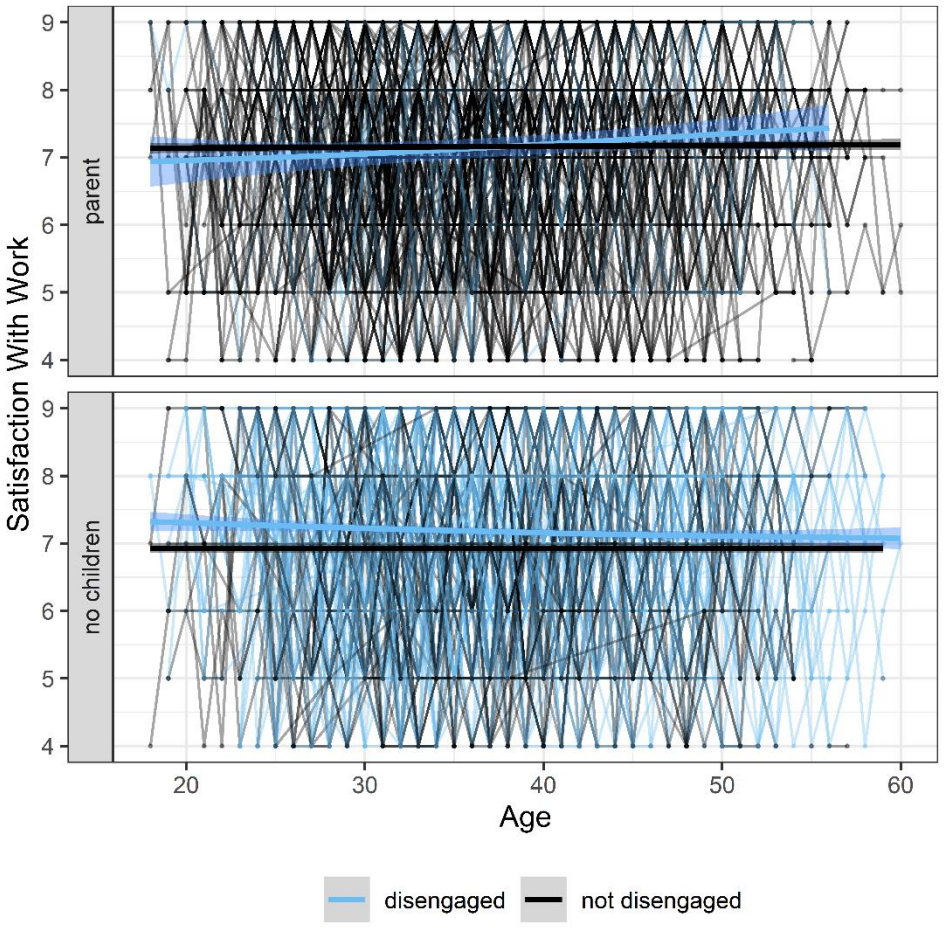
Visual Depiction of the Three-Way Interaction Effect of (not) Having Children, Perceived Importance of Career Success, and Gender on Positive Affect



Note. Depicted are local regression smoothed (LOESS) lines to illustrate non-linear change. A median split was performed to dichotomize perceived importance of career success. Individuals who responded that having children is very important are in the "high importance" group.

Figure S14

Visual Depiction of the Interaction Effect of (not) Having Children and Disengaging From the Goal to Have Children on Satisfaction With Work



Note. Depicted are individual trajectories to illustrate inter-individual variability in change and an average trajectory for each group. A median split was performed to dichotomize perceived importance to have children. Individuals who responded that having children is rather or very important are in the "high importance" group. Local regression smoothing (LOESS) is used to illustrate non-linear change.

Appendix D

Individual Contributions to Studies I-III

Individual Contribution to Empirical Studies

The contributions based on the CRediT Taxonomy (https://credit.niso.org/) of all authors of each of the three empirical studies that comprise this dissertation are presented below.

The Development of Life Goals Across the Adult Life Span. (Study I)

Laura Buchinger: conceptualization (equal), methodology (equal), data curation (lead), formal analysis (lead), visualization (lead), writing of original draft (lead), reviewing and editing the draft (lead)
David Richter: conceptualization (equal), methodology (equal), supervision (lead), funding acquisition (lead), reviewing and editing the draft (supporting)
Jutta Heckhausen: conceptualization (equal), reviewing and editing the draft (supporting)

Codevelopment of Life Goals and the Big Five Personality Traits Across Adulthood and Old Age (Study II)

Laura Buchinger: conceptualization (lead), data curation (lead), formal analysis (lead), methodology (lead), visualization (lead), writing–original draft (lead), writing–review and editing (lead)
Theresa M. Entringer: supervision (supporting), writing–review and editing (supporting)
David Richter: funding acquisition (lead), supervision (lead), writing–review and editing (supporting)
Gert G. Wagner: conceptualization (supporting), writing–review and editing (supporting)
Denis Gerstorf: methodology (supporting), writing–review and editing (supporting)
Wiebke Bleidorn: conceptualization (supporting), methodology (supporting), writing–review and editing (supporting)

Kids or no Kids? Life Goals in one's 20's Predict Midlife Trajectories of Well-Being (Study III)

Laura Buchinger: conceptualization (lead), data curation (lead), formal analysis (lead), methodology (lead), visualization (lead), writing–original draft (lead), writing–review and editing (lead)
Iris Wahring: conceptualization (supporting), writing-original draft (supporting), writing–review and editing (supporting)
Nilam Ram: methodology (supporting), writing–review and editing (supporting)
Christiane Hoppmann: writing–review and editing (supporting)
Jutta Heckhausen: writing–review and editing (supporting)
Denis Gerstorf: conceptualization (supporting), methodology (supporting), writing–review and editing (supporting)

Appendix E

Curriculum Vitae

The CV is not contained in the online version of this dissertation due to data protection reasons.

The CV is not contained in the online version of this dissertation due to data protection reasons.

Appendix F

Eidesstattliche Erklärung

Eidesstattliche Erklärung

Hiermit erkläre ich, dass ich die vorliegende Dissertation selbstständig verfasst und ohne unerlaubte Hilfe angefertigt habe. Alle Hilfsmittel, die verwendet wurden, habe ich angegeben. Die Dissertation ist in keinem früheren Promotionsverfahren angenommen oder abgelehnt worden.

Berlin, 06.09.2023 Laura Buchinger

Ort, Datum Unterschrift